



HAL
open science

Does institutional environment influence the role, strategy and impact of Credit Rating Agencies?

Xuheng Tong

► **To cite this version:**

Xuheng Tong. Does institutional environment influence the role, strategy and impact of Credit Rating Agencies?: Application to China and comparative elements with Europe. Business administration. Université de Lorraine, 2018. English. NNT : 2018LORR0196 . tel-02073030

HAL Id: tel-02073030

<https://hal.univ-lorraine.fr/tel-02073030>

Submitted on 17 Dec 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



AVERTISSEMENT

Ce document est le fruit d'un long travail approuvé par le jury de soutenance et mis à disposition de l'ensemble de la communauté universitaire élargie.

Il est soumis à la propriété intellectuelle de l'auteur. Ceci implique une obligation de citation et de référencement lors de l'utilisation de ce document.

D'autre part, toute contrefaçon, plagiat, reproduction illicite encourt une poursuite pénale.

Contact : ddoc-theses-contact@univ-lorraine.fr

LIENS

Code de la Propriété Intellectuelle. articles L 122. 4

Code de la Propriété Intellectuelle. articles L 335.2- L 335.10

http://www.cfcopies.com/V2/leg/leg_droi.php

<http://www.culture.gouv.fr/culture/infos-pratiques/droits/protection.htm>



UNIVERSITÉ
DE LORRAINE



CEREFIGE
Centre Européen de Recherche en Économie Financière
et Gestion des Entreprises

**L'environnement institutionnel influence-t-il le rôle, la
stratégie et l'impact des agences de notation financières?
-Application à la Chine et éléments de comparaison avec l'Europe-**

Thèse déposée pour obtenir le diplôme de
Doctorat en Sciences de Gestion

Université de Lorraine, CEREFIGE

par

Xuheng TONG

Présentée et soutenue en public le jeudi 06 décembre, 2018

Sous la direction de

M. le Professeur Jean-Noël ORY

Composition du jury

Rapporteur:

M. Philippe RAIMBOURG. Professeur des Universités, Université Paris 1
Panthéon-Sorbonne (France)

M. Laurent WEILL. Professeur des Universités, Université de Strasbourg/EM
Strasbourg Business School (France)

Examineur:

Mme. Céline BARREDY. Professeur des Universités, Université de Lorraine (France)

Mme. Ana COLOVIC. Professeur associée-Habilitation à diriger des Recherches (HDR),
Neoma Business School (France)

M. Ferdinand MAGER. Professor-Doctor (Prof. Dr.), EBS Business School
(Allemagne)

M. Jean-Noël ORY. Professeur des Universités, Université de Lorraine (France) –
Directeur de thèse



UNIVERSITÉ
DE LORRAINE



CEREFIGE

Centre Européen de Recherche en Économie Financière
et Gestion des Entreprises

**Does institutional environment influence
the role, strategy and impact of Credit Rating Agencies?
-Application to China and comparative elements with Europe-**

Thesis submitted for the degree of

Ph.D. in Financial Management

at

Lorraine University (ED SJPEG), Laboratory CEREFIGE

by

Xuheng TONG

To be presented and defended publicly on the 6th December 2018

Under the direction of

Mr. Professor Jean-Noël ORY

Composition of jury

Referee:

Mr. Philippe RAIMBOURG. Professor, University of Paris 1 Panthéon-Sorbonne (France)

Mr. Laurent WEILL. Professor, University of Strasbourg/EM Strasbourg Business School (France)

Examiner:

Ms. Céline BARREDY. Professor, University of Lorraine (France)

Ms. Ana COLOVIC. Associate Professor-HDR, Neoma Business School (France)

Mr. Ferdinand MAGER. Professor-Doctor (Prof. Dr.), EBS Business School (Germany)

Mr. Jean-Noël ORY. Professor, University of Lorraine (France) – Supervisor

Thesis dedicated to my parents

献给我的爸爸妈妈



Acknowledgement

I dedicate my work to my parents.

Without your love and support, I could never have achieved anything on my own. My heart is always with you even though we're far apart in distance.

I remember the chaotic first year of my thesis. After a series of accidents at school, during and after my trip in the Central Europe, I was deeply depressed. It was you that supported financially and emotionally. I could finally pick up the courage to continue my work in the second year and worked very efficiently in the next three years of research. I wish you could have your happy and healthy retirement life in the new lake house.

I give thoughts to my relatives in Shanghai, among whom my dearest aunt, uncle and grandfathers who passed away during this period, and to the difficult time that my family, spent together without my presence. I admired especially the enormous courage showed by my cousin and the way how she handled the most painful loss.

I am relieved to see my younger cousins in Japan started to flourish themselves in the world of paintings. I hope that the turbulence in the youth turned to be a precious and rich source of your creativity. I am also trilled to learn that my uncle and aunt still keep their passion for drawing and keep a perfect balance between art and commerce.

The life is bitter-sweet. I thank at the same time, these last two years, and my love, Jérémy. You brought me happiness, a lot of nice pictures with smiles, birds and flowers. Of course, I cannot forget to mention the wonder views that we enjoyed both during our voyages. I cannot help but to laugh every time I heard your jokes. Please keep your special sense of humor whatever it happens.

I thank your family, your parents, Gisèle and Gilles; your brother's: Nicolas, Elodie and lovely Luca; your grand-parents, uncles and aunts. Thank you for the wonderful summer time together. How nice to be loved!

I benefit a lot from this doctoral research.

I want to express my profound gratitude and the sincerest respect to my supervisor Mr. Professor Jean-Noël Ory. Thank you for your guidance and encouragement. I appreciate all the exchanges that we have had during this period. It is not only very fruitful for my research but also enlightening for my carrier and life.

A special thanks to your time. You spent a lot of efforts to read my pages, a lot of them (not only these 500 pages but also all pages that we decided not to put into the thesis). You corrected all of the pages very carefully (even during holidays!), down to a simple punctuation.

I really improved a great deal, thanks to your comments and propositions, not only for this thesis itself; but most importantly, I have learned how to do research, how to present more properly and coherently, how to make readers understand my thinking...

I have the most pleasure to have Mr. Professor Patrice Laroche and Mr. Jérôme Hubler as members of my thesis committee. Thank you for your advice.

Advice also came from attendants of conferences and summer schools. I made a lot progress and all of I made it not only by myself.

I have the greatest honor to welcome all of my jury: Mr. Professor Philippe RAIMBOURG, Mr. Professor Laurent WEILL, Ms. Professor Céline BARREDY, Ms. HDR Ana COLOVIC, Mr. Professor Ferdinand MAGER, and Mr. Professor Jean-Noël ORY.

Thank you for accepting our invitation to be here and giving your professional opinions on my first research work. I am very grateful for you precious time and attention.

It is a long journey to arrive at the moment of thesis defense.

Thank heaven that I am not alone.

I thank my colleagues of the Laboratory CEREFIGE and Doctor School SJPEG: Edina, Vincent, Xiaoqi, Guo Rui, Huifen, Renaud, Aramis, Jonathan, Stefan, Turki, Sarah, Oskana, Adrien, Thierry, Caterina, Mitche Axel, Georges (I am sorry if I have not mentioned all of your names)...

And from the Laboratory Committee, Monsieur Herrmann, Monsieur Grasser, Madame Louargant, Madame Rasolofo-Distler, Madame Jacob-Leal, Madame Persson...as well as the administration team: Laurence, Vincent, Komivi, Madame Cecchi, Monsieur Poirson.

I thank my colleagues and students that I worked four years together in LEA, CEU, IAE Nancy, Metz and the faculty of University Lorraine (management and economy) and University of Management in Slovakia. These are my first teaching and researching experiences that I treasure a lot.

I appreciate especially the continuing confidence of ESM-IAE (Department of International Finance and Management Control, Audit) for your confidence in me. Especially, Madame Deschanet, Madame Lelièvre, Monsieur Husson, Monsieur Khim, Monsieur Razafitombo, Monsieur Nobil...And the help of the administration team: Madame Martin, Madame Vogel and Madame Pluvinet...

I also thank my friends.

I think, first of all, of my dearest friend Xiao Yu Yu, who is far in Munich, but we are always trying to see each other when it is possible. The same for Ting and Mikael, Thank you for your hospitality in Paris, as always.

I also cannot forget my friend and supervisor in Fudan, Nathan. Thank you for all the nice memories that we shared together.

Gratefulness is also due to the family of Anaïs, Cléa, Katia, Richard, René and Mami Claud; that of Nadia, Stévo, Kiko and your nice parents; and that of Charles, Nathalie, Richard, Raphael and Laurent, for your company, friendship and your generosity. I spend a wonderful time with you in your beautiful house. I miss it!

I thank all other friends for your love.

The thoughts also go to *Foyer Marae*. 103 Rue St. Georges (54000, Nancy) was my address in France since 01/09/2012 until 31/12/2017. I left and I came back, you welcome us as the first day. You are my family and I met wonderful people there: Momoko, Muriel, Anaïs, Morad, Alice, Farouk, Rachel, Alexandra (but not limited to and BTW, a special thinking to Jean)... I remembered how I evolved myself. I was awkward following our after-dinner discussions, because of the language, because of culture barriers or other reasons. You helped me to integrate into the French society.

My acquaintance in Nancy and Metz, Marion, Adèle, Julie, Youssef, Marie, Sami and Camille... and I thank the City Nancy for your hospitality. You organized a lot of activities to make foreign students feel at home. And Madame Lacova, Natalia, Ali, Lenka, Martin, Maryne (from Erasmus), Pietari, Isabelle, Kristina, Idil, Dietrich, Natalia, Jan (from couchsurfing), Ayumi, Maximilian, Victor, Hambaseanu, Bas, Song, Ao Leong Si Nga, Adriana, Zia (from the trips), Adeline, Mac-Abel, Ismaël (from NJP), Shun, Azza, Néomi (from Doctorials 2016)... and others that I have or don't have the name...Not to mention all teachers and classmates I have the entire time... You are ALL my precious source of inspiration.

I also tried to help others as I could. I thank the *Association of Chinese students and researchers in Nancy* offered my chances to provide aid to whom in need. It is fulfilling to feel useful and needed.

I remember and cherish most of my solitary days, which helped me to refresh my first intention to be abroad:

« Je n'ai rien oublié pour m'instruire: j'ai quitté mon pays et parcouru l'univers pour mieux connaître la vérité. »¹

During these six years abroad, I discovered the glamour of knowledge during my study, the charm of nature along my voyage, the “calm strength” throughout silent contemplation in front of the works of Art... all the novels, poems, films, series, stories and pieces of music... Thank you for comforting me when I felt agitated.

I know the reflection will never stop and my footsteps will continue after the exploration of more than 30 countries, the universe of research and the mysterious world of art, and most of all, myself.

I am thinking and rethinking, trying to figure out: Who am I? Where am I going?
What do I really want to do? What is a meaningful life?

...

I am looking forward to the path leading to the answers!

¹ Montesquieu. *Lettres Persanes*. Published in 1721.

Figures

General introduction: Theoretical framework and application to CRAs, under Chinese market institutional environment: Chapter One	27
Chapter Two 2.....	29
Chapter Three 3.....	29
Structure of the thesis (1)	32
Structure of the methodologies.....	41
Introduction of Part One §1: Structure of the thesis (2)	46
I.1. Organizational behaviors and structure.....	54
I.2. Factors of institutional changes.....	65
I.3. Summary of previous institutional elements and induction of later research.....	80
I.4. Four kinds of relationship of CRAs and other market actors.....	84
II.1. Domestic financial flows going out.....	103
II.2. Foreign financial flows coming inside.....	104
II.3. Segmentation of Chinese stock market.....	107
II.4. Next step of Chinese Opening-up: example of institutional investors.....	113
II.5. Evolution of Chinese stock market Reform: important year with events.....	115
III.1. Information types of rating processing.....	160
Introduction of Part Two §2: Structure of the thesis (3)	174
IV. 1. Structure of Section 1.....	182
IV. 2. Binomial external governance of CRAs.....	289
Structure of V.....	293
V.1.1. Structure of Section 1, Chapter V.....	312
V.1.2. Binomial internal governance of CRAs.....	323
V.2.1. Reasoning for strategic rating behaviors.....	325
V.2.2. Basic structure of the internal corporate governance.....	337
V.2.3. CRAs' "rating standards" of using "public information"	344
VI.2.1. Window description.....	428
VI.2.2. Calculation of AAR and CAR.....	431
General conclusion: Structure of the thesis (4)	499

Graphs

I.1. Component process of institutionalization.....	79
I.2. Statistics of three main issues for two decades.....	95
II.1. Growth rate by bond type.....	121
III.1. Accounting and Auditing Standards applied to market segments.....	152
III.2. Stocks traded, turnover ratio of domestic shares (%)	165
Introduction of Part Two §2: “An Institution as shared behavioral beliefs cum endogenous rules of the game”	171
IV.2.1. Fine rating rankings of competing credit risk indexes (Big Three)	230
IV.2.2. Comparison between number of issuer and issue ratings.....	235
IV.2.3. Evolution of initial ratings, CRC and WL (number of rating events)	236
IV.2.4. China’ GDP for recent 30 years.....	237
IV.2.5. Average rating by year.....	238
IV.2.6. Number of ratings issued by global CRAs.....	243
IV.2.7. Number of ratings issued by local CRAs.....	243
IV.2.8. Rating level by agency, with a given year.....	244
IV.3.1. The timeliness-accuracy frontier and the expanded timeliness-accuracy frontier.....	280
V.1.2. Classification by Credit Ratings.....	320
V.2.1. Rating process (Moody’s financial metrics)	342
V.2.2. Bull and bear markets in China.....	350
V.3.1. Distribution of sole-rating for initial issuer ratings, by year.....	373
V.3.2. Results of odds ratios (1)	380
V.3.3. Results of marginal effect (1)	381
V.3.4. Fitness of the model: Akaike's and Bayesian information criterion (1)	382
V.3.5. Results of prediction: contingency table (1)	382
V.3.6. Results of coefficient and odds ratio (2)	383
V.3.7. Results of odds ratio (3)	384
V.3.8. Results of marginal effect (3)	385
V.3.9. Fitness of the model: Akaike's and Bayesian information criterion (2)	385

V.3.10. Results of prediction: contingency table (2)	386
V.3.11. Significance test of cut points (1)	390
V.3.12. Results of odds ratios (4)	390
V.3.13. Fitness of the model (3)	391
V.3.14. Significance test of cut points (2)	393
V.3.15. Results of odds ratios (5)	394
V.3.16. Fitness of the model (2)	399
VI.2.1. CAAR (cumulative average abnormal returns) over 31-days period (event window, 15 days before and after the event day) for upgrading and downgrading under OLS and Garch models as estimation process.....	439
VI.3.1. Results of WLs (for OLS)	487
VI.3.2. Comparison of results of negative WLS (OLS vs. Garch)	489
VI.3.3. Comparison of results of positive WLS (OLS vs. Garch)	490

Tables

General introduction: A selection of reference in the study of the theoretical framework of <i>Institutionalism</i>	28
The interaction of CRAs with three market actors and the ideas to develop our Empirical Part Two.....	29
Content of Empirical Part Two.....	30
Content of Chapter I.....	34
Snapshot of the current situations on Chinese socialist markets.....	36
Topics of literature review.....	38
Two comparative analyses: historical and spatial comparison.....	39
Sample construction.....	43
I.1. CRAs' reactions in front of imposed rules, auto-regulation norms and reputation mechanism.....	74
II.1. Listing information of Chinese banking “Big Five”	101
II.2. Initial access of investors into segmented Chinese stock market.....	112
II.3. Actual access of investors into segmented Chinese Stock Market.....	114
III.1. Summary of Chinese sectoral mechanism.....	137
III.2. List of Chinese supervisory institutions and the accredited CRAs.....	139
III.3. Supervisory Structure of New Europe (13 countries)	142
IV.1.1. Rating regulatory texts used in the thesis and the position.....	184
IV.1.2. Rating normative texts used in the thesis and the position.....	184
IV.1.3. Word frequency query result for rating regulation in Europe (since the latest version in 2013)	187
IV.1.4. Redistribution of frequently-used words (1)	188
IV.1.5. Word frequency query result for IOSCO (since 2015)	190
IV.1.6. Redistribution of frequently-used words (2)	192
IV.1.7. Comparison between European rating regulations and norms.....	194
IV.1.8. Word frequency query result for Federal Law (version 2015)	196
IV.1.9. Redistribution of frequently-used words (3)	198
IV.1.10. Word frequency query result for ACRC (version 2015)	198

IV.1.11. Redistribution of frequently-used words (4)	200
IV.1.12. Comparison between Russian rating regulations and norms.....	201
IV.1.13. Word frequency query result for the HK code (version 2011)	205
IV.1.14. Redistribution of frequently-used words (5)	207
IV.1.15. List of regulations and rules in Continental China.....	209
IV.1.16. Word frequency query result for rating regulations in Continental China...	210
IV.1.17. Word frequency query result for rating norms in Continental China.....	212
IV.1.18. Redistribution of frequently-used words (6), by chapter in the Convention in Continental China.....	214
IV.2.1. Conversion from rating scale into numeric rank.....	231
IV.2.2. Data Collection and by year.....	232
IV.2.3. Information of first initial ratings in Chinese history.....	240
IV.2.4. Description of sample by agency (1)	241
IV.2.5. Number of ratings by agency, with a given year.....	242
IV.2.6. Rating level by agency, with a given year.....	243
IV.2.7. Listing places of companies rated by CRAs.....	245
IV.2.8. Results of chi-square test for initial ratings.....	246
IV.2.9. Description of sample by agency (2)	247
IV.2.10. Upgrading by local CRAs.....	248
IV.2.11. Upgrading by global CRAs.....	249
IV.2.12. Downgrading for investment grade (local CRAs)	250
IV.2.13. Downgrades for speculation grade (local CRAs)	250
IV.2.14. Downgrading by global CRAs.....	251
IV.2.15. Downgrades on A-level (global CRAs)	252
IV.2.16. Results of chi-square test for CRCs.....	253
IV.2.17. Description of sample by agency (3)	255
IV.3.1. Number of initial issuer ratings: separation of sole-rating and multi-ratings	259
IV.3.2. Double-ratings vs. Sole-ratings issued by global/local CRAs.....	265
IV.3.3. A study of threshold effect (the sample of double-rating)	265
IV.3.4. The grade of first ratings in the case of double-rating, and the type of	

CRAAs.....	266
IV.3.5. The grade of second ratings in the case of double-rating, and the type of CRAAs.....	266
IV.3.6. A study for tiebreak effect (the sample of triple-rating)	267
IV.3.7. Correlation tests and mean tests for tiebreak effect.....	269
IV.3.8. Industry classification for split ratings (the sample of more than three ratings)	273
IV.3.9. Magnitude of CRCs within the event window.....	282
IV.3.10. Magnitude of CRCs on the same day.....	283
IV.3.11. WLs from S&P and Moody’s.....	285
IV.3.12. Rating level of WLs from S&P and S&P National.....	286
V.1.1. The year of existence for global CRAAs	312
V.1.2. Chinese local rating market position with the year of exercise.....	314
V.1.3. Name of Chinese local CRAAs and Speculation on strategic behavioral beliefs.....	317
V.1.4. Conversion of ratings into numbers.....	321
V.1.5. Descriptive table of rating distribution by CRA.....	322
V.1.6. Descriptive table of rating distribution by rating level.....	322
V.2.1. Firm-specific accounting numbers and financial ratios.....	327
V.2.2. Dummy variables for corporate governance.....	331
V.2.3. Coding of market turbulence based on bull/bear market.....	351
V.2.4. The table of GDP and inflation rate.....	351
V.2.5. Sovereign ratings of Chinese government since 2000 of “Big Three”	352
V.2.6. Ten variables of hard information, explanation and expected sign.....	354
V.2.7. Six variables of soft information and expected sign.....	357
V.2.8. Two stock-market-related variables and expected sign.....	357
V.2.9. Four macro-economic variables and expected sign.....	358
V.2.10. Descriptive data (1)	360
V.2.11. Descriptive data (2)	362
V.2.12. Descriptive data (3)	362

V.2.13. Descriptive data (4)	363
V.2.14. Pearson correlation test result for hard information.....	364
V.2.15. VIF before and after the calibration.....	365
V.2.16. Summary of tested variables.....	368
V.3.1. Sample description of Section 3 (Chapter V)	370
V.3.2. Recalls of Section 1 (Chapter V)	371
V.3.3. χ^2 test for rating grade ((investment/speculation grades) * CRAs (global/local agencies))	372
V.3.4. Distribution of sole-rating for initial issuer ratings, by year.....	373
V.3.5. Recalls of Section 2 (Chapter V)	374
V.3.6. Rating distribution according to CRAs.....	388
V.3.7. 11 independent variables left in our model.....	389
V.3.8. Marginal effects for interest coverage ratio.....	391
V.3.9. Results of prediction (3)	392
V.3.10. Marginal effects for interest coverage ratio, board size and market turbulence	396
V.3.11. Marginal effects (dy/dx) *** for Chinese local CRAs.....	396
V.3.12. Results of prediction (4)	399
Introduction of Chapter VI: Institutional factors and literature review.....	404
Introduction of Chapter VI: Originality in different methodological approaches.....	405
VI.1.1. Data description of CRCs, according to Chinese institutional factors.....	424
VI.2.1. General results of downgrading (OLS estimation model)	440
VI.2.2. Downgrading (Garch).....	441
VI.2.3. General results of upgrading (OLS estimation model)	442
VI.2.4. Upgrading (Garch).....	443
VI.2.5. Results based on the subsample of CRCs before the crisis (-2008)	445
VI.2.6. Results based on the subsample of CRCs after the crisis (2008-)	446
VI.2.7. Results based on the subsample of “A shares”	447
VI.2.8. Results based on the subsample of “H shares”	448
VI.2.9. Results based on the subsample of double-listing shares.....	449

VI.2.10. Results based on the subsample of global agencies.....	450
VI.2.11. Results based on the subsample of local agencies.....	451
VI.2.12. Results based on the subsample of public-listed companies with concentrated ownership.....	452
VI.2.13. Results based on the subsample of public-listed companies with dispersed ownership.....	453
VI.2.14. Results based on the subsample of non-WLs-preceded CRCs.....	454
VI.2.15. Results based on the subsample of WLs-preceded CRCs.....	455
VI.2.16. Results based on the subsample of CRCs before the crisis (-2008)	456
VI.2.17. Results based on the subsample of CRCs after the crisis (2008-)	457
VI.2.18. Results based on the subsample of “A shares”	459
VI.2.19. Results based on the subsample of “H shares”	459
VI.2.20. Results based on the subsample of double-listing shares.....	460
VI.2.21. χ^2 test for CRCs ((downgrades/upgrades) * CRAs (global/local agencies))	461
VI.2.22. Results based on the subsample of global agencies.....	462
VI.2.23. Results based on the subsample of local agencies.....	462
VI.2.24. Results based on the subsample of public-listed companies with concentrated ownership.....	464
VI.2.25. Results based on the subsample of public-listed companies with dispersed ownership.....	465
VI.2.26. Results based on the subsample of non-WLs-preceded CRCs.....	467
VI.2.27. Results based on the subsample of WLs-preceded CRCs.....	468
VI.3.1. Literature review: Cross-sectional analysis for the causes of abnormal returns (ARs).....	473
VI.3.2. Data description of hard information, stock market information and board size.....	475
VI.3.3. Data description of soft information.....	476
VI.3.4. Data description of CRA and information of current CRCs.....	478
VI.3.5. Summary of variables (downgrading).....	480

VI.3.6. Summary of variables (upgrading).....	481
VI.3.7. Results for multiple linear models (downgrading).....	483
VI.3.8. Results for multiple linear models (upgrading).....	483
VI.3.9. Summary of stock market reactions in the case of WLs (negative and positive)	485
VI.3.10. Data description and methodology.....	486
VI.3.11. Results of parametric test and non-parametric test of negative WLs.....	486
VI.3.12. Results of parametric test and non-parametric test of positive WLs.....	487
VI.3.13. Results of parametric test and non-parametric test of negative WLs.....	488
VI.3.14. Results of parametric test and non-parametric test of positive WLs.....	489
VI.3.15. Summary of results for WLs.....	490
VI.3.16. Summary of stock market reactions to WLs and to WLs-preceded CRCs.	491
General conclusion: What element from Chinese institutional environment are useful (Chapter I)	501
What element from Chinese institutional environment are useful (Chapter II)	502
What element from Chinese institutional environment are useful (Chapter III)	503
Results of Chapter V.....	507
Results of Chapter VI (credit rating changes: downgrades)	509
Results of Chapter VI (credit rating changes: upgrades)	510
Results of Chapter VI (watch-lists)	510
Perspective and future projects.....	512

Abbreviation

Average Abnormal Return (AAR)

Agriculture Bank of China (ABC)

Analytical Credit Rating Agency (ACRA)

Akaike information criterion (AIC)

Autorité des Marchés Financiers (AMF)

Abnormal Returns (ARs)

Bundesanstalt für Finanzdienstleistungsaufsicht/Federal Financial Supervisory Authority (BaFin)

Bank holding companies (BHC)

Bayesian information criterion (BIC)

Bank of China (BOC)

Bank of Communications (BOComm)

Board size (BOZ)

Cumulative Abnormal Return (CAR)

Cumulative Average Abnormal Return (CAAR)

Capital Asset Pricing Model (CAPM)

Corporate Bonds (CBs)

China Banking Regulatory Commission (CBRC)

China Construction Bank (CCB)

China Credit Rating Co. (CCRC)

Chengxin International Credit Rating (CCXI)

Chengxin Securities Rating (CCXR)

Central and Eastern Europe Countries (CEECs)

Chief executive officer (CEO)

Chief financial officer (CFO)

China Insurance Regulatory Commission (CIRC)

Credit Information System Bureau (CISB)

Coordinated market economy/Rhenish capitalism (CME)

China Orient Asset Management (COAM)

Company Bonds (ComBs)
Concentration of ownership (CON)
Construction (CONS)
Chief operational officer (COO)
Congress of the Chinese Party of Chinese (CPC)
Credit Ratings (CRs)
Credit Rating Agencies (CRAs)
Credit Rating Changes (CRCs)
Credit Rating and Investor Services of India (CRISIL)
China Securities Regulatory Commission (CSRC)
Days between two credit rating changes (DAY)
Dominion Bond Rating Service (DBRS)
Default Probability (DP)
Duality: the non-separation of management and direction (DUA)
Enterprise Bonds (EBs)
European Banking Authority (EBA)
Earnings before interest taxes, depreciation, and amortization (EBITDA)
European Bank for Reconstruction and Development (EBRD)
European Insurance and Occupational Pensions Authority (EIOPA)
Egan Jones Rating Company (EJR)
Efficient Market Hypothesis (EMH)
European Supervisory Authorities (ESA)
European System of Financial Supervision (ESFS)
European Securities and Markets Authority (ESMA)
European Systemic Risk Board (ESRB)
Ernst et Young (EY)
Financial Bonds (FBs)
Financial Conduct Authorities (FCA)
Free cash flow (FCF)
Financial (FIN)

Generalized autoregressive conditional heteroskedasticity (Garch)
Government Bonds (GBs)
Gross domestic product (GDP)
Grade change (GRA)
Hong Kong Stock Exchange (HKSE)
H shares Mainland 100 (HSML100)
Hybrid in ownership (HYB)
International Association of Insurance Supervisors (IAIS)
Industrial and Commercial Bank of China (ICBC)
Interest coverage ratio (ICR)
Investment information and Credit Rating agency (ICRA)
Issuer Default Ratings (IDRs)
Independent Investigating Officers (IIOs)
Industry sector (IND)
Inflation rate (INF)
Internationalization in listing (INT)
International Organization of Securities Commissions (IOSCO)
Initial Public Offering (IPO)
Internal Rating-Based Approach (IRB)
Kolmogorov-Smirnov test (KS test)
Less Developing Countries (LDCs)
Leverage (LEV)
Liquidity (LIQ)
Liberal market economy (LME)
Legal Person (LP)
Last Rating grade (LRG)
Long-term (LT)
Magnitude of the changes (MAG)
Manufacturing (MAN)
Market Capitalization (MCAP)

Management and directors of the board (MGMT)

Mining (MIG)

Market internationalization (MIN)

Member States (MS)

National Association of Financial Market Institutional Investors (NAFMII)

National Competent Authorities (NCA)

Non-profitable organization (NPO)

Normal returns (NRs)

Nationally Recognized Statistical Rating Organization (NRSRO)

Ordinary Least Square (OLS)

Over-the-counter market (OTC)

Ownership (OWN)

Price-to-Book (PB)

Peoples' Bank of China (PBOC)

Price-to-EBITDA (Pebitda)

Private owner (individual and/or family investor(s)) as top shareholder (PRIV)

Qualified Domestic Institutional Investor (QDII)

Qualified Foreign Institutional Investors (QFII)

Real estate (REA)

Rest of tertiary industry (RES)

Revenue (REV)

Return on asset (RoA)

Return on equity (RoE)

Risk of Beta (RIS)

Standard Average Abnormal Return (SAAR)

Security Association of China (SAC)

State Asset Management Bureau (SAMBs)

State-owned Assets Supervision and Administration Commission of the State Council (SASAC)

Shanghai Brilliance Credit Rating and Investors Service (SBCR)

Standard Cumulative Average Abnormal Return (SCAAR)

Securities and Futures Appeals Tribunal (SFAT)

Securities and Futures Commission (SFC)

Shanghai Far East Credit Rating (SFE)

Securities and Futures Ordinance (SFO)

Size of the firm: logasset (SIZ)

State-Owned Enterprises (SOEs)

Sovereign debt rating (SRA)

Shanghai Stock Exchange (SSE)

Standard and Poor's (S&P)

State as the top owner (STA)

Shenzhen Stock Exchange (SZSE)

Technology, media and telecommunication (TMT)

Transport (TRA)

Turbulence (TUR)

Utilities (UTI)

Variance Inflation Factor (VIF)

Watch-lists (WLs)

World Trade Organization (WTO)

Xinhua Financial Network (XFN)

Years of listing on the public market (YEA)

Abstract in English

Credit rating agencies (CRAs) became the center of media exposure and public interest during the Subprime Crisis and European Sovereign Debt Crisis. As a corollary, they attracted at the same time the academic attention.

However, when we went over the literature review dedicated to CRAs, most studies are shown to be conducted on the developed markets, especially on the American market. As for emerging markets, there are still more “conceptual speculations” than actual empirical findings. Furthermore, when researchers relied on classic theories concerning CRAs (Theory of Agency, Theory of information asymmetry and Theory of Signal, among others), they usually didn’t take into account the institutional elements in their analyses.

These observations have intrigued us to carry out a “rating analysis” under Chinese institutional environment. “Chinese study” has become a very popular topic, due to the economic success of China. In this Ph.D. thesis, we aim to contribute to the entire research on CRAs, with theoretical, conceptual and empirical aspects.

We used the *New-institutionalism* as a theoretical frame of reference (Chapter I) to justify the importance to have a good understanding of Chinese institutional characteristics. Chinese State-capitalism and Socialist-market economics (Chapter II), along with the interaction of CRAs with market actors (including regulators, issuers and investors, in Chapter III) are devoted to setting the stage.

We used a comparative methodology, in order to better illustrate Chinese institutional characteristics. The comparison is both historical and spatial. In other words, we took a dynamic way to look back into the history of Chinese rating business and examined the similarities and differences of the institutional environment where CRAs are situated, in China and in Europe.

This background information helped us to construct more suitable hypotheses that are further tested statistically. In particular, we added Chinese institutional elements into the explanatory variables that we summarized from the existing econometric results.

In this regard, we tried to diversify our methodology (both qualitative and quantitative). We implemented various methodological approaches that seemed the most appropriate, on the sample that the most suitable, according to each of the objectives that we set, to better comprehend CRAs’ role (Chapter IV), strategy (Chapter V) and impact (Chapter VI), under Chinese market context.

Firstly, we found that CRAs were not expected to play “their main role” in assessing the credit default risk for market investment in China, as they are usually assigned to do so in Europe, and other developed countries. After running the frequency test in NVivo, to register the words most used in the written regulatory and normative documents (two institutional pillars), we concluded that the expectation of roles of CRAs was also different in Continental China and in Hong Kong, because of the market segmentation. (Section 1, Chapter IV).

At the expectation of issuers, CRAs also seem to play a role in rating “shopping”, in split rating, and even in rating inflation. Investors are very cautious accordingly, especially when issuers are motivated to solicit multiple ratings. (Section 3, Chapter IV).

Secondly, by using logistic models in Stata, we found that global CRAs tend to rate more strictly than local CRAs, *ceteris paribus*. We also realized that the strategical behaviors of Chinese local CRAs are distinctive one from the other, when we studied the determinants “behind” initial issuer ratings. (Chapter V). These findings confirmed the preliminary quantitative tests that we executed on the descriptive data that we get from SPSS. (Section 2, Chapter IV).

Thirdly, we failed to find informative impact of credit rating changes (CRCs) on the stock market, through a classic event study relying on the market model that we performed in Stata and EViews. Even if we refined the methodology by completing Garch to OLS estimation model, and non-parametric tests to parametric tests, we only found significant outcomes in some subsamples (of downgrades and upgrades), and for negative watch-lists (WLs). We explored the causes of significant abnormal returns, and it reveals that the “industry type” contributes to the explanation (Chapter VI).

In the end, the analyses we led and the findings we reported from each of these empirical chapters (Part Two) have contributed to enrich, in return, our discussion of Chinese institutional characteristics (Part One).

Keywords: Credit Rating Agency, *New-institutionalism*, Chinese and European market institutional environment, rating regulation and norm, Chinese rating industry, rating determinant, informative impact on stock market, event study

Résumé en français

L'actualité concernant le *rating* a attiré l'attention du monde académique. Cependant, la plupart des articles publiés jusqu'alors sur ce sujet, ont porté sur les marchés développés, et plus particulièrement les États-Unis. Les quelques études traitant des marchés émergents, quant à elles, reposaient plus sur des « faits stylisés » que sur des résultats empiriques étayés. De plus, les études existantes reposant sur les théories classiques dans ce domaine omettent souvent de prendre en compte les éléments institutionnels dans leur analyse.

Ces observations nous ont poussée à faire une étude de *rating*, dans l'environnement institutionnel de la Chine. Faire des recherches sur la Chine est dorénavant devenue populaire, en raison de sa réussite économique. L'objectif de cette thèse doctorale est de contribuer à l'ensemble de la recherche sur les agences de notation.

Nos recherches ont couvert les trois aspects : théorique, conceptuel et empirique.

La première partie de notre étude se focalise sur l'examen du cadre théorique : le *Néo-Institutionnalisme*. Dans cette optique, nous avons parcouru son histoire, son évolution et ses applications au domaine des organisations et aux agences de notation. (Chapitre I)

Le *Capitalisme d'État* propre au marché chinois est mis en avant, et une analyse comparative a été menée entre les marchés des actions et les marchés d'obligations chinois et européens. Nous avons examiné non seulement les pays européens occidentaux, mais aussi les pays de la « Nouvelle Europe ». Cette dernière fait partie de l'économie en transition post-communiste. Nous nous intéressons également à l'intégration de la notation financière, au niveau de l'Union Européenne. (Chapitre II). Par ailleurs, nous menons une analyse dynamique, afin de mieux comprendre l'évolution de l'industrie de la notation en Chine. Cela nous permet ensuite d'illustrer l'interaction des agences de notation avec les autres acteurs du marché : les autorités régulatrices, les émetteurs de titres financiers, et les investisseurs. Plus précisément, dans un premier temps, nous avons mis en évidence que le système sectoriel de la régulation de *rating* en Chine est très compliqué à comprendre et qu'il reste au cœur de la mutation financière du pays. Dans un deuxième temps, nous nous sommes rendu compte qu'il faut catégoriser différents types d'informations communiquées par les émetteurs sur le marché. Enfin, nous nous intéressons aux différents types d'investisseurs présents sur ce marché chinois segmenté, comme représentants de différents « esprits » dans leurs activités d'investissement. (Chapitre III)

Dans la seconde partie, nous avons réalisé une vaste revue de la littérature, et proposé d'ajouter les spécificités institutionnelles chinoises aux variables déjà prises en compte dans les études sur le *rating*. Tout cela nous amène à remettre en question les évidences et les constats théoriques et empiriques retrouvés dans les études habituelles sur la notation financière, et à mettre en avant des hypothèses à tester empiriquement. Nous nous situons essentiellement dans un cadre épistémologique reposant sur une démarche hypothético-déductive.

Au niveau de la *méthodologie*, certains outils comparatifs, qualitatifs et quantitatifs ont été envisagés. Diverses approches sont choisies en fonction du contenu de chaque

chapitre : le rôle (Chapitre IV), la stratégie (Chapitre V), et l'impact (Chapitre VI) des agences de notation en Chine. Nous les adaptons également aux échantillons les plus pertinents selon l'étude à mener.

Au niveau des *résultats*, nous sommes arrivées à plusieurs découvertes empiriques:

Premièrement, nous avons montré qu'en Chine, le rôle des agences de notation ne se limitait pas à celui qui leur est habituellement assigné (consistant à évaluer le « risque de crédit »), par une approche comparative. C'est contraire à ce qu'elles font en Europe ou sur d'autres marchés plus matures. Après avoir exécuté, sur le logiciel NVivo, une étude des textes de lois et de « codes de conduite » relatifs à la notation (deux piliers institutionnels). Nous en sommes arrivées à la conclusion que leur rôle était également différent en Chine continentale et à Hong Kong, en raison de la segmentation du marché. La structure de surveillance formelle des activités de notation en « Mainland China » est complétée par une structure informelle (*Guanxi*, c'est-à-dire le réseau interpersonnel). (Section 1, Chapitre IV)

Il semble aussi que les agences de notations se laissent tenter par le « rating shopping », le « split rating » et le « rating inflation », sous la pression des émetteurs. En revanche, les investisseurs sont relativement prudents à cet égard, surtout quand les émetteurs sont motivés pour solliciter de « multi-ratings ». (Section 3, Chapitre IV)

Deuxièmement, nous avons mis en évidence que les agences de notation internationales (« the Big Three ») ont tendance à noter plus strictement que les agences locales, *ceteris paribus*, en employant des modèles logistiques (sur le logiciel Stata). Nous nous sommes rendu compte que les comportements stratégiques variaient d'une agence à l'autre, lorsque l'on étudie les déterminants à l'origine des notations initiales des émetteurs. (Chapitre V)

Ces résultats confirment le constat que nous avons établi préalablement, à partir des tests préliminaires (sur le logiciel SPSS) appliqués à l'analyse descriptive des données quantitatives. (Section 2, Chapitre IV)

Troisièmement, nous ne sommes pas parvenues à trouver l'impact des « modifications de notation » sur le marché chinois des actions, de manière générale. Nous avons utilisé une étude d'événements, sur les logiciels Stata et EViews. Seuls des rendements anormaux significatifs sont apparus sur quelques sous-échantillons, même après avoir affiné notre méthodologie, en complétant le modèle du marché par différentes méthodes d'estimation (OLS et GARCH) et par divers tests paramétriques et non-paramétriques. Par ailleurs, les « mises sous surveillance » négatives sont apparues comme étant plus informationnelles que les « mises sous surveillance » positives. Nous avons constaté que les variables liées au type d'industrie arrivent à expliquer les rendements anormaux significatifs. (Chapitre VI)

Enfin, les analyses et résultats que nous avons apportés au cours de chaque chapitre dans la partie empirique, ont enrichi en retour, nos discussions sur l'environnement institutionnel du marché chinois abordées dans la première partie de cette thèse.

Mots-clés: Agence de notation, *Néo-Institutionnalisme*, environnement institutionnel des marchés chinois et européen, régulation et norme du *rating*, industrie de notation en Chine, déterminants du *rating*, impact informationnel sur le marché des actions, étude d'événements

Brief table of contents

§I. Preparatory Part One

Why the discussion of the characteristics of “Chinese institutional environment” is essential to a research on “Credit Rating Agency (CRAs)”?

Chapter I: One theoretical framework and effects of institutional environment on CRAs

Section 1: Historical, evolutionary and analytic perspective of institutionalism:

Section 2: Application of New-institutionalism Theory to CRAs

Section 3: Chinese environmental effects on classic theories concerning CRAs

Chapter II: Two characteristics of Chinese institutional environment

Section 1: Financial sector under Chinese State-Capitalism

Section 2: The segmented Chinese stock market

Section 3: Financing by Corporate bonds (CBs)

Chapter III: Three consequences of rating sector on Chinese market actors

Section 1: Regulatory mechanism and Comparison

Section 2: Issuers and information collection

Section 3: Reactions of Chinese investors

§II. Empirical Part Two

How does the three-dimensional examination of CRAs’ interactions with “Chinese market actors” bring originality to the empirical findings?

Chapter IV: Expected role of CRAs and functions of multi-ratings

Section 1: Qualitative study for rating regulations and norms

Section 2: Sample constitution for quantitative study and preliminary results

Section 3: Multi-ratings study for issuers and investors

Chapter V: Strategy of CRAs in giving initial issuer ratings

Section 1: Reasoning for strategic rating behaviors

Section 2: Strategic choices of rating determinants

Section 3: Execution of logistic models and analysis of results

Chapter VI: Informative impact and analysis of rating events on investors’ stock returns

Section 1: From previous inspirations to hypotheses and data description

Section 2: Research design and results for CRCs

Section 3: Further analysis of CRCs and more evidence of event study on WLs

General introduction

I. Objective

Credit Rating Agency (hereinafter referred to as “CRA”), just as the name implies, is a kind of organization. CRAs aim to assess the level of credit risk of specific financial instruments (especially debt obligations, and by extension, other structured products) and their issuers for both private and public entities. This appraisal will be concluded and disclosed to the investors, in the form of ratings.

CRAs have been attracting attention since their establishment, especially during the crises (subprime crisis and European Sovereign Debt Crisis), and their image has been further discredited in a series of scandals, like Enron accounting fraud... However, it should be admitted that beyond all critics, it is believed that CRAs have been deeply embedded into the modern finance worldwide and have become an indispensable part of the grand picture.

Under this economic context, we did a research on CRAs.

The objective to do this thesis is also to investigate the rating business under a specific institutional environment: Chinese markets (bond and stock markets), along with the comparison with European markets.

In this respect, we are interested in both Anglo-Saxon Britain, Continental European countries (France and Germany, among others), as well as the post-communist countries in Eastern and central Europe and Russia. These comparisons provide us with opportunities to question the conceptual, theoretical and empirical results that we found in the classic studies on CRAs. That justifies the importance to have a preliminary discussion (Preparatory Part One) of the institutional characteristics, on a research of “Credit Rating Agencies (CRAs)”, under the context of “Chinese environment”.

CRAAs are initially designed for the assessing the bond market risk. However, the reality in China is more complex:

On one hand, the regulatory system is complicated and confusing. The bond market, itself, is inefficient and illiquid. That makes it impossible for the moment to lead a traditional study (bond market-limited) on CRAAs, under Chinese institutional environment.

On the other hand, Chinese stock market has its unique features. E.g. Chinese local agencies get access to rate company bonds (corporate bonds for listed companies). Chinese rating regulations restrain the possibility for global CRAAs (the “Big Three”) to compete with local CRAAs on the same market segment, in the objective to protect the local rating market. At the same time, the local CRAAs have fierce competition among themselves.

Generally speaking, taking into account the characteristics of Chinese institutional markets, our study aims to resolve a paradox: why is the rating business growing fast, although Socialist-market economy is supposed to be less important in corporate financing, in Chinese environment than in other developed countries, and despite a still “narrow” bond market?

We traced the evolution of CRAAs from the early stage and studied their development in a dynamic scenario, under the historical background of *Chinese Reform and Opening-up Policies and State-Capitalism*.

The three-dimensional examination of CRAAs, under the viewpoints of three different market actors: regulators, issuers and investors, enabled us to bring originality to the empirical findings (Empirical Part Two). More specifically:

What are the roles of CRAAs that are expected by rating regulators to play on the market, and what about issuers and investors?

What are the strategies of local CRAAs in giving initial issuer ratings and in which way are they different from the “Big Three”?

What is the informative impact of credit rating changes and watch-lists, as perceived by the investors on the stock returns?

II. Research questions

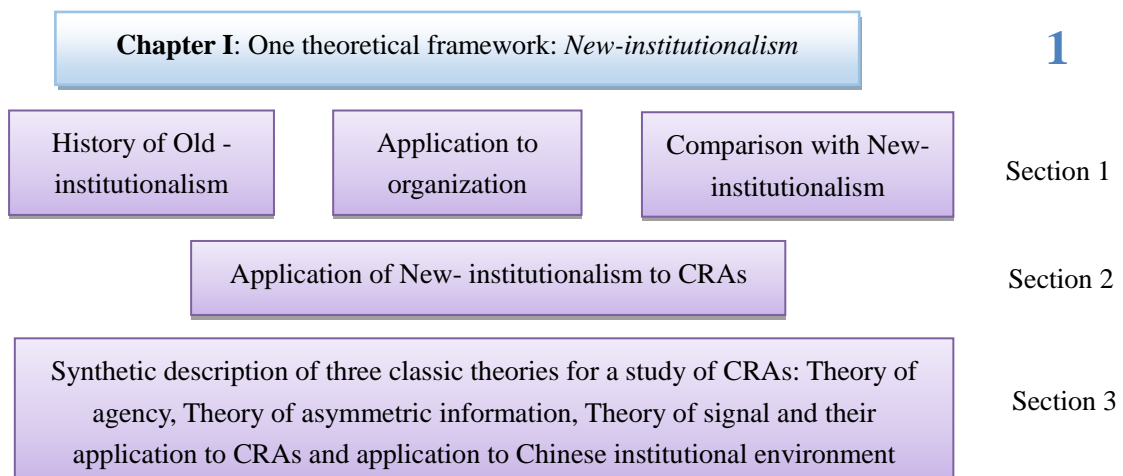
The thesis is composed of two parts: a theoretical part along with background information (Part One) and an empirical part (Part Two).

We connect them with one thinking line from one to the other, throughout the entire Ph.D. thesis. In other words, the Part One helps to construct the hypotheses, that will be tested statistically in Part Two; in return, the empirical results and analyses lead to enrich the comprehension of our discussion on Chinese institutional elements under the theoretical framework.

1. Theoretical framework and application to CRAs, under Chinese market institutional environment

We aimed to deeply explain the evolution of *Theory of Institutionalism* (from the old to the new-institutionalism and various applications to organizations, CRAs among others, under Chinese institutional environment).

The graph below concretizes our thinking in the development of Chapter I. The objective is not only to justify that the choice of theoretical framework is suitable for a study on CRAs, but also to make use of the institutional elements to better explain three classic theories for a study of CRAs, on Chinese market environment.



To do so, we referred to some books of reference, in the study of the theoretical framework of *Institutionalism*, in addition to the peer-reviewed articles.

A selection of references (complete version could be found in the bibliography) is presented as follows, but not limit to:

Author	Year	Main topic(s)
Max Weber	1922	<i>Rationalism</i>
Powell and DiMaggio	1991	<i>New-institutionalism</i> and application to organizational study
Scott	1995 (first edition in 1981) and 2003	<i>New-institutionalism</i> , application to organizational study; Three institutional pillars
North	1990 and 2005	Informal structure and institutional changes
Tang Shiping	2011	Institutional changes
Roland	2014	Institutional changes
Weich	1969 & 1979	Psychology of organization and the process of institutionalization

We inspired from these books and tried to discuss the *Theory of institutionalism* around three principle concepts:

- ✓ In order to survive under the institutional pressure, organizations adopt different strategies (either isomorphism or distinctiveness) out of the foremost rationality.
- ✓ The legitimacy of an organization consists of both informal and formal structures. It corresponds to three institutional pillars (reputational, normative and regulatory).
- ✓ The process of internationalization enables organizations to take a certain pattern in the interaction with the environment. The process should be considered as a dynamic evolution, full of institutional changes.

Chapter II and III (showed as below) are chapters to present background information of Chinese market environment. We begin the presentation by elaborating the historical context. Under the guideline of Chinese State-Capitalism and thanks to the Reform and Opening-up Politics, Chinese socialist-market economy is born, and Chinese stock market and bond market are established. There are three points of view to examine Chinese market with its unique features.

Chapter II: Two characteristics of Chinese institutional environment			2	
Chinese Socialist-market economy	Chinese State-Capitalism: Reform and Opening-up Politics	Application of politics to financial industry	Financial flow	Section 1
	Stock market	Multi-layered market structure, market segmentation...		Section 2
	Bond market	Types and segments of corporate bonds, regulatory reforms...		Section 3
Chapter III: from viewpoints of market actors and their interaction with CRAs			3	
	Regulators	Issuing & trading supervision, comparison with European experiences		Section 1
	Issuers	Hard & soft information and cross-industry & cross-regional factors		Section 2
	Investors	Domestic & foreign investors, individual & institutional investors, comparison with European case		Section 3

Our objective of these two chapters is not only to make conceptual description, but also to prepare three angles of analyses. In other words, the interaction of CRAs with three market actors (regulators, issuers and investors) in the Part One §1, also enlightens us to develop our Empirical Part Two §2. You may find more details in the table as follows.

Where in the Part One...	What kind of interaction with the CRAs...	Where in the Part Two...	Chapter
Chapter III, Section 1	Regulators and rating norms	Chapter IV, Section 1	The expected roles of CRAs
Chapter III, Section 2&3	Issuers and investors	Chapter IV, Section 3	Functions of multi-ratings
Chapter III, Section 2	Issuers	Chapter V	Strategy of local/global CRAs and different categories of information as rating determinants
Chapter III, Section 3	Investors	Chapter VI	Informative impact of rating events (credit rating changes and watch-lists)

2. Three-dimensional examination of the role, strategy and impact of CRAs

The discussion of the theoretical framework and of background information on Chinese institutional environment inspires us to construct corresponding hypotheses to test in the Empirical Part Two. You can find more details as follows:

Chapter IV. Expected role of CRAs and functions of multi-ratings

Section 1: Textual study (rating regulation and code of rating business conduct) and a comparative study of inter and intra markets, (between developing markets (Russia and Continental China) and developed markets (European Union and Hong Kong)), in order to find the keywords, the most frequently used in the official documents (frequency test in NVivo). The idea is to derive the expected role played by the CRAs, from the viewpoints of rating regulations and norms.

Section 2: Data collection and sample description (initial ratings, credit rating changes: CRCs, Watch-lists: WLs). And first quantitative statistic tests, such as Chi-square tests to examine institutional elements on Chinese rating market environment (type of agencies: local/global (intuition of “rating inflation” shown by migrant tables), segmentation of the market: Continental China/Hong Kong and time evolution...etc.)

Section 3: Based on the multi-ratings samples, we tried to study the initial ratings, CRCs and WLs, from points of view of both issuers and investors.

-Issuers’ communication on the website about their “use of rating”, threshold effect of rating shopping, tiebreak effect of split ratings, industry effect of split ratings and the discrete reactions of investors in case of split ratings.

-Investigations of inside/outside causes, and the analyses of the asynchronous CRCs (from the point of view of leaders/followers)

-Attitude of issuers and investors, in the case of watch-lists (WLs) and WLs issued by global CRAs.

Chapter V: Strategy of CRAs in giving initial issuer ratings

Section 1: Rating market analysis and strategic rating behaviors, according to the profile of credit rating agencies (agency-effect: either « top three », “new market entrants” and global/ local CRAs and time-varying effect).

Section 2: The strategic choice of rating determinants (hard, soft, market and macro-economic information) from the literature review and elements from Chinese institutional environment.

Section 3: We performed binomial logistic regression (speculation grade vs. investment grade), and multinomial ordinal logistic regression (investment grade), to analyze the difference between global and local CRAs and that inside each of the local CRAs. The objective is to explain and predict CRAs’ strategic behaviors in the choice of rating determinants and their rating models.

Chapter VI: Informative impact and analysis of rating events on investors’ stock returns

Section 1: Event study to test the information content of Credit Rating Changes, for both upgrading and downgrading, with the consideration of Chinese institutional elements (crisis effects (2008), segmentation of the stock market, global and local CRAs, consideration of anticipation, CRCs preceded by watch-lists).

Section 2: A more robust model (Garch, considering the auto-regressive heteroscedasticity), based on a classic market model, with both parametric and non-parametric tests.

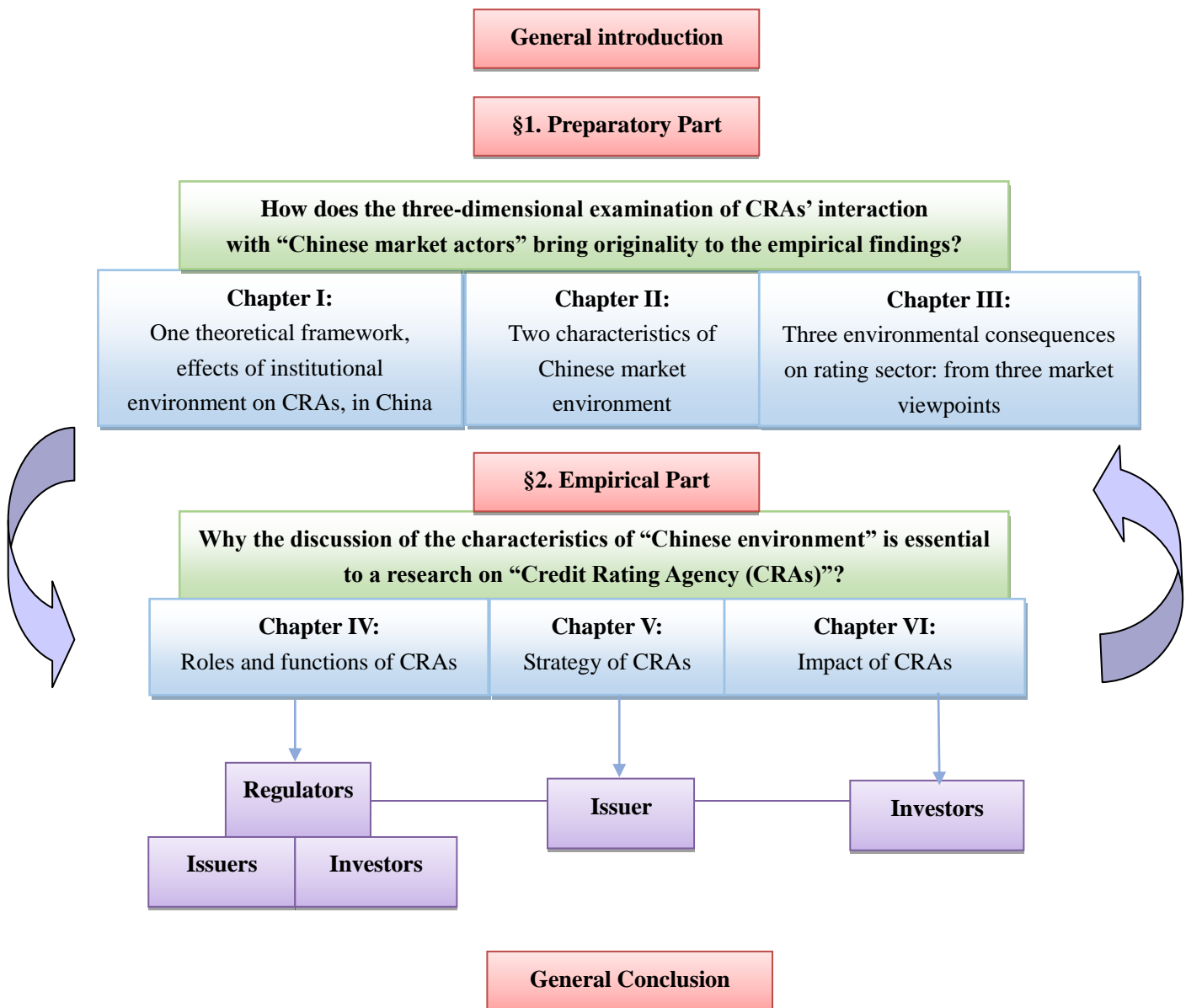
Section 3: Cross-sectional analysis on CRCs and event study on Watch-list (WLs).

To conclude, the Part One of the thesis explains why we choose to do a study on credit rating agencies (CRAs) and why our thesis contributes to the existing literature review. We will present and justify, from the points of view of theoretical framework (Chapter I) and background information (Chapter II and III), that it is essential to take into account the discussion of institutional elements. Our thesis uses Chinese market environment as an example, but this principal should be applied to any other market on the subject. The main problem inherent in studies on CRAs, is that we tend to forget to contextualize the researches. Since most studies concentrate on USA and on developed markets, we take their intuitional factors for granted and have not realized that some of the factors may be incompatible with other markets, especially if we want to extent our study to markets in emerging countries and transitionary economic. This kind of discussions gives us an opportunity not only to reexamine the classic theories, but also to cast doubts on the conceptual speculations. The overview of Chinese institutional environment and socialist market economics lead us to the interaction of CRAs with three market actors: regulators, issuers and investors, which enables us to conduct a three-dimensional examination in the Part Two of the thesis. To be specific, what we will investigate is the role (Chapter IV), strategy (Chapter V) and impact (Chapter VI) of CRAs, and we have made a table above to outlines mains ideas in each of these chapters.

Here, we have summarized the objective and research questions of the thesis and in addition to that, we would like to give our readers some “keys” to better understand the logic of the thesis. We are fully aware that it is a long work of research. It is easy to lose orientation, if we don’t present the structure clearly. It should be noted that we also pay a lot of attention to construct introductions and conclusions for each part, section, subsection and point in the thesis. Along with graphs and tables that you can have here in the general introduction, they all serve as the “guideposts” to remind our readers that our thesis is organized properly, in order to better present the panorama of Chinese rating business.

That is also the function of the following *Figure*, firstly is to introduce the entire structure of the thesis, secondly is to explain its content. A special attention is paid to emphasize on the interconnection between two parts and the development of the theoretical, conceptual and empirical aspects of CRAs, under Chinese institutional environment.

III. Structure and content of the thesis (1)



Again, we want to explain the content of thesis from the *Figure* above.

Generally speaking, after a general introduction, the thesis develops into two parts: preparatory part, empirical part. It finally ends with a general conclusion. That's the overall structure of the thesis. The main body of the paper is organized as follows:

The preparatory part begins with a discussion of the theoretical framework of New-institutionalization and its applications to CRAs, under Chinese institutional environment (Chapter I).

Then, it covers the background information concerning the Chinese State-capitalism and Socialist-market economics in China, (Chapter II).

We examined Chinese institutional environment, from point of view of regulatory authorities, issuers and investors, (Chapter III). The interaction of CRAs with Chinese market actors also leads our thinking to have a three-dimensional examination on CRAs, under Chinese context.

The empirical part begins with a vast literature review and the synthesis of existing findings. They both lead us to constitute our own hypotheses, together with the institutional information that we studied previously in the Preparatory Part One.

We mobilized the most appropriate qualitative and quantitative methodologies to test and analyze credit rating agencies' role (Chapter IV), their rating determinants as business strategies (Chapter V) and the informative impact of rating events on common stock returns (Chapter VI).

The results and analyses that we get from each of the empirical chapter, in return, help to enrich our understanding the theoretical and conceptual aspect of CRAs and Chinese institutional environment.

IV. Quintuple contributions

The reason why we chose to study this topic was not only because CRAs were right in the center of media debates during the crisis, neither because of the fact that Chinese cases/emerging countries' cases/transitory economies' cases are rare to see in the literature review; it is also because the research covers a wide range of contributions, lying in several aspects: **theoretical, conceptual, empirical (epistemological, methodological and analytical) and sample construction.**

1. Contributions to the theoretical framework and the classic theories

We started the discussion of theoretical framework, from a multidisciplinary vision. In other words, this research work is not only limited to the knowledge in *Finance* or in *Management*, but also combines theories of Science of Law, of Economics, of Politics, of Sociology, and of Psychology.

It provides us with a chance to summarize thoroughly the regulatory/normative, organizational, informative elements under the Chinese institutional environment, where the CRAs are developing their business.

Our research contributes to the development of theories in three aspects, under the single theoretical framework: *New-institutionalism*.

We detail the content of Chapter I, as follows:

Chapter I, Section 1
We went over the differences of <i>Old-institutionalism</i> with <i>New-institutionalism</i> and their application on researches of organization
-Old-institutionalism: survival as the foremost rational, informal structure, interaction with the environment (rational, natural, open system). -New-institutionalism: strategic responses to institutional pressure, challenges for legitimacy from three sources, process of institutionalization.
<i>We concluded the comparative discussion, with an analysis of organizations on five levels: organizational population, organizational field, organizational set, societal level and transnational level.</i>

Chapter I, Section 2
We applied the <i>New-Institutionalism</i> to CRAs
<p>-Evolutionary approach of institutional environment: factors and process of institutional changes (mimetic, normative and coercive) with two strategies to deal with the circumstances: isomorphism and distinctiveness.</p> <p>-Three institutional pillars: reputational, normative, and regulatory.</p> <p>-Causes and consequences of institutionalization: regulatory, normative and cognitive.</p> <p><i>We conducted our application of New-institutionalism to a specific organizational context and a fast-developing developing business of CRAs under Chinese market environment.</i></p>
Chapter I, Section 3
We applied three classic theories used in a study of CRAs to the Chinese context
<p>-<i>Theory of agency</i>: the classic relationship of agency-principle between investors and CRAs; the client-contractor relationship between issuers and CRAs; the extended model, by including rating regulators.</p> <p>-<i>Theory of information asymmetry</i>: to avoid the problem of “moral hazard” <i>ex post</i>; CRAs work as a “coordinative mechanism” between issuers and investors <i>ex ante</i>.</p> <p>-<i>Theory of signal</i>: the motivation to solicit initial ratings and the informative impacts of rating events (including credit rating changes and watch-lists).</p> <p><i>We organized our reasoning logic on three levels: from the synthetic description, to the application to CRAs and to the application to Chinese institutional environment.</i></p>

As we know, most financial theories are concluded from researches on the market setting of developed markets. With the development of emerging and transitory economies, some empirical studies start to appear on the “new” markets. However, their characteristics, which are different from those on the markets where we are used to doing study, are sometimes forgotten to be taken into account. Hence, it should be noted that we cannot use any theory mechanically, without considering the actual situation. The different institutional elements may change the hypotheses and even the empirical results that we got from most literature review. Under this circumstance, we have our first theoretical contributions. We are aware that it is essential to discuss the theoretical framework of *New-institutionalism*, with the application of organization, of CRAs and of Chinese market institutional environment. It also responds to the first question that we asked in the thesis: why the consideration of Chinese institutional environment is essential to the study of credit rating agencies.

2. Contributions to the background information

Under the theoretical framework, we discussed two principal characteristics (Chapter II), three market actors, and their interaction with CRAs (Chapter III), in terms of background information, under Chinese institutional environment.

Two principal characteristics

Chinese State-capitalism

We took the example of Chinese financial sector, especially banking industry, to illustrate the “*Reform and Opening-up Politics*”; however, the openness of Chinese market is not valid for all circumstances. The financial flows are encouraged to go out, but not the way around.

Chinese Socialist-market economics

Chinese market economy has only a short history, but it has significantly evolved. Our thesis is a snapshot of the specificities on the stock and bond market, since their first establishment in the early 90s’.

From the viewpoints of ...		Market specificities
Stock market	Regulators	Multi-layered structure and segmentation of Chinese stock market
	Issuers	Dual-listing of “A shares” and “H shares” (on both Continental China and HK market)
	Investors	Different access of domestic, foreigner, individual and institutional investors into the market segments
Bond market	Type of corporate bonds (CBs)	Convertible bond, corporate financial bills (short-term), enterprise bond, company bond
	Market segment	Inter-bank OTC market and bond exchange market
	Regulatory reforms	Positive impacts on the liquidity of issuing and investing activities of CBs
	Capital structure	Fits neither the <i>Trade-off model</i> nor the <i>Pecking order hypothesis theory</i>

Three market actors and their interaction with CRAs

Firstly, we made a list of Chinese rating regulatory institutions, from the point of view of the issuing supervision and trading supervision. According to the registration and the certification of rating activities on Mainland China and Hong Kong market, we made a list of all accredited CRAs, able to conduct business on each market segment. This kind of background information inspired us to have qualitative tests on the role of CRAs in regards of rating regulators and norms, that we gave details in Chapter IV.

Secondly, we examined four categories of issuers' information: public information, soft information (especially corporate governance), as well as cross-industry (micro-economy) and cross-regional (macro-economy) information. We started firstly from a general introduction, and then applied it to Chinese context (with comparison with Germany case). All of the information helped us to constitute rating determinants in Chapter V.

Thirdly, different types of Chinese investors, presented in different market segments and different period of time (before and after the financial crisis), contribute to explain different reactions of investors in front of rating events (CRCs and WLs). We used an event study to examine whether the abnormal returns are significant or not, in Chapter VI.

3. Contributions to the epistemology

After having an overview of the institutional characteristics of Chinese market environment and background information that we discussed in the Preparatory Part One, we tried to do the most exhaustive literature review as far as we know.

Large-scale of collection of existing empirical findings (that we presented in the following table, in the Empirical Part Two), helped us to constitute the hypotheses to test respectively.

Topics of the literature review	Where in the thesis?
Rating laws, rules and regulations, as well as norms and code of rating conduct	Chapter IV, Section 1
Expected roles of multi-ratings for issuers and investors reactions	Chapter IV, Section 3
Agency-conduct effect and time-varying effect	Chapter V, Section 1
Strategic choices of rating determinants	Chapter V, Section 2
Informative impact of CRCs	Chapter VI, Section 1
Informative impact of WLs	Chapter VI, Section 3
Cross-sectional analysis for causes of abnormal returns	Chapter VI, Section 3

The hypothetical-deductive epistemology is implemented by three kinds of methodology: comparative, qualitative and quantitative. This is the fourth point of our contributions in the thesis.

4. Contributions to the methodology

We were not only satisfied to get the results but also want to explain the reasons behind these empirical results. There are two comparative analyses: historical and spatial comparison.

In this regard, we adopted firstly the historical comparison to study the market dynamics of CRAs (local and global CRAs) and the evolution of the rating business, from its initial stage to the most recent period (year 2016). This examination covers a comprehensive period (including the crisis of 2008) and goes through the establishment and development of Chinese socialist capital markets, since the *Reform and Opening-up Politics*.

In parallel with the time-varying effect, we also compared between Chinese market to European markets (not only on the level of European Union, but also on the level of single markets; not only for countries like France, Germany and UK, but also for post-communist countries and transitory economies: like the so-called “New Europe” and Russia). It should be noted that there also exists the segmentation within Chinese market. Consequently, there exists also the spatial comparison between HK and Mainland market.

Types of comparison	Content	Where in the thesis...
Historical	Evolution of <i>Institutionalism</i> (from Old to <i>New-institutionalism</i>) and its applications (from economics, politics, sociology to organizations)	Chapter I, Section 1
Historical and Spatial	The changing institutional environment, in comparison with Central and Eastern European countries	Chapter I, Section 2, Subsection 1
Spatial	The application of <i>New-institutionalism</i> in the case of CRAs and of the classic theories, in the case of CRAs, under Chinese institutional environment, in comparison with international experiences	Chapter I, Section 2& Section 3, Subsection 2-3
Historical	Evolution of <i>Chinese financial politics</i> under the guidance of “ <i>Open and Reform</i> ”, and socialist capital markets (stock and bond markets)	Chapter II

Spatial	Chinese market actors: regulators, issuers and investors and their differences in the interaction with CRAs, with the comparison of European cases (especially, the case of Germany)	Chapter III
Spatial and Historical	We used the cases of European Union (considering the reforms of the European law and code of conduct of <i>IOSCO</i>) and Russia (recent establishment of Federal Law and new code of rating business) to constitute hypotheses of expected role of CRAs, respectively for HK and Continental Chinese cases. We considered as well as the market segmentation of Chinese market.	Chapter IV, Section 1
Historical	We collected all rating events available in the database from the very beginning of Chinese financial market (1988) and explain Chinese institutional elements, by the data description, throughout the evolution of rating activities.	Chapter IV, Section 2
Historical	We retrieved the historical development of Chinese CRAs (agency effect) and made a rating market analysis by taking account of the time-varying effect.	Chapter V, Section 1
Spatial	We added Chinese institutional characteristics to the rating determinants existing in the literature review. These two sources help us to constitute the hypotheses.	Chapter V, Section 2
Spatial	We inspired from the empirical evidence in other markets (Anglo-Saxon markets, Continental European markets, Emerging markets) on the informative impact of CRCs to form our hypotheses under Chinese institutional environment.	Chapter VI, Section 1
Spatial	We added rating determinants to the variables that are important to a classic cross-sectional analysis of CRCs.	Chapter VI, Section 3
Spatial	We got the same kinds of inspiration from literature review, on the focus of the informative impact of WLs on stock market returns.	Chapter VI, Section 3

We made qualitative and quantitative methodologies, with the help of software to deal with the data (Excel, NVivo, SPSS, Stata and EViews), by using statistical/econometric techniques, to have the three-dimension of examination of CRAs, in the interaction of market actors: regulators, issuers and investors.

You can find, in the following diagram, the structure of the methodologies that we employed in the thesis. Our various methodologies respond to the second question that we asked in the thesis: how to conduct a study to describe, to understand, to

explain and to predict, the role, strategy and impact of the CRAs, through three chapters in the Empirical Part Two.

Structure of methodologies

Methodologies	To be specific...	Where in the thesis?
Qualitative	Textual study (frequency inquiry)	Chapter IV, Section 1
	Descriptive data of quantitative study	Chapter IV, Section 2,
	Rating communication, other descriptive data for multi-ratings	Chapter IV, Section 3
	Rating market analysis in China	Chapter V, Section 1
	Selection of rating determinants and descriptive data for independent variables	Chapter V, Section 2& 3
	Descriptive data for CRCs and WLS	Chapter VI, Section 1& 3
	Descriptive data for cross-sectional analysis	Chapter VI, Section 3
	Quantitative	Preliminary results: Chi-square test
Chi-square test, correlation test (Pearson and Spearman), mean test for independent sample (T test, U test, and W test), normality test (Kolmogorov-Smirnov)...		Chapter IV, Section 3
Binomial and multinomial ordinal logistic models		Chapter V, Section 3
Event study on sample of CRCs and WLS: OLS/Garch (time series), parametric and non-parametric tests (one sample and paired sample)		Chapter VI, Section 2 and 3
Analyses for multiple linear regression		Chapter VI, Section 3

5. Contributions to the sample construction

There are some conceptual ideas of rating business in China (Kennedy Scott, 2003), but speaking of empirical results, we did a variety of empirical studies with various methodologies, on the most suitable samples, compared to Poon and Chan (2007, 2008).

We don't want to implicate ourselves into the debates of positivism of constructivism. We tried to collect as exhaustive data as we were able to; however, we admit at the same time, the construction of sample is inevitably linked to our choices.

In regards of sample construction, we wanted to conduct a study by using a more recent and comprehensive database (based on Bloomberg), with consideration of all possible institutional characteristics, under Chinese market environment.

In this paper, we concentrated on the rating industry (presence of both global and local CRAs) in China (Mainland and HK) and its evolution in the rating business (1988-2016, including the crisis of 2008). Chinese market is also a representative example of emerging market and transitory economy.

The data is from the database Bloomberg. It should be noted that we realized that the quality of data was not optimal throughout our several-years-use, especially when it concerns emerging market. It happens often a lack of data, and even some abnormalities due to the lack of transparency of the market. We would like to use another database Wind and to compare the data in the future study. For the moment, the use of Bloomberg led to two consequences:

First consequence is that, the size of sample (in Chapter V and Chapter VI) is sometimes limited, compared to the general presentation of data (in the Section 2, Chapter IV), although we tried to make the researches, based on the most extensive and exhaustive sample as possible.

Second consequence is that, raw data was cleaned up to deal with the aberrations, and considerable efforts have been made to remove the outliers. However, we had to make

some compromises, in order not to excessively restrict the size of the testing sample. For example, we are aware that the treatment of contamination (in Chapter VI) could be better with the consideration of other contaminating sources.

Sample	Where in the thesis?
We collected all relevant rating laws and norms in China (HK and Mainland), in European Union and in Russia.	Chapter IV, Section 1
All kinds of issuers and issue ratings (LT) available in <i>Bloomberg</i> are eligible for the quantitative study. We divided the sample into three subsections: initial ratings, credit rating changes and watch-lists.	Chapter IV, Section 2
<p>-Subsection 3.1: Multi-(issuer) initial ratings sample. We divided the sample into subsamples to study:</p> <ul style="list-style-type: none"> ○ Rating communication (Point 3.1.1); ○ “Rating shopping” (Point 3.1.2: sole rating sample vs. double rating sample); ○ “Split rating” (Point 3.1.3: triple rating sample and point 3.1.4: issuers are rated by more than 3 different CRAs); ○ “Rating inflation” (Point 3.1.5). <p>-Subsection 3.2: Asynchronous credit rating changes</p> <p>-Subsection 3.3: The justification of watch-lists to keep a balance of various rating quality properties for both issuers and investors</p>	Chapter IV, Section 3
<p>We considered only sole-(issuer) initial ratings sample.</p> <p>We divided the sample into:</p> <p>-Subsection 3.1: initial ratings of speculation grade vs. of investment grade;</p> <p>-Subsection 3.2: all initial ratings of investment grade.</p>	Chapter V Section 3
<p>We took into account credit rating changes and we crossed the sample with the list of Chinese public companies in Mainland (Shanghai and Shenzhen) and in HK, on the segment of “A shares” and “H shares”. Then, we sorted the entire sample by Chinese institutional factors:</p> <p>-Regulation changes/crisis effects</p> <p>-Segmentation of the stock market</p> <p>-Global and local CRAs</p> <p>-Consideration of anticipation</p> <p>-CRCs preceded by watch-lists of upgrades and downgrades.</p>	Chapter VI, Section 1&2
We conducted a cross-sectional to explain the (cumulative) abnormal returns that we get from the Chapter VI, Section 2	Chapter VI, Section 3
We selected a sample of WLs (positive and negative) to have an insight into their informative impacts.	

§I. Preparatory Part One

Why the discussion of the characteristics of “Chinese institutional environment” is essential to a research on “Credit Rating Agency (CRAs)”?

Chapter I. One theoretical framework and effects of institutional environment on CRAs

Chapter II. Two characteristics of Chinese institutional environment

Chapter III. Three consequences of CRAs on Chinese market actors

Introduction of Part One §1

Preparatory Part One aims to respond theoretically to the firstly objective of our thesis:
Why the discussion of Chinese institutional environment is essential to a research on CRAs?

The main content of Part One §1 is composed of three chapters

One theoretical framework: New institutionalism Theory and effects of Chinese institutional environment on CRAs (Chapter I)

Two characteristics of Chinese institutional environment: Policies of State-Capitalism and Socialist Market Economics (Chapter II)

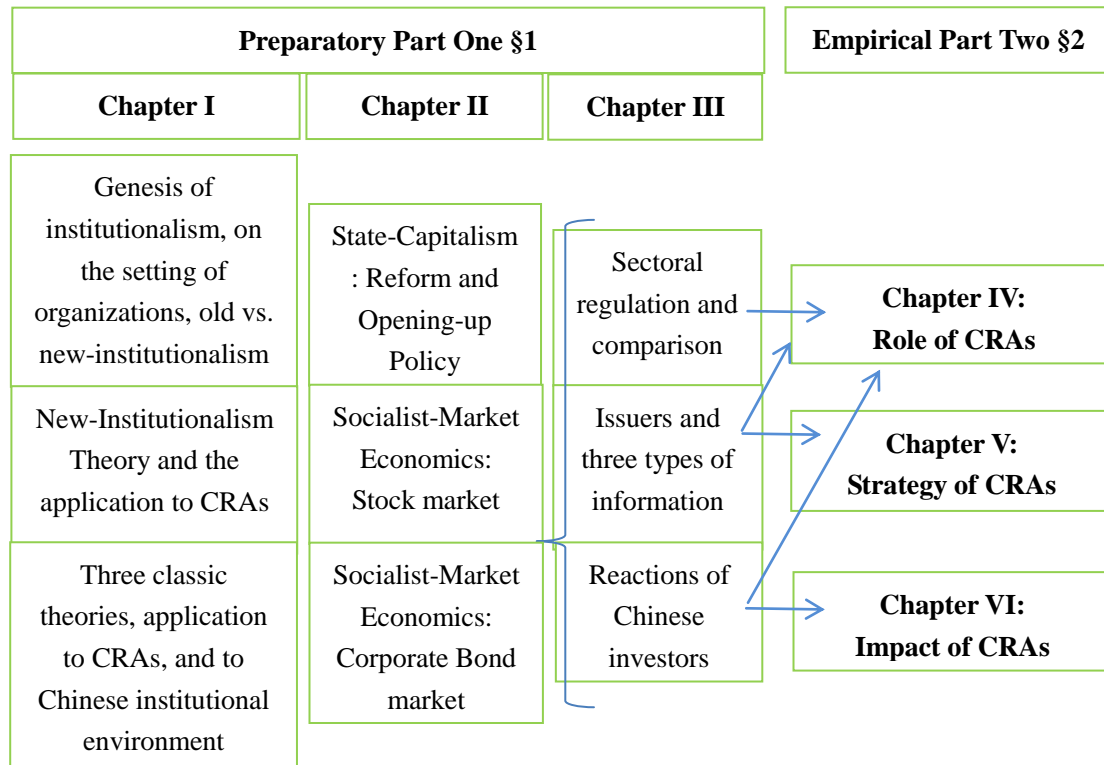
Three consequences of rating sector on market actors (viewpoints from regulators, issuers, investors) (Chapter III)

First Chapter talks about the theoretical framework in a general way and its evolution. It deals with the application of New-Institutionalism to organizations, to rating sector and to Chinese market. All elements combined, we are able to discuss three classic theories concerning CRAs under Chinese institutional environment.

Second Chapter discusses the background information of Chinese State-Capitalism (Reform and Opening-up policy) and socialist market environment, especially the segmentation of stock market between mainland China and Hong Kong and the promising Corporate Bond market with the political and social intentions for the further development.

Third Chapter helps us to discover interesting consequences of rating business on Chinese market actors (regulators, issuers and investors). We found it different from the situations happened elsewhere: under developed market environment, for example, when crossing their institutional characteristics with those on Chinese rating market.

Structure of the thesis (2)



* *The figure is made by the author*

There are some points to illustrate, in order to better understand the Preparatory Part One and the connection with the Empirical Part Two.

Chapter I explains theoretically (*New-institutionalism*) the importance of taking institutional environment into consideration for a research of rating. Chapter II entails the characteristics of Chinese State-Capitalism policy and Socialist-Market from three points of view of regulators, issuers and investors, in Chapter III.

These market actors provide us with three angles of the empirical analysis to have a three-dimensional examination of CRAs, to be more specific, their role (Chapter IV), strategy (Chapter V) and impact (Chapter VI) on the context of the Chinese market institutions. The 4th chapter starts from the point of view of rating regulators, issuers and investors, while the 5th and 6th focus on the interaction between CRAs and issuers and investors separately.

Chapter I.

One theoretical framework and effects of institutional environment on CRAs

Section 1: Historical, evolutionary and analytic perspective of institutionalism

Section 2: Application of New-institutionalism Theory to CRAs

Section 3: Chinese environmental effects on classic theories concerning CRAs

Introduction of Chapter I

Opposing to Behaviorism, Institutionalism takes “institutions as independent variables”² instead of as the reduction to “aggregations or direct consequences of individuals’ attributes or motives [choice]”³ neither as the “sum of individual-level properties”. We are in line with March and Olsen (1984, page 734) that the theory should be “considerably more complex and resourceful and *prima facie* more important to collective life”⁴ and hence, we will develop our thesis into the framework of institutionalism and its evolution to the New-institutionalism, with the application to organizations, more specially to CRAs, under the Chinese market environment.

Chapter I is divided into three sections.

We will make, first of all, an examination of Institutionalism (Section 1) of its past and the present to entail analytically its historical genesis and gradual evolution on the setting of organizations.

New-institutionalism Theory (Section 2) provides us with a framework to discuss how Chinese market environment is meaningful to a research of CRAs.

This discussion will help to complement the traditional perception and understanding of related theories in the field of ratings: Theory of Agency, Theory of Information Asymmetry and Theory of Signal (Section 3). In other words, we will contextualize the description of three classical theories, according to Chinese market setting.

² Powell and DiMaggio, 1991, The new institutionalism in organizational analysis, *University of Chicago Press*, P8.

³ *Ibid.*

⁴ Powell and DiMaggio, 1991, *supra*. P2.

Section 1. Historical, evolutionary and analytic perspective of institutionalism

1.1. Genesis of institutionalism

1.2. Institutionalism under the setting of organizations

1.3. Analytic summary: Three points of enlightenment of *New-institutionalism*

Introduction of Section 1

Institutionalism was firstly used to explain other social sciences than organizations. Largely inspired by Scott (1991), we will briefly go over the history of early institutionalism (Subsection 1.1).

Evolving from the old institutionalism and its early approaches, “institutionalism theory burst on the organization scene during the mid-1970 and has generated much interest and attention”⁵. Based on an abounding contributions of institutionalists, such as Meyer and Rowen (1977)⁶ (they are considered to have put “the first systematic statement of the importance of institutional environments in shaping organization system.”⁷), Powell and DiMaggio (1983)⁸ and Scott (1981 & 1995), among others, we are able to conduct the discussion of institutionalism around three important notions: rational system, natural system and open system⁹ within the *Theory of Organization* (Subsection 1.2).

Finally, outside historical overview and evolutionary description, we will have an analytic summary to enlighten three points inside the New-institutionalism compared

⁵ Scott, R, 1995, *Institutions and Organization*, Foundations for Organizational Science, Sage Publications, P.13.

⁶ Meyer, John W. and Rowan, Brian, 1977, *Institutionalized Organizations: Formal Structure as Myth and Ceremony*, *American Journal of Sociology* [83(2)], pp. 340-363.

⁷ Scott, 1995, *supra*. Page10, in the *Introduction*.

⁸ DiMaggio, Paul J., and Walter W. Powell. 1983. "The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields." *American Sociological Review* 48:147-60.

⁹ Scott, 2003, Fifth edition, *Organization: rational, natural and open systems* (1981, first edition).

to the early theory: pressure of changing institutional environment, three challenges for legitimacy, process of organization's institutionalization, in order to prepare the application of theoretical framework to CRAs under Chinese environmental context (Subsection 1.3).

1.1. Genesis of institutionalism

Scott (1995) retrieved early institutionalism in economics, politics and sociology where various institutionalists made efforts to bring new ideas in the discussion of social sciences. It is also thanks to them that some important notions, such as “changing process”, “formal and informal influence” and “interdependence between individual and institutions” got lights on, since long-time ignorance of classic theories. All of these points of ideas help to constitute the historical examination of institutionalism in Subsection 1.1.

1.1.1. In the scope of Economics

The Institutionalism drew attention of “the moving, changing process”¹⁰ and institutionalists placed the indeterminate events in the center of their researches, in spite of the divergence in each of their arguments.

In contrast to the competing *Neoclassical Theory*, early economic institutionalists opposed unanimously to “abstract and universal principles” based on the simplifying assumptions that there exists “perfect competition and unique equilibria”. They also outlined the importance of the particularities of practical problems, which are subject to both endogenous and exogenous determinants, varying diachronically “over time and place”¹¹.

¹⁰ Commons, 1924, page 376 in Scott, 1995, *supra*, page 3.

¹¹ Jacoby, 1988 and 1990, in Scott, 1995, *supra*, page 4.

1.1.2. In the scope of Politics

In the light of the definition of institutions (North, 1990), institutions are “the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction”¹². Political institutionalists firstly discussed essentially “formal structures and legal systems”¹³ with an emphasis detailing “accounts of particular political systems”¹⁴, such as the example of “nation-state”.

Then, they spared more interest to “informal distribution of power, attitude and political behaviors”¹⁵, based on the “hard facts”¹⁶. This approach helped to “serve the tie to moral philosophy and [to] rebuild political science as a theoretically guided, empirical science”.

1.1.3. In the scope of Sociology

The emphasis was firstly put on the “interdependence of individuals and institutions, of self and social structure.”¹⁷ In the following studies, two European institutionalists, Durkheim and Weber, tried to detail what constituted the formal and informal influences of the institutions. And they found, first of all, the power of religion; then Weber (1922) classified three types of authority: rational-legal, traditional and charismatic¹⁸.

¹² North, D. 1990. *Institutions, institutional change and economic performance*. Cambridge University Press, P.3.

¹³ Bill and Hardgrave, 1981, in Scott, 1995, *supra*, page 6.

¹⁴ *Ibid.*

¹⁵ Thelen and Steinmo, 1992, in Scott, 1995, page 7, *supra*.

¹⁶ Eckstein, 1963, in Scott, 1995, page 7, *supra*.

¹⁷ Cooley 1902/1956 in Scott, 1995, page 8, *supra*.

¹⁸ Weber, M, 1922, *The Three Types of Legitimate Rule*, translated from original German version by Hans Gerth, 1958, *Journal Berkeley Publications in Society and Institutions* [4](1).

1.2. Institutionalism under the setting of organizations

The historical lead-in of institutionalism makes it clear that it had no special interest in the science of management of organization or any other micro-analysis on the firm-level (Zucker, 1991)¹⁹. We will start our application of the evolution of the *Theory of Institutionalism* to organizations, “as distinctive types of social forms”²⁰ in this Subsection 1.2.

We try to discuss the theory in a general way, starting from three systems: rational system, natural system and open system (Scott, 2003), all of them inherent in a study of organization in order to avoid the fatal shortcoming of *old-institutionalism* that it emphasized the importance of the particular, of time and place and historical circumstance, institutional analyses came more and more to underline ‘the value of largely descriptive work on the nature and function of politico-economic institutions’²¹.

1.2.1. Survival as the foremost rational of organizations

The example of Max Weber (*Economy and Society*, 1922) once illustrated the “idea-type bureaucracy”. He explained that individuals’ freedom is constrained by the “rationalization of Western society”, which is “based on the general principle of precisely defined and organized across-the-board competencies of the various offices. These competencies are underpinned by rules, laws, or administrative regulations”²².

If we put the arguments under organizational context, it is clear that organizations should adapt themselves to changing institutional process, in order to achieve the “overriding goal: survival”²³ under the internal and external pressure. In other words,

¹⁹ Micro-foundations according to Lynne, Zucker, 1991, Postscript: Micro-foundations of Institutional Thought. Page 103-106 in Walter W. Powell and Paul J. DiMaggio (ed.).1991, *supra*.

²⁰ Scott, 1995, *supra*. Page 16.

²¹ Hodgson, 1991, in Scott, 1995, page 5, *supra*.

²² Tony Waters and Dagmar Waters, 2015, *Weber's Rationalism and Modern Society*, Palgrave Books.

²³ Scott, 2003, *supra*. P57.

organizations are in need to reassure “the security of organization as a whole in relation to its environment, the stability of lines of authorities and communication, the stability of information relations within the organization, and the homogeneity of outlook toward the meaning and roles of the organization”.²⁴

1.2.2. Informal structure on organizational behaviors

Institutionalism since Selznick (1949) - one of the first pioneers, who added institutional arguments to the *Theory of Organization* -, contended that *rationalism* was not the only tool used to explain organizational behaviors.

The reasons are presented and summarized in the *Figure 1.1* as follows:

To begin with, organizational behaviors are closely connected to its structure. Giddens (1979), Geertz (1973) and Goffmanesque (1959) all argued that the social structure should be “translated into action”²⁵ in other words, “to access to the symbol systems (structure) is only through the flow of behaviors, or more precisely social action”.

(Number 1 in the following figure)

Besides, organizational structure contains both formal and informal parts. Inside the natural system, the informal structure was missed in the early approaches of *institutionalism*.

(Number 2 in the following figure)

As Scott (2003) pointed out that the pure obsession of “centralized and formalized structure” wasted the “intelligence and initiatives” of organizational behaviors²⁶. In addition to that, “many stated ‘goals’ [of organization] are too vague and abstract to be effective in determining policy choices” (Selznick, 1996).²⁷

(Number 3 in the following figure)

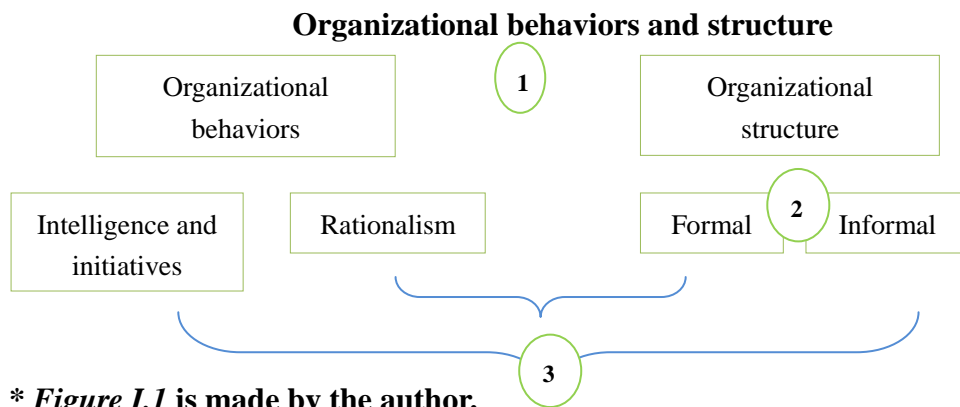
²⁴ Scott, 2003, *supra*. P70.

²⁵ Tolbert, Pamela S. 1985, Institutional Environments and Resource Dependence: Sources of Administrative Structure in Institutions of Higher Education. *Administrative Science Quarterly*, 30 [1], Page 179.

²⁶ Scott, 2003, *supra*. P59.

²⁷ Selznick, 1996. Institutionalism, “old” and “new”, *Administrative science quarterly*, 41, page 275.

Figure I.1



Consequently, organizational behaviors should be able to adapt to the needs of informal structure of organization, which itself is not only one of the natural components but also an impetus to improve organizational performance.

1.2.3. Interaction organization-environment

“Rationalities can become contextualized” (Scott, 1995), which means that institutions should not be analyzed isolated to the context where they are situated. Hence, their behaviors and choice of strategy reflex automatically on the condition of market acceptance and expectation.

In other words, as *Institutionalism* acknowledged, that organization should be considered as an open system, where “the interaction with the environment is essential for open system, functioning”²⁸.

There are two paradigms to understand the interaction of organization and the institutional environment, from the *Theory of Contingency*, “organizations achieve its best adaptation when its internal features best fit the demands of their environments”.²⁹ Kurke (1988) believed that the logic permits “organizations to retain some autonomy or discretion for future use”.³⁰

²⁸ Scott, 2003, *supra*. P89.

²⁹ Scott, 2003, *supra*. P84.

³⁰ Kurke, L.B. 1988, Does adaptation preclude adaptability? Strategy and performance, in Olivier, Christine, 1991, Strategic responses to institutional processes. *Academy of Management Review*, 16: 145-79, in Scott, 2003, P215, Page 175.

The second is the *Theory of Organizational Ecology*, which argued that environment selects organization that best suites it. The logic is in the same line with functional explaining that only needed organizations (efficient contracting and investing)³¹ are left finally.

Either way, environment is essential to be considered, serving as both source and constraint, to organizations.

1.3. Analytic summary: Three points of enlightenment of New-institutionalism

In the *old institutionalism* and early approaches, theorists failed to mention three following points, that:

- ✓ Institutionalism should be able to sort stable patterns or to construct theory-building of organizations in response to the changing environment. Admittedly, the old institutionalists had every reason to describe the diversity of institutions under different context by challenging “timeless and placeless” assumption. However, they missed the focus on the survival as the foremost goal of organizations by paying too much attention to diverse operational goals. That’s the reason why the early version of the theory stuck itself into descriptive works by the “intensive case-study approach”³².

- ✓ In addition to rules and principals, the existence of culture makes it clear that the cognitive dimension should also be taken into account of the analysis of organizations, because organizations are not shaped only by external effects of the environment. “The choices made [by organizations] reflect the entrepreneurs' subjective modeling of the environment”³³ (North, 1990).

³¹ Roland, Gerard, 2014, Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions, Culture and Economic Growth. Volume 1, P6 in Elgar Research Collection. International Library of Critical Writings in Economics, vol. 292.

³² Scott, 2003, *supra*, P72.

³³ Scott, 2003, *supra*. P217.

The cognitive dimension should also be considered as “an object of orientation”³⁴ instead of the deviation³⁵ of the “rational myth”. In other words, it serves to complete the “explicit normative or coercive pressures”³⁶, obviously existing in the institutional environment.

- ✓ The interdependence of organization and institutional environment should be reasoned in two directions. Organizations do not only suffer from the consequence of the institutional changes. They have the ability to affect the environment reversely. In other words, the relationship between organization and environment is dynamic. They are both cause and consequence to the other. That’s the reason why we prefer to use the term “interaction” in our thesis, in order to emphasize the reciprocal effects on both institutional environment and organization.

Compared to these points of insufficiency, *New-institutionalism* distinguishes itself by three points of enlightenment that we will develop in the Subsection 1.3 as follows:

1.3.1. Strategic Responses to institutional pressure

Weick is considered as one of the first theorists who took a dynamic vision and evolutionary way to study organizations. When the changing process of the institutional environment is constantly present, organizations managed to achieve certain stability in order to face up to the inside and outside pressure. Powell and DiMaggio (1983) found that organizations tend to resemble to each other by copying existing structures and procedures and they named this phenomenon “isomorphism”³⁷, either mimic, normative or coercive.

However, organizations are not isolated from the rest of the world.

³⁴ Critics of DiMaggio and Powell, 1991 to Parsons in the book of Scott, 1995, page 13, *supra*, where Parsons tried to synthesis the early institutionalism in the scope of sociology.

³⁵ DiMaggio, Paul J., and Walter W. Powell. 1991, Page 13.

³⁶ North, D. 1990. Institutions, institutional change and economic performance. *supra*, Page 104.

³⁷ DiMaggio and Powell, 1983, The iron cage revisited: institutional isomorphism and collective rationality in Powell and DiMaggio, ed. 1991, *supra*.

Competition makes organizations similar or dissimilar to each other their strategies. It was once believed by Meyer and Rowan (1977) and Powell and DiMaggio (1983) that there existed a “categorical conformity”, independent to the institutional pressure. This conviction in the early discussion of *New-institutionalism* was challenged later by the arguments of “defensive action”³⁸.

In other words, organizations may differ one to the other in their rating behaviors according to the business objective, in order to manage the institutional environment. We are going to investigate strategies of both Chinese local CRAs and “Big Three” (Moody’s, Fitch and Standard and Poor’s) empirically on the Chapter V.

It should be reminded that the different choice of rating strategies has the same ultimate rational for each CRA: to survive under the competition (which could be referred to 1.2.1 of the same Chapter I).

Olivier (1991) made a typology of strategic responses to institutional processes, where organizational actions range from “passivity to increasing active resistance”. What’s more, she added that “the degree of choice and activeness” depends on “the nature of the institutional pressures themselves”³⁹.

1.3.2. Challenges for legitimacy from three sources

Organizations were believed to be the result of technology from the point of view of (material) *Resource-dependent Theory*. “As proposed by Dill (1958: 410)⁴⁰ that environment is ‘potentially relevant to goal setting and goal attainment’⁴¹; while Institutional environment takes its unique characteristics by emphasizing that there exist additionally three sources of pressure, in order to attain and to maintain organizational legitimacy⁴².

³⁸ Olivier, Christine, 1991, Strategic responses to institutional processes. *Academy of Management Review*, 16: 145-79, in Scott, 2003, P215.

³⁹ *Idem*, Page 151.

⁴⁰ Dill, William, R, 1958, Environment as an influence on managerial autonomy, *Administrative Science Quarterly*, 2:409-43.

⁴¹ Scott, 2003, P133.

⁴² Scott, 1995

To be more specific, organizations practice their business along with the straightforward regulations, which reveal the authority of the state-nation. With time going by, they develop into some professional norms (“ontological framework, proposing distinctions, creating typification, and fabricating principles or guidelines for action”⁴³), offering both opportunities and limitations for organizations to better survive in the industry.

In addition to regulation and norms outside the organizations, personnel bring inside the organizations some culture-cognitive-like elements including “taken-for-granted classifications, routines, scripts (Schank and Abelson, 1977)⁴⁴, and the schema”⁴⁵ on micro-psychology level. The latter is different from macro cultural/social-construction level⁴⁶ that we could find in the *Old-institutionalism*.

Considering the foregoing discussion, we would like to conclude the source of legitimacy of the institution by the refined definition of North (1991) that the institutions are “the humanly devised constraints that structure political, economic and social interactions. They consist of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct) and formal rules (constitutions, laws, property rights)”⁴⁷.

His return from the focus on formal structure to the current suggestion is “because rules are made of ideas [and] institutions are essentially embodiments of ideas or codified ideas (Durkheim 1982 [1895]; Boland 1979; Hayek 1960; Nelson and Sampat 2001; Goldstein and Keohane 1993: 20–4; Weber 1978, 29–38, 311–338).”⁴⁸

The structure is not complete without the informal part.

⁴³ Scott, 2003, *supra*. P213.

⁴⁴ “Behavior patterns and sequences called up by specific roles or situations” in Scott, 1995, page 23.

⁴⁵ DiMaggio and Powell, 1991, *supra*. Page 13: Table 1.1. The old and New Institutionalisms.

⁴⁶ Scott, 2003, *supra*. P137.

⁴⁷ North D. 1991, Institutions, The Journal of Economic Perspectives [5](1), P.97.

⁴⁸ Tang Shiping, 2011, A General Theory of Institutional Change, Routledge/ Taylor & Francis (London), P3.

1.3.3. Process of institutionalization

“Out of unstable, loosely organized or narrowly technical activities”⁴⁹, “the balance between flexibility and stability”⁵⁰ should be carried by “repetitive, reciprocal, contingent behaviors”⁵¹ that are developed and maintained between two or more actors. We call this kind of “process by which actions are repeated and given similar meaning by self and others [...]”⁵² (Scott, 2003): institutionalization. It is believed that, organizational institutionalization helps organizations to “take on a special character”⁵³ or “in infusion with value beyond the technical requirements”.⁵⁴

Weick (1969) contended furthermore that there exist three stages to achieve the institutionalization: “enactment, selection and retention”⁵⁵.

To understand this process, Scott (2003) emphasized that organizational participants have impacts on the “state of their environments through their own actions”⁵⁶ and the concept of enacted environment is then perceived selectively by the organizational member; at the same time, “environment directly affect[s] organizational outcomes, which affect[s] subsequent perceptions and decisions [of organizations]”⁵⁷.

Weick (1995) concluded finally that the retained rules and routine after the “selection of all possibilities”⁵⁸, and the entire process will pattern the interaction of organizations to a set of market actors (notion borrowed from Merton, 1957: 368-80)⁵⁹: regulators, issuers and investors.

⁴⁹ Broom and Selznick, 1955, *Sociology*, page 238, in Scott, 2003, *supra*, page 69.

⁵⁰ Weick, 1979. (Second Edition), *The social psychology of Organizing*, Reading, Ma: Addison-Wesley.

⁵¹ Weick, 1969, *The social psychology of Organizing*, Reading, Ma: Addison-Wesley.

⁵² Scott, 2003, *supra*, P136.

⁵³ Selznick, 1996. *supra*.

⁵⁴ *Ibid.*

⁵⁵ Weick 1969, *supra*.

⁵⁶ Scott, 2003, *supra*, P149.

⁵⁷ Scott, 2003, *supra*, P149.

⁵⁸ Scott, 2003, *supra*, P 99.

⁵⁹ Scott, 2003, *supra*, P126.

Conclusion of Section 1

We discussed previously the history of institutionalism (Subsection 1.1) and its evolution on the setting of organizations (Subsection 1.2). The summary of three points of enlightenment of New-institutionalism (Subsection 1.3) also entails three levels of organizations fitting into the changing institutional environment.

The transformation of focus from the local environment to a subtler multi-layered structure⁶⁰ constitutes another major contribution of *New-institutionalism*. In the words of Powell and DiMaggio (1991), “whereas the old institutionalism viewed organizations as organic wholes, the new institutionalism, treats them as loosely coupled arrays of standardized elements”.⁶¹

In the following conclusion, we will relate these theoretical elements from *New-institutionalism* to the subject of interest of the thesis: CRA and rating activities. The analysis will be conducted by different organizational level.

Organizational population

This means that one individual CRA chooses either to imitate or to differentiate itself in the changing rating market environment full of competition. Each category of CRAs sharing some same characteristics will try to operate their business according to their varying *strategies*.

Organizational field⁶²

This means that the entire rating industry performs according to the institutional environment. It comprises cognitive, normative and regulatory source of pressure to attain and maintain the legitimacy, in order to guarantee the survival of their rating business.

⁶⁰ DiMaggio, Paul J., and Walter W. Powell. 1991, *supra*. P 13.

⁶¹ *Idem*, P14.

⁶² “A collection of interdependent organizations operating with common rules, norms and meaning systems.”, in Scott, 2003, *supra*, P130; and “Hirsch (1985) has proposed the closely related concept of ‘industry system’, and Meyer and I [Scott] have proposed that of ‘societal sector’ (Scott and Meyer, 1983/1991)”, Scott, 1995, *supra*, Page 56.

Organizational set

This means that we will take CRAs as the focal organization while regulators, issuers and investors will be used as lenses to reflect three-dimensional surface of CRAs through the interaction with these three market actors.

Societal level

There could be a broader societal level to discuss CRAs.

On one hand, Partnoy (1999) presented to us “regulatory license” under a relatively exclusive sector, where the entry barrier is set really high:

“Rating agencies begin to sell not only information but also the valuable property rights associated with compliance with that regulation. [...] the rating agencies will acquire market power in the sale of regulatory licenses.”

The authorization procedure would “makes governments partly liable for published ratings”.⁶³ It’s easy to wonder if the “should-be neutral” regulator would be captured by the private organization with its proper selfish interest pursuit.⁶⁴

In other words, a rating decision would not only result in an impact on the organizational level, but also lead to an externality to the entire society. The public interest would be jeopardized consequently⁶⁵. That explains the reason why CRAs are demanded to hold accountable for their rating action.

On the other hand, CRAs continue to consider themselves as a “private firms policed by the market”⁶⁶. To be more specific, the private information they provided should

⁶³ Möllers, Thomas M.J. and Niedorf, Charis, 2014, “Regulation and Liability of Credit Rating Agencies-A more efficient European Law”. 11 ECFR 333.

⁶⁴ *Theory of regulatory capture.*

⁶⁵ *Theory of public interest* in Stigler, George. J. 1972, “The theory of economic regulation” *Bell Journal of Economics and Management Science*, 11: 3-21.

⁶⁶ Kerwer, Dieter. 2005, “Holding global regulations accountable: The case of CRAs. Governance”, Vol. 18, No. 3, P. 453–475.

not be taken “as advice to buy or sell a security”⁶⁷. From the standpoints of the agencies, they should not supply any responsible for any sequent transaction.

The discrepancy of the supply-demand contributes to the idea of “accountability gap” (Kerwer, 2005). Considering the “Rating Agency Paradox” (Schwarz, 2002) is still an open question, we are going furthermore in this regard in our research.

Transnational level

The next section of the application is for the purpose not only to outline specific characteristics of Chinese institutions, but also to put it on the transnational level and in a more general way. This attempt is to avoid being caught in a trap of a mere-descriptive-work, on one hand; on the other hand, our study provides the academic world an example of organizational research on the framework of the institutional theory. It seemly has much originality in the light of the results of Farashahi et al. (2005), who “indicate that 95% of empirical studies are from developed countries. [...] This is surprising as, in contrast, developing countries are institutionally in a state of flux and would therefore provide interesting if challenging research settings.”

In parallel to this multi-level-organization-analysis: on the level of individual organization, organization population, organization filed, organization set societal level and transnational level, the application of theoretical framework to CRAs will then be put on a macro-context of Chinese market environment that we will start in the next Section 2.

⁶⁷ Kerwer, Dieter. 2005, *supra*.

Section 2. Application of New-institutionalism Theory to CRAs

2.1. Evolutionary approach of institutional environment of CRAs

2.2. Comparisons of three pillars

2.3. Causes and consequences of CRAs' institutionalization

Introduction of Section 2

From the tentative summary of main ideas of *New-institutionalism* and its comparative evolution since early studies and historical approaches, we have analyzed the reasons why we chose to develop our research of CRAs under a changing environment of Chinese market: both for an emerging market and for an economy in transition under the framework of the *Theory of New-institutionalism*.

We will break down the Section 2 into three Subsections, in order to explain the application more precisely:

In Subsection 2.1, we will explain that Chinese market is under fast development and especially for a new business as rating activities. Our study is logically conducted with an evolutionary approach with time dynamics by taking institutional environment changes into account. It is believed that CRAs tend to resemble their behaviors to each other. However, the practice of local and global CRAs depends also on their position on the market and corresponding strategies.

In Subsection 2.2, Scott (1995) developed three pillars to refine the definition of the pressure imposed by the institutional environment. To be more specific, rules, self-regulation disciplines, market reputation mechanism and their comparison are three pillars to put the CRAs into the “iron cage”. CRAs have reputation mechanism as the functioning bases but in reality, especially the financial crisis has proven that one pillar alone is not enough to maintain the legitimacy; not to mention that, in a new business as rating, the attainment of survival of the entire business is very precarious.

In Subsection 2.3, we will consider thirdly the institutionalization of CRAs. Its interaction with market actors: regulators, issuers and investors have reciprocal effects on both CRAs and the institutional environment.

We are going to develop furthermore an insight into the characteristics of Chinese market environment in the following Chapter II&III.

2.1. Evolutionary approach of institutional environment of CRAs

According to the *Theory of evolutionary economics* (Nelson & Winter, 1982), the environment is constantly changing, especially for the developing market.

In front of the complex and uncertain environment, which is conceptualized from the institutional point of view “in terms of understandings and expectations of appropriate organizational form and behavior that are shared by members of society (Zucker, 1977 and 1983)”⁶⁸, we have observed both “isomorphism” (DiMaggio, 1986) and also “the attempt [of organizations] to cultivate an ‘organizational identity’ that distinguishes the organization from others with which it may be compared”.

This mixture of organizational responses could be made individually by one single agency or collectively and in the second circumstance, some CRAs would react differently from others with dissimilar characteristics.

2.1.1. Factors and Process of institutional changes

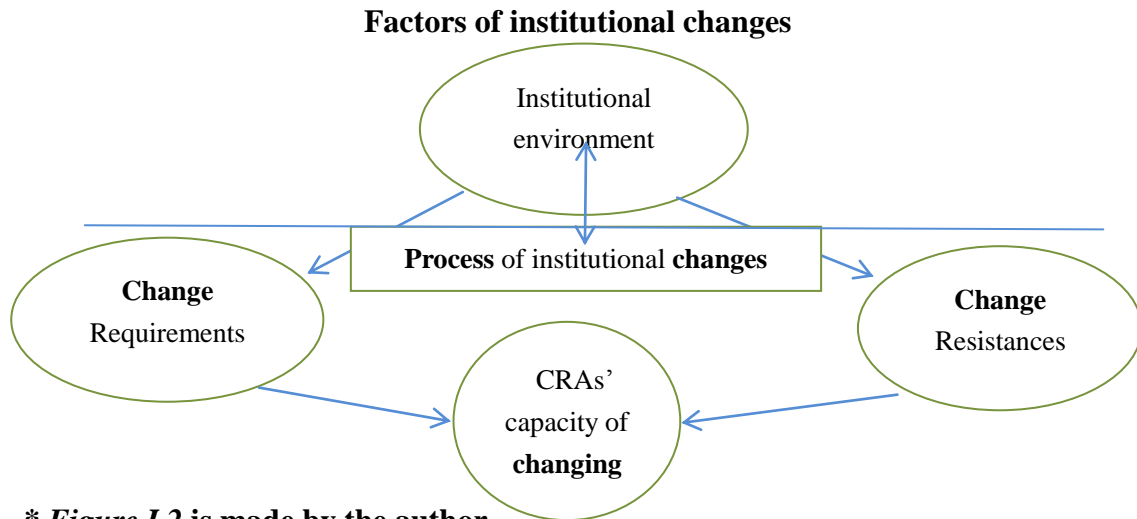
To explain the *Figure 1.2* (see below), we borrowed the factors of institutional changes (Palthe, 2014). He defined that the “organizational change capacity” is “determined by the organization's ability to adapt, learn, and apply new innovations through human, strategic, technological, and structural competencies and methods”⁶⁹ and whether they are able to fit into institutional changes depends also on a balance

⁶⁸ Tolbert, Pamela S. 1985, *supra*.

⁶⁹ Palthe, Jennifer. 2004, Regulatory, Normative, and Cognitive Elements of Organizations: Implications for Managing Change, *Management and Organizational Studies*. Vol. 1, No. 2.

between change requirements and change resistances; the *state quo* of the institutional environment is the equilibrium⁷⁰ between those two opposing forces.

Figure I.2



* Figure I.2 is made by the author.

Then, we will take the example of CRAs in Chinese market environment to further discuss these factors mentioned previously:

On one hand, “change requirements” in China are enormous, especially since the crisis (2008), when “the legitimacy of an institutionalized practice [was] gradually erode[d] (Oliver, 1992)”⁷¹. Since then, Chinese rating authorities are eager to have local CRAs to replace “Big Three”, in order to establish the reputation of ratings. They artificially segment the market to limit the activities of rating business of global CRAs by regulations. (We will discuss furthermore in Section 1 of Chapter IV.)

On the other hand, “change resistance” for rating business was quite small when people were not quite familiar with it. The demands of local rating have exploded with the encouragement of Chinese rating regulations. (Please refer to the Section 2 of Chapter IV for the statistical description of our samples.)

Two elements combined, it has made CRAs being through the entire process of

⁷⁰ North, 1990, *supra*.

⁷¹ Oliver, C. 1992. The antecedents of deinstitutionalization. *Organizational Studies*, 13:563-588, in Palthe, *supra*.

institutional changes since the entry to Chinese market. CRAs have two strategies to react to the changing environment: isomorphism and distinctiveness before its stabilization. (We will discuss theoretically CRAs' strategies in Point 2 & 3 of Subsection 2.1 of Chapter I (Behavioral isomorphism and motives & Distinctiveness as balancing strategy), and empirically in Section 1 of Chapter V)

It should be noted that, the way around, the institutionalization of CRAs' behaviors will reshape the landscape of Chinese rating environment, which will be explored in Subsection 2.3 of Chapter I (Causes and consequences of CRA's institutionalization).

The next step to understand "CRAs' capacity of changing" under Chinese institutional environment is to compare the situation to that in *CEECs (Central and Eastern Europe Countries*⁷²), whose institutional transformation has suffered a "shock therapy"⁷³. On the contrast, Chinese companies, especially SOEs took the proactive lead of the communist party, have been through continuous and gradual reforms. Hence, Chinese transitional period of "gradualism" is thus more peaceful and profound, compared to other ex-communist countries.

If we want to conceptualize the changing dynamics⁷⁴ of these two economies between China and New European countries, there are other two future discussions about the process of institutional changes.

Here, we are largely inspired by *General Theory of Institutional Changes (Tang, 2011)* with regulative, normative and cognitive elements applied to CRAs:

First discussion is to ask if the institutional changes have been through an incremental

⁷² Including 11 new member states (NMS) of European Union, 4 countries of Visegrád Group: (Slovakia, Czech Republic, Hungary and Poland), Romania and Bulgarian (Black Sea countries), Slovenia and Croatia (ancient members of Yugoslavia); 3 Baltic States: Estonia, Latvia and Lithuania (ancient members of Soviet Union); There are 5 countries (Slovakia 2009, Slovenia 2007, Estonia 2011, Latvia 2014, Lithuania 2015) using Euro.

⁷³ McMillan, John; Naughton, Barry, 1992, *How to Reform a Planned Economy: Lessons from China*, Oxford Review of Economic Policy, 8 [1], P. 130-43.

⁷⁴ Tang Shiping, 2011, *supra*, P38.

(step by step) process such as a long-enduring change of thinking from self-imposed discipline, industry norms, market reputation mechanism or competition-driven environment. Consequently, the institutional changes could also happen abruptly (big bang), such as an instant change of regulation during the crisis.

In the paradigm of Gerard (2014)⁷⁵, there exist fast-moving and slow-moving institutions inside each institutional change. In the big picture of Chinese gradually-changing process for economic transition, regulatory elements could be changed suddenly with a new issue of laws and rules, while norms should take some time to take root. As for cultural-cognitive elements, their influence diffuses slowly after the acceptance of changes as “a collective mind-set”⁷⁶. These three tempos compose the “nice music” of Chinese institutional changes under the market environment.

Second discussion is to ask if the institutional changes could be solidified, such as new ideas for rules and laws coming into vigor, which would change the institutional environment once for good. The institutional changes could also be ephemeral and temporary, which would be finally forgotten in the dust of the past.

2.1.2. Behavioral isomorphism and motives

Organizations are exposed to internal and external pressure under the changing process. Isomorphism has been invented by Powell and DiMaggio (1991) to describe organizations’ “non-choice behaviors”⁷⁷ under the circumstance. This kind of conformity to “social norms of acceptable behaviors”⁷⁸ helps to ensure their legitimacy and, hence, their chances of survival (Meyer and Rowan, 1977; DiMaggio and Powell, 1983)⁷⁹. To be detailed, the isomorphism is manifested by “a constraining

⁷⁵ Roland, Gerard, 2014, *supra*.

⁷⁶ Aoki, M, 2006, *supra*. Page 10.

⁷⁷ Oliver, Christine. 1991, Strategic responses to institutional processes. *Academy of Management Review*, 16[1], Page 147, Table 1.

⁷⁸ Covalleski and Dirsmith, 1988, An institutional perspective on the rise, social transformation, and fall of a university budget category, *Administrative Science Quarterly*. 33: 562-587. in *Idem*, Page 174.

⁷⁹ Tolbert, Pamela S. 1985, *supra*.

process that forces one unit in a population to resemble other units that face the same set of environmental conditions”⁸⁰.

Isomorphism takes three forms in DiMaggio & Powell (1983)⁸¹: mimetic, normative and coercive and then we will apply the theory to Chinese rating industry. Under these three viewpoints, the structure of Chinese rating industry is shaped and within each category of CRAs, we found:

Mimetic isomorphism

Chinese local CRAs, are newcomers on the young rating business, choose to start by imitation to global CRAs and their early partnership with “Big Three” accelerated the process of apprentice at the first stage. The example serves as a concrete evidence showing that “organizations tend to model themselves after similar organizations in their field that they perceive to be more legitimate or successful”, as DiMaggio and Powell (1991) once argued.⁸²

Normative isomorphism

The legitimization of issuer-pay model is reinforced by the fact that professionals disfavored the investor-pay model in the modern rating practice. The first model means while the second model means, issuers of debts will pay the rating service based on the debt quality, where the conflict of interest between issuers and CRAs is often criticized, while the second model revived the paying model in past, where investors have to pay CRAs if they chose to use external ratings to evaluate the credit risk of the debts of their issuers.

The wide use of the first model “serves the organization’s own interests or contributes to organizational efficiency or control (Tolbert, 1985; Tolbert & Zucker, 1983, Zucker, 1983),”⁸³ which has confirmed this model as the industry norms rather than the other.

⁸⁰ Hawley, H. Amos. 1968. Roderick D. McKenzie on Human Ecology. Chicago: The University of Chicago Press.

⁸¹ DiMaggio, Paul J., and Walter W. Powell. 1983. *supra*.

⁸² DiMaggio, Paul J., and Walter W. Powell. 1991, *supra*, Page 70.

⁸³ Oliver, Christine. 1991, *supra*, Page 1991.

Coercive isomorphism

On the governmental level, legal closure and regulatory limitation of the Chinese domestic market to foreign CRAs have encouraged the economic patriotism among Chinese local CRAs. Under the conformity to financial and commercial strategies, CRAs, such as Dagong, have also showed its ambition of business internationalization.

If we have a further inspection of motives of Chinese CRAs behind their alignment of behavioral isomorphism, especially in their relationship with the global counterparts, we may try to conclude under the inspiration of Selznick (1996, P273) that:

“Mimesis is considered a response to uncertainty, presumably more deeply rooted in anxiety than in rational efforts to avoid reinventing the wheel” (DiMaggio and Powell, 1991) and “the more an organization’s structure is derived from institutionalized myths, the more it maintains elaborate displays of confidence, satisfaction, and good faith internally and externally [internal managers and external constituents].” (Meyer and Rowan, 1977)

Chinese new rating business justifies its existence and survival by firstly copying the models of global CRAs. CRAs are thus spared the least efforts in the confrontation to question their legitimacy. The formality of rating process and organization of agencies seem as a “social fact”, which is “obvious and natural way to conduct an organizational activity (Berger & Luckmann, 1967, Zucker, 1977, 1987)”⁸⁴.

However, with the further development of the rating market, Chinese local CRAs are also seeking to diversify the strategies from the competitors, both national and international, which we will discuss in the following Point 2.1.3 by calling it “the distinctiveness as a balancing strategy”.

⁸⁴ Olivier, Christine, 1991, *supra*, P148.

2.1.3. Distinctiveness as a balancing strategy

In order to obtain a complete understanding of the nutshell of Chinese rating market, we should not forget the existence of competition among CRAs to distinguish itself from the peers. As Scott has pointed out that we should also pay attention to the fact that “how responses vary because organizations are reacting strategically to their situations”⁸⁵. Their responses vary “because of differences among organizations in their characteristics or in their locations within the field”.

To be more specific, the “structural forms and strategies support”⁸⁶ of an organization should be reviewed separately. Consequently, stability should not be the only word to summarize the behaviors of CRAs. It is true that rating form shows resemblance to each other; however, we will show that the substance of ratings (including determinants they choose and statistical models) differs for one CRA and for the other if we want to interpret ratings properly.

In this sense, we will dedicate two empirical investigations in the Part Two §2.

Firstly, we will discuss from the point of view of role of CRAs (Chapter IV), based on a sample with multiply rating⁸⁷ (in the Section 3), to study the causes behind the split ratings.

The presence of split ratings, which means that different CRAs have different opinions on the same debt-obligation instruments or their issuers, also reveals the fact that CRAs “are also capable of responding to these influence attempts [of environment] creatively and strategically”.⁸⁸ In the homogeneous competition-driven environment such as that of Chinese rating market, CRAs are “constituted as active placers, not passive pawns”.⁸⁹ That’s the reason why we have seen that Chinese “Top Three” CRAs continue to lose their market share to the benefit of new-entrants, which

⁸⁵ Scott, 1995, *supra*, page 118.

⁸⁶ Williamson, 1975 *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press. in Scott, 1995, *supra*, page 119.

⁸⁷ One issuer is rated more than once by different CRAs.

⁸⁸ Scott, 1995, *supra*, page 132.

⁸⁹ *Ibid.*

are active in differentiating themselves from their competitors, by either internationalization or localization of their business.

Secondly, we will discuss from the point of view of strategies of CRAs (Chapter V). We will start from a market analysis, in order to understand how CRAs differentiate themselves by agency governance, internationalization, and business model to survive in the competition-driven environment. The discussion of strategic decisions of business objectives (we also call it the strategic behavioral beliefs) will help to constitute hypotheses strategic rating behaviors (more specifically, the strategic choices of rating determinants), which we will test empirically later on in the same chapter.

2.2. Comparison of three pillars

Three pillars of institutions: cognition, norms, regulation were much developed in the work of Scott (1995), which constitutes the foundation of the theoretical framework of our research. As he concluded the definition of institution⁹⁰:

“Institutions consist of cognitive, normative, and regulative structures and activities that provide stability and meaning to social behavior. Institutions are transported by various carriers, cultures, structures, and routines and they operate at multiple levels of jurisdiction.”

In response to that, we will develop three Points in the Subsection 2.2.

These pillars are related to three degrees of the understanding of the rating business, starting from the core idea of CRAs' functioning: reputation mechanism, in addition to market discipline and finally completed by the rating regulation.

We will start with the *cognitive pillar (2.2.1)*. Reputation mechanism has objective to secure the loyalty of their users on the condition of the credibility of rating services. The reputation is also taken as a business “capital”⁹¹, required by media and community power.⁹²

Just as put forward by Wilson (1994)⁹³, “every time a rating is assigned, the agency's name, integrity, and credibility are on the line and subject to inspection by the whole investment community.” It should be believed that “good firms would be induced to exert higher effort and try to distinguish themselves from the bad ones”⁹⁴.

⁹⁰ Scott, 1995, *supra*, page 33.

⁹¹ Partnoy, Frank 1999: The Siskel and Ebert of Financial Markets? Two Thumbs Down for the Credit Rating Agencies, Washington University Law Review. Volume 77, Issue 3, P628.

⁹² Igalens Jaquaes et Point Sébastien, 2009, Vers une nouvelle gouvernance des entreprises - L'entreprise face à ses parties prenantes, Dunod(Paris), P139.

⁹³ Cantor Richard and Packer Frank, 1994. The Credit Rating Industry, *February Quarterly Review*.

⁹⁴ Horner (2002) in Camanho, N., Dec, P., and Liu, Z., 2010, Credit Rating and Competition, *Working Paper*, P.6.

The study of Möllers (2014) also showed that “a rating’s reliability [was] measured by a long and well-documented history, the so-called track record. It shows whether an agency has delivered sufficiently good estimates in its ratings over a longer period of time”.⁹⁵ In other words, each rating put the reputation of the CRA at the stake. There is no wonder, which CRAs are supposed to take naturally the rating quality seriously to keep a good reputation in the business.

However, in reality, “there are no substantive requirements that its [ratings’] performance, measurement statistics or its procedures and methodologies be of a certain quality”⁹⁶ and what makes things worse is that rating users can only know the rating quality *ex ante*⁹⁷. For example, during the crisis (2008), CRA were often criticized to intervene too late. Not to mention that it is still an open question how to control the rating quality.

Consequently, there is every reason to question the utility of reputation mechanism.

It is true that the credibility must be situated at the heart of rating business, because purely theoretically speaking; CRAs with lack of legitimacy would not be able to survive on the market. However, our previous arguments made it clear that the reputation mechanism alone cannot prevent wrong-doings of CRAs. As the purpose of supervision “raises questions of efficiency and effectiveness”⁹⁸, we need to take into consideration other two pillars existing on rating sector to complete the source of pressure:

⁹⁵ Möllers, Thomas M. J. and Niedorf, Charis, 2014, Regulation and Liability of Credit Rating Agencies - A more efficient European Law. *European Company & Financial Law Review*, 11(3): 333-363.

⁹⁶ Lynch, Timothy, E. 2010, Deeply and persistent conflicted credit rating agencies in the current regulatory environment, *Legal Studies Research Paper* 33, Indiana University, page 268.

⁹⁷ Kranton, Rachel E. 2003, Competition and the Incentive to Produce High Quality, *Economica*, page 399.

⁹⁸ *Idem*, Page 321.

On one hand, there are “practice ethics” put forward by *IOSCO (International Organization of Securities Commissions)*⁹⁹; and on the other hand, we have “intrusive regulation”, including all regulative laws and rules issued by various institutional authorities. We present below these two other pillars: normative pillar (2.2.2) and regulatory pillar (2.2.3). The first one is to correct “market failure”, while the second one is to avoid “regulatory deficit”.

Table I.1 is largely inspired by the article of Palthe (2004) and itself suggests “some key dimensions” from Scoot (1995, page 35). It aims to better explain these three pillars briefly mentioned above, and our further explanations applied to CRAs is to be presented in turn as follows:

Table I.1

**CRAs’ reactions in front of imposed rules,
auto-regulation norms and reputation mechanism**

Philosophies		Reputation mechanism	Market driven self-imposed discipline	Regulation with adequate supervisory structure
Nature of legitimacy		Cognitive pre-conscience (want to do)	Norms (should do)	Laws and Rules enforcement (must do)
Reactions of CRAs	Intention	To take rating quality as survival capital	To assume responsibilities <i>ex ante</i>	To prevent <i>ex post</i> regulatory/legal punishments
	Attitude	Automatic	Active	Negative
	Consequence	Pragmatism (need to do)	Habitus (used to do)	Conformity (have to do)

* *Table I.1* is made by the author.

⁹⁹ The International Organization of Securities Commissions (IOSCO), established in 1983, is the acknowledged international body that brings together the world's securities regulators and is recognized as the global standard setter for the securities sector. Information got from Official Website at <http://www.iosco.org/about/>.

2.2.1. Reputation Pillar

First and foremost, it should be acknowledged the supreme importance of reputation for the existence of rating activities. All CRAs are involved with the cognitive pre-conscience where they will automatically and proactively issue responsible ratings. This value is “internalized”¹⁰⁰.

It makes sense for us to understand the inherent logic of pragmatism because in an ideal-parfait market, CRAs need to function accordingly to the mechanism, serving the rating users, in order to survive.

Reputation is a fast way for CRAs to get to clients in a “society of strangers”. Under the Chinese institutional environment, it needs to cede the importance to *Guanxi*¹⁰¹ in a “society of acquaintances”¹⁰². China has a short history to industrialize the agricultural society living in rural community. Confucianism, as Chinese culture-cognitive root¹⁰³, continues to play an active role in regulating the business world in the place of laws and rules. Although the collectivism is fading with the modern urbanism, still “Chinese live in an intricate web of personal and social inter-connections. Their incentive structures and enforcement mechanisms tend to be informal rather than formal (North, 1990)”¹⁰⁴, with the presence of all sorts of relationships¹⁰⁵, “into which they grow and form the institutional system which governs this behavior.”¹⁰⁶

¹⁰⁰ Palthe, 2004, page 3, *supra*.

¹⁰¹ Definition from Oxford living Dictionaries: the origin in Mandarin, literally ‘connection’: the system of social networks and influential relationships which facilitate business and other dealings.

¹⁰² Fei, Hsiao-táung.1992, From the Soil, the Foundations of Chinese Society: A Translation of Fei Xiaotong's Xiangtu Zhongguo (by Hamilton, Gary G.; Wang, Zheng), with an Introduction and Epilogue, *Berkeley: University of California Press*, 1992/1947.

¹⁰³ Xiao-Ping Chen and Chao C. Chen. 2004, On the Intricacies of the Chinese Guanxi: A Process Model of Guanxi Development, *Asia Pacific Journal of Management*, 21, 305–324, Page 307, *The Confucian heritage of guanxi*.

¹⁰⁴ John H. Dunning and Changsu Kim, 2007, The Cultural Roots of Guanxi: An Exploratory Study, *The World Economy*, Page 330.

¹⁰⁵ “Family, kinship networks, col-leagues, neighbors, classmates, friendship circles, and even casual acquaintances make up the social framework” in John H. Dunning and Changsu Kim, 2007, *supra*.

¹⁰⁶ *Ibid*.

2.2.2. Normative Pillar

Then, we turn the attention to the market driven auto-regulation. In the rating sector, it refers to the guiding norms of *IOSCO*¹⁰⁷ and other relevant norms on the national and regional level. The process of the internalization of “should do” helps CRAs to be aware of the impacts of their behaviors on market actors of all kinds. In that case, CRAs will start to take responsibility *ex ante*¹⁰⁸. This active conscience would grow gradually into habitus and make CRAs “used to do” what they are supposed to do by the professional norms.

2.2.3. Regulative Pillar

Last but not least, here comes the regulative pillar: national and regional regulation provides binding rules and any infringement to laws and rules brings along punitive consequences. In fear of regulatory sanction *ex post*, most rational reactions would be to conduct business in conformity with these rules. Following this natural reasoning, the rating business should not be the exception. However, we should also admit that the enforcement has been proved to be weak or insufficient; in the case that negative attitude inside the artificial obedience could turn to an impulsion to break the rules.

¹⁰⁷ The board of International Organization of Securities Commissions (IOSCO), 2015, Code of Conduct Fundamentals for Credit Rating Agencies: Final Report

¹⁰⁸ Assouly Judith, 2013, *Morale ou finance? La déontologie dans les pratiques financières*, Presses de Sciences Po(Paris), collection : « Nouveaux débats ».

2.3. Causes and consequences of CRAs' institutionalization

As documented by Farashahi et al. (2005), the institutional effect or “the top-down relationship between institutions and organizations”¹⁰⁹ is “taken for granted among researches” (Barley and Tolbert, 1997)¹¹⁰. On the other side of the story, institutionalization of CRAs will also reshape the institutional environment, as asserted by Pettigrew, Woodman, and Cameron (2001) that it should be “viewed as interactions between context and action”¹¹¹. In other words, the institutional environment and the organizational institutionalization of CRAs are both cause and consequence to each other during the changing process.

And if we take one step forward, it is clear that “such transformations can alter behavior substantially”¹¹², not only in the relationship of organization-institution but also to have an extensive influence on the behaviors of other market actors: regulators, issuers and investors, among others.

2.3.1. From viewpoint of regulatory pillar

Since the Basel Accord II, the “prudential regulation” power has been partially delegated to the CRAs, those private organizations serving as a reference to credit risk evaluation to estimate banking minimum regulatory capital requirement.

Additionally, CRAs have also been embedded into the regulatory system as a quasi-regulatory authority¹¹³ for issuers. When Chinese issuers ask to enlist their bonds, their eligibility should be confirmed by CRAs, according to “either legal or policy constraints”¹¹⁴ and bring additional information¹¹⁵ to the market.

¹⁰⁹ Farashahi, Mehdi; Hafsi, Taïeb; Molz, Rick. 2005, Institutionalized Norms of Conducting Research and Social Realities: A Research Synthesis of Empirical Works from 1983 to 2002, *International Journal of Management Reviews*, 7 [1], P 13.

¹¹⁰ Barley.S.R. And Tolbert. P. S. 1997. Institutionalization and structuration: Studying the links between action and institution. *Organization Studies*. 18(1), 93-117.

¹¹¹ Pettigrew, A. M., Woodman, R. W., & Cameron, K. S. 2001. Studying organizational change and development: challenges for future research. *Academy of Management Journal*, 44(4), 697-713, in Palthe, *supra*.

¹¹² Palthe, *supra*.

¹¹³ Kruck, Andreas. 2013. The Regulatory Use of Credit Ratings in Germany and the US: A Resource Dependence View on the Transfer of (Quasi-)Regulatory Authority. *German Policy Studies/Politikfeldanalyse*, 9(1), p.141-176.

¹¹⁴ Baker, H. Kent and Mansi, Sattar A. 2002, Assessing Credit Rating Agencies by Bond Issuers and Institutional Investors. *Journal of Business Finance & Accounting*, 29(9) & (10), P1379.

It is also the case when banks and insurance companies, for instance, try to constitute their investing portfolios. They are specifically asked to buy rated financial products by Chinese regulatory authorities.

2.3.2. From viewpoint of normative pillar

Baker (2002) pointed out other reasons for issuers to justify the use of ratings beyond regulatory elements. He found that CRAs serve as a good way of media promotion (Jewell et al., 1999& 2000) for issuers to collect financing.

On the other side of financing activities, investors-creditors also acknowledge that the “market practice”¹¹⁶ is important for their debtors to get better risk-management control. Under the survey conducted by Cantor (2007)¹¹⁷, more than half of the European fund managers take ratings as an important indicator for investment decision at the demand of their sponsor. More than third of investors (sponsors and managers combined) responded that they chose to use ratings voluntarily because it serves as a good investment strategy.¹¹⁸

2.3.3. From viewpoint of cognitive pillar

Baker (2002) found ratings helpful to transfer true information¹¹⁹, which explains why there exists the culture of “the use of ratings” for investors. In this aspect, Deb and Murphy (2009) confirmed by some empirical findings that “[...], the increasing use of ratings by institutions, coupled with the rise in the speed of information diffusion in the markets over the last few decades, [...]”¹²⁰ and throughout the world.

¹¹⁵ *Ibid.*

¹¹⁶ Cantor, Richard et al. 2007. The Use of Credit Ratings in Investment Management in the US and Europe. *The Journal of Fixed Income Fall*, Vol. 17, No. 2, Page 6.

¹¹⁷ Cantor, Richard et al. 2007 “The Use of Credit Ratings in Investment Management in the US and Europe”. *The Journal of Fixed Income*.

¹¹⁸ *Idem*, Question 2.

¹¹⁹ Millon, M.H. and A.V. Thakor, 1985, Moral hazard and information sharing: A model of financial information gathering agencies, *Journal of Finance* 40(5): 1403-1422 in Baker (2002), *supra*. P1376.

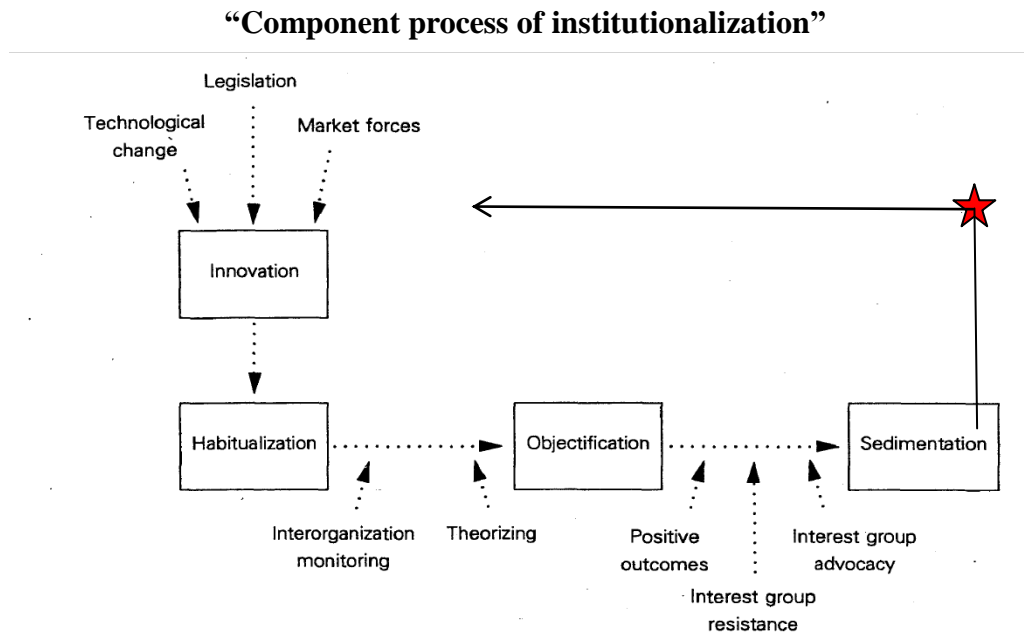
¹²⁰ Camanho, N., Deb, P., and Liu, Z., 2010, *supra*.

Conclusion of Section 2

Comments on the “component process of institutionalization” (Graph I.1)

Based on previous discussion of Section 2, we are now able to complete the comments on the *New-institutional context* (in the following *Graph I.1*).

*Graph I.1*¹²¹



First of all, “innovation and objectification” can be considered as “change requirements and resistance” in the changing institutional environment that we discussed in the Subsection 2.1. Organizations have rights to adopt strategies (the trade-off of conformity), to be faced up the challenges for organizational legitimacy and survival.

Secondly, the sources of internal and external pressure of “innovation” in the *Graph I.1* have been simplified. We have contributed in the Subsection 2.2 to a more complete discussion with three pillars. To be more specific, informal structure (cognitive-culture elements, among others), is as important as technological change (from resource-dependence point of view) and formal structure (legislation and

¹²¹ Tolbert, P. S. & Zucker, L. G. 1996. The institutionalization of institutional theory [Electronic version]. In S. Clegg, C. Hardy and W. Nord (Eds.), *Handbook of organization studies*, Page 182. London: SAGE.

market forces).

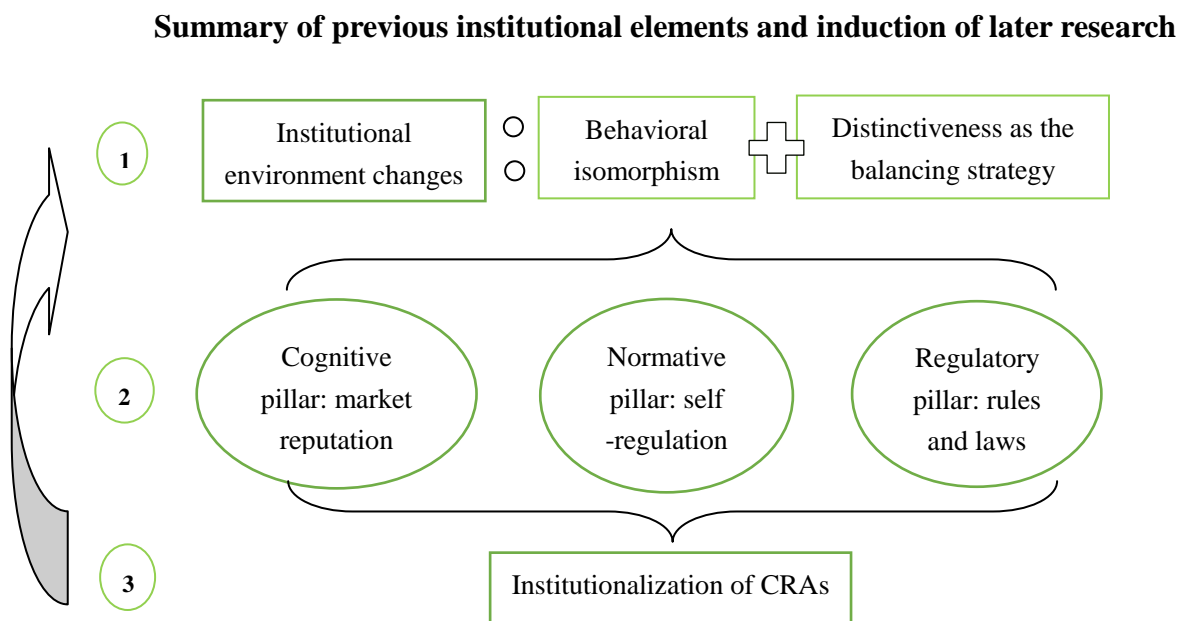
Thirdly, “sedimentation” is the last stage of institutionalization showing the final effects of the institutional environment on the organizations. Here, we added an arrow (with a red star) to emphasize the interaction of environment-organization as we did in the Subsection 2.3, where we developed as much the process of institutionalization of organization as the process of the changing institutional environment.

Structure of Section 2, Chapter I

Figure I.3 (see below) tries to recapitulate three institutional elements under the *New-institutionalism* that we have discussed so far.

To respond to the changing institutional environment, CRAs choose to either behavioral isomorphism, or to distinguish themselves from the others (Subsection 2.1, number 1 in the figure). *CRAs’* institutionalization represents a changing process (Subsection 2.3, number 3 in the figure), which can be analyzed from three points of views: regulatory, normative and cognitive pillars (Subsection 2.2, number 2 in the figure)

Figure I.3



* *Figure I.3* is made by the author.

Content of Section 2, Chapter I

We conducted our application of the theoretical framework of *New-institutionalism* to a fast-developing business of CRAs under a broader context of Chinese market environment. Here, we will conclude our Section 2 by an overview of three Subsections discussed previously.

Subsection 2.1 has proven that institutional change is a natural thing if we adopt an evolutionary approach to study the institutional environment, not to mention for a transitory economy, especially for the new activities of ratings. Under exogenous and endogenous pressure, CRAs found three forms of isomorphism: mimetic, normative and coercive, in order to attain and maintain the legitimacy in order to survive on the market. The other complimentary part of CRAs' strategies is the distinctiveness. They try to stand out of competitors to survive in the competition-driven rating market.

Subsection 2.2 has shown that, on one hand, the stability of rating behaviors corresponds to three pillars of *New-institutionalism Theory*: regulation, norms and cognition. On the other hand, the fact has also proven that CRAs would try to distinguish themselves by diverse strategies, without which the institutional analysis dedicated to CRAs is far from complete.

Subsection 2.3 discusses the interactions of CRAs with three market actors: regulators, issuers and investors. The discussion also leads us to three research problems: role, strategy of CRAs and impact of rating event that we will examine later. In other words, the entire Empirical Part Two §2 will spin around the interplay of CRAs with Chinese market environment.

Inspirations for the following chapters

In addition to the summary of forgoing subsections, *Figure I.3* (see above) also tries to introduce how the entire “theoretical framework” in the Preparatory Part One §1 and its application to CRAs and Chinese environment will help to develop three tests in Empirical Part Two §2, by reasoning from three-fold-influence (role, strategy and impact) of CRAs’ institutionalization process. In other words, we will start from the interaction of CRAs with three market actors: regulators, issuers and investors.

We will study the three-dimensional use of ratings in China, in order to compare their expected roles (Chapter IV), with other financial markets (European market and Russian market). We will introduce the characteristics of Chinese institutional environment (Chapter II and III) and examine the market segmentation (Continental China vs. Hong Kong). At the same time, we will study why issuers tend to solicit more than one rating (multi-ratings sample) and how investors perceive the phenomenon. The methodology of this investigation covers both qualitative and quantitative approaches.

The study will then concentrate on the strategy of CRAs (Chapter V). We will develop furthermore the strategic choice of business objective and strategic behaviors of CRAs. The latter is incarnated by rating factors and models used to rate issuers at first time (initial issuer ratings). As a fast-developing financial market, Chinese market provides new rating market entrants with less pressure on the process of institutional changes. We will discuss their dynamics with Chinese Top Three and global CRAs.

Last research interest will focus on the impact (Chapter VI) of ratings from the point of view of stock investors, and the sample division will be considered according to the differentiation between local and global CRAs, Chinese market segmentation (including the fact of presence of SOE), the contingency of crisis and pre/post-regulation period, presence of anticipation of preceding Watch-lists. An event study on credit rating changes and watch-lists will be completed by cross-sectional analysis on the cause of significant abnormal returns in the end.

Section 3. Chinese environmental effects on classic theories concerning CRAs

3.1. On Theory of Agency and CRAs

3.2. On Theory of Information asymmetry and CRAs

3.3. On Theory of Signal and CRAs

Introduction of Section 3

Section 3 will be broken down into three subsections, in order to reexamine three classic theories on CRAs: Theory of Agency (Subsection 3.1), Theory of information asymmetry (Subsection 3.2) and Theory of Signal (Subsection 3.3).

These are three classic theories that we found in the most literature view about CRAs. For each subsection, we will start with a synthetic description of each theory: and then draw the application to CRAs and to Chinese market environment.

3.1. On Theory of Agency and the CRAs

3.1.1. Synthetic description

Theory of Agency (agent - principal) brought by Jensen and Meckling (1976)¹²² and Fama (1980)¹²³ separates properly the power of control and management¹²⁴, where the “principal” makes the “agent” operate for their best interest.

In other words, it’s the “principal” who engages the “agent” as its representative and all actions made by the “agent” could be explained by the “maximization of utility” for both parties. On one hand, the “agent” makes profits from the service out of their

¹²² Jensen M.C. and Meckling. W.H, 1976, Theory of the firm: Managerial behavior, agency costs and ownership structure, *Journal of Financial Economics*, 3[4], Pages 305-360.

¹²³ Fama, E. F. 1980. Agency problems and the theory of the firm, *Journal of Political Economy*, 88, pp. 288–307.

¹²⁴ Fama, E. F. and M. C. Jensen, 1983, Separation of ownership and control, *Journal of Law and Economics*, 26, Page 301–325.

professional skills. On the other hand, “principle” makes use of the full capacity of the “agent” by delegating their authorities.

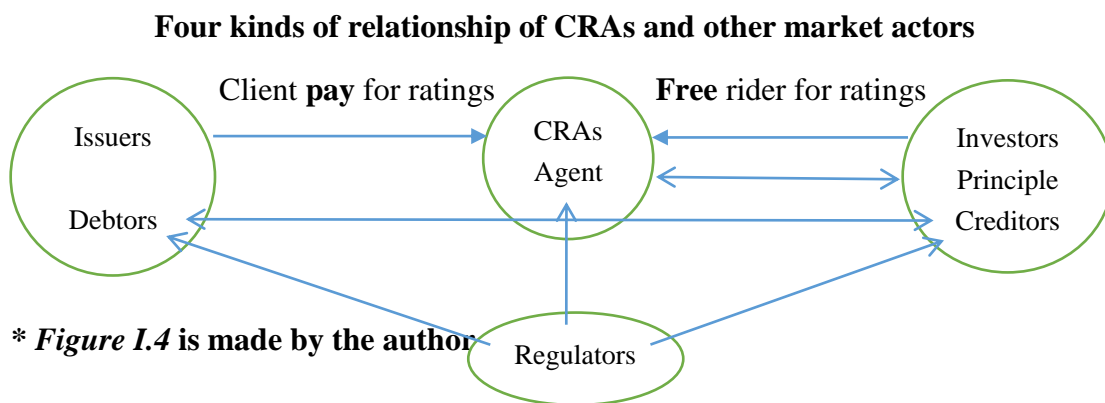
The theorists found that the interests of “principal” and “agent” could be divergent and corporate governance, either internal or external, is a good method to prevent “managerial self-serving behaviors”¹²⁵.

3.1.2. Application to CRAs

On the classic theory concerning CRAs, CRAs is entitled as “agent” in front of their “principal”: investors. However, the “agent” (CRA) is solicited¹²⁶ and paid by issuers¹²⁷ instead of the “principal” (investors)¹²⁸ under the most circumstance¹²⁹.

The classic relationship “agent-principal” is therefore distorted. Agency Issues makes “principal” (investors) have every reason to question the objectivity of their “agent” (CRAs) and to see if it would reduce the reliability of their offered ratings and the quality of the free service.

Figure I.4



¹²⁵ Filatotchev, Igor and Nakajima, Chizu, 2010, Internal and External Corporate Governance: An Interface between an Organization and its Environment, *British Journal of Management*, Vol. 21, Issue 3, pp. 591-606.

¹²⁶ Because of the public use of ratings, “the principal does not create the agent by an act of delegation but faces an existing autonomous organization.” in Kerwer, Dieter. 2005, Holding global regulations accountable: The case of CRAs. *Governance*, Vol. 18, No. 3, P. 469.

¹²⁷ In our sample, it would be the public-listed companies for their issuer ratings and/or issue ratings (LT senior unsecured bonds)

¹²⁸ The borrowers (issuers) are the virtual principal in the relationship with the raters while the lenders (debt holders) are the nominal principal in the framework. CRAs are supposed to “collect and process information on behalf of bond holders. (Wakeman 1984)” in Kraft, Pepa, 2010, The Impact of the Contractual Use of Ratings on the Rating Process - Evidence from Rating Agency Adjustments, *Working paper*.

¹²⁹ In exception to few CRAs, which adopt investor-pay model to avoid conflicts of interest.

From the *Figure I.4*, we got a clear picture of four kinds of relationship of CRAs and other market actors:

- ✓ Issuers-CRAs: they have client-contractor relationship with issuers paying for ratings and CRAs offering rating services.
- ✓ CRAs-Investors: they are “agent” on one hand and “principal” on the other hand from the point of view of traditional *Theory of Agency*. It helps to reduce the cost of research for the analysis of the information. It serves as a public good for the mass of individual investors; as for institutional investors, they are able to benefit from the scale of economy.
- ✓ Issuers-Investors: on the financial market, there exists the relationship between who have needs to be financed and who have the capacity to finance. Through bond-issuing activities, issuers turn to be debtors in front of investors-creditors, who put money into the bond-investing.
- ✓ Problems of these kinds of relationship inherent in the rating business let us not hesitate to ask if the conflict of interest between CRAs and issuers will jeopardize the borrowing-lending activities between debtors (issuers) and creditors (investors).

To better solve the problem, regulators also intervene into three kinds of relationship (see *Figure I.4*), in order to guarantee the well-being of the rating market and even the entire financial market’s healthy functioning. Their intervention is able to establish consequently the fourth relationship between the supervisors and other market actors. The understanding of these four kinds of relationship of CRAs and market actors helps a great deal to better develop the role of CRAs expected by rating regulators, that we will discuss later in Chapter IV of the Empirical Part Two §2.

The rating business of rating is far from transparent. The difficulties to have a close look at the internal corporate governance of CRAs (including ownership, board control and managerial decision making)¹³⁰ make the examination of the external

¹³⁰ We try to contact CRAs directly or by intermediary for questions/responses or questionnaires, by emails and telephones but our efforts have not had positive results.

corporate governance more necessary. The latter takes two forms, formal and informal, based on reputational, normative and regulative pillar of rating activities in the line of *New-institutionalism Theory*.

3.1.3. Application to China

Under Chinese environment, there are few profits left to CRAs considering the size of the entire rating business is still very small. Besides, their resource of revenue is unitary; in other words, there are no other profitable auxiliary services proposed by CRAs, such as consulting activities under Chinese rating context.

Hence, raters depend heavily on their issuer-clients. Kraft (2010, 2015) found CRAs intending to cater to debtors (Baker et al, 2002) and adjusting their ratings when the creditors have obligation to use rating-based debt contracts for their portfolio management (Strier, 2008).

What's more, following the idea of "extended framework" (Kerwer 2005)¹³¹ by including other stakeholders, such as regulators into the *Agency Theory* for example, it has been revealed that CRAs is an efficient "agent" useful for the State to canal credit allocation to their international investing targets.

In this regard, there are three folds of the arrangement between the CRAs and market actors. To be more specific:

Firstly, national authorities shut the door of the domestic market of Chinese rating business to global agencies. It helps them to better control the rating activities of local CRAs, which are probably more suitable for the local business with necessary connections and better understating of the needs for issuers and investors. It is noted in the same line that "in Asia, links between government, private companies and powerful families are much closer than in some other parts of the world."¹³²

¹³¹ Kerwer, Dieter. 2005. *supra*.

¹³² Mark Landler, 1999, Investment Banks Must Soothe Asian Sensibilities, *New York Times*, in Levich, Richard M., Majnoni Giovanni, Reinhart Carmen (Eds.). Ratings, rating agencies and the global financial system. Salomon

Secondly, issuers, among which most important are Chinese State-Owned Enterprises (SOEs), are required of regulatory certification¹³³ for their issuing. That means they have obligations to solicit CRAs to provide ratings for their bond-issuing. Under this circumstance, it is important to understand how *Guanxi* is essential to be maintained between CRAs to issuers, especially those firms with political connections¹³⁴. Hence, what kind of functions that those CRAs are really exercising in front of their clients-issuers helps a great deal for researchers, as outside observers, to comprehend the possible strategies of any CRA behind every rating action (Chapter V).

Thirdly, local investors, among which most important are those with state-backed shareholding have regulatory restrains to trade. Hence, public capital is circulated from the offer for financing to the demand for financing, with CRAs as the information intermediary.

The impact of rating events (credit rating changes and watch-lists) on stock market will be studied in the Chapter VI. It gives us an opportunity to discover how investors will react according to each of the different circumstances.

3.2. On Theory of information asymmetry and the CRAs

3.2.1. Synthetic description

The existence of information asymmetry makes the problems of “moral hazard” (Arrow, 1970 and Pauly, 1968) happened easily.

Center series on financial markets and institutions (New York University). *New York: Springer Science and Business Media*, LLC, 2002, P314.

¹³³ Which “involves the eligibility of a particular debt issue with regard to portfolio eligibility standards set by regulators, fund trustees, or boards of directors.” Smith, Roy and Wlater, Ingo, Rating Agencies: is there an agency issue? in Levich, Richard M, Majnoni Giovanni, Reinhart Carmen (Eds.) *supra*, P 292.

¹³⁴ Cull, Robert; Li, Wei; Sun, Bo; Xu, Lixin Colin; 2015, Government Connections and Financial Constraints: Evidence from a Large Representative Sample of Chinese Firms, *Journal of Corporate Finance*, 32, page 271-294.

Here, we are confronted with two scenarios based on the consensus that low rating equals to a higher interest rate and a higher “risk premium” will be asked by investors from issuers in the bond subscription at the first place. In other words, ratings help to decrease the negative effect of information asymmetry so as to establish a “desired equilibrium” between offer and demand prices.¹³⁵

To be more specific, there exist two scenarios:

The *first* scenario is that, if everything went well, debtors may secretly take more risks at a low cost than they are allowed. The unilateral violation of the contract helps them to get more profits, not only from the profits due to the intentional risk-taking, but also from the shortage of an adequate remuneration for their investors because of the informational opaqueness. Under the circumstances, bonds subscribers should have got more than what they actually did, because they deserve more compensation to the real risk of bond products.

The *second* scenario is that, this kind of behavior may sometimes lead to a potential loss for investors. What makes things worse is that they may not even be aware of the reason behind the investment failure. Issuers usually attribute the bad outcome to the market unpredictability and volatility, but the truth is deliberately hidden behind that case.

To complete the consequences *ex post*, the information asymmetry will also bring issues *ex ante*. Here comes what we call “adverse selection”¹³⁶. More specifically speaking, when clients are not able to distinguish the quality of complex service and products, such as a second-handed used car, due to information asymmetry, better quality but expensive ones (“plums”) get pushed out off the market by “lemons” with poor quality but low price. We will illustrate this “market failure” by the example of Chinese CRAs afterwards.

¹³⁵ Cull, Robert et al. 2015, *supra*.

¹³⁶ Akerlof, George A. 1970, The Market for "Lemons": Quality Uncertainty and the Market Mechanism. The Quarterly Journal of Economics, Vol. 84, No. 3, pp. 488-500.

3.2.2. Application to CRAs

On the classic theory concerning CRAs, their importance as an informant is clearly justified¹³⁷. CRAs work as a “coordinative mechanism”¹³⁸ between issuers (borrowers of debt/debtors) and investors (lenders of debt/creditors) to alleviate information asymmetry *ex ante*. What’s more, when most financial variables are publicly available, CRA, as an info-intermediary, is always asserting that they have access to inside resources of private information directly from internal management (“such as board meetings, profit breakdowns by product and new product plans”¹³⁹).

Theory of information content (Ederington et al, 1987)¹⁴⁰ confirmed the hypothesis of Griffin and Sanvicente (1982) that “rating process may be a vehicle for communication of private knowledge to investors and creditors”.¹⁴¹ That means investors not only use ratings and accounting data to make their decisions, but furthermore, ratings (new and recently revised ratings) provide privileged information beyond that of accounting statistics.”¹⁴² Although they admitted the “evidence to date has been inconclusive” (Ederington et al., 1987), CRAs “act as substitute information providers for firms”. Their findings are in the same line with Elayan et al. (2003)¹⁴³ in “a small market”. The informative impacts of rating events will be studied in the Chapter VI, under Chinese institutional environment.

¹³⁷ Paget-Blanc, Eric, et Painvin Nicolas. 2007, *La notation financière: Rôle des agences et méthodes de notation*. Paris: Dunod, P72.

¹³⁸ Boot, Arnoud W. A., Milbourn, Todd T., and Schmeits, Anjolein. 2006, *Credit Ratings as Coordination Mechanisms*, *Review of financial Studies*: 19, 81-118.

¹³⁹ Ederington and Yawitz, 1987. The informational content of bond rating, *Journal of Financial Research*, Vol X, No.3, P8, from the citing of Ederington L., Goh J., 1998, Bond rating agencies and stock analysts: Who knows what when? *Journal of Financial and Quantitative Analysis* 33, 569-585.

¹⁴⁰ *Ibid.*

¹⁴¹ Griffin P.A. and Sanvicente A.Z, 1982, Common Stock Returns and Rating Changes: A Methodological Comparison, *The Journal of Finance*, VOL. XXXVII, No.1. Citing from Ederington, et al. 1987, *supra*.

¹⁴² Matthies. Alexander B. 2013, *Empirical Research on Corporate Credit-Ratings: A Literature Review*, SFB 649 Discussion Paper, Christian Albrechts Universität zu Kiel, Berlin, Germany.

¹⁴³ Elayan F.A., Hsu W.H. and Meyer T.O., 2003, The Informational Content of Credit Rating announcements for Share Prices in a Small Market, *Journal of Economics and Finance*, Vol 27, No.3.

Based on all of these elements, our conclusion tends to favor the sayings that the existence of CRAs helps to reduce significantly the supposing information asymmetry, especially with the information communication from issuers. In the following discussion of Empirical Part Two §2, we will try to find the informative determinants in the initial issuer ratings, by employing logistic models of each CRA, in the Chapter V.

3.2.3. Application to China

Under Chinese environment, however, “company cooperation is hard to get” and “it’s hard to get access to confidential information”¹⁴⁴ in business practice (Fitch and S&P). What’s more, when some agencies were found “prob[ing] private information and business secrets illegally in the name of rating investigation,”¹⁴⁵ no wonder there arouse some distrusts of the rated entities in front of CRAs and their rating activities, which makes the access of CRAs to private information even more difficult.

In addition to the difficulty in getting private information, what public information that CRAs will retain and in which model they are to measure these factors depend also on each agency’s profile and how they put their position fitting into the entire Chinese market configuration.

In other words, the strategies (Chapter V) contain the strategic behavioral beliefs (business objective to survive on the competition-driven environment), strategic rating behaviors and strategic choices of rating determinants, beyond the alleged shortcomings in rating technical capacities. In Chinese society, personal connection, so called *Guanxi* is another essential element in firms’ decision-making. This precious source helps greatly to supplement the professionalism in deciding the strategies of CRAs.

¹⁴⁴ Baglolle Joel. 2004, Credit ratings in China can be mere guesswork. *The Wall Street Journal*. Hong Kong.

¹⁴⁵ Nie.Weizhun. 2009. The worrying situation: 30 out of 80 CRAs on record running at a loss. *National Business Daily*. Beijing. (In Chinese, translated by the author).

From issuers' point of view, the reason why they choose one CRA over the others may be less related to rating quality than the interpersonal connection. With time going by, the practice will pollute the healthy air of the rating market. In this regard, the decreasing market shares of Chinese three most experienced local CRAs (that we will present more evidence later in the Chapter IV and V of CRAs' role and strategies in the Empirical Part Two §2) has already announced the imminent danger of rating shopping and inflation prevailing the current rating business.

3.3. On Theory of Signal and the CRAs

3.3.1. Synthetic description

Theory of signaling (Spence, 1973) contains the idea of the exchange of information in order to have a better knowledge of one targeting party. Deriving from the job market to the financial market, it means that one market actor that plays the role to convey information while other market actors are going to have a better knowledge of the relevant actor, and then they are able to react accordingly to relevant information.

3.3.2. Application to CRAs

On the classic theory concerning CRAs, their signals, includes initial ratings and follow-up modification of current ratings (CRCs, Watch-list...)

Originally, *issuers* use rating signals to stand out of the peers and to communication to their potential investors. We can compare their motivations by the example that graduate students differentiating themselves to those without diploma in the ground-breaking article of the utility of education on the job market¹⁴⁶.

Rating events show that CRAs are trying to give or revise their opinions in terms of the creditworthiness of the issued bonds or the target corporation as a rated entity. This change of attitude of the raters will have an informative impact on the market. In other words, *investors* will react according to the "signal" sent by CRAs.

¹⁴⁶ Spence, A. M., 1973. Job Market Signaling, *The Quarterly Journal of Economics*, MIT Press, 87(3), p. 355-74.

These two angles induce two examinations later on in the Empirical Part Two §2:

First of all, we are going to ask if issuers solicit intentionally those CRAs which are more inclined to give better signals (good ratings and more frequent upgrading).

The existence of split rating (especially the systematic better rating offered by Chinese local CRAs than global CRAs) gives us a chance to have an insight into the questioning. We will study issuers' motivation for multi-ratings and investors' reactions, in the Chapter IV.

Then, we are going to ask if investors react or not and how to react (homogeneously? heterogeneously?) to rating changes and/or watch-list (among other rating events) given by different CRAs, independently to space (market segments), time constraints (presence of financial crisis or regulatory evolution), market anticipation and the preceding watch-lists, in the Chapter VI...

3.3.3. Application to China

Under Chinese environment, the findings are mixed.

There are some conceptual speculations about singling effect applied to Chinese rating business. "Such ratings are of little value,"¹⁴⁷ as claimed by Kennedy Scott. This kind of judgment reflects an awkward situation of China's credit rating industry, at the present moment.

Recent empirical findings tell the other side of the stories. Dhawan and Yu (2015) have proven the existence of credit rating relevance under Chinese environmental context. They said: "investors (debt) indeed use credit ratings to determine the risk premiums on Chinese corporate bonds." However, "the sample of corporate bond (CB) issues offers fewer convincing results about the role of credit ratings than was true for medium-term notes." And it is CBs rather than notes that is the interest of our thesis. In addition to that, they used the data from Hong Kong Monetary Authority, which is hard for others to get access to.

¹⁴⁷ Kennedy Scott. 2003. China's Credit Rating Agencies Struggle for Relevance. *China Business Review*, p.36-40.

All reasons combined, we are going to use their empirical results to illustrate the conflicting findings on the bond market. As for the thesis, I choose to study the stock market and to investigate if Chinese “stock investors react significantly to rating events with the presence of the characteristics of Chinese environment”. In this regard, Poon and Chen (2007, 2008) found that initial ratings and rating changes (downgrade) have “displayed the certification and signaling effects” respectively under the event window(s), in the form of “abnormal returns”. Inspired by their rare empirical study on Chinese rating sector, our study will make some contributions as follows:

- ✓ The collection of background information on Chinese stock market, a representation of emerging markets with its special environmental characteristics, the segmentation for example (that we have detailed in the Chapter II and III);
- ✓ A more general sample (with all types of CRAs combined);
- ✓ A relatively comprehensive period (01/01/1988 to 31/12/2016).

The second reflection of our study is to ask if the classic theory: in this case, *Theory of Signal* applied to CRAs present in Chinese institutional environment, and the empirical results are still valid to predict Chinese investors' reactions in a general way.

In that case, we will discuss subsequently more sub-questions of research to examine the informative impact of CRAs (Chapter VI) by rating events, such as credit rating changes (CRCs) and watch-lists (WLs), such as:

- ✓ Do the crisis period (2008) or regulatory changes have incidence on investors' reactions to rating event?
- ✓ Do investors on Hong Kong market give more importance to ratings than on Continental Chinese market?
- ✓ Do the presence of foreign investors and global CRAs (Big Three vs. Local CRAs) on the segment change the stock market reactions to rating events?
- ✓ Do CRCs with anticipation or not changed investors' perceptions of rating events?
- ✓ Do preceding WLs added or decreased the value of CRCs? ...

Conclusion of Section 3

It is clear that all of these three classic theories traditionally used for a study of CRAs share one core concept: the financial information on the market.

Content of Section 3, Chapter I

The understanding *Theory of Agency* (Subsection 3.1) on the setting of rating business is complicated by the relationships between CRAs and other market actors: issuers-investors and extensively, the regulators. It would be even more complicated, if we take into account Chinese market environment, where the rating is a new financial activity for the entire market. More details about Chinese environmental characteristics will be discussed further in the following Chapter II and III.

“Principal” (investors) asks rating service from “agent” (CRAs) to deal with *information asymmetry* (Subsection 3.2) during bond-borrowing/lending activities, where investors are creditors in front of the bond-issuers (debtors).

CRAs provide the market with initial ratings, credit rating changes and watch-lists among other rating events, as *signals* (Subsection 3.3). They are destined first of all, to their contractual clients: issuers and then their principals: investors.

Inspirations for the following chapters

The discussion of Section 3 also helps us to better understand the subject from three viewpoints: regulators, issuers and investors, which correspond each to three questions of research that we will develop later on, in the Empirical Part Two §2 in this thesis:

- ✓ Chapter IV: Role of CRA expected by rating users, especially that of rating regulators and functions of multi-ratings, from the points of view of issuers and investors;
- ✓ Chapter V: Strategies of CRAs through the identification of initial issuer rating’ determinants;
- ✓ Chapter VI: Impact of rating events (CRCs and Watch-list) on investors’ reactions and investigation of causes of significant abnormal returns.

Conclusion of Chapter I

Chapter I has been dedicated to a brief discussion of the *New-institutionalism Theory* of organization, including its historical evolution from the old institutionalism with early approaches and an analytic perspective of its content in the Section 1. The institutional elements that we discuss in theoretical framework will connect the Part One §1 with the empirical application of CRAs under Chinese environment in the Part Two §2. Here we have the *Graph I.2* summarizing the statistics of “a systematic review of the last 20 years of published empirical” from Farashahi et al. (2005) and it seems that our examination of the theoretical framework is also relatively complete. It covers nearly all issues in the regards of institutional theory.

*Graph I.2*¹⁴⁸

Issues	Dimensions	1983–1992 (%)*	1993–2002 (%)*
Level of institutions	Local/national	65	59
	Organizational	38	63
	Organizational field	42	61
	Transnational	0	7
	Combination	46	76
Institutional topics	Isomorphism	46	55
	Institutional change	23	36
	Regulative formal/informal	54/4	40/4
	Normative formal/informal	69/15	80/32
	Cognitive formal/informal	27/19	39/27
Direction of effect	Institutions affecting organizations (top-down)	85	80
	Organizations affecting institutions (bottom-up)	23	28
	Institutions affecting institutions	11	9

Structure of Chapter I

As indicated by the *Graph I.2*, we have also developed the Section 1 around some keywords inside the *Institutionalism*, along its history:

- ✓ Changing institutional environment, behaviors and strategies of organization (Subsection 1.1)
- ✓ Three pillars of institutionalism with informal/formal structure (Subsection 1.2)
- ✓ Interaction organization-environment (top-down and bottom-up) and the process of institutionalization (Subsection 1.3)
- ✓ “Level of institutions” is presented at the Conclusion of Section 1

¹⁴⁸ Farashahi, Mehdi; Hafsi, Taïeb; Molz, Rick. 2005, *supra*.

The development of Chapter I is not limited to a theoretical overview but extended to an application to the focus of the thesis: CRA, under the context of Chinese market environment in the Section 2:

- ✓ Firstly, we found that the institutional environment of the rating business is changing fast and CRAs respond to the complexity and uncertainty with a combination of behaviors and strategies behind: isomorphism and distinctiveness. (Subsection 2.1)
- ✓ Secondly, under the internal and external pressure, institutionalists add three more sources: regulative, normative and cognitive to the traditionally admitted technical challenge for the attainment and maintenance for organizational legitimacy. (Subsection 2.2)
- ✓ Finally, some implications drawn from the work of Aoki (2006)¹⁴⁹ help us to conclude our discussion of the New-institutionalism and its later application. In fact, there exist three kinds of duality inherent to the relationship of organization-institution inside the theory: duality for endogenous and exogenous; duality for subjective and objective and duality for constraining and enabling. In other words, admittedly, institution seems as an exogenous/external, objectively existing and constraining force to “each individual agent in his/her choices of actions” inside organizations “that are beyond his/her control.” However, institution also arises from the organizations’ enabling construction, which is subjectively interpreted and endogenously incorporated. The process is through the interaction between organization and institution within the socially-constructed reality (Berger and Luckmann, 1966)¹⁵⁰. (Subsection 2.3)

Last but not last, Section 3 helps us to challenge the taken-for-granted theories usually used to common studies for CRAs. Theory of Agency (Subsection 3.1), Theory of Information Asymmetry (Subsection 3.2) and Theory of Signaling (Subsection 3.3) are interconnected by a core notion of “information”, explained the role, strategy and impact of CRAs, in turn from the points of view of regulators, issuers and investors.

¹⁴⁹ Aoki, 2006, *supra*, page 9-10.

¹⁵⁰ Berger P.L. and Luckmann, T. 1966 (first edition), *The social construction of reality*. Penguin Book (USA).

Limits of the institutionalism, solutions and inspirations for the following chapters

Of course, we cannot use the *Institutional Theory* mechanically. It is wrong not to acknowledge the limits of the institutionalism (Kraatz and Zajac, 1996)¹⁵¹, such as to cut it off categorically from the “adaptation theories”¹⁵² or from the technical aspects inside the resource-dependence¹⁵³. Tolbert and Zucker (1996) suggested that “these two models should be treated not as opposed position but rather as representing two ends of a continuum of decision-making processes and behaviors”¹⁵⁴.

Our solutions present in the thesis are at the same time, to outline the “increasing homogeneity of organization” and “increasing resemblance to the most prestigious organizations in their field”¹⁵⁵ (local CRAs to mimic global CRAs’ examples, for instance) but also the fact that there exists also organization’s resistance to absolute conformity, which made them “likely to be more flexible, innovative, catalytic and adaptive (Meyer & Rowan, 1977: page 351)”¹⁵⁶.

Then, we acknowledge the importance of three pillars: regulative, normative, and cognitive pillars are dominant sources of pressure existing in the changing institutional environment; however, technical requirements and advances are also as important as a working force for an industry such as rating business.

Lastly, our research illustrates the possible changes of organization and institution during their interaction process and the mutual effects of their relationship through the institutionalization of organizations.

CRAs, themselves, are situated on the market environment, where the activities of regulators, issuers and investors are largely based on highly-technical financial orders. It constitutes the main elements of Chapter II & III that we will discuss more in details later on.

¹⁵¹ Matthew S. Kraatz and Edward J. Zajac, 1996, Exploring the Limits of the New Institutionalism: The Causes and Consequences of Illegitimate Organizational Change, *American Sociological Review*, 61[5], Page. 812-836.

¹⁵² *Idem*, Page 813.

¹⁵³ Oliver, Christine. 1991, Strategic responses to institutional processes. *Academy of Management Review*, 16[1], Page 145-179.

¹⁵⁴ Tolbert, P. S. & Zucker, L. G. 1996. *Supra*, Page 176.

¹⁵⁵ Matthew S. Kraatz and Edward J. Zajac, 1996, *supra*, P 815.

¹⁵⁶ Oliver, Christine. 1991, *supra*. Page 174.

Chapter II.

Two characteristics of Chinese institutional environment

Section 1. Financial sector under Chinese State-Capitalism

Section 2. The segmented Chinese stock market

Section 3. Financing by Corporate bonds (CBs)

Introduction of Chapter II

Chinese economy has earned a great progress. Price for living necessity is no longer decided by the governmental plans and it has sparked the abundant varieties of supplies. On the demand side, taking the example of E-shopping, the total number amounted to 4.7 trillion yuan (US\$680 billions)¹⁵⁷, against 11.3 trillion US Dollars for nominal GDP¹⁵⁸ in 2016. Chinese State-Capitalist makes its infrastructure facilitates even be able to compete with developed countries

Compared to that, the construction of financial infrastructure in China is still in the process of transition. According to the indicators of *European Bank for Reconstruction and Development (EBRD)*, the use of financial market is an efficient way to privatize enterprises and to restructure corporate governance; especially those belonged to the State under the planning economics. As for the financial flows from the outside world, Chinese governments remain reluctant to an unconditionally real opening market. In other words, a fair competition policy between local and global financial entities is still missed under Chinese socialist market economics.

The characteristics of Chinese institutional environment relevant to our study could be resumed by two facts: Chinese State-Capitalism (Section 1) and socialist market economics: for both stock market and bond market (Section 2&3). Each feature will help us to better understand the market actors that we will discuss in Chapter III.

¹⁵⁷ China online shopping market forecast 2017-2019, 29/03/2017, at <https://www.chinainternetwatch.com/category/online-shopping/#ixzz4dZoEQwE>

¹⁵⁸ Statistics are from IMF website, collected by the author, at <http://www.imf.org/external/pubs/ft/weo/2016/02/weodata/weorept.aspx?pr.x=82&pr.y=16&sy=2014&ey=2021&scsm=1&ssd=1&sort=country&ds=%2C&br=1&c=924&s=NGDPD%2CNGDPDPC%2CPPPGDP%2CPPPPC%2CPPPSH&grp=0&a=>

Section 1. Financial sector under Chinese State-Capitalism

1.1. Reform policy

1.2. Opening-up policy

1.3. Ideas of Chinese Policies on capital flows

Introduction of Section 1

The thirty years' development of China highlights the double-strategy under “Politics of Reform (Subsection 1.1) and Opening-up (Subsection 1.2)” since the 13th Congress of the Chinese Party of Chinese (CPC) on the year of 1978. We will firstly introduce two policies separately and then make a summary of these two ideas (Subsection 1.3).

1.1. Reform policy

On one hand, the state has made effort to reform national companies, especially State-Owned Enterprises (SOEs) and then given an impetus to encourage them to go abroad. As the witness of *the Economist*: “the best national champions are outward-looking, acquiring skills by listing on foreign exchange markets and taking over foreign companies”. Sometimes, SOEs also serve as “vehicles to pursue political objective”¹⁵⁹, such as to “employ citizens and to maintain social stability”¹⁶⁰.

For the financial sector, its development “lagged other aspects of market reform, with price distortions of capital and other constraints (Allen, Qian, and Qian 2005; Aziz 2008)”¹⁶¹. However, governmental control would turn to be an encouragement when

¹⁵⁹ Jiang F. and Kim. K.A. (2015), Corporate governance in China: A modern perspective. *Journal of Corporate Finance*, 32, P 205.

¹⁶⁰ Bai et al, 2000, a multitask theory of state enterprise reform. *Journal corporate Economy*, in Jiang F. and Kim. K.A., 2015, P 208.

¹⁶¹ Prime Penelope B. and Qi Li, 2013, Determinants of Firm Leverage: Evidence from China. *The Chinese*

the active role of financial institutions could help to realize China's expanding trade and economic investment on the international level. Hence, companies exercise their business abroad could have easy access to appropriate financing services. It is the same case for local CRAs, which are "in the need of Chinese capital" as "a huge exporter and creditor in the world"¹⁶².

Table II.1

Listing information of Chinese banking "Big Five"

Name of the Bank "Big Five"	Listing places	Listed time
Industrial and Commercial Bank of China (ICBC)	Stock Exchange of Hong Kong (HKSE)	27 October 2006
	Shanghai Stock Exchange (SSE)	
China Construction Bank (CCB)	HKSE	December 2005
	SSE	September 2007
Bank of China (BOC)	HKSE	June 1 2006
	SSE	July 5, 2006
Agriculture Bank of China (ABC)	HKSE	July 6, 2010
	SSE	July 7, 2010
Bank of Communications (BOComm)	HKSE	June 2005
	SSE	May 2007

Table II.1 shows the example of banking sector. It is clear that, five Chinese biggest banks are listed both on continental market and Hong Kong market while the intervention of State is showed mainly by the absolute controlling shares of Central Huijin Investment Company Limited, a company with central government as the sole shareholder.

On the domestic banking level, since 2014, there exist 17 banks of purely private capital, without central or local government as dominant shareholders. The experiments are still under trial period with an attentive supervision of China Banking Regulatory Commission (CBRC)¹⁶³.

Economy, vol. 46(2), page 74–106.

¹⁶² Xinhua, Dagong Global eyes enhanced placement of Dagong Europe, 08/12/2014, at http://www.chinadaily.com.cn/bizchina/2014-12/08/content_19041019.htm. The information is accessed by the author on 25/02/2017. It was an interview with Guan Jianzhong, Chairman of Dagong Global and Dagong Europe.

¹⁶³ The issue of "Instructions of the promotion of the development of private banks" (05/01/2017, in Chinese,

1.2. Opening-up policy

On the other hand, the “Opening-up” of Chinese local market to the outside world is still not well-spread, even after the transitory period of the entry of the *World Trade Organization (WTO)* on 11/12/2001.

Still taking the example of the banking sector, first of all, foreign capital has a 20% ceiling of their participation of domestic banks’ ownership, which encourages foreign bankers to establish their business with a physical presence (e.g. bureau, office, branch...) on Mainland Chinese territory.

There are 41 banks with foreign legal person and 97 branches in China by the end of 2014¹⁶⁴. The report of EY (Ernst et Young, China) resumed their extremely low market share (1.73%)¹⁶⁵ and the audit agency attributed the regulatory challenges to: limited access to capital market compared to domestic competitors (especially on the bond market), “myriad of rules and regulations (more than 6000 reports were necessary to file each year for a foreign bank according to surveys conducted by the auditing firm), and other capital and liquidity constraints”¹⁶⁶, not to mention some additional “subtle barriers” put forward by the liberal magazine *the Economist*¹⁶⁷.

Regulatory restrictions help to eliminate competition between local and foreign banks in the first place, in order to preserve the domestic market to the local institutions.

In the second place, the kind of protectionist spirit should be reasoned not merely from the commercial and financial aspects, but also from the social and even political

translated by the author) and of “Instructions of the supervision of private banks” (26/06/2015, in Chinese, translated by the author) on the official website of CBRC.

¹⁶⁴ “Foreign banks in China” (in Chinese, translated by the author), on the official website of CBRC, at <http://www.cbrc.gov.cn/chinese/home/docView/0ED3C2296A93447592D312C3A3644EEA.html>, access on 22/01/2017 by the author.

¹⁶⁵ Ernst & Young (China), 2015, Future directions for foreign banks in China 2014, at <http://www.ey.com/Publication/vwLUAssets/EY-foreign-bank-china-report-2014/%24FILE/EY-foreign-bank-china-report-2014.pdf>, consulted in 22/01/2017.

¹⁶⁶ *Ibid.*

¹⁶⁷ Economist, Foreign banks in China: Lenders of little resort. 28/06/2014, at <http://www.economist.com/news/finance-and-economics/21605920-china-enticing-elusive-market-foreign-banks-lenders-little-resort>, consulted in 25/01/2017.

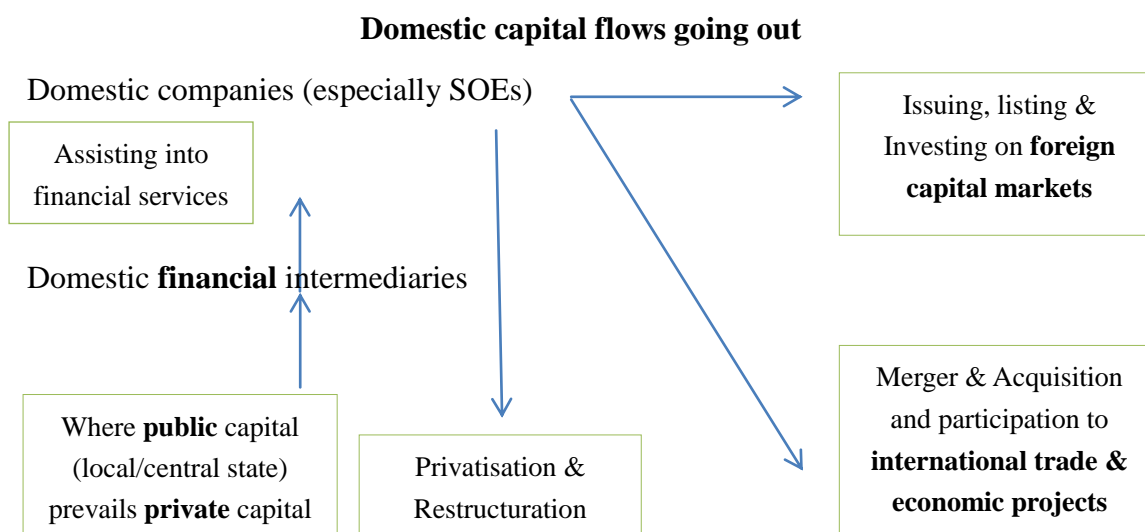
aspects for a sensitive sector like finance. Under this circumstance, Shanghai Free-Trade Zone is designed to cater to the increasing needs of foreign financial institutions, but the so-called “Free Zone” stays confined to a certain area and still under control. Hence, it should only be seen as one effort before long steps leading to a full “opening-up” for the financial practices and services under Chinese institutional environment.

1.3. Ideas of Chinese Policies on capital flows

Figure II.1 (see below) conceptualized the financial flows going from domestic market out to the foreign market, which takes two forms, with or without the assistance of domestic financial intermediaries: Firstly, direct marketization, which includes issuing, listing or investing on foreign capital markets; Secondly, participation through merger and acquisition to participate to international trade and economic projects.

Through these efforts, domestic companies try to restructure their companies. SOEs tended to use the methods to get privatized on the context when public capital still prevails over the private capital.

Figure II.1



* Figure II.1 is made by the author.

It should be noted that this kind of Opening-up remains controlled, companies in the sensitive sectors, are under the direct government of SASAC (The State-owned Assets Supervision and Administration Commission of the State Council) on national, regional and municipal level. As documented by Chen (2004), “at present, the government still holds the majority of shares in the incorporated SOEs by direct shareholding and/or indirect shareholding through state-owned institutions such as state investment companies, state holding companies, and state asset management agencies.”¹⁶⁸

Figure II.2 shows foreign capital “inflow” into the domestic market. It is clear that whether the capital inflows are for establishing business or for investment, their liberal access is still impossible; their entry is under supervision and activities with rigid regulation.

However, we should not forget some fiscal policies, among other, that are favoring some sectors in certain distant regions of China, in order to attract investments overseas. The State plays a role of allocation of financial resources; in other words, at the same time to limit and to encourage foreign capital to the places that are needed. In other words, the market is rather planned than functioned only by demand and supply.

Figure II.2



* **Figure II.2 is made by the author.**

¹⁶⁸ Chen Jean J. 2004. Determinants of capital structure of Chinese-listed companies. *Journal of Business Research* (57):1341– 135.

Conclusion of Section 1

Overall the Section 1, we found that the “Reform” part is proven by the fact that the reconstruction and privatization is catalyzed by public issuing, listing, investing (marketization) or merger and acquisition (*Subsection 1.1.*); and the “Opening-up” part is proven by the fact that national champions have got chances to attract foreign capital flows through various canals (*Subsection 1.2.*).

On one hand, the State shows the intention to “reform” domestic financial sector, for example - by public listing on foreign markets, participating to project investment or even by privatizing. Either way, every reformative step is still under a close supervision of the Chinese government itself; it could be on the national, regional or even municipal level.

On the other hand, the opening of the financial industry has some limitations. First of all, foreign financial institutions have disadvantageous access to Chinese local clients compared to their competitors in front of legal or administrative regulations. Then, the freedom of foreign services and investing activities of foreign capital is often reserved to a special area, whose design is also a special characteristic of Chinese institutional environment. Two elements combined constitute the ideas of Chinese policies on financial flows (*Subsection 1.3*)

The report of IMF in October¹⁶⁹ has illustrated the efforts of Chinese financial markets on the liberalization in recent years. It is largely believed that the *state quo* will be even more improved with the arrival of new President of People’s Bank of China (PBoC): Gang Yi. The future is promising for foreign capital, especially in the banking sector. On the basis, he set the timetable to attract foreign investment on capital markets. The strategy behind is to let the *Opening-up Policy* to force the advancement of *Reform Policy*, in terms of relevant laws, regulations and institutional changes to protect investors and to reassure the financial security.

¹⁶⁹ IMF Country Report No. 17/358, Financial System Stability Assessment, for the People’s Republic of China, 24/10/2017.

Section 2. The segmented Chinese stock market

2.1. Approval system and multi-layered market structure

2.2. Existence of dual-listing in Hong Kong market

2.3. The access of investors to market segments

Introduction of Section 2

Chinese Socialist Market Economics is served as a capitalist tool to help companies to collect capital. Chinese stock market was established in the guideline of “Reform and Opening-up Policies”. Since its establishment in Shanghai in 1990 and in Shenzhen in 1987, it has become the manifesto of Chinese government’ intention of market economics: in contrast with the planned economy in the earlier ages. Behind this idea, we see the pragmatism in economics present in a country with communism in politics. However, we should always keep in mind that the liberalism is still in the close grip of centralized-state power.

The entire market capitalization of Chinese stock market is the fourth most important in the worldwide. Its rank scales just after the market of American, of Japan and of Great-Britain.

The market is structured with different boards (Main Board, Small and Medium-Sized Enterprise Board¹⁷⁰ and Growing Enterprise Board¹⁷¹), scattered into three listing places (Shanghai Stock Exchange/SSE, Shenzhen Stock Exchange/SZSE for Mainland China and Hong Kong Stock Exchange/HKSE) and composed of four segments (A share, B share¹⁷², H share¹⁷³ and Red Chips). The definition could be

¹⁷⁰ Which is established in 2004.

¹⁷¹ Which is established in 2009.

¹⁷² Continental Chinese companies issued dollar-dominated stocks.

¹⁷³ Continental Chinese companies listed in HK Stock Exchange.

found in the Subsection 2.3 for “A shares” and “B shares” and in the Subsection 2.1 for H shares and Red Chips.

The development of the market is the results of thirties years’ historical process (Subsection 2.1 & 2.2) and the access of investors to the segmented Chinese stock market (Subsection 2.3).

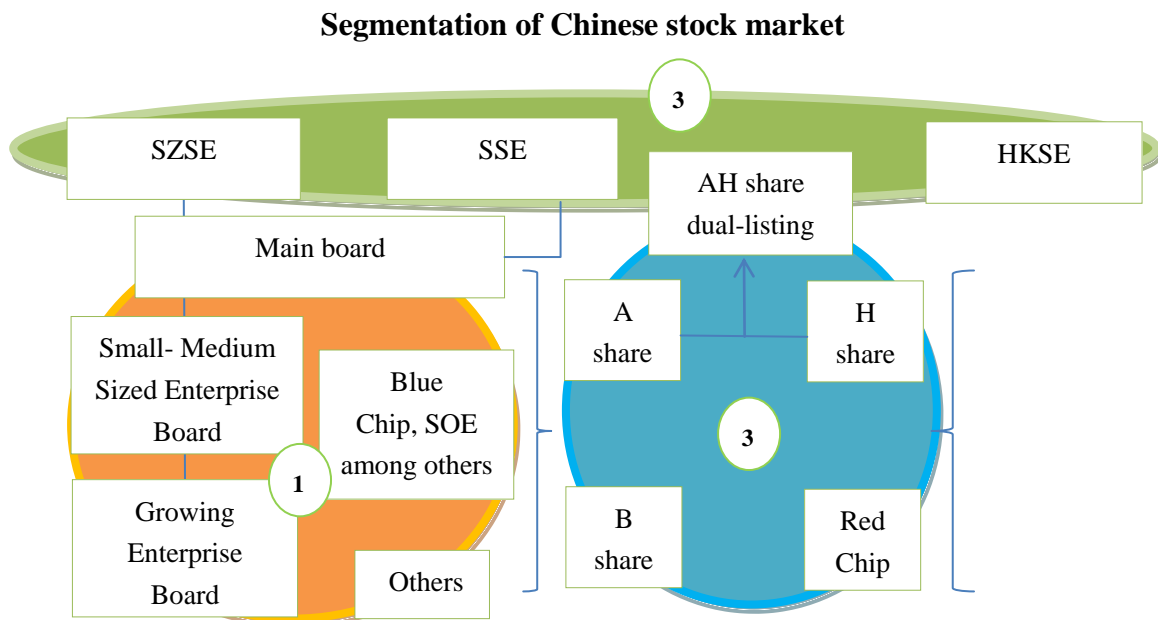
There are few companies cross-listed in New York, London and Singapore Stock Exchange but “the sample size is very small” and hence won’t be considered in our research¹⁷⁴.

To summarize the information presented above, *Figure II.3* provides us with the first glance of the segmentation of Chinese stock market.

We used cycles with different colors to catalog with number three concepts.

- ✓ Listing boards (Number 1, color orange)
- ✓ Listing places (Number 2, color blue)
- ✓ Market segments (Number 3, color green)

Figure II.3



* *Figure II.3* is made by the author.

¹⁷⁴ Liu Jianwei and Liu Chunjiao, 2007, Value Relevance of Accounting Information in Different Stock Market Segments: The Case of Chinese A-, B-, and H-Shares. *Journal of International Accounting Research*. Vol. 6, No. 2, p. 57

2.1. Approval system and market structure

Both SSE and SZSE are regulated by the Chinese Approval Procedure. The implicit quota of IPO (Initial Public Offering) is distributed among “different districts and different industries”.¹⁷⁵

In that case, listed companies of different nature are allocated artificially to different listing places, fitting into different boards according to the administration arrangement. Basically, Blue Chips concentrate largely on Main Board in SSE while SME (Small and Medium-Sized) Board and GEB (Growing Enterprise Board) in SZSE contain more IT companies than SSE. Chen (2004)¹⁷⁶ called the phenomenon some lingering “features of a centrally planned economy.”

It should be noted that the evolution from an approval system to a registration system is probably launched in the near future, with the revised draft of *Securities Law*. The new version was tended to the National People's Congress on the 20/04/2015. And consequently, the number of listed companies will be increased according to the market demand¹⁷⁷, which will significantly add dynamism to Chinese stock market. However, as we said: Rome wasn't built in a day. It is still an open question how issuers and investors will respond to the regulative changes.

¹⁷⁵ Elliott Douglas J. and Yan Kai, 2013. *The Chinese Financial System: An Introduction and Overview*. John L. Thornton China Center Monograph Series (6).

¹⁷⁶ Chen Jean J. 2004. *supra*.

¹⁷⁷ CSRC is responsible for the registration file revision. More emerging companies (especially those of TMT and of high-technical industries) could get the opportunity to collect money from the capital market, which also energize and level up Chinese economic development under the “New Normal”.

2.2. Existence of dual-listing in Hong Kong market

There are 113¹⁷⁸ large centrally-owned companies under the direct supervision of SASAC (State-owned Assets Supervision and Administration Commission of the State Council). These SOEs are extremely essential and sensitive to the Chinese economy (such as, public service, natural resources...). Besides, there are four insurance companies, five state-owned commercial banks and three public banks, in total 15 extra central SOEs. They are regulated directly by CIRC, CBRC and CSRC, respectively.

Referring to a broad definition, the scope of central SOEs could be extended to China Railway Corporation, China Post Group, China Publishing Group, Chinese Foreign Culture Group, CITIC Group and China National Tobacco Corporation which are all monitored by the Ministry of Finance of the People's Republic of China.

The final number for central SOEs ended at 125, accounting for 385 (locally and overseas) listed companies¹⁷⁹.

If we add all local SOEs (controlled (in) directly by provincial or municipal government), there were 953 SOEs (local and central combined) and presenting 51.4% value of the total "A shares" (SSE and SZSE) by the end of 2012.¹⁸⁰

As an important component of State-Capitalism, public listing is also a way for SOE (State-Owned Enterprise) to attract foreign investment, firstly by the bias of "B shares", then by Hong Kong - the Special Administrative Region of the People's Republic of China - and even by capital markets outside the border.

There are two types of shares related to Chinese companies in HKSE. Their listing

¹⁷⁸ At the website of SASAC: <http://www.sasac.gov.cn/n1180/n1226/n2425/index.html> (In Chinese, translated by the author).

¹⁷⁹ At the website of "The Central People's Government of the PRC" on 26/12/2013, at http://www.gov.cn/jrzq/2013-12/26/content_2554641.htm.

¹⁸⁰ At the website of "The Central People's Government of the PRC" on 11/01/2013, at http://www.gov.cn/jrzq/2013-01/11/content_2309490.htm.

concentrates on H shares, which are Chinese companies which are able to be listed on HK Stock Exchange while Red Chips (conceived in 1992 by economist Alex Tang and “Red” represents the Chinese Communist Party of PRC) are companies “which are Mainland-controlled companies incorporated outside mainland China and listed in Hong Kong”¹⁸¹.

“A shares” and “H shares” both constitute the interest of our research in this doctoral thesis.

The extra reason why we include H shares (dominated by HK Dollar) in our sample is also because it enables us to compare the specific phenomenon on Chinese segmented stock market with the current multi-layered market structure: AH shares. Those are shares for companies dual-listed in both continental market (either in Shanghai or Shenzhen) and Hong Kong.

¹⁸¹ Definition got from the official website of HKSE by the author.

2.3. The access of investors (domestic, foreign, individual and institutional) to market segments and evolution

Hong Kong market, as one of the most active market in Asia, attracts investors of all sorts from all over the world while the entry of capital flows in the mainland market depends on the market segmentation. To be more specific:

The mainland market, both for *SSE* and *SZSE*, contains two segments: “A share” (priced by domestic currency: Renminbi/RMB), which was reserved to domestic investors and “B shares” (issued in USA dollars for Shanghai and in HK dollars for Shenzhen), which was open initially only for foreign investors.

As for “B shares”, its transaction is much less active than “A shares”, which inversely hurt the attraction of investors even after the openness to domestic individual investors in 2001. Here we see a vicious cycle between the transaction volume/turnover rate and number of investors.

Under this circumstance, this segment of the market is considered as a temporary maneuver. On one hand, it aims to comply with the obligation of the *WTO* and to be served as a symbolic gesture of Chinese “limited opening” of stock market; On the other hand, it tries to protect domestic investors from the direct competition with foreign investors. Hence, it is only a matter of time that this special segment is going to disappear in the further development of Chinese stock market.

These are reasons why we exclude “B shares” in our sample for mainland market. Only “A shares” will be included into our sample for listed companies on Mainland China stock market.

It should be noted another important obstacle for a liberal transaction on Chinese stock market is the fact that Chinese exchange rate system is not flexible. Chinese currency: RMB is not freely converted on the international level, which makes it difficult for both sides: for domestic capital flow going out and for foreign capital flow coming inside. No wonder was Chinese stock market segmented before the

currency issues could be solved, but again when the problems will be tackled depends essentially on the State's intention.

Table II.2

Initial access of investors into segmented Chinese stock market¹⁸²

investors segment	Domestic investors		Foreign investors	
	Individual	Institutional	Individual	Institutional
A share	Yes	Yes	No	
B share	No		Yes	Yes
H share	No		Yes	Yes

* “Yes” and “No” will be briefed in the following tables as “Y” and “N”.

Table II.2 gives us a simple summary on how investors were initially distributed according to Chinese market segments.

Basically, “A shares” was once open and only to domestic investors while it was also the case for “B shares” and “H shares” to foreign investors.

Then, if we see the table more carefully, we get to know that, the initial access of investors into segmented Chinese stock market did not differentiate between individuals and institutional investors.

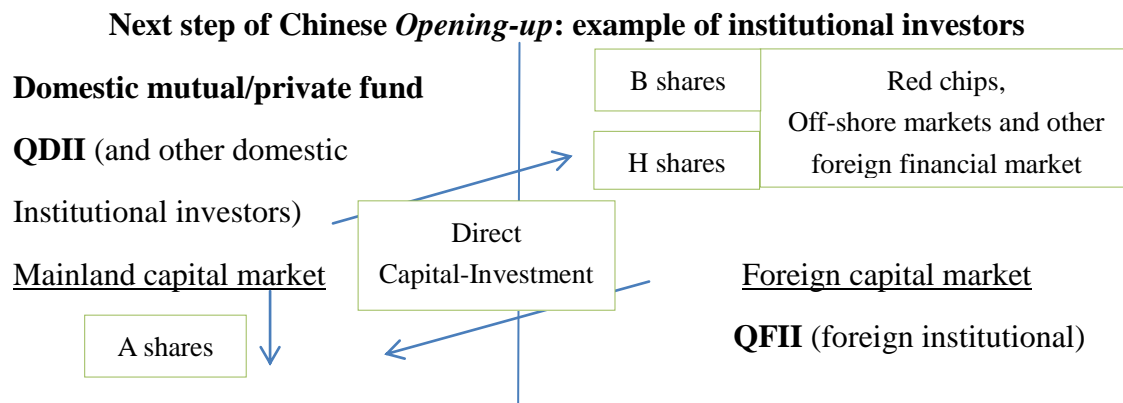
However, it is indispensable to keep in mind that on the parallel to individual investors, institutional investors have increasing important role to play on Chinese stock market, even if this kind of importance is much less remarkable compared to their equivalents on the developed markets.

On the Chinese stock market, there exist local mutual/private funds, QFII (Qualified Foreign Institutional Investors) and QDII (Qualified Domestic Institutional Investor)¹⁸³ and other institutional investors (commercial banks, insurance companies, securities companies, etc.).

¹⁸² Yao, Chengxi, 2013, Market Structure of the Chinese Equity Market. *Fordham Journal of Corporate & Financial Law*.

¹⁸³ Which is established in 2007 for domestic institutions investing in offshore markets.

Figure II.4



* *Figure II.4* is made by the author.

Figure II.4 gives us an evolutionary idea on how institutional investors are able to have access to the segmented Chinese stock market.

It is a political arrangement on the thoughts of “Reforms and Opening-up Policies” to set some criteria to control foreign financial flows of institutional investors on Chinese mainland market (A shares). Things get easier for them since the framework of QFII in 2002 and at the same times, the authorities encourage domestic capital flows going outside the mainland borders (the access to HK market in 2007 and the offshore markets for QDII in 2007)¹⁸⁴. We have seen some opening access to market segments for other investors during the changing process, among which, we could also take the illustrating fact that the “thresholds QFII have been substantially lowered” since the beginning July 2012. Of course, the Opening-up process of Chinese stock market is gradually evolving and still at the beginning stage. The fact has not been changed that domestic investors still remain the main players in this segment for “A shares”. However, this kind of action is quite symbolic, and it has also proven the determination of Chinese government letting capital flows of financial institutions circulating more freely on the market environment.

¹⁸⁴ However, B shares are still not assessable to domestic institutions.

It is true that, the segmentation of Chinese stock market has been gradually disappeared from the regulatory points of view. However, in the practice, the inertia of investors' practice remains. In other words, even if investors have rights to get to invest in different types of shares (for example, "B shares" and "H shares")¹⁸⁵, in addition to "A shares" for individual domestic investors, they are still self-restrained. That's because they don't have the habitude to diversity their investment, or they are not familiar with the options. The lack of dynamism in the B and H segments makes it difficult to speculate the price. It dives away the interest of Chinese mainland investors and so on so forth. The vicious cycle makes different investors stays inside their initial market segments, which means that domestic investors stick to "A shares" and foreign investors to "H shares".

Table II.3

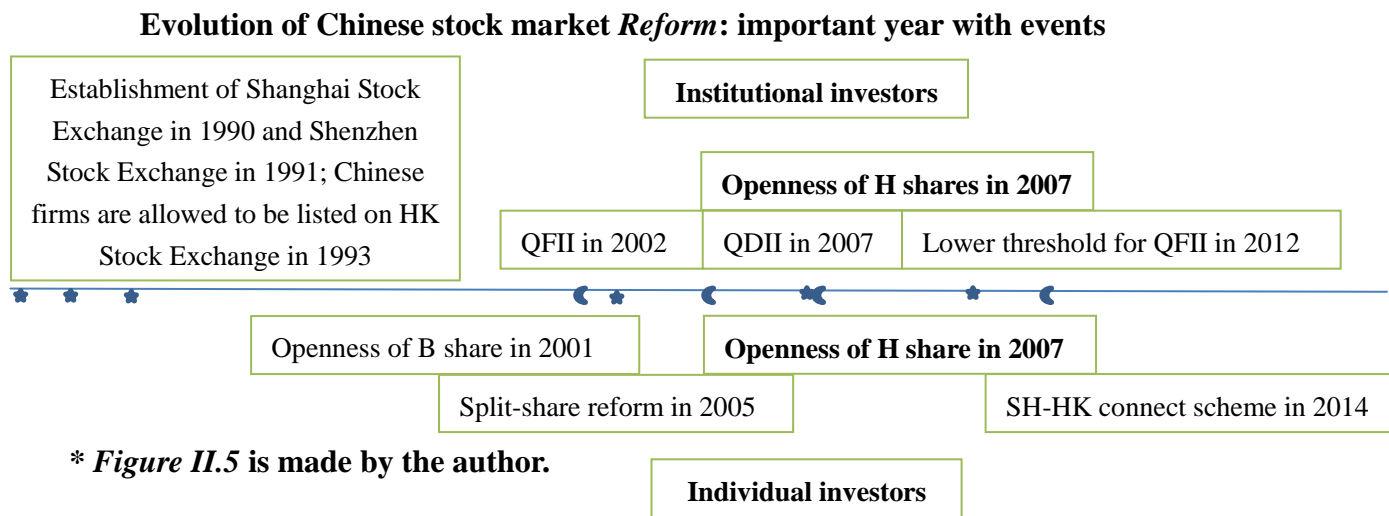
Investors Segment	Domestic investors		Foreign investors	
	Individual	Institutional	Individual	Institutional
A share	Initial situation		SH-HK connect scheme in 2014 (Yes)	In 2002 QFIIs (Y)
B & H share	B share: Opening in 2001		Initial situation	
	(Yes)	(No)		
	H share: Opening in 2007			
(Yes)	(Yes)			
Offshore markets	Offshore Markets			
	(No)	In 2007 QDIIs (Yes)		

¹⁸⁵ They are open to individual domestic investors, from 2001 and 2007 separately.

2.4. Important events during the reforms of Chinese stock market

In addition to the example for institutional investors that we summarized previously in *Figure II.4*, here we want to also review the evolution from the viewpoint of individual investors.

Figure II.5



To be more specific, we have:

The promotion of openness of B and H shares happened respectively in 2001 and 2007. These two policies led domestic investors’ access to segments initially destined for foreign investors. They are the most important reforms since the “Split share Reform”¹⁸⁶, which has the objective to derestrict non-tradable shares circulating on the market.

Investors benefit a great deal from launch of the Shanghai-Hong Kong connect scheme at the end of 2014¹⁸⁷ enables investors present on both markets to invest from

¹⁸⁶ CSRC, 2005 [86], Administrative Measures on the reform of split share for listed companies. translated by the author from Chinese: 《上市公司股权分置改革管理办法》.

¹⁸⁷ Securities Market Statistics on 08/05/2015. In Chinese, translated by the author. at <http://www.sse.com.cn/marketservices/hkexsc/home/>.

one side to the other side of the capital market. The trading link will correct it by allowing international investors to trade Shanghai-listed shares via the HK brokers (Northbound) and the same way around for mainland investors to trade Hong Kong-listed shares (Southbound)¹⁸⁸. However, the real daily transaction of the scheme¹⁸⁹ is far from the quota¹⁹⁰, which shows some potential obstacles to the initial expectations.

Under this context, the Shenzhen-HK connect scheme, which relates HK market with the SH/SZ is also under process. It's believed that companies of sectors, such as TMT (Technology, Media and Telecom), Consumption and Health Care will help to attract more interests of investors, in addition to SOEs from Blue Chips in SSE.

¹⁸⁸ "Definition and Development" from the official website of SSE, at <http://english.sse.com.cn/investors/shhkconnect/introduction/definition/>.

This mechanism is different from previous policies since the establishment of "Pilot Scheme of domestic individual direct investment on foreign securities market" of State Administration of Foreign Exchange, 2007 (translated by the author from Chinese: 《开展境内个人直接投资境外证券市场试点方案》) where only domestic investors have rights to invest on the HK market.

¹⁸⁹ From the official website of "China Stock Markets Web", In Chinese, translated by the author. at <http://www.hkex.com.hk/eng/csm/chinaConnect.asp?LangCode=en>.

¹⁹⁰ "Quota: Aggregate, Daily and Control Mechanism", from the official website of SSE, at <http://english.sse.com.cn/investors/shhkconnect/mechanism/quota/>.

Conclusion of Section 2

Structure of Section 2, Chapter II

Section 2 gives us a brief introduction of the segmented Chinese stock market, in terms of regulation (Subsection 2.1), of listing (Subsection 2.2) and how investors have access to each segment (Subsection 2.3) and its evolution (Subsection 2.4). We have also gone through the changing process of Chinese institutional environment, which presents itself the characteristic of Chinese stock market.

Inspirations for the following chapters

These observations constitute an important element to be considered among Chinese institutional elements, when we talk about expected role of CRAs in the eyes of rating regulators and norms (in Section 1 of Chapter IV); issuers' motivation to solicit multi-ratings and investors' attitudes in front of the "rating shopping", "split ratings" and "rating inflation" (in Section 3 of Chapter IV); CRAs' behaviors strategies in giving initial issuer ratings (in Chapter V); Investors' reactions to credit rating changes and watch-lists (in Chapter VI).

We hypothesize that different investors (individual or institutional, domestic or foreigner) would react differently in front of market signals (credit rating changes and watch-lists, among other rating events, for instance) and we imagine that issuers on different market segments have their specific features, which CRAs may take into account in their rating models.

Section 3. Financing by Corporate Bonds (CBs)

3.1. Types and segments of CB market

3.2. Increasing issuing and investing of CBs with regulatory reforms

3.3. Rethinking capital structure theories with Chinese institutional features

Introduction of Section 3

Generally speaking, there are three ways for corporations to finance their projects externally: market financing (bond/share securities) and bank loaning. Statistics show that Chinese corporations depend largely on banking loans compared to other capital markets, especially when interest rate liberalization is still limited by the controlling banking system.

The business of ratings is supposed to connect directly to bond issuing and trading, while in China, the stock market is more dynamic than the bond market, in terms of market financing. What's more, inside the bond and other debt products, corporate bonds (CBs) still are "scarcity" in the debt capital market, if we compare it to the Government debts.

That's why we chose to present firstly the stock market in China and its characteristics in Section 2 before making a brief introduction of bond market here.

Admittedly, there are current obstacles in the development of corporate bond market: the complication of the product types and market segmentation, among others; However, with the authority's efforts of regulatory reforms, a bright future of CBs could be expected. In the Section 3, we are going to discuss three topics around CBs:

- ✓ Four types of CB and 2 segments of CB market: inter-bank market and bond exchange market (Subsection 3.1)
- ✓ Issuing and investing activities of issuers and investors under current regulatory reforms (Subsection 3.2)
- ✓ Capital structure of Chinese listed companies and rethinking theories with Chinese institutional features (Subsection 3.3)

3.1. Types and segments of CB market

There are four types of CBs issued and traded in Chinese bond market, according to the briefing of Zeng (2009)¹⁹¹.

- ✓ *Convertible bonds*
- ✓ *Short-term corporate financing bills*
- ✓ *State-owned Corporate Bonds (Enterprise Bonds or EBs afterwards)*
- ✓ *Listed-company bonds (Company Bonds or ComBs afterwards)*

Among these four types, the Enterprise Bonds (EBs) - bonds issued by State-Owned Enterprises (SOEs) may be the most important. In fact, they benefit from a privileged position in issuing since they fit, in most of the cases, to the “national priorities” in Chinese economic reconstruction and development.

The EBs are usually the least risky, thus they benefit from the highest ratings compared to other types of bonds of the same category. With the “silent pledge” of the government, they have never failed to be paid back (including interest and principal) until 21/04/2015¹⁹²; a significant sign to the eyes of Yingjie Zhang¹⁹³ that “SOEs’ reformation made the SASAC - the State-owned Assets Supervision and Administration Commission of the State Council harder and harder to repay debts in the place of a *SOE* in difficulty”.

It reflects at the same time that the government has been more and more tolerant of the defaults as long as a systematic risk could be avoided.

When issuers of CBs are financial institutions, such as securities companies¹⁹⁴, commercial banks¹⁹⁵ and insurance companies¹⁹⁶, we will consider their issued CBs as Financial Bonds (FBs).

¹⁹¹ Zeng, L. 2009. Chinese Bond Markets—An Introduction. *Working Paper*, Standard & Poor’s (March).

¹⁹² Tianwei Group announced the failure to honor the contract with its creditors.

¹⁹³ He is general manager of the research department of CCXI (China Chengxin International credit Rating Co. Ltd.).

¹⁹⁴ CSRC, 2004 [25], Interim Measures for Management of Securities Companies Bonds, 18/10/2004. In Chinese, translated by the author from: 《证券公司债券管理暂行办法》.

Corporate Bonds and Financial Bonds are “inter-bank OTC market” bonds, under the overseeing of PBoC).

In addition to that, corporations have the rights to list their issued bonds publicly, and then the trading will go to the “bond exchange market” for Company Bonds¹⁹⁷. The company bonds are under the oversight of Chinese Security Regulatory Commission (CSRC). These two market segments constitute the picture of Chinese bond market.

3.2. Increasing issuing and investing of CBs with regulatory reforms

Determination of authorities in terms of CBs is incarnated by regulatory reform, which aims to enhance the liquidity of Chinese bond market. They are aware of the problem of imbalanced segmentation between inter-bank and exchange bond market segments for CBs-related activities (including issuing and investing in CBs) and the importance to relieve the procedural complication.

3.2.1. On the issuing side of CBs.

Since January 2008, the NDRC took a step forward in CB reform. It “allowed all unlisted companies to issue bonds without bank guarantees¹⁹⁸” and further lines in the “*Notice of the National Development and Reform Commission on the Corporate Bond Market Development and on the Facilitation of Approval Procedure (bond*

¹⁹⁵ Commercial banks had been prohibited from trading their issued bonds on the exchange market for a longtime, but according to the recent reform the entrance barrier has been eliminated: Notice on Matters Concerning the Issuance of Corporate Bonds by Commercial Banks to Increase Their Capital and the Listing, Trading and Transfer [2014]. (In Chinese, translated by the author: 《关于商业银行发行公司债券补充资本及其上市交易、转让相关事项的通知》).

¹⁹⁶ CIRC [2015, 3], 《允许保险公司在全国银行间债券市场发行资本补充债券有关事宜的公告》, 22/01/2015. Translated by the author from Chinese: Notice on Matters Concerning the Issuance of Corporate Bonds on inter-bank bond market by insurance companies to Increase Their Capital.

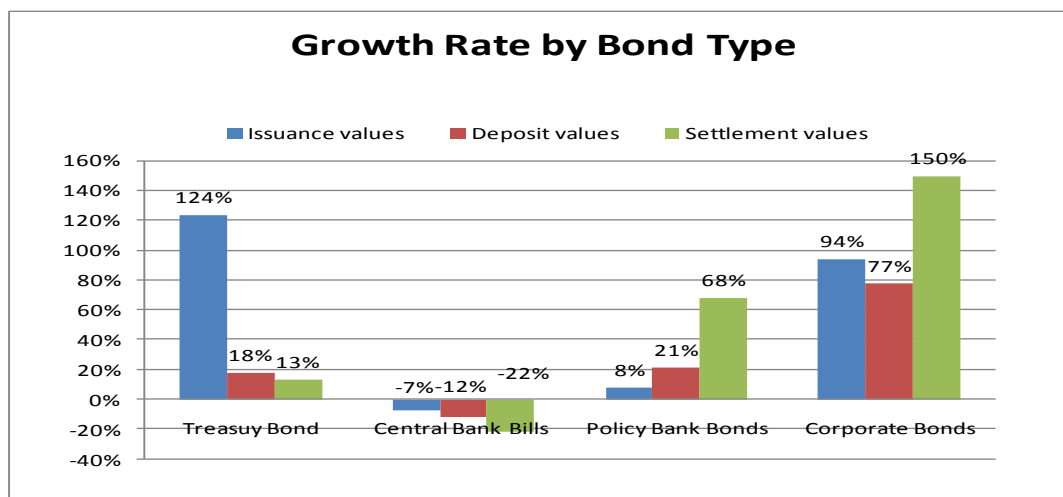
¹⁹⁷ Company bonds are CBs issued by public companies.

¹⁹⁸ Arner Douglas W., Hsu, Berry F.C. and Pu, Lifan. 2010, Credit Rating in China-Guest Editors’ Introduction. Chinese Law and Government, vol. 43, no. 3, Page 3–7, Note 41.

issuing)”,¹⁹⁹.

In the same spirit, CSRC also “allowed Chinese listed companies to issue corporate bonds for any general corporate purpose approved by their boards and without bank guarantees”.²⁰⁰ On the other hand, it is also a way for CBRC to help commercial banks prevent themselves to risk exposure.²⁰¹

Graph II.1 ²⁰²



Despite all kinds of difficulties, in the report of Chinabond, “the issuance, deposit and settlement values of corporate bond are expected to grow fast”²⁰³, compared to other types of bond and bond assimilated financial instruments, thanks to the authorities’ efforts through a series of regulatory reforms.

3.2.2. On the investing side of CBs

Investment funds along with the commercial banks (22.54% and 22.68% respectively) contributed nearly half of the bond transactions (statistics from Chinabond in 2014)²⁰⁴.

¹⁹⁹ NDRC, Notice on the improvement of corporate bond market development and the simplification of issuing approval procedure (2008[7], 02/01/2008). Translated by the author from Chinese: 《国家发展改革委关于推进企业债券市场发展，简化发行核准程序有关事项的通知》.

²⁰⁰ Bottelier, Pieter. 2004. China’s Emerging Domestic Debt Markets. *Working paper*. Stanford Center for International Development, Note 39.

²⁰¹ CBRC, Opinions of China Banking Regulatory Commission on Effectively Preventing the Risks to guarantee Corporate Bonds, Translated by the author from Chinese: 《有效防范企业债担保风险的意见》[2007]75, 12/10/2007.

²⁰² China’s bond market-the view, 2010. Information got from “Bond issuers profile”, at www. Chinabond.cn.

²⁰³ *Ibid.*

²⁰⁴ Numbers are got from CDC from Chinabond.com at <http://www.chinabond.com.cn/d2s/index.html> and the percentage is calculated by the author.

It should be noted that there are 8 times more funds than banks in term of the amount of the investment. In other words, the average scale of funds can't compete with their opponent in banking sector, but they are going to spend increasingly significant money on CBs with the openness of inter-bank bond market to private investing fund²⁰⁵ (details in the relevant Notice of PBoC²⁰⁶). The ranking of CBs' investment remains the same for the year of 2015²⁰⁷ with insurance companies on the third place.

The increasing issuing and investing activities of CBs have achieved some results in front of these regulatory reforms: “*Bloomberg's Business-Week confirmed in July 2009 that RMB-denominated bond market has become the world's No. 3 (after those for Dollars and for Euros)*” and Asia's No.1.²⁰⁸

Here, we should mention the existence of Dim sum bonds and Panda bonds. Both of them are RMB denominated, but the first bonds are issued outside Chinese territory, having the function to attract foreign investors; while the second bonds are issued by non-Chinese entity. The issuing and transaction of both bonds is becoming increasingly active with the development of RMB offshore market and both issuers and investors have positive perspective on future potential of Chinese currency and yuan-denominated asset.

As for the CBs alone, the increase is also very remarkable as well. Its amount accounted for “some 16% of the total social financing for that year by the end of 2013 (against 4% only in 2007²⁰⁹). It is clear that, Chinese authorities are trying to liberate the bond market development by: On one hand, there comes the alleviation of the regulatory obligations; On the other hand, there should come the restriction of the supervision of CRAs in regards of credit-risk control.

²⁰⁵ China's bond market-the view, 2015, page 65 and 71. Translated by the author from Chinese. Access on 28/02.2017 by the author, at <http://www.chinabond.com.cn/cb/cn/zqsc/scjs/20160728/24146263.shtml>.

²⁰⁶ PBoC [2015/17], Notice on the entrance of private investment funds into the inter-bank bond market, 15/06/2015, translated by the author from Chinese: 人民银行《关于私募投资基金进入银行间债券市场有关事项的通知》.

²⁰⁷ China's bond market-the view (2015), *supra*.

²⁰⁸ Arner Douglas W., Hsu, Berry F.C. and Pu, Lifen. 2010, *supra*. Note 48.

²⁰⁹ *Idem*. Note 49.

3.3. Rethinking capital structure theories with Chinese institutional features

Considering capital structure of Chinese listed companies, Chen (2004) found that once companies get possibility to go for equity financing, they would make debt financing, especially “long-term debt”²¹⁰ the last resort, because of “bond market is still in an infant stage of development. Bank is the major or even the only source of firms’ external debt”²¹¹ and at the same time, banking loans are relatively binding with the “controlling state banks”²¹² present under Chinese institutional environment. Consequently, this phenomenon fits neither the Trade-off model nor the Pecking order hypothesis theory. Both theories are derived from the Western financial settings, which provide few convincing explanations for the capital choices of the Chinese firms.

This is because “the fundamental institutional assumptions underpinning the Western models are not valid in China.”²¹³ We consider that more special attention should be turned to the importance of SOE (State-Owned Enterprise) present on the market. Both the state ownership and the state-major shareholding help greatly in the equity financing.²¹⁴ In addition to that, the low dividend payment is another incentive for listed companies to pursue direct equity financing other than to rely on leverage.

At the same time, it is found that “evidence in favor of the influence of central government ownership on the financing choices of firms it owns, as central state-owned firms are more likely to issue bonds”²¹⁵, and “it turns out that state ownership has a positive impact on the value of a bond offering for shareholders”.²¹⁶

²¹⁰ Huang Samuel G. H. and Song Frank M. 2006. The Determinants of Capital Structure: Evidence from China. School of Economics and Finance and Centre for China Financial Research (CCFR), The University of Hong Kong, Pokfulam Road, Hong Kong.

²¹¹ *Ibid.*

²¹² Chen Jean J.2004. *supra*.

²¹³ *Ibid.*

²¹⁴ Chun Chang, Xin Chen, Guanmin Liao, 2014, What are the reliably important determinants of capital structure in China? *Pacific-Basin Finance Journal* 30: 87–113.

²¹⁵ Pessarossi P. and Weill, L. 2013, "Choice of Corporate Debt in China: The Role of State Ownership", *China Economic Review*, Vol. 26, 2013, pp. 1-16.

²¹⁶ Weill, L and Klein P.O. 2018. "Bond Offerings in China: The Role of Ownership", *Economics of Transition*, Vol. 26, n° 3, July 2018, page 363-399.

Conclusion of Section 3

Content and structure of Section 3, Chapter II

Debt instruments are not the main financial sources for Chinese listed companies (Subsection 3.3) even if with the regulatory reforms aiming to increase the issuing and investing activities of CBs (Subsection 3.2). Chinese CB market is composed of two segments: institutional wholesale in inter-bank market (it is also an OTC market) is much more important than bond exchange market in Shanghai and in Shenzhen (Subsection 3.1), which some individual investors by retail business. As for foreign investors, they are also allowed to invest in the Chinese inter-bank bond market, but this action is quite recent since 182 QFIIs did not actually put money to Chinese bond exchange market until the year of 2014²¹⁷.

Bondholders vs. shareholders

God and Ederington (1993) entailed the possibility of “zero-sum game” between stock and debt instruments investors²¹⁸. They pointed out additionally that it is creditors that are the true interest of CRAs (given the fact that CRAs are there to assess credit risk), which distinguishes CRAs fundamentally from other financial analyses. The latter serves all kinds of investors without differentiating their nature: shareholders, bondholders or others.

In other words, this conflict of interest between shareholder and bondholders, in the interaction of investors with CRAs (when managers decide “for the interest of stockholders”²¹⁹, at the expense of bondholders), could be resumed by the *Theory of Wealth redistribution*²²⁰. Good news for ones could be bad for the others, and *vice versa*.

²¹⁷ “Numbers of investors” from the website of Chinabond, at

<http://www.chinabond.com.cn/jsp/include/EJB/documentNew.jsp?sId=0307&sBbly=201412&sMimeType=4&Ty pe=2>.

²¹⁸ Goh Jeremy C. and Ederington Louis H., 1993, Is a Bond Rating Downgrade Bad News, Good News, or No News for Stockholders? *The Journal of Finance*, Vol. XLVIII, No. 5.

²¹⁹ *Ibid.*

²²⁰ Zaima, Janis K., McCarthy, Joseph E. 1988. The Impact of Bond Rating Changes on Common Stocks and Bonds: Tests of the Wealth Redistribution Hypothesis. *Financial Review*, Volume23, Issue. 4, Page 483-98.

Conclusion of Chapter II

Two discussions of Chapter II

The *first* discussion is about Chinese State-Capitalism (Section 1) where we have an examination of “*Reform and Opening-up policies*”. We also conclude the ideas, including forms and objectives of the State on capital flows, either from the domestic market to outside or from the foreign market inside.

The *second* discussion of Chinese *Socialist Market Economics* enables us to have an overview of Chinese stock market (Section 2) and CB (corporate bond) market (Section 3) and to see how it makes the presumptions of classic theories different.

Chinese institutional characteristics of the market environment

Special institutional characteristic of Chinese market environment are non-negligible elements for a study of CRAs. Here, we want to list two important among others.

First of all, segmentation is an important institutional characteristic of Chinese market environment. It is also the keyword for CRAs to better understand the access to different segments and exposure to each regulator for issuers and investors in A and H segment for Chinese continental and Hong Kong Stock Exchange respectively (accounting & auditing standards for example) and the unique feature of dual listing (AH share). The discussion of market segments helps a great deal to understand how market actors will react differently according to, especially with the differentiation between domestic/foreign and individual/institutional investors.

Then, CRAs should have a good command of how governance-related information (Stat-Owned Enterprise/SOE, e.g.) could modify the behaviors of issuers (public companies and borrowers for debt capital product). The complementary effect of stock and bond market is proved to reduce gradually the excess reliance on Bank Loans²²¹ and to diversify the corporate financial structure of Chinese companies. And then it is a way to enrich the choice of *investors*’ portfolio.

²²¹ Arner Douglas W., Hsu, Berry F.C. and Pu, Lifen. 2010, *supra*.

Inspirations for the following chapters

Chapter II also inspires us to collect the data and to construct the sample. We are constructing samples as exhaustive as possible, in order to prepare for the tests in the Empirical Part Two §2. The empirical examination is performed by qualitative, quantitative and comparative methodology. The description of samples and preliminary quantitative tests will be prepared on the Section 2 of Chapter IV.

The access to *Bloomberg* has largely facilitated the collection of rating data (issuer rating and issue rating) by every possible agency (both local and global CRAs) from the very beginning since the entry of CRAs into Chinese market to the recent period (1988-2016). We then cross rating activities with the public companies listed on the segmented stock market: continental China market (Shanghai and Shenzhen) and Hong Kong Stock Exchange.

In other words, there are only listed companies on the stock market in our sample. Besides, they should be also rated for their issued bonds or for the entire entity, by one agency (either global: Big Three or Chinese local CRAs).

The filtration has meanings and we try to breakdown from three viewpoints:

For starters, CRA is part of the bond market's regulatory infrastructure, which is regulated itself by the rating authorities. The experiences of the interaction of the regulators with other market actors also help the authorities to conceive a more coherent rating regulatory system, in order to foster and support the promising rating business and in a long-term perspective.

Secondly, issuers on stock exchange markets have higher exposure than non-listed companies. Stock market is one of the most regulated Chinese financial markets. Hence, issuers are required to have better information disclosure and communication to the investors. This kind of transparency requirements helps us to collect enough data from the database Bloomberg, which enables us to have more insights into the

companies and to analyze them with relatively high information quality.

In addition to that, the segmentation of Chinese stock market (A shares, H shares and AH dual listing shares) offers us a good opportunity to look into the behaviors of investors, according to their positions on the market.

Thirdly, rating business serve first of all, the debtors, among all kinds of investors. CRAs help creditors to perceive the “true” risk of their debt-holding from the mist of information asymmetry. However, with the limited size and illiquid transaction on the bond market, most bond investors concentrate more on inter-bank market instead. Consequently, we are not able to enough data to make researches on it.

That is also one of the reasons why CRAs in China issue more issuer ratings for listed companies than for issue ratings, which is composed mainly by the debt instruments and their derivatives. We choose to study essentially issuer ratings in Chapter IV and V; while we do not differentiate issue ratings from issuer ratings in the event study in the Chapter VI.

The activities of CRAs will leave some consequences on the Chinese institutional environment and the discussion of the market context from three viewpoints of market actors (regulators, issuers and investors) will be developed furthermore in the next Chapter III.

Chapter III.

Three consequences of rating sector on Chinese market actors

Section 1. Regulatory mechanism and comparison

Section 2. Issuers and information collection

Section 3. Reactions of Chinese investors

Introduction of Chapter III

The characteristics of Chinese institutional environment that we discussed previously in Chapter II leave three consequences on market actors, when we relate them to the rating sector: We will start Chapter III by three viewpoints of market actors: regulator (Section 1), issuer (Section 2) and investor (Section 3) to present them in turn respectively.

Section 1 focuses firstly on issuing and trading regulators on Chinese Continental and Hong Kong Market (Subsection 1.1). It is concluded by an analytic summary and the comparison with European market, both on the European national level and on the Union level (Subsection 1.2). All of these elements will lead us to the relationship of the regulation and the institutional environment, with the comparative application in Germany and in China (Subsection 1.3).

Section 2 concentrates on three types of information, including hard information (Subsection 2.1), soft information (especially governance-related factors, Subsection 2.2) and other micro-economy and macro-economy information (Subsection 2.3). Each subsection contains the general example and Chinese application.

Section 3 entails reactions of different investors: domestic/foreign (Subsection 3.1) and individual/ institutional (Subsection 3.3), in front of all sorts of market information and their separate investing spirits behind their behaviors (Subsection 3.2).

Section 1. Regulatory mechanism and comparison

1.1. Chinese sectoral rating regulation

1.2. Learn from European experiences

1.3. Fitting into each specific environmental context

Introduction of Section 1

Structure of Chapter III

The supervisory structure in China is composed of several separated institutions whose function depends on what kind of activities in which they are involved, and it is also the case when CRAs are concerned. We call it the sectoral rating regulation (Subsection 1) and the examination will start from issuing supervision and trading supervision.

Then, we will turn our attention to European experiences (Subsection 2), for some European national regulatory attempts of different form (sectoral, functional and integrated mechanism and their evolution) as well as on the Union level. We will see the role and functions of *ESMA* in a dynamic way.

We will continue the comparison between Chinese and European rating regulation and the connection line will be drawn between rating regulations with institutional elements (Subsection 3).

Inspirations for the following chapters

Considering Chinese institutional environment and, in order to better hypothesize the role, strategy and impact of CRAs, in the interaction with regulators, issuers and investors, we contend that it is important:

- ✓ To discuss the true roles of CRAs (Chapter IV) expected by rating regulations and the code of conducts. It is as well as important to understand why issuers tend to solicit multiple ratings and how investors react consequently on Chinese markets (including mainland and Hong Kong), and in comparison with European markets. We are going to examine all facts through the game of “rating shopping”, “split rating” and even “rating inflation”.
- ✓ To explore the determinants of initial issuer ratings. In the end, “rating changes cannot be treated as homogeneous; the cause must be considered.”²²² We may start from firm-specific information, market-related information, to the Chinese institutional factors, to have an insight into CRAs’ strategies (Chapter V) on Chinese market environment. The choice of indicators that we conclude from the researches on the developed markets should be completed by the discussion of agency-conduct effect and time-varying effect. In other words, CRAs as a variable and a dynamic examination of Chinese rating market should be introduced into the statistical models, which justify the added-value of our thesis.
- ✓ To explain the impacts of rating signals (Chapter VI) on stock markets and investors reactions under diverse market segments and crisis periods, changing regulatory changes, along with market anticipation and preceding watch-lists. We are going to divide the general sample into subsamples, according to Chinese institutional characteristics that we learned from the discussion of background information, on Chinese market context.

²²² Goh and Ederington, 1993, *supra*.

1.1. Chinese sectoral rating regulation

Business of CRAs is strongly related to bond activities: issuing privately/publicly and trading on the inter-bank market (which accounts for the majority of the transaction volume) and the exchange market.

The first Subsection 1 will be concluded by an analytic summary.

1.1.1. Issuing supervision

People Bank of China (PBOC)

On the top of the regulation for corporate bonds (CBs) and financial bonds (FBs)²²³, it is the PBOC that holds the rein in the light of “*Guiding Opinions of the People’s Bank of China for the Management of Credit Rating*”²²⁴; and further “*Specification for Credit Rating Market and Inter-bank Bond Market*”²²⁵. Consequently, when CRAs exercise their business for inter-bank bonds, it is Credit Information System Bureau (CISB), a bureau of PBoC that will intervene specifically.

National Development and Reform Commission (NDRC)

For corporate activities and business development, corporate bonds are the alternative financing method in addition to the banking loans. Its modest contribution is, mainly due to the fact that, authorities were so fear of massive bond defaults once happened in 1990s at the first place; hence, they started to heavily regulate the bond issuing for corporations. They put the primary CBs’ issuing under the supervision of NDRC, and

²²³ PBoC, 2005, Administrative Measures for the Issuance of Financial Bonds on the National Inter-bank Bond Market and PBOC, 2009, Operational Procedures on Management of the Issuance of National Inter-bank Financial Bonds. Translated by the author from Chinese: 《全国银行间债券市场金融债券发行管理办法》和《全国银行间金融债券发行管理操作规程》. Both of them are inter-bank bonds.

²²⁴ Which is promulgated by the People’s Bank of China (PBoC), 2006 (In Chinese, translated by the author: 《信用评级管理指导意见》). It provides the “descriptions of the rating process, the factors affecting the rating, and rating signals and their meanings” in Arner Douglas W., Hsu, Berry F.C. and Pu, Lifen. 2010, supra, Note 17.

²²⁵ PBoC, 2006, Specification of Credit Rating Market for banking loans and Interbank Bond Market, which is promulgated in 2006. Translated from Chinese by the author: 《信贷市场和银行间债券市场信用评级规范》.

the State Planning Commission of China is its predecessor.

Recently, it was shown that supervision has become more and more tolerant toward the “exposure to risk” of issuing debts. NDRC is gradually liberalizing corporate bonds (CBs) with “higher interest payments as lending rates”²²⁶. Under the circumstance, a friendlier environment for bonds issuing should be balanced by a more active intervention of CRAs. The function of ratings is hence to assess credit risk and to protect the market actors.

That’s the reason why NDRC pointed out the importance of CRAs in the official reports, about how they should provide assisting service (along with other financial institutions)²²⁷. Since the *Notice of 2012*²²⁸, CRAs begin to constitute one of the indispensable components in bond issuing.

Chinese Security Regulatory Commission (CSRC)

What’s more, only CBs with a rating equal or above AA have the right to have public-listing on an organized Chinese domestic bond market with the regulatory assistance of CSRC and Shanghai/Shenzhen Stock Exchange.²²⁹

As for Company Bonds²³⁰, in compliance with the related laws, rules and regulations of CSRC, the issuing should have references from at least one accredited agency.

In both cases, there are precise rules in the “*Interim Measures*”²³¹, which orients the direction of rating regulation for public-listing of CBs on the exchange market and bond-issuance of listed companies (Company Bonds).

²²⁶ Bottelier, Pieter. 2004, *supra*.

²²⁷ NDRC, 2012, Notice of National Development and Reform Commission on the enhancement of credit construction during corporate bond issuing. Translated by the author from Chinese: 《国家发展改革委办公厅关于加强企业发债过程中信用建设的通知》.

²²⁸ *Ibid*.

²²⁹ SSE, 2015, Rules on Corporate Bond listing on SSE and SZSE, 2015, Rules on Corporate Bond listing on SZSE. Translated by the author from Chinese: 《上海证券交易所公司债券上市》 和 《深圳证券交易所公司债券上市规则》.

²³⁰ CSRC, 2015 [113], *Measure for Company Bond Issuance and Trading*, translated by the author from Chinese: 《公司债券发行与交易管理办法》(16/01/2015).

²³¹ CSRC, 2007, *Interim Measures for the Management of the Credit Rating Business Regarding the Securities Market*: 《证券市场资信评级业务管理暂行办法》, (Translated by the author from Chinese).

at http://www.csrc.gov.cn/pub/shenzhen/ztl/ssgsjgxx/jgfg/qtgd/201506/t20150612_279096.htm.

The main body of the *Measures* is composed of four sections: operation permit, business rules, supervisory management and legal responsibility.

- ✓ *It sets firstly a threshold to establish an agency, such as “minimum asset requirement, significant rating experience, appropriate internal control and necessary information disclosure”. It also points out the importance of “human resources, risk management, organizational structure” etc.*
- ✓ *The entire rating process is under CSRC’ supervision. Initial rating constitution should be effective, rating (re)deliberation should be confidential and rating disclosure should be transparent and rating follow-ups should be diligent. All Credit Rating Changes (CRCs) should be properly justified.*
- ✓ *Certain ethical problems could be raised because of conflict of interest. An inexhaustible list is given to prohibit certain business behaviors under certain circumstances.*
- ✓ *CRAAs are subjects to punishment and CSRC is entitled to punish any malpractice or violation according to relevant rules in “Securities Law of People’s Republic of China”²³².*

Chinese Banking Regulatory Commission (CBRC) and Chinese Banking Regulatory Commission (CBRC)

They will also intervene into the regulation when the issuers are banks and insurance companies respectively; in the same line of two previous FBs, it is the role of Chinese Security Regulatory Commission (CSRC) to regulate the issuing activities of securities companies.

²³² At http://www.sac.net.cn/flgz/flfg/201501/t20150107_115050.html. It is translated by the author from Chinese.

1.1.2. Trading supervision

Chinese Security Regulatory Commission (CSRC)

Corresponding to the role of CSRC in issuing regulation, it is also responsible for the public trading of CBs on the domestic bond exchange market and the company bonds' trading, either on the inter-bank market or domestic bond exchange market.

As for investors in CBs on the exchange market, investment funds are under the supervision of CSRC by their trading activities related to the rating business.

At the same logic, investing activities of two main investors of CBs: commercial banks and insurance companies are under supervision of two separated authorities, according to the type of sectors into which that they are engaging: the banking sectors in first case and insuring sector for the second.

Chinese Banking Regulatory Commission (CBRC)

CBRC took place of PBoC, (Chinese central bank, whose current focus is the regulation on macro-economic and monetary politics) as the Chinese supervisor in the banking industry. CBRC has shown a continuous reticence to rating activities.

We may infer its reluctance from the *Notice* published in 2011.²³³

Here presents a summary of its main ideas:

- ✓ *First of all, the massive investment of banks should be based mainly on their own internal assessment. External ratings could serve but only as a supplementary professional support.*
- ✓ *Then, banks should hold precautions with external rating in deciding their investment choices. Only CRAs with independence, professional ethics and trustworthiness could be consulted.*

The document of *Interim Administrative Measures of 2012*²³⁴ reiterates the same spirit of the careful use of external rating.

²³³ CBRC, No.10, 2011, Notice of China Banking Regulatory Commission on Regulating Commercial Banks' Use of External Credit Rating. 26/01/2011. (In Chinese, translated by the author).

²³⁴ CBRC, 2012, Interim Administrative measures of commercial banks' capital: Use of External Credit Rating.

Officially, external rating remains one of the determinants in execution of the *Basel Accord*, allocation of bank loan approval²³⁵ and other investment projects but the position of CRAs in Chinese banking sector remains marginal due to the political choice rather than a market one.

Chinese Insurance Regulatory Commission (CIRC)

As for insurance companies and insurance group holdings, with their abundant cash flow, they are certainly among the most important institutional investors on financial markets. CIRC allows the entry of insurance companies with high qualification, especially “large four”²³⁶ into all kinds of debt capital instruments, corporate bonds and companies bonds, among others.

Since then, CRAs has played an important role in limiting risk-taking. CIRC will intervene into supervising rating activities only if insurance companies and holdings use ratings as references in managing their investment portfolios.

CIRC detailed some relevant regulations in this regard in July 2010.

For instance, in parallel with the “internal rating system” and the normalization of its rating methods,²³⁷ CIRC also published a *Notice*²³⁸ to enhance the supervision of the use of external rating.

²³⁵ Arner Douglas W., Hsu, Berry F.C. and Pu, Lifan. 2010, *supra*. Page. 3–7.

²³⁶ They are China Life (601628), Ping’ An (6301318), CPIC (601601), NCI (601336) and all of them also have H shares in their capital composition : HK 2628, HK 2318, HK 2601, HK 1336, respectively. In addition to that, PICC (HK 1339) and China Tai Pin (HK 0966) listed only in Hong Kong.

²³⁷ CIRC. Guidelines for Insurance Agency’ Credit Rating of Bonds Investment (Interim), 08/01/2007, translated by the author from Chinese 《保险机构债券投资信用评级指引(试行)》 .

²³⁸ CIRC, No 61[2013], Notice of China Insurance Regulatory Commission on Enhancing Regulation Bond Investments of Insurance Funds’ Use of External Credit Rating. , 05/08/2013. (In Chinese, translated by the author: 《中国保监会关于加强保险资金投资债券使用外部信用评级监管的通知》).

1.1.3. Analytic summary

Table III.1 gives us a clear picture of the sectoral regulatory mechanism in Mainland China:

First of all, it is PBoC's duty to have a close eye on inter-bank bonds; hence, we have the central bank on top of rating regulation with NDRC's responsible for CBs issuing in general.

Then, as far as CBs issuing/listing/trading on the exchange market or when it concerns company bonds, it is CSRC and Shanghai or Shenzhen Stock Exchange, which plays the role of supervisor.

As for different financial institutions, they have to respond to proper regulators: CSRC, CBRC, CIRC. Securities companies, investment funds, commercial banks and insurance companies are both major issuers (financial bonds) and investors on the bond market; hence, they are also important users of ratings. CRAs will have to obey the regulatory obligations according to the sector in which they exercise rating activities.

Table III.1

Summary of Chinese sectoral regulatory mechanism in regards of bonds

Sectoral mechanism	Issuing (Primary market)	Trading (Secondary market)
PBoC	Supervision of inter-bank OTC bond market	
NDRC	Corporate bonds issuing	/
CSRC	Corporate bonds listed publicly on the domestic bond exchange market & Company bonds issued by public companies	Public trading of corporate bonds on the domestic bond exchange market & trading for company bonds
	Financial bonds issued by securities companies	Investment funds' investing in bonds
CBRC	Financial bonds issued by commercial banks	Commercial banks' investing in bonds
CIRC	Financial bonds issued by insurance companies	Insurance companies' investing in bonds

In addition to that, Table III.2 (see below) gives us a clear picture of the registration and certification of rating activities on both Mainland China and Hong Kong market. Moody's, S&P and Fitch are main rating players on the international level but in Mainland China, because they are not able to be registered in front of PBoC and neither of them are officially certificated by any of Chinese regulatory authorities. Under these circumstances, their presence is showed only by establishing offices²³⁹, by doing consultant business and by adjusting “focus on the Chinese government bonds (GBs) and on the companies listed on stock exchanges outside mainland”²⁴⁰. Only ratings given by Chinese local agencies have regulatory use, and hence local CRAs dominate the mainland market.

However, “Big Three” have access to the segment of Hong Kong (whose market is embracing the regulation under SFC/Securities and Futures Commission). In the spirit of “One country, two systems Policy”, Hong Kong enjoys the independence on financial activities. That's the reason why it has a different financial regulator from those of continental China.

There are numerous Chinese local CRAs²⁴¹. According to a survey conducted by Credit Information System Bureau of PBoC, most of them are on edge of bankruptcy²⁴². Our study will take 10 top registered CRAs on the list of PBoC, which represents more than 70% of the total revenue (all CRAs combined)²⁴³ according to the information get from a forum organized by *CISB*.

These Chinese local CRAs are: CCXR (Chengxin Securities Rating), CCXI (Chengxin International Credit Rating), Lianhe (United Rating), Lianhe Credit, Dagong, SBCR (Brilliance Credit Rating and Investors Service), Pengyuan, Golden, SFE (Shanghai Far East Credit Rating)²⁴⁴, CCRC (China Credit Rating Co.)

²³⁹ They all have offices in Beijing and Fitch has office in Shanghai.

²⁴⁰ Baglolle Joel. 2004. *supra*.

²⁴¹ Credit system: the first line of defense in front of the fraud. 28/03/2017, translated by the author from Chines, at http://www.sohu.com/a/130714924_398708.

²⁴² ZhuWei Nie, National Business Daily, the worrying situation of CRAs, 20/11/2009, translated by the author from Chinese, at <http://www.p5w.net/money/yhlc/yhzc/200911/t2681911.htm>.

²⁴³ *Ibid*.

²⁴⁴ Chinese first local CRA, was initially by a research institution with public background.

Table III.2

List of Chinese supervisory institutions and the accredited CRAs

Segmentation	Mainland China					Total	Hong Kong
Supervision type	Issuing		Trading			(/5)	
Supervisory Institution CRAs	PBoC	NDRC	CSRC	CIRC	CBRC	5	SFC
CCXR	Y	N	Y	Y	Y	4	CCXAP ²⁴⁵
CCXI	Y	Y	Y	N	N	3	
Lianhe/United	Y	Y	Y	Y	Y	5	N
Lianhe Credit	Y	Y	N	Y	N	3	N
Dagong	Y	Y	Y	Y	Y	5	Dagong Global ²⁴⁶
SBCR	Y	Y	Y	Y	Y	5	N
Pengyuan	Y	Y	Y	N	Y	4	Y
Golden	Y	Y	Y	Y	Y	5	N
SFE	Y	Y	Y	Y	N	4	N
CCRC	Y	N	N	Y	N	2	N
Big Three	Moody's, S&P and Fitch						Y
Total	10	8	8	8	6		6

* "Y" means "yes" and "N" means "no" in the table.

²⁴⁵ China Chengxin (Asia Pacific) Credit Ratings Companies Limited focus on service of Hong Kong offshore RMB bond market.

²⁴⁶ Dagong Global Credit Rating (HK) Co., Limited.

Some other relevant details are presented as follows:

Lianhe Credit and CCXR are subsidiaries under, respectively, their parent company Lianhe Credit Management Co., Ltd and China Chengxin Credit Management Co., Ltd. just like the cases for CCXI and for Lianhe.

Among these CRAs, only United Rating, Dagong, SBCR and Golden have full accreditation in front of sectoral regulators (NDRC, CSRC, CBRC and CIRC) while for CCXR and CCXI, they have focus one for issuing and the other for trading activities for rating business. In consequence, they also have access to the entire rating business on the level of the group.

Here, we will take some examples to better explain the rest of the situation:

Ratings given by Pengyuan and SFE are not acknowledged by CIRC and CBRC. In other words, insurance companies and banks cannot take their ratings as reference, neither for issuing financial instruments, principally various types of bonds; nor for the constitution of their investing portfolio.

CCRC is the latest entrant into the Chinese rating market, where CIRC is the only regulator that gives its accreditation. In other words, ratings issued by CCRC are only valid in the insurance sector. Consequently, rating users will have the least incentives to solicit CCRC's rating services since they have the least utility. In the competition with other CRAs, there is wonder that CCRC has the biggest disadvantage to enlarge its market share. That may also explain the reason why CCRC adopts the investors' paying model. CCRC decided to adopt a different strategy by asking investors instead of issuers to pay their rating services, in order to distinguish itself from other local CRAs. It is presumed that as a new rating market entrant, it would have little chance if it remained at the same page with other competitors.

We discussed CRAs present on Chinese rating market briefly from its interaction with rating regulations. You can find more information related to the evolution of rating business in China, in the Section 1 of Chapter V. The descriptive data of the entire samples can be found in Section 2 of Chapter IV.

1.2. Learn from European experiences

We will have two points of lesson to learn from European experiences for a future better rating regulation in China: a more consolidated supervisory system and the empowerment of the regulator, by the example of ESMA (European Securities and Markets Authority).

1.2.1. A more consolidated supervisory system

In order to inspire future reforms of Chinese rating regulation, we compare it to the European supervisory system. We have found that European national mechanism (example of UK, France, Germany and 13 countries of New Europe²⁴⁷) is more consolidated than Chinese sectoral mechanism.

On top of it, we have the functional model and the integrated model.

To be more specific:

Functional model, which is used in United-Kingdom and in France, is a model that separates “prudential supervisions” (combing systemic and micro-prudence supervision) and “conduct of business”. “A functional approach is to prevent regulatory arbitrage between different types of financial institutions” (Merton, 1995).

Integrated model, which is used in Germany, is a model represented by a single and universal supervisor, such as BaFin (Federal Financial Supervisory Authority). The German financial authority presents for all activities in banking, securities markets and insurance companies in its country. Hence, three objectives of financial stability, financial prudence and market conduct of business²⁴⁸ are get united under the integrated model.

²⁴⁷ Hungary, Czech Republic, Slovakia, Poland, Estonia, Lithuania, Latvia, Slovenia, Malta, Cyprus (for the entry 01/05/2004), Bulgaria, Romania (for the entry on 01/01/2007), Croatia (for the entry on 01/07/2013).

²⁴⁸ Jakob de Haan, Sander Oosterloo, and Dirk Schoemaker, *European Financial Markets and Institutions*. Cambridge (UK), 2009, Page. 320.

The next step is to enlarge our examination scope to New Europe: they are 13 countries that define in the Note 243.

Table III.3

Supervisory Structure of New Europe (13 countries)²⁴⁹

Year of adherence to European Union	2004										2007		2013 ²⁵⁰
Countries Supervisory Structure	HU	CZ ²⁵¹	SK ²⁵²	PL	EE	LT	LV	SI	MT ²⁵³	CY	BG ²⁵⁴	RO	CA ²⁵⁵
Sectoral	N	N		N	N	N	N	Y		Y	N	Y	N
Functional			N						N		Y 03		Y 05
Integrated	Y 00	Y 06	Y 06	Y 08	Y 01	Y 10	Y 01		Y 02				

* **Table III.3 is made by the author.**

**When we talked about sectoral model, we mean that there are as many regulatory authorities as the number of financial activities and it is the case in China.

The functional model is adopted in UK and in France.

The integrated model is adopted in Germany. More detailed explanations can be referred to previous pages (Subsection 1.1.3 for sectoral model vs. Subsection 1.2.1. for functional and integrated model).

²⁴⁹ ECB, December 2010. Recent development in Supervisory Structure in the EU member (2007-10).

²⁵⁰ 2013, *ad idem. infra.*

²⁵¹ Česká národní banka (CNB) is the single regulator. In ECB, December 2010. *supra.* Page 10.

²⁵² Národná banka Slovenska (NBS) is the single regulator, *idem*, Page 21.

²⁵³ Central Bank of Malta (CBM) and the Malta Stock Exchange, in ECB (2006), *supra*, page 18.

²⁵⁴ ECB, December 2010. Recent developments in supervisory structures in the EU member (2007-10), page 9. “Bulgarian National Bank (BNB) which is responsible for banking supervision, and the Financial Supervision Commission (FSC), which is responsible for the supervision of securities and investment activities, insurance business and pension funds.” There is no separate institution in addition to the national bank in charge of banking supervision.

²⁵⁵ Prohaska, Zdenko and Draženovic, Bojana Olgic, 2013, Financial Regulation and Supervision in Croatia, *Working paper.*

We have noticed two other obvious *trends* from the previous table:

Firstly, there are more countries are trying to reduce the number of regulators; then, they are conglomerating the supervisory system.

Besides, it is clear from *Table III.3* that there are more efforts of consolidation needed to be done for National Competent Authorities (NCA), but before that achievement, European rating integration was made by ESMA on the Union level.

In other words, European rating regulation is embedded into the larger landscape. Whatever supervisory path each Member State has chosen, they all have to behave under the guideline of a unique European legislation.

This observation could be explained by the fact that financial products have become extremely sophisticated and the financial organizations being universalized worldwide with the improvement of information technology. The modern market economy and financial globalization has made the artificial dividing border among financial activities disappeared.

1.2.2. Empowerment of regulator, the case of ESMA

De Larosière Report highlighted the importance of a supervisory coordination²⁵⁶ of European institutions with NCAs to better respond to the challenges raised by the Sub-prime and European Debt Crisis.

The influence of *ESMA* is increasing considerably since the provisions of the *amending Regulation (European Commission) in 2011*,²⁵⁷ and has been reinforced in the later *amending Regulation*²⁵⁸, “*Directives*”²⁵⁹ and “*Delegated Regulations*”²⁶⁰.

²⁵⁶ “On its proposals for reform of the supervisory role in the EU regulation and to an extent also in the global coordination of reforms.” <http://www.voxeu.org/article/critical-assessment-de-larosiere-report>.

²⁵⁷ Regulation (EU) No. 513/2011 of 11 May 2011 of the European Parliament and of the Council on credit rating agencies. Which itself is the amending Regulation (EC) No 1060/2009 on credit rating agencies (Text with European Economic Area relevance).

²⁵⁸ Regulation (EU) No. 462/2013 of 21 May 2013 of the European Parliament and of the Council on credit rating agencies.

²⁵⁹ Completed list could be consulted on the website of European Commission, at http://ec.europa.eu/finance/rating-agencies/index_fr.htm.

²⁶⁰ *Ibid.*

The post-crisis reform of rating regulation, compared to the initial version²⁶¹, makes ESMA the sole and final responsible for rating activities within the European Union. Consequently, NCAs have to play the secondary role under European authority. It is a way to help to prevent a single CRA from compromising the entire European rating industry systematically due to the lack of cooperation or even intentional “competition” among national regulatory authorities.

The change of legal environment enabled ESMA to function not only as a “registration/certification mechanism” but also as an investigation and inspection authorities²⁶².

When we talk about registration, we mean that “the registration process should therefore be streamlined, and the time limits should be reduced accordingly”²⁶³ while certification indicates that “ESMA has the right to certify CRA established in third countries that “have no presence or affiliation in the EU countries. The regime allows financial entities and instruments established or issued in non-EU countries to be rated. The certification requires a co-operation arrangement to be established between ESMA and the relevant countries”²⁶⁴.

ESMA is able to give license²⁶⁵ to the accredited CRAs as well as to force under-performed CRAs to “exit” (Withdrawal of Registration)²⁶⁶ from the European market. It’s one of the efficient ways²⁶⁷ to “police” the regulatory license that the regulator once created.²⁶⁸

Until the last update on the March of 2017, we found, there are 43 authorized CRAs within EU, with 39 registered CRAs and 4 certificated ones. According to the annual report of ESMA (2015), EJR is the most recent certificated CRA that was approved to issue ratings for the use within the European Union, in the course of 2014 and the

²⁶¹ Regulation (EU) No. 1060/2009 of 16 September 2009 of the European Parliament and Council on credit rating agencies.

²⁶² According to Article 23c and Article 23d of *Chapter II of Title III (“Supervision by ESMA”) of Regulation (EU) No. 513/2011 of 11 May 2011.*

²⁶³ *Idem*, Recital 8.

²⁶⁴ *Idem*, *Chapter I of Title III (“Registration Procedure”)*. from ESMA, “Regulating credit rating agencies” at https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/managing-risks-banks-and-financial-institutions/regulating-credit-rating-agencies_en

²⁶⁵ “Regulatory License” in Partnoy (1999), P684 and Partnoy (2006), P81.

²⁶⁶ Article 20. of *Regulation (EU) No. 513/2011 of 11 May 2011.*

²⁶⁷ Other surveillance measures are listed on the Article 24 of the Regulation 2011.

²⁶⁸ Partnoy (2006), *supra*. P83.

Japan Credit Rating Agency Ltd was the first CRA got through the application for certification. Kroll Bond and EJR are American CRAs.

The “Big Three” stated the acquisitions “in the early part of the new millennium to strengthen their offerings in different local markets”²⁶⁹. In result of this strategy, Fitch and Moody’s have seven branches all over the Europe, with separately office in Poland and Cyprus as foreign affiliations in the “New Europe”, while S&P established their business only in France, Italy and UK. Additionally, AM Best (USA), DBRS/Dominion Bond Rating Service (Canada), Dagong (China) and Expert Rating (Russia) have created European branches in UK, Italy and Germany, which left in total 18 European Small-Medium CRAs established in 11 Member-states of EU.

*Article 35a*²⁷⁰ of the *second amending Regulation (2013) of ESMA* starts to mention the notion of “civil liability”, in addition to these administrative penalties. Since then, CRAs are possible subject to litigation under the Union Law.

It is obvious that ESMA, the cross-border intergovernmental supervisor is entitled to more real legal power. Furthermore, this enforcement is not only theoretical talking: back to 2014, ESMA has taken some concrete measures targeting S&P by a censorship²⁷¹.

The “sanction power”²⁷² was also showed in the case of DBRS²⁷³ and Fitch²⁷⁴ where ESMA imposed a fine²⁷⁵ to the wrongdoing agency after appointing an Independent Investigating Officers (IIOs)²⁷⁶ to evaluate the infringement in compliance with *Regulation (EU) 462/2013* on CRAs.

²⁶⁹ ESMA, *Technical Advice on Competition, Choice and Conflicts of Interest in the CRA industry*, 2015, Note 68.

²⁷⁰ Regulation (EU) No. 462/2013 of 21 May 2013 of the European parliament and of the council on credit rating agencies.

²⁷¹ Press Release: ESMA censures Standard & Poor’s for internal control failings.

²⁷² *Idem*, Chapter I of Title IV: “Penalties, fines, periodic penalty payments, committee procedure, delegated powers and reporting”.

²⁷³ At <http://www.esma.europa.eu/news/ESMA-fines-DBRS-Ratings-Ltd-internal-control-failings>, on June 2015.

²⁷⁴ ESMA fines Fitch Rating Limited for the amount of 1.38 million for “a series of negligent breaches” of CRA Regulation” in ESMA/2016/1157.

²⁷⁵ More details about the fines and penalty payments could be found at the Article 36 of . of *Regulation (EU) No. 513/2011 of 11 May 2011*.

²⁷⁶ *Idem*, Article 23e.

1.3. Fitting into each specific environmental context

At the moment, it's hard to harmonize European regulators on the national level. NCAs, such as Financial Conduct Authorities (FCA) in United-Kingdom, Autorité des Marchés Financiers (AMF) in France and BaFin (Federal Financial Supervisory Authority and in German: Bundesanstalt für Finanzdienstleistungsaufsicht) in Germany, take different structure to supervise rating activities and indeed, “such differences may be due to the idiosyncratic characteristics of each country’s financial system and economy, including historical features, as well as political and cultural structures.”²⁷⁷

Here, we give a comparative application to German and Chinese rating regulation.

1.3.1. The case of Germany

German commercial banks play “a vital source of finance for small and medium-size enterprises”²⁷⁸ and all of their activities “must be approved by the BaFin”²⁷⁹, the omnipotent regulator.

The existence of universal financial institutions makes it clear that the market regulator should also play an across-border role and conducts a cooperative oversight accordingly, especially in the tide of financial innovation and popularization of derivatives and structured products (by asset securitization for example). It contributes a critical solution to avoid either regulatory “vacuum” or “repetition” under the mixed operational environment and to prevent systematic risks. There is also some kind of consideration for financial supervision synergy.²⁸⁰

It's proven that the properly established regulatory authority has “successfully curbed the influence of CRAs”²⁸¹ by choosing to rely more on Bank Internal Rating-Based

²⁷⁷ ECB, Recent developments in supervisory structures in the EU member states (2007-10), October 2010.”

²⁷⁸ Kerwer, Dieter. 2005, *supra*. P472.

²⁷⁹ German Ministry of Finance, quoted in Becker 2007: 87, in Kruck (2013), *supra*. P164.

²⁸⁰ Schüler, M. and F. Heinemann, 2005, The Costs of Supervisory Fragmentation in Europe, ZEW Discussion Paper, No. 05-01, Mannheim University, Mannheim.

²⁸¹ Meister; Interview, Bundesaufsichtsamt für das Kreditwesen, in *Idem*, p.470.

Approach (IRB), which is considered by Kerwer (2005) as a “resistance of some governments against the arrangement of the Basel Committee”.²⁸²

Given all of these facts, it is clear that the integrated supervisory system may be the most suitable for Germany rating industry currently.

1.3.2. The case of China

Chinese financial activities are highly segmented.

The sectoral supervisory structure is more adequate to supervise the market, which is still under a fast-development stage.

It is clear the entire regulatory system is quite confusing, where exist several problems. Here we will present some of them exhaustively:

Various regulatory institutions definitely complicate the regulation situation. Too many supervisors mean no real authority in charge. When an infringement happened, they could shirk responsibilities to each other.

Besides, the existence of the discrepancy among institutions is still obvious. There is needed a universal explanation of all relevant laws, rules and regulations.

Beyond the fragmentation of regulation, language inside the regulations and rules continue to be ambiguous. Some principles are not detailed enough for market actors to well comprehend and implement with 100% clarification.

For example, the “*Guiding Opinions of the People’s Bank of China for the Management of Credit Rating*”²⁸³ specifies that the credit rating should be conducted “legally, independently, fairly, and strictly in accordance with the published rating methodologies and procedure” and it is also the case in the Empirical Part Two §2 of the “*Specification for Credit Rating on the Credit Market and Inter-bank Bond*

²⁸² Meister, *supra*.

²⁸³ PBoC, 2006 “Guiding Opinions for the Management on Credit Rating (Guiding Opinions).” translated by the author from Chinese《信用评级管理指导意见》. In Arner Douglas W., Hsu, Berry F.C. and Pu, Lifen, *supra*, Note 17.

Market”²⁸⁴. The latter only provides “five principles of credit rating—reality, consistency, independence, objectivity, and prudence”. However, these descriptions mean nothing until we have concrete examples as reference of actions.

Of course, it takes some paths for Chinese rating regulation to arrive at certain maturity level. The current job of regulators is to ensure that, CRAs could conduct in compliance with relevant regulations as much as possible.

It’s believed that the most convenient way for representatives from every regulator is to get them united under the same permanent mechanism. In response to the new needs, the Inter-Ministerial Joint Meeting for Financial Regulation and Coordination is imagined to be an efficient option.

²⁸⁴ *Idem*, Note 19.

Conclusion of Section 1

It is important to understand the structure of Chinese regulation mechanism (from the issuing supervision to trading supervision) and we detailed the sectoral rating regulation (in the Subsection 1). PBoC acts as the general supervisor of rating regulation. It is the authority where CRA should be registered for their entry into Chinese market at the first place. It regulates the market, along with NDRC, CSRC, CBRC and CIRC, in charge of the certification for rating-related activities. Chinese rating regulation remains on the level of “entry accreditation” instead of a real “quality control” and the regulatory skills remain in the preliminary stage, which have a long way to go with a further development of Chinese bond market²⁸⁵.

That’s also the reason why we resort to European experiences (country and union level) to see what a transitory economy could learn from the developed countries and other transitory economies in terms of rating regulation (in the Subsection 2). After an overview of the example of Britain, France, Germany and New European Countries, we found that European national authorities gradually adopt more consolidated supervisory systems to be better suited into the modern financial development. Since the establishment of ESMA, it has gained increasingly empowerment, independently to different attempts of National Competent Authorities (NCA). The latter plays a secondary role and are solicited only when *ESMA* need the cooperative assistance on the European national level.

We believe that the regulatory mechanism should well fit into environmental context of each country (we took the example of Germany to illustrate the idea) and we explained the reasons why national regulators attempts should take different forms (in the Subsection 3). In this sense, more rating regulatory reforms are expected under their own changing rhythm, development situation and other relevant institutional elements.

A qualitative study for rating regulation and norms will be conducted empirically in the Section 1 of Chapter IV, to develop the conceptual discussion on the topic.

²⁸⁵ Current situation, problems and suggestions of credit rating on Chinese capital market. Zhang Zhijun (General Manager of Lianhe), 2013(01), Chinese securities, Page 76-80. ((The original text is in Chinese and it is translated by the author).

Section 2. Issuers and information collection

2.1. Quality of hard information

2.2. Soft information: corporate governance factors among others

2.3. Look beyond firm-specific information: cross industrial and cross regional factors

Introduction of Section 2

The theoretical role of CRAs as “information gathers and processors (Ramakrishnan and Thankor, 1984 and Millon and Thakor, 1985)”²⁸⁶ helps rating users to interpret properly and correctly through the information “flood”, for both hard information (Subsection 2.1) and soft information (Subsection 2.2). In other words, they are firm-specific quantitative and qualitative information and both of them enter into discrete categories²⁸⁷ (Löffler, 2005).

The prior hard information may refer to ratios quantifying financial risks; the latter soft information is used to characterize operational/business risk (Petersen, 2004). Both risks are considered as factors to influence credit default risk.

Beyond firm-specific financial information, we should be aware of the importance of cross industrial (micro-economy) and cross regional (macro-economy)²⁸⁸ factors (Subsection 2.3).

²⁸⁶ Cantor, Richard and Packer, Frank. 1996. Multiple Ratings and Credit Standards: Differences of Opinion in the Credit Rating Industry. *Federal Reserve Bank of New York Staff Reports* 12: P.15.

²⁸⁷ “Discrete information to describe continuous credit quality”, in Löffler, 2005. “Avoiding the Rating Bounce: Why Rating Agencies Are Slow to React to New Information.” *Journal of Economic Behavior & Organization*, 56(3): 365–81.

²⁸⁸ “From the point of Credit Portfolio View, default probabilities are conditional on the macro-variables” in Crouhy, Michel. Galai, Dan. and Mark, Robert. 2000. A comparative analysis of current credit risk models, *Journal of Banking & Finance* (24).

2.1. Quality of hard information

CRA's usually conduct first of all, a fundamental financial analysis. The thorough examination covers the entire financial reporting statement (Balance sheets, income statements, and cash flow statements.). And then, market information will complement these historical numbers by its present value.

The quality of ratings is related directly to the initial collection of hard information.

2.1.1. Generally speaking

According to findings of Kaplan et al. (1979): "2/3 of a holdout sample of newly issued bond" could be correctly predicted and explained by financial numbers from the statements, ratios and indicators (such as "subordination dummy variable, total assets, the long-term debt and the common stock systematic risk measure"²⁸⁹).

In addition to that, public financial information is also an important element in CRA's rating modification. Ederington and Goh (1998) and Creighton Adam et al. (2007) suggested that at least for the USA market and the Australian market, "negative rating changes are typically based on information that is well-and truly in the public domain".²⁹⁰ CRCs could be forecast by stock analyses, according to "declines/increase in actual corporate earnings"²⁹¹ proceeding to credit revisions.

2.1.2. In the case of China

When we talk about China, the quality of Chinese public information is so doubtful that global CRA's like Moody's keep a reserved attitude in obtaining and processing public financial information release. They once claimed that what is available on the Chinese market was "inaccurate". More explicitly, someone even argues that public information disclosure in China is not sufficiently credible, transparent, or even

²⁸⁹ Kaplan R.S. and Urwitz G, 1979, Statistical Models of Bond Ratings: A Methodological Inquiry, *Journal of Business*, 52(2):231-261.

²⁹⁰ Creighton Adam, Gower Luke et Richards Anthony J, 2007, The impact of rating changes in Australian financial markets, *Pacific-Basin Finance Journal* 15, 1-17.

²⁹¹ *Ibid.*

probably fraudulent.

Just as what Kennedy Scott put forward: “*Though CSRC, among other agencies, has issued a stream of regulations requiring better corporate governance by companies and accounting firms alike, fraud is still rampant. A recent Ministry of Finance study found that more than 50 percent of the companies it surveyed had significantly doctored their profit and loss statements*”²⁹²

In addition to the problematic accounting issue, as noted in the *Wall Street Journal*, the so-called “administrative control” is another worry that could also taint the independence of Chinese auditing, which itself is a relatively new phenomenon. Since Chinese stock market is segmented, the accounting and auditing standards are applied accordingly to segments where transactions take place. More details are presented in the following graph.

Graph III.1

Accounting and Auditing Standards applied to market segments²⁹³

<u>Share Catalog</u>	<u>Accounting Standard</u>	<u>Auditing Firms</u>
A-shares	Chinese GAAP	Local auditing firms
B-shares	IAS	Big 5 (International auditing firms)
H-shares	IAS/HK GAAP	Big 5 (International auditing firms)
AB-shares	Chinese GAAP and IAS dual reporting	Local CPA and Big 5 dual auditing
AH-shares	Chinese GAAP and IAS dual reporting	Local CPA and Big 5 dual auditing

Last but not least, in the complexity of Chinese market segmentation, we have seen more specifically that, GAAP- Generally Accepted Accounting Principles, used by “A share segment” are not necessary in accordance with IFRS- International Financial Reporting Standards²⁹⁴. Some global CRAs are worried consequently that it would be a problem to conciliate their conventional methods under Chinese local practices

²⁹² Kennedy Scott. 2003. *supra*.

²⁹³ Liu Jianwei and Liu Chunjiao. 2007, *supra*.

²⁹⁴ B share firms are asked to use IFRS and “H share firms” can choose between IFRS and HK. GAAP.

environment²⁹⁵. In this aspect, there is less or even no such kind of concern for “H share segments” since they have already internationalized their accounting and auditing rules to which other international issuers/investors are used.

Liu and Liu (2006) also stated empirically that public information is more value-relevant in “B shares” and in “H shares”, compared to in “A shares”. The reason behind could be at least explained by the inconsistency of accounting and auditing norms used on Chinese continental market compared to Hong Kong market.

2.2. Soft information: corporate governance factors among others

There are ten categories of information to cover in credit ratings according to the recent study of determinants on the emerging market of Brazil (2014)²⁹⁶: leverage, profitability, size, financial coverage, growth, liquidity, corporate governance, control, financial market performance and internationalization. It should be noted that researchers are aware of the specification of institutional factors accounting for developing market outside financial ratios on the firm level.

We have discussed the hard information previously; now it is the turn to explore soft information, among which there are corporate governance factors.

2.2.1. Generally speaking

There are qualitative aspects of rating information in addition to the quantitative ones, especially, the effects of corporate governance on firms’ credit ratings.

In the pioneering research of Ashbaugh-Skaife H. Et al. (2006)²⁹⁷ and the followers Alali et al. (2012)²⁹⁸, they both found good governance did have a positive impact on

²⁹⁵ Baglolle Joel. 2004, *supra*.

²⁹⁶ Cruz de Souza Murcia, Flavia et al. 2014, The determinants of credit rating: Brazilian Evidence, *Brazilian Administration Review*, V11, N2. Pp 194-201.

²⁹⁷ Ashbaugh-Skaife, Hollis; Collins, Daniel W.; LaFond, Ryan. 2006. The effects of corporate governance on firms’ credit ratings, *Journal of Accounting and Economics*, October 2006, Volume. 42, Issue. 1-2, P. 203-43.

²⁹⁸ Alali Fatima et al. 2012. The effect of corporate governance on firm’s credit ratings: further evidence using governance scores in the United States. *Accounting and Finance* 52(2012): 291-312.

rating scores after employing different proxies²⁹⁹ and controlling firm-specific risk characteristics. Consistent with discoveries on the American market, Aman and Nguyen (2013)³⁰⁰ found good governance of corporations was accompanied by higher credit rating in Japan by hardening the soft information³⁰¹. It showed that this is an important quality taken by debt holders and their raters. To be more detailed, among three attributes, ownership structure³⁰² and disclosure quality counted more than board structures. They found in extra that corporations with better governance have incentives to improve their hard information (financial ratios) because a better rating implies lower cost of their debt financing.

2.2.2. In the case of China

When we talk about China, we consider that the board structure and composition would be one of the most important soft information in a study of credit ratings, which could be measured in turn by the number of board members, independent directors and executive directors, among other factors as proxies.

To be more specific:

- ✓ *Article 109 of Company Law of People's Republic of China* clarifies that the number of *board members* should be between 5 and 19. The fewer members on board, the higher the power concentration is, especially when the number of executive directors is limited.
- ✓ Independent directors should occupy no other position for the same listed companies and have no conflict of interests with other shareholders (*Article 3*). CSRC stipulated in the "*Guidance on the establishment of the system of listed companies' independent*

²⁹⁹ "We use three different measures of corporate governance; the Gomper's index (G-score), the Brown and Caylor's score (GOV_SCORE) and a score developed by Bebchuk et al. (2009, the entrenchment index is based on six provisions; staggered boards, shareholder limits by amendments of law, poison pills, golden parachutes and super majority requirements for mergers and charter amendments.) in *Idem*, page 292.

³⁰⁰ Aman, Hiroyuki and Nguyen, Pascal. 2013, Does good governance matter to debt-holders? Evidence from the credit ratings of Japanese firms, *Research in International Business and Finance*, 29 (2013) 14– 34.

³⁰¹ Petersen, Mitchell, A. 2004. Information: hard and soft, *Working Paper*.

³⁰² Or "financial stakeholder rights and relations" in Ashbaugh-Skaife et al, 2006.

director” (2001)³⁰³, that “one third of directors should be outsiders at least” (*Article 3*).

- ✓ CEO (Chief Executive Officer) is, in the majority of cases, executive director. There exist some cases that the person who manages the company is also the chief of directors. The duality, in other words, means a concentration of the executive power and the decisive power. The phenomenon will make private information communication- canalling from the inside of the company to market investors- even harder. It should be noted that under Chinese market context, top executives are often appointed by authorities while at the same time, the percentage of management shareholding is yet very low.
- ✓ In addition to that, to responding to market segmentation, we found that in Continental Chinese market, we have all profiles of listed companies combined (the presence of both SOEs and private companies) while for HK Market, especially for H shares, the State directs “money to favored industries”³⁰⁴ and guides their listing outside mainland market. That also explains the high percentage of SOE among H shares (main board).

Admittedly, the discussion of indicators to describe a better governance is quite vast and our previous description is far from exhaustive; However, it breaks the ice and initiates the examination of soft information in Chapter V: strategies of CRAs. Besides, our study will also be able to bring two points of originality in this regard.

First of all, we will offer first empirical evidence on Chinese market to illustrate how governance-related factors (plus extensively soft information) account for CRAs. The results will help to complete the determinants identified by Poon and Chen (2008) while their research focused only on hard information.

In addition to fill in the void, we provide the possibility to compare the results under the Chinese institutional environment with those conducted in American market

³⁰³ At http://www.csrc.gov.cn/pub/newsite/flb/flfg/bmgf/ssgs/gszl/201012/t20101231_189696.html. Translated by the author from Chinese.

³⁰⁴ Special report, *The Economist*, January 21st, page 2.

(Ashbaugh-Skaife et al. 2006 and Alali, 2012), Asian markets (Japanese market, Aman and Nguyen, 2013) and other developing markets (Murcia et al. 2014).

2.3. Look beyond firm-specific information: cross industrial (micro-economy) and cross regional (macro-economy) factors³⁰⁵

2.3.1. Generally speaking

As put forward by Crouhy et al. (2000) that “the calibration of this (credit risk measurement) model necessitates reliable default data for each country, and possibly for each industry sector within each country”³⁰⁶.

In practice, some CRAs are also aware of the importance to “increase efforts to harmonize its ratings across sectors”³⁰⁷ illustrated by the findings of Ammer (2000).

In this regards, S&P has invented the national and regional scale of ratings³⁰⁸ for certain areas of the world, most of them are developing countries.³⁰⁹ In other words, S&P takes into account the differences of each country in terms of institutional elements. For example, the “Greater China Regional Scale” is included “a prefix (cn) to denote” Mainland China, Hong Kong, Macau and Taiwan.

We quoted from their publication that “*national and regional scale ratings express relative opinions about the creditworthiness of an issuer or the credit quality of an*

³⁰⁵ “From the point of Credit Portfolio View, default probabilities are conditional on the macro-variables” in Crouhy, Michel, Galai, Dan. and Mark, Robert. 2000, *supra*.

³⁰⁶ Crouhy, Michel., Galai, Dan. and Mark, Robert. 2000, *supra*. Page 116.

³⁰⁷ Ammer, John and Packer, Frank, 2000, How consistent are credit ratings? A geographic and Sectoral Analysis of Default Risk, Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*.

³⁰⁸ S&P Global Ratings: RatingsDirect: General criteria: S&P Global Ratings' National and Regional Scale Mapping Tables, online on 01/06/2017
at

https://www.standardandpoors.com/en_EU/delegate/getPDF?articleId=1824959&type=COMMENTS&subType=REGULATORY.

³⁰⁹ Including Argentina National Scales, ASEAN Regional Scale, Brazil National Scale, Chile National Scale, Greater China Regional Scale, Gulf Cooperation Council Regional Scale, Israel (Maalot) National Scale, Kazakhstan National Scale, Mexico (Caval) National Scale, Nigeria National Scale, Nordic Regional Scale, Russia National Scale, South Africa National Scale, Taiwan Ratings National Scale, Turkey National Scale, Ukraine National Scale, Uruguay National Scale.

individual debt issue within the universe of credit risk on the national scale. National scale ratings are not directly comparable with our global scale ratings or with national scale ratings for other countries”.

It means that S&P takes sovereign risk into consideration, in order to estimate accordingly the credit risks for local issuers and their debt issues.

Hence, we should consider these two extra informational factors beyond firm-specific information, either hard or soft into the information collection for the rating process.

2.3.2. In the case of Germany

The European example is documented by Kerwer (2001)³¹⁰, which illustrated that there is a “widespread skepticism among German borrowers about the US rating agencies. [...], because the same standards of credit-worthiness will be applied as in the US, which will not take into account the specificity of German corporate governance, etc.”

Their concern is also plausible from the point of view of the *Theory of Contingency* (Mintzberg)³¹¹, where the environment, including a cultural aspect, is among the four factors to influence the organizational behaviors. Just as how the study of Kruck (2013)³¹² shed the light on the difference of Anglo-Saxon (the liberal market economy, LME) and Rhenish capitalism (coordinated market economy, CME).

It’s reasonable to believe consequently that, under the German financial environment combining “macro-institutional economic-social conditions”³¹³, CRAs would adjust their business conduct accordingly. The previous examples make it clear the importance to look beyond firm-specific information.

³¹⁰ Kerwer, Dieter. 2001. Standardizing As Governance: The Case of Credit Rating Agencies. In A. Héritier, ed., *Reinventing European and International Governance*, P. 293–315. Lanham: Rowman & Littlefield.

³¹¹ Mintzberg, Henry, 1982. *Structure et dynamique des organisation*, Edition d’Organisation.

³¹² Kruck, Andreas. 2013, *supra*.

³¹³ *Ibid.*

2.3.3. In the case of China

When we talk about China, especially in the study of Ferri and Liu (2002, 2003)³¹⁴ where they showed that “sovereign risks contribution is disproportionately greater” in developing countries or even “the bulk of the rating content rests with their sovereign risks only”. They contended that investors hold undeniably negative prejudice vis-à-vis issuers in LDCs (Less Developing Countries). CRAs choose to behave conservatively by conforming the investors’ behaviors instead of sending a strong positive signal to the market, which will hurt their reputation in case of mistakes.³¹⁵

In response to those academic researches, in 2004, Moody’s published a special comment³¹⁶ on the same subject. Different from the early study, the professional experts along with a recent research of Figlewski (2012)³¹⁷, reassured the assumption that macroeconomic factors “have explanatory power” when standard models (including financial and operational ratios) are not capable to characterize perfectly credit events³¹⁸. From this viewpoint, it is important to take the importance of the State before analyzing industrial profiles of public companies on Chinese market.

³¹⁴ Ferri, Giovanni and Liu Li-Gang. 2002, Do Global Credit Rating Agencies Think Globally? *The Information Content of Firm Ratings around the World, Working Paper*. And 2003, How do global credit rating agencies rate firms from developing countries? *Asian Economic Papers*. Sep2003, Vol. 2 Issue 3, P. 30-56.

³¹⁵ Ferri, Giovanni and Liu Li-Gang. 2002, *supra*. P13.

³¹⁶ Cantor R., 2004, Measuring the quality and consistency of corporate ratings across regions, Moody’s Investors Service, New York.

³¹⁷ Figlewski, Stephen; Frydman, Halina; Liang, Weijian; 2012, Modeling the effect of macroeconomic factors on corporate default and credit rating transitions, *International Review of Economics and Finance*, January 2012, 21(1), P. 87-105.

³¹⁸ Carling, K., Jacobson, T., Linde, J., & Roszbach, K. 2007. Corporate credit risk modeling and the macro-economy. *Journal of Banking and Finance*, 31, 845–868. In the study, they compared a model with and without macro condition. It should be careful to generalize their finding since the study is essentially on the Swedish banking sector.

Conclusion of Section 2

Content of Section 2, Chapter III

The uncertainty³¹⁹ is due to several causes and here we presented some important but not exhaustive. Section 2 is divided into three subsections, where we start with a general presentation of principles and applied later on, to Chinese case.

Subsection 1 reminds us of the importance to consider the segmentation effect of the Chinese market when we talk about the quality of public financial release (hard information), which itself constitutes the foundation of credit rating assessment.

Subsection 2 presents the soft information influencing the rating results. For instance, when we talk about the securities issuing of SOEs or companies with state-shareholding partially, it's better to take the state's potential pledge and aids into account of credit ratings. In other words, reimbursement of securities is, *de facto*, backed by the government, locally or nationally³²⁰.

Besides, soft information is not only limited to the internal corporate governance but also the external governance. Hence, a change of regulatory climate impact directly how CRAs select firm-specific information. This leads our thinking thread to the following discussion.

Subsection 3 tells us the importance to look beyond the scope of corporations themselves that CRAs rated when the institutional environment where they are situated is so important to have an impact on the rated. It is the case in a general way but also in the case for Germany as well as for China.

All elements combined, CRAs should collect and select carefully all kinds of information: public/private, hard/soft, firm-specific/cross industrial and cross regional factors before conducting their statistical modeling.

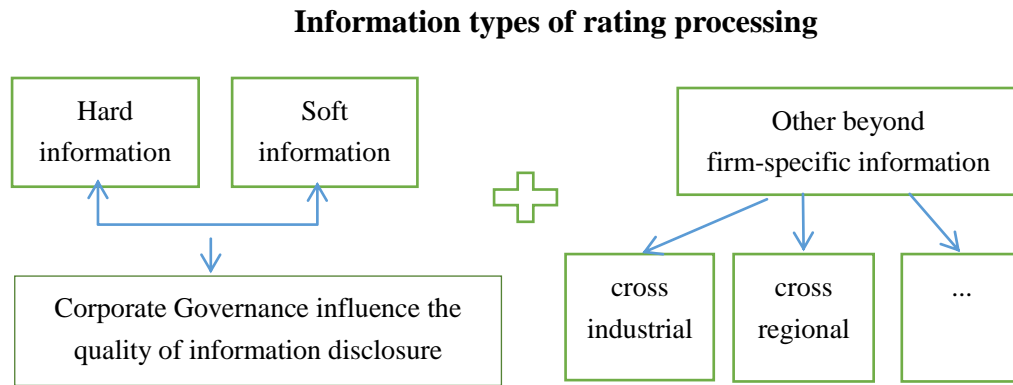
³¹⁹ “Uncertainty about credit risk as captured by disagreement among the credit rating agencies”, in Akins. B. 2012. “Financial reporting quality and uncertainty about credit risk among the ratings agencies”. *Working Paper*.

³²⁰ *Idem*, Jiang and Kim, 2015, P208.

Structure of Section 2, Chapter III

Figure III.1 provides us a schema straightforward to better memorize these three categories of information that count in the rating activities.

Figure III.1



***Figure III.1 is made by the author.**

Inspirations for the following chapters

There are three other points to discuss to finish the Section 2 of Chapter III, which will lead us to the following chapters.

Different kind of information is interconnected

Some researchers, such as Li et al (2015)³²¹ found that the quality of Chinese market informativeness (hard information, Subsection 1) is closed connected to the effectiveness of corporate governance (soft information, Subsection 2), which confirmed the conclusion of Gul (2010) where he contended that “governance mechanisms exert a significant influence on the firm's information environment”.³²²

³²¹ Li, S., Brockman, P., Zurbrugg, R., 2015. Cross-listing, firm-specific information and corporate governance: evidence from Chinese A-share and H-share. *Journal of Corporate Finance* (32): 347–362.

³²² Gul, F.A., Kim, J.-B., Qiu, A.A., 2010. Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: evidence from China. *Journal of Financial Economy*. Issue 95, 425–442 in Li. *supra*.

Differences among CRAs (agency-conduct effect)

Each CRA has its own criteria of selecting all these factors and put them into statistical assessment, which is proven empirically by Pottier and Sommer³²³(1999). They found that “each of the rating agencies examined uses a distinct rating model, with its own important factors and its own weights on those factors”. It is on the same line with the statement of Langohr and Langohr (2008) “the metrics behind the letters/numbers/signs may different from one CRA to the other”³²⁴.

Differences between the past, the present and the future, for one single CRA (time-varying effect)

In addition to that, Xie (2008)³²⁵ reported the importance to incorporate time-varying factors (stock market performance³²⁶, CPI, IPI) to better explain the existing models. Another change should be considered is that one single CRA’s way of rating may also be evolving with the time going by.

All elements combined, it is even harder for the rating users, investors among others, to understand properly strategic choice of rating business objective in order to interpret information content of ratings solicited by issuers or CRAs’ strategic rating behaviors accordingly, which will lead us to the Chapter V: strategies of CRAs. We will firstly examine the literature review, which also inspires us to conduct a market analysis of Chinese local rating activities in the Section 1 of Chapter V. Then, in the Section 2, a more thorough literature review on the “strategic choices of rating determinants” will be conducted with a summary table in the Subsection 2.1. Information collection under Chinese institutional elements will be discussed furthermore, in the Subsection 2.2. And finally, we will employ logistic models to verify the hypotheses that we put forward in the previous sections.

³²³ Pottier, S.W. and D.W. Sommer, 1999. *supra*.

³²⁴ Langohr Herwig M. and Langohr Patricia T. 2008, *The Rating Agencies and Their Credit Rating: What They Are, How They Work and Why They Are Relevant*. Chichester: John Wiley & Sons Ltd, Page 50.

³²⁵ Xie, Y. A., Shi, J., & Wu, C. 2008. “Do macroeconomic variables matter for pricing default risk?” *International Review of Economics and Finance*, 17, 279–291.

³²⁶ Stock returns on the index of S&P 500.

Section 3. Reactions of Chinese investors

3.1. Domestic and Foreign investors in front of cross-market information

3.2. Two competing spirits

3.3. Individual vs. institutional investors

Introduction of Section 3

Theory of Efficiency (Fama, 1970)³²⁷ reveals the ability of the market to incorporate and assimilate public information disclosure. According to him, the information is transmitted in the form of a “price mechanism” established by the liberalism between supply-demand “at any point of time”.

It is a lasting debate³²⁸ on whether efficiency is sustainable under Chinese market environment, the reactions of investors; whether it is patterned or random, depend also on other changing institutional elements which we will discuss more in the form of the sub-sections:

- ✓ Configuration of the market (segments of the market: “A shares” on Shanghai and Shenzhen Exchange Market with each institutional characteristic) and the understanding of the continental market and Hong Kong market for domestic and foreign investors (Subsection 3.1)
- ✓ Mode of behaviors to the interpretation of information (investing/speculative spirit) and its evolutionary openness with reforms on the Chinese markets (Subsection 3.2)
- ✓ Individual/institutional investors (Subsection 3.3)

³²⁷ Fama, E. F. 1970. Efficient capital market, a review of theory and empirical work. *Journal of Finance*, 25, 383–417.

³²⁸ Groenewold Nicolaas, et al. 2004, The dynamic interrelationships between the Greater China share markets. *China Economic Review*, 15, 45-62, where they believed that Chinese stock market is inefficient while Chong et al. (2012), Is the Chinese stock market really inefficient? *China Economic Review*, P122-137. In the study, they offered us with recent empirical evidence that SOE reform (April 2005 and before the crisis time 30 November 2006) “played an important role in improving efficiency in both Stock Exchanges”. Thiele, Thomas, A, Multi-scaling and Stock Market Efficiency in China, 2014, *Review of Pacific Basin Financial Markets and Politics*, 17(4); Their study documents that the inefficiency is not static by showing weak presence if efficiency after regulations and “the global financial crisis, a period marked by strong interventions from the Chinese central government, led to a new peak of the scaling property and strong trending behaviors”.

3.1. Domestic and Foreign investors in front of cross-market information

Li et al. (2015) found it important to “use a partitioning of market-wide versus firm-specific information” in order to clarify “relative importance of global versus local market information obtained”³²⁹ to domestic and foreign investors respectfully.

On the level of interpretation of firm-specific information, both investors have advantages and disadvantages. They asserted that compared to domestic investors, foreign counterparts will necessarily be faced up with some barriers in local market, “including: a lack of familiarity with written and spoken Chinese, a lack of local institutional knowledge an inability to ascertain the prevalence of insider trading by domestic shareholders”³³⁰ while foreign investors are found by previous studies, “more sophisticated in collecting and analyzing firm-specific information than emerging-market domestic investors”.³³¹ The ability to perceive and interpret information available on the market decides directly their trading reactions and the promptness according to the situation.

In other words, “investor-type plays an independent and significant role in determining the firm's information environment.”³³² The theory is also upheld by Chan et al. (2007)³³³ where domestic investors have favors in informativeness compared to foreigners, with application to the segmentation of A shares, B shares, H shares and other dual-listing (samples of “AB shares” and “AH shares”).

³²⁹ Li et al. 2015, *supra*.

³³⁰ *Ibid*.

³³¹ Froot and Ramadorai, 2008, Institutional portfolio flows and international investments. *Review Finance Study* [21], P937-971. and Gul et al., 2010 in Li et al. 2015, *supra*.

³³² Li et al. 2015, *supra*.

³³³ Chan, K. Menkveld, A and Yang, Z. 2007. The informativeness of domestic and foreign investors' stock trades: evidence from the perfectly segmented Chinese market. *Journal of Financial Markets*, p 391-415.

3.2. Two competing spirits

Chinese continental stock market has a high percentage turnover rate in general.

The fact could be explained:

Firstly, by the important weight of SOEs on the market. State shares plus Non-tradable Legal Person (LP) shares still count for listed companies even after the split share reform. Not to mention, the ownership concentration makes other investors the minority shareholders and “the existence of controlling shareholders who may expropriate wealth from minority shareholders”.³³⁴

General investors have no right to make big decisions about the future of the listed company that they invested in; therefore, it’s understandable to consider holding less expectation for a long-term performance.

Speculative spirit plus the lack of shareholder rights and a low dividend payback³³⁵ could also help to exacerbate the volatility of the stock market.

Theory of Behavioral Finance contributes to understand this inability to react rationally to market changes and the impossibilities to predict the future profitability, when the validity of EMH (Efficient Market Hypothesis) is highly debatable under Chinese institutional environment. Behaviors of investors on emerging market cast a doubt on the presumption of “technical trading rules” and “fundamental analyses”, summarized on developed market, which preconditions that *homo economicus* (*economic man*) is always looking for profit-maximization. However, the reality is that investors are not always rational, especially during “extremely bad and good situations”³³⁶.

³³⁴ *Idem*, Jiang F. and Kim. K, A. (2015), P 200.

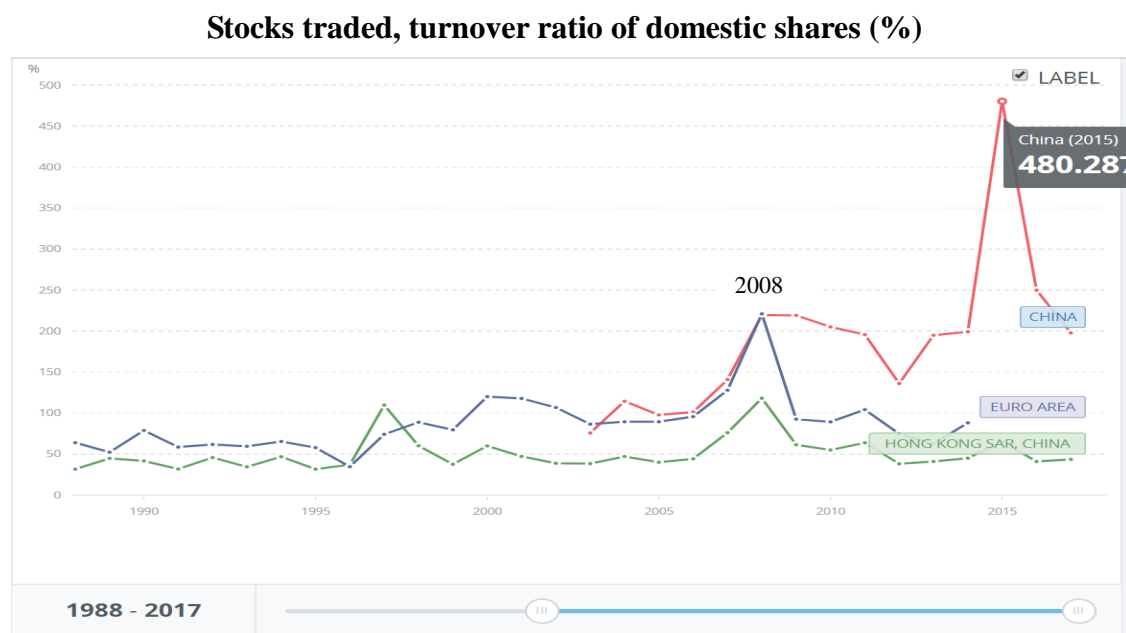
³³⁵ Elliott Douglas J. and Yan Kai, 2013. *supra*.

³³⁶ Dardour Ali, L’impact des annonces de notation de crédit sur les valeurs européennes : une comparaison avant et pendant la crise de 2008. *Revue d’économie financière*.

Comparing the turnover rate on the stock market in China³³⁷ and in Europe, what we found is presented as follows (from the *Graph III.2*):

- ✓ Continental Chinese (average of Shanghai and Shenzhen) turnover rate remains at a high level, since 2008 on the market.
- ✓ HK has the lowest turnover rating, in comparison with Continental Chinese markets and European markets.
- ✓ European markets have the pic in terms of turnover rate in the year of 2008 and it calms down and remains on a low level in recent years.

*Graph III.2*³³⁸



³³⁷ 144%-254% in Shanghai, 277%-479% in Shenzhen and 35%-50% in HK, from Facts about the Shanghai and Shenzhen stock markets (as at end September 2016), at <https://www.thechinfamily.hk/web/en/financial-products/investment/stock/stockconnect/all-about-the-shanghai-and-shenzhen-stock-markets.html>.

³³⁸ Data from World Federation of Exchanges database, at <https://data.worldbank.org/indicator/CM.MKT.TRNR?end=2017&locations=CN-HK-XC&start=1988&view=chart>

3.3. Individual vs. institutional investors

Chinese individual investors count for 99% active accounts but only for 1/4 market capitalization. In comparison, institutional investors trade share much less frequently.

In the investing spirit, investment funds are encouraged by the legislation to keep their shareholding longer. They are presumed to have the professional ability to manage massive assets for their proper account or the accounts of their clients.

From the political consideration, they are also asked to keep the financial position during market downfalls to prevent an enduring “bear market”. Financial crisis is considered by the authorities to be one of the potential causes for a social catastrophe considering the number of domestic individual investors involved in the stock market. According to the statistics from Chinaclear³³⁹, it has already amounted by the end of April 2017, to 124 198, 9 thousand. The number represents 10 % of the entire population.

Outside the stock market, institutional investors are also one of the main owners of CBs, which “prefer to hold on to this relatively ‘precious’ asset than to sell it.”³⁴⁰

³³⁹ Monthly report of CSDC (China Securities Depository and Clearing Corporation Limited) of April 2017 at http://www.chinaclear.cn/zdjs/editor_file/20170526233324876.pdf. the report is accessed and translated by the author from Chinese website.

³⁴⁰ Bottelier, Pieter. 2004, *supra*.

Conclusion of Section 3

The Chinese institutional environment has some special characteristics, such as market segmentation and the governance of SOE, which are different from other developed markets. It could be stranger information to foreign investors to understand compared to a better knowledge of institutional elements by domestic investors (Subsection 3.1).

The reactions of individual and institutional investors (Subsection 3.3) present on different Chinese market segments to the rating events should be taken separately according to their investing behaviors, which themselves are behind investing spirit or speculative spirit (Subsection 3.2). The Latter one also illustrates the differences among investors, in different market (in Euro area, in Hong Kong and in Continental Chinese markets: Shanghai and Shenzhen).

Conclusion of Chapter III

OICV-IOSCO defined three objectives for “security regulation”³⁴¹:

- ✓ *Protecting investors;*
- ✓ *Ensuring that markets are fair, efficient and transparent;*
- ✓ *Reducing systemic risk.*

The organization also specifies that all over the world, “ratings are used for regulatory purposes and they are subject to registration and ongoing supervision”.³⁴²

Section 1 takes the comparison between China and European regulatory system to illustrate the importance of rating regulation to fit into each specific institutional environmental.

Section 2 enlists three types of informative determinants for issuers, which are eligible factors to be taken into account into rating models.

Section 3 tries to distinguish two groups of domestic/foreign and individual/institutional investors present on Chinese market environment with its institutional characteristics. In order to cast lights on informative impacts of rating events, we decide to use “event studies” in our Empirical Part Two. We will take the “EMH (Efficient Market Hypothesis) as the maintained hypothesis, so that deviation of the cumulative actual return deviated from the equilibrium (expected) return can be attributable to a chose event”³⁴³.

³⁴¹ “Objectives and Principles”, 2010, of Securities Regulation, International Organization of Securities Commissions (OICV-IOSCO), Page 3.

³⁴² *Idem*, Page 3 and Page 9.

³⁴³ Yen and Lee, 2008, EMH: past, present and future, *Review of Pacific Basin Financial Markets and Politics*, 11(2), P 305-329 in Thiele, Thomas, A, 2014, *supra*.

Conclusion of Part One §I

We have brought up at the beginning of the Preparatory Part One §1 the focus of our thesis: CRAs under Chinese institutional environment.

The discussion is developed into three chapters, around the theoretical framework and some background information.

- ✓ We discussed the framework of *New-institutional Theory*, the environmental effects on CRAs with application on Chinese market and how these elements will modify the use of three classic theories on rating sectors (Theory of agency, Theory of information asymmetry and Theory of signal). (Chapter I)
- ✓ We outlined the characteristics of Chinese markets from *Chinese State-Capitalism (Reform and Opening-up policy)* and *Socialist Market Economics* (including stock and bond market). (Chapter II)
- ✓ We clarified the relationship between CRAs and their upstream and downstream market actors: the rated (issuers and their issues) and the investors (individual, institutional, domestic and foreign investors). We also cast a light on how CRAs act correspondingly under regulatory climate with a comparison of the supervisory structure (in China and in Europe). (Chapter III)

By utilizing characteristics of institutional environment, we are able to test three empirical topics: role, strategy and impact of CRAs, in Empirical Part Two §2 to figure out the main research question of our thesis: interactions between CRAs and institutional environments of Chinese markets.

On this occasion, we will have a panorama about the rating events, including: rating laws and rules for self-regulations (comparison between two institutional pillars, developed markets vs. emerging markets, Europe/Russia vs. HK/Mainland China); rating shopping, rating inflation, split rating in the case of multiple ratings (Chapter IV), market position of CRAs, initial issuer ratings, rating determinants (Chapter V), informative impact of credit rating changes, watch-lists on the stock market and causes of significant abnormal returns (Chapter VI), etc.

§II. Empirical Part Two

**How does the three-dimensional examination of CRAs' interactions
with "Chinese market actors" bring originality
to the empirical findings?**

Chapter IV. Expected role of CRAs and functions of multi-ratings

Chapter V. Strategy of CRAs in giving initial issuer ratings

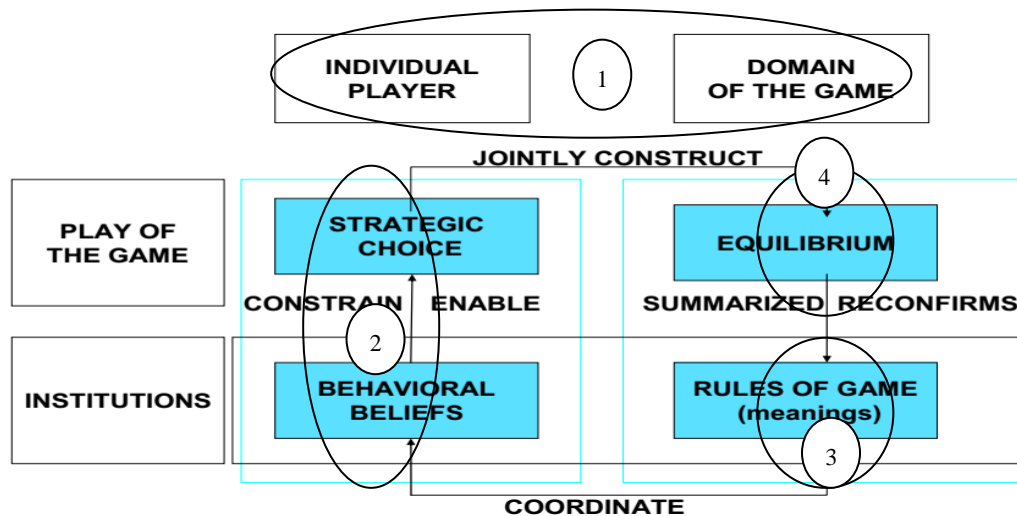
**Chapter VI. Informative impact of rating events and cause analysis of investors'
significant abnormal stock returns**

Introduction of Part Two §2

Recalls from Theoretical Part One §1

The following *Graph*³⁴⁴ summarizes three points of Section 2 of Chapter I, by defining the “domain of the game”³⁴⁵ of rating business and how credit ratings agencies) conduct their activities as “individual player” (*circle 1 in the graph below*).

“An Institution as shared behavioral beliefs cum endogenous rules of the game”



We found it very intuitive to construct the Empirical Part Two, even if the study of the institutionalist Aoki was not initially connected to a study of credit ratings. There are three other points to connect the institutional elements to a study of credit rating.

Firstly, under the pressure of the institutional changes (Aoki, 2006)³⁴⁶, CRAs decide strategically their “behavioral beliefs”, which leads to the “strategic choice” (*circle 2 in the graph above*). The “behavioral beliefs” means, each CRA is convinced that it is important to carry out strategies (either the “strategy of distinctiveness” or the “behavioral isomorphism”, Subsection 2.1 of Chapter I: Evolutionary approach of

³⁴⁴ It is from Masahiko Aoki, 2013. Comparative Institutional Analysis Theory, Corporations and East Asia: Selected Papers of Masahiko Aoki, Page 279, at

https://books.google.fr/books?id=R4AtAgAAQBAJ&pg=PA275&lpg=PA275&dq=an+institution+as+shred+behavioral+beliefs+cum+endogenous+rules+of+the+game&source=bl&ots=QlpUHY1B-2&sig=aH8D76dwhXTB8zvr0vySnXIMnYE&hl=fr&sa=X&ved=0ahUKEwj2pnp0_jZAhUMsxQKHZ7mCvIQ6AEIKzAA#v=onepage&q=an%20institution%20as%20shred%20behavioral%20beliefs%20cum%20endogenous%20rules%20of%20the%20game&f=false

³⁴⁵ Aoki. M, 2006, Mechanisms of Endogenous Institutional Change, SIEPR (Stanford Institute for Economic Policy Research) Discussion Paper, Page 11-15.

³⁴⁶ Aoki. M, 2006, *supra*, p11.

institutional environment of CRAs), in order to be able to survive on the competitive rating market. The kind of strategic belief will guide CRAs to decide the most adequate “strategic rating behaviors”, according to its market position. Under a competition-drive environment when the reputation mechanism has not been properly established, agency’s survival seems to be the foremost rational, in order to be able to flourish and expand in the future development.

The following Chapter V helps us to understand the path of reasoning that CRAs conscientiously take to form their proper strategies in order to distinguish themselves from the peers: the strategic choice of rating determinants among all kinds of information (how each CRA perceives the composition of credit default risk), to the weight of each variable into their assessment models (how to interpret information) and finally to the treatment of information by statistical measurement.

Secondly, according to the *Theory of New-institutionalism* and its application to CRAs, there exist three pillars to form the “rules of game” (*circle 3 in the graph above*): reputation mechanism, rating norms and regulations. (Subsection 2.2 of Chapter I: Comparisons of three pillars)

The differences among three institutional pillars will be illustrated empirically. We will examine in the Chapter IV rating regulations and code of conduct on Chinese mainland and HK market, with comparisons with European and Russian cases separately. We will investigate the samples of multi-ratings from the points of view of issuers and investors. These two kinds of interaction will be continued in the Chapter V and VI (concerning CRAs’ strategy and impact)

Thirdly, the “equilibrium” (*circle 4 in the graph above*) is “constructed” during the interaction of institutions and players of the game. The “rules of game” are constantly “coordinated” with the institutionalization of CRAs under the rating institutional environment. (Subsection 2.3 of Chapter I: Causes and consequences of CRAs’ institutionalization)

We will have a look at the impact of rating events on investors’ activities and their reactions to the rating signal in the later Chapter VI.

The purpose of the three-dimensional empirical examination: main content

The characteristics of Chinese institutional environment of the *socialist Market Economy* (Chapter II) in the Part One §1 helped us better to examine CRAs and their interaction with market actors: regulators, issuers and investors (Chapter III). Around the framework of *New-institutionalism Theory* (Chapter I), we understand the reason “why discussion of the characteristics of ‘Chinese institutional environment’ is essential to a research of ‘Credit Rating Agency (CRAs).’”

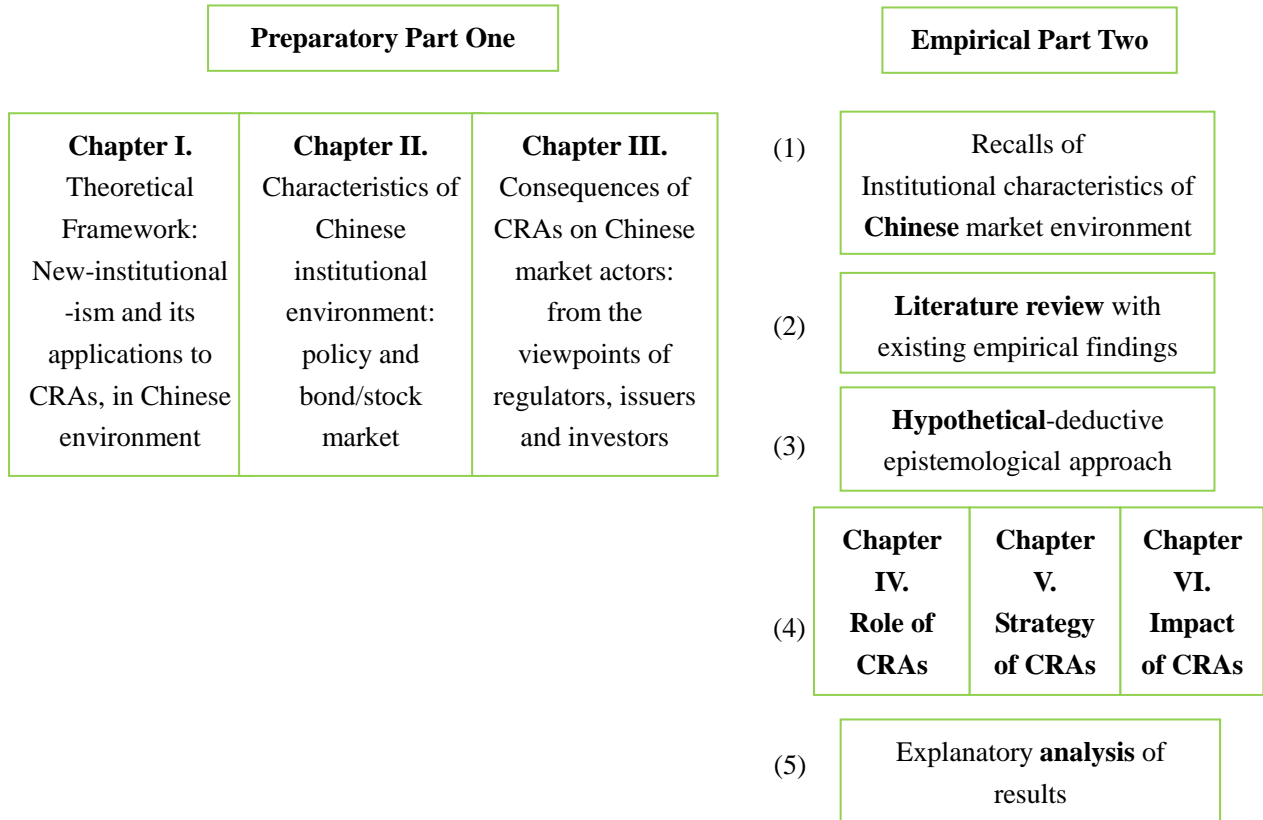
Empirical Part Two §2 aims to respond empirically to the second objective of our thesis: “how does the three-dimensional examination of CRAs’ interactions with ‘Chinese market actors’ contribute to the existing evidence of rating researches, conducted mostly in developed markets?”

To be more specific, we are going to verify:

- ✓ Whether the Chinese environmental effect will modify the role of CRAs already defined by regulators and norms under the international context? Does the market segmentation in Continental China and in HK leads to the different expectation of CRAs’ role? In addition to the qualitative study, we will conduct a preliminary quantitative study and a multi-ratings study, in order to see how issuers and investors reacted differently to rating events, in comparison with the assumptions in the literature review (Chapter IV);
- ✓ Whether strategic behavioral beliefs will be decided by CRAs’ position under the rating market environment, by selecting strategically different rating determinants and using different rating models when giving the initial issuer ratings (Chapter V);
- ✓ Whether rating events (credit rating changes and watch-list) will bring about consistent evidence obtained from developed markets to Chinese market. The general results of informative impact on investors will be broken down into subsamples (period of crisis, market segmentation, global/local CRAs, anticipation and preceding WLs...), in order to analyze furthermore the causes of abnormal returns (Chapter VI).

Structure of the thesis (3)

Each chapter of the Empirical Part Two §2 is composed of five elements: recalls of institutional characteristics of Chinese market environment in the theoretical and conceptual Preparatory Part One §1 (1), literature review of existing findings (2), tested hypotheses (3), methodology (4) and explanatory analysis of results (5).



* *Figure is made by the author.*

The structure of the thesis is composed of a Preparatory Part One (to provide theoretical framework and background information about institutional characteristics of Chinese market environment), as long as a three-dimensional empirical examination in the Empirical Part Two.

Based on sample of initial rating, credit rating changes and watch-lists, we are able to conduct both qualitative and quantitative methodologies, to explore the role, strategy and impact of CRAs, in the interactions with market actors: regulators, issuers and investors. The results will be presented, analyzed and compared to the existing literature review, considering the existence of institutional characteristics of Chinese market environment.

Hypothetical-deductive epistemological approach

The hypothetical-deductive approach could resume the entire epistemological framework of the thesis, based on a theoretical framework of *New-institutionalism* its applications, discussion of background information, literature review and previous empirical evidence.

The background description of institutional characteristics present on Chinese market environment distinguishes itself from other developed markets, either European or Anglo-Saxon markets. Both of them are also main subjects to the classic theories concerning CRAs, literature review and most existing findings for rating researches.

All elements combined, we are able to constitute and contextualize our hypothesis under Chinese institutional environment, and to test empirically these hypotheses. The objective is to verify the results if they are consistent (or not) to previous evidence, to explain and to analyze their similarities and differences.

Methodology

We employed the most suitable statistical software to do different econometric modeling: NVivo for the word frequency (Section 1 of Chapter IV), SPSS for the preliminary quantitative tests on the descriptive data (Section 2 of Chapter IV), on the multi-ratings samples for initial ratings, credit rating changes and watch-lists (Section 3 of Chapter IV), Stata for binomial logistic model and multinomial ordered logistic model (Section 3 of Chapter V), Stata and EViews for the estimation model of event studies (OLS and Garch) and parametric and non-parametric tests for rating events (credit rating changes and watch-lists, in the Section 2&3 of Chapter VI), and finally, Stata for the cause analysis of significant abnormal returns (Section 3 of Chapter VI). The methodological application is also a process of apprentice and practice of our statistical techniques and analyses. Basically, we employed three types of methodology, which are presented as follows:

✓ **Qualitative study**

We collected all rating regulations and norms in Europe, in Russia, and China (both mainland and HK) and based on these documents, we conducted a lexical analysis to summarize the “frequency of word” by the NVivo. The results are presented in the Section 1 of Chapter IV.

We also use a methodology of observation and a descriptive analysis of the “financial communication” from the official websites of listing companies inside the multiple initial ratings in the Subsection 3.1 of Chapter IV. In the same spirit, we make a rating market analysis in China, in the Section 1 of Chapter V.

This kind of descriptive data and selection of variables also exists in all of the following quantitative study, in order to give us some general information of each of the samples, on the rest of Chapter IV, V and VI.

✓ **Quantitative study**

We collected three types of rating events: initial ratings, credit rating changes and watch-lists, issued by global and local CRAs, occurred on Chinese public-listed companies, on the database Bloomberg, from 1988 to 2016.

Based on the most exhaustive sample constitution in the study of Chinese rating activities (as far as we know), we will make some preliminary quantitative tests in the Section 2 of Chapter IV.

A multiple-ratings sample will serve to analyze the functions of CRAs in “rating shopping”, “rating split” and “rating inflation”. The multiple-ratings are solicited by Chinese issuers and investors will react to the events accordingly. The relative analyses will be conducted in the Section 3 of Chapter IV.

We will sort all initial issuer ratings out of the general sample, and use the solely-rated sample for a study of CRAs’ strategy in the Chapter V. There are two groups of variables: type of CRAs (agency effect and time-varying effect), issuers-specific variables (including financial ratios, external and internal corporate governance, stock-market related information) and macro-economic indicators, to explain the

determinants of rating models (binomial logistic and multinomial ordered logistic regression). The choice of variables reflects the strategical choice of each CRA according to their behavioral beliefs (according to the market position of each in the competition-driven local rating market), which goes beyond purely financial considerations.

Chapter VI will deal with the impact of credit rating changes and watch-lists on investors' stock returns. We will execute a standard event study with market model and refine the model with different estimation method (OLS and Garch) and various tests (both parametric and non-parametric). We will divide the sample into subsamples, by several institutional factors that we discussed previously in the theoretical and conceptual part: period of crisis, market segmentation, types of CRAs (global/local CRAs), market anticipation and preceding watch-lists (in the case of credit rating changes). We will finally analyze the causes of abnormal returns by a model of multiple linear regression.

✓ **Comparative study**

Both qualitative and quantitative methodologies will help us to get empirical results. At the end of each chapter, the explanatory analysis will be conducted of to see if we are able to confirm or reject the hypothesis that we constructed in advance and inspired from the existing literature review.

Institutional elements discussed previous in the Part One §1, concerning rating activities under “Chinese institutional environment”, will be mobilized to explain the similarities or differences, especially the interactions of CRAs with market actors. The comparative will focus both on the agency-conduct effect and time-varying effect, from the point of view of CRAs' role, strategy and impact, that we develop in the following Part Two §2.

Chapter IV.

Expected role of CRAs and functions of multi-ratings

Section 1: Qualitative study for rating regulations and norms

Section 2: Sample constitution for quantitative study and preliminary results

Section 3: Multi-ratings study for issuers and investors

Introduction of Chapter IV

CRA, a private organization, using the professional expertise, assess credit default for their clients; they are also useful to the regulatory authorities for the public interest. Instead of entailing “CRA paradox”³⁴⁷ (by opposing private and public use of credit ratings), we will discuss the role of CRA in the Chapter IV, from three-dimensional use of ratings in practice, from points of view of both issuers, investors, on one hand; and rating regulators, on the other hand.

The importance of CRA is not questionable and their role are regulated and normalized by related regulations and norms. Based on comparative descriptions of rating-related rules, reports, code of conduct and the hypothesis derived from the case of European and Russia, we will be able to see how the rating market comply with intuitional pressure, separately on the markets of Continental China and of Hong Kong. The analyses of results will also take into account Chinese institutional characteristics that we have discussed (in the Section 1).

We will constitute our sample (in the Section 2), to cover all kinds of rating events: initial ratings, Credit Rating Changes (CRCs) and Watch-List (WLs). The objective is to prepare samples available for further empirical tests in the following study, but also to conduct preliminary quantitative tests. The descriptive data enables us to confirm some intuitive ideas and to better construct hypotheses.

In the absence of survey destined to issuers and investors concerning how they use CRA, we will start directly from the market statistics (database of Bloomberg) to study rating activities (in the Section 3). The functions of CRA will be testified based on hypotheses, derived from a wide range of qualitative researches that exist in the literature review. In this regard, we will be able to contribute the first quantitative study on the multi-ratings, to the entire study of CRA’s functions (from the points of view of issuers and investors).

³⁴⁷ Schwarcz, Steven. L. 2002, Private Ordering of Public Markets: The Rating Agency. *University of Illinois Law Review*.

Section 1. Qualitative study for rating regulations and norms

1.1. European regulative and normative sources of institutional pressure, a comparative perspective

1.2. Two facts from Russian case: comparison with European case

1.4. Application to Hong Kong and Mainland China

1.3. Hypotheses on Chinese segmented market: in comparison with European markets

1.5. Analytic summary of Chinese results

Introduction of Section 1

Recalls from Section 2 of Chapter I

As we illustrated in the Chapter I (on the framework of *New-institutionalism*), there exist three pillars (Subsection 2.2 of Chapter I) of institutional environment on rating business. The financial crisis (in 2008) makes it clear that reputation mechanism alone does not always work efficiently under the rating context. CRAs are easily to lose their credibility, in front of rating-users: regulators, issuers and investors.

There are two complementary philosophies prevail in the rating sector when the reputation mechanism is not sufficient. On one hand, we have “intrusive regulation” represented by regulations; On the other hand, there are “practice ethics”: norms of the rating business. We can also call them the code of conduct. The first concept of regulation is to correct the “market failure”, while the second is to avoid the “regulatory deficit”.

In this sense, we need to consider regulations and norms as extra sources of institutional pressure to formally supervise the behaviors of CRAs, since they still play important roles for the entire financial system, both in Europe and Hong Kong (where financial activities are more active), but also in Russia and Continental China (where the market economy is still under fast development).

Independent of geographic areas, institutional efforts to formulate more adequate regulations and norms are continuously facing up to the constantly-changing situations on the rating market (Subsection 2.1 of Chapter I: Evolutionary approach of

institutional environment of CRAs); The other way around, the performance of CRAs, especially during the *Subprime Mortgage Crisis* and the *European Sovereign Debt Crisis*, makes rating regulators and industry-norms makers aware of the importance to re-adapt their expectation of the roles of ratings, under the new institutional environment (Subsection 2.3 of Chapter I: Causes and consequences of CRAs' institutionalization).

In this section 1 of Chapter IV, we are going to study two institutional pillars (in the form of regulations and norms) present in the rating sector; and their dynamic interaction with CRAs, during the institutionalization process of rating activities.

Content of the Section 1, Chapter IV

Subsection 1.1 describes the interaction between the institutional environment and CRAs in a dynamic perspective, taking into account the evolutionary changes for rating regulations and norms in Europe. We will examine the most recent version of rating laws, rules, regulations and norms, in order to summarize how they put their expectations in regards of CRAs' roles in financial markets. We will conclude the subsection by the comparison with two institutional pillars (similarities and differences).

Subsection 1.2 explores the Russian case (one of the most important transitory economies), which will allow us to compare the results with those we found in European case.

Subsection 1.3 contributes to clarify the compliance of CRAs in HK and in Continental China, in terms of the regulations and norms in the rating sector.

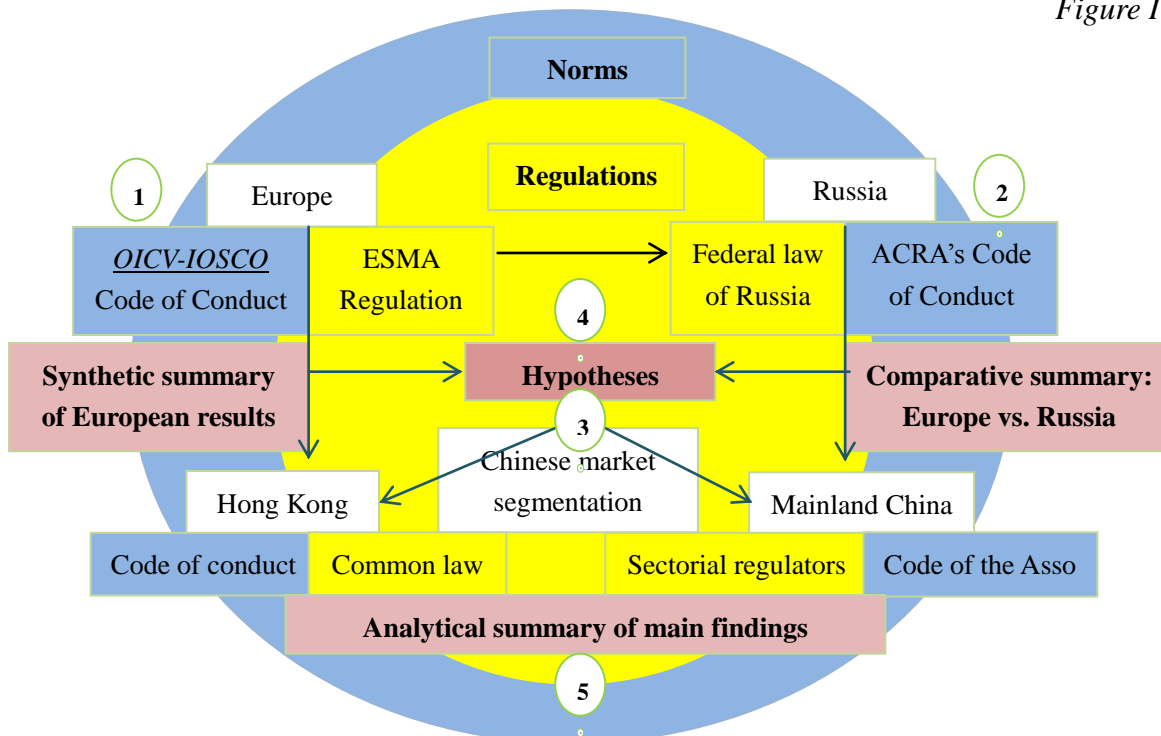
Subsection 1.4 computes hypotheses to be tested in Chinese cases. Considering the segmentation of Chinese market, European case will be used to constitute hypotheses for HK case, since both markets are well developed. In comparison, we inspired from Russian case to constitute hypotheses in Mainland China case, where two countries are still under the developing process of rating business.

Subsection 1.5 provides us with the results. They will help us to analyze the hypotheses that we put forward in the Subsection 1.4 and to see if we are going to confirm or reject them, separately in HK and in Mainland China. There are two types of comparison: horizontal and vertical (that we will explain in the following page).

Structure of the Section 1, Chapter IV

Starting from the following *Figure IV.1*, we will explain furthermore the reasoning of the Section 1, in 5 steps (which is numbered in the following Figure).

Figure IV.1



***Figure IV.1 is made by the author**

Firstly (in the Subsection 1), we study separately European rating regulations (Point 1.1.1) and norms (Point 1.1.2). We draw a summary based on the observations of the developed market and synthetic comparison between two institutional pillars (regulations vs. norms) will be presented in Point 1.1.3.

Secondly (in the Subsection 2), we start from Russian Federal Law on rating regulations (Point 1.2.1) and code of conduct of the agency ACRA (Point 1.2.2), and then turn to the conclusion drawn from the emerging market with a transitory economy, as we did before (Point 1.2.3). The horizontal comparative summary with the synthesis of European cases will be presented in Point 1.2.4.

Thirdly (in the Subsection 3), we study separately Hong Kong rating regulations and norms (Point 1.3.1 and 1.3.2); *idem* for Chinese Mainland case (Point 1.3.3 and 1.3.4).

Fourthly (in the Subsection 4), European and Russian cases inspire us to constitute hypotheses, which will be used to test the cases on Chinese segmented market, in HK (in comparison with European case) and in Continental China (in comparison with

Russia case).

Fifthly (in the Subsection 5), we analyze the results in both HK and Mainland China, and compare the results inside Chinese segmented market (Point 1.5.1-Point 1.5.3). Finally, we wait to see if the hypotheses that we drew previously from European and Russian cases are valid (Point 1.5.4).

Choices of methodology: comparative study and qualitative study

We failed the initiatives to make some semi-directive interviews to ask questions directly to CRAs and to get first-hand information about how they perceive their role on the financial markets. Even if we pledged the confidentiality or reiterated the purpose of study was only for research and we had neither interest nor intention to probe their business secret, all feedbacks were negative. That's the reasons why we chose finally to study the role of CRAs from the point of view of rating users. We started the investigation from rating regulators and rating market norms-makers.

It is a **comparative study** which contains three-levels:

First level: Point 1.1.3 and Point 1.2.3 aims to see the differences and similarities between rating regulation and norms in Europe. It concerns the comparison between two pillars of institutional pressure that we discussed in Chapter I: regulative and normative pillars on the theoretical framework of *New-institutionalism*. We applied the same comparison to Russian case, as well as to Chinese segmented markets.

Second level: European and Russian rating regulations and norms (Point 1.2.4), and final comparative results out of Chinese market segmentation: between HK and Chinese mainland (Point 1.5.3). They are horizontal comparison: (developed markets vs. emerging markets);

Third level: HK compares with Europe and Mainland China with Russia (hypotheses in Subsection 1.4 and results in Subsection 1.5). They are vertical comparison: (European cases vs. Chinese cases).

Besides, we can learn from the cross-country/regional comparison (second and third level) that: The horizontal comparison helps us to profound the understanding of the differences of one developed market and an emerging market in terms of rating regulations and norms; The vertical comparison helps to constitute the hypotheses and to test under Chinese institutional environment, in comparison with European cases.

It is a **qualitative study** which is to test hypotheses drawn from comparison between two pillars of institutional pressure, between developed markets/emerging market and between European (European Union and Russia)/Chinese cases (HK and Mainland China).

First step: The analysis concerns two-level: regulations and norms. We downloaded all documents from the official website of each regulatory or normative authority.

The list of texts is showed as follows:

Table IV.1.1

**Rating regulatory texts used in the thesis and the position
(Yellow cycle in the Graph IV.1.1 above)**

European regulations (2013) of <i>ESMA</i>	Europe 1.1.1 ³⁴⁸	Russia 1.2.1	Federal Law 2015
Common law (reports) and Moody's case ³⁴⁹	HK 1.3.1	Mainland 1.3.3	Seven regulations and rules (Table IV.1.15) ³⁵⁰

We found three rating norms on Chinese market and all of they are equally important and similar to other codes of conduct in other markets.

Table IV.1.2

**Rating normative texts used in the thesis and the position
(Blue cycle in the Graph IV.1.1 above)**

Code of conduct (2015) of <i>IOSCO</i>	Europe 1.1.2	Russia 1.2.2	Code of Conduct of ACRC (2015)
HK Code of conduct (2011)	HK 1.3.2	Mainland 1.3.4	Rating norms of Security Association of China (SAC)

Second step: We submit the PDF version of these rating regulatory and normative texts into statistical software NVivo (software designed for qualitative studies).

We chose the function of “Word Frequency” and the option of “with stemmed words”.

The latest function helps to avoid recounting the same words in different grammar forms. It should be noted that all documents are in English, except rating regulations,

³⁴⁸ For example, V.1.2.3 means Point 3, Subsection 2 of Section 1, in the Chapter IV.

³⁴⁹ It should be pointed out that we don't find document naming “rating regulation” *per se* in HK, because it remains to use common law under the influence of UK colonization, where legal cases are more important than articles. We found the Moody's case, in this spirit.

³⁵⁰ As for Mainland China, the rating regulation is rather segmented. We are able to collect all the texts after an exhaustive and extensive reading.

rules and norms for Mainland China.

It should be noted that Chinese language does not have alphabet. The advantage of NVivo is that it has an option to consider the lexical specialties and to differentiate between Chinese language and English language automatically.

The objective of our examination is to find the most appeared 100 words among these official texts, to determine what aspects constitute the biggest concern in the rating regulations and norms. We consider that the words most used can reflect how regulators and rating industry itself are willing to spend more time entailing and that illustrates the role most expected of CRAs.

Third step: we will present these 100 words with the most frequency on the documents, eliminating all grammatical words (preposition), other judicial words (article, point, paragraph...), in order to select the “eligible words” (except for HK rating regulation because there is no published text).

Fourth step: we will redistribute the “eligible words” that we found previously, according to the keywords from the same document (the title of one chapter) or other document of equivalence (except for rating regulation in Mainland China, because there are too many published texts and it is impossible to get keywords).

Fifth step: The selection of eligible words and redistribution of words according to the keywords help us to make all kinds of comparison as mentioned above.

The objective of the qualitative study is to see which eligible words are recurrent in regulatory and normative texts and which words are especially frequently seen in one document but not in the other. We considered that these words expressed the most expected roles of CRAs, from the viewpoints of regulators and norm-markers.

Based on that, we will be able to analyze the reasons behind the frequently-used words in the comparison of regulatory and normative pillars (comparison of first level) and in a country and the other: horizontal comparison (Europe vs. Russia, HK vs. Mainland China) and vertical comparison (Europe vs. HK, Russia vs. China).

1.1. European regulative and normative sources of institutional pressure: a comparative perspective

We take regulative and normative sources of institutional pressure in Europe: they are regulations of ESMA (European Securities and Markets Authorities, in the Point 1.1.1) and self-imposed disciplines on rating industry of IOSCO (International Organization of Securities Commission, in the Point 1.1.2). We will compare the results of these two sources of institutional pressure (in the Point 1.1.3).

1.1.1. ESMA and rating regulation in Europe (2013)

With the initiative of the De Larosière Report, *European System of Financial Supervision* (ESFS) was born in 2010³⁵¹. The new system consists of *European Systemic Risk Board (ESRB)* (macro-prudential supervision)³⁵² and three (ESAs) *European Supervisory Authorities*. They are:

- ✓ European Banking Authority (EBA), based in London. The EBA will be moved to Paris after the Brexit;
- ✓ European Securities and Markets Authority (ESMA), based in Paris;
- ✓ European Insurance and Occupational Pensions Authority (EIOPA), based in Frankfurt.

Since its establishment, *ESMA* cooperates both with European financial regulatory institutions but also with *national competencies authorities (NCAs)* of each member state in terms of securities markets supervision. As for regulation for CRAs, *ESMA* has issued three regulations (2009 and its amending regulation in 2011 and 2013) and several directives³⁵³. It is the solo and supreme regulator for rating-related activities in

³⁵¹ With Regulation (EU) 1093/2010, Regulation (EU) 1095/2010, Regulation (EU) 1094/2010 institutes these three ESAs and the directive 2010/78/EU in respect of the power of the ESAs.

³⁵² Regulation (EU) 1092/2010.

³⁵³ Directive 2013/14/EU of the European Parliament and of the Council of 21 May 2013 amending Directive 2003/41/EC on the activities and supervision of institutions for occupational retirement provision, Directive 2009/65/EC on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities (UCITS) and Directive 2011/61/EU on Alternative Investment Funds Managers in respect of over-reliance on credit ratings Text with EEA relevance;

the scope of European Union.

We found, based on the extraction of analysis report (version excel) of NVivo that, among 100 most used words for ESMA rating regulation, there are 24 eligible words (that we defined previously in the methodology). The results are presented in the following table:

Table IV.1.3³⁵⁴

**Word frequency query result for rating regulation in Europe
(since the latest version in 2013)**

Word	Length	Count	Weighted Percentage (%)	Similar Words
information	11	90	0.67	inform, informal, information, informed, informing
entity	6	86	0.64	entities, entity
issuers	7	77	0.57	issuer, issuers
issuing	7	76	0.56	issue, issued, issues, issuing
investments	11	69	0.51	invest, invested, investing, investment, investments
market	6	62	0.46	market, marketing, markets
assessment	10	59	0.44	assess, assessed, assessing, assessment, assessments
investors	9	59	0.44	investor, investors, investors'
infringes	9	56	0.41	infringe, infringement, infringements, infringes
sovereign	9	54	0.40	sovereign
financial	9	49	0.36	financial
methodologies	13	45	0.33	methodologies, methodology
instruments	11	44	0.33	instrument, instruments
securitisations	15	40	0.30	securitisation, securitisations
risk	4	38	0.28	risk, risks
shareholder	11	36	0.27	shareholder, shareholders, shareholders', shareholdings
structure	9	35	0.26	structure, structured, structuring
assets	6	31	0.23	asset, assets
conflicts	9	31	0.23	conflicts
rotation	8	30	0.22	rotate, rotation

at <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32013L0014>.

³⁵⁴ We explain the colons of the table: “length” means how many letters do a word contain, “count” means how many times a word count in the document, “weight” means the frequency in the entire document, “similar words” means words with the same root. The tables are directly from the outputs of NVivo.

disclose	8	28	0.21	disclose, disclosed, disclosing
reliance	8	28	0.21	reliance
independence	12	27	0.20	independence, independent, independently
creditworthiness	16	26	0.19	creditworthiness
				Number of words: 22³⁵⁵

Then, we referred to the “current regulatory framework” on the official website of *ESMA*. It has listed four axes of legislative purposes for “the latest legislative package on CRAs, [which] consists of a regulation (Regulation No 462/2013) and a directive (Directive 2013/14/EU)”. These keywords are:

- 1) *Reduce over-reliance on credit ratings;*
- 2) *increase transparency regarding the issuing of sovereign debt ratings;*
- 3) *improve the quality of the rating process and make credit rating agencies more accountable for their actions;*
- 4) *reduce conflicts of interest and encourage a greater number of actors to operate in the credit rating market³⁵⁶*

The next step is to redistribute the frequently-used eligible words that we found in the Table IV.1.3 into five categories (including four axes mentioned above and the expected roles of CRAs in the eyes of European regulator).

Table IV.1.4

Redistribution of frequently-used words (1)

Keywords	Words
To reduce over-reliance	Reliance
To increase transparency of sovereign debt ratings	Sovereign, disclose
To improve the quality	Infringes, methodologies, rotation
To reduce conflict of interest	Shareholder, conflicts, independence
Others	Information, entity, market, assessment, financial, instruments, securitizations, risk, structure, assets, issuers(issuing), investments (investors), creditworthiness

³⁵⁵ We combined issuer with issuing and investments with investors, to reduce the number of frequent-used words, with the same grammatical root.

³⁵⁶ Regulating credit rating agencies,

at

https://ec.europa.eu/info/business-economy-euro/banking-and-finance/financial-supervision-and-risk-management/managing-risks-banks-and-financial-institutions/regulating-credit-rating-agencies_en#documents

1.1.2. International rating norm and its in Europe (2015)

The real function of ESMA is complemented by a *Joint Committee*³⁵⁷ of ESAs to reassure a cross-border consistency and transversal coherence within the European Union; and also, to “increase harmonization of the supervision of CRAs on the international level, [it is also] through its work with the *International Organization of Securities Commissions (IOSCO)*”. As documented by the official document³⁵⁸: “ESMA also plays an active role within IOSCO. During 2014, CRA - focused efforts have mainly related to the revision of the *Code of Conduct for CRAs (the IOSCO Code)* and developing and maintaining a dialogue with third country supervisory authorities through IOSCO’s Committee.”

On the international level, OICV-IOSCO puts forward the *Code of Conduct Fundamentals*. The final report of 2015³⁵⁹ is based on the initial version of 2004, the revised version of 2008 and other consultation reports. They all aim to normalize the behaviors of CRAs in the rating industry.

The *Code of Conduct* comes with the idea of deregulation, which prevails inside the modern financial economics. It's true that the liberalization of finance has created much more issuing and investing opportunities for the worldwide participants; however, globalization is simultaneously accompanied, with many kinds of risks. It brings along with amplified damages and prolonged recovery to the world economy. All of these facts lead to heavy criticism and attack to the rating activities. That's the reason why we have to examine the code of conduct of CRAs together with the rating regulations. Both of them are important sources of institutional pressure to the rating industry.

In terms of the methodology, we run the same frequency test for the *Code of Conduct of IOSCO* and the results are presented on the following table:

³⁵⁷ The Mixed Committee of European Supervisory Authorities (MCEAs), transversal coherence.

³⁵⁸ ESMA, “Supervision of Credit Rating Agencies and Trade Repositories -Annual report 2014 and work plan”, 16/02/2015.

³⁵⁹ The board of the International Organization of Securities Commissions (IOSCO), “Code of Conduct Fundamentals for Credit Rating Agencies: Final Report”, March 2015.

Table IV.1.5

Word frequency query result for IOSCO (since 2015)

Word	Length	Count	Weighted Percentage (%)	Similar Words
entity	6	271	1.34	entities, entity
employees	9	165	0.82	employee, employees, employees'
obligor	7	153	0.76	obligor, obligors
informed	8	150	0.74	inform, information, informed
obligations	11	125	0.62	obligated, obligation, obligations, obliged
arrangers	9	122	0.60	arrangements, arranger, arrangers
procedures	10	120	0.59	procedure, procedures
disclosing	10	114	0.56	disclose, disclosed, discloses, disclosing
underwriter	11	110	0.55	underwriter, underwriters
publicly	8	107	0.53	public, publication, publications, publicly
methodology	11	98	0.49	methodologies, methodology
controls	8	95	0.47	control, controlled, controls
clarity	7	89	0.44	clarity
conflicts	9	80	0.40	conflict, conflicted, conflicting,
originator	10	74	0.37	originator, originators
disclosure	10	65	0.32	disclosure, disclosures
processes	9	64	0.32	process, processes
review	6	63	0.31	review, reviewed, reviewing, reviews
analyst	7	58	0.29	analyst, analysts
trading	7	55	0.27	trading
issued	6	54	0.27	issue, issued, issues, issuing
instrument	10	53	0.26	instrument, instrumentality, instruments
regulators	10	52	0.26	regulate, regulation, regulations, regulators
confidential	12	51	0.25	confidential, confidentiality, confidentially
investors	9	51	0.25	investor, investors, investors'
model	5	50	0.25	model, models
securities	10	50	0.25	securities, security
quality	7	49	0.24	quality
laws	4	48	0.24	law, laws

assessments	11	46	0.23	assess, assessing, assessment, assessments
issuer	6	45	0.22	issuer, issuers
structured	10	45	0.22	structure, structurally, structure, structured, structures
subscribers	11	43	0.21	subscriber, subscribers
management	10	42	0.21	manage, managed, management, manager, managers, managing
users	5	42	0.21	user, users
products	8	40	0.20	product, products
risk	4	39	0.19	risk, risks
integrity	9	35	0.17	integrity
markets	7	34	0.17	market, markets
				Number of words: 37³⁶⁰

The *IOSCO's rating code* covers main objectives in rating activities, including: quality and integrity, independence and avoidance of conflicts of interest, transparency and timeliness of ratings and confidential information³⁶¹. It is presented as five sections in the official document³⁶²:

- 1) *The Quality and Integrity of the Credit Rating Process;*
- 2) *CRA Independence and the Avoidance of Conflicts of Interest;*
- 3) *CRA Responsibilities to the Investing Public, Rated Entities, Obligors, Underwriters, and Arrangers;*
- 4) *Governance, Risk Management, and Employee Training;*
- 5) *Disclosure and Communication with Market Participants, etc...*

³⁶⁰ We combined issued with issuers and disclosing with disclosure, to reduce the number of frequent-used words, with the same grammatical root.

³⁶¹ The board of the IOSCO, revised on March 2015, Code of Conduct Fundamentals for CRAs, Page A-2.

³⁶² *Idem*, Page A-4.

We will redistribute the 37 eligible words that we obtained from the “frequency test”, accordingly to these five sections (keywords) mentioned above. The redistribution table is presented as follows, in the *Table IV.6*:

Table IV.1.6

Keywords	Words
Quality and integrity	Clarity, processes, review, model, quality, integrity, methodology, procedures
Independence and the avoidance of conflicts of interest	Conflicts
market participants	Obligor, arrangers, underwriter, originator, trading, issued (issuers), regulators, investors, laws, subscribers, users
Internal governance	Controls, employees, analyst, management
Disclosure and communication	Disclosing(disclosure), confidential, publicly
Others	Entity, informed, obligations, instrument, securities, assessments, structured, products, markets, risk

1.1.3. Synthetic summary of two European results: institutional comparison of regulations and norms

We run separately “frequency test” and based on results (eligible words and the redistribution of frequently-used words according to the keywords) that we get previously Point 1.1.1 and Point 1.1.2. We can conclude that:

In terms of rating regulations

The role of CRAs expected by ESMA can be summarized in general, that CRAs are important for both “issuing” and “investing” on the “financial” “market”. The role of CRAs concerns “information”, “assessment” of “risk” and “creditworthiness” of “entity”, “assets” and “instruments”, especially for “securitizations” and “structured” “products”.

As noted by RMI staff article³⁶³ that: “*the act also sets more stringent requirements for the issuance of credit ratings for structured finance and stipulates that CRAs must create a special symbol to distinguish structured products from other rating categories*”.

To achieve the purpose, the European authority is considering:

First of all, it concentrates on the “disclose”, in order to improve the transparency of ratings; *secondly*, it wants to improve the quality of ratings, by insisting better “methodologies” and frequent “rotation”; *thirdly*, it also realizes the importance to avoid “conflicts” with “shareholders”, in order to reassure the “independence” of CRAs; *finally*, a special attention should be paid to the intention to “reduce the over-reliance on CRAs”.

It shows the defiance of European rating regulator in terms of the legitimacy of the entire rating industry. Besides, ESMA talks a lot of about the “infringement” of CRAs. It seems that the institutional environment on rating industry is quite tough for European CRAs. They should behave better to guarantee their survival and to try not to be replaced in the future.

³⁶³ “A new regulatory framework for credit rating agencies”, *RMI staff article: Global credit review*. Page 18.

In terms of comparison with norms: common points

We found in the international code of CRAs (*Table IV.1.5&6*) and rating regulations of ESMA (*Table IV.1.3&4*), by comparing the eligible words and the keywords, that: They both pay attention to the “quality” of ratings and to the importance of “transparency”, “disclosure” and “communication”, in the presence of “conflicts” of interest of CRAs with other market actors.

To be more specific (please refer to the left column in the following *Table IV.1.7*):

They both admit the importance of CRAs’ role in “assessment” of “risk” of “entity” and “instrument” on the “market”, for both “issuers” and “investments”.

Table IV.1.7

Comparison between European rating regulations and norms

Frequent-used words in both texts	ESMA	Code of conduct
Number of words: 12	10	25
Disclose, methodologies, conflicts, information, entity, market, risk, assessment, instruments, structure, issuers (issuing), investments (investors)	Reliance, sovereign, infringes, rotation, shareholder, independence, financial, securitizations, assets, creditworthiness	Clarity, processes, review, model, quality, integrity, procedures, obligor, arrangers, underwriter, originator, trading, regulators, laws, subscribers, users, controls, employees, analyst, management, confidential, publicly, obligations, securities, products

In terms of comparison with norms: different points

We can learn from the table above that there are some differences between European rating regulations and norms, that:

First of all, the *Code* is not looking for alternatives to replace the role of CRAs. On the contrary, it has listed all rating-related “market participants” (obligor, arrangers, underwriter, originator, trading, regulators, and subscribers, on the right column).

It is clear that the self-imposed rating norms focus more on the CRAs’ responsibility in front of all rating users and the *Code* mentioned often the importance of “regulators” and “laws” in the rating supervision. It makes sense because the norms are not compulsory. Norms need to depend on rating regulations to supervise the rating market.

Besides, rating industry discipline-marker (rating norms) has only right to outline normative guidelines. It is not entitled to the “punitive power” as the rating regulations from the *ESMA*, when an infringement happens. Compared to the *ex-post* interventions, the *Code* pays more attention to “how to” actively practice good habitus of CRAs.

Last but not least, the *Code* aims to improve the quality of ratings (in more detailed criteria: “clarity”, “integrity”, “confidential”, “publicly”...). It concretizes more on “how to” achieve these purposes, from both organizational (emphasizing words such as “employees”, “analyst”, “management”) and operational point of view (emphasizing words such as “review”, “model”, “controls”... in the “processes”, “procedures”...)

1.2. Two facts from Russian case: comparison with European case

We will begin this Subsection 1.2 by the rating regulations (Point 1.2.1) and norms (Point 1.2.2) in Russia, and their comparison (Point 1.2.3). Furthermore, we will make a comparative summary with European case (Point 1.2.4) with Russian case. The horizontal-comparative examination also helps us to see how regulator and norm-maker expect CRAs' role, in a different way, for a developed market on one hand; and for an emerging market on the other hand.

1.2.1. Rating regulation in the Federal Law (2015)

The Federal Law of 2015 stipulates that non-Russian based CRAs were forbidden to practice rating business in the Russia Federation, which makes three Russian local CRAs: they are ACRA (Analytical Credit Rating Agency, founded in 2015), Expert Rating (under the same group, Rating-Agentur Expert RA GmbH is listed in ESMA in December of 2015 and it is the latest registered CRAs in EU so far. The Russian ExpertRA is one of the longest-lasting CRAs in the former Soviet Union area, which was founded in 1997)³⁶⁴ and National CRA (which is a state-owned CRA).

Table IV.1.8

Word frequency query result for Federal Law (version 2015)³⁶⁵

Word	Length	Count	Weighted Percentage (%)	Similar Words
information	11	92	1.43	information
entity	6	82	1.27	entities, entity
control	7	68	1.06	control, controlled, controller, controlling, controls
law	3	66	1.03	law, lawful, laws
financial	9	52	0.81	financial
register	8	47	0.73	register, registered
date	4	45	0.70	date, dated, dates
internal	8	45	0.70	internal, international
documents	9	43	0.67	document, documentation, documents

³⁶⁴ ESMA, CRA authorization, at <https://www.esma.europa.eu/supervision/credit-rating-agencies/risk>.

³⁶⁵ Federal Law of 13 July 2015 No 222-FZ On the Activities of Credit Rating Agencies in the Russian Federation, On the Amendment to Article 76.1 of the Federal Law 'On the Central Bank of the Russian Federation (Bank of Russia)' and the invalidation of certain provisions of legal acts of the Russian Federation (Adopted by the State Duma on 30 June 2015 and Approved by the Council of the Federation on 8 July 2015).

methodology	11	41	0.64	methodologies, methodology
procedure	9	41	0.64	procedure, procedures
assignment	10	37	0.57	assign, assigned, assigning, assignment, assigns
member	6	36	0.56	member, members
analysts	8	35	0.54	analyst, analysts
requirements	12	34	0.53	requirements
executive	9	30	0.47	executing, executive
regulations	11	28	0.43	regulating, regulation, regulations, regulator
voting	6	28	0.43	vote, votes, voting
legal	5	27	0.42	legal
participation	13	27	0.42	participant, participants, participate, participation
committee	9	26	0.40	committee, committees
meeting	7	24	0.37	meet, meeting, meetings, meets
applied	7	22	0.34	applied, apply
chief	5	22	0.34	chief
review	6	21	0.33	review, reviewed, reviewing
application	11	20	0.31	applicable, applicant, application
foreign	7	19	0.30	foreign
shares	6	19	0.30	share, shares
capital	7	18	0.28	capital
management	10	18	0.28	manage, management, managing
supervisory	11	18	0.28	supervisory
board	5	17	0.26	board
data	4	17	0.26	data
disclose	8	17	0.26	disclose, disclosed, disclosing
submission	10	17	0.26	submission, submissions
accountant	10	16	0.25	account, accountant, accounting
charter	7	16	0.25	charter
directors	9	16	0.25	directors
officer	7	16	0.25	office, officer, officers, offices
council	7	15	0.23	council
obligations	11	15	0.23	obligation, obligations, obliged
shareholders	12	15	0.23	shareholder, shareholders
disclosure	10	14	0.22	disclosure
head	4	14	0.22	head
position	8	14	0.22	position

stakes(shares)	6	14	0.22	stakes
				Number of words: 44³⁶⁶

Russian regulations on CRAs are on the level of the entire Federation. It is signed directly by President Putin. It contains four chapters, amounting to 20 articles. We have redistributed 44 eligible words to keywords representing four themes, directly from the Federal Law of Russia.

Table IV.1.9

Redistribution of frequently-used words (3)

Keywords	Words
General	Law, legal, regulations, supervisory
Establishment	Register, date, documents, requirements, participation, applied (application), foreign, capital, charter, submission
Organizational aspect	Control, internal, assignment, member, analyst, executive, voting, committee, chief, shares, stakes, management, board, accountant, directors, officer, council, shareholders, head, position
Operational aspect	Methodology, procedure, meeting, review, data
Communication	Disclose (disclosure)
Others	Information, entity, financial, obligations

1.2.2. ACRC's Code of conduct (2015)

ACRC is the only Russian CRA, which has published documents in English.

Admittedly, Code of Conduct of one single CRA cannot generally summarize the entire rating business in Russia; however, it gives us the only opportunity to have an insight into the norms on rating activities under Russian institutional environment.

Table IV.1.10

Word frequency query result for ACRC (version 2015)³⁶⁷

Word	Length	Count	Weighted Percentage (%)	Similar Words
entity	6	91	1.83	entities, entities', entity
information	11	89	1.79	information, informed
employees	9	66	1.33	employee, employees
internal	8	57	1.15	internal, international

³⁶⁶ We combined applied with application and disclose with disclosure, to reduce the number of frequent-used words, with the same grammatical root.

³⁶⁷ Analytical Credit Rating Agency Code of Ethics and Professional Conduct), 10/12/2015 and the agency itself has been established in 2015.

documents	9	54	1.09	document, documentation, documented, documents
assignment	10	47	0.94	assign, assigned, assigning, assignment, assignments, assigns
requirements	12	42	0.84	require, required, requirements
methodology	11	39	0.78	methodologies, methodology
issuer	6	34	0.68	issuer, issuers
analysts	8	32	0.64	analyst, analysts, analysts'
procedure	9	32	0.64	procedure, procedures
public	6	28	0.56	public(ly), publication, publications
regulations	11	27	0.54	regulate, regulating, regulations, regulator
committee	9	26	0.52	committee, committees
conflict	8	26	0.52	conflict, conflicts
obligations	11	24	0.48	obligation, obligations
control	7	23	0.46	control, controlled, controlling, controls
applied	7	22	0.44	applied, apply, applying
director	8	22	0.44	director, directors
ethics	6	22	0.44	ethics
organisers	10	22	0.44	organisation, organisationally, organise, organiser, organisers
confidential	12	20	0.40	confidential
review	6	19	0.38	review, reviewing, reviews
assess	6	18	0.36	assess, assessing, assessment, assessments
financial	9	18	0.36	financial
disclose	8	17	0.34	disclose, disclosed, discloses, disclosing
disclosure	10	16	0.32	disclosure
legislative	11	16	0.32	legislation, legislative
process	7	16	0.32	process, processes
law	3	15	0.30	law, laws
management	10	15	0.30	manage, management
underwriter	11	15	0.30	underwriter, underwriters
quality	7	14	0.28	quality
responsible	11	14	0.28	response, responsibilities, responsible
analysis	8	13	0.26	analysis, analysis'
data	4	13	0.26	data
issued	6	13	0.26	issue, issued
originator	10	12	0.24	originator, originators

risk	4	12	0.24	risk, risks
investors	9	11	0.22	investor, investors
market	6	11	0.22	market
report	6	11	0.22	report, reporting, reports
securities	10	11	0.22	securities
group	5	10	0.20	group
legal	5	10	0.20	legal
participants	12	10	0.20	participants, participation
rules	5	10	0.20	rule, rules
creditworthiness	16	9	0.18	creditworthiness
independence	12	9	0.18	independence, independent
interaction	11	9	0.18	interact, interacted, interacting, interaction
members	7	9	0.18	member, members
transactions	12	9	0.18	transactions
				Number of words: 50³⁶⁸

Russian version of rating industry code (The keywords are also the chapter title for the *Code*) tries to remind CRAs of their responsibility, in front of all market actors (from debt issuers to investors and intermediaries). It aims to mobilize CRAs to form good conducts of business, which will have implications to the entire financial market.

Table IV.1.11

Redistribution of frequently-used words (4)

Keywords	Words
Quality and objectivity (operational)	Documents, requirements, methodology, procedure, applied, review, process, quality, analysis, data, report, rules, creditworthiness
Independence and the avoidance of conflicts of interests (organizational)	Employees, internal, assignment, analysts, committee, group, conflict, director, ethics, responsible, independence, members, control, management
Transparency and protection of confidential information	Public, confidential, disclose (disclosure)
Others	Entity, Information, regulations, obligations, financial, legislative, law, legal, risk, market, securities, transactions, assess, issuer (issued), underwriter, originator, investors, interaction, organizers, participants

³⁶⁸ We combined disclose with disclosure and issuer and issued, to reduce the number of frequent-used words, with the same grammatical root.

1.2.3. Synthetic summary of two Russian results: institutional comparison of regulations and norms

It is clear that the keywords used by Russia Federal Law and local CRA resemble one to the other. However, there still exist some differences.

To explain furthermore the following Table IV.1.2, we can conclude that:

Firstly, Russia rating regulation has focus on the conditions and criteria of establishment of CRA, while the *Code* concentrates on the objectives to achieve rating quality (e.g. ethics, responsible, independence, creditworthiness, confidential...)

Secondly, Russia rating regulation pays more attention in actors inside CRA, while the Code used “employees” to describe this kind of personnel. The latter entails more the expected role of outside CRAs on the market, in the securities’ transactions and assessment, for example.

In addition, it mentions frequently the interaction of CRAs with issuers, underwriter, originator, investors, and organizers...This kind of interaction is relatively neglected in the documents of Russian rating regulations, in comparison.

Table IV.1.12

Comparison between Russian rating regulations and norms

Frequent-used words in both texts	Federal Law 2015	Code of Conduct of ACRC (2015)
Number of words: 24	20	26
Documents, requirements, applied (application), control, internal, assignment, member, analyst, committee, management, directors, methodology, procedure, review, data, disclose (disclosure), information, entity, financial, obligations, regulations, law, legal, participation (participants)	Supervisory, register, date, foreign, capital, charter, submission, executive, voting, chief, shares, stakes, board, accountant, officer, council, shareholders, head, position, meeting	Employees, group, conflict, ethics, responsible, independence, process, quality, analysis, report, rules, creditworthiness, public, confidential, legislative, risk, market, securities, transactions, assess, issuer(issued), underwriter, originator, investors, interaction, organizers

1.2.4. Conclusive results from the horizontal comparison: Europe vs. Russia

Based on the horizontal comparison, we will be able to conclude regulations in Russia, in Europe, and finally the code of conduct on both markets.

From the point of view of Russian regulator

To begin with, Russian regulators focus more on the establishment of CRAs, by setting an entry barrier *ex-ante* (including the non-access of foreign CRAs into the local market), while European regulators have in addition, a supplementary control *ex-post*. It is clear that *ESMA* does not agree with CRAs' defenses, by saying that ratings are their "free speeches" and we cannot blame their wrongful ratings. European regulator did not hesitate to make fines and other legal methods as punishment, because they are aware that ratings brought consequences on the financial markets. It is very true during the recent crises. However, in this regard, "despite these clear approaches towards the introduction of civil liability for CRAs, the Russian regulator so far has decided not to include any provision in this sense."³⁶⁹

Secondly, Russian rating regulator considers having not only supervisory, regulatory, but also legal authorities in rating business. It tries to entail more on both organizational and operational aspects of rating activities.

In the same spirit, Russian regulations on rating business are more detailed (more eligible words) than European version. We suppose that these details would give new rating business entrants more hands-on instructions, and it would also help the rating industry to grow up healthily, in the conformity to the existing regulations.

³⁶⁹ Sasso, Lorenzo, 2016. A critical analysis of the recent Russian regulation on CRAs. *Russian Law Journal*, Volume IV, Issue 2, Page 79.

From the point of view of European regulator

Firstly, we learn from the comparison that, CRAs are expected, not only to act as the intermediary providing information for issuers and investors, but also to assess risk and creditworthiness for financial instrument, such as securitizations and structured products, entities, asset management on European market... By contrast, we do not see Russian rating regulator mentioning CRAs' role on the market and its interaction with other market actors, on the text of Federal Law (2015).

It makes sense that financial development is more advanced in European than in Russia. In other words, the interaction between CRA and market participants is more complicated in the first case than in the second.

Last but not least, ESMA clearly highlights in the regulation about the danger of over-reliance on CRAs. It is still an open question if this kind of initiatives to find rating alternatives will lead to an entire or partial abandon of regulatory use of CRAs, as what suggested in the Dodd-Frank Act of 2010 in USA (*LeMieux* amendment)³⁷⁰. In the situation where European rating regulator shows the eager to look for the alternative(s) for CRAs, “the Russian regulator has not dealt with this issue yet”³⁷¹.

From the point of view of the codes of conduct

It is clear that, Russia rating norms have largely inspired from ICOSO's. They share a high level of resemblance in the written document. For instance, they both set criteria for rating quality and expect CRAs' role, in the interaction with other market actors.

³⁷⁰ The Major Regulatory Changes Addressing CRAs from the Dodd-Frank Act, in *RMI staff article, supra*, page 16.

³⁷¹ *Idem*, Page 80.

1.3. Compliance to Hong Kong and Mainland China

Subsection 1.3 is designed to compare separately the regulations and norms on HK market (Point 1.3.1 and Point 1.3.2), and on Mainland China (Point 1.3.3 and Point 1.3.4). We will study official texts: including rating-related laws, rules, regulations, reports and *Code of Conduct*.

1.3.1. Common law (SFO), reports (Q&A) and Moody's case in HK

There is no specific regulation for CRAs in HK. After the public consultation in form of Question & Answer (Q&A)³⁷², the amendment only adds Type 10: “providing credit rating services” in order to embed rating-relevant provision into the existing *Securities and Futures Ordinance (SFO)*. More explanations are listed on the SFC website³⁷³ in the form of Q&A and *Circular*, in terms of licensing of CRAs and their rating analysts in HK³⁷⁴.

Given the circumstances of Common Law, we try to look for cases concerning CRAs. We found that in 2016, *SFAT (Securities and Futures Appeals Tribunal)* “has determined that Moody’s should be subject to a public reprimand and a pecuniary penalty for \$11 million”³⁷⁵. It is interesting to hear the comments of the “SFC’s Chief Executive Officer: Mr. Ashley Alder, that ‘the Code of Conduct sets general principles and standards of conduct that all licensed or registered persons, including credit rating agencies, must follow.’”³⁷⁶ In this case, Moody’s is accused of not being “honesty and fairness”, “due diligence” and to have “adequate internal controls.”³⁷⁷ It is clear that the *Code* is made more empowered in HK, which serves as a mandatory complement to the regulation to remind CRAs of the conformity to good rating behaviors. Consequently, we turn to the attention in HK’s version of rating norms.

³⁷² SFC (Securities and Futures Commission), 29/10/2010 Consultation Conclusions Concerning the Regulatory Oversight of Credit Rating Agencies.

³⁷³ SFC (Securities and futures commission), Frequently Asked Questions, at <http://www.sfc.hk/web/EN/faqs/intermediaries/licensing/credit-rating-agencies.html>

³⁷⁴ SFC, 21/04/2011, Licensing of CRAs in HK and their rating analysts.

³⁷⁵ SFAT affirms SFC decision to reprimand and fine Moody’s over Red Flags Report, at <https://www.sfc.hk/edistributionWeb/gateway/EN/news-and-announcements/news/doc?refNo=16PR34>.

³⁷⁶ *Ibid.*

³⁷⁷ “Update 2-Hong Kong watchdog says Moody’s broke code of conduct with ‘red flags’ report”, Michelle Price, Reuters, September 10, 2015.

1.3.2. HK's version of Code of conduct

We used the same methodology to select eligible words and redistribute them by keywords. The exercise has been conducted for the Code of Conduct that we mentioned in the Moody's case. The results are shown as follows:

Table IV.1.13

Word frequency query result for the HK code (version 2011)

Word	Length	Count	Weighted Percentage (%)	Similar Words
representatives	15	54	1.80	representative, representatives, representatives'
informed	8	42	1.40	inform, information, informed
entity	6	41	1.36	entities, entity
securities	10	31	1.03	securities
public	6	25	0.83	public, publications, publicly
disclose	8	24	0.80	disclose, disclosed, disclosing
employees	9	24	0.80	employee, employees
product	7	23	0.77	product, products
process	7	21	0.70	process, processes
methodologies	13	20	0.67	methodologies, methodology
structured	10	19	0.63	structure, structured
confidential	12	16	0.53	confidential, confidentiality, confidentially
conflict	8	16	0.53	conflict, conflicts
issued	6	16	0.53	issue, issued, issues, issuing
finance	7	15	0.50	finance
responsible	11	15	0.50	response, responsibilities, responsibility, responsible
procedures	10	14	0.47	procedures
review	6	14	0.47	review, reviewing, reviews
timely	6	13	0.43	time, timely
assessment	10	12	0.40	assess, assessment, assessments
disclosure	10	12	0.40	disclosure, disclosures
target	6	12	0.40	target, targets
updating	8	12	0.40	update, updated, updates, updating
issuer	6	11	0.37	issuer, issuers
quality	7	11	0.37	quality

report	6	10	0.33	report, reporting, reports
requirements	12	10	0.33	required, requirement, requirements, requiring
financial	9	9	0.30	financial
participate	11	9	0.30	participant, participants, participate, participated
records	7	9	0.30	record, recorded, records
subscribers	11	9	0.30	subscriber, subscribers
historical	10	8	0.27	historic, historical
independence	12	8	0.27	independence, independent, independently
investors	9	8	0.27	investor, investors
revision	8	8	0.27	revise, revised, revising, revision
apply	5	7	0.23	applied, applies, apply
compensation	12	7	0.23	compensated, compensation
control	7	7	0.23	control, controlled
market	6	7	0.23	market
officer	7	7	0.23	officer, officers
preferred	9	7	0.23	preferably, preferred
relationship	12	7	0.23	relationship
assets	6	6	0.20	asset, assets
debt	4	6	0.20	debt
fees	4	6	0.20	fee, fees
integrity	9	6	0.20	integrity
internal	8	6	0.20	internal, international
investing	9	6	0.20	investing, investment
licensed	8	6	0.20	licensed
material	8	6	0.20	material, materially
mechanisms	10	6	0.20	mechanism, mechanisms
monitoring	10	6	0.20	monitor, monitoring
prohibit	8	6	0.20	prohibit, prohibited
published	9	6	0.20	publish, published
registered	10	6	0.20	registered
regulated	9	6	0.20	regulated, regulations
transaction	11	6	0.20	transaction, transactions
				Number of words: 53³⁷⁸

³⁷⁸ We combined disclose with disclosure and issuer and issued, investors with investing, finance with financial, to reduce the number of frequent-used words, with the same grammatical root.

It is clear that the HK version of *Code of Conduct* is highly guided by that of IOSCO, but it is more much detailed and refined, compared to the European version. We suppose that it is because HK does not have a proper version of rating regulations. CRAs, rating users and market actors are in need of normative guidance in the rating industry.

The extensive version serves also as the base of tribunal arguments in the case of Moody's (that we mentioned previously). That is very symbolic to illustrate the importance of the Code in the rating supervision, on the market context of Hong Kong.

Table IV.1.14

Redistribution of frequently-used words (5)

Parts	Words
Quality and integrity	Process, methodologies, procedures, review, updating, quality, report, requirements, records, historical, revision, apply, integrity, licensed, material, mechanisms, monitoring, registered, regulated
Independence and the avoidance of conflicts of interest	Representatives, employees, conflict, independence, compensation, control, officer, fees, internal, prohibit
Responsibilities to the participants & timeliness	Confidential, timely, participate, relationship, responsible, issued(issuer), subscribers, investors(investing); entity; target, securities, product, structured, finance(financial), assessment, market, preferred, assets, debt, transaction
Disclosure and communication	Public, published, disclose(disclosure), informed

After presenting eligible words from the HK's code of conduct in the rating business, we sorted them according to the keywords. To be more detailed, we found that:

First and foremost, SFC demands the license or registration system for CRAs. In addition, there exists also the system of accredited "representatives". The rating analysts, "who carry on a regulated activity for CRAs" should also be "licensed or registered to these CRAs (see section 114(4) (a) and (b) of the SFO)"³⁷⁹. In other

³⁷⁹ Securities and Futures Ordinance (Amendment of Schedule 5) Notice 2011, L.N. 28 of 2011, Explanatory

words, it sets rules for agency establishment *ex ante*.

Secondly, SFC makes it clear that the compensation arrangement and fees of ratings are important elements to consider, in addition to the internal control of employees. All of these methods are to avoid the conflicts of interest. The code tries to build a “Chinese Wall” between the rating staff and their clients.

Last but not least, SFC clarifies the important place of CRAs in the assessment of entities and target instruments: structured finance products and preferred securities for example. The HK Code is more detailed than the outlines of the European version. It also illustrates HK’s important position among leading financial markets worldwide.

1.3.3. Sectorial rating regulators in Mainland China

Compared to European and Russian universal rating regulator, Chinese rating system provides us with the sectoral regulators and they have issued various laws and rules, which themselves are on permanently-changing process. Since recent years, “the regulatory regime developed from ‘zero’ to multi-layered structure, which covers the securities, banking and insurance markets.”³⁸⁰

To collect the most exhaustive rating-related laws and rules, I referred to the catalog of “Related laws, regulations and normative documents to test the qualifications for senior managers of securities ratings”³⁸¹, to official websites of each regulator and to each accredited CRA and two relevant publications concerning rating regulations in Continental China³⁸².

Finally, I made a list to present them all, which is shown as follows:

Note.

³⁸⁰ Bian, Jing, 2015. Regulating the Chinese credit rating agencies: progress and challenges, *Journal of Money Laundering Control*, Vol. 18 Issue 1, pp. 75.

³⁸¹ “List of laws, rules and regulations documents related to the test of qualification for senior managers on securities ratings activities” translated by the author from Chinese: 《证券评级业务高级管理人员资质测试相关法律法规及规范性文件目录》, at www.100xuexi.com.

³⁸² Lynn, Bai. 2010, The Performance Disclosures of Credit Rating Agencies: Are they Effective Reputational Sanctions? *Journal of Law & Business*, and Arner Douglas W., Hsu, Berry F.C. and Pu, Lifen, 2010. Credit Rating in China-Guest Editors’ Introduction. *Chinese Law and Government*, vol. 43 (3), P. 3–7.

Table IV.1.15

List of regulations and rules in Continental China

Regulators	Regulations and rules
PBoC	PBoC, 2006, Guiding Opinions for the Management of Credit Rating (Guiding Opinions) ³⁸³
	PBoC, 2006, Specifications of Credit Rating Market for banking loans and Inter-bank Bond Market ³⁸⁴
	PBoC, 2008, Notice of People's Bank of China on Strengthening the Management of the Credit Rating Practices in Inter-bank Bond Market ³⁸⁵
NDRC	NDRC, 2012, Notice of National Development and Reform Commission on the Enhancement of Credit Construction during Corporate Bond Issuing ³⁸⁶
CSRC	CSRC, 2007, Interim Measures for the Management of the Credit Rating Business Regarding the Securities Market ³⁸⁷
CBRC	CBRC, 2011, Notice of China Banking Regulatory Commission on Regulating Commercial Banks' Use of External Credit Rating ³⁸⁸
CIRC	CIRC, 2013, Notice of China Insurance Regulatory Commission on Enhancing Regulation Bond Investments of Insurance Funds' Use of External Credit Rating ³⁸⁹

It should be noted that all documents have only Chinese language version. Comparing to the methodologies that we used in the previous cases, we have to introduce the “Chinese word segmentation” to the manipulation of NVivo (we chose Chinese as the

³⁸³ Translated by the author from Chinese: 《信用评级管理指导意见》. Which is promulgated by the People's Bank of China on March 29, 2006. It provides the “descriptions of the rating process, the factors affecting the rating, and rating signals and their meanings” from Arner Douglas W., Hsu, Berry F.C. and Pu, Lifan. 2010, “Credit Rating in China-Guest Editors' Introduction”. Chinese Law and Government, vol. 43, no. 3, pp. 3–7, note 17.

³⁸⁴ Translated by the author from Chinese: 《信贷市场和银行间债券市场信用评级规范》. Which is issued by the PBOC on November 21, 2006. It includes three parts: Specification for Credit Rating Subjects (Part 1), Specification for Credit Rating Business (Part 2), and Specification for Business Regulation of the Credit Rating Market (Part 3).

³⁸⁵ Translated by the author from Chinese: 《中国人民银行关于加强银行间债券市场信用评级作业管理的通知》. Which is issued by the PBOC on Mars 11, 2008. It contains instructive provisions on rating operations. The documents concerning “ground interview” and “rating procedure” are thus asked to be fulfilled.

³⁸⁶ Translated by the author from Chinese: 《国家发展改革委办公厅关于加强企业发债过程中信用建设的通知》 on 09/10/2012.

³⁸⁷ Translated by the author from Chinese: 《证券市场资信评级业务管理暂行办法》 on 23/03/2007.

³⁸⁸ Translated by the author from Chinese: 《规范商业银行使用外部信用评级的通知》, No.10 [2011] of China Banking Regulatory Commission. 26/01/2011.

³⁸⁹ Translated by the author from Chinese: 《中国保监会关于加强保险资金投资债券使用外部信用评级监管的通知》, No 61[2013] of China Insurance Regulatory Commission. 05/08/2013.

operating language in the software and NVivo is able to process automatically).

In order to facilitate the comparison methodology, we will translate the frequently-used words in Chinese into English in the last column of the following tables.

Table IV.1.16

Word frequency query result for rating regulations in Continental China

Word	Length	Count	Weighted Percentage (%)	Translation in English
债券	2	168	1.11	bonds
管理	2	159	1.05	management
证券	2	159	1.05	securities
银行	2	153	1.02	banks
能力	2	143	0.95	capacities
对象	2	134	0.89	entities
市场	2	128	0.85	market
报告	2	125	0.83	report
企业	2	112	0.74	corporation
制度	2	106	0.70	system
风险	2	98	0.65	risk
信息	2	91	0.60	information
人员	2	86	0.57	employee
发行人	3	82	0.54	issuer
部门	2	77	0.51	department
规定	2	70	0.46	regulations
债务	2	68	0.45	debt
经营	2	61	0.40	operations
分析	2	58	0.38	analysis
跟踪	2	58	0.38	follow-up
偿还	2	55	0.36	reimbursement
主管	2	54	0.36	responsible
资料	2	54	0.36	data
规范	2	53	0.35	regulations
评估	2	51	0.34	assess
要求	2	50	0.33	Requirements
检查	2	46	0.31	examination
主体	2	45	0.30	entities
发行	2	43	0.29	issuing
违约	2	43	0.29	default
外部	2	40	0.27	external
信贷	2	38	0.25	loaning

内	1	37	0.25	internal
程序	2	37	0.25	process
质量	2	36	0.24	quality
申请	2	35	0.23	application
文件	2	33	0.22	paper
小组	2	32	0.21	group
材料	2	32	0.21	data
报送	2	31	0.21	reporting
内部	2	30	0.20	internal
及时	2	30	0.20	in-time
担保	2	30	0.20	guarantee
统计	2	30	0.20	statistics
发债	2	28	0.19	issuing debt
公司	2	27	0.18	corporations
委员会	3	27	0.18	committee
投资	2	27	0.18	investment
金融	2	27	0.18	finance
				Number of words:40³⁹⁰

We found as showed in the table above that:

Firstly, the keywords are relatively concentrated (40 eligible words among 100 most frequently-used words in seven texts from 5 different rating regulators), in various sources of regulations and rules. The facts reflect that various regulators repeat similar things, from one to the other, leaving large regulatory loophole.

Besides, it is interesting to see that CRAs in China serve, not only to assess the default risks of debt securities/issues and entity/issuers (both for issuers and for investors) on the market, but also serve for bank loans and corporations. “Bank” is a highly-frequently-used word in these texts in China and we did not notice the situation in any other countries that we studied so far.

Last observation is on the investors-side, Chinese regulators are very prudent to the external rating.

³⁹⁰ We combined 债券(bonds) with 债务(debt) and 发债(issuing debts), 对象(entities) with 主体(entities), 报告(report) with 报送 (reporting), 发行人(issuer) with 发行(issuing), 规定(regulations) with 规范 (regulations), 资料 (data) with 材料 (data), 内 (internal) with 内部(internal), 企业 (corporations) with 公司 (corporations) to reduce the number of frequent-used words, with the same grammatical root.

1.3.4. Security Association of (Mainland) Chinese: in charge of rating norm

Interim Measures of CSRC (2007) inspires three self-imposed rules: Industry self-regulation Convention³⁹¹ and two Codes of Conduct³⁹², whose mission is to improve the reputation of the rating industry, to offer professional service with high quality to rating users, and to protect the public interest, among others. We consider these documents equivalent to rating norms in Mainland China.

The *Convention* is something like a guiding document, while two *Codes* are more detailed in their content. After the word frequency test, we got the results as follows:

Table IV.1.17

Word frequency query result for rating norms in Continental China

Word	Length	Count	Weighted Percentage (%)	Converted in English
证券	2	417	4.35	securities
人员	2	130	1.35	employee
报告	2	109	1.14	report
对象	2	85	0.89	entity
信息	2	84	0.88	information
披露	2	71	0.74	disclosure
管理	2	70	0.73	management
跟踪	2	64	0.67	follow-up
项目	2	63	0.66	projects
资料	2	58	0.60	data
制度	2	49	0.51	system
发行	2	37	0.39	issuing
分析	2	35	0.36	analysis
内容	2	34	0.35	content
发行人	3	33	0.34	issuer
规定	2	33	0.34	regulations
程序	2	32	0.33	process
委员会	3	30	0.31	committee
定期	2	30	0.31	regular
资产	2	30	0.31	capital
委托	2	29	0.30	delegation
内	1	28	0.29	internal

³⁹¹ The convention (2012) contains 10 articles (In Chinese, 《证券资信评级机构执业行为准则》) published on the website of SAC(In Chinese), at http://www.sac.net.cn/tzgg/200909/t20090929_21346.html.

³⁹² The code includes the “Code for employees for securities industry” (2014) and the “Interim implement Details for CRAs’ business on securities market”(2015). The code is translated by the author from Chinese: 《证券业从业人员执业行为准则》 and 《证券市场资信评级机构评级业务实施细则（试行）》.

冲突	2	27	0.28	conflict
指定	2	27	0.28	appointment
访谈	2	27	0.28	interview
控制	2	26	0.27	control
调查	2	26	0.27	investigate
及时	2	25	0.26	in time
方法	2	25	0.26	methodology
证监会	3	25	0.26	CSRC
公司	2	24	0.25	corporation
部门	2	23	0.24	department
高级	2	23	0.24	senior
交易	2	22	0.23	transaction
准则	2	21	0.22	regulations
措施	2	21	0.22	methodology
公开	2	20	0.21	publish
审核	2	20	0.21	review
市场	2	19	0.20	market
数据	2	19	0.20	data
公布	2	18	0.19	disclose
				Number of words:34³⁹³

To conclude the previous table and reading in detail the eligible words, there are several points to be illustrated:

Chinese Convention has more chapters (we use them as keywords to redistribute eligible words that we obtained in the Table IV.1.17) than others' Code of conduct.

It lays out the focus on the how-to-do rating activities, on the operational aspect: for the rating process (appointment, committee, investigation, interview, analysis...), for diligence examination (including follow-ups, reviews and conformity to regulations) and for organizational aspect (internal control, among others).

As for the role for CRAs expected by Chinese norms, it remains “traditional” in the role to the “issuing” and “transaction” of “securities” on the “market”.

However, what should be illustrated additionally is that neither “debt” nor “investment” is among frequently-used word for Chinese code of conduct. It reveals the fact that debt instrument is not yet prevalent, under Chinese market environment.

³⁹³ We combined 发行人 (issuer) with 发行(issuing), 规定(regulations) with 准则 (regulations), 资料 (data) with 数据 (data), 方法 (methodology) with 措施 (methodology), 披露 (disclosure) with 公开(publish) and 公布(disclose) to reduce the number of frequent-used words, with the same grammatical root.

**Redistribution of frequently-used words,
by chapter in the Convention in Continental China**

Chapter	Words
Quality	project, system, timely, process, methodology
Process (operational)	report, committee, content, analysis, investigation, data, interview, regular, appointment
Conflict of interest (organizational)	employee, delegation, control, conflict, internal, senior, department
Disclosure	disclosure (publish)
Confidential information	information
Examination	follow-up, review
Management and supervision	management, regulations (CSRC)
Others	securities, entity, capital, issuing (issuer), corporation, market, transaction

When we talk about *Association* in the execution of these *Convention and Codes*, we refer to the *Security Association of China (SAC)*. This is the institution establishing rating industry norms. It is entitled to the power of examination, inspection, management and supervision of the rating business, under a self-regulatory framework.

In the conformity to the spirits of Code of conduct, SAC has organized a field inspection along with CSRC, *Shanghai and Shenzhen Stock Exchange*, and *Chinaclear*, in September of 2015 and the report was released on Mars of 2016. They found nine problems according to *Measures for company bond issuance and trading (16/01/2015)*³⁹⁴. Bureaus in Beijing, Shanghai, Tianjin and Shenzhen accomplished sanctions to six (out of seven CRAs) by warning and “monitoring conversation”³⁹⁵ (administrative measures). It should be noted that, CRAs are subjects to penalties (fines, among others) in theory. For example, they should take legal responsible for misbehavior according to the provisions; however, the practical applicable instructions are still missing. The press release is quite ambiguous, and it is hard to dig more information out of the real case, in comparison the case of Moody’s in HK.

³⁹⁴ Translated by the author from Chinese.

³⁹⁵ CSRC, Order No.50, “Provisional Measures on Credit Rating Industry in Security Market”. 24/08/2007. (In Chinese, and translated the author).

1.4. Hypotheses on Chinese segmented market: in comparison with European markets (inspirations from the horizontal comparison)³⁹⁶

Chinese market is segmented with historical reasons. Two cases we analyzed previously, Europe on one hand and Russia, on the other hand, correspond separately to the effect of the segmentation on Chinese markets (HK and Mainland).

We assume the conclusion drawn from European market could be consistent to the conclusion that we can learn from Hong Kong case, since the SFC's (*Securities and Futures Commission*) plan is to “meet new standards set by the EU and other overseas jurisdictions”. SFC stipulates that any CRA should “operate within a regulatory regime that is deemed equivalent or as stringent as the EU regime.”³⁹⁷

At the same time, the choice of Russia is not random either. We assume the situation of Continental China in terms of rating regulation and normative discipline is similar to that in Russia. It is because that these are two biggest transitory economy (please refer to Chapter II for more details about Chinese *Reform and Opening-up Policy*). Russia is also an emerging country (member country of Group *BRICS*) with a tradition of *State intervention* (in addition to that, they shared experiences with centrally planned economics) into financial issues. Finally, in both countries, only local CRAs are allowed to practice in the national rating markets.

These are the reasons why we chose European and Russian cases, as vertical comparison, to constitute hypotheses on Chinese segmented market. Hence, we are able to form five hypotheses on the expected role of CRAs:

Firstly, Chinese rating regulation is at the preliminary stage. Various regulators are dispersed on the Mainland market segments, according to the financial sector that they are involved into. That's one of the reasons why we suppose that the power of Chinese rating regulation is less concentrated than the regime, where there is only one solo rating regulator.

Hypothesis 1: in HK, it exists double-control in the case of infringements, SFC has

³⁹⁶ European markets include Subsection 1.1 and Subsection 1.2; Chinese markets include HK market and Mainland Chinese market, in the Subsection 1.3.

³⁹⁷ HK-SFC plans to introduce regulatory regime for CRAs in HK, in *RMI staff article, supra*, Page 23.

right to punish the questioned CRA(s), like the European case; while Chinese continental regulator has only ex-ante control (registration) but does not have the right to fine ex-post penalties, like the Russian case.

Secondly, it should be noticed that since the New Federal Law of 2015, foreign CRAs have no longer rights to practice their rating activities in the Russian Federation. We assume the same forbiddances existing in China, where regulator stipulates clearly in the official document, that the access of global CRAs to Mainland China is “discriminated”, compared to their local counterparts. However, it would be hard to believe the same situation in an international financial center, where HK regulator would not take CRA differently according to the nationality of each CRA.

Hypothesis 2: Chinese continental regulator bans the entry of foreign CRAs formally and explicitly on the official texts, while this kind of forbidding rules doesn't exist for HK regulator.

Thirdly, in the case of Europe and of Russia, we have noticed that Russian version is more complicated than European, for both rating regulations and norms (with more eligible words among 100 most frequently-used words). In our logic, the reason could be explained by the fact of that CRAs in Russia have less experiences and consequently they are more in need of guidelines. In this sense, we consider the same situation would appear in Mainland China, compared to HK.

Hypothesis 3: Chinese continental regulations and the Code of Conduct are more detailed than HK's version. Presumably, rating professionals in a mature market have already had enough experiences. They don't need more hands-on instructions on how they have to/should do in their business.

Fourthly, in a developing financial market, securities instruments are less diversified and sophisticated than a well-developed market. Traditional financial intermediaries, banks among others, are still in the center of capital (re)allocation in a transitory

economy, such as in Mainland China.

Hypothesis 4: in HK market, CRAs are connected with more types of financial instruments, with more complicated interactions with extensive market participants, while CRAs are expected by the regulators and self-imposed rating norms to play the role as one of the essential infrastructure for the Corporate Bonds (CBs) (through the financing and investing activities). We are questioning the same situation happening in China, since the bond market is quite illiquid.

Finally, the financial crisis revealed the danger of excessive over-reliance of all market actors (issuers, investors and even regulators themselves) on ratings. Not to mention, it is still unknown if CRAs have nice or malicious intention in the first place. Thus, it's better to turn the attention to the way how we use external rating wisely. After the endorsement of *Los Cabos Declaration* during the summit of G20 (Mexico, 2012)³⁹⁸, a timetable is set to find rating alternatives on the level of *IOSCO*³⁹⁹, *IAIS* (*International Association of Insurance Supervisors*), national/regional central banks and commercial banks, etc... We assume thus that HK market would follow the international trend more closely than Mainland China.

The latter could be too careless on the subject as Russian rating regulator. Or it could also be possible that since CRAs play other roles beyond the evaluation of “risk of default” in China (which is probable because the bond market is neither dynamic nor inactive, while the rating market is developing quite fast), Chinese rating regulator voluntarily wish to keep CRAs’ existing and flourishing.

Hypothesis 5: the regulatory use of ratings or the role of CRAs as External Credit Assessment Institutions (ECAIs) remain on Chinese Continental market, but could be challenged or even be replaced on HK market (as the same discussion to reduce the over-reliance on CRAs for ESMA) and CRAs could even be removed out in the regulator use (as the case of Dodd-Frank Act of 2010 in USA).

³⁹⁸ FSB, 2012, Roadmap and workshop for reducing reliance on CRA ratings, FSB Report to G20 Finance Ministers and Central Bank Governors.
at http://www.fsb.org/wp-content/uploads/r_121105b.pdf?page_moved=1.

³⁹⁹ Investors such as asset management and other institutions (fund, securities firms...), cf. IOSCO, “Sound Practices at large intermediaries: Alternatives to the use of credit ratings to assess creditworthiness”, May 2015.

1.5. Analytic summary of Chinese results

To conclude the regulations and norms existing on rating market and the compliance of CRAs on HK and Continental Chinese markets, we compared the results between two market segments (horizontal comparison). And finally, we will compare results from HK case with those from Europe (regulations on the Union level of *ESMA* and normative disciplines of *OICV-IOSCO*), and results from Mainland China with those from Russia rating regulations and norms.

The objective of this analytical summary in Subsection 1.5 is to confirm or to reject the hypotheses that we constructed in the Subsection 1.4.

1.5.1. Results for HK case

Both HK regulations and norms focus on the importance of CRAS to be registered and only CRAs with license have rights to provide ratings on HK market. However, SFO does not offer any clue about the way of punishments imposed on CRAs in case of infringements. Of course, given the characteristics of Common Law, our examination is not complete until we study the *case of Moody's*, where SFC showed its ability to control rating activities both *ex-ante* and *ex-post*. In the end, **Hypothesis 1 is valid.**

There is no any article concerning the differentiation of local or foreign CRAs on HK market. The only condition to practice rating activities in HK is to register legally according to relevant provisions in SFO⁴⁰⁰ as we concluded previously. Hence, **Hypothesis 2 is valid.**

The Code of Conduct is an important complement to the absence of HK rating regulation, in the strict definition; thus, we found a version much more sophisticated (53 words eligible among 100 most frequently-used words compared 39 for ISOCO's

⁴⁰⁰ "CRAs that are licensed for the new Type 10 regulated activity will be corporations licensed under section 116 or 117 of the SFO or authorized financial institutions registered under section 119(1) of the SFO for the regulated activity". in *ibid*, Explanatory Note.

recent version of Code for rating industry). HK's version is the most detailed than anywhere else in our study, against the fact that Chinese continental version is the briefest. Hence, **Hypothesis 3 is rejected.**

CRA's are expected by the regulator and self-imposed rating norms-maker to play the role on HK financial market, not only limited to the basic assessment of common entities, securities, assets, etc., but also to the structured products and preferred securities. Hence, **Hypothesis 4 is valid.**

CRA's continue to be trusted to assume its various roles on the financial market in HK. No indicatives showed that they are expected to be replaced in HK, like the case in Europe or in USA. Hence, **Hypothesis 5 is rejected.**

1.5.2. Results for Mainland China case

Chinese various regulators all ask CRA to apply for separate registration, but the way of punishment in case of infringements should be referred to “Securities Law”⁴⁰¹ “regarding the civil liabilities for false corporate disclosure (Zou et al. 2008)”⁴⁰². It implies that rating regulators are limited to the *ex-ante* power. The *ex-post* intervention of rating regulators impress practically no big consequences on CRA (no trace is found in their specification of laws or rules), if they don’t resort the helps from other relevant authorities. Hence, **Hypothesis 1 is valid.**

Here, we present another real case to reinforce our arguments: IAMAC⁴⁰³ conducted its first general investigation⁴⁰⁴ in 2014 and found CCXI and Dagong have the best rating performance among seven authorized CRAs. In terms of rating quality, the *Association* pointed out that CRAs can’t offer sufficient arguments to justify their rating events. In addition to issuers’ operational situation and financial analysis, they are supposed to disclosure more factors to explain how they decide the rating methodology. Timeliness is an element highly evaluated by the authorities. IAMAC encourages CRAs to serve rating users more diligently, with better communication not only with other market stakeholders but also with the regulators. In the end, the association only made some commends and remarks on the behaviors of CRAs. Their suggestions imposed no constrain on their real functions.⁴⁰⁵

⁴⁰¹ “Securities Law of the People’s Republic of China” is “the piece of legislation enacted by the (Standing Committee) of National People’s Congress that regulates credit rating” on 29/12/1998, amended on 28/08/2004 and 27/10/2005, article 169. Note 11, in Douglas W. Arner, Berry F. C. Hsu & Lifan Pu, *Credit Rating in China* (2010), Guest Editors' Introduction, Chinese Law and Government, Vol 43, No, 3, Page 3-7.

⁴⁰² Zou H., Wong, S., Shum, C., Xiong, J. and Yan, J., 2008. Controlling-minority shareholders incentive conflicts and directors’ and officers’ liability insurance: evidence from China. *Journal of Banking and Finance*, 32, page 2636-2645.

⁴⁰³ *Insurance Asset Management Association of China (IAMAC)* was established according to “Notice of the China Insurance Regulatory Commission on Enhancing Regulation Bond Investments of Insurance Funds’ Use of External Credit Rating”. No 61[2013] of China Insurance Regulatory Commission. 05/08/2013 (In Chinese): 《中国保监会关于加强保险资金投资债券使用外部信用评级监管的通知》(保监发〔2013〕61号)》. It’s a national organization of industry self-regulation approved by State Council, CIRC and the Ministry of civil affairs of People’s Republic of China, who has the duty to publish an annual report to examine the quality of rating business. The association employs all necessary talents from issuance companies to evaluate CRAs’ performance, with intention to protect the interest of investors, also other users of ratings.

⁴⁰⁴ Sina (Finance), “Investigation of CRAs in insurance industry: seven problems” (in Chinese and it is translated by the autor), 09/07/2014, at <http://finance.sina.com.cn/money/insurance/bxdt/20140709/031919646247.shtml>.

⁴⁰⁵ There is some evolution in this regard. Dagong is published by Chinese rating regulators for license

It's curious to see that Chinese regulators don't forbid foreign capital into rating business *per se*, but they also stipulate that only registered CRAs can practice activities in Continental China. In practice, global CRAs are not able to be registered without partnership with local CRAs *de facto*; while if we only consider the regulations and rules "on the paper", **Hypothesis 2 should be rejected**, even if in reality, the limited access of global CRAs is no longer a myth.

Chinese rating regulation and the code of conduct are relatively brief compared to the Russia version. We have learned previously in the Part One concerning the discussion of Chinese institutional environment, that the reason is that in Mainland China, there exists much more "common knowledge" (informal institutional elements of CRAs' external governance) for professional rating practices than "explicit official texts" (formal institutional elements of CRAs' external governance, including rating regulation and norms). Hence, **Hypothesis 3 is rejected**.

CRAs are expected by the regulators and self-imposed rating norms-makers to play the role for debt instruments, but also for the finance with banking intermediary. Considering the predominance of state-owned banks in the Mainland, their expectations become less surprising. It shows that the market economy (direct finance) is still under early-stage of development, compared to the developed markets. Hence, **Hypothesis 4 is valid**.

Ratings are one of the necessary criteria for debt issuing and CRAs are among the financial infrastructure for Chinese market economy. Hence, **Hypothesis 5 is valid for issuers**, because the role of CRA is expected to be maintained; **However, it is rejected for investors**, where banks and insurance companies are demanded by each of their regulators to use "internal rating" by preference, instead of the external rating, which is provided by CRAs.

1.5.3. Conclusive results from the horizontal comparison: HK vs. Mainland China

In sum, the results drawn from the previous analyses and horizontal comparison are presented as follows:

Rating activities are more supervised in HK than in Mainland China, both for agency establishment and for punitive methods after their misbehaviors.

In Chinese rating regulation and norms, the actual difficulty for global CRAs to access to the rating market is not very explicit. It means that informal institutional elements of regulatory pillar should be taken into account for rating business participants. They should understand the importance of *Guanxi* and the personal connection, in addition to all kinds of laws, rules and regulations (where the written texts are relatively brief and imprecise), under Chinese institutional environment.

CRAs are not expected to take more roles (except for the fact that debt issuing obliges ratings on certain level) on Continental Chinese financial market, compared to HK market. Chinese market economy is still developing and CRAs are still at the marginal position. Investors (especially banks) are proposed by rating authorities to use more internal ratings than external ratings. These are the reasons why we suppose that CRAs are considered to have importance to play other roles than role to assess “default risk” of financial products for investors. That explains the paradox of rating business development on Chinese market, to some extent.

As for seeking for alternatives or not, either market has mentioned the notion in the scope of our study.

1.5.4. Conclusive results from the vertical comparison

We found that HK has a lot in common with its European counterpart, except that the difference between continental law and common law. HK regulator relies on a more detailed version of industry self-imposed normative disciplines.

However, Chinese continental regulators diverge essentially to Russian regulator, not only because these two biggest countries with transitory economy adopt different rating regulatory system: sectorial on one hand and universal on the other hand; but also, *firstly*, because the existing rating regulations in Mainland China have less legal power than the *Federal Law in Russia* signed directly by the President of the country. Chinese rating regulators have to resort to other authorities to punish CRAs for their violation. *Secondly*, provisions and articles of Chinese regulations are scattered into various documents and there lacks a universal interpretation for rules and regulations, issued by different regulators, especially when the coordination among them is still limited. *Thirdly*, they all state rather ambiguously on the paper than their Russian counterpart. The Bank of Russia is the only and supreme rating regulator in Russia Federation. Chinese rating regulation depend more on “practice costumes” than on explicit official texts. Chinese society keeps the memories from the “acquaintanceship”. It seems that informal regulatory power, such as *Guanxi* could be more useful than the codified laws, rules and regulations for the Chinese Socialist Market Economics.

In general, CRAs still play the role of information intermediary for investors to assess risk of entities or securities, either basic (as the case in China and Russia where the financial market is under-development) or sophisticated (as the case in HK, where financial innovation: securitization and structured-products continues to develop, despite of the crisis), while in Europe, alternatives of CRAs are being actively searched to release the over-reliance on rating activities.

Conclusion of Section 1

In the same spirit of *Basel Accord*, there are “general motives”⁴⁰⁶ identified by Dale and Thomas (1991)⁴⁰⁷, in regulating credit-rating-use, such as “*investor protection (incorporating a minimum credit quality of security issuance), and enhanced market efficiency through raised awareness of the risk characteristics of securities.*”⁴⁰⁸

Structure of the Section 1, Chapter V

In Section 1, we collected European (Subsection 1.1), Russian (Subsection 1.2), Chinese (both in Continental China and in Hong Kong, Subsection 1.3) rating regulations and norms.

We not only compared these two institutional sources in rating supervision, but also conducted the horizontal comparison between developed markets (European case and Hong Kong segment) and emerging markets (Russian case and Continental China segment).

We took European and Russian cases as well as the vertical comparison to constitute hypotheses (Subsection 1.4) for HK and Mainland China. The (in) validation is presented in Subsection 1.5.

The lexical analysis illustrates two aspects: what do “rating regulators” and “market-discipline markers (rating norms/business code of conduct)” expect from the role played by CRAs. We suppose that the most frequently-used words in the official texts expressed somehow their ideas.

⁴⁰⁶ Cantor, Richard et al. 2007. The Use of Credit Ratings in Investment Management in the US and Europe. *The Journal of Fixed Income*, Vol. 17, No. 2: pp. 13-26.

⁴⁰⁷ Dale, R.S. And Thomas, S.H. 1991. The regulatory use of credit ratings in international financial markets. *Journal of International Securities Market*. in Cantor. *supra*.

⁴⁰⁸ Cantor. *supra*.

Inspirations for the following chapters

For the time being, the fact that *ESMA* became the sole regulator for CRAs in Europe, has not yet been identified consistently by issuers and investors; while in China, the rating regulation is very recent. There is no research on CRAs (in our extensive research of literature review), taking into account the viewpoint of regulators, under the context of Chinese environment.

The discussion of rating regulation is a very useful institutional element for our following empirical study. For example, Jorion (2005)⁴⁰⁹ and Alsakka et al. (2015)⁴¹⁰ both showed a change of the regulatory regime could have incidences on rating impact on normal stock returns. We would like to take it as a source of inspirations to develop furthermore in our empirical studies.

⁴⁰⁹ Jorion, P., Liu, Z., & Shi, C. 2005. Informational effects of regulation FD: evidence from rating agencies. *Journal of Financial Economics*, 76, 309–330.

⁴¹⁰ Alsakka, R., Gwilym, W., Klusak, P., & Tran, V. 2015. Market Impact under a New Regulatory Regime. *Economic Notes*, 44(2), 275–307.4(4), 460-479.

Section 2. Sample constitution for quantitative study and preliminary tests

2.1. Eligible ratings for the quantitative study

2.2. Translating rating scale of global/local CRAs into numeric rank

2.3. A general glance of Chinese rating business

2.4. A study of initial ratings

2.5. A study of Credit rating changes

2.6. Description of sample by agency for Watch-Lists

Introduction of Section 2

The objective of Section 2, Chapter V

We wanted to investigate the role of CRAs from the point of view of issuers and investors. However, unfortunately, we lacked the possibility to do semi-structured interviews. *First of all*, it is difficult to imagine being able to get in touch with millions of individual investors on Chinese markets. *Secondly*, the contact of institutional issuers and investors are extremely difficult without personal connections.

That's the reason why we start to constitute the sample of market data (directly from the database Bloomberg), at the beginning of our empirical study (just after the first qualitative study).

The objective of this Section 2 is not only to collect data (for initial ratings, credit rating changes and watch-lists) and to get results for the preliminary quantitative tests, but also to prepare the sub-samples for the following study:

- ✓ Multi-ratings sample to study the functions of CRAs, from the point of views of issuers and investors, in the case of initial ratings, credit rating changes and watch-lists (Section 3 of Chapter IV).
- ✓ Sole-ratings sample to study determinants of initial issuer ratings (Chapter V).
- ✓ Signaling effect of Credit Rating Change (CRCs) and Watch-list (Chapter VI).

Structure of Section 2, Chapter IV

Firstly, Section 2 begins with the delimitation of the scope of the sample constitution. We decided that only long-term (LT) issuer credit/default rating (issuer ratings) and senior unsecured debt (issue ratings) are subject to our quantitative study, independent to the category of CRA (global or local CRAs). The data collection starts from the beginning of CRAs' entry into Chinese rating market, since the year of 1988 (in the Subsection 1).

Then, we will present the rating scales, rating forms and the differences and similarities between global and Chinese local CRAs, in order to better understand what the numeric rank (from 1 to 20) really means after our conversion from the qualitative categories (AAA to below CCC-). The conversion from rating scales to numbers is necessary for a quantitative study (in the Subsection 2).

Thirdly, all Chinese ratings will be collected to constitute our sample. The sample of ratings events is sorted by year, since the CRAs' entry on Chinese rating market. We are able to see the trend, evolution and development of the rating industry (in the Subsection 3).

Last but not least, in the following three subsections of Section 2, we will introduce three descriptions of sample by agency for initial ratings (in the Subsection 4), for CRCs (in the Subsection 5) and for Watch-lists (in the Subsection 6). The objective is also to prepare samples for quantitative test and to present preliminary results. We will try to take into account the institutional factors on Chinese market environment (for example, the presence of both global and local CRAs, the segmentation of the SSE, SZSE, HK market and double-ratings (AH shares)...), into the examination.

2.1. Eligible ratings for the quantitative study

We are able to collect data in a coherent way and the constitution of sample starts from the entry of CRAs into Chinese market to the most recent year (1988-2016). The rating events that could enter into our sample concern only Chinese public companies (codified by CN in Bloomberg software) listed in Mainland China (Shanghai and Shenzhen Stock Exchange, A shares) or/and⁴¹¹ in Hong Kong (H shares).

There are two sorts of ratings⁴¹² (Long-Term/LT) being subject to our empirical study: long-term (LT) issuer credit/default rating (issuer rating) and senior unsecured debt (issue rating) by all sorts of CRAs.

Definitions for issuer ratings:

“A Standard & Poor's issuer credit rating is a forward-looking opinion about an obligor's overall creditworthiness in order to pay its financial obligations. (Standard and Poor's).”

Issuer Default Ratings (IDRs) opine on an entity's relative vulnerability to default on financial obligations. The “threshold” default risk addressed by the IDR is generally that of the financial obligations whose non-payment would best reflect the uncured failure of that entity. (Fitch).

Issuer Ratings are opinions of the ability of entities to honor senior unsecured financial counter-party obligations and contracts. (Moody's).”

Definitions for issue ratings:

“Issue ratings are an assessment of default risk but may incorporate an assessment of relative seniority or ultimate recovery in the event of default (Standard and Poor's).

Bonds ratings, which incorporate both an indication of the probability of default and of the recovery given a default of this debt instrument (Fitch).

Long-term obligation ratings are assigned to issuers or obligations with an original maturity of one year or more and reflect both on the likelihood of a default on contractually promised payments and the expected financial loss suffered in the event of default (Moody's).”

⁴¹¹ If a company is listed both one mainland and Hong Kong market, we call it the double-listed company.

⁴¹² Both are ratings for long-term (independent of local/foreign currency).

At first glance, these definitions of “Big Three” resemble one to the others.

To sum up, issuer ratings could reflect the financial health and operating conditions of one entity, while issue ratings target only one obligation instrument. We can’t infer the failure of the whole corporation from one potential event of issue default. An entity could be rated as “issuer” without issuing any debt instrument. These two types of ratings delimit the scope of our data collection and they are the eligible ratings for the quantitative study.

2.2. Translating rating scales of global/local CRAs into numeric rank

The following graph is a summary of rating scales used by “Big Three” in the case of issuer ratings and issue ratings for Long-Term. In order to conduct quantitative studies, we have to quantify the rating scales; in other words, we have to translate the qualitative categories of rating levels into numbers.

Hence, we will firstly, explain the content of rating scales and rating forms for both global and local CRAs; then, we will show the results of conversion from category to number, under the form of a table (*Table IV.2.1*).

There are two points to illustrate to better understand the *Graph IV.2.1* below:

- ✓ In addition to letters (A, B, C, D), there are also signs: +/- (for Standard and Poor’s and Fitch) and numbers: 1, 2, 3 (for Moody’s) to make extra notches within each major rating classification.
- ✓ Among BBB and BB, there is an important distinction between investment grade and speculation grade. It’s documented that “defaults increase exponentially as one goes down the grading scale, particularly below investment grade, from BB downwards”⁴¹³ and this observation is confirmed by academic literature⁴¹⁴, such as: “a default probability that is six times higher for bonds rated BB than for those rated BBB.”⁴¹⁵

⁴¹³ *Ibid.*

⁴¹⁴ Cantor, R., and Packer, F., 1994, The credit rating industry, *Quarterly Review*: Federal Reserve Bank of New York

Fine rating rankings of competing credit risk indexes⁴¹⁶ (Big Three)

S&P (1)	Fitch (2)	Moody's (3)	S&P	Fitch	Moody's
AAA	AAA	Aaa	BB+	BB+	Ba1
AA+	AA+	Aa1	BB	BB	Ba2
AA	AA	Aa2	BB-	BB-	Ba3
AA-	AA-	Aa3	B+	B+	B1
A+	A+	A1	B	B	B2
A	A	A2	B-	B-	B3
A-	A-	A3	CCC+	CCC+	Caa1
BBB+	BBB+	Baa1	CCC	CCC	Caa2
BBB	BBB	Baa2	CCC-	CCC-	Caa3
BBB-	BBB-	Baa3	CC	CC	Ca
			C	C	C
			D	DDD	
				DD	
				D	

Above: Investment Grade	On the right: Speculative Grade
--	--

After having a quick glance of the rating forms by “Big Three”, we want to go over those of Chinese local CRAs. The objective is to compare them to the rating scales of their global competitors.

The example goes with Dagong, the only Chinese agencies among “Top Three” (along with Lianhe and Chengxin) without any ongoing cooperation with the “Big Three” (S&P, Fitch and Moody’s). We can see more details from the table in Annex 4 that:

- ✓ Triple A is as usual the top rank in the rating system, while “C” represents the lowest⁴¹⁷, followed by D meaning the default. Between them, there are three classes of ratings.⁴¹⁸ From A category to C category, the risk of default goes higher, and conversely, the credit quality goes to the opposite direction.

York, Summer-Fall, 1–26 note

⁴¹⁵ *Supra*, Langohr Herwig M. and Langohr Patricia T., Page 48.

⁴¹⁶ Langohr Herwig M. and Langohr Patricia T.. *The Rating Agencies and Their Credit Rating: What They Are, How They Work and Why They Are Relevant*. Chicheser: John Wiley & Sons Ltd, 2008, P48.

⁴¹⁷ Asian Development Bank (ADB). 2011, People’s Republic of China: Bond market Guide, *Ibid*.

⁴¹⁸ More details are explained in the “Unification of Definition for the Classification, Symbol, and Meaning”, 2011, launched by PBOC in 2006. More details could be found in the graph of Annex 5.

✓ The turning point of “speculation ratings” and “investment ratings” still lies between BBB and BB for Dagong as for global CRAs. Dagong expresses its opinion on ratings below the notch of Triple-B, by saying that the “capacity for payment of financial commitments is considered adequate”; however, at the same time, it states straightforward that “under adverse business or economic conditions risks of default are more likely to exist under this scale”.

To conclude, after cross-examining these criteria descriptions with those of “Big Three”, we found it clear that almost identical rules are applied for both global and Chinese local CRAs. It proves the similarities in terms of rating scale between these types of CRAs.

We can learn from the *Table (IV.2.1)* below that the number 1-10 and number 11-22, represent separately ratings of investment grade and speculation grade.

Table IV.2.1

Conversion from rating scale into numeric rank

Investment grade									
AAA ⁴¹⁹	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AA1	AA2	AA3	A1	A2	A3	BBB1	BBB2	BBB3	
1	2	3	4	5	6	7	8	9	10
Speculation grade									
BB+	BB	BB-	B+	B	B-	CCC+	CCC	CCC-	Follow
BB1	BB2	BB3	B1	B2	B3	Caa1	Caa2	Caa3	-ing ⁴²⁰
11	12	13	14	15	16	17	18	19	20,21, 22

⁴¹⁹ We denoted 1.5 for AAA- for CCRC, 0 for AAA+ for CCRC.

⁴²⁰ CC (Ca for Moody's), C, D are three rating levels, which are denoted for 20, 21, 22, respectively.

2.3. A general glance of Chinese rating business

Compared to one-century-long history of rating business all over the developed financial markets, CRAs' presence on Chinese financial markets is much shorter. However, with a booming economic development and the openness for the socialist markets, their business is becoming more and more active. It is also in coincidence with the fact that the direct market financing and investment begin to show its glamour to Chinese issuers and investors, both individual and institutional, locals and foreigners, under Chinese institutional environment.

2.3.1. Data collection since CRAs' entry into Chinese market

Our sample constitution illustrates three points, and the sample is presented in the *Table IV.2.2*, as below:

- ✓ Separation of LT (long-term) issuer ratings and issue ratings.
- ✓ Separation of initial ratings, on one hand; credit rating changes and watch-lists (issuers and issue combined), on the other hand.
- ✓ The data collection starts from the very beginning of CRAs' entry to Chinese market, with all types of CRAs (global and local CRAs), which covers the year of 1988 to 2016.

Table IV.2.2 ⁴²¹

Data Collection and by year

Year \ Rating	Issuer rating		Issue rating		Total	
	Initial	CRC-WL	Initial	CRC-WL	Initial	CRC-WL
1988	0		1	0	1	0
			1		1	
1989	0		0	1	0	1
			1		1	
1990, 1991, 1992	/					
1993	0		1	2	1	2

⁴²¹ We start the table from year 2009 because just as showed in "Graph 1", the explosive tendency of rating industry in China started the year after 2008.

			3		3	
1994	3	0	1	0	4	0
	3		1		4	
1995	0		1	3	1	3
			4		4	
1996	/					
1997	0		1	0	1	0
			1		1	
1998	6	7	0	4	6	11
	13		4		17	
1999	0	8	0		0	8
	8				8	
2000	3	5	0	2	3	7
	8		2		10	
2001	3	5	0		3	5
	8				8	
2002	38	5	1	0	39	5
	43		1		44	
2003	73	14	0	7	73	21
	87		7		94	
2004	17	11	0	2	17	13
	28		2		30	
2005	58	32	1	4	59	36
	90		5		95	
2006	54	32	3	1	57	33
	86		4		90	
2007	104	29	3	5	107	34
	133		8		141	
2008	56	35	1	3	57	38
	91		4		95	
2009	120	73	2	7	122	80
	193		9		202	
2010	62	52	2	7	64	59
	114		9		123	
2011	147	61	12	16	159	77

	208		28		236	
2012	195	74	5	29	200	103
	269		34		303	
2013	148	59	18	31	166	90
	207		49		256	
2014	190	163	15	31	205	194
	353		46		399	
2015	308	283	20	57	328	340
	591		77		668	
2016	166	210	15	45	181	255
	376		60		436	
Total	1751	1158	103	257	1854	1415/
		/1021+137		/208+49		1229+186
	2909		360		3269	

Based on the raw data that we collected, we will do several quantitative tests:

- ✓ Data description of rating events (Subsection 2.4 - 2.6 of Chapter IV);
- ✓ Study of multi-ratings (initial ratings, credit rating changes and watch-lists) from the point of view of issuers and investors (Section 3 of Chapter IV);
- ✓ Rating determinants of different CRAs are explored on the sample of sole-ratings for initial issuer ratings⁴²² (Chapter V);
- ✓ CRCs and WL for both issuer and issue ratings, and their impacts on the stock market returns (Chapter VI).

Before conducting these quantitative tests mentioned above on the subsamples, we will describe the entire sample from two points of view:

Number of ratings: for initial ratings (issue/issuer ratings) and for rating events (initial ratings, credit rating changes and watch-lists) (in the Point 2.3.2).

Level of ratings: a study thorough the history (in the Point 2.3.3).

⁴²² The reason why we won't use the sample of initial issue ratings is that we cannot find information related to each debt issuing. Besides, there are only 103 cases to study which is quite small as rating sample, compared to the case of initial issuer ratings.

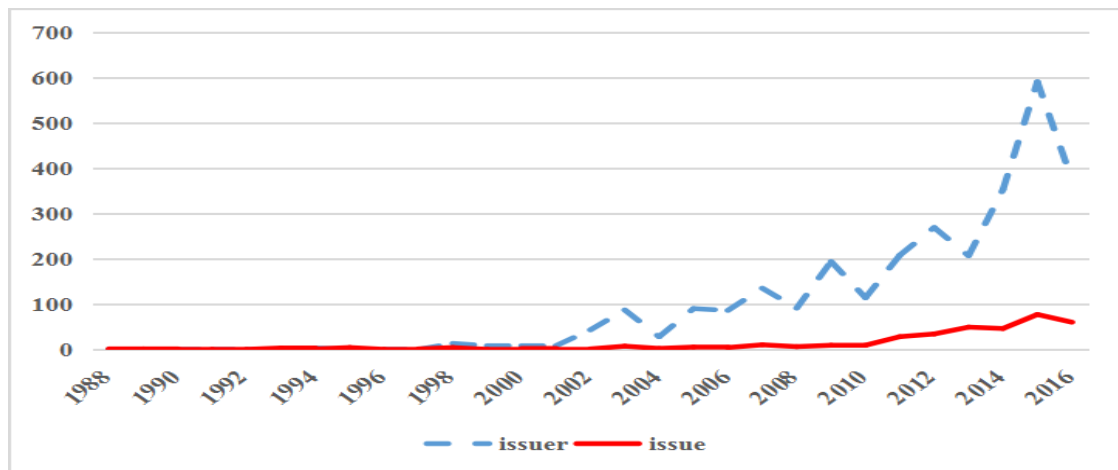
2.3.2. Evolution of rating activities' number and explanations

We transferred these numbers from the *Table IV.2.2* into a line-graph and we saw a clear trend in a direct way⁴²³.

The first credit rating appearing on Chinese market dated to 1988, where Moody's gave out its first opinion. The presence of CRA has nearly-30 years in China and the soar of rating issuing happened the year after the financial crisis (2008).

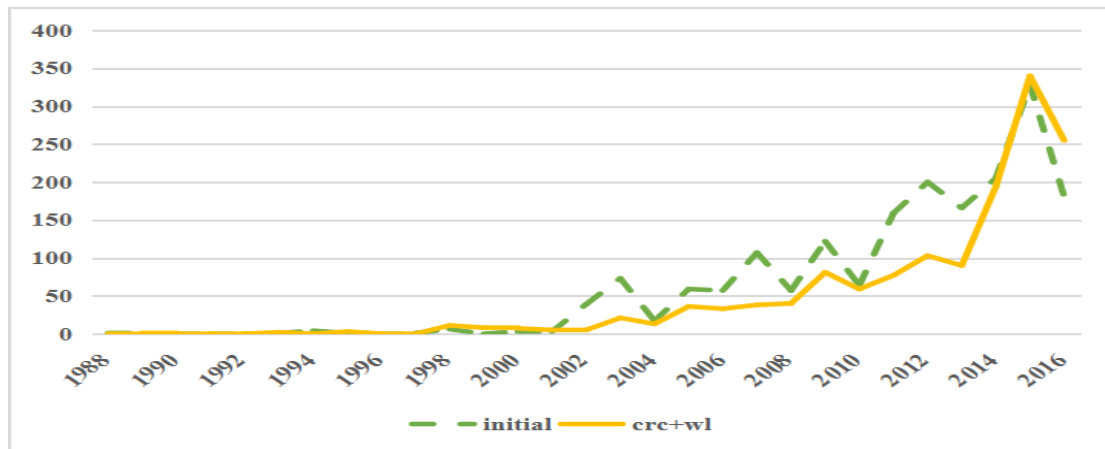
Graph IV.2.2

Comparison between number of issuer and issue ratings



Obviously from the graph presented above, we can learn that the issuer ratings outnumbered overwhelmingly issue ratings. This special circumstance is due to the fact that Chinese Corporate Bond (CB) is strictly controlled by *National Development and Reform Commission (NDRC)* and bond issuing is never an easy job for any corporation. When the volume of issued bonds is small, the number of issue ratings is correspondingly low; while for issuer ratings, there are fewer restrictions.

⁴²³ We did not mix issuer and issue ratings. For example, if a CRA gave an upgrading for both the entity and the debt, we counted twice in the sample (once for issuer rating, once for issue rating). The issuer-clients are Chinese public companies with all industry types (financial, manufacturing and commercial...)

Evolution of initial ratings, CRC and WL (number of rating events)

What is presented above is a line-graph (IV.2.3) based on the types of rating events: including initial ratings, credit rating changes (CRCs) and Watch-list (WL) of eligible ratings given by every possible credit rating agency (CRAs).

It is clear that more credit rating changes and watch-lists than initial ratings started to appear on Chinese market recent year (2015 and 2016). The result is not surprising since during the past 30 years, most of Chinese public companies are rated at least once by one CRA, either global or local.

In conclusion, we sample constitution presents the most exhaustive since the beginning of CRAs' entry into Chinese market in 1988. The choice of year is also because it marks the moment when Mainland China started to embrace the stock market. Hence, the year of 1988 had a double-remarkable meaning.

We saw from the data collection that the rating activities, both for initial rating and rating events (CRCS and WLs), are growing fast with the time going, especially after the financial crisis in 2008.

It should be noted in addition, that CRAs published much more issuer ratings than issue ratings because Chinese bond market is still under development.

China' GDP for recent 30 years



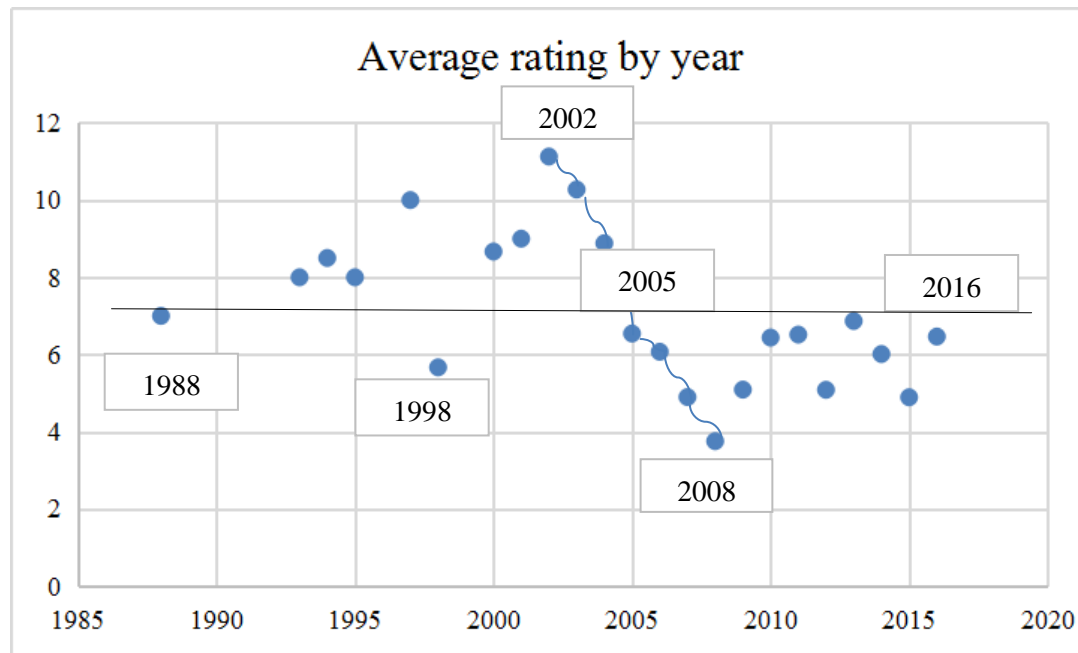
Under all circumstances, with the rise of Chinese economy (see the *Graph IV.2.4* above), the number of both issuer and issue ratings have been growing fast. The activities of CRAs in China are also coherent to the economic growth and the bond market expansion.

It still needs some time to develop a well-constructed infrastructure for bond issuing and investing activities. Hence, the rating industry is expected to become more and more active, accordingly.

It should be noted that, with the regulatory reforms (Subsection 3.2 of Chapter II: Increasing issuing and investing of CBs with regulatory reforms), we suppose the issuing and investing of corporate bonds would be increasing and the situation are going to be changing, in the near future.

2.3.3. Rating level throughout the history

Before the rating exercises of Xinhua in 2002, only Global CRAs rated occasionally on Chinese market. That explains the reason why during 1988 and 2002, we lacked data for some years (in the following *Graph IV.2.5*).



In 2005, Chinese local CRAs entered into the rating market. Since then, the average ratings were higher than before (with smaller number. To recall, the conversion of rating scale to numeric rank is presented in Subsection 2.2).

This observation has led us to ask:

- ✓ Did all CRAs rate the better and better, with time going by (with lower average rating scores)?
- ✓ Ratings are better in the post-2005 period (except the year of 1998). Is it because of the presence of local CRAs? Are they believed to inflate ratings more easily than global CRAs?
- ✓ Independent to CRAs' strategical behaviors, were better ratings due to the improvement of credit quality?

Graph.IV.2.5 gives us some intuitions. In order to respond to these questions, we will have to control the agency-conduct effect and time-varying effect, as well as the firm-specific and macro-economic variables. The objective aims to clarify the dynamics between CRAs and issuers.

We will dig more information in the following studies in Chapter V.

2.4. A study of initial ratings

In this subsection 2.4, we will study, the first initial ratings in Chinese rating (Point 2.4.1) history from point of view of CRAs (Point 2.4.2) and listing places (Point 2.4.3). The statistical χ^2 test helps us to establish relationship between these two variables of CRAs and listing places (Point 2.4.4).

2.4.1. First initial ratings in Chinese rating history

Before arrival of the millennium and at the beginning of the new century (2000, 2001 and 2002), there were only 20 initial ratings on Chinese market. All of the rated entities were banks and natural resources companies. Detailed information can be found directly from the Bloomberg and it is presented as follows:

Table IV.2.3

Information of first initial ratings in Chinese history

Company name	Date	Rating type	Agency	Initial Rating	Security Name
Bank of China Ltd	06/03/1988	Debt LT Foreign Currency	Moody's	A3	3988 HK Equity
	02/15/1994	LT Foreign Issuer Credit	S&P	BBB	
	04/01/1998	Rating Issuer Foreign Currency	R&I	AA-	
	12/01/2000	LT FC issuer	Fitch	BBB+	
China Construction Bank Corp	08/24/1993	Foreign Currency LT Debt	Moody's	Baa1	939 HK Equity
	06/10/1998	Rating LT Issuer Foreigner	S&P	BBB	
Bank of Communications Co Ltd	11/10/1994	LT Foreign Issuer Credit	S&P	BBB	3328 HK Equity
	11/10/1994	Senior Unsecured Debt	Moody's	A3	
	04/01/1998	Rating Issuer	R&I	AA-	
Industrial & Commercial	11/09/1994	LT Foreign Issuer Credit	S&P	BBB	601398 CH

Bank of China Ltd	04/01/1998	Rating Issuer Foreign Currency	R&I	AA-	Equity
	12/01/2000	LT issuer	Fitch	BBB+	
Agricultural Bank of China Ltd	06/19/1995	Foreign Currency LT Debt	Moody's	Baa1	601288 CH Equity
	04/01/1998	Rating Issuer Foreign Currency	R&I	AA-	
China Merchants Bank Co Ltd	06/11/1997	Debt LT Foreign Currency	Moody's	Baa3	600036 CH Equity
Huaneng Power International Inc	04/27/1998	Rating LT Issuer Foreigner	S&P	BBB	902 HK Equity
China petroleum and Chemical Corporation	12/08/2000	Rating LT issuer	S&P	BBB-	386 HK Equity
CNOOC Ltd	02/01/2001	Rating LT issuer foreign currency	S&P	BBB	883 HK Equity
	02/01/2001	Issuer rating	Moody's	Baa2	
Aluminum Corporation of China Ltd	06/11/2001	Rating LT issuer foreign currency	S&P	BBB	2600 HK Equity

We learn from the *Table IV.2.3*, from two points of view: types of CRAs and listing places:

Firstly, Moody's is the first global agency to give its rating opinion on the Chinese market. It should be noticed in additionally that, all of these ratings were given by the global CRAs. Chinese local CRAs entered the competition later, when rating activities has earned their familiarity under Chinese context.

Besides, most first initial ratings were given to the publically-listed companies of H shares, listed on the HK stock market.

These two observations inspired us to adopt two angles to study furthermore the initial ratings: agency (local/global CRAs, in Point 2.4.2) and market segments (in Point 2.4.3).

2.4.2. Description of sample by agency for initial ratings

From the following descriptive *Table IV.2.4*, we are able to learn two points from both global and local CRAs, in terms of rating number and rating level:

For global CRAs, Moody’s is the most active global agency in giving ratings on Chinese market. It gives most ratings among “Big Three” (in comparison with Fitch and S&P). Since 2014, S&P started to issue two types of ratings with global and national criteria (“Given the focus on credit quality within a single country, national scale credit ratings are not comparable between countries”⁴²⁴). In comparison with the results of S&P, S&P National rated with 2.90 notches higher in average.

In comparison, for local CRAs, they rated systematical better than their global competitors. The lowest rating is BBB-, which means they give ratings fully on the investment grade. On average, there are 7 notches’ differences between global and local CRAs.

Table IV.2.4

Description of sample by agency (1)

Agency Category	Local CRAs	Xin-hua⁴²⁵	Global Big Three	S&P National	Others global CRAs
Number (1854 in total)	1037	215	548	38	16
Issuer rating (1751 in total)	1034	215	448	38	16
Issue rating (103 in total)	3	0	100	0	0

⁴²⁴ “S&P Global Ratings' national scale credit ratings are an opinion of an obligor's creditworthiness (issuer, corporate, or counterparty credit rating) or overall capacity to meet specific financial obligations (issue ratings), relative to other issuers and issues in a given country. National scale credit ratings provide a rank ordering of credit risk within the country”, from National and Regional Scale Credit Ratings, at https://www.spratings.com/en_US/products/-/product-detail/national-and-regional-scale-credit-ratings.

⁴²⁵ The reason why we put Xinhua parallel to the rest of local CRAs is that it does not exist anymore. We also observed that it issued ratings, in average 5.5 notches lower than the rest of local CRAs (8.84 vs. 3.16).

Number by agency	Chengxin:297 Lianhe:242 Dagong:181 SBCR:240 CCRC:77 ⁴²⁶	/	Moody's:233 Fitch :189 S&P :126 ⁴²⁷	/	R&I:5 CI: 10 JCR: 1
Average rating	3.16	8.84	10.30	6.89	6.94
Median	3 (AA)	9 (BBB)	10 (BBB-)	6 (A)	7 (A-)
Std.dev.	1.5	3.72	3.27	3.90	2.17
Highest /Lowest	AAA /BBB-	AAA /C	AA- /C	AAA /BB-	AA- /BBB-

If we adopt a dynamic way to study the *rating number* issued by CRAs, we found both global and local CRAs issued more and more ratings on Chinese market (Xinhua and CCRC have censored data that we don't include into the *Line Graph IV.2.6&7*).

Table IV.2.5

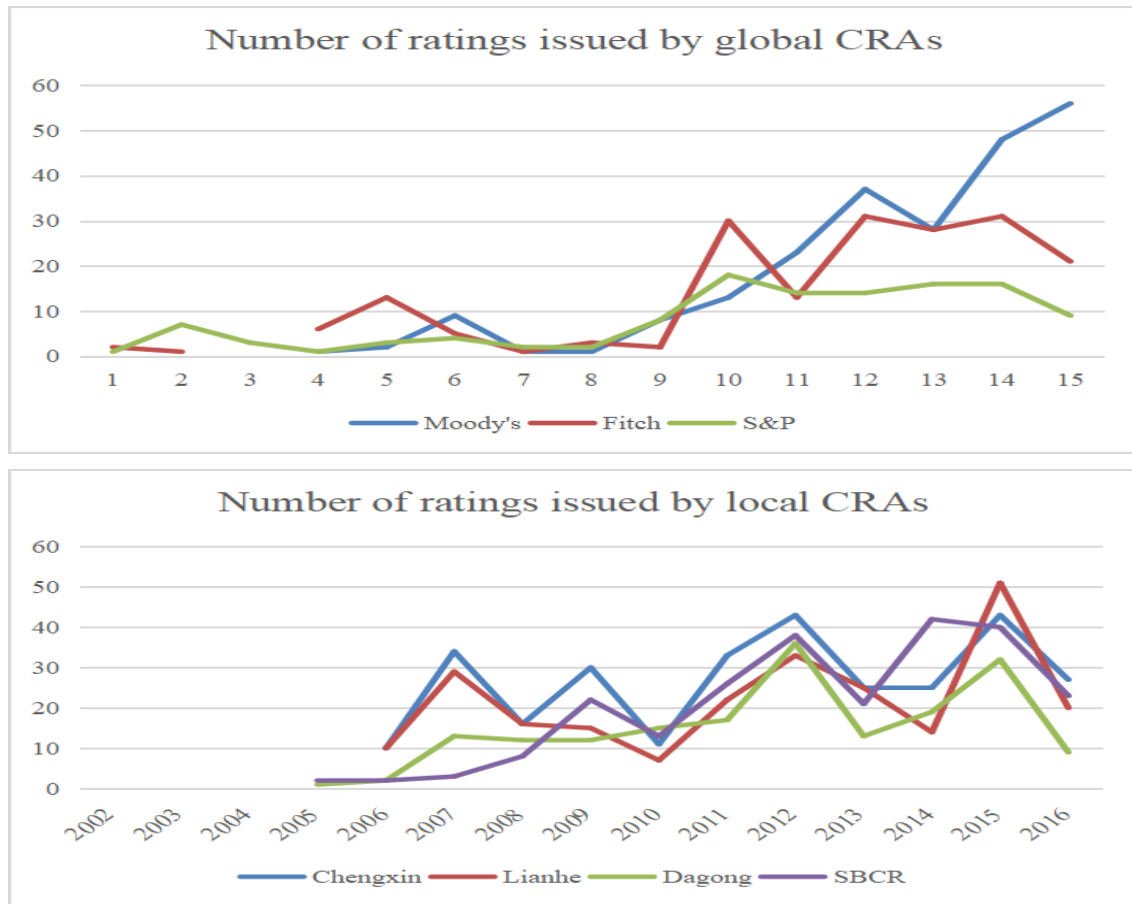
Number of ratings by agency, with a given year

CRA Year	Cheng-xin	Lian-he	Da-gong	SB CR	CC RC	Xin-hua	Moody's	Fitch	S&P	
2002	/			/		36	/	2	1	
2003						65		1	7	
2004						7		/	3	
2005						48		1	6	1
2006	10	10	2	2	/	15	2	13	3	
2007	34	29	13	3		10	9	5	4	
2008	16	16	12	8		/	1	1	2	
2009	30	15	12	22		27	1	3	2	
2010	11	7	15	13		/	8	2	8	
2011	33	22	17	26			13	30	18	
2012	43	33	36	38			23	13	14	
2013	25	25	13	21			37	31	14	
2014	25	14	19	42			19	28	28	16
2015	43	51	32	40			52	48	31	16
2016	27	20	9	23	6	56	21	9		

⁴²⁶ Including 12 pi-rating. CCRC begins its rating activities in 2014 and it is famous for the investor-pay model.

⁴²⁷ Including 7 pi-rating. According to the "S&P global ratings definitions: Public Information Ratings: 'pi' qualifier: 56": "This qualifier was used to indicate ratings that were based on an analysis of an issuer's published financial information, as well as additional information in the public domain. Such ratings did not, however, reflect in-depth meetings with an issuer's management and therefore, could have been based on less comprehensive information than ratings without a 'pi' suffix". Discontinued use as of December 2014 and as of August 2015 for Lloyd's Syndicate Assessments."

Graph IV.2.6&7



Admittedly, for a pure data description, it is hard to compare the *level of ratings* issued by CRAs (global CRAs: “Big Three”, on one hand and local CRAs and local CRAs: Chengxin, Lianhe, Dagong, SBCR and CCRC, on the other hand), without controlling the issuers’ information (that we will investigate in the Chapter V). However, we can control the time variable, to present the rating level by agency, in a given year (since 2005, with the presence of local CRAs), in the following *Table IV.2.6*.

Table IV.2.6

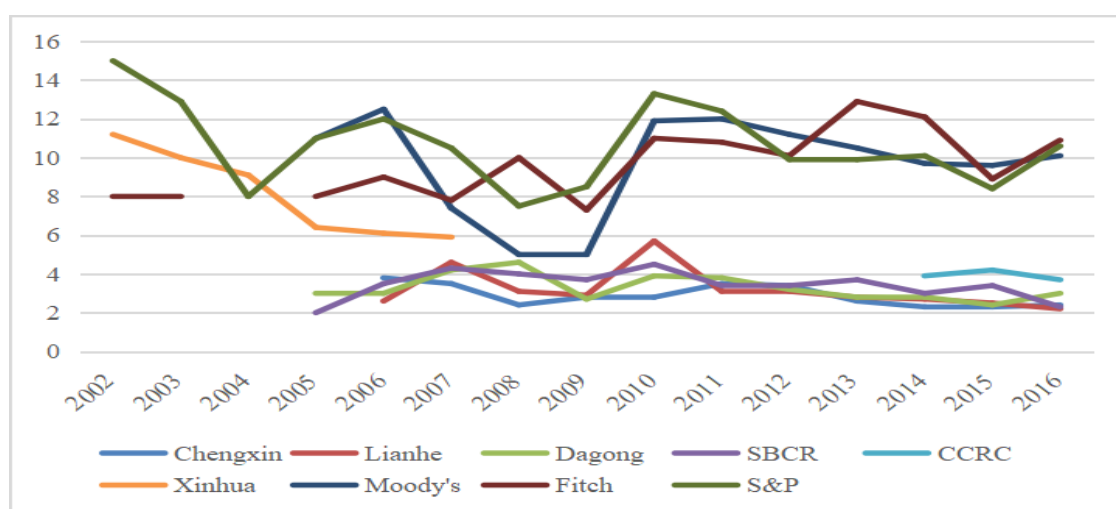
Rating level by agency, with a given year

CRA Year	Cheng-xin	Lian-he	Da-gong	SB CR	CC RC	Xin-hua	Moody's	Fitch	S&P
2002	/	/	/	/	/	11.2	/	8	15
2003						10.0		8	12.9
2004						9.1		/	8

2005			3	2		6.4	11	8	11
2006	3.8	2.6	3	3.5	/	6.1	12.5	9	12
2007	3.5	4.6	4.2	4.3		5.9	7.4	7.8	10.5
2008	2.4	3.1	4.6	4		/	5	10	7.5
2009	2.8	2.9	2.7	3.7		9.6	5	7.3	8.5
2010	2.8	5.7	3.9	4.5			11.9	11	13.3
2011	3.5	3.1	3.8	3.4			12	10.8	12.4
2012	3.4	3.1	3.2	3.4			11.2	10.1	9.9
2013	2.6	2.8	2.8	3.7		/	10.5	12.9	9.9
2014	2.3	2.7	2.8	3.0	3.9		9.7	12.1	10.1
2015	2.3	2.5	2.4	3.4	4.2		9.6	8.9	8.4
2016	2.4	2.2	3	2.3	3.7		10.1	10.9	10.6

Graph IV.2.8

Rating level by agency, with a given year



We converted the table above into the *Graph IV.2.8* above.

There are two points that we can learn:

- ✓ Both global and local CRAs have ratings relative stable from 2002 to 2016.
- ✓ Local CRAs are less severe and more generous in giving ratings of better levels, than global CRAs (lower number means better rating).

2.4.3. Segmentation of the market

Although Chinese local CRAs can rate any sort of companies, whatever their listing places/segments according to the related rating regulations, the fact is that their main clientele concentrates on small and medium enterprises, listed on Mainland market.

In addition to that, Chinese local CRAs have much less experience in the rating sphere. According to our sample, their activities just started around the year of 2005.

We saw straightforwardly from the table below, that Chinese top public companies, which are able to be listed on the segment of “H shares” (to learn more details about H shares, and its difference with “A shares”, please refer to the Chapter II) prefer the service provided by international global agencies.

Table IV.2.7

Listing places of companies rated by CRAs					
Agency	Local	Xin-hua	Global Big Three	S&P National	Others
Continental China	908	190	153	15	8
Shanghai A	464	111	115	11	8
Shanghai B	23	22	0	0	/
Shenzhen A	368	42	32	4	
Shenzhen B	19	15	6	0	
Growing Enterprise Market (GEM in SZ)	34	0	0	0	
HK (H shares)	129	25	395	23	8
Double rating: AH shares (322 in total)⁴²⁸	110	34	156	9	13
Number (1854 in total)	1037	215	548	38	16

In other word, “Big Three” and Chinese local CRAs are in charge of issuers with different features in different listing places. Each of them fits into the market segments which are the most suitable. Large agencies operating globally are more usually in charge of rating business for state-owned listed companies (SOEs) and big financial institutions, with a need of international coverage.

⁴²⁸ We explained in Chapter II that, double rating refers to the fact an issuer are listed both A shares (Continental Chinese stock market) and H shares (HK segment).

2.4.4. χ^2 test for initial ratings ((listing places) * (global/local agencies))

We provided a descriptive analysis in Point 2.4.2, to compare the initial ratings issued by different kinds of agencies, especially between the global and local CRAs. We found that the latter rated systematically better than the “Big Three”.

Segmentation of the market is another important institutional element under Chinese context. It is revealed in Point 2.4.3 that global CRAs rate essentially those public companies listed on HK segment. The fact is not only due to the regulation limitation for “Big Three” to their free entry to the Chinese continental markets, but also because public companies themselves prefer to choose global rather local CRAs.

Two elements combined, we would like to compute a Chi-square test.

Table IV.2.8

Results of χ^2 test⁴²⁹ for initial ratings

Listing place \ Agency	Global CRAs	Local CRAs
Continental China	154	908
HK	395	129
Pearson Chi-Square⁴³⁰	574.603***	

The table above has also proven that, statistically speaking, the listing place is significantly related to the type of CRAs. In general, Global CRAs rate in HK and Local CRAs rate in Continental China.

⁴²⁹ We used the SPSS and the function of analysis (Crosstabs) to compute the results.

⁴³⁰ “0 cells (0.0%) have expected count less than 5” and the results are significant.

2.5. A study of credit rating changes

After examining the initial ratings, we will have an insight into the credit rating changes (CRC) in the Subsection 2.5. We use migration tables to capture the information relative to the *number, level and magnitude* of upgrades and downgrades. Finally, χ^2 test is employed to clarify the relationship between ratings of investment/speculation grade and the fact they are published by global or local CRAs.

2.5.1. Description of sample by agency for CRCs

Chinese local “Top Three” are Chengxin, Lianhe and Dagong. We can learn from the following descriptive data that they started the rating activities much later than “global Big Three”, but they are able to make up the gap in terms of CRCs.

Chinese local CRAs issued most upgrades while the global Big Three are more used to give downgrades during the past 30 years. The only exception is for Xinhua, during its short existence, more than 3/4 out of its entire CRCs were downgrades.

Table IV.2.9

Description of sample by agency (2)

Agency Category	Local	Xinhua	Global Big Three	S&P National	Others global CRAs
Number (1229 in total)	500	63	531	111	24
Issuer rating (1021 in total)	499	63	324	111	24
Issue rating (208 in total)	1	0	207	0	0
Number by agency	Chengxin:185 Lianhe:121 Dagong:74 SBCR:74 CCRC:46	/	Moody's:160 Fitch :182 S&P :189	/	R&I:20 CI: 3 JCR: 1
Upgrading	365 (73%)	14	165	23	4
Downgrading	48	49 (77.8%)	305 (57.6%)	82 (73.9%)	6
Confirmation	87	0	61	6	14 (58.3%)

2.5.2. Migration table⁴³¹ for upgrading

We can learn three things from the comparison of *Table IV.2.10* (local CRAs) and *Table IV.2.11* (global CRAs), in case of upgrading: number, level and magnitude.

Table IV.2.10

Upgrading by local CRAs

Local ratings		Previous ratings (investment grade)								
CRCs (365 upgrades in total)		aaa (1)	aaa- (1.5)	aa+ (2)	aa (3)	aa- (4)	a+ (5)	a (6)	a- (7)	bbb+ (8)
Current ratings	aaa+(0)	1								
	aaa (1)		4	75	9	3	1			
	aaa- (1.5)			5	1					
	aa+(2)				91	10	2	1		
	aa (3)					95	13	3		
	aa- (4)						38	3		
	a+ (5)							5	1	
	a (6)								3	
	a- (7)									1

Number: Chinese local CRAs (Lianhe, Chengxin, Dagong, and SBCR, among others) issued three times more upgrades than global CRAs (Big Three: Moody’s, S&P and Fitch).

Level: All changes for local upgrades (previous ratings and current ratings) were on the investment grade, while for the migration of global upgrades, no changes were higher than the rating level of AA (to be specific, 53.4% were upgrades on the investment grade, 18.4% were upgrades from the speculation grade to the investment grade, 28.1% were upgrades on the speculation grade).

Magnitude: Global CRAs don’t spare changes with more than one-notch-increase (21.82%, 36 upgrades among 165 in total). However, this kind of actions was relative rare to see for local CRAs (12.88%, 47 upgrades among 365 in total). In sum, all local CRAs combined, they were more used to upgrading one notch for one time.

⁴³¹ If the issuer ratings and issue rating are modified at the same time, the CRCs are issued by the same CRA, and the last and current ratings remain the same (, which means no presence of split ratings), we count these two types of ratings as one rating event. For example, company A and its debt were rated both by Dagong. As we did not mix issuer and issue ratings, we counted them twice in the sample of initial ratings. However, in the migration tables for credit rating changes, this kind of upgrading or downgrading counted only once (, which is considered as the same rating event). It constitutes the criteria applying to the following migration tables

Table IV.2.11

Upgrading by global CRAs

Global ratings	Previous ratings (investment grade)						Previous ratings (speculation grade)										
	aa+ (5)	a (6)	a- (7)	bb+ (8)	bb (9)	bbb (10)	bb+ (11)	bb (12)	bb- (13)	b+ (14)	b (15)	b- (16)	ccc+ (17)	ccc (18)	ccc- (19)	cc (20)	
CRCs (146 upgrades in total)⁴³²																	
Current ratings (investment ratings)	aa(3)	1															
	aa-(4)	6															
	a+(5)		10	1													
	a(6)			17	7												
	a-(7)				18												
	bbb+(8)					9	3		1								
	bbb(9)						6		1								
	bbb-(10)							9	8	3	4		1				
Current ratings (speculation ratings)	bb+(11)							8									
	bb(12)								8		1						
	bb-(13)									6	1						
	b+(14)										5						
	b(15)											1	2				
	b-(16)												3		1		
	ccc+(17)													3	1		
	ccc(18)																
	ccc(19)																1

⁴³² 146 events according to the criteria set above.

2.5.3. Migration table for downgrading

We can learn three things from the comparison of tables for local CRAs and for global CRAs, in case of downgrading: number, level and magnitude:

Number: It's interesting to see global CRAs publishing more downgrades than local CRAs (48 vs. 305), if we sum up the information from the *Table IV.212-15*.

Table IV.2.12

Downgrading for investment grade (local CRAs)

Local CRAs		Previous ratings					
CRCs (41 in total)		aaa(1)	aa+ (2)	aa (3)	aa- (4)	a+(5)	a(6)
Current ratings (investment grade)	aaa (1)						
	aaa- (1.5)	1					
	aa+ (2)	4					
	aa (3)	3	8				
	aa- (4)		1	13			
	a+(5)				4		
	a(6)					4	
	a- (7)					1	1
bbb+ (8)						1	

Table IV.2.13

Downgrades for speculation grade (local CRAs)

Company name	Date	Agency	Current Rating	Previous rating
CHTC Helon Co Ltd	19/12/2011	Lianhe	BB+	A-
	15/02/2012		CCC	Bb+
China Erzhong Group Deyang Heavy Industries Co Ltd	06/05/2015	Chengxin	CCC	A+
	29/06/2015		CC	CCC
Zhuhai Zhongfu Enterprise Co Ltd	25/05/2015	Chengxin	BB	A+
	26/05/2015		CC	BB
Xinjiang Chalkis Co Ltd	11/10/2012	Chengxin	CC *-	AA- *-

Level: local CRAs had 41 downgrades, which current ratings remained on the investment grade (*Table IV.2.12*) and 7 downgrades to, which current ratings went down to speculation grade (*Table IV.2.13*);

As for global CRAs (*Table IV.2.14*), there were 175 downgrades happened on speculation grade, 20 downgrades were from investment-grade to speculation-grades, 42 downgrades on the investment grade (among which 9 downgrades were on a level, *Table IV.2.15*).

Table IV.2.14

Downgrading by global CRAs

Global CRAs		Previous ratings (investment grade)					Previous ratings (speculation grade)									
		a (6)	a- (7)	bbb+ (8)	bbb (9)	bbb- (10)	bb+ (11)	bb (12)	bb- (13)	b+ (14)	b (15)	b- (16)	ccc+ (17)	ccc (18)	ccc- (19)	cc (20)
CRCs (228 downgrades in total)⁴³³	bbb+ (8)	2	11													
	bbb(9)			12												
	bbb- (10)				8											
Current ratings (invest- ment grade)	bb+ (11)				2	16										
	bb(12)					2	20									
	bb- (13)						7	24								
	b+(14)						1	3	6							
	b (15)								8	26						
	b- (16)								1	7	19					
	ccc+ (17)									4	8					
	ccc (18)									3	5	7	3			
	ccc- (19)										1	1	5			
	cc(20)									1	1		1	4	1	
c (21)											1		2	1	1	
d (22)														2	1	

⁴³³ 228 events according to the criteria set above.

Downgrades on A-level (global CRAs) ⁴³⁴

Company name	Date	Type of ratings	Agency	Current Rating	Last rating
China Yangtze Power Co Ltd	23/04/2009	FC Issuer	Fitch	A-	A
		LC Issuer		A-	A+
	10/04/2013	LC Issuer		A-	A
China Petroleum & Chemical Corp	10/04/2013	LC Issuer and Debt	Fitch	A+	AA-
	25/01/2016	FC Issuer	S&P	A+	AA-
PetroChina Co Ltd	13/03/2009	LC Issuer	Fitch	AA-	AA
	10/04/2013	LC Issuer and Debt		A+	AA-
Shanghai International Port Group Co Ltd	30/09/2016	LC/FC Issuer	S&P	A+	AA- *-
CNOOC Ltd	25/01/2016	LC/FC Issuer	S&P	A+	AA-

Magnitude: it seems that local CRAs did not hesitate to downgrade an issuer or its issues by several notches for one single modification (13 downgrades among 48, representing, 27.1%). When downgrades occurred to ratings on the speculation grade, all the modifications came with a high magnitude.

“Big Three” seems very careful in giving downgrades. In most cases (70.9%, 168 downgrades among 237), they chose to put a notch down for a single time.

⁴³⁴ According to the criteria set above.

2.5.4. χ^2 test for CRCs ((investment/speculation grades) * (global/local agencies))

Migration tables above offered us a descriptive analysis of credit rating changes. From the agency's point of view, we are able to examine the number, level and magnitude of upgrades and downgrades.

First of all, local CRAs (except Xinhua, it was a CRA based on the HK market and it was listed in Japan) contributed more upgrades while global more downgrades.

Then, all upgrades of local CRAs concentrated on the investment grade. In the case of downgrades, most downgrades of local CRAs were concentrated on the investment grade, while global CRAs on the speculation grade.

Two elements combining we want to conduct a Chi-square test to explore the relationship of types of CRAs and the rating grades (investment vs. speculation), in both cases of upgrading and downgrading.

Table IV.2.16

Results of χ^2 test for CRCs

Upgrades			Downgrades		
Agency Number of rating events (%)	Global CRAs	Local CRAs	Agency Number of rating events (%)	Global CRAs	Local CRAs
Investment	87(59.2%)	365 (100%)	Investment	42(17.4%)	41 (85.4%)
Speculation	59(60.9%)	0%	Speculation	195(82.6%)	7(14.6%)
Pearson Chi-Square	168.756***		Pearson Chi-Square	90.384***	

To sum up the table above, the hypothesis of the independence between “the type of CRAs (global and local)” and “the rating grades (investment and speculation)” is violated. In other words, whether an issuer or its issues gets ratings on the investment grade or speculation grade has a significant association with the fact if it is rated by global or local CRAs. It should be note that χ^2 test confirms the dependence established between these two factors but without the precision of direction (negative and positive). However, combing other available information, we can conclude that, in our sample, global CRAs gave more speculation-grade ratings and local CRAs gave more investment-grade ratings.

2.6. A study of Watch-Lists (WLs): description of sample by agency (3)

Watch-list is firstly initiated by S&P in 1981, as documented by Elayan (1996)⁴³⁵. It is considered as a step before the “re-rating process is complete” in the future.

Afterwards, “the rating may be lowered, increased, or affirmed” for “either positive or negative reasons and for the issue’s rating to remain unchanged at the time of removal”.⁴³⁶

In the spirit, we make the third description of sample by agency, for WLs (*Table IV.2.17*). What we can learn from the table below, in separation of global and local CRAs is that: Moody’s and S&P are two CRAs that issued the most WLs among all CRAs, in terms of number of ratings.

These are two agencies which claimed⁴³⁷ that they used WLs to express re-measurement results of the new information content. They perceived, interpreted and assessed “imminent events” accordingly, which brought into a high likelihood of credit rating change. However, they are very careful to modify the ratings, so before a clarification of “extensive examinations” of credit quality, they chose to put these current rating under “special surveillance”. This kind of action is called “Watch-lists”.

In comparison, local CRAs are much less active in issuing WLs than their global counterparts. It illustrates once more, that the differentiation of local/global agency is another important institutional factor in analyzing rating events, under Chinese market environment. It also justifies the legitimacy to introduce variables concerning CRA in the logistic models, in order to better investigate CRAs’ strategic rating behaviors and strategic choice of rating determinants, in the Chapter V.

⁴³⁵ Elayan F.A., Maris, B.A., Young P.J. 1986, The effect of commercial paper rating changes and credit-watch placement on common stock prices. *The Finance Review*, Vol 31, No.1, Page 150.

⁴³⁶ *Ibid.*

⁴³⁷ Chung, Kee H.; Ann Frost, Carol; Kim, Myungsun. *Financial Management*. 2012, Characteristics and Information Value of Credit Watches. *Wiley-Blackwell*, Vol. 41, Issue 1, P.119-158. 40 pages, Note 4 and Note 5.

Table IV.2.17

Description of sample by agency (3)

Agency Category	Local	Xinhua	Global Big Three	S&P National	R&I
Number (186 in total)	22	2	131	24	7
Issuer rating (137 in total)	22	2	82	24	7
Issue rating (49 in total)	0	0	49	0	0
Number by agency	Chengxin:11 Lianhe:7 Dagong:2 SBCR:1 CCRC:1	/	Moody's:59 Fitch :17 S&P :55	/	/
Upgrading	5	1	33	2	0
Downgrading	7	0	96 (72.9%)	22 (91.7%)	3
Confirmation	10 (45.5%)	1	2	0	4

Conclusion of Section 2

Results of Section 2, Chapter IV

What we did in the Section 2 can be concluded as follows:

- ✓ We defined the scope of data collection (Subsection 1) and present the entire sample, sorted by the year (1988-2016).
- ✓ We converted the rating scale into numbers, in order to prepare samples for the quantitative studies (Subsection 2).
- ✓ We also presented the evolution of rating activities throughout the history, in terms of number and level of the ratings (Subsection 3).
- ✓ We made data description according to three types of rating events: initial ratings, credit rating changes and watch-lists.
- ✓ We are able to get some preliminary results (Subsection 4 - 6): Global CRAs rated more on HK segment; They rated more severe (ratings on the speculation grade); They are more active in giving watch-lists.

Inspirations for the following section and chapter

The most obvious drawback of our comparison in Section 2 is that when we talked about the behaviors of CRAs, we didn't control the information of the rated issuers or issue to make sure "*all else being equal*".

That's the reason why we came up with the next Section 3 to study the sample of companies with multiple ratings. In other words, we want to explore how different CRAs rated the same entity. To be more specific, we will study the role of CRAs in case of split ratings (Subsection 3.1), asynchronous credit rating changes (Subsection 3.2) and watch-lists (Subsection 3.3), taking in account the interaction of CRAs with issuers and investors.

Of course, we are aware of there exists not only the agency-conduct effects, but also time-varying effects. In other words, the quality of an issuer could be changing, neither did a CRA rate always the same way, when the time is going by. They are both our subjects of study in the Chapter V.

Section 3. Study of multi-ratings from viewpoint of issuers and investors

3.1. Issuers' motivations for multi (initial) ratings and investors' reactions to split ratings

3.2. Causes and consequences of asynchronous CRCs

3.3. Watch-List, a balance of different quality properties

Introduction of Section 3

The introduction is composed of three points: qualitative results from the literature review, sample description for quantitative study and finally, the structure of Section 3.

Inspirations from the literature review

There are few surveys have investigated the role of CRAs, *from point of view of issuers and investors*. Baker and Mansi (2002)⁴³⁸ added to Ellis (1998)⁴³⁹, and they have enriched the research by extending the business type from utilities to industrial manufacturing. We can sum up their double-insight (Moody's and S&P at the first time, and small CRAs such as DRC and Fitch, at the second time). Basically, what they found can be resumed as follows: *on one hand, issuers* are more significantly⁴⁴⁰ favorable to multi-ratings; *on the other hand, investors* put more credit on timeliness among all rating quality properties. In this regard, "a much larger proportion of investors"⁴⁴¹ were not satisfied in this respect and what they are craving for is ratings of more accuracy.

⁴³⁸ Baker and Mansi, 2002, Assessing credit rating agencies by bond issuers and institutional investors, Journal of Business finance and accounting, 29 (9-10).

⁴³⁹ Ellis, 1997, Different Sides of the Same Story: Investors? and Issuers? Views of Rating Agencies, Journal of fixed income, 7(4), 35-45.

⁴⁴⁰ Chi-square shows the significant dependence between the variable issuers/investors and multi-ratings.

⁴⁴¹ Baker and Mansi, 2002, P1391.

We found three other surveys on *investors' attitude* on the same subject, outside American market:

- ✓ Cantor et al. (2007)⁴⁴² found that, when European issuers decide to solicit multi-ratings, Moody's and S&P are their most preferable CRAs (leading ahead of Fitch: it is the third most favorite CRA on the list, when split ratings happened).
- ✓ Goswami and Venkatesh (1999)⁴⁴³ prepared a questionnaire targeting four local CRAs in India. They got responses from both institutional and individual investors. It seems that CRAs were not considered equally reliable for them. They also believed that new rating market entrants were less credible, compared to the CRISIL (Credit Rating and Investor Services of India), given its longest history and the largest market share.
- ✓ Bheemanagouda and Madegowda (2010)⁴⁴⁴ confirmed the previous findings ten years later also on the Indian market. They showed that in the case of split rating, Indian investors tended to choose the ratings issued by the local CRAs, with the CRISIL (founded in 1988) and ICRA (Investment information and Credit Rating agency, which is founded in 1991) on the top of the list⁴⁴⁵.

Content of Section 3, Chapter IV

Because of the difficulties to conduct a qualitative study (e.g. to ask directly the issuers and investors about their opinions on CRAs' roles), we decided to use market data from Bloomberg directly. The objective is to construct hypotheses on the inspiration from the literature review that we present previously, and to confirm or violate these hypotheses, using Chinese statistics.

In this Section 3 of Chapter IV, we decided to concentrate only on the sample of multi-ratings. More precisely, we analyze CRAs' functions in the case of initial ratings (Subsection 3.1), CRCs (Subsection 3.2) and WL (Subsection 3.3). It enables

⁴⁴² Cantor, Richard et al. 2007. The Use of Credit Ratings in Investment Management in the US and Europe. *The Journal of Fixed Income*.

⁴⁴³ Goswami and Venkatesh, 1999, Understanding and Use of Credit Rating in India: A Survey of Individual and Institutional Investors, working paper, page 17.

⁴⁴⁴ Bheemanagouda and Madegowda, 2010, Working of Credit Rating Agencies in India: An Analysis of Investors' Perception, *IUP Journal of behavioral finance*, 7 (1-2).

⁴⁴⁵ Other CRAs in India are CARE (credit analysis and research limited, 1993), DCR (Duff and Phelps credit rating India limited, and it is the first private CRAs in 1995; becoming Fitch India Limited later in 2001) and Brickwork Ratings India private limited (second private rating agencies).

us to better understand the motivations and reactions of issuers and investors in front of rating events, the causes and consequences of the rating events, how issuers and investors interpret rating quality, and other related institutional factors. In the same spirit, our choice is aligned with a very recent working paper⁴⁴⁶: Jiang and Packer (2017). As far as we know, it is the only article studying the jointly-rated samples, for both domestic and global CRAs.

3.1. Issuers’ motivation for multi (initial) ratings and investors’ reactions: hypotheses, methodology and sample description

In the first subsection of Section 3, we will focus on the initial ratings in the sample of multi-ratings.

Sample description

The sample that we use in this Section 3 is based on the general sample that we presented in Section 2 of Chapter IV (*Table IV.2.3*). We eliminated the issue ratings and those issuer ratings whose public information is no longer available in the database Bloomberg. Then, we broke the sample into subsamples, according to the number of ratings they received.

Table IV.3.1

Number of initial issuer ratings: separation of sole-rating and multi-ratings

Number of CRAs	Sole rating	Multi-ratings						
	1	2	3	4	5	6	7	8
Frequency	593	203 (57.51%)	76	38	17	11	6	2
		353						

At the first glance, we saw that 353 issuers, independent of the listing places and industry sector, are noted at least by two CRAs (multi-ratings sample); against 593 issuers which are rated only once, local/global CRAs combined (sole-rating sample).

⁴⁴⁶ Jiang, Xianfeng and Paker, Frank, 2017, Credit Ratings of Domestic and Global Agencies: What Drives the Differences in China and How are They Priced? BIS Working Paper No. 648, Page 12.

It should be pointed out, in addition, that more than half of the issuers were rated only by two CRAs (combing sole-rating sample and double-ratings sample).

Besides, the number of initial (issuer) ratings decreased, from double-ratings to triple-times, and so on...

Hypotheses in the Subsection 3.1, Chapter IV

According to the survey of Ellis (1998) and that of Bakers & Mansi (2002), there are some principal motivations for issuers to solicit multi-ratings. The first four points are constructed from issuers' points of view, corresponding to four hypotheses. They are presented as follows:

*Hypothesis 3.1.1: Investment communication effect*⁴⁴⁷.

According to Huang (2012)⁴⁴⁸, there exists a mechanism for “mangers of politically connected firms” to pursue “private political benefits (promotion to a senior position”, for instance). Since SOEs occupy an important place among Chinese public-listed companies, we suppose that it could be a motivation that the multi-ratings were considered as a better coverage in terms of the investment communication, in addition to the motivation that the “expected positive return exists” (Thompson and Vaz, 1990)⁴⁴⁹.

Hypothesis 3.1.2: threshold effect.

It is proven empirically⁴⁵⁰ that issuers have incentives to “shop” better ratings, especially from *speculation grade to investment grade*⁴⁵¹, in order to respond to certain investment criteria. In the recent study, Bongaerts et al. (2012)⁴⁵² found it most obvious at the boundary of investment grade-speculation grade, but they failed to detail *extra information* inherent the rating standards for all global CRAs.

⁴⁴⁷ Going from 41% (first survey) to 40% (the second survey) from Ellis (1998) to Bakers & Mansi (2002), same for the following.

⁴⁴⁸ Huang M. Wong T. And Zhang T, 2012, Political considerations in the decision of Chinese SOEs to list in HK. *Journal of Accounting and Economics* [53], P435-449.

⁴⁴⁹ Thompson and Vaz, 1990, Dual Bond Ratings: A Test of the Certification Function of Rating Agencies, *Financial Review*, 25(3), in Baker (2002), page 1377.

⁴⁵⁰ Cantor, Richard and Packer, Frank. 1995. The Credit Rating Industry. *Journal of Fixed Income*. 5(3): P.10–34.

⁴⁵¹ Going from 4% (first survey) to 8% (the second survey)

⁴⁵² Bongaerts, D.; K. J. M. Cremers; and W. N. Goetzmann. 2012, Tiebreaker: Certification and Multiple Credit Ratings. *Journal of Finance*, Volume 67, P255. And according to their research, “investors do not appear to incorporate the increased optimism by lowering credit spreads. This would seem to undermine any rationale to engage in rating shopping”.

Hypothesis 3.1.3: Tiebreaker effect⁴⁵³.

It is obvious that with time going by, issuers are seen increasingly willing to solicit a third CRA, in order to clarify the *split ratings* inside the previous two ratings. In the line of Hsueh and Kidwell (1988)⁴⁵⁴, “issuers are likely to require more than one rating to reduce informational symmetry problems [...] in the case of disagreements among the rating agencies.” In the later study, Jewell and Livingston (1999)⁴⁵⁵ compared the rating issued by Moody’s and S&P on one side; and Fitch, on the other side. They called the role of Fitch played in the game of duopoly (Moody’s and S&P) a “*tiebreaker*”.

Hypothesis 3.1.4: Industry effect.

We will try to explore the causes of *split ratings* and its potential relationship with *asset opaqueness*. It is believed that *financial* issuers have more chances to be covered by multi-ratings, because it is one of the industries that have the least transparency, compared to other manufacturing and commercial industries.

Point 3.1.5: Investors’ reactions in front of issuers’ motivation for multi-ratings.

We will cover several articles in the literature review and construct “conceptual speculations”, under Chinese institutional environment, without statistical verification.

⁴⁵³ Going from 8% (first survey) to 48% (the second survey).

⁴⁵⁴ L. Paul Hsueh and David S. Kidwell, 1988, bond ratings are two better than one, *Financial Management*, Vol. 17, No. 1, pp. 46-53, in Baker (2002), page 1370.

⁴⁵⁵ Jewell, J. and M. Livingston., 1999. A Comparison of Bond Ratings from Moody's, S&P, and Fitch. *Financial Markets, Institutions and Instruments*.

Methodology and structure of the Subsection 3.1, Chapter IV

According to each hypothesis, adequate methodology is used to solve the problem. The sample is also chosen accordingly, in order to respond to each point of the study more adequately. Hence, we will develop into four points, in Subsection 3.1.

- ✓ We decided to use qualitative study to investigate if issuers used ratings as a way of investment communication to their investors (Point 3.1.1). More specifically, we will go over systematically all official websites of issuers with multi-ratings in our sample (353 listed companies). The objective is to verify how they communicate to their investors the fact of being rated. We will look into the rubrics of “investment relationship”, “financial information release” or others reports relevant to this subject.
- ✓ We will cross-tabulate the sample of double-ratings and sole-rating, by the type of CRAs (global vs. local) and by the level of rating (speculation vs. investment grade). In the Point 3.1.2, the first and second Chi-square tests are to answer the questions: 1) Who had more willingness to “shop” the second rating? 2) Do issuers have ratings more on the investment grade or speculation grade do the same (threshold effect)?
Based on the sample of double-ratings, the third and fourth Chi-square tests are used to tell issuers how different types of CRAs are related to the grade of their first ratings and how different types of CRAs are related to the willingness to rise up the grade for the second ratings (in the case when the first ratings are on the speculation grade).
- ✓ Split rating (Point 3.1.3 & 3.1.4): we will perform Chi-square tests, correlation tests and mean tests, on the sample of triple-ratings, in order to figure out the fact why some issuers solicited the third ratings (tiebreak effect).
Then, we will study the descriptive data for a sample, including ratings up to quadruple-ratings. The objective is to compare the percentage of the financial institutions (industry effect and asset opaqueness) on the sample and on the list of the entire listed companies (the benchmark). Finally, we will be able to conclude if financial issuers are over-representing or under-representing, in the sample of multi-ratings.
- ✓ Reluctance is the attitude of investors when they are faced with multi-ratings (Point 3.1.5). For the moment, we will only summarize all relevant academic articles on this topic. It seems that investors are afraid to encounter “rating inflation”. Any further quantitative investigation is going to be figured out in the future. A study based on a survey is probably the most suitable methodology in this regard.

3.1.1. Better coverage for issuers: investment communication effect?

In terms of findings, there are two sorts of preliminary evidence:

It is extremely astonishing to see the bad quality of public-listed companies' official websites. *Firstly*, most sites are in *Chinese language only*, which makes it hard for foreign investors to get extra information. There is only English version for commercial advertisements. *Furthermore*, there are countless *technical bugs* on many sites. The access to public information with a minimum of quality is far from easy and fast. *Thirdly*, financial information of issuers is practically limited to that related to the stock market. It is hard to find information concerning CRAs or corporate bonds (CBs). It is clear that they are in the marginal position. Few issuers have intention to mention the concept of CRAs and even fewer issuers thought to illustrate ratings that they received chronologically.

Few issuers (57 out of 353) have ever communicated to the public that they are rated by global (29 cases) or local CRAs (34 cases⁴⁵⁶). Hence, the coverage is weak.

When we concentrated on the investment communication in the form of ratings, we saw that most of issuers focused on the *reputation* of CRAs by using the word, such as “one of the rare issuers among competitors to be rated by the Big Three/international CRAs/top-class CRAs”, “the CRAs with the longest existence and richest experience in rating business”, “the rating helps to *differentiate* from other competitors in the same industry sector”...

However, issuers generally did not consider the level of ratings itself. Sometimes, some of them even put ratings of speculation grade on the public information release, as if this kind of information will not be harmful to attract potential investors.

In sum, the null Hypothesis 3.1.1 that issuers used ratings to have a “better coverage” is rejected⁴⁵⁷. It seems that the use of ratings in neither a way as “investment communication” to their investors.

We speculate, under these circumstances that, the reasons why issuers tented to solicit more than one rating from different CRAs, could rather be resumed to the

⁴⁵⁶ Chengxin, Lianhe and Dagong are three local CRAs that issuers have the most willingness to communicate. Some issuers are rated by both global and local CRAs.

⁴⁵⁷ Going from 41% (first survey) to 40% (the second survey).

international openness, reputation certification, differentiation from competitors or some other motivations of this kind.

Unfortunately, without a survey directly destined to issuers (including a large panel of respondents), this kind of speculation can only remain conceptual, and we cannot confirm/reject it empirically, for the moment.

3.1.2. Rating shopping for issuers: threshold effect?

The existence of split rating may be to the benefit of the rated *issuers*. Allegedly, they intend to “shop” for a better rating⁴⁵⁸ and the “*selection* effects are especially strong when heterogeneity is greatest and correlation among the models is least” (Sangiorgi, 2009)⁴⁵⁹. At the same time, we suppose that the “implicit and explicit rating shopping” contributed to exaggerate the gravity of recent financial turmoil.

It should be noted that the “portfolio regulations for banks, insurance companies, and pension funds set minimum ratings on debts these intermediaries are permitted to purchase”⁴⁶⁰. In order to issue eligible bonds, “by either legal or policy constraints”⁴⁶¹ and additional information,⁴⁶² *issuers* could be motivated to solicit multiple ratings, consequently. Issuers are used to hiring more than one CRA, because they consider the benefit exceeding the extra cost⁴⁶³, especially when the ratings are below the investment/speculation grade threshold. This assumption is proven by some *surveys* conducted essentially in USA⁴⁶⁴.

Now, we decided to concentrate only on the sample of double-ratings to test the hypothesis, by using Chinese data.

⁴⁵⁸ “Which occurs when companies hire only those agencies that offer favorable ratings.” in Baker (2002), *supra*. P1382.

⁴⁵⁹ Sangiorgi, Francesco, Sokobin, Jonathan and Chester, Spatt, 2009, Credit-Rating Shopping, Selection and the Equilibrium Structure of Ratings, *Working paper*. P4.

⁴⁶⁰ Strier, F. 2008. Rating of the raters: Conflicts of interest in the credit rating firms. *Business and Society Review*, 113(4), 533–553.

⁴⁶¹ Baker (2002), *supra*. P1379.

⁴⁶² Jewell et al. 1999 and 2000, in *idem*. P 1370.

⁴⁶³ Hsueh et al. 1988, in Baker, H. Kent and Mansi, Sattar A. 2002, Assessing Credit Rating Agencies by Bond Issuers and Institutional Investors. *Journal of Business Finance & Accounting*, 29(9) & (10), P1370.

⁴⁶⁴ Baker, 2002, *supra*.

Table IV.3.2

Double-ratings vs. Sole-ratings, issued by global/local CRAs

Category (number)	By global CRAs (53)	By local CRAs (741)
Double ratings (201) ⁴⁶⁵	43 (81.13%)	158
Sole-ratings (593)	10	583 (78.68%)
Pearson Chi-square test ⁴⁶⁶	93.585 *** ⁴⁶⁷	

We learned from the table above that the fact if an issuer is rated only once or twice has a statistically significant relationship with the type of CRAs (between global and local CRAs).

In reading the table with insight, it is obvious that issuers have been rated by global CRAs are more willing to solicit the second rating (43 out of 53 ratings by global CRAs); while issuers are more reluctant to do the same (158 out of 741 ratings by local CRAs), in the case of having been rated by local CRAs.

Table IV.3.3

A study of threshold effect (the sample of double-ratings)

Category (number)	On the speculation grade (62)	On the investment grade (734)
Double ratings (203)	55 ⁴⁶⁸ (88.71%)	148 ⁴⁶⁹ (25.26%)
Sole-ratings (593)	7	586
Pearson Chi-square test	141.389 *** ⁴⁷⁰	

We ran the Chi-square test (by SPSS software) between the dependence of speculation/investment grade for the first ratings and sole/double-ratings. The results are computed in the *Table IV.3.3*.

Statistically speaking, issuers with first ratings being on the “speculation grade” have significantly more motivation to solicit double-ratings⁴⁷¹. Hypothesis 3.1.2 is hence valid.

⁴⁶⁵ There are two issuers solicited different types of CRAs (once for global CRA, once for local CRA).

⁴⁶⁶ Significance (2-sided) of cross-tab table (SPSS) and *idem* for the following chi-square test. .

⁴⁶⁷ The value of Pearson Chi-square is 93.585. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 13.42.

⁴⁶⁸ There are 17 cases where their rating had passage from speculation grade to investment grade.

⁴⁶⁹ There is only one case when the second rating had passage from investment grade to speculation grade.

⁴⁷⁰ The value of Pearson Chi-square is 141.389. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.81.

⁴⁷¹ 88.71% against 25.26%, when the first ratings are on the speculation grade instead of investment grade.

Combined the information from *Table IV.3.2 and IV.3.3*, we made the table as below:

Table IV.3.4

The grade of first ratings in the case of double-ratings, and the type of CRAs

Category (number)	Global CRAs	Local CRAs
On the Speculation grade (55)	39 (70.91%)	16
On the Investment grade (146)	4	142
Pearson Chi-square test	110.399*** ⁴⁷²	

When we have a further insight into the double-rating issuers, we found that only 55 issuers (16 ratings given by local CRAs and 39 by global CRAs) among 203 had initial ratings on the speculation grade. It is obvious that in the case of double-ratings, if the initial rating is on the speculation-grade, it is statistically significantly related to the fact that the rating is given by one of the global CRAs.

Table IV.3.5

The grade of second ratings in the case of double-ratings, and the type of CRAs

Category (number)	Global CRAs	Local CRAs
Still on the speculation grade (38)	38	0
Up to the investment grade (17)	1	16
Pearson Chi-square test	50.437 *** ⁴⁷³	

We studied the double-ratings, in the case when the first ratings are on the speculation grade (55 issuers in total, the second line of the Table IV.3.4). It should be noted that most ratings of speculation grades (38 out of 55 cases, as initial ratings) did not rise up to the investment grade. In other words, among these 55 issuers (69%), most second ratings still remained on the speculation grade.

The Chi-square test also told us that whether the second ratings had chance to be risen to the investment grade, is statistically significantly related to the fact that the issuers are rated by local CRAs. In other words, local CRAs are more willing to satisfy their clients, by saving their ratings from the speculation grade (with no exception).

⁴⁷² The value of Pearson Chi-square is 110.399. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 11.77.

⁴⁷³ The value of Pearson Chi-square is 50.437. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 4.95.

3.1.3. Descriptive analysis for split ratings: tiebreak effect for issuers?

In the previous Point 3.1.2, we have learned motivation of issuers to have double-ratings. We have also crossed the grade (speculation vs. investment) of first and second ratings, in the sample of double-rating, with the type of CRAs (local and global). Then, we turned our attention to the sample of issuers which have been assessed by three different CRAs on three different days (triple-ratings)⁴⁷⁴.

Sample description

The entire research table is presented as following:

Table IV.3.6

A study for tiebreak effect (the sample of triple-ratings)

Category	By global CRAs	By local CRAs
First and second ratings (76 in total) ⁴⁷⁵	20	46
The third CRAs	Global: 19 Local: 1	Global: 2 Local: 44
Pearson Ch-square test	52.803 *** ⁴⁷⁶	

We computed the Chi-square test and found the significant dependence between the type of CRAs for the first and second ratings and the same type of CRAs (global or local) for the third ratings.

For example, an issuer received ratings for the first and second time from one of the global CRAs and it had 19/20 (98%) opportunity to ask the third rating from the third global CRAs; it follows the same logic when it comes to with the Chinese local CRAs. For the latter case, there are only 2 out 46 cases (4.35%) for an exceptional situation.

⁴⁷⁴ We deleted the first and second ratings that were given on the same day.

⁴⁷⁵ There are 10 cases where first ratings were issued by global CRAs and the second by local; *vice versa*.

⁴⁷⁶ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.36.

Equations

We sought to understand more about the case of triple-ratings. We ran two kinds of tests, whose equations and explanations are presented as follows:

Correlation test

We are inspired by two studies on Chinese⁴⁷⁷ and Japanese⁴⁷⁸ context; we conducted the correlation tests to see the relationship of the first/second, first/third and second-third rating pairs.

$$\checkmark \quad \underline{\text{Parametric Pearson correlation test}} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}}$$

With the n =sample size;

x_i and y_i =individual sample indexed with i;

\bar{x} and \bar{y} =sample mean.

$$\checkmark \quad \underline{\text{Non-parametric Spearman correlation test}} = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)}$$

With d = difference between ranks.

Mean tests

Between first/second ratings, first/third ratings, and second/third ratings, there are three panels (4-6) of results under the presentation of the mean of ratings: first for T test (In the panel 4), second for Kolmogorov-Smirnov test (KS test is to test the normality in the case of small samples⁴⁷⁹, in order to justify the use of non-parametric tests. In the panel 5) and the third for Z score of Mann-Whitney U/Wilcoxon W test⁴⁸⁰ (In the panel 6).

⁴⁷⁷ Jiang, Xianfeng and Paker, Frank, 2017, *supra*.

⁴⁷⁸ Shin, Yoon S., Moore William T. 2003. Explaining credit rating differences between Japanese and U.S. Agencies. *Review of Financial Economics* 12, page 333.

⁴⁷⁹ When the KS value is significantly from 0, we have to reject the null hypothesis and to accept the alternative hypothesis of the violation of normality.

⁴⁸⁰ Shin, Yoon S., Moore William T. 2003, *supra*, page 334.

Results

Table IV.3.7

Correlation tests and mean tests for tiebreak effect

Rating pairs	Only by global CRAs	Only by local CRAs	By each of the category of CRAs
Panel 1: Number (59 in total)			
First-second ratings	6	45	8
First-third ratings	6	47	6
Second-third ratings	11	40	8
Panel 2: Correlation/ Non-parametric correlation			
First-second ratings	.547/.572	.312*/.374*	.226/.531
First-third ratings	.331/.493	-.024/.029	-.469/-.177
Second-third ratings	.716**/.773**	.226/.276	-.804*/.142
Panel 3: Mean of the pair			
First-second ratings	10.83/11.33	6.62/3.31	6.125/9.25
First-third ratings	11.50/10.83	6.63/2.91	6.67/5.33
Second-third ratings	7.63/8.81	3.30/2.98	9.375/2.75
Panel 4: T test			
First-second ratings	-.582*	6.225***	-1.802
First-third ratings	.269	7.419***	.599
Second-third ratings	-.584	.875	3.661
Panel 5: KS test			
First-second ratings	.577	2.214***	1.250*
First-third ratings	.577	2.579***	.577
Second-third ratings	.426	.559	1.500**
Panel 6: Mann-Whitney U/Wilcoxon W test			
First-second ratings	-.492	-5.141***	-2.015**
First-third ratings	-.245	-6.043***	.468
Second-third ratings	-.100	-.961	-2.356**

Analyses of results

Our results of correlation tests and mean tests can be concluded, as follows:

From panel 2, we can learn that:

Parametric and non-parametric correlation test had a certain consistency.

Ratings issued by global CRAs have significant correlation with global and *idem* for the case of local CRAs. In other words: the correlation of ratings existed only inside the type of CRAs (global CRAs for global and local CRAs for locals). The results are consistent with the findings in Shin & Moore (2003).

From panel 3 (mean of the ratings level) and the mean tests (panel 4 and panel 6), we can learn that:

✓ In the case of global CRAs (second column), parametric and non-parametric mean test had consistent results.

Third ratings are worse, in comparison to the first and second ratings, on average. In addition, there is *no significant* difference, except one-week-significance is illustrated between the first and second ratings.

✓ In the case of local CRAs (third column), parametric and non-parametric mean test had consistent results.

Second ratings are *significantly* different from the first ratings (twice higher 6.62 for the first ratings and 3.31 for the second ratings on average, from the panel 3).

To recall the conversion of rating level to number: the higher the number is, the worse a rating is. In other words, the second ratings are much better than the first ratings. We guess that it could be one of the motivations for issuers to solicit multi-ratings, in the objective to improve the rating level); and the third ratings are *significantly* different (they are even better than the third ratings) from the first ratings.

✓ In the case of mixed category of CRAs (fourth column), the KS test was significant in the case of first-second and second-third pair, which means non-parametric mean tests are more robust than t tests.

We may thus conclude that the second ratings given by Fitch are statistically significant (in the uncomputed table, we found that this kind of ratings are issued mostly by the global CRAs), at 10% level (two tails) worse than their Chinese local counterparts; while in the case of the third ratings, they are given by local CRAs (in the most cases). In the latter case, ratings are statistically significant, at 1% level better than those ratings given by Fitch.

These two observations are consistent with the conclusion that we have drawn previously. Local CRAs rated systematically better than global CRAs. Issuers are aware of the existence of differences, and they take advantage to “shop” better ratings from local CRAs, in the case of split ratings.

The means of ratings are significantly different (T test as well as Non-parametric mean test: Mann-Whitney U/Wilcoxon W test) for pairs of first-second and second-third ratings, in the case of local CRAs, not in the case of global CRAs. Consequently, we may conclude that the separation of local and global CRAs proposed by Shin & Moore (2003) is also confirmed on Chinese environment.

The *tiebreak effect* means if the third ratings are able to make an arbitrary after the double-rating, either to confirm one of the opinions when the first and second ratings are significantly different, or to give the second opinion when the first and second ratings are similar to each other. We saw from the previous table that the first theory is valid in the case of local CRAs, but not in the case of global CRAs.

Hence,

The null Hypothesis 3.1.3 is half valid (in the case of local CRAs and when the third ratings are issued by local CRAs, especially the second ratings are not on a high rating level), and half rejected (in the case of global CRAs).

3.1.4. Incentive for split ratings: opaqueness for financial issuers (industry effect)?

A higher difficulty in credit default risk assessment may be associated with the *asset opaqueness*⁴⁸¹. “When assets are sufficiently complex, ratings differ enough”⁴⁸². In other words, it may causally be related to the occurrence of split rating⁴⁸³.

Among the literature reviews (we cite some examples here, but not limit to), they are:

- ✓ Flannery et al. (2004) agreed that the smaller banking firms (NASDAQ)⁴⁸⁴ had more difficulties in being evaluated, while “large bank holding companies (BHC), traded on the NYSE, have very similar trading properties to their matched non-financial firms”⁴⁸⁵. Evidence of Flannery (2013)⁴⁸⁶ has proven furthermore that two “crisis” periods increased substantially the disagreement among CRAs, when they were rating small banks met their difficulties. The findings are mitigated in the case of bigger banks.
- ✓ According to the study of Morgan (2002), the bonds issued by banking sector⁴⁸⁷ and by insurance companies provoked more disagreement among major CRAs than “other issues with similar features”⁴⁸⁸.

⁴⁸¹ “Reducing opacity will require enhanced information disclosure and/or a reduction in asset complexity, each of which has costs and benefits that must be weighed by policymakers.” in Jones, Jeffrey S.; Lee, Wayne Y.; Yeager, Timothy J. 2012, Opaque Banks, Price Discovery, and Financial Instability. *Journal of Financial Intermediation*, P.406.

⁴⁸² Skreta, Vasiliki and Laura Veldkamp, 2008, Rating Shopping and Asset Complexity: A theory of Ratings Inflation, *Working paper*.

⁴⁸³ Livingston, Miles, Andy Naranjo, and Lei Zhou. 2007. Asset Opaqueness and Split Bond Ratings. *Financial Management*, 36, P. 49–62.

⁴⁸⁴ Which is on the country of Howe, John S.; Stephen Haggard, K. 2012, Are banks opaque, *International Review of Accounting, Banking & Finance*, Vol. 4, Issue 1, p51-72.

⁴⁸⁵ Flannery, Mark J.; Kwan, Simon H.; Nimalendran, M. 2004. Market evidence on the opaqueness of banking firms’ asset; *Journal of Financial Economics*, Volume. 71, Issue. 3, P. 419-60.

⁴⁸⁶ Flannery, Mark J.; Kwan, Simon H.; Nimalendran, M. 2013. The 2007-2009 Financial Crisis and Bank Opaqueness, *Journal of Financial Intermediation*, Volume. 22, Issue. 1, P. 55-84.

⁴⁸⁷ Iannotta, Giuliano. 2006, Testing for Opaqueness in the European Banking Industry: Evidence from Bond Credit Ratings. *Journal of Financial Services Research*. Vol. 30 Issue 3, P.287-309. The researcher has found, among others, that “bank size, asset mix and capital structure can explain bank opaqueness.” and “lower bond seniority increases opaqueness”.

⁴⁸⁸ Morgan, Donald P. 2002. Rating Banks: Risk and Uncertainty in an Opaque Industry. *American Economic Review*, 92, 874–88. In his study, he compared the issues with manufacturing, mining, trade, services, transportation, public utilities, other finance and real estate...

In the same spirit, we would like to examine the *industry effect of financial issuers*. The objective is to examine the representativity of financial issuers in the sample of multi-ratings (an issuer was rated more than 3 times). We reclassified them by the industry type and presented in the following table.

Table IV.3.8

Industry classification for split ratings (the sample of more than 3 ratings)⁴⁸⁹

Multi-rating	4 ratings	5 ratings	6 ratings	7 ratings	8 ratings
Number of ratings	38 in total	17 in total	11 in total	6 in total	2 in total
Industry sector					
Financial (J)	8 (21.05%)	2	5	4	2
Transport (G)	4 (10.53%)	4	0	1	
Mining (B)	1	2	2	1	
Manufacturing (C)	11 (28.95 %)	3	1		
Real-estate (L)	10 (26.32 %)	2	2		
Power (D)	2	3	1		
Wholesale and retail service (F)	1	1			
Culture (E)	1				

Table IV.3.8 confirmed the validity of the hypothesis 1.3.4.

It is true that financial issuers represent 21.05% of all issuers to solicit multi-ratings (in the sample of quadruple-ratings), while they occupy separately less than 3% and 1% of the entire list of listed companies in Shanghai and Shenzhen Stock Exchange (please refer to the Annex 6 for more details).

In addition, the effect is more evident, with the increase of the number of ratings that an issuer gets.

⁴⁸⁹ Which is defined by Cantor et al. (2007) as CRAs disagree on an issuers' rating category.

Additionally, it is proven that the level of asset opaqueness has *time-varying effect*, which is closely related to the *changing regulatory climate*. As documented by Morgan (2002)⁴⁹⁰: “splits over banks increased markedly after 1986, consistent with Flannery and Sorescus's (1996) thesis that the demise of ‘too big to fail’, after that date forced investors and raters to heed the risk of banks more closely.”⁴⁹¹

In the same spirit, we selected the multi-ratings on the same day to control the time-varying effect. We found in the uncomputed table that in the sample of multi-ratings (with more than 3 CRAs), issuers received ratings from global CRAs, in the most cases.

It is also showed that most of the split ratings occurred between S&P and S&P National (there are only two cases of split ratings issued by local CRAs, between Chengxin and the new Chinese rating market entrant: CCRC. The latter uses the investors-fee business model).

Again, financial issuers (18.75%) are indeed over-representative in the sample. It certifies, in some extent, the asset opaqueness theory and industry effect. To recall, it should be noted that financial institutions occupy only a weak percentage (3% in Shanghai, 1% in Shenzhen and 10% in HK stock market) in the entire industry sectors (please refer to the Annex 6 for the complete table).

⁴⁹⁰ Morgan, 2002, *supra*.

⁴⁹¹ *Ibid*.

3.1.5. Investors' discretion in avoidance of rating inflation

Credit ratings are incorporated into the bond issuance process. Logically, bonds with high *ratings* represent low *risk*, and hence they could benefit from low *cost* of capital-financing (low *interest rate* charged for their money-borrowing). Hence, ratings are used as a risk management instrument.

CRAs, combining the expertise and experience from the classical financial analyses, are favorable to *investors*. Since the information content is *free* for all investors under the issuer-fee rating business model, it is a significant way to reduce the cost of professional research. CRAs, a third party, work as an information intermediary to reduce information asymmetry, between the issuers and investors.

According to the survey conducted by Cantor (2007)⁴⁹², more than half of European fund managers take ratings as an important indicator for investment decisions, at the demand of their sponsors. More than third of investors (sponsors and managers combined) responded that they chose to use ratings voluntarily, because it served as a good investment strategy.⁴⁹³

Multi-rating⁴⁹⁴ is a frequent phenomenon for investors to deal with, which will bring them with confusion. In front of this kind of uncertainty⁴⁹⁵, investors are more willing to choose renowned CRAs' opinions: "Big Three" for example. Moody's, together with S&P, comes to be the favorite choices as credit rater, for European investors.⁴⁹⁶

By contrast, under the Indian institutional environment, the Bheemanagouda and Madegowda (2010)⁴⁹⁷ found that local CRAs are the favorite, in comparison with global CRAs.

⁴⁹² Cantor, Richard, et al., 2007, *supra*.

⁴⁹³ *Idem*, Question 2.

⁴⁹⁴ *Idem*, Question 4. In Europe, 2/3 private investors and more than 90% institutional investors refer to more than one specific CRA.

⁴⁹⁵ Cantor, Richard and Frank Packer. 1996. Multiple Ratings and Credit Standards: Differences of Opinion in the Credit Rating Industry. *Federal Reserve Bank of New York Staff Reports* 12: P.15.

⁴⁹⁶ Cantor, Richard et al. 2007, *supra*, Question 5.

⁴⁹⁷ Bheemanagouda and Madegowda, 2010, *supra*.

Jewell and Livingston (1999 and 2000)⁴⁹⁸ confirmed the value of the “additional incremental information” that could be brought by multi-ratings; However, Cantor and Packer (1995 and 1997)⁴⁹⁹ believed the danger inherent in the multi-ratings. They contended that “ratings of the smaller rating agencies, DCR and Fitch, may be inflated or that issuing firms may engage in ‘rate shopping’. If the market suspects rate shopping, the artificially high rates would be ignored, and third ratings would have no effect upon bond yields”⁵⁰⁰.

In front of these two opposition ideas, “discretion”⁵⁰¹ is the keyword when a split rating happens. Based on the survey (Cantor, 2007), European investors are shown “cautious” to the different opinions and they prefer to believe more in “lower rating” than in higher one, in avoidance of potential rating inflation.

In practice, they often “demand for third ratings” when “the issuer’s proximity to investment grade” (Baker, 2002)⁵⁰², especially in the case of high-yield bonds. In any way, “further research on the effects of split ratings on bond pricing is warranted”, as noted by Livingston et al. (2007).⁵⁰³

Under the Chinese institutional environment, in order to understand the attitude of investors in terms of the possible rating inflation, the best idea is to conduct a survey directly to the investors, both individual and institutional.

We will leave the qualitative study and analyses later on, for our future research.

⁴⁹⁸ Jewell and Livingston, 1999, A Comparison of Bond Ratings from Moody's, S&P, and Fitch, *Financial Markets, Institutions and Instruments*; and Jewell and Livingston, 2000. The impact of a Third Credit Rating on the Pricing of bonds, *Journal of Fixed Income*, 19(3), page 69-85.

⁴⁹⁹ Cantor, Richard, Packer, Frank, 2005, *supra*; same author, 1997, Differences of Opinion and Selection Bias in the Credit Rating Industry, *Journal of Banking and Finance*, 21, P. 1395–1417 and Cantor, Richard, Packer, Frank and Kevin Cole. 1997. Split Ratings and the Pricing of Credit Risk. *Working Paper. Federal Reserve Bank of New York*.

⁵⁰⁰ Baker and Mansi (2002), page 1376.

⁵⁰¹ *Idem*, Question 6.

⁵⁰² A point of view put forward previously by Cantor and Packer (1995) in Baker, *supra*.

⁵⁰³ Livingston, Miles, Andy Naranjo, and Lei Zhou. 2007, Asset Opacity and Split Bond Ratings. *Financial Management*, 36, P. 49–62.

3.2. Causes and consequences of asynchronous Credit Rating Changes (CRCs)

“From issuers’ perspective, the primary role of bond ratings is to certify the quality of the bond offerings”. “When ratings are taken as an evaluation of the company’s creditworthiness, the more ratings one obtains, the greater the likelihood of the true evaluation emerge[s]”⁵⁰⁴. That explains one of their motivations to solicit initial multi-ratings. However, “issuers should want to minimize the number of times they have to go through the rating process because of the time effort, and expense involved.”⁵⁰⁵ That explains their reluctance for frequent credit rating changes.

By contrast, investors have different expectations on CRCs.

They want more accuracy for rating service, even in detriment of the stability. They “are using ratings as source of information”⁵⁰⁶, so they are volunteer in accepting the increased “frequency and magnitude of rating changes as well as frequency of reversals of recent rating changes”⁵⁰⁷.

This kind of presumption is confirmed by qualitative research on Indian institutional environment:

If the early survey of Goswami and Venkatesh (1999)⁵⁰⁸ showed that investors were still complaining about the rating timeliness; in the case of Bheemanagouda and Madegowda (2010)⁵⁰⁹, most Indian investors (56%) praised the rating results “for timely announcement”⁵¹⁰. Both of their focus of attention stayed on the CRAs of national level.

⁵⁰⁴ Ellis, 1997, page 9.

⁵⁰⁵ Baker et al. 2002, page 1371.

⁵⁰⁶ Ellis, 1997, page 14.

⁵⁰⁷ Cantor et al. 2007, page 22.

⁵⁰⁸ Working paper, page 17.

⁵⁰⁹ The IUP Journal of behavioral finance, 7 (1-2), page 105.

⁵¹⁰ *Idem*, page 106.

3.2.1. Endogenous and exogenous causes

There are CRAs preferring one strategy to the other. Under this circumstance, we have to distinguish an “asynchronous changes in ratings in response to changes in underlying default risk” from the “systematic difference between the two ratings”⁵¹¹.

This reveals the endogenous and exogenous causes of asynchronous CRCs, in other words, we will explore the reasons of the phenomenon from the point of view of CRAs, on one hand; and from the point of view of rating users on the market, on the other hand.

First of all, some agencies choose to lag in updating ratings (instead of leading) out of the reputation concern⁵¹², not only for themselves, but also for all market participants. Altman and Rijken (2004b) took it as a wise decision, because “it is likely to be better late and right than fast and wrong.”⁵¹³ For example, S&P was found by Güttler and Wahrenburg (2007)⁵¹⁴ reacting systematically less timely than Moody’s, under a relatively restrained sample (from 1997-2004).

In this regard, the discussion of reputation mechanism under the competitive environment will be more developed in the Section 1 of Chapter V.

Secondly, every rating approach (either point-in-time/PIT or throughout the cycle) that one certain CRA has chosen will have impacts⁵¹⁵ on the rating qualities. Rating users complain that ratings cannot reflect default risk in timely; or CRAs cannot offer

⁵¹¹ Livingston, M., J. Wei, and L. Zhou, 2010. Moody’s and S&P ratings: Are they equivalent? Conservative ratings and split rated bond yields, *Journal of Money, Credit and Banking* 42, 1267–1293.

⁵¹² It’s the same way around. Since the reputation of CRAs is based on the “power to predict forthcoming defaults”, a late announcement will hurt the credibility of an agency. On the country, “Egan-Jones Ratings downgraded Enron to junk status much earlier and thereby increased their credibility in the market.” In Güttler, André and Wahrenburg, Mark. 2007, The adjustment of credit ratings in advance of defaults, *Journal of Banking & Finance*. Mar2007, Vol. 31 Issue 3, P. 751-767. 17 pages.

⁵¹³ Altman, E., and H. Rijken, 2004b, *supra*.

⁵¹⁴ Güttler and Wahrenburg, 2007, *supra*.

⁵¹⁵ Altman and Rijken, 2005a, ‘The Effects of Rating Through-the-cycle on Rating Stability, Rating Timeliness and Default-prediction Performance, *Financial Analysts Journal*; and Altman and Rijken, 2005b, The Impact of the Rating Agencies’ Through-the-cycle Methodology on Rating Dynamics, *Economic Notes by Banca Monte dei Paschi di Siena SpA*, vol. 34, no. 2, pp. 127–15.

enough accuracy⁵¹⁶ in Default Probability (DP) prediction ability (especially in short-term). CRAs argue and try to defend themselves, by saying that too much frequent and timely changes of credit rating will decrease significantly the stability. It in turn could harm the benefits of market investors⁵¹⁷, especially for those who use ratings as an investment reference for financial products. A high volatility level would be too much costly for contracting parties, as well.⁵¹⁸

Ellis⁵¹⁹ shed light on the different attitudes of market actors in front of rating quality. In his study, issuers seemed more satisfied with stable ratings. However, from the point of view of investors, the level of stability might be too high, and the revision horizon needed to be shortening with more diligence.

Cantor (2007) found that the “specific clientele preferences therefore determine which rating system will ultimately be used”⁵²⁰. Finally, “it is up to investors and authorities to judge whether this balance (between accuracy and stability) [...]” matches the best with their business interests.

In sum, the *trade-off theory* between stability and timeliness (two conflicting objectives)⁵²¹ may also help to explain the reason why some CRAs possess a “prudent migration policy”⁵²². They concede their informative role (accuracy) to regulatory role (stability) in that case (Altman and Rijken, 2004)⁵²³.

⁵¹⁶ “Their default prediction is low” in Löffler, 2004, *supra*.

⁵¹⁷ Especially “the use of ratings for regulatory purposes and for portfolio governance rules for institutional investor”, in Cheng, Mei and Neamtiu, Monica, 2009, An empirical analysis of changes in credit rating properties: Timeliness, accuracy and volatility, *Journal of Accounting and Economics*, Volume. 47, Issue. 1-2, pp. 108-30.

⁵¹⁸ Cheng, Mei and Neamtiu, Monica, 2009, *supra*.

⁵¹⁹ Ellis, David. M. 1997, *supra*.

⁵²⁰ Cantor, Richard. and C. Mann. 2006, Analyzing the Trade-off between Accuracy and Stability, *Moody's Special Comment*.

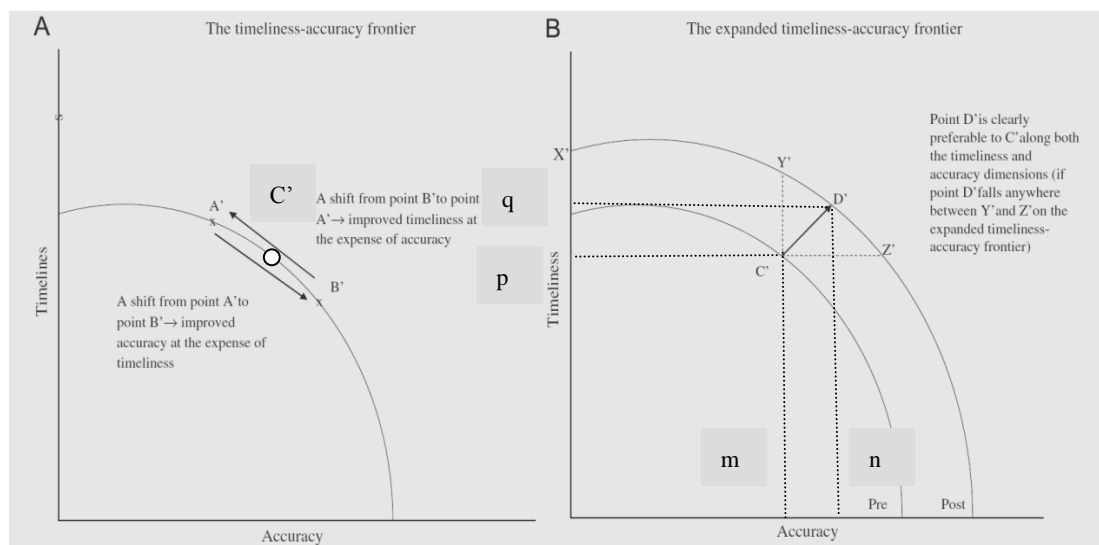
⁵²¹ Altman and Rijken, 2005a, *supra*, p154.

⁵²² It is due to the through-the-cycle (TtC) approach employed, cf. Altman and Rijken, 2005b, *supra*. And “agency-rating migration policy is the other aspect of through-the-cycle methodology”, cf. Altman, E., and H. Rijken. 2004a, How Rating Agencies Achieve Rating Stability. In: R. Cantor, Ed. 2004, Recent Research on Credit Ratings (Special issue). *Journal of Banking and Finance*, 28.

⁵²³ Altman, E., and H. Rijken, 2004b, What do we prefer: Stable rating ratings or timely ratings?. *Treasury Affairs*, Volume 1(2).

Based on the endogenous and exogenous causes, we found that at least two pieces of information could be summarized, in the following *Graph IV.1*:

*Graph IV.1*⁵²⁴



Firstly, the slow reaction (no conformity to the timeliness among rating qualities) to the events, which happened during the recent financial downfall, achieved a heated criticism. On the other side of the story, if a stricter rating standard and a hasty modification could capture most default risk, the probability of “type II errors (false warning)”⁵²⁵ would increase, with the presence of the existing frontier (Graph A, on the left) and “rating reversals can be” really harmful.⁵²⁶ The trade-off of rating quality is dependent on the entire economic and financial circumstances.

Another solution for CRAs is to make a rating go from point A' to C' or point B' to C', instead of directly from one extreme to the other (point B' to point A', or *vice versa*). Step-by step modifications can help to reduce the gravity of errors. This gives us an idea to study CRCs and their sequel CRCs. In the uncomputed excel files, we found that local CRAs had several CRCs in a short time.

⁵²⁴ Cheng, Mei and Neamtiu, Monica, 2009, *supra*, P114.

⁵²⁵ *Ibid.*

⁵²⁶ “Since the corporate bond market is notoriously illiquid, this can lead to substantial transaction costs” in Löffler, Gunter. 2005. Avoiding the Rating Bounce: Why Rating Agencies Are Slow to React to New Information. *Journal of Economic Behavior & Organization*, 56(3): 366.

Secondly, under the “regulatory pressure and investors criticism (reputation concerns)”, CRAs “responded by improving their ratings qualities” according to the findings of Cheng and Neamtiu (2009)⁵²⁷, among which the most importantly, “timeliness” increased alongside the “accuracy” in the post-crisis period (Graph B, on the right).⁵²⁸

In other words, the trade-off of rating quality has also a time-varying effect. Taking an example from the *Graph IV.1* above, we discovered:

In the pre-crisis curve, point C’ corresponded to “m” as accuracy and “p” as timeliness; while in the post-crisis curve, point D’ disposes of “n” as accuracy and “q” as timeliness. This kind of changes has gained both accuracy and timeliness, with no traded-off for one value and in exchange for the other.

Inspired by these two discussions, we will try to extend the discussion empirically in the following Point 3.2.2 and Point 3.2.3. Our first statistical inquiry on the CRCs will be conducted in the sample of multiple credit rating changes⁵²⁹.

⁵²⁷ *Ibid.*

⁵²⁸ *Idem*, P111, “July 25, 2002 is the date when both the Senate and the House passed the Sarbanes-Oxley Act. Section 702 (b) of SOX requires the SEC to study the function of rating agencies.”

⁵²⁹ Different CRAs modified the initial ratings of one rated public-listed company.

3.2.2. Leader-follower analysis

As we said previously, we got intrigues to have a look into the CRCs and their sequent CRCs in the short time. Here, we define the short time as the event window. In other words, we want to study how the second CRAs (follower) gave their latent CRCs after the first CRCs (leader) within the event window.

First of all, we have to define the period of the event window. Different empirical researches made different definition: five days before and after the event day on Chinese market (Poon and Chen, 2007)⁵³⁰, and 10 days/15 days for two researches on Spanish market⁵³¹; while Güttler, André and Wahrenburg, Mark (2007) extended the window to 90 days⁵³².

We took the event windows of 15 days before and after the event day; we found that most CRCs had their sequent changes in our sample, changed at the same direction, by one notch (63% for upgrading and 40% for downgrades).

Table IV.3.9

Magnitude of CRCs within the event window

First ratings		Latent ratings	Up				Down					
			0.5 notch ⁵³³	1	2	3	0.5	1	2	3	6	7
Up	1 notch	2	17	4		3						
	2		1	1		1		2				
	3		1									
Down	1	2			1	1	42	12	5		1	
	2						19	7	4			
	3						7	1	1	1		
	5						1	1	1			

⁵³⁰ Poon, Winnie P.H. and Chan Kam C. 2007, An Empirical Examination of the Informational Content of Credit Ratings in China. *Journal of business research*, 61, p.790-797.

⁵³¹ Abad-Romero, P. and Robles-Fernandez M.D. 2006, Risk and Return around Bond Rating Changes: New Evidence from the Spanish Stock Market, *Journal of Business Finance & Accounting*, and in 2007, Bond rating changes and stock returns: evidence from the Spanish stock market. *Spanish Economic Review*.

⁵³² Güttler, André and Wahrenburg, Mark. 2007, The adjustment of credit ratings in advance of defaults, *Journal of Banking & Finance*. Mar2007, Vol. 31, Issue 3, P. 751-767.

⁵³³ Only for agency CCRC, from AAA to AAA+ of AAA to AAA- We counted this kind of CRCs as 0.5 notches.

3.2.3. Magnitude of CRCs on the same day

Here, we controlled the time-varying effect to study the multi-ratings sample. We took CRCs happened on the same day by different CRAs and presented the descriptive data in the following *Table IV.3.10*.

It should be noted that the sample is very small when CRAs decided to make rating modifications at the same time. Most cases are cumulative, in the case of downgrades for S&P and S&P National; while Chinese local CRAs did not even give one single negative modification together.

Table IV.3.10

Magnitude of CRCs on the same day

CRA	Up				Down			
	N	Mean	Medium	Max/ min	N	Mean	Medium	Max /min
Chengxin	3	1.67	1	3/1	/			
Lianhe	2	2	2	3/1				
SBCR	1	1	/					
Moody's	2	2	2	3/1	4	1.5	1.5	2/1
S&P	10	1.7	1	6/1	51	1.37	1	4/1
S&P N	9	1.56	1	4/1	50	1.84	2	7/1
Fitch	/				2	2	2	3/1
In total	27				107			

Taking the example of S&P and S&P National, we may conclude that there exist split ratings among CRAs. We can read from the table above that the latter level up the ratings on average less generously (1.56 notches vs. 1.7 notches), however it downgrades more heavily, by a half notch (1.84 notches vs. 1.37 notches).

3.3. Watch-list, a balance of quality properties

To our knowledge, the only survey on WL is that of Cantor, Richard et al. (2007). When they addressed European investors, 1/5 of individual investors and 1/3 fund managers responded with “positive use of WL” currently. Half of the interviewees are “not likely to consider in the future”⁵³⁴. It is clear that Watch-list (WLs) is not a conventional rating event taken with habitude by the general investors, even in a relatively developed market.

3.3.1. Attitude of issuers and investors in the case of WL

Compared to direct credit rating changes (CRCs), rating reviews with preceding WLs “are able to add a finer level of detail to credit default risk-relevant information”⁵³⁵. It seems to become “a suitable instrument” to achieve rating quality by balancing different properties: timeliness, accuracy, stability...

On one hand, the economic function of the pre-announcement of watch-list is however much more valid for issuers with high quality; while for issuers with poor quality, CRAs shift their function to the monitoring role.⁵³⁶

On the other hand, from the point of view of investors, Chung et al. (2012) “supported the view of Boot, Milbourn, and Schmeits (2006)⁵³⁷ that the credit watch may be viewed as an implicit contract between the issuer and the CRA where the issuer agrees to act to prevent the lowering of its credit rating”⁵³⁸.

⁵³⁴ Question 8 in Cantor, Richard et al. 2007. The Use of Credit Ratings in Investment Management in the US and Europe. *The Journal of Fixed Income Fall*, P21.

⁵³⁵ *Ibid*, P3048.

⁵³⁶ Bannier, Christina E. And Hirsch, Christian W. 2010, The economic function of credit rating agencies – What does the watch list tell us?. *Journal of Banking & Finance* 34, 3037–3049.

⁵³⁷ Boot, Arnoud W. A., Milbourn, Todd T., and Schmeits, Anjolein. 2006. Credit Ratings as Coordination Mechanisms, *Review of financial Studies* 2006:19, 81-118.

⁵³⁸ Chung, Kee H.; Ann Frost, Carol; Kim, Myungsun. Financial Management. 2012, Characteristics and Information Value of Credit Watches. *Wiley-Blackwell*, Vol. 41 Issue 1, P.119-158, 40 pages.

3.3.2. *WL issued by the duopoly and S&P vs. S&P national*

Watch-lists remain a novelty under Chinese rating context.

Since most WLs were issued by *global CRAs* and the sample is very small, we are even able to make an exhaustive list here. We believe it the best way to have a global and straightforward understanding on the topic.

As for *Chinese local CRAs*, they wait to learn more about WLs, from their global counterparts. In the comparison to a credit rating change, WLs are not popular enough. We believe that local CRAs are going to realize that compared to CRCs, WLs have their benefits (as we presented in the previous point 3.3.1), and this kind of rating events will be coming more in the future.

Table IV.3.11

WLs from S&P and Moody's

	Company name	Date	Agency	Current Rating	Last rating
1	CNOOC Ltd	6/23/2005	S&P	BBB+ *-	BBB+
			Moody's	A2 *-	A2
2	ENN Energy Holdings Ltd	12/13/2011	S&P	BBB- *-	BBB-
			Moody's	Baa3 *-	Baa3
3	Greenland Hong Kong Holdings Ltd	9/1/2011	Moody's	B1 *-	B1
		8/31/2011	S&P	BB- *-	BB-
4	Greenland Hong Kong Holdings Ltd	5/9/2013	Moody's	Caa1 *+	Caa1
			S&P	B- *+	B-
5	Greentown China Holdings Ltd	6/12/2012	Moody's	Caa2 *+	Caa2
		6/11/2012	S&P	CCC+ *+	CCC+
6	Fosun International Ltd	01/13/2014	S&P	BB+ *-	BB+
			Moody's	B1 *-	B1
7	CITIC Securities Co Ltd	09/17/2015	S&P	BBB+ *-	BBB+
		09/02/2015	Moody's	Baa1 *-	Baa1
8	West China Cement Ltd	12/01/2015	Moody's	Ba3 *+	Ba3
		11/30/2015	S&P	B+ *+	B+
9	Shanghai Electric Power Co Ltd	11/02/2016	S&P	BBB *-	BBB
		11/01/2016	Moody's	Baa2 *-	Baa2
10	Shanghai International Port Group Co Ltd	09/15/2016	S&P	AA- *-	AA-
		09/14/2016	Moody's	A1 *-	A1
11	Golden Eagle Retail Group Ltd	04/05/2016	S&P	BB- *-	BB-
			Moody's	B1 *-	B1

Here, we are going to focus on the WLs given by global CRAs.

Firstly, we isolated the issuers of WLs issued by Big Two (the duopoly of Moody's and S&P) and found in the *Table IV.3.11*, that the rating events occurred either on the same day or these two CRAs released the WLs very close in time⁵³⁹.

Table IV.3.12

Rating level of WLs from S&P and S&P National

	S&P	S&P National
Average	11.61 (BB+)	9.43 (BBB)
Median	12 (BB)	10 (BBB-)
Standard deviation	3.24	4.08
Maximum /Minimum	19 (CCC-) / 4 (AA-)	19 (CCC-) / 1 (AAA)

Secondly, in the sample of multi-ratings, we chose to study WLs issued by S&P and its Chinese rating version (S&P N), on the same issuers, on the same day⁵⁴⁰.

We found in the following *Table IV.3.12*, that the latter rated two notches higher, on average. This observation is consistent with previous findings in the case of CRCs, that S&P National is more generous to Chinese rated entities than S&P.

⁵³⁹ Almost within one-day-gap and there is one exception.

⁵⁴⁰ There is only one exception, with one day difference.

Conclusion of Section 3

To our knowledge, it is the first empirical study, by using market statistics to investigate the functions of CRAs in the case of Chinese multi-ratings, with a complete vision covering initial ratings (Subsection 3.1), CRCs (Subsection 3.2) and WL (Subsection 3.3). We covered both points of view of issuers and investors. In this domain, only qualitative surveys are registered in the literature review, mostly on developed markets.

The differences inherent in market actors' attitudes stem most likely from the difference in the agency relationship with CRAs⁵⁴¹; in other words, from the interaction of CRAs with investors and issuers. To be more specific, institutional investors have one duty to sponsors, "only with the timely repayment of interest and principal"; while issuers have duties "both to bondholders and shareholders".

We also initiated some basic qualitative analyses of multi-ratings "on the same day" to control the behaviors of CRAs and the economic and financial conjunctures of the rated entities. They are both time-varying variables (could be sensitive to the financial crisis, changes of sovereign rating, mutations of regulations, openness/bull/bear of financial market) and further study will need be conducted in Chapter V.

From the strategies of CRAs and strategic choices of rating determinants that each CRA make, we will be able to figure out both the agency-conduct effect and time-varying effect by logistic models.

⁵⁴¹ Ellis, 1997, page 16.

Conclusion of Chapter IV

Content of Chapter IV

Instead of asking questions directly to CRAs about their roles, we had our focus on the expectations from the point of view of Chinese regulators and norms, to speculate from the most frequently-used words. Neither did we have opportunity to make questionnaires from the points of view of issuers and investors to investigate the same subject, for the reasons that we have already explained previously. Instead, we examined the market functions of CRAs in front of issuers and investors, as well as discussed the rating quality, based on samples of multiple-ratings (for initial ratings, credit rating changes and watch-lists).

The construction of Chapter IV is mobilized to respond empirically to the questions under the theoretical framework, in the Part One §1:

Do Characteristics of Chinese environment have an influence to decide the role of CRAs in Continental China and in HK? How do Chinese regulation and norms' bring about different expectations in the role of CRAs? (Section 1)

How do issuers and investors react to motivations, causes and consequences of multi-ratings, as well as quality properties of ratings? (Section 3, based on the preparation of sample for quantitative study in Section 2)

Generally speaking, CRAs have the role to certify the quality of “debt issue’s credit” (Millon & Thakor, 1985 and Hsueh & Kidwell, 1988); “[it] also reduces the moral hazard problem of transferring information directly”. However, the “principle role of CRAs” and their functions still remain unclear in the literature review, when we put the discussions under Chinese institutional environment.

One of the reasons to explain the difficulties could be attributed to the binomial external governance of CRAs on Chinese market context, which we presented below (*Figure IV. 2*).

Binomial external governance of CRAs

Formal: Rating <i>regulations and norms</i>	Informal: Guanxi and connections (<i>cognitive</i>)
--	--

***Figure IV.2 is made by the author.**

Formal incentive structures only are often “undeveloped or ineffective”⁵⁴², to explain the Chinese Socialist Market Economics, and we have to rely much more on the informal structures, because the latter are considered as the primary means to ensure the “certainty and security” (North, 2005)⁵⁴³.

Consequently, it should be noted that *Guanxi* might compensate for the inadequate “formal incentive structures” and the enforcement mechanisms (Nee, 1992)⁵⁴⁴. Thus, from this point of view, any perception of *Guanxi* is an artefact of institutional conditions. That is, in the circumstances of weak formal institutions, personal connections and networking with other market actors (issuers and investors) become fundamental parts of economic and social exchanges.⁵⁴⁵ “Again, informal governance mechanism such as social networks and trust may be a solution to these potential agency conflicts.”⁵⁴⁶ It explains the reason why formal institutional pressure tends to make CRAs’ behaviors converge; while in reality, Chinese local CRAs are looking to distinguish themselves to each other. In other words, they would act differently due to the choice of strategies. In this regard, we will spend more efforts to explore their strategies by statistical models, which will contribute to the conceptual speculations that we have in the most articles related to Chinese rating business environment.

⁵⁴² “5.1. The legal environment is weak (but improving)” in Jiang Fuxiu and Kim Kenneth A. 2015, Corporate governance in China: A modern perspective. *Journal of Corporate Finance* (32), page 190-216.

⁵⁴³ North, D. C. 2005, *Understanding the Process of Economic Change* (Princeton, NJ: Princeton University Press), Page 333.

⁵⁴⁴ Nee, V. 1992, Organizational Dynamics of Market Transition: Hybrid Firms, Property Rights, and Mixed Economy in China, *Administrative Science Quarterly*, 31, 1, 1–27.

⁵⁴⁵ Xin, K.R. and Pearce, J.L. 1996, Guanxi: Connections as substitutes for formal institutional support, *Academy of Management Journal*, vol. 39, pp. 1641–1658.

⁵⁴⁶ Filatotchev & Nakajima, 2010, Internal and External Corporate Governance: An Interface between an Organization and its Environment, *British Journal of Management* (21), page 591-606.

Inspirations for the following chapters

The three sources of institutional pressure (reputational, normative and regulatory) under theoretical framework for the external governance of CRAs should be complemented by the internal governance of CRAs. We will use market statistics to test empirically how the *Guanxi* and connections, in addition to regulations and norms, will influence CRAs' strategies.

The purpose is to see how the strategic behaviors of CRAs and strategic choice of determinants will have effects on initial issuer ratings, including the consideration of fixed and time-varying effects, from both agency perspective and issuers' perspective.⁵⁴⁷

Indeed, "the metrics behind the letters/numbers/signs may different from one CRA to the other"⁵⁴⁸. The objective of Chapter V is to identify the differences between these two categories (global vs. local) of CRAs, and inside Chinese local CRAs under the competition-driven environment, in the interaction with issuers.

In the same spirit, we will also use Chinese institutional elements, to test the informative impact of rating event (credit rating changes and watch-lists) on investors' reactions on stock market. We also would like to explain the causes of significant abnormal returns in the Chapter VI.

⁵⁴⁷ *Idem*, page 600.

⁵⁴⁸ *Supra*, Langohr Herwig M. and Langohr Patricia T. P50.

Chapter V.

Strategy of CRAs in giving initial issuer ratings

Section 1. Reasoning for strategic rating behaviors

Section 2. Strategic choices of rating determinants

Section 3. Execution of logistic models and analysis of results

Introduction of Chapter V

Content of Chapter V

Chapter V is composed of three sections.

Firstly, we will start with a rating market analysis of Chinese rating industry. With the position of each CRAs and intuition from global CRAs (literature review told us that it is important to consider ratings differences across-agency and over-time: we call them in the thesis: agency-conduct effect and time-varying effect), we will develop our first hypotheses from the viewpoint of CRAs on their strategic rating behaviors (Section1).

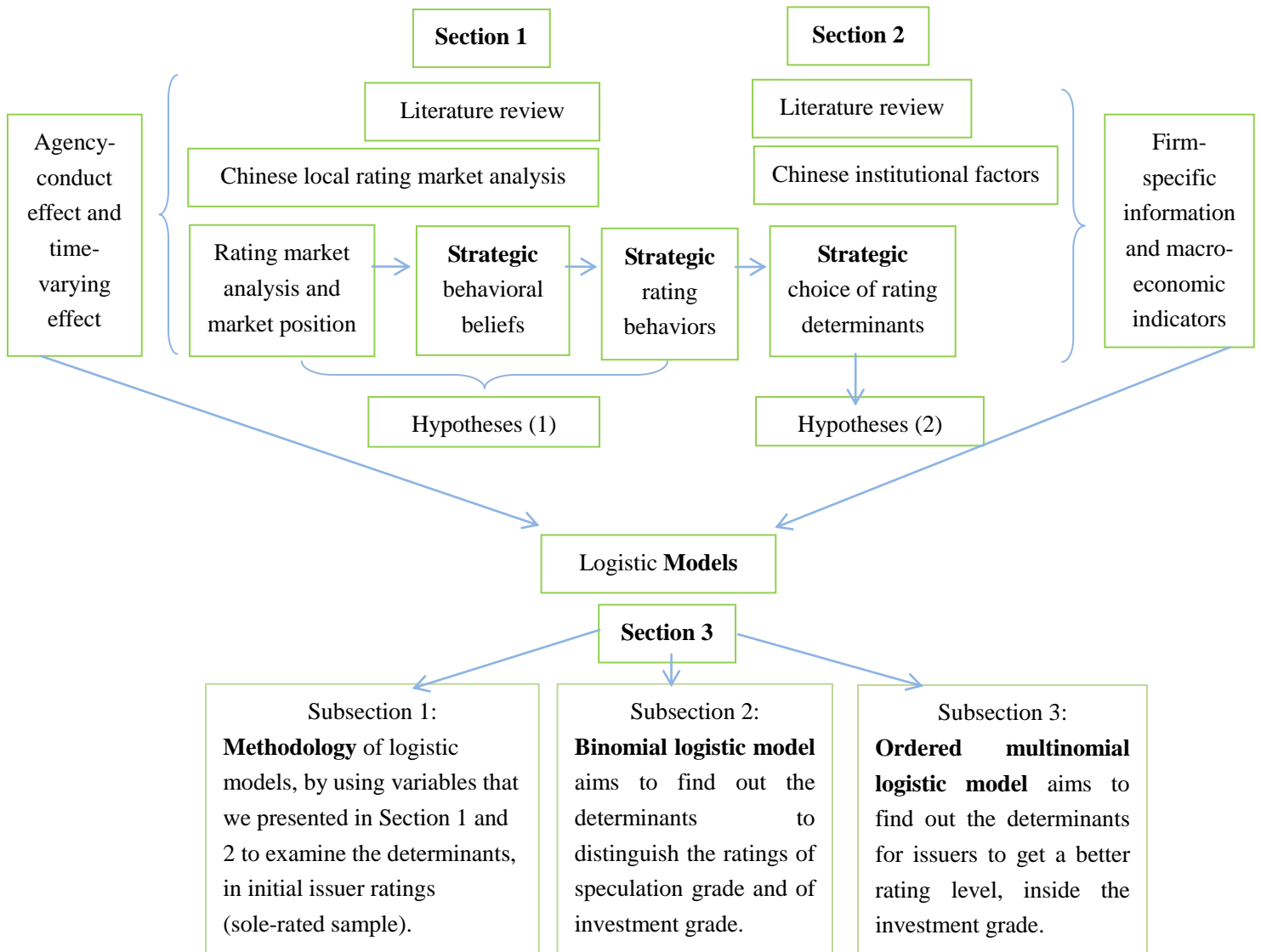
Secondly, all of these elements will lead us to hypothesize the strategic choice of rating determinants from the viewpoint of issuers, based on the literature review of similar studies in developed countries, and on the introduction of Chinese institutional factors (Section 2).

Finally, we will use logistic models (binomial logistic and ordered logistic models) to examine if some variables existing in the literature are able to determine Chinese rating grade and level. The independent variables that we take into account are agency-conduct effect, time-varying effect, all kinds of firm-specific information (financial ratios and accounting numbers, governance-related and market information), and Chinese macroeconomic indicators. The latter helps to capture the through-the-cycle effect of rating activities (Section 3).

The objective is also to confirm or to reject two previous hypotheses (in the interaction with CRAs and issuers) that we constructed in the previous sections. The analyses of results are able, in return, to enrich the understanding of Chinese institutional factors.

Structure of Chapter V

The structure is summarized by the following *Figure*.



**Figure is made by the author.*

Section 1. Reasoning of strategic rating behaviors

1.1. Literature review: agency-conduct effect and time-varying effect

1.2. Chinese local rating market analysis: What is different from global CRAs?

1.3. Constitution of Hypotheses (1)

Introduction of Section 1

Subsection 1.1 summarizes the literature review from effects of agency-conduct and time-varying. These articles give us first intuitions constitute the hypotheses.

Subsection 1.2 presents Chinese local rating market analysis, which helps us to understand how Chinese local CRAs differ from global CRAs: either they decide to assimilate their behaviors or to distinguish themselves from the peers, and in which path leading to the distinctiveness.

Subsection 1.3 starts from the conclusive summary of rating market positions (Point 1.3.1) to speculate CRAs' strategic behavioral belief (Point 1.3.2), in order to survive in the competition-driven environment. The latter is one of the factors for different CRAs to choose their strategic rating behaviors accordingly (Point 1.3.3). Finally, we will focus on the sole-rating sample to describe initial issuer ratings. The objective is to examine how CRAs rated in China during the year 2002-2016 (Point 1.3.4).

1.1. Literature review: agency-conduct effect and time-varying effect

Moody's and S&P rate virtually all publicly traded "corporate bond issues" and their ratings are perceived highly correlated⁵⁴⁹ by investors and issuers according to interviews. In our study, we want to investigate the subtle rating difference cross-agency, not only for duopoly (Point 1.1.1), but also for other CRAs of new-market entrants (Point 1.1.2) to the rating market.

The rating behaviors are also considered to be time-varying (Point 1.1.3) in the literature review, in order to complete the agency-related differences over-rating.

The literature reviews on developed rating market told us the important to consider the agency-conduct effect and time-varying effect into the study of CRAs' strategies.

1.1.1 Inspirations from duopoly-split ratings

In the previous Section 3 of Chapter IV, we had interest in multi-rating samples, where the split ratings "are not exactly rare"⁵⁵⁰. However, studies on the subject focused more on impact of split ratings on bond yield than the reason(s) behind a split rating.

We will try to respond to the question "why split ratings occur" (Ederington, 1972) in this Chapter V, by finding rating determinants.

With time going by, the "random errors"⁵⁵¹ (the rating difference among CRAs are not systematic but are rather arbitrary) or "equivalence hypothesis"⁵⁵² (that we consider all CRAs behave in the same way) have been increasingly challenged by the theory of "systematic differences in the behavior of major CRA"⁵⁵³. It is believed that

⁵⁴⁹ Baker, H. Kent and Mansi, Sattar A. 2002, Assessing Credit Rating Agencies by Bond Issuers and Institutional Investors. *Journal of Business Finance & Accounting*, 29(9) & (10), Nov./Dec. 2002, 0306-686X.

⁵⁵⁰ Ederington, Louis H. Financial Management, 1972, Why split ratings occur. Vol. 15, Issue 1, P.37-47.

⁵⁵¹ Jewell, J. and M. Livingston. 1998. Split Ratings, Bond Yields, and Underwriter Spreads for Industrial Bonds. *Journal of Financial Research*, 21, P. 185-204.

⁵⁵² Livingston, M., J. Wei, and L. Zhou, 2010. Moody's and S&P ratings: Are they equivalent? Conservative ratings and split rated bond yields, *Journal of Money, Credit and Banking* 42, P.1272.

⁵⁵³ Bove, Michael. And Larik, Waseem. 2014, *supra*, P733.

“opinion [...] with respect to underlying Credit Risk determinants”⁵⁵⁴ of the duopoly (Moody’s and S&P), two most active CRAs on the worldwide level, differs one to the other.

In “the first study to extensively analyze insurer financial strength ratings”⁵⁵⁵, Pottier and Sommer (1999)⁵⁵⁶ proved that “each of the rating agencies examined (in the study) uses a distinct rating model, with its own important factors and its own weights on those factors”.

The results indicated that “Moody’s appears to use a much smaller number of publicly available quantitative factors in its rating process, and perhaps relies more on private or qualitative information,”⁵⁵⁷ when they compared Moody’s to S&P and A. M. Best. Following the same spirit, Bowe and Larik (2014)⁵⁵⁸ also took both hard and soft information (firm-specific financial ratios and governance-related variables. We will have a more detailed description for these variables, in the next Section 2 of Chapter V) into consideration.

They provided us with evidence through a thorough examination and found that: Moody’s is more conservative⁵⁵⁹ (*ceteris paribus*, Moody’s rates worse than other counterparts) when rating “smaller firms with unfavorable coverage and leverage ratios and lower profitability”. Besides, “the constraints on internal management” are positively accepted and favorably incorporated in the measurement model of Moody’s than other rating competitors.

⁵⁵⁴ The split rating is consistent in Livingston, M., A. Naranjo, and L. Zhou, 2008. Split bond ratings and rating migration, *Journal of Banking and Finance* 32, 1613–1624.

⁵⁵⁵ *Ibid.*

⁵⁵⁶ Pottier, S.W. and D.W. Sommer, 1999. *supra.*

⁵⁵⁷ *Idem*, P639.

⁵⁵⁸ Bowe, Michael and Larik, Waseem. 2014, Split ratings and Differences in Corporate Credit Rating Policy between Moody’s and Standard & Poor’s, *The Financial Review* 49 (2014) 713–734.

⁵⁵⁹ Pottier, S.W. and D.W. Sommer, 1999; Luehlhing, Michael S.; Cochran, James J.; Johnson, Gene H. 2010, The impact of Split Bond Ratings on accounting research results: some additional evidence and some preliminary insights, *Academy of Accounting & Financial Studies Journal*. Jun2010, Vol. 14 Issue 3, p113-124. They started only from the point of view of hard information (accounting).

1.1.2. Competition with new-market entrants

The situation becomes more complicated in the presence of several market new-entrants, just like the situation when Fitch firstly entered to the “duopoly”⁵⁶⁰. Hence, Fitch formed the “Big Three” along with Moody’s and S&P, which we just discussed in the previous Point 1.1.1.

Another example is showed in the study of Dominion Bond Rating Service (DBRS): “a relatively new player [entered] in the European market”⁵⁶¹. Camanho, et al (2010) found that the ratings issued by DBRS are “significantly more lenient than those issued by the more established players”⁵⁶².

As documented by Becker and Milbourn (2011)⁵⁶³ and in the line of the *Theory of Reputation*⁵⁶⁴, a decrease of rating quality (ratings are not able to reflect correctly the credit default risk) coincided with the arrival of new competitors.⁵⁶⁵ Under this circumstance, “the negative relation between S&P revenue share and its tendency to issue inflated ratings”⁵⁶⁶ showed the earlier-existing S&P tried hard to please clients to retain their business when the competition gets fierce.

Even without competition, inflated ratings could also happen for “titled” CRAs. According to the findings of Lynn and Bai (2010), earlier-existing CRAs are practically enjoy the “advanced position”⁵⁶⁷ and are indulged by the market. The users of ratings are more comfortable to “experienced goods” than to “new goods”⁵⁶⁸ offered by CRAs of new-market entrants, because the use of ratings of new market-entrants presents some underlying uncertainty⁵⁶⁹. In addition to that, we

⁵⁶⁰ Becker. and Milbourn., 2011, *supra*.

⁵⁶¹ Camanho, N., Deb, P., and Liu, Z., 2010, Credit Rating and Competition, *Working Paper*.

⁵⁶² *Ibid*.

⁵⁶³ Becker, B. and T. Milbourn, 2011, How did increased competition affect credit ratings? *Journal of Financial Economics*. 101(3): p. 493-514.

⁵⁶⁴ Klein and Leffler, 1983, in Becker, B. and T. Milbourn, 2011, *supra*.

⁵⁶⁵ Becker, B. and T. Milbourn, 2011, *supra*.

⁵⁶⁶ Strobl, G. and H. Xia, 2012. *supra*.

⁵⁶⁷ Lynn, Bai. 2010, The Performance Disclosures of Credit Rating Agencies: Are they Effective Reputational Sanctions? *New York University, Journal of Law & Business*.

⁵⁶⁸ Peng, Xiukun., 2015, Research on the International Community’s Regulation and Reformation of Credit Rating Agencies, *Press of Chinese Democratic Legal Institutions*, Beijing: P73. (The original text is in Chinese and it was translated by the author).

⁵⁶⁹ “This can result from direct costs involving communicating with the new rating agency, disclosing required financial information, settling legal issues, and the potential additional expenses related to rating fees” in Strobl, G.

suppose that rating users could also benefit from a higher marginal utility by continuing using the rating service from the same CRA.

All of these facts will inevitably bring up the laxity of ratings for both new rating market competitors and earlier-existing CRAs. That explains the reason why we pay attention to the year of entry of each Chinese local CRA when doing rating market analysis in the next Subsection 2.

1.1.3. Considering the time-varying effect

The split rating may result from the type and nature of a CRA, and more precisely the way they choose, interpret, treat information and finally measure the “credit default risk”. Rating behaviors reflect also CRAs’ strategies that help themselves to distinguish one agency from the other(s).

It should be noted that rating behaviors of one single CRA to is also under the time evolution. Blume, Lim, and MacKinlay (1998)⁵⁷⁰ and Baghai, Servaes, and Tamayo (2014)⁵⁷¹ all documented that CRAs were rating more stringently, with time going by.

Firstly, this change may be linked to the regulatory climate⁵⁷² after a variety of scandals (such as Enron). Alsakka et al. (2015)⁵⁷³ are among the first researchers to take the new version of European CRA regulation into consideration. To tackle with the ongoing crisis, *ESMA* adopted a more interventionist way to regulate the rating market. This supervision philosophy has certain effects on agencies’ rating

and H. Xia, 2012, The issuer-pay rating model and rating inflation: Evidence from corporate credit ratings. *Working Paper*, P14.

⁵⁷⁰ Blume, Marshall, Lim, Felix and MacKinlay, Craig, 1998. The Declining Credit Quality of U.S. Corporate Debt: Myth or Reality?, *The Journal of Finance*, Vol LIII, No.4.

⁵⁷¹ Baghai, Ramin P., Servaes, Henri, Yamayo, Ane. 2014, Have Rating Agencies Become More Conservative? Implications for Capital Structure and Debt Pricing. *Journal of Finance*, Vol. 69 Issue 5, P. 1961-2005.

⁵⁷² Jorion, Philippe, Liu, Zhu and Shi, Charles. 2005, Informational effects of regulation FD: evidence from rating agencies. *Journal of Financial Economics* 76, P. 329. They found that the “Regulation FD did more than preserve the “status quo ante” as argued by Moody’s.

⁵⁷³ Alsakka R. et al. 2015, Market Impact under a New Regulatory Regime. *Economic Notes by Banca Monte dei Paschi di Siena SpA*, vol. 44, no. 2-2015: pp. 275–307.

behaviors.⁵⁷⁴

Secondly, it may be simply because CRAs adjust⁵⁷⁵ ratings according to accounting principles in reference⁵⁷⁶, since financial ratios matter great deals to the raters. In other words, rating evolution emerged naturally with an increase of reporting quality (Jorion, Shi, and Zhang, 2009)⁵⁷⁷. It could be a great concern for developing market as that in China. We will explore this point more in the following Subsection 2 of Section 2 when talking about Chinese institutional factors.

1.2. Chinese local rating market analysis: What is different from global CRAs?

Last Subsection 1.1 was dedicated to the discussion of literature review, essentially from global CRAs' experiences in the developed markets, and this Subsection 1.2 will focus on Chinese local rating industry, which itself represents several specialties.

There are two principle ideas which guide the Subsection 2: coexistence of local and global CRAs in Chinese rating market (Point 1.2.1) and “strategy of distinctiveness” (Point 1.2.2-Point 1.2.5) among Chinese local CRAs.

Firstly, there is the coexistence of two types of CRAs: “Big Three” (local) and domestic/local CRAs.

The study of Shin & Moore (2003) talked about the global-local separation in rating in the case of Japanese institutional environment.⁵⁷⁸ However, “the rank correlations (of ratings from Japanese local CRAs and from global CRAs) are relatively high, and the correlations do not follow country lines (Japan and USA).” They suggested that

⁵⁷⁴ *Idem*, the pioneering study provides us with a series of conflicting evidence. That means the evolution of rating standards under a change of regulatory climate still needs a long way to go, before it becomes a new pattern.

⁵⁷⁵ For example, to take the financial arrangements “off-balance sheet”, into the consideration.

⁵⁷⁶ Kraft, Pepa, 2015a, Rating Agency Adjustments to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads, *Accounting Review*, March 2015, v. 90, Issue 2, P. 641-74.

⁵⁷⁷ Jorion, Philippe; Shi, Charles; Zhang, Sanjian. 2009, *Review of Accounting Studies*, Vol. 14 Issue 1, p123-160. 38p.

⁵⁷⁸ Shin, Yoon S., Moore William T. 2003. Explaining credit rating differences between Japanese and U.S. Agencies. *Review of Financial Economics*, issue 12. Page 327-344.

the separation was due to “a mean shift”⁵⁷⁹ and in fact, “relative credit ratings are quite homogeneous across all rates”. In other words, the rating behaviors of Japanese local and global CRAs are not fundamentally different, in the sense that we can only level up the ratings on the basis of ratings given by global CRAs.

In contrast, Jiang and Paker (2017) found “the correlation coefficients between (Chinese) domestic and global agency ratings are much smaller” compared the correlations across global-local CRAs.⁵⁸⁰

Secondly, in the same study, Jiang and Paker (2017) also found “the correlation of Moody’s and S&P’s global ratings is close to one”⁵⁸¹, but this was not the case for local CRAs. The rating behaviors among Chinese local CRAs are different one from the other. Their findings have driven us to pay attention to differences inside Chinese local CRAs, in addition to differences between local and global CRAs.

We collected information from the database Bloomberg and we are able to get data of Chinese local CRAs: Xinhua, Chengxin, Lianhe (United Rating), Dagong, SBCR (Brilliance Credit Rating and Investors Service) and CCRC (China Credit Rating Co.)⁵⁸². Except Xinhua, the rest of local CRAs were still able to survive in the competition-driven Chinese rating environment (Point 1.2.1).

We are going to put these Chinese local CRAs into four types of “strategy of distinctiveness”, which will be developed more in detail in the following points:

- ✓ *Distinctiveness by CRA’s governance: CRAs with joint-venture with global CRAs and historical or current connections and partnership, (Lianhe, Chengxin, and Xinhua) vs. CRAs with state background, such as SFE and Golden (Point 1.2.2);*
- ✓ *Distinctiveness by flattering ratings of new-market entrants: CRAs newly-entering into the local rating market (SBCR), with a fierce competition with earlier-existing CRAs, such as Lianhe and Chengxin (Point 1.2.3);*

⁵⁷⁹ *Idem*, 342.

⁵⁸⁰ Jiang, Xianfeng and Paker, Frank, 2017, Credit Ratings of Domestic and Global Agencies: What Drives the Differences in China and How are They Priced? BIS Working Paper No. 648, Page 13.

⁵⁸¹ *Ibid.*

⁵⁸² Pengyuan, Gloden, SFE are not included into our sample because of the missing data from Bloomberg.

- ✓ *Distinctiveness by business internationalization: Dagong (Point 1.2.4);*
- ✓ *Distinctiveness by conflicting (investor-pay) business model: CCRC (Point 1.2.5);*

In the first Part One §1, we have discussed the importance of “distinctiveness”, as the balancing strategy to the “isomorphism”, when the pressure of institutional changes is big. It is the case in Chinese local rating market.

The objective of the following points (Point 1.2.2-1.2.5) is to illustrate these four kinds of distinctness and to understand how each Chinese local CRA choose specifically their “strategies of distinctiveness”, in order to survive in the competition-driven environment that we will discuss in the first Point 1.2.1.

1.2.1. Survival in the competition-driven environment: comparison with European cases

European rating market

On one hand, European Small-Medium CRAs mainly concentrate on their activities in their home state. They rarely conduct business across the broader to other *Member States (MS) of European Union (EU)*, as documented by the *Technical Report (2013)*⁵⁸³. It means that there was an absence of competition among European local CRAs. On the other hand, “Fitch, Moody’s and S&P’s rating activities cover (geographically) all MS of the EU”⁵⁸⁴ with all types of ratings. It means that there was a direct presence of competition between “Big three” with European local CRAs.

When we turn attention to the most recent annual reports of ESMA in 2014 and 2015⁵⁸⁵, it is found that the market share of CRAs in Europe remain largely unchanged. “Big Three” still occupy most business (S&P: 39.69%/45%, Moody’s: 34.53%/31.29% and Fitch: 16.22%/16.56%). The rest is allocated to European *Medium & Small-sized CRAs* and only CERVED Group S.p.A. (Italy) and Economist

⁵⁸³ ESMA, the feasibility of a network of Small and Medium-sized CRAs, 2013.

⁵⁸⁴ *Idem*, Geographical scope of activities, page 9.

⁵⁸⁵ ESMA, *Technical Advice on Competition, Choice and Conflicts of Interest in the CRA industry*, 2014 and 2015.

Intelligence Unit Ltd. (UK) and DBRS Ratings Limited (UK) occupied more than 1 % of the entire rating market turnovers in the historical registers of ESMA.

This kind of “inertia” in Europe could be explained by the barriers for new-entrant-CRAs. These barriers contain at least two angles of understatement.

First of all, we can argue that know-how and R&D (research and development) increase the level of access to the highly professional business.

Secondly, there are legislative demands to be taken into consideration. Compared to “Big Three”, the compliance and supervisory fees could cost a fortune⁵⁸⁶ for European local CRAs even with some regulatory exemptions, not to mention the money needs to be invested for the further business development and activity expansions.

Finally, from the point of view of rating users, CRAs with less seniority (new-market entrants) lack the natural credibility capital. Rating-users usually don’t have enough confidence to solicit ratings from these new CRAs.

Chinese rating market

From these two aspects to understand the rating market in Europe, we can argue, taking the Chinese case, that the situation is the opposite: there is fierce competition among Chinese local CRAs; while there is absence of direct competition between local and global CRAs.

Other points to illustrate, in comparison with European situations are:

Firstly, Chinese local CRAs are not constrained by their rating technical competences.

On one hand, they started the business with partnership or cooperation with “Big Three”. The apprentice period enabled them to learn from their global counterparts. We will show some example in the following Point 1.2.2. *On the other hand*, CRAs bring other perspective, especially political and social consideration in addition to the economic and financial ones, into the rating process. They recompense the technique

⁵⁸⁶ *Idem*, in technical rules of 2014, note 358: “Some smaller CRAs have estimated that their compliance costs may account for up to 10% of their total annual revenues”.

retards by their compared advantages, better understanding of the local market institutional environment among others, vis a vis their global competitors.

Secondly, the “reputation effect” of local CRAs is not a problem in China, because the reputation mechanism is rather weak here. Chinese local rating users don’t have much experience of rating products, compared to their international counterparts.

Finally, it seems that issuers could have more “negotiation power” in soliciting ratings in front of local CRAs than in front of global CRAs. Some conceptual studies showed that Chinese rating market remained a “buyer’s market”: when the competition was fierce, CRAs intended to put the satisfactions of clients on priority.

Chinese rating regulators never stop criticizing “Big Three”, taking examples of their notorious roles in the financial crises and recurrent misjudgments in emerging markets. It is not surprising to see that Chinese issuers tend to solicit ratings more from local CRAs, than from “Big Three”. However, it seems that global CRAs were still companies’ first choices, when they could go public on *Hong Kong Stock Exchange* (HKSE). In other words, the market segmentation is an important institutional element to be considered.

The recent fast development of Chinese local rating market is very promising, thanks to the legislative and regulatory wishes. They imagine being able to have a rating “independence”, in order to get rid of the financial “domination” of “Big Three” in the rating business.

Consequent to the economic and financial politics, “Big Three” are excluded from Chinese mainland rating business. It’s true that they are the main players on the international level; However, since they are not officially recognized by Chinese regulatory authorities (by accreditation), Chinese local agencies are the only CRAs able to get license of practice. Hence, the latter dominate the mainland rating market.

To conclude, there is an absence of direct competition between global and local CRAs; while the indirect competition (under the form of joint-ventures) is going to be discussed in the next Point 1.2.2.

1.2.2. Distinctiveness by CRAs' governance

From the retrospective point of view, Chinese local CRAs started their business by joint-ventures with global CRAs or corporation under various forms.

- ✓ The acquisition of Moody's (49% of the stock of CCXI) was approved by *Ministry of Commerce of China* on the 28th of August in 2006.
- ✓ Fitch established a partnership with Lianhe Credit in 2008 with 49% votes in hand.
- ✓ SFE was initiated in 1988 by the Shanghai Academy of Social Sciences. The agency formed an alliance with *Xinhua Financial Network (XFN*⁵⁸⁷*)* in 2002 till 2008⁵⁸⁸ (Each of them had 50% of the business, which is against the rating regulation by saying that foreign capital should have less than half of the shares of any Chinese local CRA. It is indeed the case for Moody's and Fitch. They both have 49% of the agency shares.)

In addition to that,

- ✓ Dagong once had a “strategic collaboration” with Moody's from 1999 to 2001⁵⁸⁹, in order to establish quickly their rating system. It published a report calling “Dagong credit rating methodology”⁵⁹⁰ with the American giant by combining the advanced techniques, international experiences with Chinese capital market situations⁵⁹¹. This kind of collaboration has terminated when Dagong decided to go after the strategy of business internationalization with “a different perspective” that we will discuss later in the Point 1.2.3.

⁵⁸⁷ Its reputation was tainted by a “default accident” of rated bond. Both regulator and market started to question its creditworthiness. The information is from Fan Junli, journalist of “Finance (Caijing.com.cn)”, Xinhua thought about the retirement from SFE. Access by the author on 10/06/2017.

at <http://www.caijing.com.cn/2008-05-14/100061503.html>. (In Chinese).

⁵⁸⁸ Xiao, YanRu, 2008. Xinhua Financial Network is negotiating the dropout of shares of Shanghai Far East Credit Rating. China Business News. Access by the author on 15/07/2016 at <http://tech.qq.com/a/20081223/000063.htm>.

⁵⁸⁹ Kennedy, Scott. 2003. China's Credit Rating Agencies Struggle for Relevance. *China Business Review*, 36–40.

⁵⁹⁰ The information is translated by the author from the official website.

at <http://www.dagongxypj.com/aboutus.php?tid=87>, access on 29/04.2015. (In Chinese)

⁵⁹¹ The information is translated by the author from the web <http://business.sohu.com/29/05/article13260529.html>, The author gets access to the information on 27/04/2015. (In Chinese)

- ✓ SBCR has an ongoing technical cooperation and exchanges of know-how with Standard and Poor's (S&P)⁵⁹².

These examples all showed that:

On one hand, Chinese four largest CRAs have more or less, historical or current connections and partnership, either in ownership, in management or in business execution, with “foreign oligopolists”;

On the other hand, we can easily find Chinese local CRAs' close relationship with governmental institutions:

- ✓ There are seven organizations with governmental background on the board of Dagong⁵⁹³.
- ✓ In 2013, *SFE* opened the ownership to China Development Finance Promotion Association. The institution, which is established by China Development Bank, has becoming the controlling shareholder⁵⁹⁴, after Xinhua withdrawing its investments into the rating activities. The entire evolution shows that the entire Chinese rating activities have swift back from openness to international capital to national control.
- ✓ Golden was firstly founded on the August of 2005, and then on 2008, *China Orient Asset Management (COAM)* starts to hold the ownership of the agency. It should be noted that the *COAM* is a State solely-holding financial institution. It belongs to the *Ministry of Finance of the People's Republic of China* and the *National Council for Social Security Fund*.

Hence, there is a legitimate question to ask if these CRAs have certain economic patriotism to favor issuers with national background compared to CRA with foreign partnership.

⁵⁹² The author learned the news from a telephone interview with the director of Human Resource.

⁵⁹³ They are as follows: China Society for Finance and Banking (CSFB), Chinese (Beijing) Academy of Social Sciences, Chinese "Scientific and Technological Committee" of Aeronautics and Astronautics, Development Research Center (DRC) of the State Council, China Association of enterprises, Chinese Enterprise Management Association (CEMA), International Commercial University.

⁵⁹⁴ The information is translated by the author from the official website, and the author gets access to the information on 16/07/2016, at http://www.sfecr.com/ydgk/index_13.aspx.

1.2.3. Distinctiveness by flattening ratings of new-market entrants

Most of Chinese local CRAs exercise their rating business essentially on the local rating market without the diversion of interest to the international market (except the case of Dagong, that we will discuss the example in the next Point 1.2.4). Hence, they have no choice but to compete to survive in the presence of fierce local competition.

Chengxin (CCXR and CCXI), Dagong and Lianhe (Lianhe/United Ratings and China Lianhe Credit Rating) are Chinese local “Top Three” with the earliest presence and longest history. This dominance became less remarkable with the time’s going.

The N.1 on the rating market: China Chengxin has lost 70% of its market share⁵⁹⁵, and still conceding to the fast growing new-entrants⁵⁹⁶, such as SBCR and Pengyuan. Compared to other leading local CRAs, they were once insignificant small agencies on the marginal market position to the entire under-developing rating industry.

Those CRAs are often criticized for the alleged bad quality of ratings. “All of these malpractices smear the credibility of the entire business”, comment documented by the Vice-President of *Credit Information System Bureau (CISB)*⁵⁹⁷.

The CEO of Chengxin also blamed some of their competitor. He complained that the drop of their once-overwhelming market share was due to the irresponsible and daring rating behaviors of new-entrants.

⁵⁹⁵ Fei Sun & Tao Han. 2012. “The Awkwardness of Chengxin”. *Financial World*, at <http://fw.xinhua08.com/a/20120828/1011189.shtml>. (In Chinese)

⁵⁹⁶ Peng, Xiukun., 2015, *supra*, P175.

⁵⁹⁷ *Ibid.*

1.2.4. Distinctiveness by business internationalization

Based on the experience obtained from the global CRAs, Chinese local agencies are able to go far on the future horizon outside the border of the local market. Here we take the example of Dagong, as the pioneer of international rating market.

Firstly, On the November of 2002, just a year after the end of its corporation with Moody's, Dagong published the "Handbook of Chinese Corporate Credit System Construction" by its own capacity. The document serves as a reference for governmental administrations, corporations and academic institutions firstly in the history of Chinese credit rating industry.⁵⁹⁸

Then, Dagong started its journey of internationalization and met the biggest challenge during the application for the registration of *NRSRO (Nationally Recognized Statistical Rating Organization)*.

Dagong was refused by the *SEC (Securities and Exchange Commission)* in 2010 "because, irrespective of the jurisdictional question, it does not appear possible at this time for Dagong to comply with the record-keeping, production, and examination requirements of the federal securities laws."⁵⁹⁹

Dagong has not been discouraged by these defeats and in response to the decision of the American regulator, "Dagong released a statement on 25/09/2010, condemning the SEC for rejecting its application as they are unable to handle cross-border regulation and oversight. The firm said that the SEC is discriminatory against Chinese credit rating agencies and the company is considering legal action against the SEC."⁶⁰⁰

As "the first firm to be denied by the SEC since the regulations governing the

⁵⁹⁸ The information is translated by the author from the official website, at <http://www.dagongxypj.com/aboutus.php?tid=87>, access on 29/04.2015. (In Chinese)

⁵⁹⁹ "Order Denying, in the Matter of the Application of Dagong Global Credit Rating Co., LTD. for Review of Application for Registration as NRSRO", Securities Exchange Act of 1934: Rel. No. 62968 / September 22, 2010, Administration Procedure File No. 3-13860, SEC, USA.

⁶⁰⁰ A New Regulatory Framework for Credit Rating Agencies, 2011, *Global Credit Review*. Vol.1. P.15-31. *Risk Management Institute (RMI)*. National University of Singapore.

application process went into effect in 2007”⁶⁰¹, Dagong shows its determination to continue the strategy to distinguish itself from competitors by business internationalization and it uses “a different perspective”⁶⁰² on the global rating market as the slogan for business.

Its worldwide expansion till now could be introduced as following steps:

- ✓ Dagong established a subsidiary Dagong Global Credit Rating (Hong Kong) Co., Limited and it “was granted a Type 10 License (providing credit rating services) by the Securities and Futures Commission of Hong Kong (SFC) in July of 2014”.⁶⁰³
- ✓ Dagong Europe, established and financed by Dagong and Mandarin Capital Partners⁶⁰⁴ in 2011, is recognized by the European Securities & Markets Authorities (ESMA, the sole rating regulator in Europe) on the 13/06/2013. One year later in 2014, Chinese Dagong has acquired the rest of the shares from the Mandarin Capital Partners and being the sole shareholder of its European branch.⁶⁰⁵
- ✓ Dagong Global Credit Rating formed Universal Credit Rating Group in Hong Kong 2013 with RusRating (Russia)⁶⁰⁶ and Egan-Jones Rating (USA). “The UCRGs aims to reform the current international credit rating regime, create the initial framework for a new system and plans to provide credit risk information on all the world’s economies by 2025”⁶⁰⁷. Their ambition is to defeat the “Big Three” on the international level.
- ✓ To be noted that Dagong is one of the rare Chinese local CRAs that has the well-maintained and often-updated English version official website.

⁶⁰¹ Dagong Fires back at SEC, Wall Street Journal. September 27th, 2010. *Ibid.*

⁶⁰² The information is got from the official website of Dagong Europe, at <http://www.dagongeuropa.com/>, access on 16/07/2016.

⁶⁰³ The information is got from the official website of Dagong Hong Kong, at http://www.dagonghk.com/AboutUs.php?act=list&parent_id=19&menu_id=251, the author gets access to the information on 16/07/2016.

⁶⁰⁴ “Mandarin Capital Partners S.C.A. SICAR is a co-sponsored fund of China Development Financial Co., Ltd and Mandarin Capital Management SA specializing in investments in mid and late ventures, management and leveraged buyouts, management buy-in, and recapitalization in mid-sized unlisted companies”, from the Bloomberg, at <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=29180955>.

⁶⁰⁵ Xinhua, Dagong Global eyes enhanced placement of Dagong Europe, 08/12/2014. The article is accessed by the author on 25/02/2017, at http://www.chinadaily.com.cn/bizchina/2014-12/08/content_19041019.htm.

⁶⁰⁶ The Moscow Times, RusRating Owner sells out to develop HK Rating Agency, 08/12/2013, at <https://themoscowtimes.com/articles/rusrating-owner-sells-out-to-develop-hong-kong-rating-agency-30299>.

⁶⁰⁷ Bian, Jing, 2015. Regulating the Chinese credit rating agencies: progress and challenges, *Journal of Money Laundering Control*, Vol. 18, Issue 1, pp. 66 - 80.

1.2.5. Distinctiveness by conflicting business model

The conflict of interest existing in the classic rating business is obvious. International conventional pricing policies: issuer-fees model makes issuers the direct clients of CRAs; especially “when the issuers depend heavily on debt financing,” raters could be “responsive to firm (the rated) preferences” (Becker & Milbourn, 2011, P18). The profits chasing is also one of the risks to decrease rating quality (Jiang et al., 2012).⁶⁰⁸

Different from the majority of the international agencies, Egan Jones Rating Company (EJR) is one of the first CRAs adopting investor-fees model⁶⁰⁹. Beaver (2004)⁶¹⁰ founded EJR has better rating quality than Moody’s and believed it resulted mostly from the property of certification and contracting climate⁶¹¹. Strobl and Xia (2012)⁶¹² attributed the results to the fact that EJR has less incentive to inflate rating than S&P⁶¹³.

When we turn to the case in Chinese rating market, we noticed the fact that the entire members of Chinese *NAFMII* (National Association of Financial Market Institutional Investors)⁶¹⁴ have invested 50 million yuan to establish CCRC. It is considered as a *non-profitable organization (NPO)* and offers public service for the entire market.

It is the first and only Chinese CRA which adopts the investor-fees model, which seems to be a better way to avoid the conflict of interest between the issuers and CRAs, especially when the competition is severe, and the reputation mechanism has not yet been properly established to protect the interest of investors.

⁶⁰⁸ Jiang, J., M. Stanford, and Y. Xie, 2012, Does It Matter Who Pays for Bond Ratings? *Journal of Financial Economics*, 105: 607–621.

⁶⁰⁹ Möllers, *supra*. P340. Besides, it’s also an agency that offers no longer the service of solicited ratings.

⁶¹⁰ Beaver, W. H., C. Shakespeare, and M. T. Soliman, 2006, Differential Properties in the Rating of Certified Versus Non-certified Bond-rating Agencies, *Journal of Accounting and Economics*, 42, 303–334.

⁶¹¹ *Idem*, P332.

⁶¹² Strobl, G. and H. Xia, 2012. *supra*.

⁶¹³ It should be highlighted here, that the reputational concern is an important element to be taken into consideration when we talk about the rating quality. In the later study, Xia (2013) found that the S&P improved, which he explained eloquently that neither business model nor competition alone is sufficient to guarantee the high quality of information content. In other words, they all among the determinants of CRA’s behavior and the external market climate where they are situated may make them to choose one over the other.

⁶¹⁴ A trade group that operates under the central bank (People’s Bank of China, PBoC) in A New Regulatory Framework for Credit Rating Agencies (RMI staff article), *Ibid*.

Just as suggested by Cornaggia & Cornaggia (2013)⁶¹⁵, the agency with investors-fees business model “provides a more accurate rating with more timely adjustment compared to issuer-fees CRAs, according to the study that they compared the conflicting business model of Moody’s and of Rapid Ratings⁶¹⁶. The rating quality of Moody’s is mitigated by the stability pursuit from issuers, whose intention could be explained by the conflict of interest inherent in the business model.

However, its distinctiveness by business model cannot prevent all kinds of problems, for example:

- ✓ Some financial institutions, such as investment banks play a role in underwriting securities (representing thus interests of issuers on the primary market) but they are also investors for debt instruments and products on the secondary exchange market. Consequently, another conflict of interest could be formed between CRAs and this kind of market actors with both function of issuers and investors.⁶¹⁷
- ✓ Besides, as Pagano and Volpin (2009) tried to explain that large investors may still have some sorts of influence on CRAs’ behaviors, for instance, “to avoid or delay rating downgrades securities in which they have invested heavily”⁶¹⁸. Of course, it should be admitted that an agency can’t take an aligned position to favor all of its investors in accordance. It is because investors don’t share the same investment strategy at the same time, which make the conflict of interest inside the investor-fees model less severe than issuer-pay model. However, there exists also high possibility that institutional investors imitate one to another in constituting their investment portfolio.
- ✓ And in practice, just as what said by Vice-President of PBOC, Shiyu Liu: “it’s really difficult (for CCRC to) live on the competition-driven environment nowadays

⁶¹⁵ Cornaggia, J. and Cornaggia K.J. 2013, Estimating the Costs of Issuer-Paid Credit Ratings, *The Society for Financial Studies*.

⁶¹⁶ “In contrast, Rapid Ratings produces a cardinal score intended to reflect absolute financial health and its ratings are thus more sensitive to macroeconomic conditions.” in *idem*, P2231.

⁶¹⁷ Rongping Hu, 21/10/2011. Chinaratings is investigating the new business model: investor-fee. *Economic Observation*, at <http://www.eeo.com.cn/2011/1021/214051.shtml>. (It is translated by the author from Chinese).

⁶¹⁸ Pagano and Volpin, 2009, Credit Ratings Failures: Causes and Policy Options. *Working paper*, P16.

essentially by the earning from the investors”⁶¹⁹. The observation may explain the reason why CRAs changed their pricing policies at the first place. With the high technology appeared at the 70s, investors are used to get rating service for free. In order to survive on the market full of competition, there is no surprise to see inflated ratings or CRAs’ flattery actions in their ancillary activities.

1.3. Constitution of Hypotheses (I)

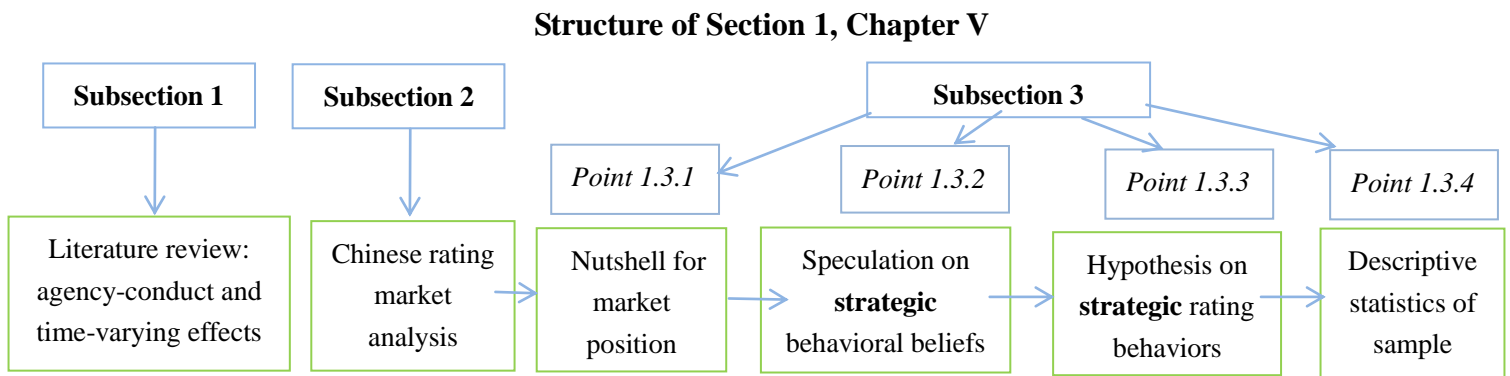
In the Subsection 1.2, we have analyzed Chinese local rating market. We have learned four types of “strategy of distinctiveness” under the competition-driven rating environment. According to the market position, each CRA is convinced (strategic behavioral beliefs) that it should distinguish itself from the rest of the competitors. Its strategic rating behaviors are chosen to be able to survive on the market full of competition, accordingly. That justifies the reason why we cannot take Chinese local CRAs entirely, without differentiate them one from the other. If we want to conduct a rating study on Chinese market, it is important to understand their strategies in the upstream.

In this Subsection 1.3, we are able to summarize the market position of each local CRA (Point 1.3.1) and starting from it, we may speculate their strategic behavioral beliefs (Point 1.3.2). We suppose afterwards that it will lead CRAs to make the choices of their strategic rating behaviors (Point 1.3.3) and we will give more details for the strategic choice of rating determinants in the next Section 2 of Chapter V. The descriptive statistics will be presented in the end (Point 1.3.4).

The following mind-map shows four steps to constitute the first testing hypotheses:

⁶¹⁹ 21st Century Economic Report, 2010, Chinaratings opened the shop and it’s hard to promote the investor-fee business model, Guangzhou, 30/09/2010, at <http://money.163.com/10/0930/00/6HPOP4Q600253B0H.html>, access on 16/07/2016, (it is translated by the author from Chinese).

Figure V.1.1



***Figure V.1.1 is made by the author**

1.3.1. Nutshell for rating market position

We would like to conclude the market position of CRAs, after the discussion of Chinese local rating analysis in the Section 2.

Firstly, we will start from the governance (ownership, among others) of CRAs to see how local CRAs to choose between the partnership with “Big Three” or State-backed ownership.

On one hand, the partnership with international “Big Three” is much criticized by national authorities⁶²⁰. The president of PBoC⁶²¹, who is piloting policies for the entire credit rating industry, was worried to point out that: from the point of view of national strategies, it is necessary to see the way for developing countries to get rid of the western control of interest groups. Of course, his concerns are essentially based on political, social and economic considerations, instead of purely financial ones.

Table V.1.1

The year of existence for Global CRAs

Global Big three	S&P National	Others global
Since the beginning of 1988	Since 2014	R&I ⁶²² : 1998 CI ⁶²³ : 2008 JCR ⁶²⁴ : 2015

⁶²⁰ A speech of Zhou Xiaochuan, President of Bank of China, at China Economic Outlook Forum in 25/12/2011. (In Chinese)

⁶²¹ The speech of Zhou Xiaochuan at China Economic Outlook Forum in 25/12/2011.

⁶²² Rating and Investment Information (Japan).

⁶²³ Capital Intelligence (Cyprus).

One the other hand, Chinese local agencies are doubted for their patriotism inclination. This kind of “national patriotism” could also be explained by close connections between CRAs and institutions with state background and/or the intervention of either national or local authorities into the rating market.

Secondly, under the competitive-drive environment of Chinese local rating market, homogeneous service made rating products hardly non-replaceable, so the fidelity of clients is impossible. In other words, rating users, such as issuer, may select the most suitable rating service among all possible offers on Chinese local rating market (we call this kind of strategy of “rating shopping” that we have discussed in the Section 3, Chapter IV). Hence, rating users do not bother to stick to one CRA the entire time.

Chinese local CRAs depend largely on the profits from rating activities, especially for larger issuers (Fridson, 1999)⁶²⁵, issues with more rating fees (more profitable service)⁶²⁶ or issues by complex issuing companies⁶²⁷.

The study of Wang (2012) showed empirically that CRAs have more natural incentives to “inflate” under this circumstance. This evidence is confirmed again by an applied “reputation models in games theory” in the research of Mathis (2008), “when the fraction [...] becomes large, the CRA is always too lax with a positive probability [...]”⁶²⁸.

SBCR, among other new-entrants, is accused to rate artificially better than it should have. “Rating inflation” is also one of the main concerns why investors are cautious to take multi-ratings, which we have already discussed in the Section 3 of Chapter IV.

⁶²⁴ Japan Credit Rating Agency (Japan).

⁶²⁵ Fridson, Martin S., 1999. Why Do Bond Rating Agencies Exist? Extra Credit (Merrill Lynch), November/December, Page 14, in White, Lawrence J. 2001. The Credit Rating Industry: An Industrial Organization Analysis.

⁶²⁶ Wang, Tao, 2010, Determinants of Corporate Default: Systematic Distress, Sectoral Distress and Credit Contagion. 23rd Australasian Finance and Banking Conference 2010 Paper, P23.

⁶²⁷ Skreta, Vasiliki and Laura Veldkamp, 2008, Rating Shopping and Asset Complexity: A theory of Ratings Inflation, *working paper*.

⁶²⁸ Wang, 2010, *supra*.

Last but not least, under the process of Chinese local CRAs’ institutionalization, Dagong and CCRC tried to distinguish themselves by business internationalization for the first one and conflicting (investor-paying) business model for the latter.

All elements combined, we got the summary table to speculate the market position of Chinese local CRAs, as follows:

Table V.1.2

Chinese local rating market position with the year of exercise

Name of Chinese local CRAs	Year	Market position
Xinhua	2002-2009 ⁶²⁹	Half of the agency shares were hold in hands of non-Chinese continental investors.
Lianhe and Chengxin	From 2006	Chinese duopoly by joint-ventures with global CRAs.
Dagong	From 2007	The most media-exposed Chinese local earlier- existing CRA, distinctiveness by business internationalization. Together with Lianhe and Chengxin, they are Chinese “Top Three”.
SBCR	From 2007	Fast rising new-market entrant with the alleged rating inflation.
CCRC	From 2014	New-market entrant with strategy of distinctiveness by conflicting investor-paying model.

⁶²⁹ It is a CRA with foreign capital with short existence. It had partnership with another CRA with state-owned background. Xinhua ceased its rating activities because one default accident of its rating harmed fundamentally its reputation and it is believed that Chinese rating regulations were not favoring a HK-based agency, listed on Japanese stock market.

1.3.2. Speculation on strategic behavioral beliefs: how does reputation mechanism deal with the competition?

It should be noted that there is “a fierce local competition” on Chinese rating market. The findings of Bae, Kang and Wang (2015)⁶³⁰ confirmed that the competition⁶³¹ would drive more lax rating and affect negatively the market welfare⁶³².

In the case of international practices, reputation may be the counter-power to prevent any outrageous flattering rating given by CRAs to secure the loyalty of their clients.

In the case of Chinese rating market, nevertheless, “unrealistically high ratings”⁶³³ for rated entities is not a rare phenomenon. It’s worrying to see “some Chinese local CRAs yield to clients for short-term interests at the cost of rating quality”⁶³⁴. We can imagine that in order to keep their marginal market position in the competition with the earlier-existing CRAs, with “reputational capital”⁶³⁵ (Partnoy, 1999 and Moller, 2014), new-market entrants, without this kind of natural connection with clients, are more logic to choose strategically to cater to⁶³⁶ their issuers (under the traditional issuer-fees business model), especially when “there are no substantive requirements that its performance measurement statistics or its procedures and methodologies be of a certain quality”⁶³⁷. From the point of view of rating users, it is also obvious that users of ratings are more willing to solicit ratings from CRAs that they know better,

⁶³⁰ Bae, Kee-Hong, Kang, Jun-Koo and Wang, Jin., 2015. “Does Increased Competition Affect Credit Ratings? A Reexamination of the Effect of Fitch’s Market Share on Credit Ratings in the Corporate Bond Market”, *Journal of Financial and Quantitative Analysis*, Vol. 50, No. 5, P. 1011–1035. In his study, S&P increased the rating quality after the new competitor entered the market.

⁶³¹ Camanho, N., Deb, P., and Liu, Z., 2010, Credit Rating and Competition, *Working Paper*. In his study, only if the “new entrant has a higher reputation than the incumbent”, The established players would have the incentive to defend their reputation and consequently maintain a high level of rating.

⁶³² *Ibid.*

⁶³³ Poon, Winnie P.H. and Chan Kam C. 2007. *supra*.

⁶³⁴ “The trade-off between maintaining reputation (to increase profits in the future) and inflation ratings today (to increase current profits)” in Camanho, Deb, and Liu, 2010, *supra*.

⁶³⁵ Partnoy, Frank: The Siskel and Ebert of Financial Markets? 1999, Two Thumbs Down for the Credit Rating Agencies, *Washington University Law Review*. Volume 77, Issue 3, P628.

⁶³⁶ “The trade-off between maintaining reputation (to increase profits in the future) and inflation ratings today (to increase current profits)” in Camanho, Deb, and Liu, 2010, *supra*.

⁶³⁷ Lynch, Timothy, E. 2010, Deeply and persistent conflicted credit rating agencies in the current regulatory environment, *Legal Studies Research Paper* 33, Indiana University. P268.

trust, and feel satisfied with through previous ratings.

What makes the things worse is that, the reputation cost⁶³⁸ due to the regulation violation is very limited (Partnoy, 1999) in the “underdeveloped and overprotective domestic rating market” (Poon and Chan, 2007). That means that the new-market entrants are not afraid that the “rating inflation” would cost them future business. Hence, they tend more to conquer quickly the market share than to consider the construction of healthy rating market in the long term, on the base of high rating quality. With the presence of competition among local CRAs, the rating inflation among earlier-existing Chinese local CRAs is also possible (detailed literature review and theories on the topic, can be found in the Point 1.1.2).

On the other side of the story.

There exists the other optimistic interpretation of the consequences of competition. It may not necessarily mean to hinder the “reputational commitments for quality”⁶³⁹. For the sake of financial safety and public interest, it is not surprising to see the behavioral beliefs of Chinese local CRAs distinguish from those of their international counterparts. It seems reasonable to argue that beyond a purely commercial profit pursuit, they could also serve as an instrument to facilitate corporate financing to certain targeted industry or listed companies.

In that case, it may be easier to understand the observations of Kennedy (2003)⁶⁴⁰ that “inappropriate higher ratings” distributed by Chinese local CRAs than their global counterparts, since CRAs’ role goes beyond the scope of finance, *ad litteram*.

Additionally, it should be noted the fact that, most corporate bond issuers are State-Owned Enterprises (SOEs). Their issues are, *de facto*, secured by the central or local government. In other words, the credit default risk is covered in other way. In other words, the reputation mechanism of Chinese CRAs is functioning vis a vis the State (or other governments of all levels), instead of other market actors.

⁶³⁸ Bolton, Freixas, and Shapiro, 2012, The Credit Rating Game, *NBER Working Paper*.

⁶³⁹ Bar-Isaac, Heski, 2005, Imperfect Competition and Reputational Commitment, *Economic Letters*, 89(2), November, page 167-173.

⁶⁴⁰ Kennedy Scott, 2003, *supra*.

Beyond the trade-off of reputation and competition, CRAs like Dagong and CCRC tried to survive by distinguish themselves to stand out of the process of the institutionalization of Chinese local rating market.

From the point of view of *New-institutional Theory*, in addition to the rating regulation and code of rating conducts, the first pillar of rating business under Chinese institutional environment can be extended beyond the reputation mechanism.

It should be noted that CRAs wield different strategic behavioral beliefs (Point 1.3.2) according to their market position (Point 1.3.1). Their foremost rational of CRAs is always to survive in the competition-driven environment.

We compute the speculations in the following *Table V.1.3*:

Table V.1.3

Name of Chinese local CRAs	Speculation on strategic behavioral beliefs
Xinhua	to keep in good reputation with rating practices in the line with global CRAs, but it is obvious that their behavioral belief led to the fatal consequence: Xinhua ceased to exist after 2009.
Chengxin and Lianhe	-to acquire necessary technical competences from international partners: Moody's and Fitch separately; -to acquire a guarantee for good reputation.
Dagong	-to form the reputation as the icon of "Ratings: made in China" in the eyes of foreign issuers and investors; -as the leader of rating internationalization in the eyes of domestic issuers and investors
SBCR	-focus on domestic market to survive in the competition-driven environment by a purely commercial profit-pursuit strategy; -rating inflation is not a problem on the condition that the strategy helps its continuous survival on the market.
CCRC	to compete with other local agencies with investor-fees business model

1.3.3. Testing hypotheses for strategic rating behaviors

CRAs' strategic rating behaviors are related to their strategic behavioral belief under rating market competition pressure, in addition to the technical competences of rating measurement. Hence, we sort of six null hypothesis (0) and alternative hypothesis (1). Here, we adopt two dynamic visions: rating conducts cross-CRAs and evolution of one single agency cross-time.

And these agency-conduct effect and time-varying effect are waiting to be tested empirically by logistical models in the Section 3. We compute hence the following hypotheses, as presented as follows:

H1 (0): Each CRA rate differently as time going.

H1 (1): The time-varying hypothesis for CRAs' strategic behaviors under Chinese institutional environment is not valid.

H2 (0): Xinhua rated more conservatively than other local CRAs.

H2 (1): Xinhua rated similarly to other local CRAs.

H3 (0): Chengxin and Lianhe rated in the similar way as they have joint-ventures with Big Three (Moody's and Fitch).

H3 (1): Chengxin and Lianhe rated differently one to the other, because of the split-rating among "Big Three".

H4 (0): Dagong rated differently from other local competitors because of its "different perspective" as business slogan during business internationalization.

H4 (1): Dagong rated the same to other local competitors because its principal rating activities remain on the local market.

H5 (0): SBCR gave better ratings compared to earlier-existing local CRAs because it is the new-entrant of the market. It is considered allegedly more flattery.

H5 (1): SBCR rated the same to earlier-existing local CRAs, because their critics have no grounds. On the contrary, we may suppose that leading local CRAs themselves enjoy the benefits of advanced position as a titled agency. It makes them less assiduous in rating activities. As for the new-entrant of market, they have to be more diligent in following and strict in giving ratings of quality.

H6 (0): CCRC rated differently from the rest of local competitors thanks to its investors-fees business model.

H6 (1): CCRC rated the same to the rest of local competitors, independent to its investors-fees business model.

1.3.4. Descriptive statistics of sample

In the Section 2 and 3 of Chapter IV, we started our quantitative study with several preliminary tests to describe statistically the general sample and to explore the multi-rating samples of issuer initial ratings, credit rating changes and watch-lists. Following Bhojraj and Sengupta (2003), we transformed the letter-based credit ratings (2nd and 3rd column) into numerical values (4th column). The only difference was that we stopped the number at 20 and enveloped all ratings CC and CC below to 20, without converting C to 21 and the default (D) to 23.

Graph V.1.2 ⁶⁴¹

Classification by Credit Ratings

Explanation	Standard & Poor's (Modifiers)	Moody's (Modifiers)	Cardinal Scale
Investment grade:			
Highest grade	AAA	Aaa	1
High grade	AA (+, none,-)	Aa (1,2,3)	2, 3, 4
Upper medium grade	A (+, none, -)	A (1,2,3)	5, 6, 7
Medium grade	BBB(+, none,-)	Baa (1,2,3)	8, 9, 10
Speculative grade:			
Lower medium grade	BB (+, none,-)	Ba (1,2,3)	11, 12, 13
Speculative	B (+, none,-)	B (1,2,3)	14, 15, 16
Poor standing	CCC (+, none,-)	Caa (1,2,3)	17, 18, 19
Highly speculative	CC	Ca	20
Lowest quality, no interest	C	C	21
In default	D		23

In this Chapter V, we will continue our quantitative investigation of initial issuer ratings in the sole-rating sample. Compared to Chapter IV,

Firstly, we want to reduce 23 notches to 8, ranging from 0 to 7, corresponding from the worst ratings to the highest rating (AAA). This conversion should be referred to the following *Table V.1.4*. In other words, we try to limit the dispersion of data when the entire sample is not big enough.

Then, we gave the highest number 7 to the highest rating: AAA; while in the previous Chapter IV, the highest number 20 was given to the lowest grade: CC (and below CC).

⁶⁴¹ Jorion, Philippe and Zhang, Gaiyan, 2007, Information Effects of Bond Rating Changes: The Role of the Rating Prior to the Announcement, *The Journal of Fixed Income*, 16 (4) 45-59.

The reason why we allocate the highest value to the safest firm is to facilitate the interpretation of logistic models in the Section 3.

Table V.1.4

Conversion of ratings into numbers

Investment grade				
Explanation	Highest grade	High grade (H)	Upper medium grade (U-M)	Medium grade (M)
Rating scale	AAA	AA	A	BBB
Conversion	7 (6.5-7.5)	6 (5.5-6.5)	5 (4.5-5.5)	4 (3.5-4.5)
Speculation grade				
Explanation	Lower medium grade (L-M)	Speculative Grade (S)	Poor standing	Highly speculative and below
Rating scale	BB	B	CCC	CC
Conversion	3 (2.5-3.5)	2 (1.5-2.5)	1 (0.5-1.5)	0 (<0.5)

As we showed in the following *Table V.1.5*, there are several other points to illustrate in the descriptive data, in terms of number and level of the ratings:

- ✓ **Number:** Most initial (issuer) sole-ratings were given by local CRAs. Global CRAs only counted 2% of entire number. It is not surprising because most issuers rated by global CRAs were rated by multiple times. We have discussed the multi-ratings sample in the previous Section 3, Chapter IV. In the future study, we will extend our study scope in this regard.
- ✓ **Level:** Local CRAs are generally rated largely better than global CRAs. Xinhua noted more closely to its international counterpart, and CCRC, a recent established agency with investor-fees business model, rated less generous than other local CRAs.
- ✓ It should be noted that the following descriptive data did not control the firm-related information, which will be discussed more in detail in the following Section 2, Chapter V.

Table V.1.5

Descriptive table of rating distribution by CRA

CRAs Issuers	Global CRAs				Local CRAs					
	Moo dy's	S &P	Fitc h	JCR ⁶⁴²	Xin -hua	Lian -he	Cheng -xin	Da- gong	SB CR	CC RC
Number (in total 564)	5	3	3	1	75	108	127	86	151	5
Percen- tage %	12 out of 564 2.15%				13%	19%	23%	15%	27 %	1%
Average in rating scale	2.2	3.3	2.3	4	3.48	5.72	5.91	5.79	5.78	4.6
Explanat ion	Spec ulati on	Lower -Medi um	Spec ulati on	Med ium	Low- Mediu m	High grade				
Median	2	3	2	4	4	6	6	6	6	5.5
Min- Max	0-4	2-5	2-3	4-4	0-6	4-7	5-7	5-7	0-7	5-7

The following *Table V.1.6* shows the number of issuers of each level of ratings (0 stands for the lowest rating and 7 for the highest.) The ratings are skewed towards high level (especially, on the level of A and AA). The observation is not surprising, since most initial (issuer) sole-ratings are given by local CRAs. It is also consistent with the descriptive data that we got previously, in the Section 2 of Chapter IV.

Table V.1.6

Descriptive table of rating distribution by rating level

Ratings Issuers	(0) Below CC	(1) CCC	(2) B	(3) BB	(4) BBB	(5) A	(6) AA	(7) AAA
Number (564 in total)	8	2	13	23	32	120	333	33
Percentage %	1.4%	0.4%	2.3%	4.1%	5.7%	21.3%	59%	5.9%

⁶⁴² Japan Credit Rating Agency.

Conclusion of Section 1

The literature review in Subsection 1.1, reveals the differences cross-CRAs, not only from the experiences among leading CRAs' (duopoly) split ratings, but also from the competition with new-market entrants into the rating market. And finally, we will consider the presumptions that strategic rating behaviors of CRAs will evolve with the time going.

Subsection 1.2 presents a rating market analysis:

Firstly, there is the coexistence of local and global CRAs. The presence of competition among local CRAs and the absence with the “Big Three” makes it curious to investigate the market position taken by CRAs on Chinese rating market, especially when the weak reputation mechanism is still prevalent.

Secondly, their interaction and relationship with the *State* has certain influence on deciding their rating strategies.

Additionally, the Chinese rating market is developing very fast. It is presumed that new market entrants give more flattering ratings compared to earlier-existing CRAs.

Last interest here is the further development of rating business in China, with their business internationalization and diversification of business model (from issuers-fees to investors-fees).

Figure V.1.2

Binomial internal governance of CRAs

Formal: ownership to differentiate global/local CRAs	Informal: weak reputation mechanism when the competition is fierce (<i>cognitive</i>)
---	--

* *Figure V.1.2* is made by the author.

The *Figure* above can summarize main elements of Subsection 2, from the reasoning of *New-institutional Theory*, with both formal and informal internal governance of CRAs.

Subsection 1.3 introduces some speculations based on a summary on rating market position of each CRA on Chinese rating market. We hypothesized that CRA would decide different strategic behavioral beliefs accordingly, so as to be able to survive on competition-driven environment. Beyond technical competences, they would then have different strategies rating behaviors, among which they would choose different rating determinants with their proper financial and economic interpretation and information treatment.

A clear picture, from point of view of issuers, will illustrate in the analyses of Section 2 of Chapter V.

Section 2. Strategic choices of rating determinants

2.1. Literature review for information selection

2.2. Introducing Chinese institutional factors

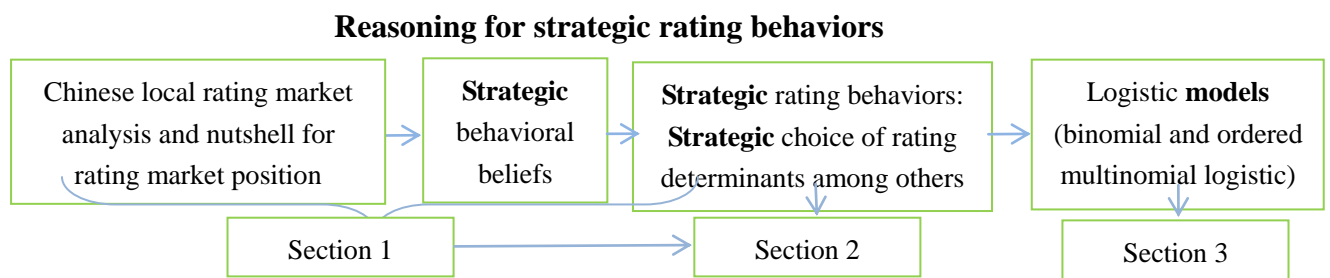
2.3. Constitution of Hypothesis (2)

Introduction of Section 2

Section 1 makes us aware that CRAs' strategic behavioral beliefs are not only decided by technical competences of each CRA in credit risk measurement, but also are influenced by the configuration of their market position.

These strategic behavioral beliefs will make CRAs choose strategically their rating behaviors, which embody the choices of rating determinants in the rating process. The reason why are we going to choose these determinants and how are we to categorize them are two main interest in the Section 2 of Chapter V.

Figure V.2.1



***Figure V.2.1 is made by the author**

More specifically, we will start from the literature review (Subsection 2.1) to the introduction of Chinese institutional factors (Subsection 2.2), along with the consideration of informative quality and voluntary disclosure for both public and private information. All elements combined, we are able to constitute the testing hypotheses (Subsection 2.3) among which, there are variables of firm-specific characteristics, stock market-related information and macro-economic indicators.

2.1. Literature review for information selection

The review will cover all kinds of rating determinants in the literature, from hard information (Point 2.1.1) to soft information, essentially internal and external governance-related information (Point 2.1.2). Finally, we will focus on stock market-related information (Point 2.1.3).

Matthies (2013) made also the same classification in his publication concerning a literature of “determinants of credit ratings”.

We will also argue the connections between the variables with rating activities. In other words, we will employ theories related to rating studies to justify the upstreaming use of all these variables in the literature review, in addition to simply list empirical findings.

The complete vision will lead us to introduce Chinese institutional factors in the next Subsection 2.2. The idea is, firstly, to concretize some variables with Chinese characteristics; secondly, to add some supplementary variables that only make sense under Chinese institutional environment.

2.1.1. Characterizing firm-specific accounting numbers and financial ratios

The possible factors are listed in *S&P Corporate finance Criteria (1996)*⁶⁴³: cash flow protection, financial flexibility, capital structure (leverage), management quality, operating efficiency, competitive climate, regulatory climate and others. Two years later (in 1998)⁶⁴⁴, the agency added variables of profitability, coverage ratio, asset beta to the previous criteria.

The following table is to summarize the financial ratios used in credit rating measurement. We are trying to cover the largest literature review as possible. These articles are listed by chronological order.

Table V.2.1

Firm-specific accounting numbers and financial ratios

Variables	Literature review
	Balance sheet
Size	Cantor and Packer (1996) ⁶⁴⁵ , Blume (1998) ⁶⁴⁶ , Bhojraj and Sengupta (2003) ⁶⁴⁷ , Ashbaugh-Skaife et al. (2006) ⁶⁴⁸ , Poon and Chen (2008) ⁶⁴⁹ , Alali et al. (2012) ⁶⁵⁰ , Bongaerts (2012) ⁶⁵¹ , Aman and Nguyen (2013) ⁶⁵² , Bowe and Larik (2014) ⁶⁵³ , Murcia et al. (2015) ⁶⁵⁴ , Jiang and

⁶⁴³ Baker (2002), table 12 and Ellis (1997) table 11.

⁶⁴⁴ Shin, Yoon S., Moore William T. 2003, *supra*.

⁶⁴⁵ Cantor, Richard and Frank Packer. 1996. Multiple Ratings and Credit Standards: Differences of Opinion in the Credit Rating Industry. *Federal Reserve Bank of New York Staff Reports* 12: p17, note 9.

⁶⁴⁶ Blume, Marshall, Lim, Felix and MacKinlay, Craig, 1998, The Declining Credit Quality of U.S. Corporate Debt: Myth or Reality? *The Journal of Finance*, Vol LIII, No.4.

⁶⁴⁷ Bhojraj, S. and Sengupta, P, 2003, Effect of corporate governance on bond ratings and yields: the role of institutional investors and outside directors. *The journal of business*, 76(3), p 455-476.

⁶⁴⁸ Ashbaugh-Skaife, Hollis; Collins, Daniel W.; Lafond, Ryan, 2006. The effects of corporate governance on firms' credit ratings ", *Journal of Accounting and Economics*, v. 42, issue. 1-2, P. 203-43.

⁶⁴⁹ Poon, Winnie P.H. and Chan Kam C. 2008, The Effects of Credit Ratings on Stock Returns in China. *The Chinese Economy*, vol. 41, no. 2, March–April 2008, P. 34–55.

⁶⁵⁰ Alali Fatima et al. 2012. The effect of corporate governance on firm's credit ratings: further evidence using governance scores in the United States. *Accounting and Finance* 52(2012): 291-312.

⁶⁵¹ Bongaerts, D.; K. J. M. Cremers; and W. N. Goetzmann. 2012, Tiebreaker: Certification and Multiple Credit Ratings. *Journal of Finance*, 67 (2012), P. 127.

⁶⁵² Aman, Hiroyuki and Nguyen, Pascal. 2013, Does good governance matter to debtholders? Evidence from the credit ratings of Japanese firms, *Research in International Business and Finance*, 29 (2013) 14– 34.

⁶⁵³ Bowe, Michael and Larik, Waseem, 2014. Split Ratings and Differences in Corporate Credit Rating Policy between Moody's and Standard & Poor's. *Financial Review*, Vol. 49, Issue 4, pp. 713-734.

⁶⁵⁴ Cruz de Souza Murcia, Flavia et al. 2014. The determinants of credit rating: Brazilian Evidence, *Brazilian Administration Review*, V11, N2. Pp 188-209.

	Packer (2017)
Leverage	Cantor and Packer (1996), Blume (1998), Bhojraj and Sengupta (2003), Shin and Moore (2003) ⁶⁵⁵ , Doumpos (2005) ⁶⁵⁶ , Ashbaugh-Skaife et al. (2006), Gray et al. (2006) ⁶⁵⁷ , Poon and Chen (2008), Jorion et al. (2009) ⁶⁵⁸ , Alali et al. (2012), Bongaerts (2012), Aman and Nguyen (2013), Bowe and Larik (2014), Murcia et al. (2015), Jiang and Packer (2017)
Liquidity	Doumpos (2005), Gray et al. (2006) ⁶⁵⁹ , Poon and Chen (2008), Murcia et al. (2015)
Cash flow statement	
Financial coverage	Cantor and Packer (1996), Blume (1998), Shin and Moore (2003), Doumpos (2005), Gray et al. (2006), Ashbaugh-Skaife et al. (2006), Poon and Chen (2008), Jorion et al. (2009), Alali et al. (2012), Bowe and Larik (2014), Murcia et al. (2015), Jiang and Packer (2017)
Income statement	
Profitability ROA	Cantor and Packer (1996), Shin and Moore (2003), Doumpos (2005), Ashbaugh-Skaife et al. (2006), Poon and Chen (2008), Alali et al. (2012), Bongaerts (2012), Aman and Nguyen (2013), Bowe and Larik (2014), Jiang and Packer (2017)
Profitability ROE	Poon and Chen (2008), Murcia et al. (2015)
Profitability Operating margin	Blume (1998), Bhojraj and Sengupta (2003), Doumpos (2005), Ashbaugh-Skaife et al. (2006), Gray et al. (2006), Poon and Chen (2008), Jorion et al. (2009), Alali et al. (2012), Murcia et al. (2015)

⁶⁵⁵ Shin, Yoon S. and Moore, William T. 2003, *supra*.

⁶⁵⁶ Analysis of the Selected Financial Ratios (Appendix), in Doumpos, Michael and Pasiouras, Fotios, 2005, Developing and Testing Models for Replicating Credit Ratings: A Multicriteria Approach. *Computational Economics* (2005) 25: P340.

⁶⁵⁷ Gray, Mirkovic and Rangunathan, 2006, The Determinants of Credit Ratings: Australian Evidence, *Australian Journal of Management* 31(2)

⁶⁵⁸ Jorion, Philippe, Shi, Charles and Zhang, Sanjian. 2009, Tightening credit standards: the role of accounting quality. *Revue Accounting Study*, 14: P. 123–160.

⁶⁵⁹ Gray, S. Mirkovic, A and Rangunathan, V. 2006. The determinants of credit ratings: Australian evidence. *Australian Journal of Management*, 31(2), P 333-354.

2.1.2. Considering external and internal corporate governance

In the Section 1 of Chapter IV, we talked about the external governance of CRAs (including rating regulations and norms) and in the Section 1 of Chapter V, the internal governance of CRAs.

Here, in the Section 2 of Chapter V, we will talk about the internal and external corporate governance and their effects on CRAs' strategies. In other words, how CRAs determine initial (issuer) ratings, in the interaction with the issuers.

If we want to conclude the reason why researchers used corporate governance as rating determinants, we could put it, in a simple way that “higher corporate governance is associated with higher bond ratings.” (Bhojraj and Sengupta, 2003)

External corporate governance

We present some elements of external corporate governance: market segmentation and industry type, among others. We found some empirical evidence dealing with these two variables:

Firstly, it is shown that companies listed in foreign currency market segment⁶⁶⁰ or internationalization have incidence in credit rating level, in the line of Murcia et al. (2015) and Jiang and Kim (2015).

Secondly, the examples of Cantor and Packer (1996), Ashbaugh-Skaife et al. (2006), Jorion et al. (2009), Alali et al. (2012) and Jiang and Packer (2017), all make us aware of the importance to consider the industry type into the modeling.

Gray et al. (2006) excluded the financial institutions (bank and insurance firms) from the sample “due to significant differences in accounting standards and the interpretation of overall financial ratios”⁶⁶¹. Their study concentrated only on the utility companies. Other researchers, like Bouzouita and Yong (1998)⁶⁶², studied, on the other hand, exclusively insurance companies. They included specific financial variables to insurers (net premiums written, for instance) among explanatory variables.

⁶⁶⁰ In the Chinese case, they are listed companies listed in HK (with HK dollar) market or in B shares segment (with US dollar).

⁶⁶¹ *Idem*, page 337

⁶⁶² Raja Bouzouita; Arthur J. Young. 1998, a probit analysis of best ratings, *Journal of Insurance Issues*. 21(1):23-34; Western Risk and Insurance Association.

Internal corporate governance

We are going to revise some empirical evidence on internal corporate governance. These variables are considered to be important for credit rating assessment. There are three articles on the topic:

Bhojraj et al. (2003) contributed to one of the first articles considering ownership and board information, more specifically the institutional ownership, concentration of shareholding and outside directors, into the explanatory variables of bond yields. Its relationship between credit rating is “highly correlated to that of credit ratings and corporate governance”⁶⁶³.

The latter articles of Ashbaugh-Skaife (2006) and Alali et al. (2012) completed the possible variables and used three governance scores to describe all of the soft information.

Aman and Nguyen (2013) applied the consideration to Japanese case⁶⁶⁴. It should be noted that, until then, most of similar works were on American context. Their study was largely inspired by the work of Shin and Moore (2003), where the Keiretsu affiliation was firstly discussed.

⁶⁶³ Matthies, 2013, *supra*, page 11.

⁶⁶⁴ Japan does good governance matter to debtholders: evidence from the credit ratings of Japanese firms,

The following table summarizes the relevant literature review.

Table V.2.2

Dummy variables for corporate governance

Variables		Literature review
Share-holding ⁶⁶⁵	Ownership concentration	Bhojraj and Sengupta (2003), Ashbaugh-Skaife et al. (2006), Gul (2010) ⁶⁶⁶ , Jiang and Kim (2015) ⁶⁶⁷
	Institutional/governmental owners for control (SOE)	Bhojraj and Sengupta (2003), Ashbaugh-Skaife et al. (2006), Aman and Nguyen (2013), Murcia et al. (2015), Bowe and Larik (2014), Jiang and Kim (2015), Jiang and Packer (2017)
Management (executive power)	Managerial ownership	Ashbaugh-Skaife et al. (2006), Aman and Nguyen (2013)
	Separation between chief director (chair) and president	Bhojraj and Sengupta (2003), Ashbaugh-Skaife et al. (2006), Murcia et al. (2015), Jiang and Kim (2015)
Board (decisive power) and directors	Board size	Aman and Nguyen (2013)
	High level ⁶⁶⁸ of outsider/independent directors	Bhojraj and Sengupta (2003), Ashbaugh-Skaife et al. (2006), Aman and Nguyen (2013), Jiang and Kim (2015)

⁶⁶⁵ There are two types of ownership concentration registered by Jiang and Kim (2015): firms controlled by one or more of their large shareholders: either by the state in case of a SOE or by an individual or a family.

⁶⁶⁶ Gul, F.A., Kim, J.-B., Qiu, A.A., 2010. Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: evidence from *China Journal Finance Economy* [95], 425–442.

⁶⁶⁷ Jiang F. and Kim. K, A. 2015. Corporate governance in China: A modern perspective. *Journal of Corporate Finance*, 32, P 190-216.

⁶⁶⁸ The board has more than 1/3 members are independent directors.

Complexity of the corporate governance-related information

However, the situation is much more complicated in dealing with the corporation governance-information.

First of all, it is difficult to find adequate surrogates to evaluate the corporate governance.

Secondly, corporate governance is composed of different aspects. It is hard to cover everything in one study. The literature review listed in Alali et al. (2013) also shows that most of the previous studies focused only on one aspect (either shareholding, or management, or board control).

Third, CRAs are on behalf of bondholders to evaluate the “credit risk” (likelihood of firms ‘default). Ashbaugh-Skaife et al. (2006) found that the “*management disciplining hypothesis*” is valid for both shareholders and bondholders. In other words, a company where managers are properly supervised by administrative board or other stakeholders is a company with high corporate governance.

However, when shareholders stop aligning the interest with bondholders in monitoring and limiting managers’ self-interest pursuits (tunneling, propping, for example), the conflict of interest could occur between these two investors of different nature. A high shareholder rights (au detriment to bondholders right) could be considered a positive indicator of high corporate governance for the first, negative for the later. Here it is the “*wealth redistribution hypothesis*” that is valid.

With the presence of two scenarios, it is hard to draw a direct line between good governance scores with good rating level.

2.1.3. Stock market-related information

In addition to that, since we only have listed company in the sample, we have to take into account stock market-related information in the evaluation of its “credit risk”. The dynamics between shareholders and bondholders, in the stakeholder model, is another path helps us figure out how credit ratings are determined.

The relevant articles can be listed as follows:

Bhojraj and Sengupta (2003) and Alali et al. (2012) used “Price to Book” to capture the corporate growth. High P-to-B/PB “could be associated with greater risk”.

Beta risk describes the “sensitivity to the market systematic risk” of individual listed companies. There are articles of Blume (1998), Bhojraj and Sengupta (2003), Shin and Moore (2003), Jorion et al. (2009), Alali et al. (2012), Bongaerts (2012), Aman and Nguyen (2013), which mentioned the variable in their researches.

2.2. Introduction of Chinese institutional factors

With the internationalization of rating business, some studies of rating determinants on developing countries have recently emerged in the literature:

The working paper of Cruz de Souza Murcia et al. (2014) provides us with a relative exhaustive list of determinants. Their findings essentially focus on the Brazilian (emerging) market.

We have also the study contributed by Poon and Chen (2008). Their study is the first determinant-analysis on Chinese rating market. In addition, we had the study of Jiang and Packer (2017). They used the multi-rating samples to explore the determinants “behind” the different actions of global and local CRAs, under Chinese market.

Largely inspired from previous publications studying rating determinants, in North-America and Europe, and combing cases in emerging countries (especially Chinese cases on the same/similar topic), we decided to take into account all variables of hard information⁶⁶⁹ once appeared in the literature review for information selection, in the Point 2.1.1 (Characterizing firm-specific accounting numbers and financial ratios).

Some other studies discussing Chinese institutional factors (without an application to rating studies) will also help us to add Chinese characteristics into the rating modeling.

In this regard, there are four points to elaborate the Chinese case, in the Subsection 2. To be specific:

⁶⁶⁹ The definition of hard information should be referred to the Section 2 of Chapter III. Basically, they are financial numbers and accounting ratio from balance sheet, profit and loss (P/L), and cash flow statement. There are detailed explanations and comparison with soft information and other information beyond firm-specific financial information.

Chinese corporate governance is considered important to the information selection for a study of rating, on one hand; and a study concerning Chinese market, on the other hand (Point 2.2.1). We start from viewpoints of external and internal corporate governance (including shareholding, management, board information and their interconnections) in this regard.

The introduction of Chinese institutional factors should not be complete if we don't consider the information quality of public information (Point 2.2.2) and disclosure of private information (Point 2.2.3) of rating information. Blume et al. (1998) has concluded in the literature that in addition to the relevance of rating quality and credit default, there are public and private information into the consideration.

As we saw in the Section 1 of this Chapter V, the uncertainty⁶⁷⁰ among CRAs is important. As stated by Haggard et al. (2008)⁶⁷¹ as well as Akins (2012)⁶⁷², the agency-conduct effect could be due to a lack of reporting quality (public information)⁶⁷³, especially, “when debt market participants lack access to private information.”⁶⁷⁴ The situation is specially witnessed in the developing markets where the regulatory power is weak, as the situation in Chinese rating market. Of course, with the time going by, the situation is evolving. We should take a dynamic vision to draw the link between “credit risk” and “availability of credible information”⁶⁷⁵ (for both public and private information).

Last but not least, we will add supplementary macro-economic indicators in the last Point 2.2.4, such as bull/bear stock market circumstances, GDP and inflation rate, sovereign rating, in order to complete the discussion of this Subsection 2.

⁶⁷⁰ “Uncertainty about credit risk as captured by disagreement among the credit rating agencies”, in Akins. B. 2012. Financial reporting quality and uncertainty about credit risk among the ratings agencies. *Working Paper*.

⁶⁷¹ Haggard, S., X. Martin, and R. Pereira, 2008. Does voluntary disclosure improve stock price informativeness? *Financial Management* 37, 747–768, in Bowe, Michael. and Larik, Waseem. 2014, P715.

⁶⁷² Akins. 2012, *supra*.

⁶⁷³ It was proven empirically by Akins (2012) that after the introduction of SFAS 142 (indicating less reporting quality), the disagreement among the CRAs increased.

⁶⁷⁴ *Ibid*.

⁶⁷⁵ Matthies, 2013, *supra*, page 11.

2.2.1. Chinese external and internal corporate governance

Here we turn our attention to the governance of Chinese listed companies.

Chinese external corporate governance

External corporate governance includes formal structure (corporate legal, regulatory, normative code), and informal corporate governmental mechanism. In the regard, we would like to take into account the market segmentation and industry sector type.

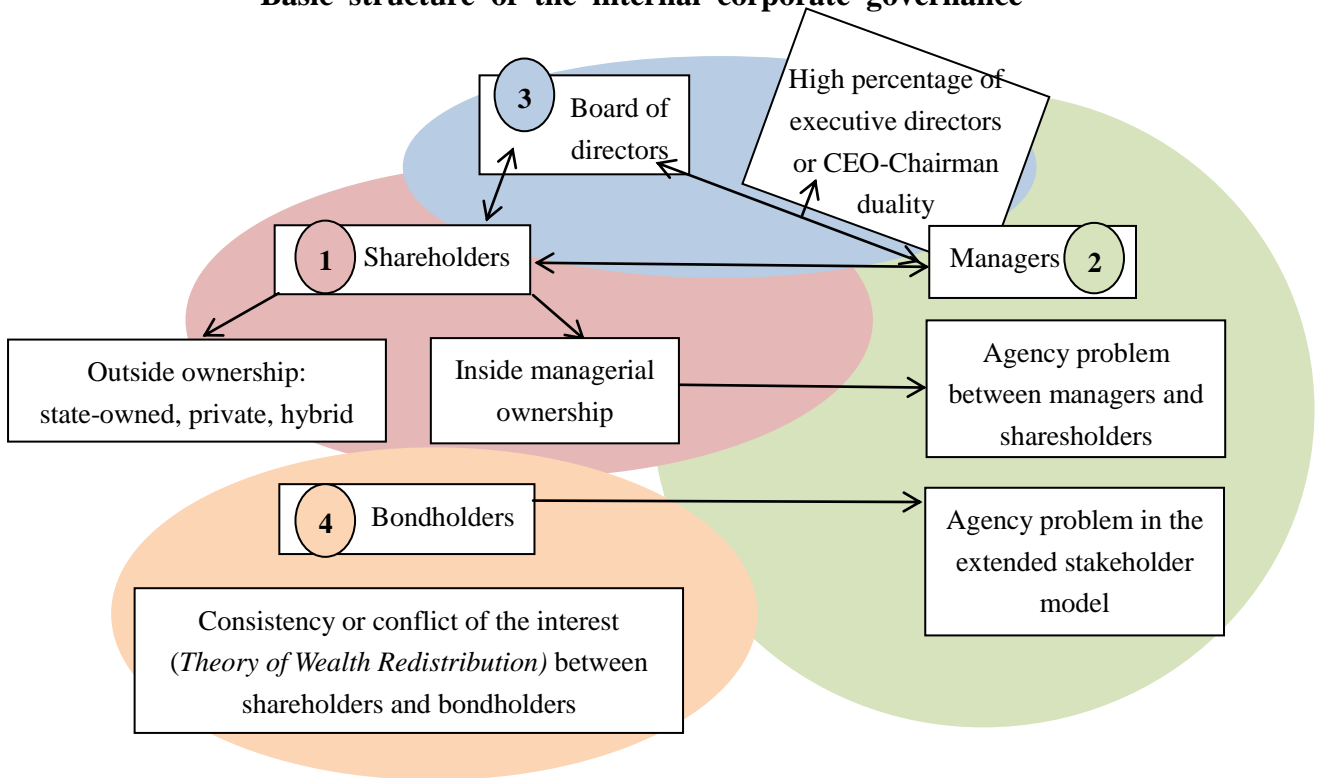
As for market segmentation, it implies that different issuers would comply with different regulations (first institutional pillar), industrial norms and code of business (second pillar), in place to each market segment. In other words, under the framework of *New-institutionalism*, CRAs could interpret information according to the institutional environment of each rated issuers.

The segment where public companies are listed (“A shares”, “H shares” or double-listing, please refer to Section 2 of Chapter II and Chapter III, for more details) would have an incidence on the interaction of issuers with CRAs; not to mention that Chinese rating activities are also segmented (between global and local CRAs, please refer to Section 1 of Chapter V, for more details).

As for sector type, we suppose that the accounting numbers and financial ratios have different meaning for companies of different industry. For example, the leverage ratio should not be taken identically for manufacturing and commercial companies, as for financial institutions.

Figure.V.2.2

Basic structure of the internal corporate governance



***Figure V.2.2 is made by the author**

Chinese internal corporate governance

The *Figure V.2.2* summarizes the “basic structure of the internal corporate governance”, and we called it “soft information”, in the sense of Section 2 of Chapter III.

We will explain the *Figure* from three viewpoints of corporate actors: shareholders (circle 1 in red), managers (circle 2 in green), directors (circle 2 in blue), their interconnection (circle 4 in orange) and finally the interaction with CRAs.

It should be noted that “some of the points that we raise here are facts, some are common knowledge, and some are our own personal views”,⁶⁷⁶ because our study is one of the first to carry Chinese institutional factors into a study of rating determinants. We will discuss separately three aspects of internal corporate

⁶⁷⁶ Jiang and Kim, 2015, page 204.

governance, with their interconnection. We will finally conclude with their interaction with rating activities.

First circle in red (regarding shareholding structure)

There are four points to illustrate when we talk about the shareholding.

- ✓ In terms outsider-ownership: including state-owned companies and family-owned companies.
 - ✓ Compared to Russian and Eastern European Transitional Economies, “China has adopted a reform strategy that gives priorities to fostering markets and nurturing institutional changes”⁶⁷⁷, instead of a “radical ownership reforms”. In other words, China chose the path of corporation instead of privatization. It left an important role of the state still in the place. The fact if a listed company is a SOE is prenominal to know under Chinese context.
 - ✓ Chinese private ownership derived mostly from “family firms or firms founded by entrepreneurs”⁶⁷⁸ and they constitute largely the largest shareholder for non-SOEs (Jiang and Kim, 2015, page 200).
- ✓ In terms of insider-ownership: We are not going to talk about the case of managerial ownership (insiders) in Chinese context because “the managers of SOE are not significant shareholders”, while for non-SOEs or “the practice of granting executive options to managers are still rare”⁶⁷⁹.
- ✓ In terms of ownership concentration: Block-holders are highly presented in developing countries and there is no exception in China. According to Jiang and Kim (2015), “concentrated ownership may represent a bad governance outcome, as it potentially reveals the existence of controlling shareholders who may expropriate wealth from minority shareholders.”⁶⁸⁰

⁶⁷⁷ Xu, Xiaonian; Wang, Yan. 1999, Ownership structure and corporate governance in Chinese stock companies. *China Economic Review*, Vol. 10 Issue 1, p75. 24p.

⁶⁷⁸ F. Jiang & K. A. Kim, 2015, *supra*, page 200.

⁶⁷⁹ *Idem.* Jiang and Kim, 2015, page 206.

⁶⁸⁰ F. Jiang & K. A. Kim, 2015, Corporate governance in China: A modern perspective, *Journal of Corporate Finance*, 32: page 200.

Second circle in green (regarding management)

We can discuss the agency problem from three points of view.

- ✓ The *agency problem* (Jensen in “theory of the firm”, 1976 and Fama in “separation of ownership and control”, 1983) exists rarely under Chinese institutional environment. Managers are often appointed by the government for SOE⁶⁸¹ and the government, under the form of holding company, corporation and sovereign investment fund, is usually the main shareholder of the company.
- ✓ In the same logic of non-SOEs, “agency problems associated with the separation of ownership and management will be small when a private investor is the dominant shareholder”⁶⁸² for entrepreneurship or family company when “the large shareholder-founder is the manager”⁶⁸³ or “managers are from within the firm or from the family”.⁶⁸⁴ Since “the market for managerial talent in China is nascent”,⁶⁸⁵ owners don’t have enough choice but to self-appoint or to put family member(s) on the manager’s chair. Hence, the conflict of interest is mitigated by the alignment of interest between the agent and the principle.
- ✓ There exists another case when the manager is also the president of the board. For example, Chinese three biggest IT companies: Baidu, Alibaba and Tencent all adopt the duality model.

Jiang and Kim (2015) reported this kind of “governance problem”, because “directors are supposed to monitor top managers.”⁶⁸⁶ When the executive power and monitoring power are succumbed to the same person; or in the same vein, when the percentage of executive directors is important, managers would enjoy the position of “entrenchment”.

⁶⁸¹ “At the central, provincial, municipal, and county levels, an Organization Department maintains an exhaustive list of government employees, and from this list it makes all of the important personnel assignments on behalf of the state, including the appointment of SOE managers (Kato and Long, 2006a).” and SASAV (State-owned assets supervision and administration commission) “is also responsible for appointing and removing top executives at SOEs”. In *Idem*, page 195 and 212.

⁶⁸² Chen, Gongmeng, Firth Michael, Xu Liping, 2009, Does the type of ownership control matter? Evidence from China’s listed companies, *Journal of Banking & Finance*, Volume 33, Issue 1, Pages 171-181.

⁶⁸³ *Idem*, page 200.

⁶⁸⁴ *Ibid.*

⁶⁸⁵ *Idem*, page 212.

⁶⁸⁶ *Idem*, page 202.

Third circle in blue (regarding “board information”)

The directors of board represent shareholders, monitor and evaluate managers’ decisions and executions. There are three points to illustrate on Chinese market environment.

- ✓ According to the Article 109 of Company Law of People’s Republic of China, the number of board members should be between 5 and 19. A lower number represents a higher level of power concentration.
- ✓ *China Securities Regulatory Commission (CSRC)* stipulated “Guidance on the establishment of the system of listed companies’ independent director” (2001)⁶⁸⁷, where it asks that “one third of directors should be outsiders at least” (Article 3). Independent directors should occupy no other position for the same listed companies and have no conflict of interests with other shareholders. Theoretically, outsiders on the board are to represent the interest of minority in shareholding. According to Jiang and Kim (2015), they also serve as “political and government connections”⁶⁸⁸. Some researches content that the “differences in independence ratios between firms may be economically meaningless”⁶⁸⁹. Jiang and Kim (2015) found that most Chinese listed companies try to “maintain the minimum one-third independence ratio” and the variation is low. Yang et al. (2011)⁶⁹⁰ also cast the doubt on Chinese independent directors.
- ✓ These requirements are not valid for public companies of “H shares”. Generally speaking, public companies listed on “H shares” segment have a large board with more directors than their counterparts listed on “A shares” segment. Besides, independent directors occupy a more important place in HK than in continental China. This observation is consistent with what put forward by Jiang and Kim (2015), that “in stark contrast to China, firms in most developed economies have more independent directors than is required.”⁶⁹¹.

⁶⁸⁷ At http://www.csrc.gov.cn/pub/newsite/flb/flfg/bmgf/ssgs/gszl/201012/t20101231_189696.html. (In Chinese)

⁶⁸⁸ F. Jiang & K. A. Kim, 2015, *supra*, page 207.

⁶⁸⁹ Jiang and Kim, 2015, *supra*, page 206-207. The note 58: “Recent papers on independent directors in China (Bai et al., 2004 and Li and Naughton, 2007) echo similar sentiments”.

⁶⁹⁰ Yang, Jingjing; Jing Chi. 2011. A review of corporate governance in China, *Martin Young. Asian-Pacific Economic Literature*. Vol. 25, Issue 1, p15-28.

⁶⁹¹ *Idem*, page 206, Note 56, in reference of Chapter 4 of Kim, K.A., Nofsinger, J.R., Mohr, D., 2010. Corporate

Fourth circle in orange (regarding the interconnection of three kinds of internal corporate governance-related information and their interaction with CRAs)

We want to discuss the interconnection between shareholders, with managers and board members and finally to reveal how Chinese internal corporate governance interacts with CRAs.

- ✓ It should be reminded that, “*Guanxi* and connections” is the informal part of CRAs’ external governance (Conclusion of Chapter IV). We suppose that the companies with “state-ownership”, compared to those with “private or family ownership”, have more political and other connections. It may be beneficial for issuers to get access to a better negotiation power in front of CRAs. That justifies the reason why we considered discussing the internal corporate governance of the rated companies.
- ✓ There are two conflicting theories to explain the fact when the ownership is concentrated. The “management disciplining theory” implies a positive relation between the rights of block shareholders and credit ratings, while “wealth transfers theory” suggests a negative relation (Ashbaugh-Skaife et al., 2006, page 209). There is no empirical evidence in Chinese market to confirm one theory over the other. It is still unclear how it would influence CRAs’ rating decision in China, in this regard.
- ✓ As we discussed earlier that the conflict of interest between managers and “major shareholders” is minimal under Chinese market environment. The duality helps to increase managers’ power, and then to exacerbate the rights of “minor shareholders”. Its effect on the initial rating level is still unclear. It depends on the dynamics between different types of investors (especially between shareholders and bondholders). The conclusion of the topic remains indecisive in the relevant literature review.
- ✓ When “board chairs are appointed by the firm’s largest shareholders (Kato and Long, 2006)”⁶⁹², the interest of shareholding, management and board would be aligned. On the contrary, an independent board composition could be one of most important mechanisms to limit the shareholder rights and to supervise the management. It is believed to be a positive determinant when CRAs decided to give initial issuer rating.

Governance, 3rd edition. Pearson Prentice Hall Publishers, Upper Saddle River, NY.

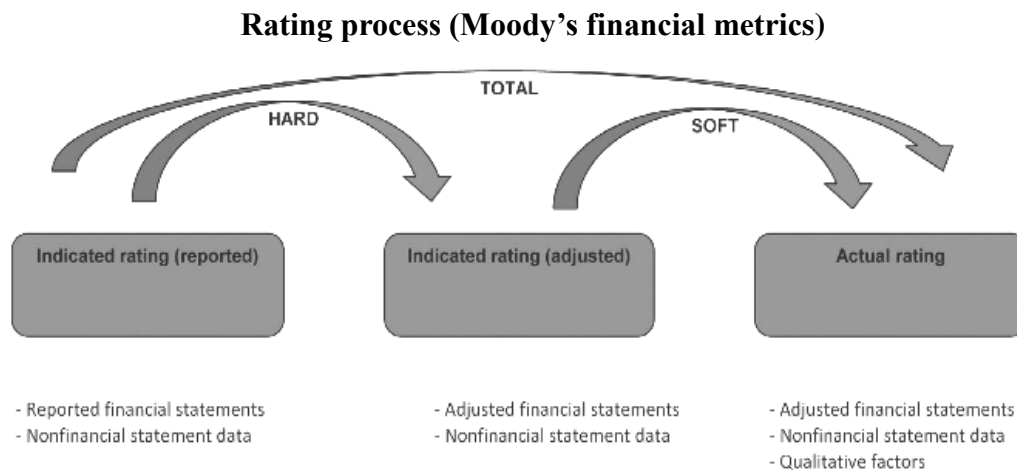
⁶⁹² F. Jiang & K. A. Kim, 2015, *supra*, page 209.

2.2.2. Evolving quality of public information in China

It is believed that “strong governance structures and practices improve the reliability and validity of the reported accounting numbers used by rating agencies in assessing a firm’s likelihood of default” (Ashbaugh-Skaife et al., 2006). After the overview of Chinese corporate governance (internal and external), it seems reasonable to turn to our attention to the public information and its evolving quality under Chinese institutional environment.

Kraft (2015)⁶⁹³ examined the quantitative and qualitative adjustment of Moody’s rating process and found the adjustment allowed the CRA “to better capture default risk, consistent with it effectively processing both hard and soft information”.

Graph V.2.1⁶⁹⁴



Consequently, here rises a legitimate question if we are able to use public information of Chinese listed companies directly from the financial reports and statements, especially when the quality of information is still debatable in some conceptual studies about Chinese market economics.

In this regard, some researches such as Jiang and Paker (2017) argued recently that “Chinese accounting standards are gradually converging to international

⁶⁹³ Kraft, Pepa, 2015, Rating Agency Adjustments to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads. *Accounting Review*, Vol. 90, Issue 2, p641-674. 34 pages.

⁶⁹⁴ *Idem*, Appendix C: Rating process (Moody’s financial metrics).

standards”⁶⁹⁵.

Their working paper used *S&P's Capital IQ database* “across accounting standards” to avoid “some discrepancies (Ding and Su 2008; Eng, Sun, and Vichitsarawong 2013)”⁶⁹⁶ inherent to Chinese market segmentation; in other words, they made the adjustment to avoid the discrepancy existing between Chinese mainland standards with international standards. They believed that “it may be the case that the accounting standards, adopted by rated firms differ across the sample, and this difference may bias the empirical results for global and domestic ratings in some fashion.”⁶⁹⁷ In the end, they concluded that there existed negligible differences with non-normalized financial data (recalls from Chapter III, which Chinese listed companies in “A shares” use Chinese GAAP and in “H shares” use HK GAAP).⁶⁹⁸ The evidence proved empirically that we should have more confidence on Chinese accounting and auditing numbers, even with the presence of market segmentation, when we talk about the quality of public information and its effect on the ratings. We hence draw the first conclusion that it is “safe” to directly use the financial numbers from Bloomberg, which themselves are from the annual reports of each listed company.

However, we should not take financial ratios mechanically into rating calculations. There are two points of view from CRA *agency-conduct effect* and *time-varying effect* (recalls of Subsection 1.1, Chapter V) to understand the quality of public information. The *Figure V.2.3* also describes these two viewpoints, as follows:

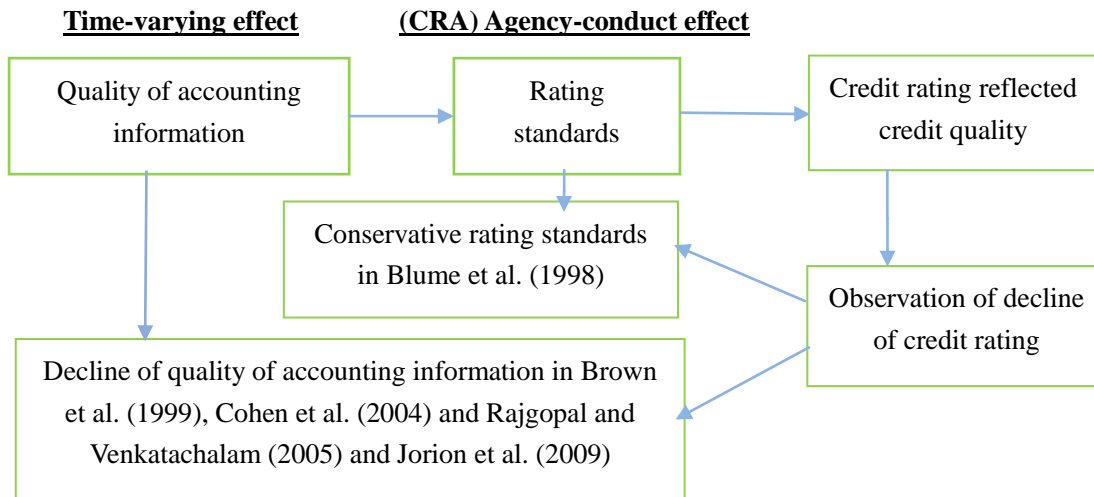
⁶⁹⁵ Jiang, Xianfeng and Paker, Frank, 2017, Credit Ratings of Domestic and Global Agencies: What Drives the Differences in China and How are They Priced? *BIS Working Paper No. 648*.

⁶⁹⁶ *Ibid.*

⁶⁹⁷ *Ibid.*

⁶⁹⁸ *Ibid.*

**CRAs’ “rating standards” of using “public information”
in the measurement of “credit quality”**



***Figure V.2.3 is made by the author**

In order to explain the *Figure* above, we think of two discussions:

First of all, it is important to mention the notion of *agency-conduct effect*. Blume et al. (1998)⁶⁹⁹ pointed out that CRAs tended to tighten the rating standards, with time going by. It means, *ceteris paribus*, an issuer will be rated worse in the future than it is rated at present, when the CRA gradually start to follow the conservative rating standards. For example, an issuer or its issue was once rated A in year t, would be given a rating of BBB in year t+1, without a change in its credit quality, *per se*.

Jorion et al. (2009)⁷⁰⁰ reexamined the “apparent tightening of credit standards” and the relationship with the quality of “accounting information”. They found that the observation of Blume and his colleagues was due to the quality decline of accounting numbers. Brown et al. (1999)⁷⁰¹, Cohen et al. (2004)⁷⁰² and Rajgopal and

⁶⁹⁹ Blume, Marshall, Lim, Felix and MacKinlay, Craig, 1998, The Declining Credit Quality of U.S. Corporate Debt: Myth or Reality? *The Journal of Finance*, Vol LIII, No.4.

⁷⁰⁰ Jorion et al. (2009), *supra*, Page 132.

⁷⁰¹ Brown, S., Lo, K., & Lys, T. 1999. Use of R² in accounting research: Measuring changes in value relevance over the last four decades. *Journal of Accounting and Economics*, 28, 83–115.

⁷⁰² Cohen, D. A., Dey, A., & Lys, T. 2004. Trends in earnings management and informativeness of earnings

Venkatachalam (2005)⁷⁰³ have all noticed this kind of “upward bias”, when “opportunistic earnings management has increased over time” in order to “achieve or preserve a desired credit rating” (Graham et al., 2005⁷⁰⁴). *Enron Scandal* in 2001 is one of the revealing examples proving the legitimacy to question the authenticity of the accounting numbers. These studies bring us to the next discussion.

Second point is that we have to consider the *time-varying effect* of “informativeness of accounting variables”. It has been proved empirically that “higher annual report disclosures improve credit rating (Heflin et al., 2011)”⁷⁰⁵.

Under Chinese institutional environment, we esteem necessary to take into account the arrival of *Corporate Accounting Standards (29/12/2001)* and *Corporate Accounting Norms (15/02/2006)*. It is clear to see authority stresses to improve accounting quality and to narrow the deficiency between Chinese and international standards. Consequently, it is believed that the post-2005 period marks an increase of quality of Chinese public information, independent to the question if CRAs change their rating standards.

announcements in the pre- and post-Sarbanes-Oxley periods. *Working Paper*, Northwestern University.

⁷⁰³ Rajgopal, S., & Venkatachalam, M. 2005. Financial reporting quality and idiosyncratic return volatility over the last four decades. *Working Paper*, University of Washington and Duke University

⁷⁰⁴ Graham, J., Harvey, C. R., & Rajgopal, S. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, 3–73.

⁷⁰⁵ Heflin, F. F, Shaw, J. Wild, 2011, Credit ratings and disclosure channels, *Research in accounting regulation*. Issuer 23. page 20-33.

2.2.3. Voluntary disclosure for private information in China

Admittedly, it is generally believed, as what stated by Hsueh and Kidwell (1988) that “a rating agency uses both publicly available information, such as accounting statements, and nonpublic information, such as confidential interviews, to assign quality ratings to individual corporate bonds”⁷⁰⁶. Even though “ratings would appear to provide a possible means of communicating relevant aspects of such inside information to bondholders without at the same time divulging harmful details to competitors, [...]”, “whether the agencies actually receive much inside information is hard to ascertain.”⁷⁰⁷

One side of story relative to private information, from the point of view of CRAs

In the scenario where CRAs are able to provide the market with private information, we want to test (in Chapter VI), that if the significant abnormal stock returns are attributed to the rating events (credit rating changes and watch-lists).

It should be noted that time-varying effect is an important element to be considered in the discussion of rating events’ impacts on investors’ reactions. In the work of Hung, Jui-Cheng (2009), the researchers found that the weak-form *EMH* (the Efficient Market Hypothesis or market inefficiency) has been rejected for most Chinese stock market segments (“B shares” for SHSE and “AB shares” for SZSE) due to the “increased liquidity and maturity accompanying deregulation and liberation”.⁷⁰⁸ Chong et al. (2012)⁷⁰⁹ also confirmed statistically that after the SOE reform, Chinese market has been more efficient.

We have reasons to believe that the efficiency on Chinese stock market have also a segmentation effect. As we explained earlier in the Chapter II and III that, Chinese market actors’ (regulators, issuers and investors) behaviors would be different, according to the different market institutional environment.

⁷⁰⁶ Baker, 2002, *supra*, page 1375.

⁷⁰⁷ Goh and Ederington, 1993, *supra*.

⁷⁰⁸ Hung, Jui-Cheng, 2009, Deregulation and liberalization of the Chinese stock market and the improvement of market efficiency. *The quarterly Review of Economics and Finance*, 843-857.

⁷⁰⁹ Terence Tai-Leung, Chong, Tau-Hing Lam and Isabel Kit-Ming Yan, 2012, Is the Chinese stock market really inefficient? *Chinese Economic Review* 23, page 122-137.

One other side of story relative to private information, from the point of view of issuers

Independent on the discussion whether CRAs have the privilege to obtain private information, we want to discuss “the voluntary disclosure” from the issuers. According to the *Discretionary-based disclosure Theory*, corporations have practices to release information which is not necessarily required by the legislation, The theory helps us to explain the facts why “Holthausen and Leftwich (1986) and Wansley and Clauretje (1985), also observed significant negative returns prior to the announcements (of rating events) indicating some anticipation.”⁷¹⁰ In other words, investors reacted to voluntary disclosure of issuers and their issues, directly or via the channel of CRAs as a sort of information intermediary (*info-intermediary*). Of course, Credit Rating Changes (CRCs) is one of the main subjects in the later Chapter VI, where we will contribute more time and energy to examine the impact of CRAs, on the stock market.

In the discussion of strategies of CRAs in this Chapter V, we just want to remind the importance of voluntary disclosure and to ask if certain CRAs have more abilities to get private information from their clients-issuers, at the first place then others; and how issuers with certain characteristics are more willing to communicate voluntarily private information to the market, at the second place.

In this regard, we have found one article to capture this “disclosure quality”⁷¹¹. Aman and Nguyen (2013) used “an aggregate score sourced from Nikko Securities based on the amount and quality of information available on the firm’s website” to deal with the issue.

⁷¹⁰ *Ibid.*

⁷¹¹ Aman and Nguyen, 2013, page 20.

Voluntary disclosure under Chinese institutional environment

We don't have such indicators, directly available on the database. However, we are also aware that the voluntary diffusion of information is endogenous. In the relevant literature, it shows that the disclosure depends on corporate governance factors, when we are situated in the "low information environment"⁷¹².

For instance, Chinese managers under state ownership are more prone to communicate (Wang et al., 2008⁷¹³) when state-shares become block-holders (Xiao and Yuan, 2007⁷¹⁴). Lan et al., 2013⁷¹⁵ summarized it as the quadratic convex: "the disclosure level initially decreases with state ownership, but then increases with ownership after it reaches a certain point" (page 271), considering the size of the corporations.

These SOEs also "reflect the effects of state-encouraged disclosure policies"⁷¹⁶ when they are listed under "the impact of international capital market pressure" as a "show-casting" on Hong Kong Stock Market or when the foreign shareholding is present at the ownership (Xiao et al., 2004⁷¹⁷; Xiao and Yuan, 2007; Wang et al., 2008).

In the end, it seems quite complicated to find a proxy as a variable, which is able to represents the voluntary disclosure of private information. Our discussion on the topic remains conceptual for the moment.

⁷¹² Lam and Du, 2004, information asymmetry and estimation risk: preliminary evidence from Chinese equity markets. *Pacific-Basin finance Journal* 12, page 311-331.

⁷¹³ Kun Wang, Sewon O, M. Cathy Claiborne, 2008, Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China, *Journal of International Accounting, Auditing and Taxation* (17), 14-30.

⁷¹⁴ Xiao Huafang, Yuan Jianguo, 2007, Ownership structure, board composition and corporate voluntary disclosure: Evidence from listed companies in China, *Managerial Auditing Journal*, Vol. 22 Issue: 6, pp.604-619.

⁷¹⁵ Yang Lan, Lili Wang, Xueyong Zhang, 2013, Determinants and features of voluntary disclosure in the Chinese stock market, *China Journal of Accounting Research*, 6(4), 265-285.

⁷¹⁶ Ferguson, Michael J., Kevin C. K. Lam, Grace Meina Lee, 2002, Voluntary Disclosure by State-owned Enterprises Listed on the Stock Exchange of Hong Kong, *Journal of International Financial Management and Accounting*, Vol. 13, pp. 125-152, 2002.

⁷¹⁷ Jason Zezhong Xiao, He Yang, Chee W. Chow, 2004, The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies. *Journal of Accounting and Public Policy* 23, page 191-225.

2.2.4. Supplementary information of Chinese macroeconomic indicators

Based on stock-market related information, we are aware the importance to take into account the market circumstance for the entire stock market, in addition to the information for individual listed companies. It includes variables, such as price to book ratio, stock market performance and beta risk.

At the same time, we consider the issuer rating is also related the macro-economic facts. In consequence, we compute four extra variables to supplement the information. They are stock market turbulence, GDP growth rate, inflation rate and sovereign rating level.

First of all, we calculate the market turbulence based on the appearance of bull and bear market⁷¹⁸. I used the same methodology as that of Yu et al. (2017). They employed the approach of Bry and Boschan (1971), “*The stock market is classified as bull and bear markets under the following rules: i. at the end of each month, if the current closing price of stock index compared to future and past 5 months is the highest (lowest), take the current month as a peak (valley) point. ii. This method may generate some continuous peak (valley) points, but only the highest (lowest) one is taken as turning point. iii. The period from peak to valley points is defined as the bear market. The converse is the bull market. Each period should not be shorter than 5 months, and a complete cycle including bull and bear markets should not be less than 12 months.*”

To complete the previous *Graph V.2.2* using recent data, we found that during the period of 2015/06 (index: 4277.22) and 2016/02 (index: 2687.98), there was a massive drop of 37.18 %. The turning point occurred on the February of 2016. Since then till the end of 2016 (3103.64), a steady growth was registered up to 15.48%.

⁷¹⁸ “In this article, we classify the stock market as bull and bear markets based on the cycle of Shanghai Stock Exchange (SSE) Composite Index.” with monthly data, in Xiaojian Yu, Zewei Chen, Weidong Xu, and Junhui Fu, 2017, Forecasting Bull and Bear Markets: Evidence from China, *Emerging Markets Finance & Trade*, Vol 53, Page 1724.

Bull and bear markets in China

Bull market		Bear market	
Period	Period return	Period	Period return
1997/01–1997/04	44.47%	1997/04–1997/09	–21.26%
1997/09–1998/05	28.60%	1998/05–1999/02	–22.75%
1999/02–2001/06	103.47%	2001/06–2002/01	–32.75%
2002/01–2003/05	5.67%	2003/05–2003/10	–14.46%
2003/10–2004/03	29.17%	2004/03–2005/05	–39.09%
2005/05–2007/10	461.38%	2007/10–2008/10	–70.97%
2008/10–2009/07	97.37%	2009/07–2013/06	–41.99%
2013/06–2015/06	116.11%		

Notes: The turning points are classified by Bry and Boschan (1971) approach. Sample period is January 1997 to June 2015.

Afterwards, I compute the following *Table V.2.3* by taking the value “1” if it is a bull market; if not, we code “0” for bear market (on the line of “code”). When the turning the point from bear/bull or the way around happened in the middle of the year, we computed 0/1 or 1/0.

The market turbulence can be described if there a change from bull market to bear market (*vice versa*) within one year. We code “1” when the year before the initial issuer rating was written “Yes”, and “No” for “0”, corresponding to the line of turbulence, from the following table.

For example, when the credit rating (Y) is given in 2002, we take the situation of 2001 (cellar with * in the following table), where there was turbulence on the market. We compute 1 for the dummy variable representing market turbulence (X) in the equation to explain the credit ratings.

Table V.2.3

Coding of market turbulence based on bull/bear market

Year	2000	01	02	03	04	05	06	07	08
Code	1	1/0	1	1/0	1/0	0/1	1	1/0	0/1
Tur	No	Yes (*)	No	Yes	Yes	Yes	No	Yes	Yes
Year	09	10	11	12	13	14	15	16	/
Code	1/0	0	0	0	0/1	1	1/0	0/1	
Tur	Yes	No	No	No	Yes	No	Yes	Yes	

Secondly, we take into account GDP and inflation rate.

Similar to the intention of Bowe and Larik (2014), they used two indicators to capture the implementation of “pro-cyclical (business cycle) rating policies” (Amato and Furfine, 2004), we got data from the *World Bank* official site:

Table V.2.4⁷¹⁹

The table of GDP and inflation rate

Year	Rate of GDP		Inflation rate	
	Continental China	European Union	Continental China	European Union
2000	8.49	3.87	0.26	3.16
2001	8.32	2.21	0.72	3.15
2002	9.13	1.35	-0.77	2.31
2003	10.04	1.31	1.16	2.1
2004	10.11	2.57	3.88	2.26
2005	11.40	2.11	1.82	2.48
2006	12.72	3.35	1.46	2.60
2007	14.23	3.08	4.75	2.63
2008	9.65	0.48	5.86	4.21
2009	9.4	-4.36	-0.70	0.95
2010	10.64	2.12	3.32	1.67
2011	9.54	1.69	5.41	3.31
2012	7.86	-0.43	2.63	2.72
2013	7.76	0.26	2.63	1.39
2014	7.30	1.74	2.00	0.22
2015	6.9	2.31	1.44	-0.06
2016	6.69	1.94	2.01	0.22

If we take 2% of inflation as the red line, as the case of *Maastricht Treaty of European Union*, it is obvious that Chinese inflation rate is quite high since 2007, except the year after the financial crisis (2009). It has become rather stable most recently (since 2014).

As for GDP growth, China had success in achieving two-figured increase before the financial crisis (2007) for five years straight. The growth has slowed lately, compared to the past; however, it still stays at a high level, if we compare it to the statistics of European Union.

⁷¹⁹ Data from the World Bank, at <https://data.worldbank.org/indicator>.

Thirdly, we want to illustrate the importance of sovereign rating.

In this regard, we collect all rating changes (or confirmation) issued by “Big Three” during the period of 2000-2016 from the Trading Economics⁷²⁰, in the following table.

Table V.2.5

Sovereign ratings of Chinese government since 2000 of “Big Three”

CRAs Date	Mood y's⁷²¹	S&P⁷²²	Fitch	CRAs Date	Moody's	S&P	Fitch
2000.Sep			A- (stable/s)	2006.Sep			A (positive/p)
2001.Aug	A3 (s)			2007.May	A2 (p)		
2002.Oct	A3 (p)			2007.Jul	A1 (s)	A (p)	
2003.Apr		BBB(p)		2007.Nov			A+ (s)
2003.May			A- (s)	2008.Jul		A+ (s)	
2003.Oct	A2 (s)		A- (p)	2009.Nov	A1 (p)		
2004.Feb		BBB+ (p)		2010.Nov	Aa3 (p)		
2005.Jul		A- (p)		2010.Dec		Aa- (s)	
2005.Oct			A (s)	2013.Apr	Aa3 (s)		
2006.Jul		A (s)		2016. Mar	Aa3 (negative/n)	Aa- (n)	

The study of Han et al. (2009)⁷²³ has justified the choice of “sovereign rating” as possible determinant variable in credit rating models. They cited the work of Ferri and Liu (2012)⁷²⁴ by explaining “sovereign credit rating ceiling effect”⁷²⁵. Hooper et al. (2005)⁷²⁶ also found its impact on stock market indices. Both group of researchers stated the fact that sovereign rating and its modification should be considered as an event on the market environment, both in developed countries and in developing countries.

⁷²⁰ China-Credit Rating, at <https://tradingeconomics.com/china/rating>.

⁷²¹ Moody's gave Chinese sovereign rating A3 in 1998.

⁷²² S&P gave Chinese sovereign rating BBB in 1999.

⁷²³ Han, Seung Hun, Yoon S. Shin, Walter Reinhart and William T. Moore, 2009, Market Segmentation Effects in Corporate Credit Rating Changes: The Case of Emerging Markets, *Journal of Financial Services Research*, 35(2), page 141-166.

⁷²⁴ Ferri G, Liu L, 2002. Do global credit rating agencies think globally? *SSRN working paper*.

⁷²⁵ *Idem*, “Sovereign ceiling effect is that corporate credit ratings are bound not to exceed their sovereign ratings. Under sovereign credit rating ceiling, the private information of firms is less important because sovereign ratings have significant effect on corporate ratings.” (Note 7, page 145).

⁷²⁶ Hooper V, Hume T, Kim S, 2005. Sovereign rating changes: do they provide new information for stock markets? *SSRN working paper*.

2.3. Constitution of hypotheses (2)

Back to the sample of sole-ratings for initial issuer rating⁷²⁷ that we described in Section 2 and 3 in Chapter IV, we got 564 issuers starting from 2002 (where Xinhua was the only Chinese local CRA issuing initial issuer ratings during the period of 2002-2005. In our sample, the entire research year ranges from 2002 to 2016.)

The year of 2006 is full of meaning. *Firstly*, it is because Chinese accounting standards got an important revolution in 2006. We estimate that the quality of public information under Chinese context is hence more guaranteed than in the past. *Secondly*, it is because of the split-share reform in 2005 (please refer to Section 2 of Chapter II), that we presume that the efficiency of stock market has been significantly increased in the post-2005 period.

The variables that we choose to introduce into study are those that we inspired from the international experiences on the topic of rating determinants (Subsection 2.1). Rating determinants are composed of four types of information into two categories: firm-specific information (variables of financial characteristics, internal and external corporate governance attribute and stock-market related information) and macro-economic indicators: stock market turbulence, GDP, inflation rate and sovereign rating. At the same time, we took into account Chinese institutional factors in the coverage of all kinds of supplementary information: hard information to soft information, public information to private information (Subsection 2.2).

The Section 2.3 is broken down into three subsections:

- ✓ Given all the evidence presented previously, we will compute hypotheses including all information mentioned above, in the Point 2.3.1.
- ✓ The statistics description will be presented, in the Point 2.3.2.
- ✓ The chosen variables will be calibrated in Point 2.3.3, after the first quantitative tests: such as the correlations tests and VIF indicator.

⁷²⁷ Companies that are rated only once by a single CRA are called the companies with sole-rating.

2.3.1. Testing hypotheses for strategic choices of rating determinants

Accounting numbers and financial ratios: hard information

We get the explanations of variables directly from the database Bloomberg.

For initial issuer rating at the year (t), we take financial ratios of one year before (t-1) and the expected sign⁷²⁸ from the relevant literature review.

Table V.2.6

Ten variables of hard information

Criteria	Variables	Explanation	Expect-ed sign
Firm size	1. Total asset	The total of all short and long-term assets as reported on the Balance Sheet.	+
Leverage	2. TOT_DEBT_TO_TOT_ASSET (%)	Total Debt *100 / Total Assets	-
	3. TOT_DEBT_TO_TOT_EQY (%)	Short and Long Term Debt / Shareholders' Equity * 100	-
Liquidity	4. QUICK_RATIO	(Cash and Near Cash + Short Term Investments + Account Receivables) / Current Liabilities	+
	5. CUR_RATIO	Current Assets / Current Liabilities	+
Financial coverage	6. INTEREST_COVERAGE_RATIO	EBIT / Total Interest Incurred	+
	7. FCF_TO_TOTAL_DEBT	Trailing 12 Month Free Cash Flow / Total Debt	+
Profitability	8. ROE	(Trailing 12M Net Income / Average Total Assets) * 100	+
	9. ROA	(Net Income Available for Common Shareholders / Average Total Common Equity) * 100	+
	10. Profit margin	(Net Income / Revenue) * 100	+

⁷²⁸ “Positive” means that determinant contributes positively to get a better rating; “Negative” means the opposite.

Chinese external and internal corporate governance: soft information

Chinese external corporate governance

We separated our sample by listing place of public companies. The segmentation (that we discussed previously in Section 2 of Chapter II) and the examination of three viewpoints of Chinese market environment (in Chapter III), makes us aware the important differences between mainland Chinese market and HK market.

11. INT (Market internationalization): In the Chinese segmented market, they are listed companies on HK (with HK dollar market). If it is the case, the dummy variable will take the value “1”, if not we code “0”.

It is true that with the internationalization of shareholding, corporate will have greater access to foreign capital. According to the results of Murcia et al. (2015, page 201 and 204), we should have predicted positive sign for the variable. However, under Chinese institutional environment, the market segmentation is also closely related to the type of CRAs (Section 1 of Chapter V). Systemically, local CRAs rate better than the “Big Three”. (Section 2 of Chapter IV and Chapter V) Hence, we are not able to predict the sign of the coefficient.

As for industry sector (IND):

12. IND have nine categories, it takes the value “1”, if the issuer is a company in the sector of mining, manufacturing, utilities, construction, TMT (technology, media and telecommunication), finance, transport, real estate and the rest of tertiary industry; if not “0”. We then combined the sectors into three categories, with mining the Industry1, manufacturing the Industry2 (reference⁷²⁹) and the rest Industry3.

⁷²⁹ We use manufacturing issuers as reference (the category is not going to be introduced into the logistic models. It is the Industry2). We cannot predict the sign of each category of issuers (compared to the situation when an issuer is a manufacturing company).

We get the information directly from Bloomberg (function ownership summary/OWN: top ownership type and top geographic ownership; function management and directors of the board/MGMT). The expected signs are from literature review: Bhojraj and Sengupta (2003), Ashbaugh-Skaife et al. (2006), Alali et al. (2012), Aman and Nguyen (2013), Murcia et al. (2015), among others.

Some extra explanations for these dummy variables are presented as follow:

Chinese internal corporate governance

13. CON (concentration of ownership): if the top investor holds half or more than half of the shares, we compute 1; if not, 0. The direction of the sign is undecisive;
14. We have three categories for ownership (OWN):
 - ✓ STA (state as the top owner): if the biggest shareholder is the government, we compute 1; if not, we code 0. The difference STA and State-Owned Enterprise (SOE) is that SOEs are central companies on the list of *SASAC (State-owned Assets Supervision & Administration Commission)*, while STA are those companies which have a wider definition, with the state directly or indirectly controlling shareholding via SAMBs (State Asset Management Bureau)⁷³⁰. It serves as the reference;
 - ✓ PRIV: if individual and/or family investor is/are the top investor(s), we compute 1; if not, 0. We expect the negative (N) sign⁷³¹;
 - ✓ The third category “hybrid” (HYB) takes 1, when STA and PRIV take value 0. It is difficult to predict the sign of the coefficient, because the ownership constitution is rather complex, compared to SOE.
15. Duality (the non-separation of management and direction): if the chief of the board is the same person of the top manager, we compute 1; if it is the separation model, 0; we cannot predict the sign of the variable.

⁷³⁰ Chen, Gongmeng, Firth Michael, Xu Liping, 2009, *supra*.

⁷³¹ “We also find that those large non-state firms with weak government connections, likely the engine or innovation in the coming years in China, are especially financially constrained”. In Cull et al, 2015, government connections and financial constraints: evidence from a large representative sample of Chinese firms, *Journal of corporate Finance*, 271-294.

16. All the other variables in the internal corporate governance are dummies variables, except the variable of “Board size” (BOZ). We expect the positive (P) sign.

Table V.2.7

Six variables of soft information and expected sign

Variable	Expected sign	Variable	Expected sign
11. INT	?	14. PRIV/HYB	-/?
12. IND: Sector 1/Section 3	?	15. DUA	?
13. CON	?	16. BOZ	+

As for independent directors, we did not find the percentage on the board on the database Bloomberg. The variable should be completed later, when we are looking for other adequate database(s).

Stock market-related information

As illustrated by the Brazilian researchers (Murcia et al., 2015), that stock market-related ratios do not directly concern credit ratings. In the same spirit, both Bhojraj and Sengupta (2003) and Alali et al. (2012) failed to find significant explanatory power of “cumulative daily stock return” in credit rating.

Nevertheless, we keep two price ratios in our model. We suppose that the growth of risk on stock market is presumably negatively related to the credit ratings. We got the descriptions of variables, from the same database of Bloomberg.

17. Price-to-book (It is the average of the index member's capitalization divided by their book value. Book value is the value per share if the index members were liquidated.)

18. Price to EBIDTA (Price / Trailing 12-Month EBITDA per Share)

Table V.2.8

Two stock-market-related variables and expected sign

Variable	Expected sign	Variable	Expected sign
17. PB	?	18.P_EBITDA	?

Supplementary information of macroeconomic indicators

- 19. The variable of market turbulence (TUR) takes the value 1 for the existence of turbulence (from bull market to bear market within one year and *vice versa*). The explanation can be found in Point 2.2.4 (Supplementary information of Chinese macroeconomic indicators).
 - 20. GDP growth rate will be registered as they showed. We predicted positive signal for its effect to initial issuer ratings.
 - 21. *Idem* for the inflation rate (INF).
 - 22. Sovereign debt rating (SRA): during the period of study, there are year 2003, 2004, 2005, 2006, 2007, 2008 and 2010, where at least one agency among “Big Three” upgraded Chinese sovereign rating. The details can also be found in Point 2.2.4 (Supplementary information of Chinese macroeconomic indicators)
- We computed “0” for BBB, “1” for BBB+, “2” for A-, “3” for A and “4” for A+ and “5” for AA-, and then accumulate ratings from Moody’s, S&P and Fitch. SRA is equal to the sum of ratings from the “Big Three”.

Table V.2.9

Four macro-economic variables and expected sign

Variable	Expected sign	Variable	Expected sign
19. TUR	-	21. INF	-
20. GDP	+	22. SRA	+

In sum, we suppose a prosperous and stable financial market and economic condition are favorable for corporate credit ratings. In this sense, we predict negative sign for TUR and inflation; positive sign for GDP and SRA.

2.3.2. Descriptive statistics of sample

The information of CRAs has been discussed in the previous Section 1.

Hard information (accounting data and financial ratios), soft information (corporate governance-related information) and the other supplementary information to firm-specific information have been discussed in detail, in the ongoing Section 2.

So far, we have counted ten accounting ratios, six governance-related information, two stock market-related ratios and four other macroeconomic information, in total 22 variables, in the descriptive statistics of sample.

There are several points to illustrate before presenting following tables: *firstly*, the number we registered in the table of “data description” are at two decimals. This will be the case for all the tables below in the “point of description statistics”. *Then*, there are some missing data and we will leave the blanket empty when import the information into Stata.

Data description for hard information

What we can learn from the table below is that:

- ✓ The standard deviation is quite high, especially for firm size and interest coverage, which reveals the enormous discrepancy among issuers.
- ✓ We will take the “log of asset” to replace BS_TOT_ASSET, to level down the number.
- ✓ Something to add to the table: there are 22 issuers among 564 having negative profitability.

Table V.2.10

Descriptive data (1)

		Number 732	Average	Median	Std. Dev.	Min	Max
Size	BS_TOT_ASSET	563	24057.18	4882.20	143649.38	118.49	2844266
Leverage	TOT_DEBT_TO_TOT_ASSET (%)	554	28.82	28.40	15.97	.06	87.29
	TOT_DEBT_TO_TOT_EQY (%)	554	88.84	59.10	108.77	.09	1206.48
Liquidity	QUICK_RATIO	546	0.91	0.70	0.88	.04	8.50
	CUR_RATIO	546	1.55	1.31	1.13	.04	10.81
Coverage	INTEREST_COVERAGE_RATIO	523	163.58	3.80	2454.96	-4.30	40978.30
	FCF_TO_TOTAL_DEBT	552	0.56	-0.15	12.86	-18.99	230.98
Profitability	RETURN_ON_ASSET	554	4.58	3.80	4.80	-22.78	27.93
	RETURN_COM_EQY	554	9.39	9.39	13.82	-171.39	93.28
	PROF_MARGIN	563	9.44	7.17	16.91	-154.80	135.74

⁷³² The column of "number" counts the eligible number of issuers to each variable.

Data description for soft information

The following table describes the external (listing internationalization and industry types) and internal (concentration of shareholding, ownership types, duality and board size) governance-related information of issuers in our sample.

What we can learn from the table below is that:

- ✓ It is clear to see that few Chinese issuers have chances to list in foreign market (including HK segment). It is even rarer to have a double listing.
- ✓ We categorized the dummy variables for industry into three sectors (mining and raw materials as industry1; manufacturing as industry2: reference; and commercial companies with financial institutions as industry3). Industry is a categorical variable.
- ✓ It is not surprising to see the concentration level of Chinese public companies is high.
- ✓ There are three types of ownership and we take state/public as reference, in comparison with private ownership, and hybrid ownership. Ownership is also a categorical variable.
- ✓ The missing data for the variable of “duality” is rather important. Especially, we found a lot of cases when Bloomberg is not able to give us information about the president of management team or the general manager.
- ✓ According to the *Security Law*, the minimum number of directors on the board should be five. We saw in the table that the minimum of BOZ is 3. In order to understand the non-conformity to the law, we checked case by case afterwards. The conclusion is that, Bloomberg documents the information relevant to the transitory situation for these issuers, when they suffered from a huge internal personnel change, the year before being rated at the first time (initial issuer ratings).

Table V.2.11

Descriptive data (2)

Variables		Number	1	0
Listing international (INT)			73 (12.94%)	491
Industry (IND)	Mining (MIN) ⁷³³	564	49 (8.69%)	
	Manufacturing (MAN) ⁷³⁴		212 (37.59%)	
	Utilities (UTI) ⁷³⁵		55 (9.75%)	
	Construction (CONS)		34 (6.03%)	
	TMT		93 (16.49%)	
	Financial (FIN)		20 (3.55%)	
	Transport (TRA)		30 (5.32%)	
	Real estate (REA)		31 (5.50%)	
	Rest of tertiary industry (RES)		40 (7.09%)	
Concentration (CON) of shareholding		549	441 (80.32%)	108
Owner-ship (OWN)	State (STA)	549	97 (17.67%)	
	Private (PRIV)		77(14.03%)	
	Hybrid (HYB)		375	
Duality (DUA)		487	90 (18.48%)	397
Board size (BOZ)		557	Average:8.73	Stan. Dev: 2.12
			Medium: 9	Min-Max: 3-19

Data description of stock market-related information

Table V.2.12

Descriptive data (3)

	Number	Average	Median	Std.Dev.	Min	Max
Price-to-Book	525	3.85	2.66	9.47	0.29	208.90
Price-to-EBITDA	514	28.60	17.15	70.50	1.50	1114.96

As for stock market-related information, the price-to ratios are relatively high, compared to the benchmark of S&P 500⁷³⁶. The variation is quite big, which means the differences among listed companies are huge.

⁷³³ Mining and related industries are denoted as "Industry1".

⁷³⁴ Manufacturing is coded as Industry2. It is considered as reference in the logistic models (in the Section 3).

⁷³⁵ The Utilities and the following industrial types are combined as the Industry3, in the logistic models (in the Section 3).

⁷³⁶ Price to book average ratio from 2002 is 2.27 and P/E average ratio from 2002 is 24.88, at <http://www.multpl.com>. (Data is from Robert Shiller, Irrational Exuberance).

Data description of macro-economic indicators

We have discussed previously the pro-cyclical methods that CRAs use to give ratings requires the consideration of information beyond the firm-specific information.

We present in the following table four macro-economic indicators (stock market turbulence, GDP and inflation growth, Chinese sovereign debt rating) and the why of calculation is described in the Point 2.3.1 (Supplementary information of macroeconomic indicators).

Table V.2.13

Descriptive data (4)

Year	TUR	GDP	INF	SRA
2000	0	8.49	0.26	4
2001	1	8.32	0.72	4
2002	0	9.13	-0.77	4
2003	1	10.04	1.16	5
2004	1	10.11	3.88	6
2005	1	11.40	1.82	8
2006	0	12.72	1.46	9
2007	1	14.23	4.75	11
2008	1	9.65	5.86	12
2009	1	9.4	-0.70	12
2010	0	10.64	3.32	14
2011	0	9.54	5.41	14
2012	0	7.86	2.63	14
2013	1	7.76	2.63	14
2014	0	7.30	2.00	14
2015	1	6.9	1.44	14
2016	1	6.69	2.01	14

2.3.3. Calibration of variables

As for variables of hard information

It is clear that, several ratios have similar functionality, such as “total debt to total asset” with “total debt to total equity”. We cannot put them into the logistic models all together. In order to avoid the problem of multi-collinearity, I will run the correlation of rating determinants. Then, we use VIF indicator to verify the results and to make sure that we made the good choice of variables.

Table V.2.14

Pearson correlation test result for hard information

	Log (ASSET) ET)	TOT_DE BT_TO_ TOT_AS SET	TOT_D EBT_T O_TOT _EQY	QUI CK_ RAT IO	CU R_R ATI O	INTERES T_COVE RAGE_R ATIO	FCF_T O_TOT AL_DE BT	RETU RN_O N_AS SET	RETU RN_C OM_E QY	PRO F_M ARG IN
Log (ASSET)	1									
TOT_DE BT_TO_ TOT_AS SET	0.213 **	1								
TOT_DE BT_TO_ TOT_EQ Y	0.434 **	.648**	1							
QUICK_ RATIO	-0.259 **	-.430**	-.301**	1						
CUR_RA TIO	-0.194 **	-.362**	-.153**	.880 **	1					
INTERE ST_COV ERAGE_ RATIO	-0.020	-0.068	-0.039	0.07 7	0.06 3	1				
FCF_TO _TOTAL _DEBT	-0.027	-0.073	-0.037	.109 *	.094 *	0.005	1			
RETUR N_ON_ ASSET	-0.234 **	-.383**	-.401**	.318 **	.251 **	0.054	0.077	1		

RETUR N_COM _EQY	0.003	-.147**	-.344**	.100 *	0.08 2	0.008	0.026	.767**	1	
PROF_ MARGI N	-0.013	-.207**	-.282**	.236 **	.230 **	0.021	.091*	.505**	.502**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table V.2.15

VIF before and after the calibration

Before			After		
Model	Collinearity Statistics		Model	Collinearity Statistics	
	Tolerance	VIF		Tolerance	VIF
Log (ASSET)	0.776	1.289	1. Log (ASSET)	0.932	1.073
TOT_DEBT_TO_TOT_ASSET	0.318	3.154	2. TOT_DEBT_TO_TOT_ASSET	0.820	1.219
TOT_DEBT_TO_TOT_EQY	0.312	3.208	3. CUR_RATIO	0.831	1.204
QUICK_RATIO	0.186	5.381	4. INTEREST_COVERAGE_RATIO	0.990	1.010
CUR_RATIO	0.194	5.148	5. FCF_TO_TOTAL_DEBT	0.981	1.020
INTEREST_COVERAGE_RATIO	0.987	1.013	6. PROF_MARGIN	0.760	1.316
FCF_TO_TOTAL_DEBT	0.978	1.022	/		
RETURN_ON_ASSET	0.221	4.531			
RETURN_COM_EQY	0.269	3.715			
PROF_MARGIN	0.668	1.497			

According to the definition of VIF, the more distance that the ratio of VIF is from 1, the more correlation one variable is to the rest of variables. The advantage of VIF is that it takes into account of the entire set of variables, instead of a binary relationship

between two variables (as we showed in the correlation test).

In this regard, I dropped TOT_DEBT_TO_TOT_EQY, QUICK_RATIO, RETURN_ON_ASSET and RETURN_COM_EQY, since they have higher VIF than other ratios of the same category. For instance, “quick ratio” compared to the “current ratio”. I ran the same VIF test and found the results of the rest of variables are all around 1, which means the independent variables have better quality after the calibration.

As for variables of soft information

We run non-parametric correlation test: Spearman’s rank correlation instead of Pearson correlation in afraid of non-respect of hypothesis of normal distribution of parametric test, because most of variables are dummy variables instead of continuous variables and VIF test. According to the criteria of “free of multi-collinearity” (VIF <10 or Tolerance > 0.2), it is clear that, there is no obvious problem in the model, if we take in account external and internal corporate governance-related variables (7-12): INT, IND: Industry1 and Industry3, CON, OWN: PRIV and HYB, DUA, BOZ.

As for variables of stock market-related information

There is no significant correlation among *price-to book ratio (13)* and *Price-to-EBITDA ratio (14)*. We hence didn’t eliminate any of them out of the modeling because of the correlation.

As for variables of macro-economic indicators

Concerning variables of *market turbulence (15)*, *GDP (16)*, *Inflation (17)*, *sovereign rating (18)*, we found by using parametric correlation test (Pearson), that no correlation is observed. The results are consistent with non-parametric tests (Spearman).

Conclusion of Section 2

Corresponding to four types of information including (hard information, soft information, stock market-related information and macro-economy information) that we discussed in Section 2 of Chapter III, we explored as extensive as possible in the literature review to find possible determinants in credit rating measurement (Subsection 2.1).

Chinese firms and market characteristics were examined, from points of view of internal and external corporate governance, quality of public information, voluntary disclosure of private information and other supplementary information of macroeconomic indicators (Subsection 2.2).

Using the sole-rating sample of initial issuer ratings, we are able to describe statistically all variables that we chose previously. We checked the correlation (parametric and non-parametric tests) among all explanatory variables and passed VIF test to make sure the adequacy in the choice of rating determinants (Subsection 2.3).

After the calibration, we have in total 18 variables to test in the logistic models, (if the variable is a dummy, we put “D” in the parenthesis of the following table. IND and OWN are variables with three and three categories).

The details could be found in the table below:

Table V.2.16

Summary of tested variables

Hard information (accounting numbers and financial ratios)					
Log-asset	TOT_DEBT_TO_T_ASSET	CUR_RATIO	INTEREST_COVERAGE_RATIO	FCF_TO_TOTAL_DEBT	PROF_MARGIN
External corporate governance		Internal corporate governance			
INT	IND (D): Industry1 and Industry3	CON(D)	OWN(D): PRIV and HYB ⁷³⁷	DUA	BOZ
Stock market-related information		Macro-economic information			
PB	P_EBITDA	TUR (D)	GDP	Inflation	SRA

These variables, along with variables representing agency-conduct effect and time-varying effect that we have discussed in the Section 1, are going to tell us which rating determinants are statically significant in deciding rating grade (speculation grade vs. investment grade) and rating levels.

We will present the results and analyses in the next Section 3 of Chapter V.

⁷³⁷ With State-owned companies (SOE) as reference.

Section 3. Execution of logistic models and analysis of results

3.1. Methodology for logistic models

3.2. Results of binomial logistic model and analysis

3.3. Results of ordered multinomial logistic model and analysis

Introduction of Section 3

Structure of Section 3, Chapter V

In the presentation, we will firstly present the sample description, especially the amount of data of each logistic model.

And then, we recalled all independent variables that we have initiated in the previous Section 1 (agency effect and time-varying effect) and in the previous Section 2 (four categories of independent variables: hard, soft, stock market related information and macro-economic information). They exist in both classic researches in the literature review, but also in the discussion of Chinese institutional characteristics.

In Subsection 3.1: Methodologies of two types of logistic models: binomial dependent variable, on one hand, multinomial dependent variable, on the other hand; non-ordered logistic model, on one hand, ordered logistic model, on the other hand.

In Subsection 3.2: Results and analyses of binomial logistic models with credit rating as dependent variable (1 if ratings on the speculation grade, and 0 if ratings on the investment grade, amounting to 564 initial issuer ratings).

In Subsection 3.3: Results and analyses of ordered multinomial logistic models, with investment-grade ratings as dependent variable, in the line of Ashbaugh-Skaife (2006) and Alali et al. (2012). The size sample amounts to 518 initial issuer ratings.

Sample description of Section 3, Chapter V

The sample of 564⁷³⁸ “initial long-term issuer ratings”⁷³⁹, were rated only once in the history (from 2002 to 2016) by one single CRA (“sole ratings”). We are able to run binomial logistic model to explain rating determinants, in Subsection 2.

Speculation-grade ratings were very few in terms of number (46 out of 564). We will then, spend more time to investigate sample inside the investment grade (518 out of 564) by explaining rating determinants, in Subsection 3.

Table V.3.1

Plan	Rating grade	Amount of data	Rating level	Amount of data	Dependent variable
Subsection 2	Speculation grade vs. Investment grade	564	Equal to and below BB+	46	1
			Equal to and above BBB-	518	0
Subsection 3	Investment grade	518	BBB ⁷⁴⁰	32	0
			A	120	1
			AA	333	2
			AAA	33	3

We use independent variables in the previous year (t-1) to determine the rating result (dependent variables) in the subsequent year (t), similar to the methodology of Bhojraj and Sengupta (2003), Shin and Moore (2003) and Murcia et al. (2015).

The reason why we did not use the approach of (Gray et al., 2006), by using the average of three previous years⁷⁴¹ is because of the difficulty to retrieve historical data. It would restrain furthermore the size of our limited sample.

There are two sources of independent variables that we have already presented in detail, in the previous Section 1 and Section 2 of Chapter V.

⁷³⁸ Based on the sample of initial issuer ratings, which are rated only once in the entire time (sole-rating sample), by one CRA, we can see that the number is less than the number presented in the “Data collection since CRAs’ entry into Chinese rating market (since 1988)” in Chapter IV (Point 2.3.1), due to some lacks of data on Bloomberg for certain issuer. Besides, some listed companies ceased to exist, the data is hence impossible to get. Finally, we get in total 564 initial issuer ratings.

⁷³⁹ Poon and Chen, 2008, *supra*, page 41.

⁷⁴⁰ In order to reduce the rating scale, we combined BBB-, BBB and BBB+ together. *Idem.* for the rest of rating levels.

⁷⁴¹ Certes, Bouzouita and Yong (1998) even suggested five previous years, out of the consideration of “through the cycle” to determine the value of independent variable.

Recalls of Section 1, Chapter V

We discussed both agency-conduct effect and time-varying effect. We derived from the Section 1 two types of variables: variables representing CRAs and variable of the “Year”.

In our sample, we have several findings in terms of “agency-conduct effect”:

The following table presents the way how we introduced the variable into the Excel document.

Table V.3.2

CRAs	Global CRAs (12)				Local CRAs					
	Mood y’s	S&P	Fitc h	JC R	Xin Hua (75)	Lianhe (108)	Cheng Xin (127)	Da Gong (86)	SB CR (151)	CCRC (5)
Issuers(i)										
Issuer 1										
Issuer 2										
.										
.										
.										
Issuer 564										

Global agencies only gave 12 initial issuer ratings. It is impossible to study separately the “Big three” with such a small size of sample. Hence, we combined them together under the label of global CRAs. We made this decision was also because that Xinhua is a right-censored variable. It ceases to exist in 2009.

As for Xinhua, it was extremely dynamic at the beginning of our study period, but it ceased to exist on the year of 2009; while CCRC started its activity quite late, we captured only 5 initial issuer ratings; SBCR is the most active Chinese local CRA, in giving 151 out of 564 initial issuer ratings; Lianhe and Chengxin counted together 235 initial issuer ratings.

Table V.3.3

χ^2 test for rating grade

((investment/speculation grades) * CRAs (global/local agencies))

Rating grade	Global+Xinhua	Local	Total
Speculation	39	7	46
Investment	48	470	518
Total	87	477	565

The Pearson Chi-square test gives us 184.676, which is significant⁷⁴². Hence, the type of CRAs between global and Chinese local, is significantly correlated with the rating grade. The fact to be rated by global CRAs is positively correlated to the fact to get a speculation-grade rating. The result is consistent what we got from the previous Chapter IV (Point 2.5.4).

We did the same Chi-square test between Chinese local CRAs Top Three (Lianhe, Chengxin and Dagong) and local CRAs, with rating grade, SPSS does not compute the significance. Hence, we don't bother to present the results here.

⁷⁴² SPSS computed: 0 cells (0.0%) have expected count less than 5. The minimum expected count is 7.10.

Additionally, “the time-varying effect” is also an important factor to explore.

We will introduce another variable: YEAR, trying to capture the evolving strategic rating behaviors of certain CRA across the time.

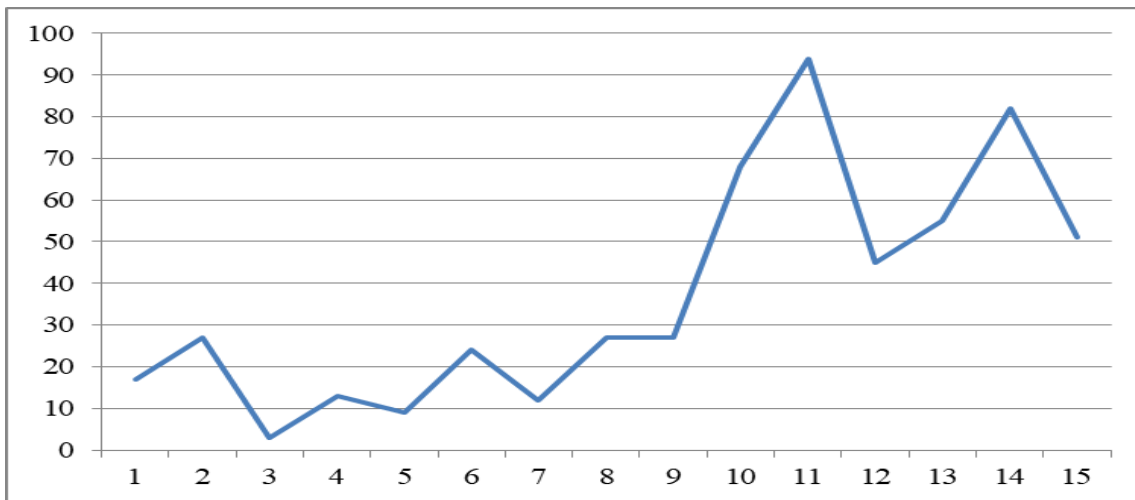
It is clear from the following *Table. V.3.4 and Graph V.3.1* (Axe x designates the year of rating. X=1 is equal to the year of 2002; X=15 is equal to the year of 2016; Axe y designates the number of ratings in the given year), that with time going by, the **number of ratings** increased.

Table V.3.4

Number of the sole-rating for initial issuer, by year

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
N.	17	37	3	13	9	24	12	27	27	68	94	45	55	82	51

Graph V.3.1



As for the **rating level**, we ran a model of “multiple linear regression”, between ratings (dependent variable, going from 0 to 7) and the year (independent variable, going from 2002 to 2016). We found that the model computes the significance, with independent variable significant at the level of less than 1%. The coefficient is positive, which means when the time went by, the level of rating increased. The observation is consistent with the descriptive data of Point 2.3.2 and Point 2.3.3 in Chapter IV.

Recalls of Section 2, Chapter V

There are 16 variables that we concluded from the classic studies of rating determinants, among firm-specific information (hard, soft, stock market related information) and macro-economy information.

The choice of these independent variables is not only justified by the literature review, but also by the characteristics of Chinese institutional environment. You may find more details in the Subsection 2.1 and 2.2 (Chapter V), respectively.

These four categories of independent variables are presented in the Excel, which is shown as follows:

Table V.3.5

Information	Year(t)	16 variables			
		Hard (6 variables)	Soft (5 variables, 2 external and 3 internal)	Stock market-related information (2 variables)	Macro- economic information (3 variables)
Issuers(i)					
Issuer 1	2002
Issuer 2	· · ·				
·					
·					
Issuer 564	2016				

Correlation test

We ran finally the correlation test between the variable “year”, the variables representing CRAs and the rest of variables of section 2. We found that the “year” is significantly correlated with globalxinhua, GDP and sovereign ratings.

Consequently, we will not introduce the variable into the logistic models. It is impossible to verify the Hypothesis 1⁷⁴³ concerning the time-varying hypothesis for CRAs’ strategic behaviors, under these circumstances.

We have to find another variable to represent the effect in the future study.

⁷⁴³ Please refer to the Subsection 1.3.3: Tasting hypotheses on strategic rating behaviors.

3.1. Methodologies for logistic models

Ederington (1985)⁷⁴⁴ classified four possible approaches to study determinants of bond ratings, considering the pros and cons of both ordered (non-ordered) and linearity (non-linearity). We will use two sets of dependent variables, in the line of Alali et al. (2012), in our logistics models: non-ordered binomial logistic model and ordered multinomial logistic model.

Firstly, we will explain the probability to be rated on the speculation grade, in comparison with ratings on investment grade (as reference), by using non-ordered binomial logistic model.

Secondly, we will focus on the ratings inside the investment grade to explain the determinants to get better ratings than others. The ordered logistic model means that each step, we will *accumulate* a lower level to the higher level. In our model, we coded BBB as the base (0) and AAA as the highest level (3).

Hence, we calculate the possibility to be rated, compared the possibility to be rated:

First step: AAA (we denoted Y equal to 3), compared to AA, A and BBB (we denoted Y equal to 2, 1 and 0, respectively);

Second step: AAA and AA (3 and 2, respectively), compared to A and BBB (1 and 0, respectively);

Third step: AAA, AA and A (3, 2 and 1, respectively), compared to BBB (We denoted Y equal to 0).

⁷⁴⁴ Ederington, Louis, 1985, Classification models and bond ratings, *The Financial Review* 20, page 237–262.

3.1.1. Binomial logistic models: investment grade vs. speculation grade

In Section 1, we have converted the rating scale into 8 levels, with the lowest level for 0 and highest level for 7. Here, we created a dummy dependent variable Y' . It takes 1 if an issuer is rated on “speculation grade” (ratings lower than and equal to BB), and takes 0 if it is rated on the “investment grade” (ratings equal to and higher than BBB, A, AA, AAA).

$$Y_{i,t} = a + bX_{i,(t-1)} + \varepsilon$$

$$Y_{i,t}' \begin{cases} = 1, & \text{if } Y_{i,t} = 0, 1, 2, 3 \\ = 0, & \text{if } Y_{i,t} = 4, 5, 6, 7 \end{cases}$$

$Y_{i,t}$ is a latent variable compared to the vector of independent variables and we try to estimate in the binomial logistic model, the probability to be rated on the speculation grade, compared to on the investment grade (which is denoted 0, as reference).

$X_{i,(t-1)}$ = the entire set of firm-specific, macro-economic information (16 variables in total) and variables representing agency-conduct effect and time-varying effect.

In the equation, “a” is the constant, “b” is a vector of coefficients to be estimated, and ε is a logistic Weibull distributed residual. The entire model uses the maximum likelihood estimation.

To interpret the results, we will use not only coefficients, but also odds ratios and marginal effects.

3.1.2. Ordered multinomial logistic model for ratings of investment grade

To our knowledge, Blume (1998) is one of the recent researchers applying “ordered probit model” to credit-rating related studies. Shin and Moore (2003) and Gray et al. (2006)⁷⁴⁵ used the model, in application to studies of CRAs in Japan and Australia, respectively. According to them (2006), this model has several advantages:

Compared to “multiple discriminant analysis”, “ordered probit approach recognizes” certain order among ratings. They take the example by saying “that A is higher than BBB, not merely different”.

Besides, compared to “regression analysis”, “ordered probit approach” solves the problem inside the first model that the “rating notches should not be defined as an interval scale with arbitrary intervals attached to each group”⁷⁴⁶. For example, the average quality difference between the AAA and AA classes (two “adjacent ratings”)⁷⁴⁷ is not assumed to be the same as that between BBB and BB classes.

We are going to use the ordered logistic models instead of probit model because we want to keep continuity in the logistic distribution law with previous binomial model. Empirically speaking, they are very similar, and we just need to be careful in the results interpretation.

$$Y_{i,t} = a + bX_{i,(t-1)} + \varepsilon$$

$$Y_{i,t}' \begin{cases} =0, & \text{if } Y_{i,t}=4 \\ =1, & \text{if } Y_{i,t}=5 \\ =2, & \text{if } Y_{i,t}=6 \\ =3, & \text{if } Y_{i,t}=7 \end{cases}$$

⁷⁴⁵ Gray, S. Mirkovic, A and Rangunathan, V. 2006. The determinants of credit ratings: Australian evidence. *Australian Journal of Management*, 31(2), P 333-354. In other words, it is problematic if “each rating with an equal interval on the dependent variable scale”, in Kaplan and Urwitz, 1979.

⁷⁴⁶ Ederington, Louis, 1985, Classification models and bond ratings. *The Financial Review* 20, page 240.

⁷⁴⁷ *Idem*, page 241

We only study ratings of investment-grade here.

First of all, it is because that the size of the sample is quite small (only 46 in total in the entire sample). The other reason is because we followed the lead of Jorion et al. (2009) and trying to explore the ratings on the investment grade. We compute $Y_{i,t}=0$ for issuer i , that is rated BBB (that we once coded 4 in Section 1, Chapter V) in year t , and 3 for the highest rating AAA for an issuer i , in year t .

$$\begin{array}{l} Y_{i,t}'=0, \\ Y_{i,t}'=1, \\ Y_{i,t}'=2, \\ Y_{i,t}'=3, \end{array} \left\{ \begin{array}{l} \text{if } Y_{i,t} \leq a_1 \\ \text{if } a_1 < Y_{i,t} \leq a_2 \\ \text{if } a_2 < Y_{i,t} \leq a_3 \\ \text{if } a_3 < Y_{i,t} \end{array} \right.$$

The objective of the ordered model is to find “ $a = \{a_1, a_2, a_3\}$, [which is] a set of unknown threshold parameters (cut points) such that the rating $Y_{i,t}'$ is”.

3.2. Results of binomial logistic model and analysis

We will run nested models in the following three points and results (by using commands and outputs of Stata) are presented as follows:

Point 3.2.1: We will introduce all variables, except those representing CRAs, into the logistic model. Secondly, we will interpret the odds ratio and marginal effect. Thirdly, we will compute the fitness test and the cross-classification (contingency) table.

Point 3.2.2: As we presented in the chi-square test in the introduction that the type CRAs (global and local) is significantly related to the fact to be rated on the speculation grade or investment grade; hence, we will the sole variable: Globalxinhua to execute the logistic model. And then, we will interpret the odds ratio and marginal effect, as what we did before.

Point 3.2.3: We will add agency variable into the previous model, first the variable of Globalxinhua (reference agency is the local CRAs). Secondly, we will interpret the odds ratio and marginal effect, as what we always did. Thirdly, we will run the fitness test and the cross-classification (contingency) table.

Last but not least, we will select the best-fitted model, and to test the power of our logistic model to predict the rating statistics, in comparison with the logistic model in Point 3.2.1.

This will justify our introduction of the variable of “agency (CRAs)” into the classic rating determinant models. It also illustrates the contribution of our thesis.

Results of marginal effect (1)

```

. margins, dydx(*)
Average marginal effects      Number of obs   =      419
Model VCE      : OIM

Expression      : Pr(rating_speculative), predict()
dy/dx w.r.t.   : logasset TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO FCF_TO_TOTAL_DEBT PROF_MARGIN
                 internationalisation firstsector thirdsector concentration private HYB duality boardsize Pricetobook
                 priceebitda markturbulance gdp inflation sovereignrating

```

	Delta-method		z	P> z	[95% Conf. Interval]	
	dy/dx	Std. Err.				
logasset	.0167056	.0283425	0.59	0.556	-.0388447	.0722559
TOT_DEBT_TO_TOT_ASSET	.0035386	.0008824	4.01	0.000	.0018092	.005268
CUR_RATIO	.0103414	.0094111	1.10	0.272	-.0081041	.0287868
INTEREST_COVERAGE_RATIO	.0002637	.0005499	0.48	0.632	-.0008141	.0013416
FCF_TO_TOTAL_DEBT	.0001237	.0024843	0.05	0.960	-.0047455	.0049929
PROF_MARGIN	.0013077	.0006692	1.95	0.051	-3.85e-06	.0026193
internationalisation	.0649393	.0293956	2.21	0.027	.0073249	.1225537
firstsector	.0215759	.0383048	0.56	0.573	-.0535002	.0966519
thirdsector	-.0302748	.024728	-1.22	0.221	-.0787408	.0181911
concentration	.0440072	.027758	1.59	0.113	-.0103976	.0984119
private	.05334	.0426581	1.25	0.211	-.0302683	.1369483
HYB	-.0065542	.0288734	-0.23	0.820	-.063145	.0500365
duality	-.0038049	.0327386	-0.12	0.907	-.0679713	.0603614
boardsize	-.0048411	.0066692	-0.73	0.468	-.0179124	.0082302
Pricetobook	.0009279	.0032749	0.28	0.777	-.0054908	.0073465
priceebitda	.0006561	.0003721	1.76	0.078	-.0000731	.0013853
markturbulance	-.0140223	.022905	-0.61	0.540	-.0589153	.0308707
gdp	-.0100954	.0088864	-1.14	0.256	-.0275124	.0073217
inflation	.0038479	.0085452	0.45	0.652	-.0129004	.0205962
sovereignrating	-.0248811	.0047276	-5.26	0.000	-.0341471	-.0156151

What we can learn from the *Graph V.3.3* is another way to interpret the results.

Marginal effects told us that with one-unit growth in the sovereign debt ratings of Chinese government, issuers get 2.4% less likely to be rated on the speculation grade (vs. investment grade). The interpretation should be the same for other significant continuous variables.

The interpretation is the same for the other continuous variables: debt/asset ratio (***), profit margin (*) and price-EBITDA (*).

As for the selection test, the results showing below of AIC and BIC (in the *Graph V.3.4*) are both based on the log likelihood, the lower value we got, and the best the model is fitted. We will compare the results with the results, derived from the model in the Point 3.2.3.

Fitness of the model: Akaike's and Bayesian information criterion (1)

Model	Observations	ll(null)	ll(model)	df	AIC	BIC
	419	-120.384	-62.7704	21	167.5408	252.3361

We can learn from the contingency table (1) that our model is able to classify more than 95% of the ratings correctly, in terms of speculation grade or investment grade.

In the case of True D (the ratings are predicted to be on the speculation grade), our model successfully predicted 19 cases (with classified +) out of 35 (with sensitivity of 54.29%). When the model classified ratings on the speculation grade, 19 cases out of 23 were right and only 4 cases were observed on the investment grade (This gives us a positive predictive value at 82.61%).

In the case of True ~D (the ratings are predicted to be on the investment grade); our model was correct in 380 cases out of 384, which gives us a high specificity at 98.96%. In other words, our model is more power in predicting ratings of investment grade.

Results of prediction: contingency table (1)

```

. estat classification
Logistic model for rating_speculativel

```

Classified	True		Total
	D	~D	
+	19	4	23
-	16	380	396
Total	35	384	419

```

Classified + if predicted Pr(D) >= .5
True D defined as rating_speculativel != 0

```

Sensitivity	Pr(+ D)	54.29%
Specificity	Pr(- ~D)	98.96%
Positive predictive value	Pr(D +)	82.61%
Negative predictive value	Pr(~D -)	95.96%
False + rate for true ~D	Pr(+ ~D)	1.04%
False - rate for true D	Pr(- D)	45.71%
False + rate for classified +	Pr(~D +)	17.39%
False - rate for classified -	Pr(D -)	4.04%
Correctly classified		95.23%

3.2.2. Logistic model with sole-variable: the quasi-separability of Globalxinhua

Our model following the classic rating determinants in the literature review is not sufficient to predict ratings of speculation grade in the previous contingency table (1). That is the reason why we want to add some other variables in the model: CRAs. As we showed in Chapter IV and Section 1 of Chapter V, they are an important factor in determining rating level. We saw from the following *Graph V.3.5* that the logistic model is significant at 1% level, with the sole variable of Globalxinhua⁷⁴⁹.

The coefficient showed following is 4.00, which means that ratings issued by global CRAs are *more likely* to have ratings on the speculation grade, compared to the reference of investment grade. The result is not surprising, and it is consistent with the chi-square test that we made at the beginning of Section 3.

Graph V.3.6

Results of coefficient and odds ratio (2)

```

. logit rating_speculative1 globalxinhua
Iteration 0:  log likelihood = -159.36592
Iteration 1:  log likelihood = -106.86812
Iteration 2:  log likelihood = -96.720037
Iteration 3:  log likelihood = -96.338548
Iteration 4:  log likelihood = -96.337082
Iteration 5:  log likelihood = -96.337082

Logistic regression              Number of obs   =      564
                                LR chi2(1)      =     126.06
                                Prob > chi2      =      0.0000
Log likelihood = -96.337082      Pseudo R2      =      0.3955

```

rating_speculative1	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
globalxinhua	3.999183	.4375605	9.14	0.000	3.14158 4.856786
_cons	-4.206823	.3807687	-11.05	0.000	-4.953115 -3.46053

```

. logistic rating_speculative1 globalxinhua
Logistic regression              Number of obs   =      564
                                LR chi2(1)      =     126.06
                                Prob > chi2      =      0.0000
Log likelihood = -96.337082      Pseudo R2      =      0.3955

```

rating_speculative1	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
globalxinhua	54.55357	23.87049	9.14	0.000	23.14041 128.6102
_cons	.0148936	.005671	-11.05	0.000	.0070614 .0314131

As for the odds ratio, we can get analysis that the relative probability to get ratings of speculation-grade (vs. investment-grade) is 54 times higher in the case of global CRAs than in the case of locals CRAs.

⁷⁴⁹ The variable includes the ratings given by global CRAs and Xinhua CRA.

3.2.3. Logistic model with all variables, including Globalxinhua: comparative analysis

After introducing Globalxinhua as an additional variable to the basic model in the Point 3.2.1. We get results of *odds ratio*, presented as follows:

Graph V.3.7

Results of odds ratio (3)

```
. logistic rating_speculativel logasset TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO FCF_TO_TOTAL_DEBT PROF_MARG
> IN internationalisation firstsector thirdsector concentration private HYB duality boardsize Pricetobook priceebitda marke
> tturbulance gdp inflation sovereignrating globalxinhua
```

```
Logistic regression                Number of obs    =      419
                                   LR chi2(21)       =     128.61
                                   Prob > chi2        =     0.0000
                                   Pseudo R2         =     0.5342
Log likelihood = -56.079387
```

rating_speculativel	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]
logasset	.8742979	.5690183	-0.21	0.836	.2441591 3.130732
TOT_DEBT_TO_TOT_ASSET	1.089308	.0250738	3.72	0.000	1.041257 1.139578
CUR_RATIO	1.283765	.3093111	1.04	0.300	.8005652 2.058613
INTEREST_COVERAGE_RATIO	1.002609	.0148287	0.18	0.860	.9739623 1.032098
FCF_TO_TOTAL_DEBT	.9974587	.1214315	-0.02	0.983	.785722 1.266254
PROF_MARGIN	1.028534	.0174292	1.66	0.097	.9949348 1.063268
internationalisation	1.894078	1.466693	0.82	0.409	.4152058 8.640366
firstsector	1.197615	1.234197	0.17	0.861	.1588967 9.026497
thirdsector	.4055751	.2546918	-1.44	0.151	.1184503 1.388693
concentration	2.255831	1.591635	1.15	0.249	.5658857 8.992585
private	1.690428	1.826998	0.49	0.627	.2032481 14.05941
HYB	.8087549	.5816544	-0.30	0.768	.1975308 3.311303
duality	.8057128	.687728	-0.25	0.800	.1512254 4.292752
boardsize	.8707111	.1455835	-0.83	0.408	.6274116 1.208358
Pricetobook	1.043221	.0773601	0.57	0.568	.9021013 1.206416
priceebitda	1.016778	.0097116	1.74	0.082	.9979208 1.035992
marketturbulance	.8383843	.4954381	-0.30	0.765	.2632878 2.669657
gdp	.7993064	.2168554	-0.83	0.409	.4696545 1.360342
inflation	.9432248	.2157837	-0.26	0.798	.6023985 1.476885
sovereignrating	.9123099	.1601418	-0.52	0.601	.6467362 1.286938
globalxinhua	80.70053	102.7958	3.45	0.001	6.646935 979.7862

Only debt/asset ratios (***) , profit margin (*) and price-EBITDA (*) keep being significant in the new model⁷⁵⁰. They are still positive⁷⁵¹ (in terms of coefficient, in Annex 8) rating determinant in deciding ratings on the speculation grade.

In the same spirit, global and Xinhua CRAs (***) are *more likely* to give ratings equal to and below BB+. The relative probability is 81 times (80.70053) higher, in the case of global CRAs and Xinhua, in comparison with the case of local CRAs.

⁷⁵⁰ We suppose that the reason why the variable of “internationalization” is no longer significant is that the variable of “globalxinhua” incorporated already the information. The discussion of background information tells us that most of companies with international ownership are rated by global CRAs and Xinhua.

⁷⁵¹ However, we have predicted in the Subsection 2.3 (Constitution of hypothesis (2): testing hypothesis for strategic choices of rating determinants), that the “profit margin” should be a negative factor to the ratings of speculation grade.

As for the selection tests (Graph V.3.9), we get a lower AIC and BIC. It means that the model is empirically better than a classic model without considering the type of CRAs. The absence of competition between global and local CRAs due to the rating regulation and to segments of makers have impact on the choice of issuers and investors (we have illustrated in Chapter IV); in return, it also impacts the strategic behaviors of CRAs in giving initial issuer ratings.

In comparison, we found in the following contingency table (2), that the addition of Globalxinhua variable to the model has increased the robustness of our rating model prediction, especially in the power of speculation-grade ratings (the increase of sensitivity, when the ratings on the speculation grade are denoted 1 as Y, in the binomial logistic model). We get a slightly higher ratio as “correct classification” at 95.7%. More precisely⁷⁵³, our model becomes more powerful in predicting ratings of speculation grade (with an augmentation of sensitivity, from 54.29% to 62.86%), without diminishing too much the prediction capacity for ratings of investment grade, at the same time (a small drop of specificity from 98.96% to 98.70%).

Graph V.3.10

Results of prediction: contingency table (2)

```

.
. estat classification
Logistic model for rating_speculativel

```

Classified	True		Total
	D	~D	
+	22	5	27
-	13	379	392
Total	35	384	419

```

Classified + if predicted Pr(D) >= .5
True D defined as rating_speculativel != 0

```

Sensitivity	Pr(+ D)	62.86%
Specificity	Pr(- ~D)	98.70%
Positive predictive value	Pr(D +)	81.48%
Negative predictive value	Pr(~D -)	96.68%
False + rate for true ~D	Pr(+ ~D)	1.30%
False - rate for true D	Pr(- D)	37.14%
False + rate for classified +	Pr(~D +)	18.52%
False - rate for classified -	Pr(D -)	3.32%
Correctly classified		95.70%

⁷⁵³ The prevalence of ratings on the speculation grade remains the same 35 cases out of 419 (8%). The positive and negative predictive values are almost the same, if we compare the values (Graph V.3.5) in the Subsection V.3.2.1.

3.3. Results of ordered multinomial logistic model and analysis

We have figured out in the previous binomial logistic model that the introduction of variables of CRA helped to increase the prediction power to differentiate the ratings of speculation grade (in comparison with ratings of investment grade). Here, we would like to concentrate to investigate the rating determinants behind the initial issuer ratings of investment grade.

Firstly, as we did in the binomial logistic model, we will introduce all classic variables (except those representing CRAs) into the ordered multinomial logistic model. Before interpreting the coefficient, odds ratio, marginal effects and fitness test, prediction test, we need to test the preliminary condition of the model: proportional odds and to figure out in detail, which variables(s) contribute to the reject of the null hypothesis.

In the spirit, we try to reduce the number of independent variables and select the best of them in our study. We will delete independent variables which are significant in the “Brant Test of Parallel Regression Assumption”.

However, as stated by Paul Allison (2001, page 141)⁷⁵⁴ that: *SAS/STAT User’s Guide warns that the test may tend to reject the null hypothesis more often than is warranted. In my own experience, if there are many independent variables and if the sample size is large, this test will usually produce p-values below .05. I don’t think that means that the cumulative logit models should always be rejected in such case.*

In reality, we do have a lot of variables in the model. Consequently, there is no wonder the null hypothesis is easily to be rejected. In other words, we should be very careful in the drop of independent variables. We define the threshold at 5%, instead of 10% to preserve less important contributor to the violation of parallel regression assumption.

⁷⁵⁴ Allison, P. 1999. Logistic regression, using SAS: Theory and Application. Cary, NC: SAS Institute, INC.

The other preliminary condition of the model is to examine if these cut points are adequate, which means if we should combine certain category of ratings to reduce the number of dependent variables (we denoted 0 to 3, meaning ratings of BBB to AAA).

Secondly, we will introduce CRAs into the previous ordered multinomial logistic model. Before the execution under Stata, we want to get an insight into number of rating distribution according to CRAs.

Table V.3.6

Dependent variable CRAs	0 (BBB)	1 (A)	2 (AA)	3 (AAA)	Total
Global	1	2	4	0	7
Xinhua	25	13	3	0	41
=Global+Xinhua	=26	=15	=7	=0	=48
Lianhe					
Chengxin	4	51	155	23	233
Dagong	0	25	56	4	85
=Top three	=4	=76	=211	=27	=318
SBCR	1	27	114	5	147
CCRC	1	2	1	1	5
=New CRAs	=2	=29	=115	=6	=152
Total	32	120	333	33	518

Since we have studied the difference between global and local CRAs in the binomial logistic model (in the Subsection 2), we want to dig into all Chinese local CRAs by ordinal multinomial logistic model (in the Subsection 3).

To be specific, in this Point 3.3.2, we will add five variables of Chinese local CRA (with reference of global CRAs and Xinhua) into the classic model in the Point 3.3.1, following the next six steps.

The first two steps aim to verify the validity of the logistic model and the last two steps are to examine the quality of the model.

- ✓ To *test* the proportionality of odds,
- ✓ To *test* the adequacy of cut point;
- ✓ To *calculate* the odds ratio for every significant independent variable,
- ✓ To *calculate* the margins;
- ✓ To *compare* the statistical fitness of the model,
- ✓ To get the table of prediction and *compare* to the results of Point 3.3.1.

3.3.1. Logistic model with all variables, except those representing CRAs (2)

- ✓ After the control of approximate likelihood-ratio test of proportionality of odds⁷⁵⁵, we have 11 independent variables left in our model. They are:

Table V.3.7

Category	Independent variables
Hard information	Debt/asset, current ratio, interest coverage ratio, profit margin
Soft information	Industry (first sector, third sector), ownership concentration, ownership (private and hybrid), duality, board size
Stock market-relate information	Price-to-EBITDA
Macro-economy information	Market turbulence

- ✓ We ran the extra tests to see if the choice of three cut points (in order to divide the dependent variable of four categories. From lowest to highest level, they are ratings of BBB, A, AA and AAA) is justified.

The results are shown as follows. It is clear that, these cut-points are significantly different from their higher category. Hence, none of these four categories of ratings should be combined.

⁷⁵⁵ Chi2 (26) =25.62, with Prob > chi2 = 0.4840 (data from the Stata output).

- ✓ More detailed explanation can be found in the following *Table V.3.8*, concerning the *marginal effects* for the ratio. We saw that four “dy/dx” summed up to 0.

To be specific: one-unit-increase in the “interest coverage” is associated with being, at 0.05% less likely, rated in the BBB level, at 0.12% less likely rated in the A level, at 0.12% more likely rated in the AA rating level, and at 0.05% more likely rated in the AAA rating level.

Table V.3.8

Marginal effects for interest coverage ratio

	dy/dx	Std. Err.	z	P> z 	[95% Conf.	Interval]
(0) BBB	-.0004533	.0002712	-1.67	0.095	-.0009847	.0000782
(1) A	-.0012228	.0006876	-1.78	0.075	-.0025706	.0001249
(2) AA	.0011673	.0006669	1.75	0.080	-.0001397	.0024744
(3) AAA	.0005088	.0002978	1.71	0.088	-.0000749	.0010924

- ✓ *As for fitness test*, we found several ratios, such as AIC and BIC, based on the log-likelihood, to evaluate the quality of the model. These numbers will be served to compare with those in the later model with variables representing CRAs. It should be noted that the less important the numbers are, the more fitted the model is.

Graph V.3.13

Fitness of the model (3)

`. fitstat`

Measures of Fit for **ologit** of **ordered**

Log-Lik Intercept Only:	-369.753	Log-Lik Full Model:	-362.014
D(368):	724.029	LR(13):	15.477
		Prob > LR:	0.279
McFadden's R2:	0.021	McFadden's Adj R2:	-0.022
ML (Cox-Snell) R2:	0.040	Cragg-Uhler(Nagelkerke) R2:	0.046
McKelvey & Zavoina's R2:	0.050		
Variance of y*:	3.464	Variance of error:	3.290
Count R2:	0.646	Adj Count R2:	0.000
AIC:	1.969	AIC*n:	756.029
BIC:	-1465.807	BIC':	61.881
BIC used by Stata:	819.239	AIC used by Stata:	756.029

- ✓ As for prediction test, we conducted a loop in Stata to calculate how our model is able to predict correctly the rating level, according to the independent variables that we used in the logistic model. We draw the conclusion that the success rate is at 49% (256 out of 518). We saw from the Table V.3.9 that the model tended to better rate the issuers and the prediction concentrated on the level of AA.

Table V.3.9

Results of prediction (3)

Predicted by the model Observation	(0) BBB	(1) A	(2) AA	(3) AAA	Total
(0) BBB	0	0	22	10	32
(1) A	0	1	88	31	120
(2) AA	0	1	247	85	333
(3) AAA	0	0	25	8	33
Total	0	2	382	134	518

The results from the post-estimation tests show a relatively weak power in the prediction. It means that our model is far from satisfactory. That is also one of the reasons why we want to introduce variables representing CRAs in the next Point 3.3.2.

3.3.2. Logistic model with all variables, Chinese local CRAs vs. Globalxinhua

As we mentioned lastly in the Point 3.2.1, our model needs to be refined in terms of the prediction power. Here, we tried to improve its quality by introducing Chinese local CRAs into the ordered multinomial logistic model. They are Lianhe, Chengxin, Dagong, SBCR, and CCRC, in reference to Globalxinhua (that we have studied in the previous binomial logistic model in the Subsection 2).

- ✓ We verified “the approximate likelihood-ratio test of proportionality of odds across response categories”⁷⁵⁶ and the choice of cut points.
- ✓ We found that for the first test, the null hypothesis is maintained (the odds are proportional thus the ordinal multinomial logistic model is valid).
- ✓ For the second test, the null hypothesis is rejected. There is significance between cut points and those of higher category (hence, we should keep four categories in the dependent variable, without combining rating levels).

Graph V.3.14

Significance test of cut points (2)

ordered	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
	3.385812	.4507886	7.51	0.000	2.502282 4.269341
ordered	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
	4.17932	.2618951	15.96	0.000	3.666015 4.692625

⁷⁵⁶ Chi2(36) = 44.66, with Prob > chi2 = 0.1526 (data from the Stata output).

- ✓ After verifying the validity of the model, we will analyze the odds ratios of the refined models. We found in the following *Graph V.3.15* that in addition to the “interest coverage ratio”, board size, market turbulence and Chinese local CRAs, are also positive significant independent variables in the refined model (the Pseudo R2 has significantly increased, compared to that in Point 3.3.1).

To interpret the odds ratio, we may say that issuers are more likely to get better ratings (inside the investment grade) when the companies have higher interest coverage, larger board and when the stock market goes from bull to bear (or the other way around).

Graph V.3.15

Results of odds ratios (5)

```

. ologit ordered TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO PROF_MARGIN firstsector thirdsector concentration
> private HYB duality boardsize pricebitda markturbalance lianhe chengxin dagong sbcr ccrc, or

Iteration 0:  log likelihood = -369.75294
Iteration 1:  log likelihood = -313.3123
Iteration 2:  log likelihood = -295.14618
Iteration 3:  log likelihood = -292.10063
Iteration 4:  log likelihood = -292.02157
Iteration 5:  log likelihood = -292.02154

Ordered logistic regression      Number of obs   =      384
                                LR chi2(18)     =     155.46
                                Prob > chi2      =      0.0000
                                Pseudo R2        =      0.2102

Log likelihood = -292.02154

```

ordered	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
TOT_DEBT_TO_TOT_ASSET	.9883783	.0086306	-1.34	0.181	.9716067	1.00544
CUR_RATIO	.8519566	.1229597	-1.11	0.267	.6420469	1.130494
INTEREST_COVERAGE_RATIO	1.011858	.0049389	2.42	0.016	1.002224	1.021585
PROF_MARGIN	1.004635	.0087691	0.53	0.596	.9875936	1.02197
firstsector	.9881425	.4259185	-0.03	0.978	.4245478	2.299919
thirdsector	1.405968	.3516721	1.36	0.173	.8611246	2.29554
concentration	.9391762	.2648683	-0.22	0.824	.5403679	1.632317
private	.8554924	.3675671	-0.36	0.716	.3685468	1.985819
HYB	1.177847	.3763487	0.51	0.608	.629667	2.203267
duality	1.003963	.2854141	0.01	0.989	.5750848	1.752684
boardsize	1.156016	.0697543	2.40	0.016	1.027075	1.301145
pricebitda	.9948409	.0050428	-1.02	0.308	.985006	1.004774
markturbalance	2.523121	.6632646	3.52	0.000	1.507227	4.223742
lianhe	216.2579	140.1059	8.30	0.000	60.74471	769.9022
chengxin	363.0278	232.7106	9.20	0.000	103.3467	1275.214
dagong	159.4728	101.9864	7.93	0.000	45.53285	558.5327
sbcr	296.4609	185.5365	9.09	0.000	86.94674	1010.838
ccrc	29.01606	34.08572	2.87	0.004	2.902124	290.1088
/cut1	1.980573	.8393991			.3353814	3.625766
/cut2	5.366385	.9472681			3.509774	7.222997
/cut3	9.545706	1.013655			7.558978	11.53243

- ✓ Two tables of marginal effect (Table V.3.10 and Table V.3.11) below illustrate the details in interpreting the significant independent variables in the model⁷⁵⁷.

- ✓ The analysis for the continuous variable: interest coverage ratio. The explanation remains the same as in Point 3.3.1 (We are not going to repeat the explanation).

- ✓ As for the discrete variable: board size. With the increase of one more board member, there is 0.43% less likely to be rated BBB, 1.75% less likely to be rated A, 1.34% more likely to be rated “AA” and 0.08% more likely to be rated “AAA”.

- ✓ As for the dummy variable: market turbulence. The interpretation is that for a stable stock market (compared to the opposite one), there is 2.72% less likely to be rated BBB, 11.16% less likely to be rated “A”, 8.57% more likely to be rated AA and 5.31% more likely to be rated “AAA”.

- ✓ As for variables of Chinese local CRAs, all of them are significantly (at 1%) more likely to be associated with better ratings of higher level, compared to their international peers (Big Three and Xinhua CRA). They are (all more than 50%) less likely to rate on the “A level” (except CCRC, the only CRA with investor-pay business model in Chinese rating market); Chengxin and SBCR are more than 50% more likely to ratings on AA level.

⁷⁵⁷ We ran the same tests to the local rating samples and we confirm the same results. The details can be referred to the Annex 9.

Table V.3.10

Marginal effects for interest coverage ratio, board size and market turbulence

Interest coverage	dy/dx	Std. Err.	z	P> z 	[95% Conf.	Interval]
0 (BBB)	-.0003468	.0001517	-2.29	0.022	-.0006441	-.0000494
1 (A)	-.0014216	.0005953	-2.39	0.017	-.0025883	-.0002548
2 (AA)	.0010919	.0004883	2.24	0.025	.0001348	.0020489
3 (AAA)	.0006765	.0002906	2.33	0.020	.0001069	.001246
Board size	dy/dx	Std. Err.	z	P> z 	[95% Conf.	Interval]
0 (BBB)	-.0042644	.0018688	-2.28	0.022	-.0079271	-.0006017
1 (A)	-.0174829	.0072617	-2.41	0.016	-.0317157	-.0032502
2 (AA)	.0134279	.0058283	2.30	0.021	.0020046	.0248512
3 (AAA)	.0083194	.0036981	2.25	0.024	.0010713	.0155675
Market-turbulence	dy/dx	Std. Err.	z	P> z 	[95% Conf.	Interval]
0 (BBB)	-.0272224	.0083288	-3.27	0.001	-.0435466	-.0108982
1 (A)	-.1116045	.0320295	-3.48	0.000	-.1743812	-.0488277
2 (AA)	.0857188	.0266971	3.21	0.001	.0333935	.138044
3 (AAA)	.0531081	.0172239	3.08	0.002	.01935	.0868662

Table V.3.11

Marginal effects (dy/dx) * for Chinese local CRAs**

CRAs	Lianhe	Chengxin	Dagong	SBCR	CCRC
0 (BBB)	-.1581425	-.1733791	-.1491831	-.1674209	-.0990613
1 (A)	-.648342	-.7108079	-.6116109	-.686381	-.4061248
2 (AA)	.4979646	.5459421	.469753	.5271808	.3119276
3 (AAA)	.3085199	.3382449	.2910411	.3266211	.1932585

We imagine the possible explanatory analyses of the results could be presented as follows:

The result that more board directors coincided with the ratings of higher categories corresponds to our prediction in Point 2.3.1 of Section 2 (“Testing hypothesis for strategic choices of rating determinants”). By using Chinese institutional elements, we may suppose that the “interpersonal connection” is very important to Chinese internal corporate governance. We imagine consequently, that a bigger board could create more chances to have personal relationship with a member of the rating agency. The

potential *Guanxi* could then nourish the possibility for an issuer to be better rated.

There is another theory by saying that the more directors on the board, the more there is chance to increase the corporate governance. It will be compatible with the fact to be rated on the better level.

As for the explanation to market turbulence, it is harder⁷⁵⁸ to understand why CRAs rated better in the case of the market turbulence than on the opposite, *ceteris paribus*. Without relevant empirical findings, we may only guess when the stock market was less secure, that investors would intent to invest on the bond market. Issuers need better ratings to attract investors by better ratings to outstand on the market. In other words, a bad rating during market turbulence is extremely dangerous for companies to collect fund on the market.

There is another theory by saying that only companies with good financial, economic performance and good corporate governance dared to ask their initial issuer ratings at the moment of market turbulence. They are more resistant to the bad macroeconomic circumstances.

Of course, all of these speculations need to be verified empirically. We leave the work in the future researches.

Additionally, it is clear that, compared to Global CRAs and Xinhua, Chinese local CRAs are more likely to give ratings of higher level. Chengxin has 363 times more likely to do that. Even the most “reasonable” local CRAs: CCRC. It is 29 times more likely to do the same, compared to the Big Three and Xinhua. These results enable us to respond to the rest of hypotheses that we composed previously in the Point 1.3.3 (“Testing hypotheses on strategic rating behaviors”).

We can conclude that:

⁷⁵⁸ We predicted that market turbulence should be a negative factor to the initial issuer rating level.

Null Hypothesis 3 is rejected. Chengxin and Lianhe rated differently one to the other. The probability to have a better rating in a higher level is higher for Chengxin than for Lianhe.

Null Hypothesis 4 is valid. Dagong rated differently from other local competitors (compared to Chengxin and Lianhe, among Chinese top Three). However, it still does not align its rating behavior with global CRAs, in terms of the severity in giving better ratings inside the investment grade. It is true that we have witnessed its expansion (first bureau in Milan and then in Frankfurt) during its business internationalization; however, we also saw its sufferance in the local market. Most recently, in 17/08/2018, Dagong is banned by CSRC and National Association of Financial Market Institutional Investors. They both retrieved its license in the rating activities concerning bond issuing (inter-bank OTC market) and corporate bonds (bond exchange market), because of the misbehaviors.

It is hard to have a conclusive arbitrary to the Hypothesis 5. It is clear that, in comparison with Globalxinhua CRAs, SBCR has 296 times more likely to give ratings of higher level, against 363 times for Chengxin, 216 times for Lianhe and 159 times for Dagong (those are Chinese Top three CRAs). The new-entrant of Chinese rating market does not necessarily rate more flatteringly than other earlier-existing local CRAs. Nevertheless, SBCR is not necessarily more stringent in giving ratings neither.

Null Hypothesis 6 is valid. CCRC rated differently from the rest of local competitors. It is 29 times more likely to give better ratings on the investment grade, comparing to global CRAs and Xinhua (the number is less important than any other Chinese local CRA). It should be noted that CCRC is disposed of the investors-fees business model, which is distinctive to any other CRA on the rating market.

- ✓ *In comparison*, not only *fitness results* gave better scores (lower log-likelihood, AIC and BIC, among others); but also, we are able to score *better prediction*, on level of 53%, as the correct ratings (277 out of 518 ratings on the right rating level, among BBB, A, AA, and AAA).

Graph V.3.17

Fitness of the model (4)

```

. fitstat
Measures of Fit for ologit of ordered

Log-Lik Intercept Only:      -369.753   Log-Lik Full Model:      -292.022
D(363):                      584.043   LR(18):                  155.463
                               Prob > LR:                0.000
McFadden's R2:               0.210     McFadden's Adj R2:      0.153
ML (Cox-Snell) R2:          0.333     Cragg-Uhler (Nagelkerke) R2: 0.390
McKelvey & Zavoina's R2:    0.441
Variance of y*:              5.890     Variance of error:      3.290
Count R2:                    0.701     Adj Count R2:           0.154
AIC:                          1.630     AIC*n:                  626.043
BIC:                          -1576.040  BIC':                   -48.351
BIC used by Stata:           709.007   AIC used by Stata:     626.043

```

Table V.3.12

Results of prediction (4)

Prediction by the model Observation	(0) BBB	(1) A	(2) AA	(3) AAA	Total
(0) BBB	18	3	1	10	32
(1) A	4	12	73	31	120
(2) AA	1	8	239	85	333
(3) AAA	0	0	25	8	33
Total	23	23	338	134	518

In other words, by introducing variables representing CRAs, our model is better than the model only using classic independent variables as rating determinants in the literature (without considering the type of CRAs).

It also justifies the value of our research, that we not only consider the inspiration from existing empirical evidence, but also the elements from the characteristics of Chinese institutional environment.

Conclusion of Section 3

We ran logistical models (binomial and ordered multinomial) to understand the strategic choices of rating determinants for both global and local CRAs, in Chinese institutional rating environment, through the entire rating history on the market.

We used the explanatory variables that had been described in Section 2 of Chapter V. We also considered the agency-conduct effect and time-varying effect that we had discussed in Section 1 of Chapter V.

The objective of the execution of logistic models is to find out which independent variables that we introduced in the model, are more fitted to explain CRAs' strategic rating behaviors, with more power of prediction.

First of all, we investigated the difference between ratings of speculation grade and investment grade. Secondly, we dig inside ratings of investment grade (going from BBB, A, AA to AAA).

These two results both showed the importance to consider the presence of CRAs as rating determinants, in addition to those variables that we usually found in the literature review. To be specific:

- ✓ Global CRAs and Xinhua are more likely to be associated with ratings of speculation grade, rather than those of investment grade;
- ✓ Chinese local CRAs are more likely to be associated with better level of ratings inside the investment grade, compared to Globalxinhua.

This choice of independent variables constitutes our contribution to the classic researches concerning CRAs' strategies.

In addition to that, we also found that:

- ✓ Higher level of Debt/Asset ratio, profit margin and Price-to-EBITDA ratio are more likely to be associated with ratings of speculation grade;
- ✓ Higher interest coverage, bigger board size, the existence of stock market turbulence is more likely to be associated with better level of ratings inside the investment grade.

Conclusion of Chapter V

In Chapter IV, we made some preliminary quantitative tests (especially chi-square test) without controlling other variables. We improved statistic techniques by using logistic models to investigate the strategic behaviors of CRAs.

To our knowledge, it is the first study which considers:

- ✓ Not only the differences between local/global CRAs, but also inside the local CRAs (agency-conduct effect), by considering their ownership structure but also their evolving rating market position (time-varying effect), in the competition-driven rating environment. The formal and informal internal governance of CRAs helps us to speculate each of their strategic behavioral beliefs. The latter leads to each of their strategic rating behaviors, which are concretized by the choices of rating determinants. (in the Section 1)
- ✓ Not only public/private and hard/soft information of firms, but also stock market-related and macro-economic information outside the issuer-firms. (in the Section 2)
- ✓ Not only using binomial but also the ordered multinomial logistic model to investigate both rating grades and rating level inside the investment grade (in the Section 3)

In sum, a vast review of literature “[...] suggests that some of the difference in the results of the individual rating regressions may stem from the differences in data examined by different agencies, which might be a fruitful topic for future research.”⁷⁵⁹

Our study, under Chinese institutional environment, reveals not only different agencies chose strategically different variables as determinants to giving initial issuer ratings; but also, some CRAs rated indeed better than others. Chinese local CRAs tended to inflate ratings, under the local market competition, in comparison with the global CRAs. That’s why we made this Chapter V to examine the interaction of CRAs and issuers, before conducting an event study to understand the impact of credit rating changes/watch-lists, from the point of view of investors, in the following Chapter VI.

⁷⁵⁹ Xianfeng Jiang and Frank Packer, 2017, *supra*, page 23.

Chapter VI.

Informative impact of rating events and cause analysis of investors' significant abnormal stock returns

Section 1. From previous inspirations to hypotheses and data description

Section 2. Research design and results for CRCs

Section 3. Further evidence and analysis

Introduction of Chapter VI

Recalls of “classic theories concerning CRAs” in Chapter I (Section 3)

Here, we are going to recall three classic theories concerning CRAs, which we discussed in the theoretical framework (Section 3, Chapter I). Our examination was applied to both rating industry and to Chinese environment.

In the literature review, *Theory of Asymmetric information*, *Theory of Agency and Theory of signal* are three fundamental theories to explain the potential impact of ratings events on the stock market.

Credit Rating Agencies, as an information intermediary, provide investors with ratings of issuers and their issues based on the analysis of public information and the assessment of private information. Under this circumstance, CRAs work also as a “coordinative mechanism” (Boot et al., 2006)⁷⁶⁰ between issuers (borrowers) and investors (lenders) to reduce the asymmetry of information between them.

Since the bond market is less liquid (Gropp and Richards, 2001)⁷⁶¹, most event studies were looking forward to investigating the impact of rating events on common stock returns. It’s as well as interesting to examine the reactions of investors since they are main users of ratings. Under the issuer-pay business model, issuers solicited agent CRAs, in the interest of investors (principle).

In addition to “initial ratings” that we studied in Chapter IV (multi-ratings for initial issuer rating sample) and Chapter V for (sole and multi-ratings for initial issuer rating sample), both credit rating changes (CRCs) and Watch-lists (WLs) are important *signals* to transmit information, when the market has not achieved fully *efficiency*.

The market reaction in response to rating events constitutes the focus in the study of Chapter VI, in addition to the role and strategy that we have studied previously in the rest of the Empirical Part §2.

⁷⁶⁰ Boot, Arnoud W. A., Milbourn, Todd T., and Schmeits, Anjolein. 2006, Credit Ratings as Coordination Mechanisms, *Review of financial Studies* 2006:19, 81-118.

⁷⁶¹ Gropp, R., A. Richards, 2001. Rating agency actions and pricing of debt equity of European banks: What can we infer about private sector monitoring of bank soundness? *Economic Notes by Banca Monte dei Paschi di Siena SpA* 30(3): 373-398.

Structure and content of Chapter VI

In Section 1, we will discuss the existent literature and empirical evidence on the topic of the “impact of credit rating changes (CRCs)”. We will establish our hypotheses based on academic articles, and most of them are conducted on the American and European markets; while our study is conducted on the Chinese market, a representative example of *emerging market*, with worldwide important capitalization and its unique institutional characteristics that we have explored in the Preparatory Part One §1.

On the same subject, there are very few studies (Poon and Chan, 2008)⁷⁶². The objective of our research is to use a more general sampling (with both *local and global* CRAs, present on all segments of the market), covering a relatively comprehensive period (including financial crisis 2008 period).

The data description is presented at the end of the Section 1.

In Section 2, we will present the methodology to get market reactions to rating events (Subsection 1). The results and analyses will be sorted by institutional factors. In other words, we will divide the entire sample into sub-sample (upgrading in Subsection 3; downgrading, in Subsection 4) to see if the results remain the same, compare to the general results (in Subsection 2).

Institutional factors	Literature review
Crisis effect (2008)	Jorion (2005), Alsakka et al. (2015), Dardour (2008), Kenjegaliev (2016), Teiletche et al. (2009), Afik et al. (2014)
Market segmentation	Han et al. (2009)
Types of CRAs (global/local)	Li et al. (2006), Han et al. (2009)
Proxy of anticipation: equity ownership dispersion/concentration	Hsueh and Liu (1992), Purda (2007)
CRCs preceded by WLs	Elayan et al. (2003), Han (2009), Lal (2011) and Chung et al. (2012), Holthausen and Leftwich (1986), Bannier and Hirsch (2010), Hubler et al. (2017), Hand et al. (1992)

⁷⁶² Poon, W., & Chan, K. 2008. The effects of credit ratings on stock returns in China. *The Chinese Economy*, 41(2), 34–55.

As far as I know, Poon and Chan (2008) is the only research about CRAs' impact on Chinese stock returns. However, they studied one agency Xinhua (which does not exist anymore). The study period is limited: from 2002 to 2004. They did not consider any institutional factor. My thesis contributes to diversify the methodology and deepen our knowledge of the impacts of rating events on stock market.

In terms of methodology, our study contains some originality.

Different approaches are presented as follows:

Originality	Different methodological approaches		
Estimation model	OLS		Garch
Test of abnormal returns and cumulative abnormal returns	Single sample test		Paired sample test
	Parametric test	Cross-sectional t test	Non-parametric test: Wilcoxon signed-rank test
		Time-series standard deviation t test	

The objective is not to show off the econometric techniques, but to verify the robustness and stability of results, across different methodological approaches.

In Section 3, we aim to examine the cumulative abnormal return (CARs) left in the Section 2 by a cross-sectional analysis. We will study additionally the impact of watch-lists (WLs). Each of the subsection will start from the literature review and methodology demonstration, to the result analyses.

Section 1. From previous inspirations to hypotheses and data description

1.1. Literature review for informative impacts of CRCs (Credit Rating Changes)

1.2. Hypotheses sorted by Chinese institutional factors

1.3. Descriptive statistics and the treatment of contamination

Introduction of Section 1

CRAs' information content and stock market reaction

Investors are always pursuing qualified information, in order to obtain more returns from their financial investments. Credit Rating Agencies (CRAs) allegedly provide complementary information content other than simply collect and summarize the existing public information.

There present three points of view on the subject of CRAs' information content.

The first type of researchers was on the denial

We want to tame some early studies as example. Kaplan et al. (1979)⁷⁶³ and Wakeman (1982)⁷⁶⁴ argued that CRAs gave no additional provision to public information. They tested empirically that CRAs did nothing else but to collect and summarize publicly available financial data and took it as the foundation of their statistical measurement.

Goh and Ederington (1999) are among those researches to record that “CRCs can be predicted from publicly available information”⁷⁶⁵. They believed that there would be

⁷⁶³ Kaplan R.S. and Urwitz G., 1979, Statistical Models of Bond Ratings: A Methodological Inquiry, *Journal of Business*, 52(2):231-261.

⁷⁶⁴ *Ibid.* “(Credit Rating Changes merely provide) a single, easily communicated code that incorporates all the major ingredients of the bond’s risk”.

⁷⁶⁵ Goh Jeremy C. and Ederington Louis H., 1999, Cross-sectional Variation in the Stock Market Reaction to Bond Rating Changes, *The Quarterly Review of Economics and Finance*, Vol 39, No.1, Page 101-112.

no/little surprise⁷⁶⁶. Consequently, there is no market reaction occurred at the moment of rating events.

The second type of researches admitted that the informativeness of CRAs was reduced by market anticipation or corporate discretionary-based disclosure

Pinches and Shingleton (1978) didn't agree with these arguments listed above and they believed that CRAs formed an extra reliable information source. For this reason, CRAs are no longer those institutions limited to collect public financial information. However, this group of researchers doubted the utility of CRAs in real investment transactions. It needs to be admitted that the existence of market anticipation, "ie. rate changes lag" (for both decreased and increased ratings)⁷⁶⁷ reduced the importance of information content. They indicated in their paper, that "*the information content of the rating change had been fully discounted by the month of the rating change. Thus, investors could not profit if they acted upon the announcement of the change in the bond rating*".

With the presence of market anticipation, Jorion and Zhang (2007) examined the information effects prior to the announcement. They documented that "*companies tend to bias their news releases toward good news, or the fact that CRAs expend more resources in detecting credit deteriorations rather than improvement*".

In their analysis, a "barely insignificant upgrade effect" is often observed by academic studies with the arrival of CRCs⁷⁶⁸, compared to the "downgrades". The latter case is much more surprising.

⁷⁶⁶ Ederington L.H, Yawitz J.B. and Roberts B.E, 1987. The informational content of bond rating, *Journal of Financial Research*, Vol X, No.3.

⁷⁶⁷ Pinches George E. And Singleton J. Clay, 1987. The adjustment of stock prices to bond rating changes. *Journal of financial research*, vol.10, p.211-226.

⁷⁶⁸ Jorion, P., G. Zhang, 2007, Information effects of bond rating changes: The role of the rating prior to the announcement, *The Journal of Fixed Income*, 16(4): 45-59.

The reason why “markets react stronger to downgrades than to upgrades”⁷⁶⁹ could also be explained by the fact that the corporate *discretionary-based disclosure* that we discussed lastly in the Point 2.2.2 of Chapter V. Gonzales et al. (2004)⁷⁷⁰ pointed out “downgrading may therefore [...] contain additional information that is not publicly available”⁷⁷¹, compared to upgrading.

The third type of researchers struggled against any skepticism or reserved attitudes towards CRAs’ information content. They revealed some empirical results to support this standpoint.

Purda (2007)⁷⁷² has different findings. She found it easier to predict downgrading compared to upgrading by using “small number of publicly available variables”. It is not surprising, since the “good news” is more from the “inside” of the company, in the form of private information. However, the anticipation did not change stock price reaction in response to CRCs, according to her empirical investigation.

Kliger and Sarig (2000), among others, believed in information value of CRAs. They took advantage of the moment when Moody’s refined its rating reporting system to eliminate the contamination brought by other economic events. They wanted to use this kind of “new approach” and they declared that this kind of “rating changes” “exclusively reflect(s) rating information”⁷⁷³.

They found that “bond, stock and options prices” reacted to this special information. For these facts, it’s reasonable to conclude that rating information is “indeed pricing relevant and useful”, from their point of view.

⁷⁶⁹ Matthies, Alexander B. 2013, Empirical Research on Corporate Credit-Ratings: A Literature Review, *SFB 649 Discussion Paper*.

⁷⁷⁰ Gonzales, F., F. Haas, R. Johannes, M. Persson, L. Toledo, R. Violi, C. Zins, M. Wieland, 2004, Market dynamics associated with credit ratings: a literature review, *Banque de France Financial Stability Review* 4.

⁷⁷¹ Matthies, Alexander B. 2013, *supra*, page 8.

⁷⁷² Purda, Lynnette D. 2007. Stock market reaction to anticipated versus surprise rating changes, *Journal of Financial Research*. Vol. 30 Issue 2, p301-320. 20p.

⁷⁷³ Kliger D. and O. Sarig, 2000, The information value of bond ratings, *Journal of finance*, Issue 55, page 2879-2902.

Structure of Section 1

Each piece of news study stands on the shoulder of previous researches. The existing findings don't stop inspiring and encouraging followers to see wider and dig deeper. We will start the Section 1 with the literature review (Subsection 1.1) and then build our own hypotheses, by taking account of Chinese institutional factors (Subsection 1.2) at the same time. The data description will be presented (Subsection 1.3) to prepare methodologically the next Section 2.

1.1. Literature review for informative impacts of CRCs (Credit Rating Changes)

Structure of Subsection 1.1, Chapter VI

The followings are some evidence outside USA markets (Anglo-Saxon markets: Point 1.1.1, continental European market: Point 1.1.2 and emerging markets: Point 1.1.3). We are trying to make the literature review as extensive and as exhaustive as possibly that we can do for the moment.

Theory of Information Content

Under the premise that CRAs contains "information content", which is proved by recent studies, CRCs send "signals" to investors.

There are two directions of CRCs: upgrades and downgrades.

"Upgrading" means the appreciation of issuers' ability to honor their debt or an increase of their overall financial situation.

On contrary, "downgrading" means CRAs lost faith, to a certain degree (according to the decreasing level), on the creditworthiness of issuers or their obligations.

Generally speaking, a series of researches conducted on the USA market and we cited among others, the study of Holthausen & Leftwich (1986)⁷⁷⁴, Glascock et al. (1992)⁷⁷⁵, Hand et al. (1992)⁷⁷⁶, Dichev & Piotroski (2001)⁷⁷⁷ and May (2010)⁷⁷⁸ for U.S.A.

⁷⁷⁴ Holthausen. R. & Leftwich, R., 1986. The effect of bond rating changes on common stock prices. *Journal of Financial Economics*. 17. 57-89.

The conclusion of these works could be presented, in a general way, that “downgrade” has negative significant impacts on the stock market, but in the case of “upgrade”, there was usually no significant reaction statistically speaking.

In the regards of Jorion and Zhang (2007), “upgrading” could be as much as useful in implicating the market evolution if we take into account the reactions⁷⁷⁹ to the preceding response before the CRCs occurred.

Theory of Wealth Redistribution

The alternative theory (Zaima 1988)⁷⁸⁰ also tries to explain some conflicting observations (“downgrade” with negative significant impacts on the stock market, “upgrading” with positive significant impacts). The literature review of Matthies (2013)⁷⁸¹ cited the findings to Barron et al. (1997) and Abad-Romero & Robles-Fernandez (2006 &2007) to indicate that some empirical results conformed to the theory.

In the same vein, Imbierowicz (2013)⁷⁸² documented the transferred wealth but only on the condition that there were “increases in firm leverage and the firms’ contemporaneous involvement in M&A (mergers and acquisition)”.

In the same line, Hubler et al. (2013, page 4)⁷⁸³ also mentioned “when the reason behind the rating change is motivated by an increase in the variance of cash flows and

⁷⁷⁵ Glascock John. L. et al., 1992. Announcement effects of Moody’s Bond Rating Changes on Equity Returns. *Quarterly Journal of Business & Economics*. 26(3), 67-78.

⁷⁷⁶ Hand J.R.M., Holthausen R.W. & Leftwich R.W., 1992. The Effect of Bond Rating Agency announcements on Bond and Stock Prices. *The Journal of Finance*, 47(2), 733-752.

⁷⁷⁷ Dichev I.D. & Piotroski J.D., 2001. The Long-Run Stock Returns Following Bond Ratings Changes. *The Journal of Finance*.56(1), 173-203.

⁷⁷⁸ May. A.D., 2010. The impact of bond rating changes on corporate bond prices. New evidence from the over-the-counter market. *Journal of Banking & Finance*. 34, 2822-2836.

⁷⁷⁹ The observations are confirmed in the early studies such as, Wansley and Clauretje (1985), Holthausen and Leftwich (1986), Elayan et al. (2003), Goh and Ederington (1999).

⁷⁸⁰ Zaima, J.K. and McCarthy, J. 1988. The impact of bond rating changes on common stocks and bonds: tests of the wealth redistribution hypothesis, *The Financial Review*, 23, 483–98.

⁷⁸¹ Matthies, Alexander B. 2013, *supra*.

⁷⁸² Imbierowicz, B. and Wahrenburg, M. 2013 Wealth transfer effects between stockholders and bondholders, *The Quarterly Review of Economics and Finance*, 53, 23-43

⁷⁸³ Hubler J., Louargant C., Ory J.N. and Raimbourg P., 2013. Do rating agencies’ decisions impact stock risks? Evidence from European markets, *The European Journal of Finance*, page 4.

earnings of the leverage of the firm, or by an increase of the leverage of the firm” will “shift wealth from bondholders to stockholders, so that bond price will be expected” to go to the opposite direction to the equity price.

Comparison of two theories

Theory of Information Content and *Theory of Wealth Redistribution* explained the direction of stock returns could go when rating events (upgrading/downgrading (CRCs) and Watch-lists (WLs)).

In the other words, downgrading or negative WLs indicates the increase of the credit risk, which is bad news for creditor on bond market. The first theory pretends that it also leads to a negative impact also on the stock market, while the second theory tends to believe a positive impact.

Precautions to take...

Before going in detail into the literature review, we have to remind our readers to be careful when using existing evidence on the topic.

We have noticed that the results in the various publications are sometimes confusing. The more we read relevant articles, the stronger feelings we have that some authors tried to “fish” significant results (by using different estimation and event windows). Their analyses of results, however, concerning financial and economic reasons behind these market reactions, are sometimes sloppy in comparison.

1.1.1. Application to Anglo-Saxon markets

Barron et al. (1997) are one of the pioneers in studying CRCs outside USA stock market. Their study covered the “impact of new ratings, credit rating changes (short-term and long-term), commercial paper rating and Credit Watch changes on UK stock returns”⁷⁸⁴.

Different from the American market, downgrades were associated with significant *positive* “excess stock returns”⁷⁸⁵.

In addition to that, there are three principle articles concentrating on Australian market.

Matolcsy and Lianto (1995) started from the “incremental information content” of CRCs and controlled the “concurrent annual accounting income”⁷⁸⁶. This methodology has its *pros and cons*. The advantage is that they contented able to test the value added by CRAs, but on the other hand, they were not able to “examine the immediate stock price reaction to announcements of CRAs”⁷⁸⁷.

In spite of different research design, they got the same results as other studies, where only “bond downgrades have additional information content”⁷⁸⁸

Choy et al. (2006) and Creighton et al. (2007) contributed two more recent studies. The first group of researchers used “standard market model” and they achieved the same outcomes with the most studies; while the second one contradicted their predecessors by saying CRCs brought “small movements”⁷⁸⁹ and CRAs were not

⁷⁸⁴ Barron M.J., Clare A.D., and Thomas S.H., 1997. The effect of bond rating changes and new ratings on UK stock returns, *Journal of business Finance & Accounting*, 24(3) &9(4), 0306-686X.

⁷⁸⁵ *Ibid.*

⁷⁸⁶ Matolcsy Z.P. and Lianto T., 1995. The incremental information content of bond, *Journal of Banking & Finance* 19, 891-902.

⁷⁸⁷ Choy E., Gray. S., and Ragunathan. V.,2006, Effect of credit rating changes on Australian stock returns, *Accounting and Finance*: 46, 755-769.

⁷⁸⁸ Matolcsy Z.P. and Lianto T., 1995, *supra*.

⁷⁸⁹ “Equity prices tend to fall on days of negative changes and rise on days of positive changes” from Creighton Adam, Gower Luke et Richards Anthony J, 2007, The impact of rating changes in Australian financial markets, *Pacific-Basin Finance Journal* 15, 1–17.

considered to have “access to important information that is not already in the public domain.”⁷⁹⁰

Elayan et al. (2003)⁷⁹¹ employed the sample on the market of New-Zealand and entered hence the “continuing debate” of whether information content exists for CRAs. The debate has not yet been conclusive.

1.1.2. Application to Continental European markets

Iankova et al. (2009)⁷⁹² showed abnormal abnormal stock returns on European markets and compared the results to those on the USA market; they found statistical significance with a small magnitude.

Calderoni et al. (2009)⁷⁹³ used a pan-European (UK, Germany and France) sample. They showed that the results are consistent with observations in the USA market, with more intense reactions for non-UK and non-financial firms. It indicates presumably that continental European markets have lower accounting and financial disclosure.

The results are quite mitigated for studies on a single European country, we may cite papers for: France (Francois-Heude & Paget-Blanc, 2004)⁷⁹⁴, German (Kenjegaliev, 2016)⁷⁹⁵, Spain (Abad-Romero & Robles-Fernandez, 2006 &2007), Sweden (Li, 2004), for Ireland (Li et al., 2004)⁷⁹⁶, for Italy (Linciano, 2004)⁷⁹⁷ and for Portugal

⁷⁹⁰ *Ibid.*

⁷⁹¹ Elayan F.A., Hsu W.H. and Meyer T.O., 2003, The Informational Content of Credit Rating announcements for Share Prices in a Small Market, *Journal of Economics and Finance*, Vol 27, No.3.

⁷⁹² Iankova E., Pochon F and Teiletche J., 2009, L'impact des décisions des agences de notation sur le prix des actions : une comparaison du cas français avec les cas européen et américain. *Économie et prévision*, 7(188).

⁷⁹³ Calderoni, Federico and Colla, Paolo and Gatti, Stefano, 2009, Rating Changes Across Europe, *Working paper*.

⁷⁹⁴ François-Heude. A. and Paget-Blanc.E. 2004, Les annonces de rating : impact sur le rendement des actions cotées sur Euronext-Paris, *Banque et marchés*, n° 70, pp. 16-28.

⁷⁹⁵ Kenjegaliev, A., Duygun, M., and Mamedshakhova. D. 2016. Do rating grades convey important information: German evidence? *Economic Modeling*, 53, 334-344.

⁷⁹⁶ Li X.H., Visaltanachoti N.& Charoenwong C., 2004, Market reaction to credit rating announcements on the Irish stock market, Working paper, Nanyang Technological University (NTU) Nanyang Business School, Massey University.

⁷⁹⁷ Linciano N. 2004, One reaction of stock prices to rating changes, Working paper, Commission nazionale per le

(Pacheco, 2012)⁷⁹⁸.

To be specific for some studies among the cited ones:

Francois-Heude & Paget-Blanc (2004) focused on companies listed in *Euronext-Paris*. Significant negative reactions for downgrades and less important reactions were found for upgrade. Researchers also indicated that negative information had longer influence during a month after the event day, which could be attributed to the “risk aversion” of investors.

An *event study by dummy approach* was used to test the Spanish Stock Market (Abad-Romero P. and Robles-Fernandez M.D, 2006). Their findings contradicted the previous results and “documented significantly negative excess returns for upgraded firms and no significantly excess returns” to other circumstance.⁷⁹⁹ In their later research (Abad-Romero P. and Robles-Fernandez M.D, 2007), a *nonparametric method* in addition to an “*event study taking into account autocorrelation and conditional heteroskedasticity*” were used and they found similar results for upgrades where *Wealth Redistribution Hypothesis* between bondholders and owners of the certain corporations is the most suitable theory in the explanation. As for the case of “a lower rating”, their findings showed “slightly negative abnormal returns in issuing firms around the date of the announcement”.⁸⁰⁰

Li Hui and his colleges (2004) pointed out the importance of “liquidity” in the value of credit rating announcement.⁸⁰¹ According to them, “in the small but liquid stock market like the Swedish share market”, CRAs’ role in front of investors is limited. It is because that a low level of asymmetric environment makes private financial

societa e la borsa (CONSOB).

⁷⁹⁸ Pacheco, Luís, 2012, Moody’s Credit Ratings and the stock market performance of Portuguese rated firms, *Journal of Advanced Studies in Finance*, Volume III Issue 1 (5).

⁷⁹⁹ Abad-Romero P. and Robles-Fernandez M.D., 2006, Risk and Return around Bond Rating Changes: New Evidence from the Spanish Stock Market, *Journal of Business Finance & Accounting*, 33(5) & (6).

⁸⁰⁰ Abad-Romero, P. and Robles-Fernandez M.D., 2007. Bond rating changes and stock returns: evidence from the Spanish stock market. *Spanish Economic Review*, 9: page 79-103.

⁸⁰¹ Li Hui et al. 2004, Effects of Credit Rating Announcements: The Swedish Stock Market. *The International Journal of Finance*. Volume. 16, No. 1.

information harder to get. A “standard event study” proved this speculation and showed no significant CAAR during a short surrounding announcement period. Nevertheless, in a relatively long-term (20 days) after the announcement, the information content of CRAs appeared for both upgrades and downgrades.

Pacheco (2012) confirmed that anticipation helped to reduce the market reactions, “either due to a previous sovereign downgrade or to the contagion effects of a bearish market outlook”, but he still registered significant share price changes in the presence of CRCs and outlook.

The institutional environment of each stock market could be one the reasons to explain the differences.

These papers also illustrated the effects of rated entities’ sector (Abad-Romero & Robles-Fernandez, 2006 & 2007; banks, companies and corporate for Linciano, 2004), type of rating announcement (Linciano, 2004; Francois-Heude & Paget-Blanc, 2004), long-term or short-term issue ratings (Li, 2004) and the level of sovereign rating (Pacheco. 2012).

1.1.3. Application to Emerging markets⁸⁰²

With a fast development in economics, emerging countries start to attract attention of the academic world, but the amount of paper is quite limited.

Afik et al. (2014)⁸⁰³ found the market reactions to CRCs “superficial” and “the information value of rating announcements in Israel is small and potentially insignificant.” They explained that in a small market “everyone knows everyone”, CRAs may not have the same privilege knowing private information compared to local financial institutions.

The existence of “Guanxi” in Chinese institutional environment makes us wonder if the situation could be similar for the new Chinese rating industry, where local CRAs don’t necessarily have comparative advantages to get private information.

⁸⁰² Emerging market in terms of rating business development, not in terms of economic development.

⁸⁰³ Afik, Zvika et al. 2014, The (un)informative value of credit rating announcements in small markets. *Journal of financial Stability*, 14, page 66-80.

On the other hand, findings of Freitas & Minardi (2013)⁸⁰⁴ for 4 *Latino-American* stock markets are similar to what can be found in the study of Murica et al. (2013)⁸⁰⁵ for the *Brazilian* market and that of Lal and Mitra (2011)⁸⁰⁶ for the *Indian* market.

They discovered that, in the case of downgrading, there “has some information content and impact on the share prices” while by contrast, “upgrades appear to be purely a response to the information that the market already has”.

The results are consistent with those of Poon and Chan (2008) for the Chinese market. Their focus is confined to one specific agency: Xinhua-Far East, who “displayed the certification and signaling effects” for both initial ratings and rating changes (downgrade) respectively.

Among their empirical results, we could conclude otherwise that “credit ratings [...] convey information and such ratings have significant effects on the stock returns of the rated companies”. Poon et al. (2007, 2008) also suggested that “in emerging market, [...] the market is likely *efficient* enough to react to some valuable ratings”⁸⁰⁷. However, when we went back to carefully verify the results tables, the truth is that they only found significant reactions around the event day (-3, 3) and (5, 5), at 5% level of significant, and only in the case of downgrading. Honestly, we found it a little bit hasty for them, to draw such a conclusion as they asserted, based on the results they got for real.

All of these elements intrigue us to do a complete and more thorough investigation, on the impacts of rating events (credit rating changes and watch-lists) on Chinese stock returns. You may find the hypotheses, data description, methodology, results and analyses, as follows...

⁸⁰⁴ Freitas. A. & Minardi. A. 2013. The Impact of Credit Rating Changes in Latin American Stock Markets. *Brazilian Administration Review*, 10 (4), 439-461.

⁸⁰⁵ Flávia Cruz de Souza Murcia, Fernando Dal-Ri Murcia, José Alonso Borba, 2013, The Informational Content of Credit Ratings in Brazil: An Event Study, *RBFIn - Brazilian Review of Finance*, Vol 11(4).

⁸⁰⁶ Lal Jawahar and Mitra Mamta. 2011. Effect of Bond Rating on Share Prices: A Study of Select Indian Companies”. *Vision* 15(3) 231–238.

⁸⁰⁷ *Ibid.*

1.2. Hypotheses sorted by Chinese institutional factors

We make the following assumptions based on classic theories concerning credit rating studies and literature review discussed in the preceding parts, under Chinese institutional environment. We will ask six questions, the first one is related to the general sample and the last five questions are related to the subsamples.

The *first* question is to ask:

Q0: Generally speaking, do CRAs convey information on Chinese stock market?

Admittedly, most facts in the literature review reported rating impact on stock market; however, we have more intention, in considering Chinese credit rating industry (Chapter V) and stock market institutional characteristics (Chapter II & III), to agree with some conceptual speculations and suppose that there is no information content for CRAs under the Chinese environment.

We compose our first tested hypothesis as follow:

H0 null: There is no reaction of Chinese stock market in response to credit rating changes.

However, it is hard to have significant results in a general way given the complexity on Chinese market, due to the characteristics of the institutional environment.

Inspired by a set of literature review considering institutional factors, we decided to compute the following hypotheses, based on sub-samples:

- ✓ A special period of time: crisis 2008 (H1)
- ✓ Market segmentation (H2)
- ✓ Types of CRAs: global and local (H3)
- ✓ Market anticipation for CRCs (H4)
- ✓ Sequent Credit rating Changes preceded by Watch-Lists (H5)

1.2.1. Crisis effects

In the theoretical framework of *New-institutionalism*, “time evolution” is as an indispensable dimension. The “crisis effect” can be another angle that we can take into account, in that case.

There is evidence (Dardour, 2008 for European market⁸⁰⁸ and Kenjegaliev, 2016 for the German market), showing a change of investors’ behaviors before, after and during the crisis of 2008⁸⁰⁹. In the same spirit, Teiletche et al. (2009) also documented the importance of macro-economic/financial context.

In the small Israeli market, Afik et al. (2014, page 79) found that in 2000-2007, the market response was “small and statistically insignificant followed by a correction in stock prices; in 2008-2009 (after the crisis), the immediate market reaction is negative and statistically significant, and it is not followed by a noticeable correction”. The authors contributed the reasons to either the rating regulation or the financial crisis.

All these studies all inspired us to ask the following question: ***Q1: Does stock market’s reaction to CRCs change since the recent financial crisis (2008)?***

As Hsueh and Liu (1992)⁸¹⁰ indicated that stock market reactions to CRCs “should be positively related to the level of market uncertainty”. In order to explore the rating impact on the “aggregate market level”, we split the entire sample into subsample to differentiate ratings, before and after the year 2008, in order to test separately the rating impact. As a consequence, we can test alternatively two hypotheses:

H1 null (1): There’s no influence of CRAs before 2008, in the stock market’s reaction to credit rating changes (CRCs).

H1 null (2): There’s no influence of CRAs after 2008, in the stock market’s reaction to CRCs.

⁸⁰⁸ Dardour, Ali. 2008. L’impact des annonces de notation de crédit sur les valeurs européennes : une comparaison avant et pendant la crise de 2008. *Revue d’économie financière*, 111, 273-292. He found that CRAs started to be more valued after the recent crisis (2008) and both rating increase and decrease resulted in negative responses.

⁸⁰⁹ 15/09/2008 remarks the bankruptcy of Lehman brothers and because of financial crisis, Chinese exportations State Council of the People’s Republic of China on 9 November 2008, announced Chinese stimulus plan, amounting to 4 trillion yuan to help local governments and SOEs to overcome the financial and economic difficulties.

⁸¹⁰ Hsueh and Liu, 1992, Market Anticipation and the Effect of Bond Rating Changes on Common Stock Prices, *Journal of Business Research*, Issue 24, page 227.

1.2.2. Segmentation of the stock market

Han et al. (2009)⁸¹¹ found that American Depository Receipts (ADRs; in U.S dollars) reacted significantly for CRCs in both directions. However, there is no informative impact of CRAs on 26 stock markets using local currency. To our knowledge, there exists only one study devoting to emerging markets to examine the *Market Segmentation Effects* of CRCs.

Since Chinese stock market has A and H segments (including AH share-double listing), dispersed in three listing places with different accounting/auditing regulatory principles and different listed company category and different investors⁸¹² (please refer to Chapter II and III for more details), it's interesting to see if these institutional characteristics would contribute to differentiate stock market reactions to CRCs. Hong Kong is an international financial center and we suppose that the investors may be more familiar with CRAs in this market segment, compared to those in Mainland China. It leads us to ask our next question: ***Q2: Do public-listed companies of “A shares” respond differently from companies of “H shares” to CRCs? What about the Abnormal Returns (AR) for double-listing shares?***

As far as we know, there is no relevant evidence ever showed in the Chinese context to differentiate market reactions under various listing places/segments to the same Credit Rating Changes. Our study is the first to consider the market segmentation, trying to split the entire sample into three sub-samples, in terms of: A shares, H shares and double-listing shares. Consequently, we have tested subsequently three sub-hypotheses, as follows:

H2 null (1): There is no significant AR for “A shares” in the case of CRCs.

H2 null (2): There is no significant AR for “H shares” in the case of CRCs.

H2 null (3): There is no significant AR for dual-listing shares in the case of CRCs.

⁸¹¹ Han, Seung Hun, Shin, Yoon S., Reinhart Walter & Moore, William T. 2009. Market Segmentation effects in corporate Credit Rating changes: the case of emerging markets, *Journal of Financial Service Research*. 35. 141-166.

⁸¹² A/B share for Continental China (Shanghai Stock Exchange and Shenzhen Stock Exchange) and H share for Hong Kong (Hang Seng Stock Exchange). Besides, the dual share (listed both for A and H share) is also part of our discussion. Since there are few statistics for B shares to constitute a sample, we will focus only on A share, H share, dual share (both A and H shares) and their differences.

1.2.3. Global and local CRAs

The study of Li et al. (2006)⁸¹³ is applied to the Japanese stock market and they found global CRAs (Moody's and S&P) are more influential⁸¹⁴, along with negative significance, than two local Japanese agencies for the local downgrades. By contrast, Han et al. (2009)⁸¹⁵ found an exception that only local CRAs on Korean market (among 26 emerging markets) were more appreciated.

In the previous Chapter IV and V, we found by descriptive data, Chi-square test and logistic models, that the type of CRAs is one of the most important institutional factors under Chinese environment.

It brings us to ask the question: ***Q3: Do CRCs (Credit rating changes) given by local and global agencies generate different reactions on Chinese stock market?***

At the beginning of Chapter VI, we classified the literature review on the informative impact of CRCs on stock market. We concretized some ideas, by saying that “Big Three” truly have information content and they can give valuable news by signaling CRCs, according to the existing evidence. The situation remains unclear under Chinese institutional environment.

Besides, it is true that Poon and Chen (2007, 2008) found some significant reactions of the stock market around the event day. However, most of other news reports, academic studies and conceptual speculations, illustrated that Chinese local CRAs have no supplementary value to the capital market.

Hence, we compute two hypotheses, based on the two sub-samples. We divided the entire CRCs, into those given by “Big Three” and those given by “Chinese local CRAs”.

H3 null (1): CRCs given by “Big Three” is no news.

H3 null (2): CRCs given by Chinese local CRAs is no news.

⁸¹³ Li Joanne, Shin Yoon S., & Moore William T. 2006. Reactions of Japanese markets to changes in credit ratings by global and local agencies. *Journal of Banking & Finance*, 30, 1007–1021.

⁸¹⁴ “Market reaction is more severe on average in response to downgrade by global agencies” (but no significant impact for upgrade for both groups of agencies):

⁸¹⁵ Han, Seung Hun, Shin, Yoon S., Reinhart Walter and Moore, William T., 2009, Market Segmentation effects in corporate Credit Rating changes: the case of emerging markets, *J. Finance Serv Res.* 35: 141-166.

1.2.4. Consideration of anticipation: a proxy of ownership

Hsueh and Liu (1992) documented that when the market conditions were less certain, it was difficult to anticipate a CRC. It is the same case for firms with less information. Hence, the market reaction to the rating events would be magnified. In other words, the high degree of anticipation reduces the informative value of CRAs.

However, Purda (2007) used some indicators to predict CRCs, she found whether there were predicted CRCs (with anticipation) or surprising CRCs (without anticipation), the stock market reactions remained the same.

These two competing empirical findings lead us to ask the next question:

Q4: Does stock market reaction of public-listed companies remain the same with or without the anticipation of CRCs?

In order to quantify the “anticipation”, we took the ideas of Hsueh and Liu (1992). In their work, they took the proxy of “ownership” to designate low-information available companies. To be specific, the “concentrated ownership” means the existence of dominant investors. “They are more aggressive in acquiring information about these firms” (page 228) from all other analysts and data system. These high-information firms could diminish the value of CRAs, because shareholders have already possessed certain information canals at their disposal.

Consequently, we will divide the entire sample, into two subsamples: one with public-listed companies with the concentrated ownership; the other with the dispersed ownership.

Therefore, there are two hypotheses to be tested, which are presented as follows:

H4 null (2): There is no significant AR for public-listed companies with concentrated ownership, in the case of a CRC.

H4 null (1): There is no significant AR for public-listed companies with dispersed ownership, in the case of a CRC.

1.2.5. Watch-Lists (WLs)-preceded Credit rating changes (CRCs)

Bannier and Hirsch (2010) had a relatively complete insight into WLs, for the first time in the literature review. They sought to explain the economic functions of the CRCs, with preceding WLs.

On one hand, Elayan et al. (2003), Han (2009), Lal (2011) and Chung et al. (2012) found CRCs following WLs brought as much as market reactions to WLs-preceded CRCs; On the other hand, the early study of Holthausen and Leftwich (1986) showed that because of WLs, CRCs (WL resolutions) brought “little evidence (page 85)”.

In addition to that, the communication paper of Hubler et al. (2017)⁸¹⁶ reminds us that how stock market reacts depends also on the investors' expectation (Hand et al., 1992). It seems that market would also choose to compensate the reactions when the announcement was not up to their initial expectation. The kind of possibility makes it even more complicated and inconclusive to estimate the direction where stock prices would go.

The mitigated results lead us to ask the following question:

Q5: Does the fact that CRCs are preceded by Watch-Lists (WLs) or not, bring the same information content on Chinese stock market?

Comparing credit rating changes with and without preceding WLs, we compose the following hypotheses to test empirically in the Section 2:

H5 null (2): There is no significant AR for non-WLs-preceded CRCs.

H5 null (1): There is no significant AR for WLs-preceded CRCs.

⁸¹⁶ Hubler J., Laroche P., Louargant C., Ory JN, 2017, How rating agencies' decisions impact stock markets? A meta-analysis. *Working paper. Conference paper. 30th Australasian Finance and Banking Conference*, 13-15 December 2017, Sydney, Australia.

1.3. Descriptive statistics and the treatment of contamination

We separated the sample into upgrading part and downgrading part. At the same time, we sorted them into five sub-samples, according to all hypotheses that we made previously. They themselves are sorted by Chinese institutional factors.

For example: the sub-sample “time dimension: crisis (2008) effect” split the general sample into “before”: 31 upgrades and “after”: 283 upgrades, in the case of upgrading (We used the 314 upgrades to construct the size of general sample).

Another example is that in the case of downgrading (156 downgrades is the size of general sample), we have subsample “concentrated ownership: anticipation” and “dispersed ownership: little or no anticipation”. It accounts 133 and 19 downgrades, respectively. You may notice that there are 4 downgrades in short. It is because among 156 downgrades, there are 4 cases that we cannot find relevant information in the database Bloomberg, concerning the ownership of the listed companies. We had to delete them from the general sample, when constituting our 4th subsample.

The statistics described in the table below are all *non-contaminated* rating events in the meaning that during the estimation and event window, if there was other CRC(s)⁸¹⁷ happened, we only included the first CRC.

According to Followill & Martell (1997, p.81), it’s important to “knowing the precise timing of the arrival of event information” by “*eliminat(ing) announce events contaminated by extraneous, contemporaneous information events or events preceded by announcement by the other major rating agency.*” That’s the reason why we dealt with the contamination with much precaution, before conducting any statistical measurements.

⁸¹⁷ We kept the case when first CRC occurred after the initial ratings and confirmation within 131-days-window,

Table VI.1.1

Data description of CRCs, according to Chinese institutional factors

Number of rating events		Downgrading	Upgrading
General sample (H0)		156	314
Time dimension: crisis (2008) effect (H1)	Before	31	32
	After	283	124
Market Segmentation (H2)	A shares (SSE+SZSE)	207 (134+73)	72 (58+14)
	H shares	107	84
	Dual-listing shares ⁸¹⁸	33*2=66	24*2=48
Types of CRAs (H3)	Global CRAs	83	100
	Local CRAs	231	56
Proxy for Anticipation: “equity ownership dispersion” to indicate “the quantity of information available about the individual firm” ⁸¹⁹ (H4)	Concentrated ownership: anticipation	261	133
	Dispersed ownership: little or no anticipation	50 ⁸²⁰	19 ⁸²¹
CRCs preceded by WLs (H5)	Absence of WLs	280 ⁸²²	134 ⁸²³
	Existence of WLs	21	21

We should admit that without the control of concurrent sovereign rating(s) and other possible financial release or reports, our “non-contaminated sample” may be still contaminated to some extent. A necessary adjustment should be made to avoid relevant problems in the future study.

However, for the moment, it is a compromise to avoid a too-much-strict restriction of the sample constitution, since the number of CRCs is still small in Chinese market (compared to other developed markets, especially in USA).

⁸¹⁸ It should be noted here that in Chinese market, there is “dual share”, which makes it possible for a rating event to have double impact on both continental Chinese market and Hong Kong market segment separately.

⁸¹⁹ Hsueh and Liu, 1992, *supra*, page 231. We defined the concentrated ownership as one entity holds at least 50% of the corporate shares.

⁸²⁰ In the database of Bloomberg, there are 3 events that we did not find any information relative to WLs before CRCs. So, we have short of data for 3 events.

⁸²¹ We have short of data for 4 events.

⁸²² We have short of data for 13 events.

⁸²³ We have short of data for 1 event.

In this regard, as we dig into the literature review, we found that many authors had never mentioned how to deal with the problem of contamination. In the Anglo-Saxon market, Barron et al. (1997, page 498) admitted that the price to “make a robust analysis of rating changes” is very high. They cited the example that “US studies can lose over half their observations from 'contamination' (e.g. see Hand et al., 1992).”

For the moment, the controls (that I made to guarantee a relatively cleaning sample) are:

Firstly, there is no other event happened during the estimation window and event windows.

And then, we are aware that, there are many situations where stock prices were missing in the data base, at the period of estimation and event windows. When the stock transaction was suspended during a day over the estimation window, we took the average price of the “day before” and the “day after” of the day of suspension to get the stock price.

When the missing data occurred during event windows, we canceled the event series.

We are also aware of the fact that this kind of procedure will reduce the quality of linear regression.

Thirdly, we controlled and eliminated the series, when the regression F test score is greater than 10% (not significant).

Conclusion of Section 1

In conclude, capital market reaction (showing by price/returns changes) depends on the interpretation of “signals”, which reflects how investors perceive and understand the information content of the listed companies and financial instruments that there are investing in, inside and outside the market.

The situation of the stock market reactions to CRCs is quite complicated, especially after taking into account of Chinese institutional factors.

By summarizing earlier researches, we presented some possible hypotheses and trying to explain the reasons why the results cannot be presented in a general way.

A non-contaminated sample was described according to the crisis effect, market segmentation, CRAs categories (global and local CRAs) and the consideration of anticipation and CRCs with preceding WLs.

Theses sub-samples will be used to explore the stock market Abnormal Returns (ARs)⁸²⁴ when CRCs occurred, according to each of these scenarios.

⁸²⁴ Based on which, we can calculate average abnormal returns, cumulative abnormal returns and cumulative average abnormal returns.

Section 2. Research design and results for CRCs

2.1. Methodology

2.2. General results (tables and graphs)

2.3. Analysis sorted by Chinese institutional factors (upgrading)

2.4. Analysis sorted by Chinese institutional factors (downgrading)

Introduction of Section 2

We adopt a classic methodology (initiated by Brown & Warner (1984), Dyckman et al. (1984), Holthausen & Leftwith (1986)) to study the informative impact of CRCs.

The use of *event study* requires market information of the exact day during estimation and rating event window and the database *Bloomberg* makes it easy to get day-to-day price, either for daily common stock of a specific listed company or for its corresponding index, in Chinese market (Shanghai, Shenzhen and HK stock exchange), from 01/01/1988 to 01/01/2017. We cross-examined all of these companies with those that were ever rated by CRAs (either global, or local), to constitute all tested sample.

Here, we want to spend some time to pre-visit two things:

Firstly, why do we use a uni-factorial market model instead of Capital Asset Pricing Model (CAPM)? It is because we saw from the literature review that a majority of authors tended to use the first one than the second one. In the objective to compare my results with theirs, we kept continuity in the choice of market model. The next step in our future publications, we want to do a rating impact study, based on the CAPM, including the risk-free rate.

Secondly, why we used three separate indexes? It is because the existence of market segmentation is an important factor to consider under Chinese institutional environment. We have presented precisely their nuance in the Chapter II and III.

2.1. Methodology

Firstly, it is our call to decide the period of study. We should keep the balance between a long enough estimation window to ensure the estimation capacity of our model and not-to-long estimation window to avoid too much noise on the stock market during that period (Point 2.1.1).

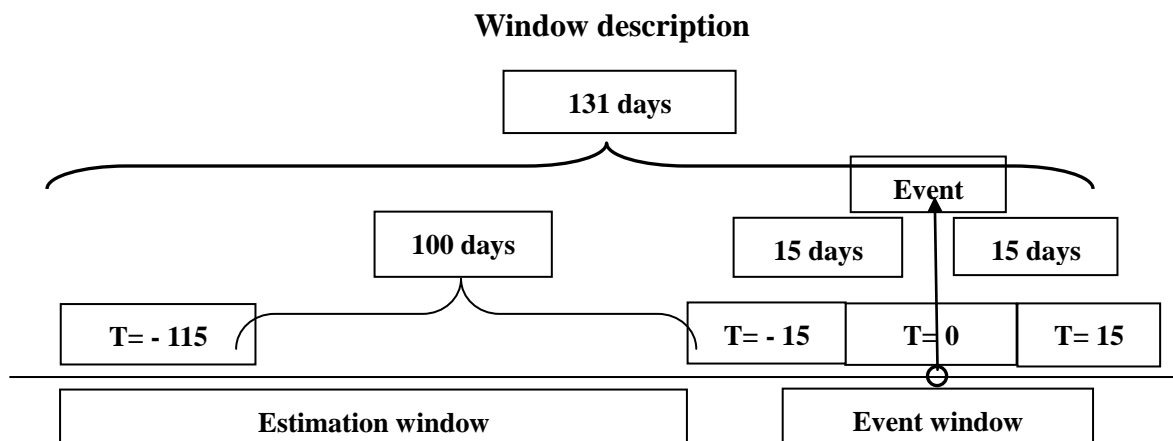
We use the classic models for an *event study* with daily stock market price/return (Point 2.1.2). The estimation method is the OLS, along with a refinement of GLS (Point 2.1.3).

Finally, we will use several parametric and non-parametric tests to see if the results of *Average Abnormal Returns (AARs)* and *Cumulative Average Abnormal Returns (CAARs)* are statistically significant (Point 2.1.4 and Point 2.1.5).

2.1.1. Estimation windows and event windows

“According to Camargos and Barbosa (2003, p. 3), the choice of the window is arbitrary” and “should not be too long, because it would risk encompassing other events, generating biases, nor too small, because it would risk failing to fully capture the abnormality in prices”⁸²⁵.

Figure VI.2.1



* **Figure VI.2.1 made by the author.**

⁸²⁵ Freitas, and Minardi, 2013. The Impact of Credit Rating Changes in Latin American Stock Markets, *Brazilian Administration Review*, Vol. 10 Issue 4, p439-461.

We fixed our estimation window after referring to a set of literature view, especially for emerging and small market, and decided to take [-115,-15] for a period of 100 days and the event windows [-15,+15] for 31 days (including event day), under which there are also some sub-windows to test results.

2.1.2. Market model for a classic event study

In order to get *Abnormal Returns (ARs)*, *Average Abnormal Returns (AARs)* and *Cumulative Average Abnormal Returns (CAARs)*, we use following formulas:

Firstly, by using daily common stock price for both market ($P_{m,t}$) and individual equity ($P_{i,t}$), we get $R_{m,t}$ and $R_{i,t}$, on the day t respectively:

$$\mathbf{R}_{i,t} = \mathbf{Ln} (P_{i,t} / P_{i-1,t}) \quad (1)$$

With $R_{i,t}$: actual common stock return observed for individual equity i on day t .

$$\mathbf{R}_{m,t} = \mathbf{Ln} (P_{m,t} / P_{m-1,t}) \quad (2)$$

With $R_{m,t}$: market return on day t , with three separated indexes (obtained from *Bloomberg*) as market reference: “Shanghai A share” index and “Shenzhen A share” Index for A shares listed in *Shanghai Stock Exchange* and *Shenzhen Stock Exchange* respectively; *HSML100 (H shares Mainland) Index* for Chinese companies listed in “H share segment” in Hong Kong. The reason to choose them is that these indexes compound the largest sample of companies in each listing place.

Secondly, during the 100-days estimation window, we have 100 $R_{i,t}$ and 100 corresponding $R_{m,t}$ (observed returns of listed company i on the market m).

With the help of software Stata and the use of function of OLS (ordinary least square) for a simple regression), we will estimate two coefficients from the equation (the estimation model with Garch model will be discussed in the Point 2.1.3)

$$\mathbf{R}_{i,t} = \alpha_i + \beta_i * \mathbf{R}_{m,t} + \epsilon_{i,t} \quad (3)^{826}$$

$$\text{With } \epsilon_{i,t} \approx \mathbf{N} (0, \sigma (\epsilon_{i,t})) \quad (4)$$

⁸²⁶ We controlled the quality of the simple linear regression. We set the acceptance threshold of F test at 10%.

And then, we calculate $R_{n,t}$ (expected return for each stock i on day t during event window $[p, q]$) by market model:

$$R_{n,t} = \hat{\alpha}_i + \hat{\beta}_i * R_{m,t} \quad (5)$$

With $\hat{\alpha}_i$ and $\hat{\beta}_i$ obtained above by equation (3)

We could get Abnormal Returns (ARs) by:

$$AR_{i,t} = R_{i,t} - R_{n,t} \quad (6)$$

With $AR_{i,t}$: difference between return observed in reality and return expected by stock investors.

On a certain day t (on the vertical column in the following Figure VI.2.2), AAR_t is calculated as follows:

$$AAR_t = \text{Sum} (AR_{1,t} : AR_{i,t}) / N = \sum_{i=1}^N AR_{i,t} / N \quad (7)$$

For a certain i (i being a specific rating event for a certain issuer, on the horizontal line in the following Figure VI.2.2), $CAR_{i,(p,q)}$ is calculated for the event window $(-15 \leq p \leq q \leq +15)$ as follows:

$$CAR_{i,(p,q)} = \text{Sum} (AR_{i,p} : AR_{i,q}) = \sum_{t=p}^q AR_{i,t} \quad (8)$$

CAAR is related to the “testing windows”. In other words, CAAR will be calculated and tested over the whole or different sub-event windows.

Taking a random period of $[p, q]$ from the total 31 days of the event window, we have:

$$CAAR_{(p,q)} = \sum_{t=p}^q AAR_t = CAR_{i,(p,q)} / N \quad (9)^{827}$$

⁸²⁷ In the line of a set of publications, we cite Francois-Heude & Paget-Blanc (2004, page 20), Holthausen. R. & Leftwich, R. (1986, page 87), Barron M.J. et al. (1997, page 899); Abad-Romero & Robles-Fernandez (2006, page 893), Freitas & Minardi (2013, page 449), among others.

Figure VI.2.2

Calculation of AAR and CAR

		31 days for the event window						
		t	t= -15 ...	t=p	t=0...	t=q	t=15	
		i	⏟					CAR _{i,(p,q)}
Number of the rating event (i): N	Event(1)	AR _{1,t-15}		...			AR _{1,t15}	CAR _{1,(p,q)}
	Event(2)							
	·							
	Event(i)	AR _{i,t-15}		...			AR _{i,t15}	CAR _{i,(p,q)}
AAR_t		AAR _{t-15}		...			AR _{t15}	

* Figure VI.2.2 made by the author.

There are two ways to get CAAR_{i,t}: either we cumulate AAR for all event (i) from time t-15 to t15, or we take the average of CAR_(p,q) of event from 1 to i.

2.1.3. Refined estimation model: Garch vs. OLS

To get α_i and β_i , we firstly referred to OLS (ordinary least square) as the classic estimation method. In the line of Malatesta (1986) and Abad-Romero & Robles-Fernandez (2006), we also implement a Garch model to deal with the auto-regressive conditional heteroscedasticity, in order to have a better estimation of the value of α_i and β_i .

First of all, we ran the series ($R_{i,t}$ and $R_{m,t}$) one after the other for 100-day period as estimation, from the equation (3) in the software Stata to test if there exists the *Arch Effect*.

$$\sigma_{i,t}^2 = \lambda_0 + \lambda_1 * \varepsilon_{i,t-1}^2 + \dots + \lambda_{100} * \varepsilon_{i,t-100}^2 = \lambda_0 + \sum_{i=1}^{100} \lambda_i \varepsilon_{i,t-i}^2 \tag{10}$$

And then, we chose individually the most optimal lag “(from 1 to 5, following

Abad-Romero and Robles-Fernandez, 2006)” where the *Arch Effect* is significant, as in the article of Hubler et al. (2013, page 8). According to them, “in order to ensure this suitability, we simultaneously run an ARCH-LM test to check the appropriate order of the ARCH parameter”.

- ✓ If none of coefficient for ARCH-LM is significant, it means we cannot reject the null hypothesis (there exists no “autoregressive conditional heteroskedasticity (ARCH)”); consequently, we consider that an OLS model is appropriate to estimate the market model parameter.
- ✓ In case of “one lag” coefficient associate is significant, then we tested the significance of the “two lags” coefficient, and so on, until the five lags as maximum. We checked the reliability of all significant coefficients, by observing, at each step, the goodness of fit model⁸²⁸ (focusing on the criteria such as Akaike and Schwarz).

Secondly, once the optimal order of the ARCH process was selected, we selected the optimal order of the Garch process (beginning with a 0 lag, which means no *Garch effect*). We added one lag each step, until the moment when we found the significant coefficient).

That means that, we not only took into account the previous stock return(s), but also the previous variance(s) into consideration.

$$\sigma_{i,t}^2 = \omega + \lambda_1 * \varepsilon_{i,t-1}^2 + \dots + \lambda_{100} * \varepsilon_{i,t-100}^2 + \gamma_1 * \sigma_{i,t-1}^2 + \dots + \gamma_{100} * \sigma_{i,t-100}^2 = \omega + \sum_{i=1}^{100} \lambda_i \varepsilon_{i,t-i}^2 + \sum_{i=1}^{100} \gamma_i \sigma_{i,t-i}^2 \quad (11)$$

If there are several Garch models with significant coefficients, we run IC test (AIC and BIC⁸²⁹) to capture the least value with the best fitness, as described before.

Thirdly, in order to improve the optimal order of the GARCH process, and to ensure that no partial autocorrelation still existed in the residuals, once the model was implemented, we performed at each step a Ljung-Box test to detect the residuals.

The objective is to get the fittest model, in the way that it allows the probability of

⁸²⁸ “The goodness of fit relies on the likelihood ratio test”, in Hubler et al., 2013, *supra*, page 9.

⁸²⁹ Akaike information criterion and Bayesian information criterion.

those residuals of the model to behave as “*White noise series*”, to be maximum. In other words, the *Q statistic* should not be shown significant (in order to maintain the null hypothesis of no existence of auto-correlation for the residuals) at lags of 15. We also applied the same test to the squared residuals of the model, in order to “capture a potential nonlinear residual auto-correlation”⁸³⁰.

Fourthly, if the residual remains auto-correlation (white noise test is significant at least 5%, in order to reject the null hypothesis: residuals are random, and no serial correlation is present), we introduced auto-regressive-moving-average model: ARMA (p,q) terms in the Garch model in the next step. The choice of lags depends on the auto-correlation (q lags) and partial auto-correlation (p lags) plots. If the model is still not the optimal, we continued to add values to p and q.

$$X_t = c + \varepsilon_t + \sum_{i=1}^p \varphi_i X_{t-1} + \sum_{i=1}^q \theta_i \varepsilon_{t-1} \quad (12)$$

In sum, we used Stata as software for the calculation. *EViews* is also used to control process. We believe that this kind of econometric treatment⁸³¹ help to refine the α_i and β_i , compared to those that we obtained in the OLS.⁸³²

⁸³⁰ *Idem*, page 8.

⁸³¹ Engle, Robert F. 1982 Autoregressive Conditional Heteroscedasticity with Estimates of the Variance of United Kingdom Inflation. *Econometrica*. 50 (4), page 987–1007.

⁸³² If in the previous procedures, we still couldn't find the converged model, with significant beta and coefficients for *Arch/Garch*; or in the situation where the “flat log likelihood encountered, cannot find uphill direction”⁸³², we plot regression lines to find the outliers. We deleted the day(s) with the most aberrant data, until the moment when we got suitable models by repeating the previous procedures. This kind of problem occurred often because of the low quality of data and the annoying lack of data on Chinese stock market and insufficient support in Bloomberg.

2.1.4. Parametric tests: one sample t test and paired-samples t test

Previously, we presented in detail the models of OLS and Garch to get coefficients α_i and β_i . We used the equations of market model to calculate ARs: abnormal returns⁸³³.

The objective is to test the significance of ARs and CARs $_{(p,q)}$. There are many different types of test in the literature review in the study of market impact.

We have chosen both parametric tests and non-parametric test. The later will be presented in the Point 2.1.5. As for parametric tests, we consider not only one-sample test but also paired-sample test; not only cross-sectional T test, but also time-series standard deviation T test.

One sample T test

It is implemented to check whether the arithmetic mean of CARs (for a period of time in the event window (p, q)) and the arithmetic mean of ARs (for one day t) are significantly different from 0.

The null hypotheses $H_0: AAR=0$ and $H_0: CAAR=0$. The objective of the test is to verify if AR and CAR have their average at 0.

$$\mathbf{T \ test} = \frac{\bar{x}}{S_x} \tag{13}^{834}$$

With \bar{x} , being the average of CAR and AR, according to the event window (for a period $[p-q]$ or a day t) where we chose to test.

With S_x , being the standard error of the AAR and CAAR respectively

$$\text{So, we have } S_x = \frac{\sigma}{\sqrt{N}} \tag{14}$$

In the first case,

$$\sigma = \frac{1}{\sqrt{N-1}} * \sum_{i=1}^N (AR_{i,t} - AAR_t) \tag{15}$$

Where “under the assumption of i.i.d. (independent and identically distributed) normally distributed abnormal returns, the ratio of AAR_t to $S_{(AAR_t)}$ is distributed as a

⁸³³ Please refer to the Subsection 2.1.2: Market model for a classic event study.

⁸³⁴ Abad-Romero & Robles-Fernandez, 2006, *supra*.

Student's t with N degrees of freedom⁸³⁵.

In the second case, we have two options:

- Firstly, if we use the *cross-sectional T test*,

$$\sigma = \frac{1}{\sqrt{N-1}} * \sum_{i=1}^N (CAR_i - CAAR) \quad (16)$$

Where σ is the “standard deviation” of the “cumulative abnormal returns” during the period p to q, as we quoted previously (Creighton et al, 2007)

- Secondly, if we use *time-series standard deviation T test*,

$$S_x = \sigma * \sqrt{q-p+1} \quad (17)$$

$$\sigma = \frac{1}{\sqrt{q-p}} * \sum_{t=p}^q (AAR_t - \overline{AAR}) \quad (18)$$

$$\overline{AAR} = \frac{1}{q-p+1} * \sum_{t=p}^q AAR_t \quad (19)$$

With S_x is the “standard deviation σ ” multiplied “by the square root of the number of days in the period (p,q)”⁸³⁶; σ is the “standard deviation” of all AAR at time t during the period p to q; the average of AR_t is calculated during the testing window (p,q).

Paired-samples T test

It is the second parametric test that we conducted. The objective is to see if there is a significant difference in the pair of AR and NR (normal returns) at the date t; between CAR and CNR (cumulative normal returns)” during the period [p, q].

$$\mathbf{CNR} = \mathbf{Sum (R_{n,p}: R_{n,q})} \quad (20)$$

Where [p, q] is the period of time chosen among event window and $R_{n,t}$ is the expected return for each stock i on day t=[p, q], the theoretical expected return is calculated by market model and the equation (4). More findings could be found in the study of Kenjegaliev (2016) for details.

⁸³⁵ Creighton et al. (2007, page 6).

⁸³⁶ Holthausen. R. & Leftwich, R. (1986, page 87), Abad-Romero & Robles-Fernandez (2006, page 893), Creighton Adam et al. (2007, page 6), Freitas & Minardi (2013, page 449), among others.

2.1.5. Non-parametric tests

Considering statistical restrictions imposed by t-test (both for one-sample and paired-samples), we conduct two non-parametric tests to avoid the *normal distribution hypothesis*. Non-parametric tests also have more advantage to avoid some inconvenience due to the fact that they are “less sensitive to extreme values” (Dardour, 2013), especially in the case of small samples.

This additional test will be implemented to all the results, in line with the study of Abad-Romero & Robles-Fernandez (2006), Hubler et al. (2013)⁸³⁷, Alsakka et al. (2015), among others.

As we did in the case of parametric test, we also apply a one-sample non-parametric test and a paired-sample non-parametric test:

One sample non-parametric test⁸³⁸

Wilcoxon signed-rank test: it “assume(s) that there is information in the magnitudes as well as the signs” (Abad-Romero & Robles-Fernandez (2006, page 893). According to these Spanish researchers, we should rank all ARs and CARs “from smallest to largest by absolute value” and then, we associate the ranks with the same sign. In other words, ARs and CARs with positive sign in one group, and those with negative sign in the other group.

Null hypothesis (0) means the median of AR and of CAR is not significantly different from 0.

$$W_i = \sum_{i=1}^N \text{rank}(AR_{i,t}) + /- \quad (21)$$

⁸³⁷ Hubler J., Louargant C., Ory J.N. and Raimbourg P., 2013, *supra*.

⁸³⁸ We wanted to do the sign test as well. We also call it binomial test, (with *Null hypothesis (0)* means the proportion of “positive sign” and of “negative sign” is not significantly different; in other words, their probability is equally distributed, conform to the expected value at 50%). We compute 1 when AR or CAR is positive; 0 in the case when there is negative AR/CAR. However, the test has poor performance theoretically speaking, and the reality shows that results are not neither consistent with those of other tests. That is reason why we did not compute the results in our thesis.

Where $\text{rank}(AR_{i,t})$ is the rank of the absolute value of $AR_{i,t}$ at time point t , for firm i , when it is signed positively/negatively. We added the abnormal returns for each firm i in the event window (p, q) for $CAR_{i, p-q}$.

Paired-sample non-parametric test

It is represented, in this thesis by a *Wilcoxon signed-rank test* as mentioned above. The idea follows the same for two-related-samples in the description of the parametric t test, that we compared the sample of abnormal returns (ARs) and normal returns (NRs).

We will skip the detailed description of paired-sample here, please refer to page 434, for more information.

2.2. General results

We used two types of estimation model (OLS and Garch model) in the Point 2.1.3 to get separately results for upgrading and downgrading.

As for the tests, we adopted as presented in the previous Subsection 2.1.4 and Point 2.1.5 that, at the same time for parametric tests (T tests, two-tailed and at 10% *, 5% ** and 1% ***) and non-parametric test (Wilcoxon signed-rank test), and tests for single-sample and for paired-sample.

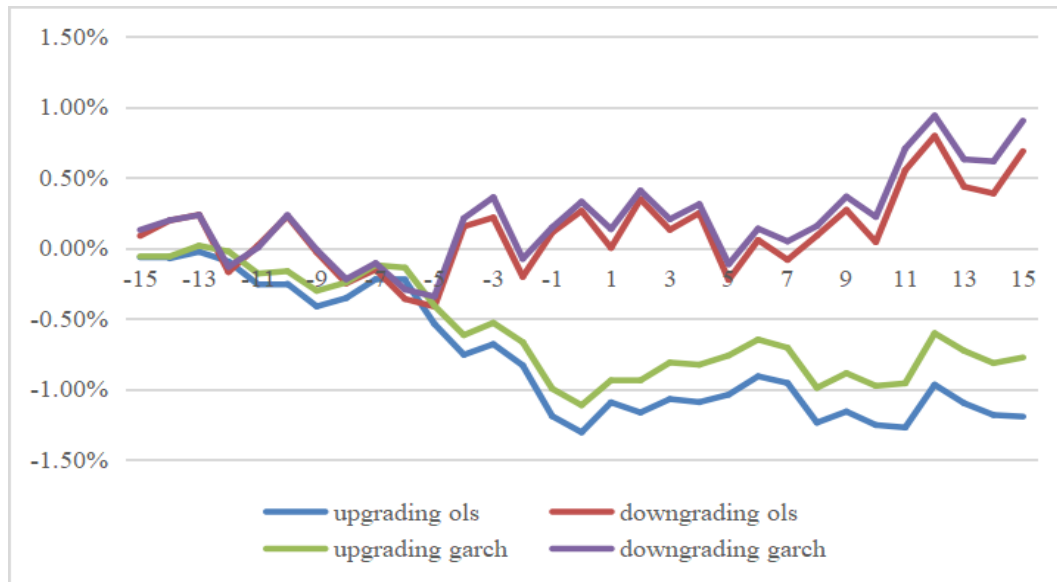
In other words, we have three elements into consideration, when presenting the results:

- ✓ Estimation process: OLS and Garch models
- ✓ Type of tests: parametric versus non-parametric tests
- ✓ Type of sample test: one sample versus paired model

The results of tests are going to confirm the Null Hypothesis H0.

Generally speaking, there is no reaction of Chinese stock market in response to credit rating changes.

**CAAR (cumulative average abnormal returns) over 31-days period
(event window, 15 days before and after the event day)
for upgrading and downgrading
under OLS and Garch models as estimation process**



The results are not surprising in terms of the consistence between OLS and Garch. The high consistency can be explained by the fact that most of series between $R_{i,t}$ and $R_{m,t}$ don't exhibit any *Arch or Garch effect*. To be specific, 117 upgrading series out of 314 (37.26%) and 53 downgrading series out of 156 (33.97%), have *Arch/Garch* effects.

In other words, Garch model has been used instead of OLS in calculation of alpha and beta in one third of all series combined. We have also noticed that, even with this refined estimation model, the estimated coefficients are not much different in magnitude.

What we get from the graph above is that the results are similar with OLS and Garch models. We can get more information form the following tables and graphs of cumulative average abnormal returns for the event window (-15 to 15 day before and after the event day 0) and for the sub-event windows, before, after and around the event day 0.

As the structure of the Subsection 2.2:

- ✓ Subsection 2.2.1 and 2.2.2. are for downgrading; Subsection 2.2.3 and 2.2.4 are about results for upgrading,
- ✓ Subsection 2.2.1 and 2.2.3 and results of OLS estimation model and Subsection 2.2.2 and 2.2.4. are results of Garch;
- ✓ All tables contain results both from parametric tests (cross-sectional t test and time-series standard deviation t test) and non-parametric tests (Wilcoxon signed-rank test), divided into single sample tests and paired-samples test.

2.2.1. Downgrading (OLS estimation model)

Table VI.2.1

Tests	Parametric test					Non-parametric test	
	Single sample			Paired-samples		Single sample	Paired-samples
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-0.42%		-2.076**	-0.44%	-1.718*	.073*	-1.564
-1	0.31%		1.562	0.54%	2.108**	.249	-1.403
0	0.15%		0.852	-0.10%	-0.419	.934	-0.713
1	-0.26%		-1.293	-0.40%	-1.532	.280	-1.286
2	0.34%		1.970*	0.37%	1.619	.071*	-1.216
(-15,15)	0.90%	0.546	0.449	2.50%	1.375	.557	-0.955
(-10,10)	0.17%	0.027	0.020	0.13%	0.992	.586	-0.867
(-5,5)	0.27%	0.191	0.123	0.58%	0.639	.474	-0.441
(-1,1)	0.35%	0.636	0.398	0.04%	0.090	.258	-0.432
(-15,-1)	0.13%	0.121	0.105	1.52%	1.249	.520	-0.441
(-10,-1)	0.04%	0.131	0.097	1.09%	1.273	.624	-0.842
(-5,-1)	0.47%	0.915	0.563	0.79%	1.315	.652	-0.651
(1,15)	0.54%	0.593	0.370	1.07%	1.053	.628	-0.886
(1,10)	-0.10%	-0.424	-0.254	0.27%	0.349	.455	-0.543
(1,5)	-0.43%	-1.157	-0.671	-0.12%	-0.195	.082*	-0.255

The results report that before the downgrading, there are no significant reactions, except immediately before the rating event (two days and the day before the

upgrades). It is also the case for the post-event-day windows (weak significance, at day -2 for the single sample tests and a week after the event day, at the period of (1, 5) for the non-parametric test).

2.2.2. Downgrading (Garch)

Table VI.2.2

Tests	Parametric test					Non-parametric test	
	Single sample			Paired-samples		Single sample	Paired-samples
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-0.44%		-2.170**	-0.47%	-1.926*	.065*	-1.557
-1	0.22%		1.193	0.39%	1.647	.255	-0.957
0	0.18%		1.005	-0.03%	-0.121	.780	-0.518
1	-0.19%		-0.996	-0.27%	-1.071	.350	-0.950
2	0.27%		1.625	0.20%	0.983	.119	-0.963
(-15,15)	0.90%	0.704	0.641	2.97%	1.545	.642	-1.184
(-10,10)	0.22%	0.226	0.187	1.73%	1.239	.798	-1.210
(-5,5)	0.18%	0.245	0.176	0.72%	0.751	.560	-0.577
(-1,1)	0.21%	0.649	0.530	0.09%	0.213	.279	-0.384
(-15,-1)	0.15%	0.158	0.146	1.63%	1.292	.575	-0.614
(-10,-1)	0.14%	0.198	0.155	1.22%	1.359	.778	-0.902
(-5,-1)	0.44%	0.840	0.539	0.78%	1.274	.622	-0.690
(1,15)	0.57%	0.804	0.573	1.37%	1.303	.497	-1.046
(1,10)	-0.11%	-0.197	-0.145	0.53%	0.649	.613	-0.925
(1,5)	-0.44%	-1.025	-0.716	-0.03%	-0.054	.110	-0.103

The implementation of Garch model confirms that downgrading seems to have no effect on stock market, with no abnormal returns, except on the only day of day -2.

Combing the results of Table VI.2.1 and 2, we conclude that downgrades have mostly no informative impact. Hence, the null H0 is confirmed on Chinese stock market. This conclusion is very different from those that can be drawn from the literature review on the stock markets of developed countries. We imagine a possible explanation that the stock market could have anticipated the downgrades with other information at their

disposal, or that a downgrade is not considered by the investors as an “important event”. The market reaction would be consequently diminished. It would be necessary to investigate a longer pre-event-day windows outside 15 days (longer than what we learnt from the literature review), in order to verify the speculation.

2.2.3. Upgrading (OLS estimation model)

Table VI.2.3

Results of parametric test and non-parametric test of AR and CAR

Tests	Parametric test					Non-parametric test ⁸³⁹	
	Single sample			Paired-samples		Single sample	Paired-samples
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-0.15%		-1.026	0.04%	0.217	.003***	-0.979
-1	-0.36%		-2.598**	-0.21%	-1.142	.005**	-1.829*
0	-0.11%		-0.884	-0.10%	-0.516	.103	-2.037**
1	0.21%		1.106	0.43%	1.858*	.876	-0.906
2	-0.07%		-0.522	0.03%	0.132	.449	-0.215
(-15,15)	-1.19%	-1.431	-1.461	-0.78%	-0.581	.239	-0.824
(-10,10)	-1.00%	-1.490	-1.390	-0.79%	-0.747	.115	-1.287
(-5,5)	-0.81%	-1.743*	-1.372	-0.60%	-0.863	.064*	-1.628
(-1,1)	-0.26%	-0.868	-0.528	0.13%	0.315	.015**	-0.865
(-15,-1)	-1.19%	-1.956*	-2.130**	-1.84%	-2.224**	.019**	-3.046***
(-10,-1)	-0.93%	-1.836*	-1.733*	-1.36%	-2.047**	.003***	-3.098***
(-5,-1)	-0.96%	-2.947***	-2.532**	-0.94%	-2.130**	.000***	-2.582**
(1,15)	0.11%	0.197	0.199	1.15%	1.335	.899	-1.113
(1,10)	0.05%	0.124	0.117	0.67%	0.995	.615	-0.060
(1,5)	0.27%	0.905	1.087	0.44%	1.050	.688	-0.369

In the case of upgrades, the results report that during the pre-event-day periods, there are significant negative abnormal returns (ARs), while the post-event-day stock market reactions are not significant.

⁸³⁹ We don't interpret the signs for non-parametric tests.

2.2.4. Upgrading (Garch)

Table VI.2.4

Tests	Parametric test					Non-parametric test	
	Single sample			Paired-samples		Single sample	Paired-samples
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-0.14%		-0.943	0.07%	0.384	.003***	-0.818
-1	-0.33%		-2.472**	-0.14%	-0.763	.011**	-1.527
0	-0.12%		-0.917	-0.09%	-0.497	.150	-1.844*
1	0.18%		0.933	0.36%	1.629	.822	-0.843
2	0.00%		-0.004	0.16%	0.828	.599	-0.018
(-15,15)	-0.77%	-0.935	-0.954	0.08%	0.064	.615	-0.295
(-10,10)	-0.80%	-1.202	-1.171	-0.33%	-0.333	.257	-1.429
(-5,5)	-0.62%	-1.303	-1.118	-0.22%	-0.308	.239	-0.869
(-1,1)	-0.27%	-0.898	-0.614	0.13%	0.328	.035**	-0.808
(-15,-1)	-1.00%	-1.586	-1.890*	-1.42%	-1.750*	.090*	-2.347**
(-10,-1)	-0.82%	-1.582	-1.639	-1.09%	-1.662*	.015**	-2.619***
(-5,-1)	-0.86%	-2.619***	-2.378**	-0.94%	-1.648*	.000***	-2.005**
(1,15)	0.34%	0.625	0.586	1.59%	1.966**	.417	-1.956*
(1,10)	0.14%	0.339	0.319	0.85%	1.351	.994	-0.814
(1,5)	0.35%	1.147	1.925*	0.61%	1.420	.454	-0.135

The results are quite similar for OLS and for Garch model, except the fact that stock market post-event-day reactions are positively significant for some tests (paired sample t test and w test for period (1, 15) and single sample time-series standard deviation t test for period (1, 5)) in the latter case. Combing the results of Table VI.2.3 and 4, we may conclude that the Null Hypothesis H0 is confirmed, that the stock market reaction is none.

We could explain the significant negative prior ARs by saying that CRCs tented to communicate a possible upgrade to the investors beforehand. On the discussion of Chinese stock institutional environment (in Chapter II, III and IV), we speculate that institutional investors tried to seduce individual investors to sell their actions and bought them at a lower price before the good news officially released. They kept/resold the stocks at a higher price with the arrival of upgrading.

2.3. Analysis of downgrading results sorted by Chinese institutional factors

It is clear in the previous demonstrations that the results of single sample and paired sample have a certain consistency. We decided not to include the last tests in the following analyses to avoid the repetition. However, we kept the parametric test and non-parametric test in the single sample. At the same time, we made the comparison between OLS and Garch model in the estimation model.

We confirmed the null Hypothesis 0 that, there is no significant market reaction to CRCs on Chinese market. We are not going to stop here; we want to dig into the results, by dividing the entire sample into subsamples. The criteria that we are going to adopt are from the five points of Chinese institutional factors, which are presented as follows:

2.3.1. Crisis effects (2008)

2.3.2. Segmentation of the stock market

2.3.3. Global and local CRAs

2.3.4. Consideration of anticipation: a proxy of ownership

2.3.5. Watch-lists-preceded Credit rating changes (CRCs)

They will bring answers to five questions that we put forward in the Subsection 1.2.

Q1: Does stock market's reaction to CRCs change because of the recent financial crisis (2008)?

Q2: Do public-listed companies of "A shares" respond differently from companies of "H shares" to CRCs? What about the double-listing shares?

Q3: Do CRCs given by local and global agencies generate different reactions on Chinese stock market?

Q4: Does stock market's reaction of public-listed companies remain the same with or without the anticipation of CRCs?

Q5: Does the fact that CRCs are preceded by Watch-Lists (WLs) or not, bring the same information content on Chinese stock market?

2.3.1. Subsample of CRCs before vs. after the crisis (2008)

Recall of Subsection 1.2: The Null Hypothesis H1:

H1 null (1): There's no influence of CRAs before 2008, in the stock market's reaction to credit rating changes (CRCs).

H1 null (2): There's no influence of CRAs after 2008, in the stock market's reaction to CRCs.

Recall of Subsection 1.3: Descriptive statistics:

We split the entire sample of downgrades, amounting to 156 credit rating changes, into two subsamples in terms of time dimension. The subsample of CRCs occurred before the crisis counts for 32 rating events and after 2008 counts for 124 downgrades. It is true that the subsample of CRCs before the crisis is very small (21%); however, it is an exhaustive and non-contaminated subsample. We can get the results from the following tables.

Table VI.2.5

Results based on the subsample of CRCs before the crisis (-2008)

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.74%	-2.144**		-0.76%	-2.192**		.100	.108
-1	0.15%	0.399		0.16%	0.437		.708	.722
0	-0.56%	-1.926*		-0.58%	-2.021*		.003***	.003***
1	-0.03%	-0.083		-0.04%	-0.109		.681	.695
2	0.19%	0.663		0.18%	0.619		.537	.550
(-15,15)	1.02%	0.400	0.466	0.76%	0.306	0.345	.765	.667
(-10,10)	-1.22%	-0.598	-0.697	-1.45%	-0.709	-0.824	.926	.808
(-5,5)	-2.87%	-1.512	-2.418**	-3.00%	-1.592	-2.515**	.224	.239
(-1,1)	-0.44%	-0.677	-0.691	-0.46%	-.698	-.68	.390	.350

(-15,-1)	-0.36%	-0.187	-0.282	-0.47%	-.245	-0.38	.765	.911
(-10,-1)	-0.82%	-0.545	-0.709	-0.90%	-0.601	-0.776	.896	1.000
(-5,-1)	-1.33%	-1.043	-1.359	-1.36%	-1.073	-1.376	.313	.350
(1,15)	1.94%	1.520	1.184	1.81%	1.414	1.082	.027**	.033**
(1,10)	0.17%	0.150	0.138	0.04%	0.035	0.033	.360	.369
(1,5)	-0.97%	-0.966	-1.383	-1.06%	-1.041	-1.501	.369	.443

Table VI.2.6

Results based on the subsample of CRCs after the crisis (2008-)

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.33%		-1.393	-0.35%		-1.494	.243	.208
-1	0.31%		1.348	0.24%		1.108	.375	.412
0	0.35%		1.645*	0.38%		1.788*	.167	.135
1	-0.32%		-1.341	-0.23%		-1.026	.313	.386
2	0.34%		1.625	0.30%		1.499	.148	.150
(-15,15)	0.44%	0.306	0.259	0.94%	0.632	0.578	.305	.441
(-10,10)	0.26%	0.256	0.175	0.65%	0.591	0.449	.487	.826
(-5,5)	0.88%	1.196	0.692	1.00%	1.305	0.827	.181	.211
(-1,1)	0.34%	0.921	0.520	0.38%	1.031	0.689	.132	.099*
(-15,-1)	0.11%	0.109	0.095	0.31%	0.285	0.255	.408	.551
(-10,-1)	0.29%	0.365	0.265	0.41%	0.502	0.371	.595	.761
(-5,-1)	0.92%	1.669*	1.027	0.90%	1.596	0.990	.335	.303
(1,15)	-0.02%	-0.023	-0.060	0.25%	0.305	0.236	.550	.820
(1,10)	-0.37%	-0.636	-0.366	-0.15%	-0.234	-0.162	.152	.298
(1,5)	-0.39%	-0.836	-0.460	-0.28%	-0.594	-0.386	.120	.179

We learned from the tables above that before the crisis, the downgrades lead to negative market reactions. On the day of announcement, parametric and non-parametric tests (for both OLS and Garch estimation model) report significant negative CAARs. The results are consistent to most of the literature review. Hence, H1 null (1) is rejected.

However, things have changes after 2008, the different tests report no significant

reaction, neither before, neither after the downgrade announcement (except the day of the event; or a short window before and around, with a positive reaction. However, we should take care to the poor robustness of this result, because of the weak significance and not to mention that, all tests are not computed significant). Hence, H1 null (2) is confirmed.

2.3.2. Subsample of segmentation of the stock market: A share, H share and double-listing share

Recall Subsection 1.2: The Null Hypothesis H2:

H2 null (1): There is no significant AR for “A shares” in the case of CRCs.

H2 null (2): There is no significant AR for “H shares” in the case of CRCs.

H2 null (3): There is no significant AR for dual-listing shares in the case of CRCs.

Recall Subsection 1.3: Descriptive statistics:

The subsample division between “A shares” (72 downgrades) and “H shares” (84 downgrades) is almost equal. We studied at the same time the double-listing shares, in other words, companies listed not only on Continental Chinese market, but also on Hong Kong market. We reported 24 public-listed companies and each downgrade generated market reactions on both market segments.

Table VI.2.7

Results based on the subsample of “A shares”

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/ CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/ CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.33%		-1.430	-0.34%		-1.437	.166	.149

-1	0.09%	0.470		0.10%	0.478		.645	.602
0	-0.16%	-0.698		-0.16%	-0.712		.063*	.070*
1	-0.25%	-1.078		-0.26%	-1.138		.105	.073*
2	0.40%	2.189**		0.41%	2.191**		.035**	.041**
(-15,15)	0.56%	0.390	0.429	0.73%	0.514	0.541	.849	.955
(-10,10)	0.27%	0.240	0.276	0.31%	0.258	0.299	.960	.991
(-5,5)	-0.17%	-0.219	-0.196	-0.19%	-0.239	-0.220	.897	.745
(-1,1)	-0.31%	-0.906	-1.013	-0.32%	-0.929	-1.005	.259	.259
(-15,-1)	0.57%	0.602	0.659	0.65%	0.680	0.752	.978	.736
(-10,-1)	0.62%	0.825	0.916	0.70%	0.893	0.985	.745	.567
(-5,-1)	0.38%	0.803	0.641	0.38%	0.771	0.635	.849	.866
(1,15)	0.15%	0.175	0.153	0.24%	0.287	0.229	.637	.653
(1,10)	-0.19%	-0.322	-0.266	-0.22%	-0.362	-0.299	.533	.694
(1,5)	-0.39%	-0.826	-0.639	-0.41%	-0.877	-0.661	.269	.239

Table VI.2.8

Results based on the subsample of “H shares”

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank Test (significance)	
-2	-0.53%	-1.667*		-0.52%	-1.650*		.150	.185
-1	0.40%	1.239		0.33%	1.101		.220	.174
0	0.43%	1.602		0.48%	1.765*		.100	.076*
1	-0.30%	-0.926		-0.14%	-0.455		.834	.813
2	0.22%	0.765		0.16%	0.588		.698	.675
(-15,15)	0.00%	0.002	0.002	1.05%	0.511	0.472	.402	.630
(-10,10)	-0.67%	-0.462	-0.349	0.14%	0.095	0.077	.454	.862
(-5,5)	0.16%	0.133	0.096	0.50%	0.423	0.328	.515	.412
(-1,1)	0.54%	1.034	0.749	0.67%	1.277	1.196	.065	.040**
(-15,-1)	-0.63%	-0.419	-0.394	-0.29%	-0.186	-0.179	.227	.356
(-10,-1)	-0.59%	-0.518	-0.426	-0.33%	-0.284	-0.244	.248	.443
(-5,-1)	0.42%	0.485	0.340	0.49%	0.557	0.408	.858	.652
(1,15)	0.20%	0.172	0.114	0.86%	0.768	0.560	.964	.611
(1,10)	-0.51%	-0.599	-0.392	-0.01%	-0.008	-0.006	.498	.789
(1,5)	-0.70%	-1.025	-0.684	-0.47%	-0.674	-0.526	.142	.280

Table VI.2.9

Results based on the subsample of double-listing shares

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.14%		-0.390	-0.16%		-0.429	.615	.608
-1	0.43%		1.602	0.42%		1.523	.230	.286
0	0.38%		1.312	0.35%		1.190	.601	.622
1	0.40%		1.147	0.37%		1.063	.538	.704
2	0.82%		3.079***	0.79%		2.952***	.014**	.018**
(-15,15)	2.02%	1.040	1.156	1.45%	0.747	0.830	.766	.951
(-10,10)	1.13%	0.778	0.804	0.73%	0.491	0.527	.967	.854
(-5,5)	2.10%	2.353**	1.896*	1.84%	1.984*	1.652*	.020**	.041**
(-1,1)	1.22%	2.748***	25.878***	1.14%	2.5000**	19.332***	.013**	.024**
(-15,-1)	0.81%	0.599	0.633	0.54%	0.400	0.419	.910	.894
(-10,-1)	0.56%	0.696	0.715	0.40%	0.490	0.505	.814	.894
(-5,-1)	1.03%	1.833*	2.074**	0.95%	1.631	1.889*	.151	.142
(1,15)	0.83%	0.851	0.696	0.56%	0.586	0.475	.615	.935
(1,10)	0.19%	0.221	0.162	-0.01%	-0.013	-0.010	.751	.552
(1,5)	0.69%	1.088	0.661	0.54%	0.850	0.517	.573	.870

There was no much difference of CRCs happening in Chinese continental stock market and HK market. The informative effect of the announcement seems not to prevail (and, more general, no reaction on the market, except a short rebound 2 days after the event, on continental Chinese market). Hence H2 null (1) and (2) are confirmed.

The informative effect is more obvious in the double-listing (sub-sample of AH shares). Hence, H2 null (3) is rejected and we may explain the significant negative CAARs by the *Theory of Wealth Redistribution*. The magnitude is the most important at the window (-1, +1) around the event day.

2.3.3. Subsample of global vs. local CRAs

Recall of Subsection 1.2: The Null Hypothesis H3:

H3 null (1): CRCs given by “Big Three” is no news.

H3 null (2): CRCs given by Chinese local CRAs is no news.

Recall of Subsection 1.3: Descriptive statistics:

There are twice more downgrades given by global CRAs (100 credit rating changes/CRCs) than local CRAs (56 CRCs/).

Table VI.2.10

Results based on the subsample of global agencies

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.40%		-1.381	-0.38%		-1.306	.332	.460
-1	0.25%		0.922	0.15%		0.615	.522	.592
0	0.62%		2.318**	0.55%		2.194**	.033**	.041**
1	-0.22%		-0.712	-0.22%		-0.851	.693	.726
2	0.13%		0.500	0.13%		0.579	.853	.752
(-15,15)	0.87%	0.501	0.476	0.94%	0.536	0.547	.441	.462
(-10,10)	0.01%	0.004	0.003	0.13%	0.097	0.080	.396	.509
(-5,5)	0.61%	0.624	0.420	0.48%	0.494	0.339	.441	.578
(-1,1)	0.66%	1.317	0.908	0.48%	1.061	0.715	.050*	.066*
(-15,-1)	0.17%	0.137	0.141	0.24%	0.195	0.206	.437	.483
(-10,-1)	-0.12%	-0.122	-0.102	0.04%	0.045	0.040	.357	.547
(-5,-1)	0.79%	1.189	0.860	0.75%	1.111	0.826	.552	.492
(1,15)	0.08%	0.088	0.063	0.15%	0.165	0.130	.575	.693
(1,10)	-0.50%	-0.668	-0.467	-0.46%	-0.597	-0.453	.189	.211
(1,5)	-0.80%	-1.340	-0.908	-0.82%	-1.367	-0.912	.040**	.038**

Table VI.2.11

Results based on the subsample of local agencies

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.52%	-2.395**		-0.54%	-2.505**		.026**	.019**
-1	0.32%		1.266	0.34%		1.309	.468	.488
0	-0.46%	-2.127**		-0.47%	-2.177**		.006***	.007***
1	-0.14%		-0.518	-0.14%		-0.511	.253	.243
2	0.54%	2.422**		0.52%	2.352**		.018**	.021**
(-15,15)	0.60%	0.344	0.320	0.83%	0.480	0.443	.851	.800
(-10,10)	0.27%	0.235	0.192	0.38%	0.306	0.263	.488	.498
(-5,5)	-0.41%	-0.405	-0.380	-0.36%	-0.339	-0.330	.813	.909
(-1,1)	-0.28%	-0.671	-0.405	-0.26%	-0.639	-0.374	.267	.293
(-15,-1)	-0.19%	-0.139	-0.163	-0.02%	-0.016	-0.019	.788	.980
(-10,-1)	0.22%	0.227	0.245	0.32%	0.316	0.346	.941	.695
(-5,-1)	-0.14%	-0.181	-0.196	-0.12%	-0.149	-0.158	.870	.883
(1,15)	1.25%	1.104	0.882	1.32%	1.228	0.928	.084*	.085*
(1,10)	0.51%	0.815	0.496	0.52%	0.089	0.519	.320	.257
(1,5)	0.19%	0.378	0.275	0.23%	0.418	0.325	.813	.738

Statistically speaking, there lacks market prior reaction to downgrades issued by both global and local CRAs. The evidence is predictable by literature review. Researchers believed it less easy for rating professionals to communicate “bad news”.

On the day of event, downgrades from global CRAs are associated with positive significant abnormal returns; by contrast, local CRAs are with negative significant abnormal returns. Hence, both H3 null (1) and H3 null (2) are rejected. However, the informative effect does not last.

2.3.4. Subsample of concentrated vs. dispersed ownership

Recall of Subsection 1.2: The Null Hypothesis H4:

H4 null (1): There is no significant AR for public-listed companies with concentrated ownership, in the case of a CRC.

H4 null (2): There is no significant AR for public-listed companies with dispersed ownership, in the case of a CRC.

Recall of Subsection 1.3: Descriptive statistics:

We split the entire sample of 156 downgrades into two subsections, according to the ownership, either concentrated or dispersed. We looked up the information of public-listed companies on the database Bloomberg. There are four 4 companies that we are not able to retrieve the information and most of them have a concentrated ownership (133 out of 152 CRCs).

Only 19 companies in the sample don't have a dominant investor (which process more than 50% of the capital). According to Hsueh and Liu (1992), they represent low-information companies (CRAs are the most important information source to market investors), which should expect important stock market reactions to the CRCs.

Table VI.2.12

**Results based on the subsample of
public-listed companies with concentrated ownership**

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.36%		-1.608	-0.39%		-1.731*	.164	.166
-1	0.33%		1.566	0.27%		1.390	.299	.307
0	0.12%		0.578	0.16%		0.767	.790	.969

1	-0.33%	-1.460		-0.26%	-1.227		.128	.114
2	0.31%	1.613		0.22%	1.193		.153	.290
(-15,15)	1.19%	0.882	0.795	1.49%	1.107	1.069	.797	.759
(-10,10)	0.45%	0.458	0.338	0.61%	0.598	0.504	.735	.867
(-5,5)	0.45%	0.582	0.391	0.40%	0.498	0.378	.360	.480
(-1,1)	0.12%	0.344	0.200	0.16%	0.475	0.333	.410	.364
(-15,-1)	0.65%	0.652	0.626	0.65%	0.643	0.644	.757	.764
(-10,-1)	0.63%	1.858	0.701	0.55%	0.715	0.614	.901	.874
(-5,-1)	0.76%	1.373	0.928	0.68%	1.182	0.848	.384	.404
(1,15)	0.43%	0.638	0.383	0.69%	1.052	0.691	.627	.435
(1,10)	-0.30%	-0.583	-0.307	-0.10%	-0.180	-0.116	.315	.532
(1,5)	-0.43%	-0.948	-0.546	-0.44%	-.949	-0.662	.108	.091*

Table VI.2.13

**Results based on the subsample of
public-listed companies with dispersed ownership**

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.72%	-1.646		-0.77%	-1.715		.147	.147
-1	0.47%	0.637		0.08%	0.113		.398	.841
0	0.49%	1.184		0.42%	0.969		.260	.398
1	0.25%	0.508		0.29%	0.574		.334	.295
2	0.71%	1.525		0.58%	1.240		.107	.147
(-15,15)	-4.29%	-1.189	-1.283	-4.92%	-1.195	-1.551	.227	.260
(-10,10)	-2.54%	-0.877	-0.932	-3.06%	-0.918	-1.220	.658	.546
(-5,5)	-0.61%	-0.298	-0.307	-1.01%	-0.458	-0.543	.573	1.000
(-1,1)	1.21%	1.056	5.328***	0.79%	0.659	2.639**	.227	.494
(-15,-1)	-2.92%	-1.067	-1.320	-3.61%	-1.1276	-1.755*	.445	.355
(-10,-1)	-2.43%	-1.065	-1.222	-2.73%	-1.123	-1.504	.494	.546
(-5,-1)	-0.39%	-0.254	-0.301	-0.77%	-0.503	-0.607	.968	.717
(1,15)	-1.87%	-0.616	-0.749	-1.73%	-0.535	-0.725	.520	.601
(1,10)	-0.60%	-0.270	-0.332	-0.76%	-0.323	-0.454	.936	.872
(1,5)	-0.71%	-0.509	-0.461	-0.67%	-0.444	-0.473	.872	.904

If we look separately at the sub-samples of concentrated and dispersed ownership in the case of “downgrades”. All tests don’t report the same significant results, over the event window. Hence, H4 null (1) and (2) are confirmed.

2.3.5. Subsample of CRCs, with vs. without preceding watch-list

Recall of Subsection 1.2: The Null Hypothesis H5:

H5 null (1): There is no significant AR for non-WLs-preceded CRCs.

H5 null (2): There is no significant AR for WLs-preceded CRCs.

Recall of Subsection 1.3: Descriptive statistics:

There are 21 downgrades with preceding WLs and 134 without⁸⁴⁰. The subsample in the first case is extremely small. Statistically the results are not sufficiently robust, but it is a non-contaminated and exhaustive subsample.

Table VI.2.14

Results based on the subsample of non-WLs-preceded CRCs

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.54%		-2.379**	-0.56%		-2.499**	.020**	.014**
-1	0.26%		1.171	0.23%		1.087	.482	.374
0	0.03%		0.145	0.10%		0.553	.518	.767
1	-0.19%		-0.875	-0.12%		-0.566	.623	.713
2	0.31%		1.613	0.25%		1.359	.182	.239
(-15,15)	0.52%	0.387	0.318	0.93%	0.677	0.590	.473	.639
(-10,10)	-0.30%	-0.316	-0.225	0.09%	0.086	0.069	.528	.928
(-5,5)	-0.10%	-0.129	-0.086	0.16%	0.206	0.149	.592	.530
(-1,1)	0.10%	0.284	0.244	0.21%	0.622	0.691	.414	.263

⁸⁴⁰ We did not find watch-list information concerning one downgrade.

(-15,-1)	-0.07%	-0.069	-0.062	0.12%	0.111	0.099	.368	.560
(-10,-1)	-0.06%	-0.076	-0.056	0.08%	0.099	0.074	.546	.841
(-5,-1)	0.35%	0.611	0.390	0.38%	0.638	0.412	.951	.782
(1,15)	0.57%	0.732	0.464	0.72%	0.923	0.644	.511	.392
(1,10)	-0.27%	-0.483	-0.307	-0.09%	-0.163	-0.132	.477	.742
(1,5)	-0.48%	-1.028	-0.624	-0.32%	-0.691	-0.513	.194	.286

Table VI.2.15

Results based on the subsample of WLs-preceded CRCs

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	0.34%		0.964	0.23%		0.609	.122	.205
-1	0.65%		1.542	0.30%		0.747	.149	.590
0	0.97%		1.699	0.95%		1.671	.054*	0.058*
1	-0.72%		-1.333	-0.65%		-1.214	.106	.131
2	0.56%		1.399	0.41%		1.092	.149	.205
(-15,15)	1.74%	0.490	0.679	1.82%	0.507	0.773	.931	.876
(-10,10)	2.10%	0.681	0.939	1.97%	0.628	1.001	.821	.986
(-5,5)	1.64%	0.898	0.933	1.46%	0.765	0.911	.715	.794
(-1,1)	0.91%	0.883	0.585	0.60%	0.575	0.430	.356	.664
(-15,-1)	1.27%	0.658	0.800	1.05%	0.551	0.729	.590	.794
(-10,-1)	1.05%	0.637	0.740	0.94%	0.557	0.716	.821	.876
(-5,-1)	1.21%	1.495	1.155	0.92%	1.044	0.939	.230	.414
(1,15)	-0.50%	-0.269	-0.276	-0.19%	-0.098	-0.115	.639	.848
(1,10)	0.07%	0.045	0.047	0.07%	0.046	0.062	.848	.794
(1,5)	-0.54%	-0.587	-0.519	-0.42%	-0.445	-0.482	.092*	.159

We find only 2 days before the event day, there are negative significant CAARs, in the case of downgrades without preceding WLs, while downgrades with preceding WLs are accompanied by positive significant returns on the event day. However, in the latter case, it should be noted that the effect does not last long; the magnitude is not that important and only non-parametric tests show significance. Hence, H5 null (1) and (2) are confirmed.

2.4. Analysis of upgrading results sorted by Chinese institutional factors

We adopted exactly the same methodological approaches (Subsection 2.1), to test, present and analyze the results according to five Chinese institutional factors. In each point, we will firstly recall the hypothesis and data description of each subsample, based on the entire sample of upgrades (314 rating events).

2.4.1. Subsample of before vs. after crisis (2008)

Recall of Subsection 1.2: The Null Hypothesis H1:

H1 null (1): There's no influence of CRAs before 2008, in the stock market's reaction to credit rating changes (CRCs).

H1 null (2): There's no influence of CRAs after 2008, in the stock market's reaction to CRCs.

Recall of Subsection 1.3: Descriptive statistics:

We split the entire sample of upgrades into two subsamples, with 31 events announced before the crisis and 283 CRCs announced after 2008.

Table VI.2.16

Results based on the subsample of CRCs before the crisis (-2008)

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank Test (significance)	
-2	0.60%		1.601	0.61%		1.623	.337	.357
-1	-0.25%		-0.899	-0.29%		-0.937	.337	.367
0	-0.38%		-1.365	-0.26%		-0.999	.170	.264
1	-0.22%		-0.891	-0.35%		-1.252	.281	.170
2	0.22%		0.577	0.30%		0.748	.557	.389

(-15,15)	0.33%	0.147	0.197	0.53%	0.228	0.310	.367	.299
(-10,10)	0.29%	0.218	0.209	0.28%	0.187	0.188	.624	.666
(-5,5)	-0.21%	-0.224	-0.169	-0.10%	-0.096	-0.078	.724	.953
(-1,1)	-0.85%	-1.711*	-5.816***	-0.90%	-1.600	-12.039***	.147	.224
(-15,-1)	-1.25%	-0.796	-1.000	-1.29%	-0.761	-1.016	.652	.710
(-10,-1)	-0.81%	-0.794	-0.785	-0.97%	-0.810	-0.887	.183	.281
(-5,-1)	-0.62%	-0.896	-0.652	-0.66%	-0.836	-0.674	.422	.518
(1,15)	1.96%	1.182	2.187**	2.09%	1.255	2.118**	.030**	.021**
(1,10)	1.47%	1.344	2.110**	1.51%	1.388	1.807*	.183	.158
(1,5)	0.79%	1.186	1.372	0.83%	1.189	1.101	.164	.196

Table VI.2.17

Results based on the subsample of CRCs after the crisis (2008-)

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.19%		-1.222	-0.22%		-1.410	.001***	.001**
-1	-0.36%		-2.408**	-0.33%		-2.317**	.009***	.018**
0	-0.07%		-0.503	-0.10%		-0.727	.227	.250
1	0.27%		1.289	0.23%		1.128	.846	.875
2	-0.10%		-0.688	-0.03%		-0.238	.341	.401
(-15,15)	-1.26%	-1.428	-1.462	-0.92%	-1.039	-1.064	.134	.390
(-10,10)	-1.08%	-1.487	-1.396	-0.91%	-1.274	-1.229	.077*	.186
(-5,5)	-0.81%	-1.602	-1.260	-0.68%	-1.312	-1.112	.085*	.207
(-1,1)	-0.16%	-.489	-0.292	-0.20%	-0.613	-0.406	.041**	.071*
(-15,-1)	-1.18%	-1.805*	-1.899*	-0.96%	-1.433	-1.634	.022**	.093*
(-10,-1)	-0.95%	-1.716*	-1.552	-0.80%	-1.433	-1.394	.007***	.024**
(-5,-1)	-0.96%	-2.728***	-2.222**	-0.99%	-2.489**	-2.032**	.000***	.000***
(1,15)	-0.01%	-0.014	-0.015	0.15%	0.256	0.239	.672	.917
(1,10)	-0.06%	-0.142	-0.135	-0.01%	-0.031	-0.029	.396	.629
(1,5)	0.23%	0.713	0.720	0.30%	0.904	1.222	.914	.705

We learn from the tables above that before the crisis, upgrades lead to positive market reactions after the announcement. Results are relatively consistent, whatever the estimation process (OLS or Garch model) and test model (parametric or non-parametric) for the event window (1, 15).

However, things have changed after 2008. CRCs seem to have no informative effect anymore. We can only and surprisingly report a negative market reaction occurring prior to the “good news” announcement, but no significant CAARs after the upgrades. Hence, null Hypothesis H1 (1) for “upgrades before the crisis” is rejected, while null Hypothesis H1 (2) for “upgrades before the crisis” is confirmed.

2.4.2. Subsample of segmentation of the stock market: A share, H share and double-listing share

Recall of Subsection 1.2: The Null Hypothesis H2:

H2 null (1): There is no significant AR for “A shares” in the case of CRCs.

H2 null (2): There is no significant AR for “H shares” in the case of CRCs.

H2 null (3): There is no significant AR for dual-listing shares in the case of CRCs.

Recall of Subsection 1.3: Descriptive statistics:

207 “A shares” and 107 “H shares” were given upgrades during the entire history of Chinese credit ratings changes. In other words, in terms of number, CRAs gave more upgrades on Chinese continental stock market than on HK market.

There are 33 public-listed companies generated double market reactions to the upgrading CRCs.

Table VI.2.18

Results based on the subsample of “A shares”

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.37%		-2.261**	-0.35%		-2.144**	.001***	.001
-1	-0.28%		-1.462	-0.24%		-1.293	.2304	.446
0	-0.11%		-0.652	-0.10%		-0.626	.048**	.081*
1	0.03%		0.154	-0.03%		-0.158	.425	.389
2	-0.02%		-0.084	0.09%		0.504	.893	.869
(-15,15)	-1.35%	-1.245	-1.271	-0.77%	-0.723	-0.720	.421	.917
(-10,10)	-1.10%	-1.268	-1.218	-0.85%	-0.994	-0.978	.305	.561
(-5,5)	-1.01%	-1.697*	-1.413	-0.75%	-1.222	-1.084	.162	.488
(-1,1)	-0.37%	-0.998	-1.374	-0.37%	-1.021	-2.019**	.095*	.165
(-15,-1)	-1.46%	-1.942*	-1.756*	-1.20%	-1.521	-1.501	.037**	.160
(-10,-1)	-1.08%	-1.719*	-1.403	-0.93%	-1.446	-1.295	.022**	.090*
(-5,-1)	-1.14%	-2.717***	-2.019**	-1.00%	-2.366**	-1.854*	.000***	.003***
(1,15)	0.22%	0.295	0.365	0.53%	0.755	0.802	.786	.319
(1,10)	0.10%	0.183	0.225	0.19%	0.375	0.418	.739	.902
(1,5)	0.25%	0.674	1.932*	0.35%	0.912	2.274**	.514	.272

Table VI.2.19

Results based on the subsample of “H shares”

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank Test (significance)	
-2	0.28%		0.967	0.27%		0.94	.700	.693
-1	-0.51%		-3.083***	-0.51%		-3.037***	.000***	.001***
0	-0.12%		-0.660	-0.14%		-0.738	.943	.933
1	0.57%		1.288	0.57%		1.286	.401	.410

2	-0.18%	-0.965		-0.17%	-0.928		.244	.238
(-15,15)	-0.89%	-0.702	-0.701	-0.78%	-0.604	-0.623	.325	.407
(-10,10)	-0.81%	-0.779	-0.774	-0.70%	-0.673	-0.679	.191	.254
(-5,5)	-0.42%	-0.578	-0.441	-0.37%	-0.501	-0.388	.220	.275
(-1,1)	-0.06%	-0.114	-0.064	-0.08%	-0.150	-0.086	.060*	.086*
(-15,-1)	-0.67%	-0.645	-0.680	-0.60%	-0.580	-0.618	.281	.348
(-10,-1)	-0.65%	-0.750	-0.908	-0.60%	-0.688	-0.848	.060*	.072*
(-5,-1)	-0.61%	-1.209	-0.948	-0.58%	-1.150	-0.917	.030**	.039**
(1,15)	-0.10%	-0.131	-0.130	-0.04%	-0.043	-0.043	.857	.975
(1,10)	-0.03%	-0.052	-0.045	0.04%	0.056	0.049	.714	.894
(1,5)	0.30%	0.612	0.422	0.35%	0.696	0.487	.792	.739

Table VI.2.20

Results based on the subsample of double-listing shares

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.27%	-0.951		-0.26%	-0.913		.097*	.091*
-1	-0.31%	-1.411		-0.28%	-1.242		.025**	.064*
0	-0.08%	-0.306		-0.12%	-0.449		.598	.480
1	0.63%	0.899		0.63%	0.898		.771	.796
2	-0.71%	-3.131***		-0.60%	-2.410**		.005***	.012**
(-15,15)	1.13%	0.682	0.557	1.71%	1.044	0.856	.713	.476
(-10,10)	-0.18%	-0.134	-0.100	0.08%	0.057	0.045	.766	.831
(-5,5)	-0.31%	-0.310	-0.218	-0.12%	-0.120	-0.092	.572	.752
(-1,1)	0.24%	0.286	0.286	0.23%	0.268	0.274	.226	.330
(-15,-1)	-0.11%	-0.075	-0.098	0.17%	0.118	0.157	.625	.816
(-10,-1)	-0.54%	-0.465	-0.521	-0.36%	-0.307	-0.359	.221	.305
(-5,-1)	-0.32%	-0.428	-0.371	-0.22%	-0.304	-0.264	.167	.175
(1,15)	1.31%	1.364	0.770	1.66%	1.726*	0.985	.504	.265
(1,10)	0.44%	0.519	0.285	0.56%	0.660	0.376	.901	.972
(1,5)	0.08%	0.108	0.067	0.22%	0.274	0.194	.791	.916

Considering the results from the parametric tests (from both OLS and Garch estimation models), there are some insights to conclude that upgrades in Chinese continental stock market are considered as good news. However, non-parametric is not consistent with the results. What is more obvious is once again, we report negative significant CAARS prior to the announcement.

The effect is less evident in HK segment. There is no sign showing that investors pay much attention to CRCs. We report almost no significant CAARs, neither before, the moment, neither after the event. The results are consistent with the majority of researches in the literature review, dedicated to event studies regarding CRCs' impact on stock markets. The sub-sample of double-listing (both AH shares) shows almost the same results.

Hence, all sub-hypotheses of H2 are confirmed.

2.4.3. Subsample of global vs. local CRAs

Recall of Subsection 1.2: The Null Hypothesis H3:

H3 null (1): CRCs given by "Big Three" is no news.

H3 null (2): CRCs given by Chinese local CRAs is no news.

Recall of Subsection 1.3: Descriptive statistics:

We counted 83 upgrades given by global CRAs, while 231 given by local CRAs.

Table VI.2.21

χ^2 test for CRCs ((downgrades/upgrades) * CRAs (global/local agencies))

	Downgrades	Upgrades
Global CRAs	83	100
Local CRAs	231	56

Without controlling other factors, global CRAs announced more downgrades, while local CRAs announced more upgrades. We conducted the crosstab between CRCs and

CRAAs, the χ^2 test computed a value at 62.201⁸⁴¹. It is significant at level of less than 1% (***)).

Table VI.2.22

Results based on the subsample of global agencies

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.01%	-0.040		-0.01%	-0.054		.537	.510
-1	-0.70%	-3.160***		-0.68%	-3.093***		.000***	.000***
0	-0.38%	-1.624		-0.39%	-1.562		.537	.583
1	0.66%	1.179		0.69%	1.219		.457	.371
2	0.22%	1.078		0.25%	1.233		.236	.196
(-15,15)	1.38%	1.060	0.910	2.19%	1.632	1.403	.374	.134
(-10,10)	0.66%	0.652	0.465	1.19%	1.157	0.820	.775	.329
(-5,5)	-0.30%	-0.372	-0.229	-0.04%	-0.055	-0.033	.570	.867
(-1,1)	-0.40%	-0.568	-0.328	-0.38%	-0.533	-0.308	.097*	.159
(-15,-1)	-0.16%	-0.173	-0.162	0.19%	0.203	0.189	.630	.971
(-10,-1)	-0.47%	-0.634	-0.526	-0.25%	-0.349	-0.280	.134	.240
(-5,-1)	-1.01%	-1.861	-1.450	-0.94%	-1.702*	-1.307	.014**	.022**
(1,15)	1.91%	2.131**	1.844**	2.38%	2.593**	2.282**	.022**	.006***
(1,10)	1.49%	1.951*	1.538	1.83%	2.308**	1.880*	.098*	.035**
(1,5)	1.10%	1.843*	1.340	1.28%	2.090**	1.520	.132	.112

Table VI.2.23

Results based on the subsample of local agencies

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional	Time-series standard deviation	AR/CAR	Cross-sectional T test	Time-series standard deviation	Wilcoxon signed-rank test	

⁸⁴¹ 0 cells (0.0%) have expected count less than 5. The minimum expected count is 60.74.

		T test	T test			T test	(significance)	
-2	-0.15%		-0.838	-0.18%		-1.009	.005***	0.003**
-1	-0.22%		-1.330	-0.20%		-1.243	.210	.308
0	-0.01%		-0.032	-0.02%		-0.139	.163	.181
1	0.07%		0.397	-0.01%		-0.041	.561	.423
2	-0.17%		-1.019	-0.09%		-0.567	.149	.193
(-15,15)	-1.99%	-1.972**	-2.513***	-1.84%	-1.819**	-2.319**	.069*	.146
(-10,10)	-1.52%	-1.846*	-2.202**	-1.51%	-1.848**	-2.321**	.053*	.067*
(-5,5)	-0.91%	-1.622	-1.832**	-0.83%	-1.427	-1.896**	.102	.209
(-1,1)	-0.16%	-0.519	-0.629	-0.23%	-0.723	-1.216	.072*	.113
(-15,-1)	-1.55%	-2.057**	-3.044***	-1.42%	-1.817*	-3.166***	.014**	.049**
(-10,-1)	-1.10%	-1.728*	-2.172**	-1.02%	-1.563	-2.303**	.009***	.029***
(-5,-1)	-0.90%	-2.260**	-2.848***	-0.83%	-2.077**	-2.759***	.002***	.005***
(1,15)	-0.43%	-0.631	-0.742	-0.40%	-0.606	-0.617	.339	.541
(1,10)	-0.41%	-0.847	-0.890	-0.47%	-1.017	-0.977	.171	.220
(1,5)	-0.01%	-0.025	-0.031	0.02%	0.057	0.111	.805	.962

We learn from the tables above that upgrades issued by global CRAs lead to significant positive market reactions after the announcement.

On the contrary, upgrades issued by local CRAs are not associated with any significant market reactions (one again, significant negative CAARs are reported prior to the announcement). We can speculate from these observations that local CRAs are more willing to release upgrades to the market and their credibility is therefore lower than that of the global CRAs or that the information they convey is weaker, comparing to that brought by the “Big Three”. Consequently, market reactions to local upgrades are minimal compared to that occurring in response to global CRAs’ announcement, in the post-event-day windows.

Combining these two results, we can justify the reason why we divided the sub-sample of global/ local CRAs. Hence, the null hypothesis H3 (1) is rejected and the null hypothesis H3 (2) is confirmed, that investors have different reactions to CRCs, issued by global CRAs compared to the local ones.

2.4.4. Subsample of concentrated vs. dispersed ownership

Recall of Subsection 1.2: The Null Hypothesis H4:

H4 null (1): There is no significant AR for public-listed companies with concentrated ownership, in the case of a CRC.

H4 null (2): There is no significant AR for public-listed companies with dispersed ownership, in the case of a CRC.

Recall of Subsection 1.3: Descriptive statistics:

There are 261 public-listed companies with concentrated ownership, against 50 companies with dispersed ownership.

Table VI.2.24

Results based on the subsample of public-listed companies with concentrated ownership

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank Test (significance)	
-2	-0.09%		-0.536	-0.07%		-0.423	.017**	.023**
-1	-0.40%		-2.561**	-0.37%		-2.466**	.005***	.011**
0	0.04%		0.267	0.04%		0.341	.491	.590
1	0.29%		1.320	0.24%		1.104	.696	.828
2	-0.06%		-0.423	0.02%		0.166	.431	.542
(-15,15)	-0.72%	-0.773	-0.849	-0.34%	-0.366	-0.411	.456	.890
(-10,10)	-0.59%	-0.810	-0.731	-0.42%	-0.594	-0.562	.214	.398
(-5,5)	-0.49%	-0.981	-0.711	-0.29%	-0.562	-0.451	.150	.453
(-1,1)	-0.07%	-0.218	-0.119	-0.08%	-0.257	-0.156	.081*	.135
(-15,-1)	-1.17%	-1.692*	-2.060**	-0.96%	-1.343	-1.799*	.024**	.105
(-10,-1)	-1.02%	-1.810*	-1.869*	-0.90%	-1.561	-1.785*	.001***	.005***

(-5,-1)	-1.00%	-2.693 ***	-2.420**	-0.87%	-2.350**	-2.196**	.000 ***	.001***
(1,15)	0.41%	0.666	0.719	0.58%	0.990	1.019	.629	.309
(1,10)	0.40%	0.882	0.785	0.43%	0.998	0.893	.816	.507
(1,5)	0.47%	1.478	1.504	0.54%	1.640	2.384**	.427	.259

Table VI.2.25

**Results based on the subsample of
public-listed companies with dispersed ownership**

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.41%		-1.485	-0.43%		-1.572	.070	.040**
-1	-0.21%		-0.689	-0.19%		-0.607	.367	.420
0	-0.93%		-2.458**	-0.99%		-2.377**	.012**	.019**
1	-0.19%		-0.550	-0.15%		-0.407	.996	.253
2	-0.15%		-0.375	-0.15%		-0.358	.094*	.843
(-15,15)	-4.18%	-2.271 **	-2.016**	-3.55%	-1.870*	-1.690*	.119	.163
(-10,10)	-3.71%	-2.106 ***	-2.314**	-3.32%	-1.780*	-2.037**	.169	.184
(-5,5)	-2.63%	-2.134 ***	-2.536**	-2.52%	-1.932*	-2.229**	.035**	.194
(-1,1)	-1.33%	-1.749*	-1.815*	-1.32%	-1.641	-1.602	.579	.060*
(-15,-1)	-1.37%	-1.083	-1.091	-1.24%	-0.973	-0.996	.973	.646
(-10,-1)	-0.64%	-0.530	-0.597	-0.57%	-0.465	-0.536	.152	.958
(-5,-1)	-0.88%	-1.323	-1.802*	-0.88%	-1.308	-1.857*	.342	.194
(1,15)	-1.88%	-1.347	-1.275	-1.32%	-0.930	-0.895	.029**	.668
(1,10)	-2.14%	-2.140 **	-2.435**	-1.76%	-1.634	-1.983*	.437	.065*
(1,5)	-0.82%	-1.019	-1.440	-0.65%	-0.753	-0.996	.996	.515

The difference between companies of concentrated and diversified ownership is obvious in terms of market returns in the case of upgrades.

For the first case, the market reaction to the announcement is almost none; except, once again, with significant negative CAARs occurring prior to the rating event. The results confirm the ideas (Hsueh and Liu, 1992) that these are higher-informative companies, and investors may have other canals to get information. Consequently, CRCs become less surprising and the market reactions could be hence diminished.

For the second case (public-listed companies with dispersed ownership, especially for post-event-day and surrounding the downgrade announcement), we also document significant negative market reactions. It illustrates that CRAs decisions for low-information companies (in the definition of Hsueh and Liu) are more informative. In other words, when investors could not predict the arrival of upgrades from other information sources before the event day, the CRAs' announcement would provoke more abnormal stock returns out of surprise, consequently.

Hence, null hypothesis H4. (1) is confirmed and null hypothesis H4. (2) is rejected. The latter case suggests that wealth is transferred from stock investors to bond investors.

2.4.5. Subsample of CRCs, with vs. without preceding WLs

Recall of Subsection 1.2: The Null Hypothesis H5:

H5 null (1): There is no significant AR for non-WLs-preceded CRCs.

H5 null (2): There is no significant AR for WLs-preceded CRCs.

Recall of Subsection 1.3: Descriptive statistics:

21 CRCs (among 314 in the entire sample) are preceded by WLs. The subsample is extremely small, compared to CRCs without preceding WLs.

Table VI.2.26

Results based on the subsample of non-WLs-preceded CRCs

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-Sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significance)	
-2	-0.27%		-1.782*	-0.25%		-1.669*	.001***	.001***
-1	-0.29%		-1.915*	-0.25%		-1.756*	.053*	.099*
0	-0.04%		-0.303	-0.03%		-0.251	.189	.265
1	0.30%		1.429	0.26%		1.268	.659	.709
2	-0.15%		-1.021	-0.07%		-0.479	.246	.361
(-15,15)	-1.07%	-1.190	-1.282	-0.66%	-0.746	-0.827	.445	.862
(-10,10)	-0.84%	-1.168	-1.077	-0.65%	-0.914	-0.900	.246	.454
(-5,5)	-0.70%	-1.426	-1.079	-0.49%	-0.974	-0.828	.158	.467
(-1,1)	-0.03%	-0.094	-0.060	-0.03%	-0.078	-0.056	.123*	.232
(-15,-1)	-1.06%	-1.651	-1.785*	-0.88%	-1.328	-1.607	.057*	.203
(-10,-1)	-0.88%	-1.633	-1.536	-0.77%	-1.414	-1.481	.010**	.040**
(-5,-1)	-0.99%	-2.903***	-2.706***	-0.87%	-2.567**	-2.532**	.000***	.000***
(1,15)	0.03%	0.046	0.049	0.25%	.429	0.441	.927	.588
(1,10)	0.08%	0.182	0.160	0.16%	.363	0.332	.589	.940
(1,5)	0.33%	1.023	0.903	0.42%	1.247	1.524	.574	.348

Table VI.2.27

Results based on the subsample of WLs-preceded CRCs

Tests	Parametric test						Non-parametric test	
	OLS			GARCH			OLS	GARCH
	Average AR/CAR	Cross-sectional T test	Time-series standard deviation T test	AR/CAR	Cross-sectional T test	Time-series standard deviation T test	Wilcoxon signed-rank test (significant)	
-2	0.15%		0.291	0.08%		0.154	.590	.434
-1	-1.40%		-4.564***	-1.43%		-4.497***	.000***	.000***
0	-0.94%		-1.838*	-1.10%		-1.720**	.063*	.073*
1	0.04%		0.091	0.00%		0.001	.414	.394
2	0.34%		0.648	0.30%		0.570	.414	.520
(-15,15)	-3.10%	-1.157	-1.151	-3.38%	-1.244	-1.224	.217	.217
(-10,10)	-3.01%	-1.437	-1.326	-3.30%	-1.549	-1.397	.092*	.085*
(-5,5)	-2.84%	-1.497	-1.670*	-3.16%	-1.653	-1.756*	.170	.140
(-1,1)	-2.29%	-3.055***	-1.803*	-2.53%	-2.870***	-1.949*	.010**	.010**
(-15,-1)	-4.02%	-1.965*	-2.021**	-4.10%	-1.991**	-2.039**	.068*	.085*
(-10,-1)	-3.43%	-2.157**	-2.010**	-3.44%	-2.231**	-2.145**	.013**	.010**
(-5,-1)	-2.14%	-1.718	-1.630	-2.30%	-1.862*	-1.768*	.140	.068*
(1,15)	1.86%	1.119	1.482	1.82%	1.107	1.488	.114	.131
(1,10)	1.25%	1.140	1.210	1.24%	1.132	1.188	.131	.092*
(1,5)	0.24%	0.250	0.522	0.25%	0.244	0.483	.664	.821

Upgrades with preceding positive WLs have more amplified “prior” negative significant returns (before the event and on the moment of upgrades), compared to upgrades without preceding WLs.

Hence, the null hypothesis H5.0 (1) is confirmed and null hypothesis H5.0 (2) is rejected.

Conclusion of Section 2

Contributions

We present other strong points in the thesis as follows:

- ✓ We covered a most long period of study: 1988-2017.
- ✓ We took into account the market segmentation (A shares, H shares and double AH shares).
- ✓ We separated the CRCs into samples of global and local CRAs.
- ✓ We considered the market anticipation by using the issuers' ownership concentration/dispersion as proxy.
- ✓ We did not forget neither the CRCs preceded by WLs as the market expectation of the arrival of rating events.

Methodology

We used event study with a classic market model as the standard methodology, to study the impact of CRCs on Chinese stock market returns. We considered the auto-regression, heteroscedasticity and non-linearity, by using Garch model in addition to OLS model; non-parametric tests to parametric tests, as widely used in literature. In addition to that, our research is one of the first rating studies under Chinese institutional environment, even though rating event and impact analysis have already been widely conducted in the literature review.

Analyses of results

Our research contributes to the first study to include all these Chinese institutional characteristics into one paper, in addition to the presentation of general results on the emerging market, for both upgrades and downgrades.

We found no market significant reaction in the general samples, for both downgrades and upgrades.

However, we cannot ignore the observation that, an upward rating revision always accompanied by strong negative prior market reactions, under our sample range (during three windows before the announcement, significant reactions were registered). This kind of results confirms the theory, saying that CRAs are inclined to release good news beforehand to please their clients. At the same time, according to the "*Wealth Redistribution Hypothesis*", where bondholders and shareholders are playing a "zero-sum game", the good news for the first could turn to be bad for the second.

Section 3: Further analysis of CRCs and more evidence of event study on WLS

3.1. Cross-sectional analysis for the causes of abnormal returns (ARs)

3.2. Event study on Watch-Lists (WLS)

Introduction of Section 3

We inspired from the literature review that the event study of credit rating changes is not enough to fully understand the market impact of CRAs. Given the fact that some studies of CRCs are also accompanied by a cross-sectional analysis to explore the causes of abnormal returns, on one hand; and an event study on Watch-Lists (WLS) on the other hand, we will complete the last Section 2 with some extra tests here in the Section 3. The methodology and results are presented as follows.

3.1. Cross-sectional analysis for the causes of abnormal returns (ARs)

Empirical findings of God and Ederington (1993)⁸⁴² showed that only CRCs connected to the deterioration of “firm’s or industry’s prospects and/or performance” would lead to negative market reaction. That means securities price/return changes only when CRAs assume that CRCs are relative to a change of “firm's future earnings or sales”.

They asserted that leverage ratio could also be a factor influencing creditor/shareholder relationship. Corporate wealth is going to transfer from one to another according to its financing policy. However, downgrades due to the leverage increases do not result in any equity market reaction.

⁸⁴² Goh Jeremy C. and Ederington Louis H., 1993, Is a Bond Rating Downgrade Bad News, Good News, or No News for stockholders? *The Journal of Finance*, Vol. XLVIII, No. 5.

The empirical example told us that: “CRCs cannot be treated homogenously, and the cause must be considered”.

“The change in the firm’s defaults risk could be due to a change in firm value”⁸⁴³. The deterioration of “financial prospects convey new negative information to the capital market”⁸⁴⁴ (for both bond and stock market). Hence it is important to understand the causes of significant abnormal returns, in response to the credit rating changes.

In Subsection 3.1, a model of multiple linear regression will be adopted, in order to implement a “cross-sectional analysis” and to explain the causes of (C)ARs ((cumulative) abnormal returns on the (a) day(s) or over the period of the event window(s)) in the further step.

⁸⁴³ Zaima and McCarthy, 1988, *supra*.

⁸⁴⁴ Goh and Ederington, 1993, *supra*.

3.1.1. Literature review

It's important to examine the possible causes behind the credit rating changes (CRCs), in order to explain why there is “mixed evidence” of their informative impacts. In this Point 3.1.1, we are going to present some qualitative determinants in addition to the quantitative variables.

These explanatory variables are in addition to those we have already used the Section 2 of Chapter VI. In other words, we will not repetitively to present the following Chinese institutional factors: crisis effect variable (before or after 2008), market segmentation (A shares, H shares and double-listing shares), separation between local/global CRAs, public-companies with concentrated/dispersed ownership and CRCs preceded (or not) by WLs.

Table VI.3.1

Variables	Literature review
Financial and accounting ratios	
Firm size (SIZ)	Cornelle et al. (1989) ⁸⁴⁵ , Elayan et al. (2003), Jorion et al. (2005), Li et al (2006), Poon and Chan (2008), Dardour (2013), Freitas & Minardi (2013), Murcia et al. (2013) ⁸⁴⁶
Debt ratio (leverage-LEV)	Li et al. (2004), Li (2006), Han et al. (2009), Freitas & Minardi (2013) ⁸⁴⁷ , Murcia et al. (2013)
Current ratio (liquidity-LIQ)	Elayan et al. (2003)
Free Cash flow (FCF)	Li et al. (2006)
Revenue (REV)	Li et al. (2006), Freitas & Minardi (2013)
Governance information	
Ownership ⁸⁴⁸ (OWN)	Li et al. (2006), Poon and Chan (2008)
Stock market-related information	
Market capitalization (MCAP)	Han et al. (2009), Freitas & Minardi (2013)
Listing years (YEA)	Poon and Chan (2008)
Beta risk (RIS)	Dardour (2013)

⁸⁴⁵ Cornell Bradford et al., 1989, Cross-Sectional Regularities in the Response of Stock Prices to Bond Rating Changes, *Journal of Accounting, Auditing and Finance* 4(4): 460-479.

⁸⁴⁶ Cruz de Souza Murcia et al. 2013, The informational content of credit ratings in Brazil: an event study. *Working paper*.

⁸⁴⁷ The rated firm is a keiretsu member for Japanese case and state legal shares for Chinese case.

⁸⁴⁸ In addition to the leverage ratio, they used also the ratio of Debt/ Ebidta.

Other information	
Industry (IND)	Elayan et al.(2003), Li et al. (2006), Poon and Chan (2008), Dardour (2013)
Sovereign rating (SOV)	Han et al. (2009)
Related to the previous/initial rating scale/grade	
Grade change (GRA) ⁸⁴⁹	Holthausen and Leftwich (1986), Hand et al. (1992), Goh and Ederington (1999), Jorion et al. (2005), Han (2009), Bannier and Hirsch (2010), Dardour (2013), Freitas & Minardi (2013), Sehgal and Mathur (2013) ⁸⁵⁰
Magnitude of the changes (MAG)	Holthausen and Leftwich (1986), Cornelle et al. (1989), Hand et al. (1992), Goh and Ederington (1999), Jorion et al. (2005), Li et al. (2006), Bannier and Hirsch (2010), Freitas & Minardi (2013), Murcia et al. (2013), Sehgal and Mathur (2013)
Days (DAY) ⁸⁵¹	Holthausen and Leftwich (1986), Jorion et al. (2005), Bannier and Hirsch (2010)
Last rating grade (LRG)	Cornelle et al. (1989), Li (2006), Poon and Chan (2008)

⁸⁴⁹ From speculation grade to investment grade, and *vice versa*.

⁸⁵⁰ Sehgal Sanjay and Mathur Shruti, 2013, Cross-sectional variation in Stock Price Reaction on bond rating changes: evidence from India. *Asia Journal of Finance & Accounting*. Vol.5, No2.

⁸⁵¹ The days between current CRC and last CRC.

3.1.2. Data description

We sum up all reasons that appeared in existing studies, by adding other Chinese institutional factors, ownership of the company, for example, in the line of a vast literature review reported in Section 2 of Chapter V.

We compute variables available from the database *Bloomberg* (*certain variables are hard to get*) and the data description is presented in the following tables. The detailed description remains the same as in Chapter V, when we studied the rating determinants of CRAs. The tables of descriptive data are divided into two samples: first for upgrading and second for downgrading.

The following *Table VI.3.2* describes the hard information: financial ratios (*the first kind of variables*), stock-market related information (*the second kind of variables*) and board size of the listed companies.

Table VI.3.2

Data description of hard information, stock market information and board size

Sample 1: downgrading (number in total:156)	N	Average	Median	Stand. Dev.	Min/max
Logasset (SIZ)	155	4.70	4.79	.72	3.03/6.51
Debt/asset (LEV)	154	38.59	35.13	16.61	1.15/75.84
Current ratio (LIQ)	151	1.33	1.14	1.25	0.09/10.67
interest coverage ratio (ICR)	150	0.49	2.10	56.11	-660.96/ 153.85
FCF to total debt (FCF)	154	-0.04	-0.10	0.85	-3.14/6.99
profit margin (REV)	155	4.79	4.74	101.27	-1147.24/ 319.98
Price to book(pb)	155	1.81	1.37	1.75	0.29/12.51
Price to EBITDA (pebitda)	150	24.66	6.02	144.74	0.78/ 1767.02
Market capitalization (log Mcap)	155	4.35	4.29	0.71	2.89/6.31
Listing year (YEA)	155	1998	4.88	1990	2010
Board size (BOZ)	153	9.63	9	2.86	5/19

Sample 2: upgrading (number in total: 314)	N⁸⁵²	Average	Median	Stand. Dev.	Min/max
Logasset (SIZ)	313	4.71	4.49	0.86	7.20/2.99
Debt/asset (LEV)	313	30.39	28.39	15.45	86.72/0
Current ratio (LIQ)	273	1.19	1.11	0.68	4.92/0.13
Interest coverage ratio (ICR)	267	6.91	3.28	11.19	85.03/-5.43
FCF to total debt (FCF)	312	0.04	-0.05	0.64	5.47/-3.28
profit margin (REV)	313	13.29	8.27	14.87	140.63/-8.48
Price-to-book (pb)	312	2.44	1.96	1.75	12.41/0.31
Price-to-EBITDA (pebitda)	273	11.90	8.16	12.48	91.11/1.05
Market capitalization (log Mcap)	312	4.50	4.35	0.70	6.37/3.02
Listing year ⁸⁵³	313	2001	5.03	1990	2011
Board size (BOZ)	312	10.29	9	2.78	19/5

In addition to hard information and information regarding stock market, we computed soft information (*the third kind of variables*) in the *Table VI.3.3* as below. The choice of reference follows the idea in the Section 2 of Chapter V.

Table VI.3.3

Data description of soft information

Sample 1: downgrading (number in total: 156)		N	0	1
Listing international (INT)		152	65	87
Industry	Sector 1	156	/	23
	Sector 2 (reference)			70
	Sector 3			63
Ownership diversification		152	133	19
Owner- ship	State (reference)	152	/	34
	Private			18
	Hybrid			100
Duality		101	83	18
Sample 2: upgrading (number in total: 314)		N	0	1
Listing international		256	226	36
Industry	Sector 1	314	/	37

⁸⁵² It should be noted the missing data in the database Bloomberg. For example, for the Sample 1(upgrading), there are only 267 cases among 314 (in total) having data for the variable ICR.

⁸⁵³ It means the number of years that a company going public, since its IPO.

854	Sector 2 (reference)			153
	Sector 3			124
Ownership diversification		311	261 (concentration)	50
Owner-ship	State (reference)	314	/	81
	Private			23
	Hybrid			210
Duality ⁸⁵⁵		262	226	36

We have other information, such as: there are additional variables, relative to the macro-economic circumstances of the year (we computed the variable denoted as YEAR), before the CRCs. We counted the *fourth kind of variables* and they are: market turbulence (TUR), GDP, inflation rate (INF) and sovereign debt level (SRA). They are our fourth kind of variables. The definition of variables could be found in Section 2 of Chapter V.

The fifth kind of variables that we took into account is the types of CRAs (globalxinhua⁸⁵⁶, chengxinlianhe, dagong and new entrants on the rating market). We used chengxinlianhe as the reference, for the reason that we explained in the Subsection 3.3, Chapter V.

We added four extra variables to capture information of current CRCs (compared to the previous CRCs and preceding Ws), as the *sixth kind of variables*. They are grade change (GRA denoting a change from speculation-graded ratings to investment-grade ratings, and *vice versa*. It takes the value of 0 for the existence of GRA, and 1 otherwise), magnitude of the changes (MAG), days since the very last CRCs (DAY) and the grade of the last rating (LRG, speculation 1 and investment 0). There is our sixth category of information in the model of “multiple linear regression”, from the inspirations of the literature review.

These two kinds of variables are showed in detail in the Table VI.3.4.

⁸⁵⁴ Sector 1 includes natural resources, Sector 2 includes manufacturing industries and Sector 3 includes service industries.

⁸⁵⁵ Duality takes 1 when the president of board is also the general manager of the company. It takes 0 when they are two different peoples.

⁸⁵⁶ We have illustrated in logistic models in the Chapter V that Xinhua had relatively similar strategies with global CRAs. That’s why we combined them into one variable.

Table VI.3.4

Data description of CRA and information of current CRCs

Sample 1: downgrading (number in total: 156) Dummy variables		0		1	
CRAs	Globalxinhua	/		=134	
	chengxinlianhe			16	
	Dagong			2	
	New			4	
	=Local CRAs			=22	
GRA		139		17	
LRG		81		75	
Continuous variables		Average	Median	Stand. Dev.	Min/max
MAG		1.33	1	1.15	1/9
DAY ⁸⁵⁷		508.03	354	368.21	38 ⁸⁵⁸ /1644
Sample 2: upgrading (number in total: 314) Dummy variables		0		1	
CRAs	Globalxinhua	/		=88	
	chengxinlianhe			140	
	Dagong			28	
	New			58	
	= Local CRAs			=226	
GRA		311		3	
LRG		286		28	
Continuous variables		Average	Median	Stand. Dev.	Min/max
MAG		1.11	1	0.43	1/4
DAY ⁸⁵⁹		744.51	628	501.42	19/2548

Finally, we introduced the variable (“yesnowl”) to designate the credit rating changes which are preceded by a WL (we computed 1 for presence of preceding watch-lists and 0 of the opposite). The information incorporates what we described in the Point 2.4.5 (“Subsample of CRCs: with vs. without preceding WLs”). In terms of the descriptive data, we witnessed that only 13 % downgrades and 7% upgrades had preceding watch-lists on the same direction.

⁸⁵⁷ 3 data untraceable.

⁸⁵⁸ Day should not less than 131 days because we eliminated the contaminated CRCs (with another CRC during the estimation and event window). The reason why we still have CRCs with the variable “DAY” less than 131, is the case when the first credit rating changes followed the initial ratings within the 131-days-window. Same for the upgrades.

⁸⁵⁹ 13 data untraceable.

3.1.3. Variable selection (downgrading)

We did the same control of multi-collinearity before estimating the model. The matrix of correlation, showing by a VIF indicator, leads to the conclusion that there is high correlation between:

We ran first of all, the correlation test, we found high correlation between:

- ✓ Logasset and market capitalization; we deleted logasset to preserve the information on the stock market capitalization of the firm.
- ✓ Listing years are collated with the variables, year and SRA; idem for year⁸⁶⁰ and SRA. We decided to delete all of these three variables.
- ✓ “Interest coverage ratio” and “profit margin” are correlated. At this step, this is *a priori* no reason to prefer one of these two variables against the other one, we cannot make the choice for the moment.

We performed in the second step, the VIF indicator.

Stata reported that Dagong and new CRAs are two variables to be dropped because of the collinearity⁸⁶¹. We found in addition that “profit margin” and “current ratio” as two variables with more than 4 as VIF.

In other words, we would have 23 variables in total, among which 5 variables (CRAs and information related to CRCs: Global, GRA, MAG, DAY, LRG) can only be used in the post-event-day windows. It is because without the occurrence of rating event, we cannot calculate the relevant information (rating event in which day, in which direction, by which CRA and in which magnitude...)

In other words, we will introduce only 18 variables in the model of “multiple linear regression”, in the pre-event-day windows.

⁸⁶⁰ The variable Year is correlated with the variable GDP, but we decided to preserve the information of Chinese domestic product.

⁸⁶¹ The number of the observations is extremely small.

Table VI.3.5

Summary of variables (downgrading)

Types of variables	Variables	Number
Hard information	Debt-to-asset, Interest-coverage ratio, FCF-to-total-debt	3
Soft information	Board size, Industry1, Industry3, CON, PRIV, HYB, INT, Duality	8
Stock market information	Price-to-Book, Price-to-Ebitda, Market capitalization	3
Macro-economic information	TUR, GDP, INF	3
CRAs*	Global	1
Information related to the CRCs*	GRA, MAG, DAY, LRG	4
WLs-preceded CRCs (or not)	yesnowl	1

A word before introducing the methodology of this cross-sectional analysis of the causes of ARs is that: in the non-shown Stata execution program, we run the *Principle Component Analysis and Factor Analysis*, in order to reduce the number of explanatory variables.

Unfortunately, the correlation among the rest of variables is minimal for both upgrading and downgrading sample. Therefore, the number of components and factors keeps still too much important to make the interpretation easy.

Hence, we chose not to go further and not to report the results of these two kinds of principal components analysis.

3.1.4. Variable selection (upgrading)

Before estimating the model, we checked the multi-collinearity problem and we performed, first of all, the matrix of correlation, followed by a VIF indicator. The matrix of correlation leads to the conclusion that there is high correlation between:

- ✓ Year and SRA (sovereign rating level). We deleted the variable of the Year to preserve the information of Chinese sovereign debt.
- ✓ SRA and GDP. We still preserved SRA, because it had more importance in the

literature review, compared to the “gross domestic product”.

- ✓ Logasset and board size; logasset and market capitalization; we deleted logasset to preserve other two information with low correlation, between each other.
- ✓ “Interest coverage ratio (ICR)” and “debt to asset ratio”; ICR and free cash flow. We did the same thing to remove ICR from the model.

We performed in the second step, the VIF indicator.

Stata reported that GRA (from speculation to investment grade, and *vice versa*) is dropped automatically, because of the collinearity. We found in addition that Global CRAs as a variable with VIF with a value greater than 4. We decided to delete it.

Hence, we dropped these five variables. In other words, we would have 26 variables in total, among which 6 variables can be used only in the post-event-day window⁸⁶².

Table VI.3.6

Summary of variables (upgrading)

Types of variables	Variables	Number
Hard information	Debt-to-asset, Current-ratio, FCF-to-total-debt, Profit margin	4
Soft information	Board size, INT, Industry1, Industry3, CON, HYB, PRIV, Duality	8
Stock market information	Price-to-Book, Price-to-Ebitda, Market capitalization, listing year	4
Macro-economic information	TUR, INF, SRA	3
CRAs *	Dagong, SBCR, CCRC	3
Information related to the CRCs*	MAG, DAY, LRG	3
WLs-preceded CRCs (or not)	yesnowl	1

⁸⁶² It should be noted that, the information related to the CRCs and kinds of CRAs should only be considered in the post-event-day windows, for the reason that we have described in the Subsection 3.1.3 (Chapter VI).

3.1.5. Methodology and results (OLS and Garch)

$$AR/CAR = \beta_0 + (\beta_1 * X_{1j}) + (\beta_2 * X_{2j}) + (\beta_3 * X_{3j}) + (\beta_4 * X_{4j}) + (\beta_5 * X_{5j}) + (\beta_6 * X_{6j}) + \varepsilon$$

- ✓ We have presented the descriptive data of independent variables and the selection of explanatory variables after two steps (matrix of correlation and VIF indicator). Hence, for the independent variables (X):

We sorted all kinds of variables that we selected in the previous Point 3.1.3 and Point 3.1.4, and we put these variables into six categories: hard information, soft information, stock market information, macro-economic information, kinds of CRAs and information related to the CRCs. There are continuous variables, as well as dummy variables.

- ✓ For the dependent variables AR/CAR⁸⁶³ (Y):

We chose the abnormal returns at the day j and cumulative abnormal returns for the period (p, q) , where at least one test, from both parametric and non-parametric tests, got significant results.

Considering the general results that we got from Subsection 2.2, we chose: for the downgrading, to explain the two-days-before-the-event-day; and for the upgrading one of the pre-event-day windows $(-10, -1)$.

- ✓ We used the model of “multiple linear regression” (with option of stepwise: backward)⁸⁶⁴). Regarding the threshold, we set 15% for the removing and 10% for the adding to the model.

For example, the backward stepwise selection, Stata started with the full model, and removing variables with less than 15% significant level, revising forward then by reintroducing back these variables to see if they appeared to be significant *at 10%*.

⁸⁶³ Abnormal returns for a day and Cumulative ARs for a period over the event window.

⁸⁶⁴ There exists the stepwise (forward); however, the selection is less common than backward.

Table VI.3.7

Results for multiple linear regression models (downgrading)

Event window	Average AR/ CAR	Downgrading (OLS)	Average AR/ CAR	Downgrading (Garch)
-2	-0.45%	Industry 1 ***(+) GDP **(+) Private *(+) Yesnowl*(+) INT*(-)	-0.44%	Industry 1 **(+) GDP **(+) Private *(+) Yesnowl*(+)

We ran the model of multi-linear regression with 18 variables, for the event window -2, in the case of downgrading. We found Industry1: agriculture and mining (manufacturing sector: the variable of industry2 as the reference), GDP, private dominant shareholders (compared to State-Owned Enterprises) and CRCs with preceding WLS (the variable Yesnowl), is the positive significant variable in the model.

Table VI.3.8

Results for multiple linear regression models (upgrading)

Event window	Average AR/ CAR	Upgrading (OLS)	Average AR/ CAR	Upgrading (Garch)
(-10, -1)	-0.93%	Duality*(-), Industry 3*(-)	-0.82%	Duality**(-), Industry 3*(-) P-EBITDA*(-)

What we can learn from the table is that among these 20 variables, “duality” and “industry 3 (manufacturing sector: the variable of industry2 as the reference)” were two negative significant variables to explain the window before the upgrades.

Combing the results that we found previously, we can conclude that industrial sector is a very important cause to explain the prior significant abnormal returns, in both downgrades and upgrades.

3.2. Event study on Watch-Lists (WLs)

We have explored briefly WLs in the Section 3 of Chapter IV (by using multi-rating samples). We also examined the CRCs with preceding WLs, in the Section 2 of Chapter VI. We understood that CRAs used WLs to keep balance of stability and timeliness and to provide information content.

Bannier and Hirsch (2010) dig more into WLs. They concluded empirically that indeed, CRAs were able to deliver information in the form of WLs, in the case of issuers of high creditworthiness, while in the case of issuers of low quality, CRAs rather developed into an “implicit contract” between issuers. They suggested that under the theoretical framework of Boot et al. (2006), CRAs became a monitor for the issuers in the last scenario. WLs served consequently a warning to issuers to “abstain from risk-augmenting actions”.

Chung et al. (2012)⁸⁶⁵ contributed to the first study to obtain a relatively complete overview on the topic of WLs. They found in the same vein as Bannier and Hirsch that, good news (positive WLs) is much more likely to “indicate the direction of the subsequent rating changes” because it conveys more information content, compared to negative WLs.

⁸⁶⁵ Chung, K., Frost, A., Kim, M., 2012, Characteristics and information value of Credit Watch, Financial management, Volume 41, Issue 1, page 119-158.

3.2.1. Literature review, hypotheses and data description

There exist few studies about WLs, compared to the number of studies on CRCs. The most exhaustive literature review that we are able to do at the moment is showed as follows:

Table VI.3.9

Summary of stock market reactions in the case of WLs (negative and positive)

WLs	Presence of stock market reactions	Literature
Negative	Yes	Wansley and Clauretie (1985), Holthausen and Leftwich (1986), Hand et al. (1992) ⁸⁶⁶ , Followill and Martell (1997) ⁸⁶⁷ , Elayan et al. (2003), Francois-Heude & Paget-Blanc (2004), Linciano (2004), Norden and Weber (2004) ⁸⁶⁸ , Chung et al (2012)
	No	Barron et al. (1997), Afik et al. (2014)
Positive	Yes	Wansley and Clauretie (1985), Holthausen and Leftwich (1986), Barron et al. (1997) ⁸⁶⁹ , Francois-Heude & Paget-Blanc (2004), Chung et al. (2012)
	No	Hand et al. (1992), Elayan et al. (2003), Norden and Weber (2004)

Inspired by the literature review presented in the table above, it comes to ask the Q6:

Q6: Do Watch-Lists (negative and positive WLs) of CRAs have impact on investors⁸⁷⁰?

The hypothesis is presented as follows:

H6: There is no common stock return change to WLs.

⁸⁶⁶ Negative reactions only to unexpected negative WL.

⁸⁶⁷ Followill, R.A. and Martell, T. 1997. Bond review and rating change announcements: an examination of informational value and market efficiency. *Journal of Economics and Finance*. Page 75-82.

⁸⁶⁸ Norden, L. and Weber, M, 2004, Informational efficiency of credit default swap and stock markets: the impact of credit rating announcements. There existed strong anticipation for “mean abnormal stock returns around reviews for downgrade”, Table 3, page 2824.

⁸⁶⁹ Barron et al. (1997) found results very different from most literature in the USA market (negative reactions). We should be aware the size of sampling is too small to make the early results sufficiently convincing. It is the same situation for the study of Francois-Heude & Paget-Blanc (2004).

⁸⁷⁰ Wansley and Clauretie (1985) only found WL additions that are followed by resolutions (in the sense of Holthausen and Leftwich (1986) and Hand et al. (1992)) of the same direction resulted in statistically significant price changes. Elayan et al. (2003) found significant negative stock price reactions with or without the following CRCs. Here, we discussed WLs without considering the absence or existence of the following CRCs.

Table VI.3.10

Data description and methodology

	Positive	Negative
Number in total	24	64
Crisis (before/after 2008)	10/14	5/59
Agency (local/global)	2/22	4/60
Segmentation (Continental China/ HK)	7/17	19/45
Ownership(concentration/diversification)	8/16	11/53

It should be noted that the sample size is quite small to have a cross-sectional analysis. Hence, what we are going to do is the same event study applied to the sample of Watch-lists and the results are presented as follows.

3.2.2. Results for OLS

Table VI.3.11

Results of parametric test and non-parametric test of negative WLs

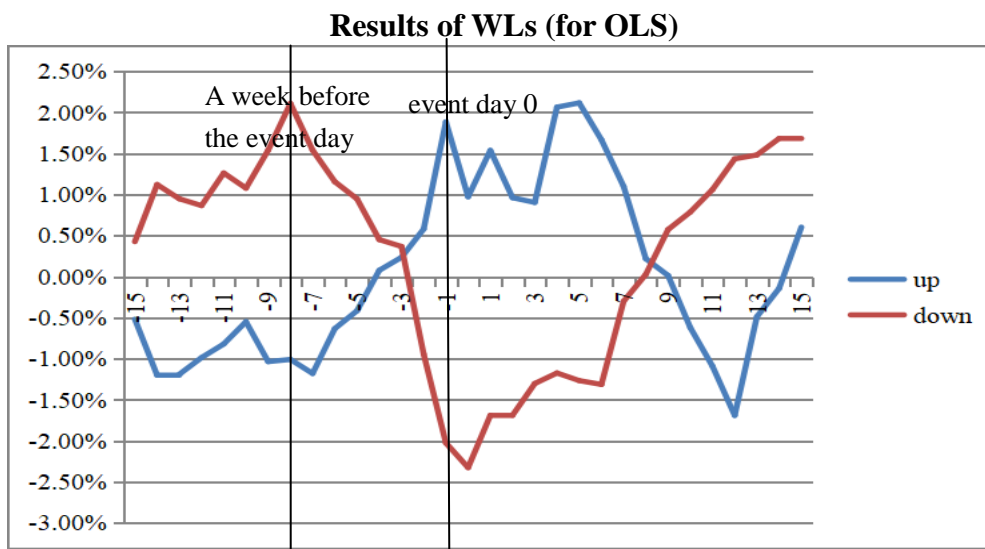
Tests	Parametric test					Non-parametric test	
	Single sample			Paired-samples		Single sample	Paired-samples
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-1.31%		-1.886*	-0.96%	-1.346	.119	-0.649
-1	-1.08%		-3.110***	-1.13%	-2.508**	.009***	-2.297**
0	-0.30%		-0.643	0.00%	-0.012	.607	-0.321
1	0.64%		1.814*	0.30%	0.644	.199	-0.495
2	0.00%		0.006	0.50%	1.171	.748	-0.823
(-15,15)	1.68%	0.752	0.609	4.68%	1.572	.229	-2.140**
(-10,10)	-0.48%	-0.260	-0.184	-0.11%	-0.050	.758	-0.227
(-5,5)	-2.42%	-1.961*	-1.267	-1.88%	-1.212	.050*	-1.572
(-1,1)	-0.75%	-1.046	-0.501	-0.84%	-1.042	.363	-1.090
(-15,-1)	-2.03%	-1.107	-0.892	0.14%	0.065	.774	-1.144
(-10,-1)	-3.29%	-1.888*	-1.748*	-3.46%	-1.865*	.152	-1.505
(-5,-1)	-3.18%	-3.059***	-2.640**	-2.92%	-2.485**	.005***	-2.120**
(1,15)	4.01%	3.338***	3.474***	4.55%	2.609**	.006***	-2.133**
(1,10)	3.11%	3.249***	2.829***	3.35%	2.390**	.003***	-2.060**
(1,5)	1.06%	1.590	1.593	1.05%	1.129	.239	-0.435

Table VI.3.12

Results of parametric test and non-parametric test of positive WLs

Tests	Parametric test				Non-parametric test		
	Single sample		Paired-samples		Single sample	Paired-samples	
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	0.34%		0.628	0.05%	0.803	1.000	-0.457
-1	1.30%		1.853*	0.71%	0.941	.130	-0.561
0	-0.91%		-0.965	-0.46%	-0.433	.689	-0.656
1	0.56%		1.044	0.32%	0.451	.797	-0.400
2	-0.58%		-1.578	-1.04%	-2.485**	.199	-2.371**
(-15,15)	0.60%	0.229	0.180	-6.44%	-1.556	.841	-1.800*
(-10,10)	0.20%	0.084	0.072	-4.06%	-1.232	.689	-1.400
(-5,5)	2.75%	1.530	1.267	1.17%	0.509	.253	-0.343
(-1,1)	0.96%	1.099	0.490	0.57%	0.459	.304	-0.229
(-15,-1)	1.88%	0.874	0.996	-2.76%	-0.999	.549	-1.143
(-10,-1)	2.71%	1.301	1.797*	0.03%	0.010	.424	-0.486
(-5,-1)	2.52%	1.602	2.418**	1.71%	0.917	.407	-0.229
(1,15)	-0.37%	-0.185	-0.141	-3.21%	-1.098	.710	-1.029
(1,10)	-1.59%	-0.949	-0.809	-3.63%	-1.671	.407	-1.486
(1,5)	1.14%	0.941	0.775	-0.08%	-0.051	.424	-0.029

Graph VI.3.1



We can conclude that:

The null H₀ is rejected in the case of negative WLs; the null H₀ is confirmed in the case positive WLs.

For the negative WL, there is a larger significant market response, firstly negative prior to the announcement, which turns to positive in the post-event-day windows.

For the positive WL, the market reaction is weak.

3.2.3. Robust test Results for Garch

Table VI.3.13

Results of parametric test and non-parametric test of negative WLs

Tests	Parametric test					Non-parametric test	
	Single sample			Paired sample		Single sample	Paired sample
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	-1.30%	-1.864*		-0.94%	-1.304	.147	-0.548
-1	-1.07%	-3.067***		-1.11%	-2.447**	.009***	-2.321**
0	-0.29%	-0.614		0.02%	0.051	.758	-0.428
1	0.63%	1.800*		0.28%	0.624	.206	-0.508
2	0.02%	0.055		0.54%	1.239	.794	-0.863
(-15,15)	1.96%	0.825	0.709	5.22%	1.590	.136	-2.274**
(-10,10)	-0.25%	-0.132	-0.097	0.34%	0.139	.449	-0.756
(-5,5)	-2.32%	-1.815*	-1.222	-1.68%	-1.040	.118	-1.217
(-1,1)	-0.73%	-1.026	-0.494	-0.80%	-1.016	.411	-0.976
(-15,-1)	-1.90%	-1.015	-0.838	.039%	0.175	.963	-1.465
(-10,-1)	-3.15%	-1.776*	-1.672*	-3.19%	-1.647	.245	-1.244
(-5,-1)	-3.13%	-2.945***	-2.609**	-2.82%	-2.325**	.011**	-1.933*
(1,15)	4.14%	3.267***	3.600***	4.81%	2.542***	.005***	-2.227**
(1,10)	3.19%	3.254***	2.907***	3.50%	2.426***	.003***	-2.073**
(1,5)	1.10%	1.624	1.703*	1.11%	1.190	.201	-0.722

Graph VI.3.2

Comparison of results of negative WLS (OLS vs. Garch)

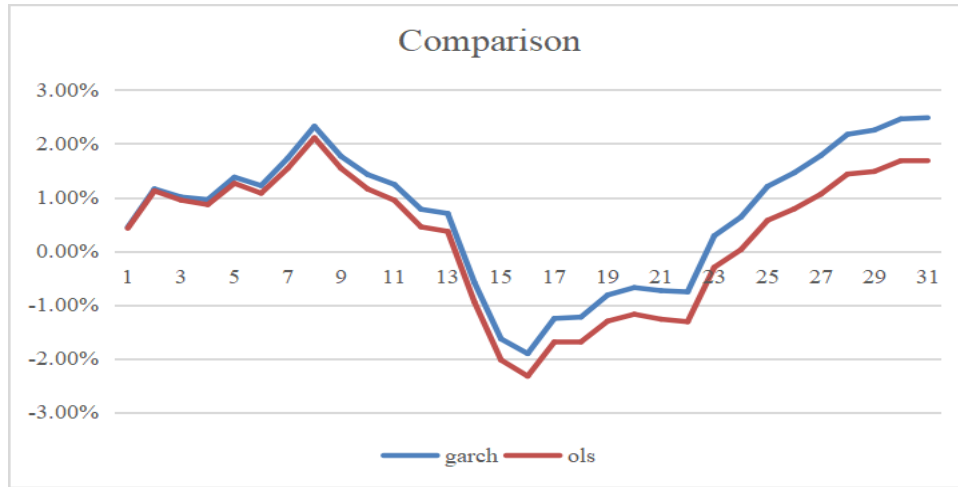
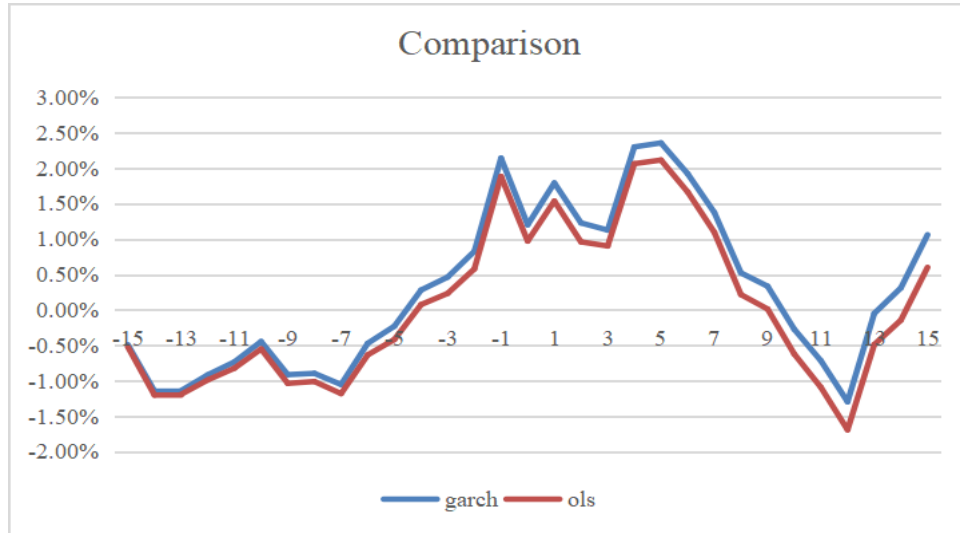


Table VI.3.14

Results of parametric test and non-parametric test of positive WLS

Tests	Parametric test					Non-parametric test	
	Single sample			Paired sample		Single sample	Paired sample
	Mean	Cross-Sectional T test	Time-series standard deviation T test	Mean	Paired T test	Wilcoxon signed-rank test (p value)	Wilcoxon signed-rank test
-2	0.34%		0.623	0.54%	0.797	1.000	-0.371
-1	1.29%		1.838*	0.69%	0.913	.130	-0.514
0	-0.92%		-0.972	-0.47%	-0.441	.668	-0.571
1	0.60%		1.118	0.39%	0.559	.753	-0.314
2	-0.56%		-1.488	-1.00%	-2.338**	.209	2.200**
(-15,15)	1.02%	0.424	0.304	-5.61%	-1.547	.954	-1.743*
(-10,10)	0.38%	0.169	0.137	-3.70%	-1.239	.819	-1.286
(-5,5)	2.82%	1.630	1.296	1.31%	0.598	.241	-0.457
(-1,1)	0.98%	1.131	0.499	0.61%	0.492	.278	-0.371
(-15,-1)	1.99%	0.943	1.063	-2.56%	-0.954	.549	-1.029
(-10,-1)	2.72%	1.324	1.816*	0.05%	0.021	.424	-0.229
(-5,-1)	2.51%	1.612	2.418**	1.68%	0.926	.376	-0.971
(1,15)	-0.06%	-0.029	-0.021	-2.58%	-1.000	.841	-1.114
(1,10)	-1.42%	-0.870	-0.719	-3.28%	-1.656*	.440	-1.514
(1,5)	1.23%	1.039	0.827	0.09%	0.065	.361	-0.057

Comparison of results of positive WLS (OLS vs. Garch)



It is clear from the tables and graphs that the results of market reactions from OLS model and Garch model are consistent.

Table VI.3.15

Summary of results for WLS

Negative watch-lists			
Pre-event-day window	Negative	Strong market reactions	(-5, -1)
Post-event-day windows	Positive	Strong market reactions	(1,10) and (1,15)
Positive watch-lists: no market reaction			

We can learn from the previous table the stock market had anticipated the future WL actions and their behaviors during the pre-event-day windows reflected to a possibly occurrence of rating events (especially a week before the event day). The post-event-day reactions of the market were simply there to correct the overreactions beforehand.

Comparing the results of WLs (Point 3.2.2 for OLS model and Point 3.2.3 for Garch model) to the results of credit rating changes with preceding WLs (Point 2.3.5 and Point 2.4.5), it seems that:

In the case of downward modification, negative WLs are more informative than CRCs with preceding WLs;

By contrast, in the case of upward modification, positive WLs convey less information content than CRCs with preceding WLs.

Table VI.3.16

Summary of stock market reactions to WLs and to WLs-preceded CRCs

Rating event	Pre-event-day window	Significance	Post-event-day window	Significance
Negative WLs	Negative reactions	Yes	Positive reactions	Yes
Downgrades with preceding WLs	Positive reactions	No	Positive reactions on the event day	No ⁸⁷¹
Positive WLs	Positive reactions	No	Negative reactions	No
Upgrades with preceding WLs	Negative reactions	Yes	Negative reactions on the event day	Yes ⁸⁷²

⁸⁷¹ The significance (at 10%) was only found in the non-parametric tests, on the event day.

⁸⁷² We found low-level of significance (at 10%) on the event day, independent of test model (parametric or non-parametric) or estimation model (OLS or Garch).

Conclusion of Section 3

Based on an examination of informative content of CRCs, we mobilized cross-sectional estimation to perform an analysis of the abnormal returns' determinants, on the sample of CRCs (Section 2) and we conducted an additional event study of Section 2 on the new sample of WL, in this Section 3.

First of all, we extracted from literature review and rating determinants that have values in logistic models (Chapter V) to examine the factors counting to explain abnormal returns. In order to choose the most adequate variables, we ran preliminary tests of correlation and VIF (Variance Inflation Factor) for the multivariate linear regression. We also chose to use the backward stepwise model to run the regression (using both OLS and Garch as estimation model), separately from upgrading and downgrading. We found that "industry type" is an important factor in explaining the significant abnormal returns.

Secondly, we used the same epistemology (hypothetical-deduction from the literature review) and methodology is Section 2 (estimation: OLS and Garch and test: parametric and non-parametric tests) to see the results of WL on the common stock returns. We obtained results that negative WLs are more informative than positive WLs.

Conclusion of Chapter VI

Our research of informative impact of CRAs' actions (CRCs and WLs) contributes to the existing empirical study in a few aspects:

- ✓ A summary of literature review that includes a vast lecture of articles, conceptual, theoretical and methodological discussion and empirical evidence on rating impacts on Anglo-Saxon markets, to Continental European markets and to Emerging markets.
- ✓ We constitute hypotheses based on general results (Hypothesis 0) and results of the subsample. The criteria to divide the entire sample include the consideration of when (the crisis of 2008, Hypothesis 1), where (segmentation of the market, Hypothesis 2), CRA effect (Hypothesis 3), the existence of anticipation (Hypothesis 4) and finally the fact whether credit rating changes (CRCs) were preceded by watch-lists (WLs) determinate the Hypothesis 5.
- ✓ A more exhaustive sample (1988-2016) of CRAs' rating actions, including CRCs and WLs, on Chinese institutional environment.
- ✓ We adopted a classic event study as methodology, relying on the market model. We improved the entire model by a Garch estimation procedure (in addition to the OLS estimation procedure). We implemented the statistical tests, by one sample and paired sample parametric, as well as, non-parametric tests.

We presented not only general results, but also results based on five sub-samples. These results obtained separately in the five subsamples in the Section 2, helped us to answer five hypotheses that we computed in the Section 1.

The results are presented according to five criteria, inspiring from Chinese institutional factors: the timing of CRCs (before or after the crisis); the market segmentation, between Chinese continental markets and Hong Kong (A shares, H

shares and double-listing shares); the difference between global and local agencies; the governance of the listed companies: concentration vs. dispersion of ownership (we took it as a proxy for the existence (or not) of the market anticipation); the credit rating changes with or without preceding watch-lists.

- ✓ Finally, we performed a cross-sectional examination of the determinants in the case of the significant abnormal stock returns (that we found in the previous Section 2) and the WLs to complete the findings on CRCs.

In sum, our study contributes to the innovation of the summary of literature review, the constitution of hypotheses and samples (including sub-sample division for both credit rating changes and watch-list), methodology, results presentation and finally the analyses, by using the characteristics under Chinese institutional environment.

It should be admitted that our results don't always have consistency with evidence in the literature review. The originality of the research makes it a hard job to explain the reasons of some results. Hence, we had to make some conceptual speculations based on these empirical observations.

Some explanations would need to be further deeply studied in the near future, when we have a deeper and wider understanding of relevant theories on CRAs, and a better knowledge of the emerging market and economy in transition, not only in Chinese but also in the similar countries/regions.

Conclusion of Part Two §2

We have explained the reasons why the consideration of Chinese characteristics is important for a study of Credit Rating Agencies (CRAs), in the light of the theoretical framework of *New-institutionalism*. In the Preparatory Part One §1, we have revisited classic theories related to rating business and industry, and three consequences on market actors under Chinese institutional environment.

By introducing these institutional characteristics of Chinese market environment to the basis of vast literature review, we are able to examine empirically CRAs, taking into account the interactions of CRAs with “Chinese market actors” (regulators, issuers and investors), from three points of view (role, strategy and role):

In Chapter IV, we *firstly* went over the rating regulations and norms (code of conduct) to explore qualitatively what are the roles of the CRAs that are expected by regulators and market-discipline makers in HK and Continental China, in comparison with the European and Russian cases.

Then, we conducted quantitatively some preliminary tests to examine the development of the rating business since its entry into Chinese market.

Finally, we used different methodologies to explain the motivations of an issuer to solicit ratings from more than one CRA and the consequences on investors, by using a sample of multi-ratings. (Chapter IV).

In Chapter V, we applied logistic models, with firm-specific variables and macro-economic indicators, to illustrate rating determinant of CRAs. We also took into account the agency-conduct effect and time-varying effect. We understood from this exercise that the rating process does not only have a technical aspect (statistical/econometric), it is also a process reflecting CRAs’ choice of strategies. (Chapter V).

In Chapter VI, finally, we implemented a classic “event study” to assess the impact(s) of credit rating changes (CRCs) and watch-lists (WLs) on the stock returns.

We brought some innovations to the classic market model methodology with additional estimation (autoregressive conditional heteroskedasticity/GARCH) to the OLS and diverse tests (parametric/non-parametric as well as single/paired sample).

We presented not only the general results but also results on subsamples. The criteria to divide the general sample into subsamples are posed, according to five Chinese institutional factors: crisis effects (2008), market segmentation, global and local CRAs, the existence of anticipation (the ownership is taken as a proxy) and finally the CRCs preceded (or not) by watch-lists.

We found no informative impact of credit rating changes for both downgrades and upgrades, except for some subsamples; while we found negative watch-lists (WLs) have more information content than the positive WLs.

A cross-sectional analysis showed in addition, that the causes of the significant abnormal returns can be explained by the “industry type”. We inspired from Chinese institutional elements and went over some classic explanatory variables in the literature review. A model of “multiple linear regression” (with option of stepwise) is mobilized in this regard.

General conclusion

Since John Moody established the first credit rating agency (CRAs) in history and published the first “Analysis of Railroad Investments” in 1909, CRAs have served as “informational guide” to the “bond issuers”.

This historical acknowledgment is particularly marked by the decision of the Basel Committee, which decided to integrate CRAs to the system of banking supervision. The action means that the responsibility of regulation started to be delegated, at least partially, to an external credit assessor. Hence, CRAs, as private organization, turned to be legitimate regulator, whose constituency is traditionally limited to the public space.

The “use of rating” has become a common practice for market actors: regulators, issuers and investors. CRAs have never stopped to participate in the financial market and their importance is increasingly enhanced with the investment internationalization and securities liberalization.

However, there are various criticisms pointing to CRA along all these years.

The main arguments are presented as follows:

The entire rating industry is under-concurrence and global agencies dominate the business. Considering international market share, Moody’s Investor Service, Standard & Poor’s and Fitch Rating are the “Big Three” in the rating business. Developing countries are worried that their financial security would be indirectly “threatened”. This is also one of the reasons why global CRAs are refused by Chinese regulators for their official entrance to the local market, and why Chinese local CRAs compete fiercely for the new business.

Secondly, it is not possible to verify the accuracy of information content for credit rating. The whole process lacks sufficient transparency. Some claim that even the methodology and rating models used by CRAs have their potential problems. In other words, there is no way to “rate” rating itself. A lack of internal control may

exacerbate the dysfunctions of rating mechanism, which is very obvious during the crisis.

Thirdly, credit rating changes (especially the downgrades) always come too late, and they will help to magnify the danger of economic downturns. These concerns are not merely theoretical: facts have proved that CRAs failed to predict any crisis as they were expected to do.

In addition to the timeliness, the frequency of credit rating changes is also a source for the public's lack of trust. Especially, a multiple pro-cyclical rating modification seems to help to increase the market volatility (in other words, to decrease the market stability) and consequently, to provoke systematic risk. People start to wonder if there is certain consistency inside the CRAs' rating behaviors, independent on macroeconomic circumstances...

There are three main topics in the study of CRAs. *Firstly*, linkage with ratings and bond products' risk of default; *Secondly*, determinants of initial ratings and causes of credit rating changes (CRCs) in the process of the rating assessment; *Thirdly*, certification effect of initial ratings, signal effect of CRCs and their impact on the national/cross-national/international capital market (bond market and/or stock market).

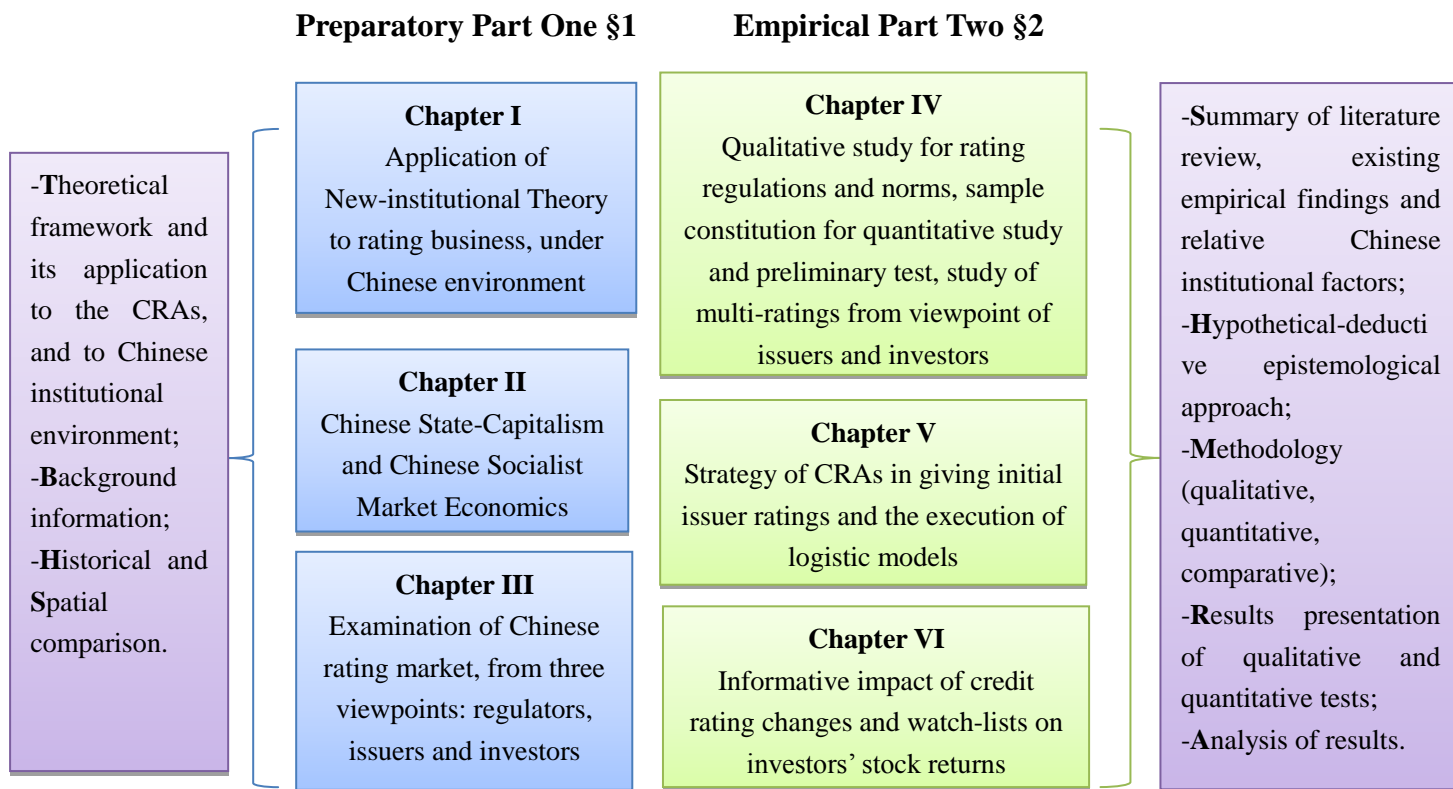
Following a vast literature review and relevant hypotheses, our first ambition was to use data from Chinese rating market to perform qualitative and quantitative methodology to study each of the lines of study described above. The objective was also to have a complete vision of the rating industry in an emerging market with special characteristics. The next step is to compare the results with those from developed markets in the literature review.

However, we found it difficult to find data for bond products on the Chinese market, especially given the fact that a study of default risk needs panel data. Besides, it is impossible to get information from the inside of local CRAs. We have tried several times to contact CRAs during the past years on the Chinese market. We even wanted to do semi-directive surveys and to make interviews with employees from CRAs. All

of these attempts failed, unfortunately.

Hence, we finally decided to do researches on CRAs under Chinese institutional environment, as an observer. In other words, we studied the CRAs' role, strategy and impact, from the points of view of regulators, issuers and investors, with their interaction with credit rating agencies, by using market data. The sample construction is presented in the general introduction. According to us, it is also one of our major contributions, which we have presented in detail in the introduction) in the thesis.

Structure of the thesis (4)



Before proceeding to the three-dimensional examination of CRAs and its interaction with market actors, we decided to solidify the basis of this doctoral thesis and to recall its structure. We constructed a theoretical framework and presented background information of ratings on Chinese institutional environment (Part One). The analyses of results of rating activities on Chinese market (Part Two) also conversely helped to enrich the discussion of Chinese institutional elements. The interconnection of two parts of the thesis creates a complete circle of reflection.

Inspirations from the Preparatory Part One §1: Theoretical framework and background information

The reasons why we chose Chinese institutional environment as the context of the research of CRAs can be presented as follows:

First of all, there are very few rating studies on the developing countries, emerging markets or transitional economics. Chinese market is one of these markets and it has attracted international attention because of its “economic miracle”. What can we learn from its financial and business model is a popular academic topic in recent years. In addition, I wanted to start my research on CRAs from a market, with which I am more familiar than others.

Secondly, we are intrigued by the idea of a comparative study between China and Europe. This kind of study has never been done before, as far as we know in the literature review.

European market has its specialty “unity in diversity”. We have examples from the “New Europe” as transitional economics. We have also Rhenish capitalism example, with banking as the core of the financial system. European rating regulation has been through a huge evolution since financial crisis in 2008 and European sovereign debt crisis. It gives us enough inspirations to think of.

Thirdly, we are aware that a pure imitation of methodologies found in the literature review is not a suitable way to study CRAs, especially when we want to take into account Chinese institutional environment. It is because in the field of study, almost all of the regular patterns in the theories and empirical findings are concluded and found in the developing market, especially in the USA market. This’s the reason why the discussion of background information about the Chinese institutional market characteristics is essential to a research on “Credit Rating Agency (CRAs)”.

The theoretical framework and background information enable us to get enough sources to compare the differences and similarities between China and Europe, and hence to build adequate hypotheses, more suitable to study an emerging market and a transitional economics.

In the Chapter I, we went through the history of the *Theory of Institutionalism*. We applied the theory firstly to the organization (Section 1), and secondly to the CRAs (Section 2). In the same spirit, we adapted three classic theories on CRAs to Chinese institutional environment (Section 3). Some of these institutional elements serve the discussion of background information, and they help enrich the construction of the hypotheses in the following chapters.

Chinese institutional elements	Why is it useful?	Where is it in the thesis?
Formal and informal sources of institutional pressure	Rating regulations and norms vs. Guanxi and connection	Chapter IV
	Ownership of global/local CRAs, reputational mechanism, competitive environment and CRAs' corresponding strategies	Chapter V
Interaction of CRAs with the environment	Three-dimensional study of CRAs, and interaction with market actors	Chapter III
	Qualitative study for rating regulations and norms	Chapter IV, Section 1
	Study of multi-ratings samples (initial ratings, credit rating changes and watch-list)	Chapter IV, Section 3
	Strategy of CRAs in giving initial issuer ratings	Chapter V
	Informative impacts and analyses of rating events on investors' stock returns	Chapter VI
Institutional changes	Chinese State-capitalism and socialist economics	Chapter II
	Regulatory mechanism and comparison with European cases	Chapter III, Section 1
	Rating regulations and norms	Chapter IV, Section 1
	A general glance at Chinese rating business	Chapter IV, Section 2
	Analysis of Chinese local rating market: time-varying effect	Chapter V, Section 1
Behavioral isomorphism and distinctiveness as a balancing strategy	Strategy of CRAs in giving initial issuer ratings, in order to survive under the institutional pressure: agency-conduct effect	Chapter V, Section 1& section 3
Three-pillars of institutional environment	Qualitative study for rating regulations and norms	Chapter IV, Section 1

In Chapter II, we made a review of the evolution of Chinese State-Capitalism (Section 1) and the presentation of Chinese market environment (Section 2&3, for the stock market and bond market), in the Chapter II. Thanks to the “Reform and Opening-up policy”, financial capital is able to cross the Chinese borders. However, Chinese socialist market preserves its special institutional characteristics.

The following table explains the contributions that the Chapter II could have, to the existing theoretical, conceptual and empirical examinations of rating activities.

Chinese institutional elements	Why is it useful?	Where is it in the Empirical Part Two §2?
Reform and Opening-up policy and increasing issuing and investing of corporate bonds with regulatory reforms	Regulatory mechanism and comparison with European cases	Chapter III, Section 1
	Rating regulations and norms	Chapter IV, Section 1
	A general glance at Chinese rating business	Chapter IV, section 2
	Analysis of Chinese local rating market: time-varying effect	Chapter V, section 1
Segmentation of the market	Qualitative study for rating regulations and norms: comparison between Continental China and Hong Kong	Chapter IV, section 1
	Hypothesis 2 and result presentation of CRCs on A share, H share and double-listed shared segments	Chapter VI, section 1&2

In Chapter III, we tried to cast lights on CRAs from the points of view of three market actors: regulators, issuers and investors, under Chinese institutional environment. There are three sections dedicating to explain their viewpoints respectively.

The objective of this chapter was to examine, among others, the strict and confusing regulatory standards, the diverse types of information from the issuers, the different kinds of investors (domestic vs. foreign; individual vs. institutional), and two competing spirits (investment vs. speculation) on Chinese market environment...

We completed the discussion with a comparison between Chinese cases with European cases (especially German and New European transitional economics).

The discussion of Chinese market background information is useful in the empirical Part Two §2. Actually, along with literature review and theoretical framework, these elements constitute our sources of inspiration to construct the hypotheses. To be specific, these elements from Chinese institutional environment are:

Chinese institutional elements	Why is it useful?	Where is it in the Empirical Part Two §2?
Chinese regulatory mechanism, comparison and interaction with CRAs	Qualitative study for rating regulations and norms: comparison between European and Chinese cases	Chapter IV, Section 1
Issuers and information collection: hard, soft, and beyond firm-specific information: cross-industry & cross-regional information	Strategic choices of rating determinants for initial issuer ratings	Chapter V, Section 2
	Hypotheses and result presentation of impact of CRCs, sorted by Chinese institutional factors	Chapter VI, Section 1&2
	Cross-sectional analysis for the causes of abnormal returns (ARs): the selection of variables	Chapter VI, Section 3
Interaction of CRAs with issuers	Study of multi-ratings samples (initial ratings, credit rating changes and watch-lists)	Chapter IV, section 3
	Strategy of CRAs in giving initial issuer ratings	Chapter V
Interaction of CRAs with investors	Study of multi-ratings samples (initial ratings, credit rating changes and watch-lists)	Chapter IV, section 3
	Informative impact and analyses of rating events on investors' stock returns	Chapter VI

Analyses of results from Empirical Part Two §2

We performed a hypothetical-deductive epistemological approach. We used theoretical framework and background information in the Preparatory Part Two §2, as well as literature review at the beginning of each chapter in the Empirical Part Two §2, to construct hypotheses.

As for the methodology, we presented a diagram in the “General Introduction” to illustrate the details. Basically, there are three types of methodology that we employed in the thesis: qualitative, quantitative, and comparative approaches of methodology. We adopted different statistical techniques, econometric models and testing samples, according to the subjects that we studied: role (Chapter IV), strategy (Chapter V) and impact (Chapter VI) of CRAs. Here, we will present the results and analyses of results of the following three chapters, in the Empirical Part Two §2.

In Chapter IV, we studied the role of CRAs and how they are expected by regulators/norms, issuers and investors.

The results of each Section of the chapter are presented separately.

First of all (in the Section 1), we performed a qualitative study for official documents of rating laws, rules, regulations and norms. We ran frequency tests to find the words most repeated by authorities/industrial norms, and we compared European, Russian and Chinese cases on these two institutional pillars.

The comparison concerns three aspects:

- ✓ Comparison between regulative and normative sources of institutional pressure. They are two pillars of the *Theory of New-institutionalism*;
- ✓ Comparison between European and Russian cases; and comparison between Continental Chinese and Hong Kong cases. They are horizontal comparisons: (developed markets vs. emerging markets);

- ✓ Comparison between European and HK cases and comparison between Russian and Continental Chinese cases. They are vertical comparisons: European cases vs. Chinese cases.

Through these comparisons, we have come to the following conclusions:

- ✓ Rating activities are more supervised in HK than in Mainland China. There are more guidelines in the rating regulations and norms talking about the agency establishment, and there exist real punishments, when CRAs misbehaved in Hong Kong;
- ✓ The written texts are relatively brief and imprecise, under Chinese institutional environment. We speculate hence that informal institutional elements (such as *Guanxi* and connections) are more decisive in rating business in Mainland China;
- ✓ In Chinese rating regulations and norms, the actual difficulty to get access to the market for global CRAs is not very explicit. Laws never pronounced the word “forbiddances”. However, global CRAs are not able to be registered or get rightful license for rating business without partnership with local CRAs *de facto*;
- ✓ CRAs are expected to play role mainly in the process of debt loaning, and they are not expected to take other responsibilities in addition to evaluate the credit risk on the financial market in the Mainland, except for the fact that debt issuing obliges ratings on a certain level.
- ✓ No alternatives are waiting to replace CRAs and their functions on Chinese markets.

Secondly (in the Section 2), we constructed our samples for the following quantitative tests. What can be learnt from the preliminary descriptive tests is listed below:

- ✓ With the time going by, 1) There are more and more initial ratings and rating events (credit rating changes and WLs); 2) There are more issuer ratings than issue ratings; 3) Rating level remains on a high level in the post-2005 period of Chinese rating history.
- ✓ Chi-square tests for initial ratings tell us that the market segmentation is an important Chinese institutional factor. Statistically speaking, the listing place is significantly connected to the type of CRAs. In general, Global CRAs rate in HK segment and local CRAs rate in Continental China segment.

- ✓ We used migration tables to illustrate the number, level and magnitude of upgrades and downgrades. Combining the results of Chi-square tests for credit rating changes and other relevant information, we can conclude that, in our sample, global CRAs give more speculation-grade ratings, while local CRAs give more investment-grade ratings.
- ✓ The descriptive data tells us that global CRAs are more inclined to give watch-lists than their local counterparts.

Thirdly (in the Section 3), we employed multi-rating samples to study initial ratings, credit rating changes and watch-lists, from the viewpoints of issuers and investors.

The results can be summarized as follows:

- ✓ When we studied the initial ratings, we found that for issuers,
 - 1) The fact to be rated does not aim to get a better coverage in media (the null hypothesis of “investment communication effect” is rejected);
 - 2) Statistically speaking, issuers were rated on the “speculation grade” at first (initial ratings) have significantly more motivation to solicit double-ratings (the null hypothesis of “threshold effect” confirmed);
 - 3) The validation of the null hypothesis of “tiebreak effect” depends on types of CRAs. In the case of local CRAs and when the second ratings are bad, issuers tend to solicit third ratings from local CRAs; However, in the case of global CRAs, issuers don’t solicit the third ratings to have an arbitrage from two previous ratings;
 - 4) It is true that financial institutions have more probability to solicit multi-ratings (the null hypothesis of “industry effect” is valid).
 - 5) We found that for investors, they are very dubious of multi-ratings, in the fear of “rating shopping”. They are especially cautious in using these ratings, especially when split rating happens.
- ✓ When we studied the credit rating changes, we concluded that “the asynchronous changes in ratings” among CRAs resulted from the strategies of each agency. Some choose to have rating modification lags, out of the “reputation concern”. They are also aware of the *Trade-off Theory* between stability and timeliness (two conflicting rating

qualities). Consequently, these two “endogenous and exogenous causes” lead to the fact that one CRA could be “leader” of credit rating changes, while other(s) would be the followers. In most cases, we observed that the modifications are within one notch, in terms of the magnitude.

- ✓ When we studied the watch-lists, we found that WLs remained a novelty under Chinese rating context. Based on two data descriptions on the sample of WLs given by global CRAs, we found that Moody’s and S&P rated alike, while S&P National rated two notches higher than S&P, in average.

In the Chapter V, we illustrated the importance to consider the agency-conduct effect of different types of CRAs and time-varying effect, not only between global CRAs and local CRAs, but also between Chinese local top three CRAs (Chengxin, Lianhe and Dagong) and new rating market entrants: SBCR and CCRC (*in the Section 1*).

The rating determinants include four categories: hard information (financial ratios), soft information (especially corporate governance), stock market-related information and macro-economic information. We also took into account Chinese institutional factors in the discussion (*in the Section 2*).

We ran logistical models (both binomial and ordered multinomial) to explore the strategic choices for both global and local CRAs, in giving initial issuer ratings of speculation grade vs. investment grade, or ratings of different level inside the investment grade (*in the Section 3*). The results can be resumed as follows:

Models	Strategy	Determinants that are more likely to be associated with the strategy
Binomial logistical model	How issuers get their initial ratings on the speculation grade, instead of investment grade?	Global CRAs and Xinhua (compared to Chinese local CRAs), high level of debt/asset ratio and Price-to-EBITDA ratio
Ordered multinomial logistical model	How issuers get ratings of better level inside the investment grade?	Chinese local CRAs (compared to Global CRAs and Xinhua), higher interest coverage, bigger board size, the existence of stock market turbulence

In order to response to the hypotheses that we constituted in the Section 1&2, and to analyze the strategic rating behaviors of CRAs (from the point of view of time-varying effect and agency-conduct effect), we can summarize the results of logistic models in the previous table:

- ✓ We did not find actual time-varying effect for CRAs' strategic behaviors under Chinese institutional environment.
- ✓ Xinhua rated more conservatively than other local CRAs.
- ✓ Chengxin and Lianhe rated differently one from the other. The probability to have a better rating on the investment grade is higher for Chengxin than for Lianhe.
- ✓ Dagong rated more severely than other local competitors (compared to Chengxin and Lianhe, among Chinese top Three).
- ✓ Strategic rating behaviors of SBCR remained unclear on the current sample.
- ✓ CCRC rated more severely than the rest of local competitors.

More results can be found in the Section 3 of Chapter V. We can find a certain level of consistency between these results and the results from the descriptive data of Section 2 of Chapter IV⁸⁷³.

In the Chapter VI, we showed at the beginning of the chapter, that most previous results concerning the market reactions to Credit Rating Changes (CRCs) are prevailed in the American and European capital markets, in the Subsection 1.1. Consequently, there is no doubt that a rating study on the context of Chinese institutional environment may contribute to the entire academic research.

According to the elements that we sorted from the previous background information, we were able to construct five other hypotheses on five different subsamples, in addition to the general results from the entire sample of downgrades and upgrades. We tried to take into consideration the influence of financial crisis (in 2008), the segmentation of stock market, and the difference between global and local agencies,

⁸⁷³ To recall the content of the Section 2 of Chapter IV, we performed some preliminary tests (e.g. chi-squares tests) based on the samples for quantitative study.

the ownership (concentrated or dispersed) of the public-listed companies and the existence of proceeding WLs (in the Subsection 1.2).

The process to treat the contamination and the sample description were explained and presented in the Subsection 1.3.

We used a classic “event study” with daily stock returns (market model that we presented in the Subsection 2.1). In order to confirm/reject previous hypotheses, we employed OLS and Garch estimation model, and the existence of significant abnormal returns was confirmed with parametric and non-parametric tests.

It turns out that there is, generally speaking, no informative impact of CRCs on the Chinese stock market during the timeline 1988-2016 (in the Subsection 2.2).

The other results are presented as follows (we only computed significant informative impacts in the table). They include both downgrades and upgrades (in the Subsection 2.3 and Subsection 2.4).

Downgrades			
Subsample	Direction of the market reaction	Magnitude (star) of the market reaction	Duration
Before the crisis	Negative	Low-level for parametric tests and strong-level for non-parametric tests	The event day
Double-listing shares	Positive	Strong-level for the event window (-1,1), medium-level for (-5,5)	A week before and after the event day
Global CRAs	Positive	Medium-level	The event day
Local CRAs	Negative	Medium-level for parametric tests and strong-level for non-parametric tests	The event day

Upgrades			
Subsample	Direction of the market reaction	Magnitude (star) of the market reaction	Duration
Before the crisis	Positive	Medium-level	Two to three weeks after the event day
Global CRAs	Positive	Medium-level	Between one and three weeks after the event day
Public-listed companies with dispersed ownership	Negative	Medium-level	The event day, surrounding event windows and windows after the event day
WLs-preceded CRCs	Negative	Low-level	Event day

Other information shows that the negative Watch-lists (WLs) are more informative than positive WLs, in the Subsection 3.2.

Negative watch-lists			
General results	Positive market reaction	Strong-level market reactions	Two to three weeks after the event day
Positive watch-lists: no market reaction			

Comparing the result analyses of watch-lists (WLs) to those of general results of credit rating changes (CRCs), we can conclude that: upgrades (there are negative prior market reactions in the pre-event-day windows) are more informative than positive WLs. By contrast, downgrades are less informative than negative WL, for both pre-event-day and post-event-day windows.

In addition to the event study with a classic market model, we also performed a cross-sectional analysis (with the model of multiple linear regression and stepwise option). We explored the causes of abnormal returns, and we found that the “industry type” is an important factor in the explanation, in the Subsection 3.1.

Perspectives and future projects

When the thesis comes to the end, we went back and reexamined the writing of this thesis. We would concede a few improvements, in spite of all contributions that could make to the entire research landscape of ratings.

A few elements from the thesis can be presented as follow:

- ✓ It needs to add more detailed elements in presenting background information concerning Chinese rating business, in terms of institutional regulations, for instance: it is also important to update this information, given the fact that institutional changes and environmental evolution are important factors for developing markets.
- ✓ Another example can be put forward in the Empirical Part. We acknowledge that the division line to differentiate “before” and “after” crisis (2008) may not be wise enough (we took the day when Lehman Brothers declared bankruptcy on 15/09/2008 as the division line). It may be more suitable to take a transitory period as a phase of “during the crisis”, instead of taking a milestone day to mark the history so abruptly.
- ✓ Our exploration of econometrics needs to go further and develop more in depth. In the following study, we aim to diversify and extend our methodology. Triggered and inspired by more theories and academic findings, we aim to in the future to continue to refine our statistical models, for logistic regressions and event studies, for instance. At the same time, we are looking forward to searching for even more suitable methods to study CRAs, under Chinese institutional environment.

To sum up, we still believe that it is a very interesting topic with far-reaching meanings of research, and it deserves more devotion, attention and efforts, in order to unearth more treasures inside.

During my doctoral period, I made four communications papers, attended a workshop (dedicated to the bond market analysis) and a summer school (about institutional studies). I have two ongoing projects of publication with my director and some other researches from the Research Center CEREFIGE .

In comparison with other Ph.D. theses composed of published essays, I may have some delay to get my own articles published. However, the reason I chose (with the

agreement of my director) to publish our articles after having accomplished this thesis is that we believe it necessary to have a complete vision of my research question. A clear blueprint of research topics should be set out at first. Consequently, I spent almost all of my efforts on conceiving a classic thesis, with a complete structure, which includes theories, background information, hypotheses (epistemological approach) methodology, and finally the analyses of results.

We are able to discover the three facets of CRAs, in the interaction with three market actors: regulators, issuers and investors. It provides us with plenty of possibilities for the reevaluation of the content from the thesis, by means of further publications. The following table summarizes our research outputs and what we could do with in the thesis.

Where in the thesis	Part One	Communication paper(s)	Publication project(s)
Chapter I	Application of the New-institutionalism Theory to Chinese rating environment		
Chapter II and III	Chinese bond market and CRAs: issuing, investing and regulation		
Where in the thesis	Part Two	Communication paper(s)	Publication project(s)
Chapter IV	Qualitative study for rating regulations and norms: a comparative perspective	2 contributions	
Chapter IV	Study of multi-ratings from viewpoint of issuers and investors		
Chapter V	Analysis of Chinese local rating market. their strategies and rating determination of giving initial issuer ratings (logistic models)		Ongoing
Chapter VI	Informative impact of CRCs, WLs and the analysis of their causes (the consideration of Chinese institutional factors)	2 contributions	Ongoing ⁸⁷⁴

My future research interest is to deepen my understanding of CRAs, under Chinese market institutional environment, but not only. Additionally, we also intend to explore other emerging countries and transitory economies in the future study, in order to embed a suitable study of CRAs in their local institutional environment.

⁸⁷⁴ A communication paper entitled “The impact of credit rating agencies on the Chinese markets: A comparison between Chinese and International Agencies”, with two colleagues has been accepted recently.

Bibliography

Books

Audit Mathias, et al (Eds.). *Conflits de lois et régulation économique : L'expérience du marché intérieur*. Paris : Lextenso éditions(L.G.D.J), 2008.

Assouly Judith, *Morale ou finance ? La déontologie dans les pratiques financières*, Paris, Presses de Sciences Po, coll. « Nouveaux débats », 2013, 200 pages.

Barou, Nicolas, et al. *La Chine : un colosse Financier ? Le système financier chinois à l'aube du XXIème siècle*. Paris: Vuibert (Europe-Asie Finance (EUROASH)), 2006.

Berger P.L. and Luckmann. T. *The social construction of reality*. Penguin Book (USA). 1966 (First edition).

Bobulescu, Roxana and Ulgen, Faruk. *Organisation industrielle: Dynamique des marches et strategies des firmes*. Bruxelles : De Boeck Supérieur, 2012.

Bonneau, Thierry. *Régulation bancaire et financière européenne et internationale*. Bruxelles: Bruylant, 2012. And the 2ème édition, 2014.

Brottes, Jérémy et al. *Les codes commentés larcier : Code européen des marchés financiers*. Louvain-la-Neuve: Larcier, 2011.

Campell JY, Lo AW and McKinlay AC. *The econometrics of financial markets*. New Jersey: Princeton University Press, 1997.

Charreaux, Gérard and Wirtz, Peter. *Gouvernance des entreprises : nouvelles perspectives*. Paris : Economica, 2006.

Dembinski, Paul H., *Éthique et Responsabilité en Finance: Quo vadis ?* RB Edition (Paris), 2015.

Della Faille, Patrick. *La modernisation des marchés financiers: Transposition en droit belge de la directive MiFID*. Louvain-la-Neuve : Anthemis, 2008.

Emonet-Fournier, Caroline et al. *Les marchés européens de NYSE Euronext*. Paris: Economica, 2010.

Fei, Hsiao-táung. 1992, *From the Soil, the Foundations of Chinese Society: A Translation of Fei Xiaotong's Xiangtu Zhongguo* (by Hamilton, Gary G; Wang, Zheng), with an Introduction and Epilogue, Berkeley: University of California Press, 1992/1947.

Fournier-Emonet Caroline and Sayegh-Guermas Lila : *La réglementation des marchés financiers européens*, Paris: Economica, 2007.

Gao, Jian. Debt capital markets in China. (Chinese version), Beijing: Economic Science Press, 2009.

Green, Stephen. China's Stock Market - A Guide to its Progress, Players and Prospects. The economist Newspaper Ltd, 2003.

Hawley, H. Amos. Roderick D. McKenzie. on Human Ecology. Chicago: The University of Chicago Press. 1968.

Igalens Jaquaes et Point Sébastien, Vers une nouvelle gouvernance des entreprises - L'entreprise face à ses parties prenantes, Dunod(Paris). 2009.

Jakob de Haan, Sander Oosterloo, and Dirk Schoenmaker, European Financial Markets and Institutions. Cambridge University Press (UK), 2009.

Jo Hatch, Mary and Cunliffe, Ann L. Organization theory: Modern, symbolic, and postmodern perspectives. Oxford University Press (New York), 2006.

John H. Dunning and Changsu Kim, The Cultural Roots of Guanxi: An Exploratory Study, The World Economy, 2007.

Kim, K.A., Nofsinger, J.R., Mohr, D. Corporate Governance, 3rd edition. Pearson Prentice Hall Publishers, Upper Saddle River, New York. 2010.

Koleva, Petia. Rodet-Kroichvili, Nathalie et Vercueil, Julien (eds). Nouvelles Europes: Trajectoires et enjeux économiques. Pôle éditorial de l'Université de Technologie de Belfort-Montbéliard, décembre 2006.

Kharoubi Cécile et Thomas Philippe, Analyse du risque de crédit: Banque & Marché, RB (Paris), 2013.

Kruck, Andreas. Private Ratings, Public Regulations: Credit Rating Agencies and Global Financial Governance, in the series of Transformations of the State, UK: Palgrave Macmillan, 2011.

Lacroix, André and Marchildon, Allison , Quelle éthique pour la finance?: portrait et analyse de la finance socialement responsable, Presses Université Du Québec (Québec). 2013.

Langohr Herwig M. and Langohr Patricia T. The Rating Agencies and Their Credit Rating: What They Are, How They Work and Why They Are Relevant. Chichester: John Wiley & Sons Ltd. 2008.

Levich, Richard M, Majnoni Giovanni, Reinhart Carmen (Eds.). Ratings, rating agencies and the global financial system. Salomon Center series on financial markets and institutions (New York

- University). New York: Springer Science and Business Media, LLC, 2002.
- Ly-Baro, Fatimata. Structure financière de l'Entreprise. *Economia*, 2002.
- Martin, Didier. Règlement général de l'autorité des marchés financiers (AMF) 2013. Paris : LexisNexis, 2013.
- Mattarocci, Gianluca. The Independence of Credit Rating Agencies- How Business Models and Regulators Interact. Elsevier, 2014.
- Matthews, David J. Ruined in a Conventional Way: Responses to Credit Ratings' Role in Credit Crises, *Northwestern Journal of International Law & Business*, 2009.
- Mintzberg, Henry, Structure et dynamique des organisations, Edition d'Organisation. 1982.
- Naughton, B. The Chinese Economy: Transitions and Growth. Cambridge: MIT Press. 2007.
- North, Douglas. Institutions, institutional change and economic performance. Cambridge University Press. 1990.
- North, Douglas. Understanding the Process of Economic Change. Princeton University Press. 2007.
- Paget-Blanc Eric, and Painvin Nicolas. La notation financière: Rôle des agences et méthodes de notation. Paris : Dunod, 2007.
- Pichet, Eric. Le gouvernement d'entreprise dans les grandes sociétés cotées : de la convergence des pratiques à l'émergence de principes de bonne gouvernance. Les éditions du siècle, 2009.
- Powell and DiMaggio. The new institutionalism in organizational analysis, University of Chicago Press. 1991.
- Raimbourg, Philippe. Les agences de rating. Paris: Economica, 1990.
- Scott, Richard. W, Institutions and Organization, Foundations for Organizational Science, Sage Publications. 1995.
- Scott, Richard. W. Organization: rational, natural and open systems (1981, first edition). 2003 (Fifth Edition).
- Sinclair, Timothy J. The New Masters of Capital: American Bond Rating Agencies and the Politics of Creditworthiness. USA: Cornell University Press, 2008.
- Snyder, Francis, et al (Eds.). The "visible hand" (La « main visible »). Bruxelles: Bruylant, 2012.

Sotiropoulou Anastasia. Les obligations d'information des sociétés cotées : En droit de l'Union Européenne. Bruxelles: Larcier, 2012.

Tang Shiping, A General Theory of Institutional Change, Routledge/Taylor & Francis (London), 2011.

Tony Waters and Dagmar Waters, Weber's Rationalism and Modern Society, Palgrave Books. 2015.

Valette Jean-Paul, Régulation des marchés financiers. Ellipses (Paris), 2013.

Walter, C.E., and F.J.T. Howie. Red Capitalism: The Fragile Financial Foundation of China's Extraordinary Rise. Singapore: John Wiley & Sons (Asia). 2015.

Weber, Max. Economy and Society. University of California Press. 1922,

Weick, Karl, E. The social psychology of Organizing, Reading, Ma: Addison-Wesley. 1969.

Weick, Karl, E. (Second Edition), The social psychology of Organizing, Reading, Ma: Addison-Wesley. 1979.

高汉：金融创新背景下的信用评级及监管的法律经济学分析。北京：法律出版社，2012。

李振宇，等（编著），资信评级原理（Principle of credit rating）。北京：中国方正出版社，2010。

彭秀坤，国际社会信用评级机构规则及其改革研究（Research on the International Community's Regulation and Reformation of Credit Rating Agencies.）北京：中国民主法治出版社，2015。

姜楠，信用评级机构监管研究：后危机时代（Study of regulations for Credit rating agencies : post-crisis）。北京：经济日报出版社，2014。

王一兵，信用资本问题研究（Studies on Credit Capital）。北京：中国金融出版社，2008。

袁敏，资信评级的功能检验与质量控制研究（Study of Credit rating agencies' functions and quality control）。上海：立信会计出版社，2007。

Articles

Abad-Romero, P. and Robles-Fernandez M.D. 2006, "Risk and return around bond rating changes: New evidence from the Spanish stock market", *Journal of Business Finance & Accounting*, 33(5-6): page 885-908.

Abad-Romero, P. and Robles-Fernandez M.D. 2007, "Bond rating changes and stock returns: evidence from the Spanish stock market". *Spanish Economic Review*. Volume 9, Issue 2, pp 79-103.

Afik. Z., Feinstein. I and Galil. K. 2014, "The (un)informative value of credit rating announcements in small markets". *Journal of Financial Stability* 14, page 66-80.

Akerlof, George, 1970, "The Market for "Lemons": Quality Uncertainty and the Market Mechanism". *The Quarterly Journal of Economics*, Volume. 84, No. 3, page 488-500.

Akhigbe, A, J. Madura, and A. M. Whyte. 1997. "Intra-Industry Effects of Bond Rating Changes." *Journal of Financial Research* 20: 545-561.

Akins, B. 2012. "Financial reporting quality and uncertainty about credit risk among the ratings agencies". *Working Paper*.

Alali Fatima et al. 2012. "The effect of corporate governance on firm's credit ratings: further evidence using governance scores in the United States". *Accounting and Finance*, 52(2012): 291-312.

Altman, E., and Saunders, A. 1998, "Credit risk measurement: Development over the last 20 years." *Journal of Banking & Finance*, P.1721-1742. 20 pages.

Altman, E., and Rijken, H. 2004a, "How Rating Agencies Achieve Rating Stability." In: R. Cantor, Ed. Recent Research on Credit Ratings (special issue). *Journal of Banking and Finance*, 28.

Altman, E., and Rijken, H. 2004b, "What do we prefer: Stable rating ratings or timely ratings?", *Treasury Affairs*, Volume 1(2), 2004.

Altman, E., and Rijken, H. 2005a, "The Effects of Rating Through-the-cycle on Rating Stability, Rating Timeliness and Default-prediction Performance", *Financial Analysts Journal*.

Altman, E., and Rijken, H. 2005b, "The Impact of the Rating Agencies' Through-the-cycle Methodology on Rating Dynamics", *Economic Notes by Banca Monte dei Paschi di Siena SpA*, Vol. 34, no. 2, pp. 127-15.

Altman, E., and Rijken, H. 2006, "A point-in-time perspective on through-the-cycle rating", *Financial Analysis Journal*, Volume 62, Number 1.

Alsakka R. et al. 2015, "Market Impact under a New Regulatory Regime". *Economic Notes by Banca Monte dei Paschi di Siena SpA*, Vol. 44, No. 2: pp. 275–307

Aman, Hiroyuki and Nguyen, Pascal. 2013, "Does good governance matter to debtholders? Evidence from the credit ratings of Japanese firms", *Research in International Business and Finance*, 29: 14– 34.

Amato, Jeffery D. and Furfine, Craig H. 2004, "Are Credit Ratings Procyclical?", *Journal of Banking and Finance*, Special Issue November 2004, Volume. 28, Issue. 11, P. 2641-77.

Ammer, John and Packer, Frank, 2000, "How consistent are credit ratings? A geographic and Sectoral Analysis of Default Risk", Board of Governors of the Federal Reserve System, *International Finance Discussion Papers*.

Aoki. M, 2006, Mechanisms of Endogenous Institutional Change, SIEPR (Stanford Institute for Economic Policy Research), *Discussion Paper* p11.

Arner Douglas W., Hsu, Berry F.C. and Pu, Li Fen. 2010, "Credit Rating in China-Guest Editors' Introduction". *Chinese Law and Government*, vol. 43, no. 3, May–June 2010, pp. 3–7.

Ashbaugh-Skaife, Hollis; Collins, Daniel W.; Lafond, Ryan; 2006, "The effects of corporate governance on firms' credit ratings", *Journal of Accounting and Economics*, October 2006, v. 42, issue. 1-2, P. 203-43.

Bae, Kee-Hong, Kang, Jun-Koo and Wang, Jin. 2015. "Does Increased Competition Affect Credit Ratings? A Reexamination of the Effect of Fitch's Market Share on Credit Ratings in the Corporate Bond Market", *Journal of Financial and Quantitative Analysis*, Vol. 50, No. 5, Oct. 2015, P. 1011–1035.

Baghai, Ramin P., Servaes, Henri, Yamayo, Ane. 2014, "Have Rating Agencies Become More Conservative? Implications for Capital Structure and Debt Pricing". *Journal of Finance*, Vol. 69 Issue 5, Page 1961-2005.

Baglole Joel. 2004, "Credit ratings in China can be mere guesswork". *The Wall Street Journal*. Hong Kong.

Baker, H. Kent and Mansi, Sattar A. 2002, "Assessing Credit Rating Agencies by Bond Issuers and Institutional Investors". *Journal of Business Finance & Accounting*, 29(9) & (10).

Bannier, Christina E. And Hirsch, Christian W. 2010, "The economic function of credit rating agencies – What does the watchlist tell us?", *Journal of Banking & Finance* 34 (2010) 3037–3049.

Barley.S.R. and Tolbert.P.S. 1997. "Institutionalization and structuration: Studying the links between action and institution". *Organization Studies*. 18(1), 93-117.

- Bar-Isaac, H., 2005, "Imperfect Competition and Reputational Commitment", *Economic Letters*, 89(2), November, page167-173.
- Bar-Isaac, H and Shapiro, J., 2011, "Credit Ratings Accuracy and Analyst Incentives" *American Economic Review*. May2011, Vol. 101, Issue 3, P. 120-124.
- Bar-Isaac, H., and Shapiro, J., 2013, "Ratings Quality over the Business Cycle." *Journal of Financial Economics*, 108: page 62–78.
- Barron M.J., Clare A.D., and Thomas S.H., 1997, "The effect of bond rating changes and new ratings on UK stock returns", *Journal of business Finance & Accounting*, 24(3) &9(4), 0306-686X.
- Beaver, W. H., C. Shakespeare, and M. T. Soliman, 2006, "Differential Properties in the Rating of Certified Versus Non-certified Bond-rating Agencies," *Journal of Accounting and Economics*, 42, 303–334.
- Becker, B. and T. Milbourn, 2011, "How did increased competition affect credit ratings?" *Journal of Financial Economics*. 101(3): p. 493-514.
- Bernheim, B. Douglas. 1994. "A Theory of Conformity". *Journal of Political Economy* 102 (5):841–77.
- Bian, Jing, 2015, "Regulating the Chinese credit rating agencies: progress and challenges", *Journal of Money Laundering Control*, Vol. 18, Issue 1, pp. 66 - 80.
- Bheemanagouda and Madegowda, 2010, "Working of Credit Rating Agencies in India: An Analysis of Investors", *Perception, IUP Journal of behavioral finance*, 7 (1-2).
- Bhojraj, S. and Sengupta, P, 2003, "Effect of corporate governance on bond ratings and yields: the role of institutional investors and outside directors". *The journal of business*, 76(3), page 455-476.
- Blume, Marshall, Lim, Felix and MacKinlay, Craig, 1998, "The Declining Credit Quality of U.S. Corporate Debt: Myth or Reality?", *The Journal of Finance*, Vol LIII, No.4.
- Bolton, Patrick, Xavier Freixas, and Joel Shapiro, 2009, "The Credit Rating Game," *NBER Working Paper* No. 14712.
- Bongaerts, D.; K. J. M. Cremers; and W. N. Goetzmann. 2012, "Tiebreaker: Certification and Multiple Credit Ratings." *Journal of Finance*, 67 (2012), 113–152.
- Boot, Arnoud W. A., Milbourn, Todd T., and Schmeits, Anjolein. 2006, "Credit Ratings as Coordination Mechanisms", *Review of financial Studies* 2006:19, 81-118.

- Bottelier, Pieter. 2004, “China’s Emerging Domestic Debt Markets”. *Working paper* for Stanford Center for International Development.
- Bottelier, Pieter. 2005, “China’s Emerging Domestic Debt Markets: Facts and Issues”. *Perspectives*, Volume 6, No. 2, June 30, 2005.
- Bowe, Michael. And Larik, Waseem. 2014, “Split ratings and Differences in Corporate Credit Rating Policy between Moody’s and Standard & Poor’s”, *The Financial Review* 49 (2014) 713–734.
- Brown and Warner, 1984. “Using Daily Stock Returns: The Case of Event Studies”. *Journal of Financial Economics*, 14(1), 3-31.
- Brown, S., Lo, K., & Lys, T. 1999. “Use of R^2 in accounting research: Measuring changes in value relevance over the last four decades”. *Journal of Accounting and Economics*, 28, 83–115.
- Calderoni et al. 2009. “Rating change across Europe”. *Working paper*.
- Camanho, N., Deb, P., and Liu, Z., 2010, “Credit Rating and Competition”, *Working Paper*.
- Campbell T.S. and Kracaw W.A., 1980, “Information Production, Market Signaling, and the Theory of Financial Intermediation” *The Journal of Finance*, Vol. XXXV, N.4, page 863-882.
- Cantor, Richard and Packer, Frank. 1994. “The Credit Rating Industry”. *Federal Reserve Bank of New York Quarterly Review*. 19: P.1–26.
- Cantor, Richard and Packer, Frank. 1995. “The Credit Rating Industry”. *Journal of Fixed Income*. 5(3): P.10–34.
- Cantor, Richard and Packer, Frank. 1996. “Multiple Ratings and Credit Standards: Differences of Opinion in the Credit Rating Industry.” *Federal Reserve Bank of New York Staff Reports* 12: 1–43.
- Cantor, Richard and Packer, Frank. 1997. “Differences of Opinion and Selection Bias in the Credit Rating Industry”, *Journal of Banking and Finance*, 21, P. 1395–1417.
- Cantor, Richard and Packer, Frank and Kevin Cole. 1997. “Split Ratings and the Pricing of Credit Risk.” *Working Paper*. Federal Reserve Bank of New York. New York, New York.
- Cantor R., 2004, “Measuring the quality and consistency of corporate ratings across regions”, Moody’s Investors Service, New York.
- Cantor, Richard. and C. Mann. 2006, “Analyzing the Trade-off between Accuracy and Stability,” *Moody’s Special Comment*.

Cantor, Richard et al. 2007, "The Use of Credit Ratings in Investment Management in the US and Europe". *The Journal of Fixed Income Fall*, Vol. 17, No. 2, P.13-26.

Carling, K., Jacobson, T., Linde, J., & Roszbach, K. 2007. "Corporate credit risk modeling and the macroeconomy". *Journal of Banking and Finance*, 31, 845–868.

Carpenter Jennifer N. et al. 2014, "The Real Value of China's Stock Market". *Working paper*.

Cesaroni Tatiana, 2015, "Procyclicality of credit rating systems: How to manage it", *Journal of Economics and Business* 82 (2015) 62–83.

Chan, K. Menkveld, A and Yang, Z. 2007. "The informativeness of domestic and foreign investors' stock trades: evidence from the perfectly segmented Chinese market". *Journal of Financial Markets*, p 391-415.

Chan-Lee, James H., and Sanghoon Ahn. 2001. "Information Quality of Financial Systems and Economic Development: An Indicators Approach for East Asia". *Asian Development Bank Institute Working Paper* no. 20. Tokyo: Asian Development Bank Institute.

Chen Andrew H., Mazumdar Sumon C., and Surana Rahul, 2011, "China's Corporate Bond Market Development: Security Design Implications of Information Asymmetry". *The Chinese Economy*, vol. 44, no. 5, Sep–Oct2011, P. 6–33.

Chen, Gongmeng, Firth Michael, Xu Liping, 2009. "Does the type of ownership control matter? Evidence from China's listed companies", *Journal of Banking & Finance*, Volume 33, Issue 1, Page 171-181.

Chen Jean J.2004, "Determinants of capital structure of Chinese-listed companies". *Journal of Business Research*, 57 (2004) 1341– 1351.

Chen, Yan-Shing; Ho, Po-Hsin, Lin, Chih-Yung and Tsai, Wei-Che, 2012, "Applying recurrent event analysis to understand the causes of changes in firm credit ratings", *Applied Financial Economics*, 22:12, 977-988.

Cheng, Mei and Neamtii, Monica. 2009, "An empirical analysis of changes in credit rating properties: Timeliness, accuracy and volatility" *Journal of Accounting and Economics*, March 2009, v. 47, issue. 1-2, pp. 108-30.

Chong et al. 2012, "Is the Chinese stock market really inefficient?". *China Economic Review*, P122-137.

Choy E., Gray. S., and Ragnathan, V., 2006, "Effect of credit rating changes on Australian stock returns", *Accounting and Finance* 2006: 46, 755-769.

Chun Chang, Xin Chen, Guanmin Liao, 2014, “What are the reliably important determinants of capital structure in China?” *Pacific-Basin Finance Journal* 30: 87–113.

Chung, Kee H.; Ann Frost, Carol; Kim, Myungsun. Financial Management. 2012, “Characteristics and Information Value of Credit Watches.” *Wiley-Blackwell*, Vol. 41 Issue 1, P.119-158. 40 pages.

Cohen, D. A., Dey, A., & Lys, T. 2004. “Trends in earnings management and informativeness of earnings announcements in the pre- and post-Sarbanes-Oxley periods”. *Working Paper*, Northwestern University.

Cornell Bradford et al., 1989, “Cross-Sectional Regularities in the Response of Stock Prices to Bond Rating Changes”, *Journal of Accounting, Auditing and Finance* 4(4): 460-479.

Cornaggia, J. and Cornaggia K.J. 2013, “Estimating the Costs of Issuer-Paid Credit Ratings”, *The Society for Financial Studies*.

Covaleski and Dirsmith, 1988, “An institutional perspective on the rise, social transformation, and fall of a university budget category”, *Administrative Science Quarterly*. 33: 562-587.

Covitz, Denial.M., and Harrison, Paul, 2003, “Testing conflicts of interest a bond rating agency with market anticipations”. *Federal Reserve Board (USA)*.

Creighton, Adam, Luke Gower, and Anthony J. Richards. 2007. “The Impact of Rating Changes in Australian Financial Markets.” *Pacific-Basin Finance Journal*, 15(1): 1–17.

Crouhy, Michel., Galai, Dan. and Mark, Robert. 2000, “A comparative analysis of current credit risk models”, *Journal of Banking & Finance* 24 (2000) 59-117.

Cruz de Souza Murcia, Flavia et al. 2013. “The informational content of credit ratings in Brazil: an event study”. *Working paper*.

Cruz de Souza Murcia, Flavia et al. 2014, “The determinants of credit rating: Brazilian Evidence”, *Brazilian Administration Review*, V11, N2. Pp 188-209.

Cull, Robert; Li, Wei; Sun, Bo; Xu, Lixin Colin. 2015, “Government Connections and Financial Constraints: Evidence from a Large Representative Sample of Chinese Firms », *Journal of Corporate Finance*, 32, page 271-294.

Dardour Ali, 2013, « L’impact des annonces de notation de crédit sur les valeurs européennes : une comparaison avant et pendant la crise de 2008 ». *Revue d’économie financière*.

Das, Sanjiv R.; Fan, Rong; Geng, Gary. 2002, “Bayesian Migration in Credit Ratings Based on Probabilities of Default. ” *Journal of Fixed Income*. Vol. 12, Issue 3, page 17.

Degos Jean-Guy, Gmiden Oussama Ben and Henchiri Hamel. E., 2012, « Les agences de notation financières: Naissance et évolution d'un oligopole controversé ». *Revue française de gestion*, N.227, page 45-65.

Dichev I.D. and Piotroski J.D., 2001, “The Long-Run Stock Returns Following Bond Ratings Changes”. *The Journal of Finance*, Vol LVI, No.1.

DiMaggio, P. and Powell, W. 1983. “The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields”. *American Sociological Review*, 48: page 147-60.

Dill, William, R, 1958, “Environment as an influence on managerial autonomy”, *Administrative Science Quarterly*, 2:409-43.

Dimitrov et al. 2015. “Impact of the Dodd-Frank Act on Credit Ratings”. *Journal of Financial Economics (JFE)*, 115: page 505-520.

Doumpos, Michael and Zopounidis, Constantin; 2001, “Assessing financial risks using a multicriteria sorting procedure: the case of country risk assessment”, *Omega* 29, 97-109.

Doumpos, M., Kosmidou, K., Baourakis, G., and Zopounidis, C., 2002, “Credit risk assessment using a multicriteria hierarchical discrimination approach: A comparative analysis”. *European Journal of Operational Research* 138 (2002) 392–412.

Doumpos, Michael and Pasiouras, Fotios, 2005, “Developing and Testing Models for Replicating Credit Ratings: A Multicriteria Approach”. *Computational Economics*, 25: 327–341.

Doumpos, Michael; Niklis, Dimitrios; Zopounidis, Constantin; Andriosopoulos, Kostas, 2015, “Combining Accounting Data and a Structural Model for Predicting Credit Ratings: Empirical Evidence from European Listed Firms”, *Journal of Banking and Finance*, V.50, page 599-607.

Downing Chris, Underwood Shane and Xing Yuhang, 2009, “The Relative Informational Efficiency of Stocks and Bonds: An Intraday Analysis”, Oct. 2009, *Journal of Financial and Quantitative Analysis*. Vol. 44, No. 5, pp. 1081–1102.

Du, Yu and Suo, Wulin, 2007, “Assessing Credit Quality from the Equity Market: Can a Structural Approach Forecast Credit Ratings?” *Canadian Journal of Administrative Sciences*, September 2007, Volume. 24, Issue. 3, Page 212-28.

Dyckman. Thomas et al. “Supplement 1984, A Comparison of Event Study Methodologies Using Daily Stock Returns: A Simulation Approach”, *Journal of Accounting Research*, Vol 22.

Ederington, Louis, 1985, “Classification models and bond ratings”, *The Financial Review* 20,237–262.

Ederington, Louis H. 1986, “Why split ratings occur”. *Financial Management*. Vol. 15 Issue 1, P.37-47.

Ederington L.H, Yawitz J.B. and Roberts B.E, 1987, “The informational content of bond rating”, *Journal of Financial Research*, Vol X, No.3.

Ederington L.H, Goh J., 1998, “Bond rating agencies and stock analysts: Who knows what when?”, *Journal of Financial and Quantitative Analysis* 33, 569-585.

Elayan F.A., Maris, B.A., Young P.J. 1986, “The effect of commercial paper rating changes and credit-watch placement on common stock prices”. *The Finance Review*, Vol 31. No.1. P 149-167.

Elayan F.A., Hsu W.H. and Meyer T.O., 2003, “The Informational Content of Credit Rating announcements for Share Prices in a Small Market”, *Journal of Economics and Finance*, Vol 27, No.3.

Elliott Douglas J. and Yan Kai, 2013, “The Chinese Financial System: An Introduction and Overview”. John L. *Thornton China Center Monograph Series*, Number 6.

Ellis, David. M. 1997, “Different Sides of the Same Story: Investors’ and Issuers’ View of Rating Agencies”. *Working paper*.

Elton, E., Martin, J., Gruber, J., Agrawal, D., Mann, C., 2004, “Factors affecting the valuation of corporate bonds. In: Cantor, R. (Ed.), *Recent Research on Credit Ratings (special issue)*”. *Journal of Banking and Finance*, 28 (11).

Fama Eugen F, 1970, “Efficient Capital Markets: a Review of Theory and Empirical Work”. *Journal of Finance*, Vol. 25, pp. 383-417.

Fama, Eugen F, 1980, “Agency problems and the theory of the firm”. *Journal of Political Economy*, 88: pp. 288–307.

Fama, Eugen F, and Jensen, M, 1983, “Separation of ownership and control”, *Journal of Law and Economics*, 26, page 301–325.

Farashahi, Mehdi; Hafsi, Taïeb; Molz, Rick. 2005, “Institutionalized Norms of Conducting Research and Social Realities: A Research Synthesis of Empirical Works from 1983 to 2002”, *International Journal of Management Reviews*, 7 [1], P 13.

Ferguson, Michael J., Kevin C. K. Lam, Grace Meina Lee, 2002, “Voluntary Disclosure by State-owned Enterprises Listed on the Stock Exchange of Hong Kong,” *Journal of International Financial Management and Accounting*, Vol. 13, pp. 125-152.

Ferri, Giovanni.; Liu, Li-Gang; Stiglitz, 1999, “The Procyclical Role of Rating Agencies: Evidence from the East Asian Crisis” *J. E. Economic Notes*. Nov99, Vol. 28 Issue 3, P. 335.

Ferri, Giovanni, Liu Li-Gang, and Majnoni, Giovanni. 2001. “The Role of Rating Agency Assessments in Less Developed Countries: Impact of the Proposed Basel Guidelines”. *Journal of Banking and Finance* 25 (1):115–48.

Ferri, Giovanni and Liu Li-Gang. 2002, “Do Global Credit Rating Agencies Think Globally? *The Information Content of Firm Ratings around the World*”, *Working Paper*.

Ferri, Giovanni and Liu, Li-Gang. 2003, "How do global credit rating agencies rate firms from developing countries?", *Asian Economic Papers*. Sep2003, Vol. 2 Issue 3, P. 30-56. 27 pages.

Figlewski, Stephen; Frydman, Halina; Liang, Weijian; 2012, "Modeling the effect of macroeconomic factors on corporate default and credit rating transitions", *International Review of Economics and Finance*, January 2012, v. 21, issue. 1, P. 87-105.

Filatotchev & Nakajima, 2010, "Internal and External Corporate Governance: An Interface between an Organization and its Environment", *British Journal of Management* (21), page 591-606.

Fischer, Thomas, 2015, "Market Structure and Rating Strategies in Credit Rating Markets--A Dynamic Model with Matching of Heterogeneous Bond Issuers and Rating Agencies" *Journal of Banking and Finance*, Vol. 58, pp. 39-56.

Flannery, Mark J.; Kwan, Simon H.; Nimalendran, M. 2004, "Market evidence on the opaqueness of banking firms' asset"; *Journal of Financial Economics*, March 2004, Volume. 71, Issue. 3, P. 419-60.

Flannery, Mark J.; Kwan, Simon H.; Nimalendran, M. 2013, "The 2007-2009 Financial Crisis and Bank Opaqueness", *Journal of Financial Intermediation*, January 2013, Volume. 22, Issue. 1, P. 55-84.

Followill R.A. and Martell Terrence, 1997, "Bond review and rating change announcements: an examination of informational value and market efficiency", *Journal of Economics and Finance*, Volume 21.

Fons, J., 2002. "Understanding Moody's corporate bond ratings and rating process". *Moody's Special Comment (May)*.

François-Heude. A. and Paget-Blanc.E. 2004, « Les annonces de rating : impact sur le rendement des actions cotées sur Euronext-Paris », *Banque et marchés*, n° 70, pp. 16-28.

Freitas, and Minardi, 2013. "The Impact of Credit Rating Changes in Latin American Stock Markets", *Brazilian Administration Review*, Vol. 10 Issue 4, p439-461.

Froot and Ramadorai, 2008, "Institutional portfolio flows and international investments". *Review Finance Study*, [21], P937-971.

Frost Carol Ann, 2006, "Credit Rating Agencies in Capital Markets: A Review of Research Evidence on Selected Criticisms of the Agencies". *Journal of Accounting, Auditing & Finance*, 22(3).

Gavetti, Giovanni, Greve, Henrich R., Levinthal, Daniel A. & Ocasio, William, 2012. "The Behavioral Theory of the Firm: Assessment and Prospects". *The Academy of Management Annals*, 6:1, Page 1-40.

Glascok John. L. et al. "Announcement effects of Moody's Bond Rating Changes on Equity Returns". *Quarterly Journal of Business & Economics*. Vol. 26, No. 3 (Summer, 1987), pp. 67-78.

Goh Jeremy C., and Ederington Louis H., 1993, "Is a Bond Rating Downgrade Bad News, Good News, or No News for Stockholders?" *The Journal of Finance*, Vol. XLVIII, No. 5.

Goh Jeremy C., and Ederington Louis H., 1999, "Cross-sectional Variation in the Stock Market Reaction to Bond Rating Changes". *The Quarterly Review of Economics and Finance*, Vol 39 [1], Page 101-112.

Gonzales, F., Haas, F., Johannes, R., Persson, M., Toledo, L., Violi, R., Wieland, M., and Zins, C., 2004, "Market dynamics associated with credit ratings: a literature review", *Occasional Paper Series 16*, European Central Bank.

Gopalany, Radhakrishnan; Song, Fenghua; and Yerramilli, Vijay., 2010, "Do Credit Rating Agencies Underestimate Liquidity Risk?", *Working Paper*.

Goswami and Venkatesh. 1999, "Understanding and Use of Credit Rating In India: A Survey of Individual and Institutional Investors", *working paper*, page 17.

Graham, J., Harvey, C. R., & Rajgopal, S. 2005. "The economic implications of corporate financial reporting". *Journal of Accounting and Economics*, 40, page 3-73

Gray, S. Mirkovic, A and Rangunathan, V. 2006. "The determinants of credit ratings: Australian evidence". *Australian Journal of Management*, 31(2), P 333-354.

Griffin P.A. and Sanvicente A.Z, 1982, "Common Stock Returns and Rating Changes: A Methodological Comparison", *The Journal of Finance*, VOL. XXXVII, No.1.

Groenewold et al. 2004, "The dynamic interrelationships between the Greater China share markets". *China Economic Review*, 15, page 45-62.

Gropp R. and Richards A.J., 2001, "Rating Agency Actions and the Pricing of Debt and Equity of European Banks: What can we infer about private sector monitoring of bank soundness?" *Economic notes by Banca Monte dei Paschi di Siena Spa*, Volume 30, pp. 373-398.

Grossman S.J., and Stiglitz J. 1981. "On the impossibility of informationally efficient markets", *American economic Review*, Vol. 70, Issue 3, page 393-408.

- Gul, F.A., Kim, J.-B., Qiu, A.A., 2010. "Ownership concentration, foreign shareholding, audit quality, and stock price synchronicity: evidence from China". *Journal Finance Economy*, 95: page 425–442.
- Güttler, André and Wahrenburg, Mark. 2007, "The adjustment of credit ratings in advance of defaults", *Journal of Banking & Finance*. Mar2007, Vol. 31 Issue 3, P. 751-767. 17 pages.
- Han, Seung Hun, Shin, Yoon S., Reinhart Walter and Moore, William T., 2009, "Market Segmentation effects in corporate Credit Rating changes: the case of emerging markets", *Journal Finance Service Research*. 35: 141-166.
- Hand J., Holthausen R., and Leftwich R., 1992, "The Effect of Bond Rating Agency Announcements on Bond and Stock Prices", *The Journal of Finance*, VOL. XLVII: 2.
- Heflin, F., Shaw, K., and Wild, J., 2011, "Credit ratings and disclosure channels", *Research in accounting regulation*. 23: page 20-33.
- Holthausen. R. and Leftwich, R., 1986, "The effect of bond rating changes on common stock prices". *Journal of Financial Economics* 17: page 57-89.
- Hooper V, Hume T, Kim S, 2005. "Sovereign rating changes: do they provide new information for stock markets?" *Working paper*.
- Howe, John S.; Stephen Haggard, K. 2012. "Are banks opaque", *International Review of Accounting, Banking & Finance*. Spring2012, Vol. 4 Issue 1, p51-72.
- Hung, Jui-Cheng, 2009, "Deregulation and liberalization of the Chinese stock market and the improvement of market efficiency", *The quarterly Review of Economics and Finance*, 843-857.
- Huang M. Wong T. And Zhang T, 2012, "Political considerations in the decision of Chinese SOEs to list in HK". *Journal of Accounting and Economics* [53], P435-449.
- Huang Samuel G. H. and Song Frank M. 2006. "The Determinants of Capital Structure: Evidence from China". *China Economic Review*, Volume 17, Issue 1, Pages 14-36.
- Hubler J., Louargant C., Ory J.N. and Raimbourg P., 2013, "Do rating agencies' decisions impact stock risks? Evidence from European markets", *The European Journal of Finance*, vol. 20, N°11, November, page 1008-1036.
- Hubler J., Laroche P., Louargant C., Ory JN, 2017, "How rating agencies' decisions impact stock markets? A meta-analysis". *Conference paper. 30th Australasian Finance and Banking Conference*, 13-15 December 2017, Sydney, Australia.

Hunt, J.P, 2009, “Credit rating agencies and the ‘worldwide credit crisis’: the limits of reputation, the insufficiency of reform, and a proposal for improvement”. *Columbia Business Law Review*, N.1.

Hsueh, L. Paul and David S. Kidwell, 1988, “Bond ratings are two better than one”, *Financial Management*, Vol. 17, No. 1, pp. 46-53.

Hwang, Ruey-Ching, Chung, Huimin, and Chu, C.K. 2010. “Predicting issuer credit ratings using a semiparametric method”. *Journal of Empirical Finance*. Jan2010.

Hwang, Ruey-Ching, 2013, “Forecasting credit ratings with the varying-coefficient model”, *Quantitative Finance*, 13:12, Page 1947-1965.

Iankova E., Pochon F and Teïletche J., 2009, « L’impact des décisions des agences de notation sur le prix des actions : une comparaison du cas français avec les cas européen et américain ». *Économie et prévision*, 7(188).

Iannotta, Giuliano. 2006, “Testing for Opaqueness in the European Banking Industry: Evidence from Bond Credit Ratings”, *Journal of Financial Services Research*. Dec2006, Vol. 30 Issue 3, P.287-309.

Imbierowicz, B. and Wahrenburg, M. 2013. “Wealth transfer effects between stockholders and bondholders”, *The Quarterly Review of Economics and Finance*, 53, 23-43.

Jason Zezhong Xiao, He Yang, Chee W. Chow, 2004, “The determinants and characteristics of voluntary Internet-based disclosures by listed Chinese companies”, *Journal of Accounting and Public Policy* 23, 191–225.

Jensen M.C. and Meckling W.H. 1976, “Theory of the firm: Managerial behavior, agency costs and ownership structure”, *Journal of Financial Economics*, P305-360.

Jewell, J. and M. Livingston., 1998 “Split Ratings, Bond Yields, and Underwriter Spreads for Industrial Bonds.” *Journal of Financial Research*, 21, P. 185–204.

Jewell, J. and M. Livingston., 1999. “A Comparison of Bond Ratings from Moody's, S&P, and Fitch”, *Financial Markets, Institutions and Instruments*. Volume. 8, Number. 4.

Jewell, J. and M. Livingston., 2000. “The impact of a Third Credit Rating on the Pricing of bonds”, *Journal of Fixed Income*, 19(3), page 69-85.

Jiang, J., M. Stanford, and Y. Xie, 2012, “Does It Matter Who Pays for Bond Ratings?” *Journal of Financial Economics*. 105: 607–621.

Jiang F. and Kim. K, A. 2015, “Corporate governance in China: A modern perspective”. *Journal of Corporate Finance*, 32, P 190-216.

- Jiang, Xianfeng, and Paker, Frank, 2017, “Credit Ratings of Domestic and Global Agencies: What Drives the Differences in China and How are They Priced?” *BIS Working Paper* No. 648, 36 Pages.
- Jones, Jeffrey S.; Lee, Wayne Y.; Yeager, Timothy J. 2012, “Opaque Banks, Price Discovery, and Financial Instability”; *Journal of Financial Intermediation*, Volum 21, Issue. 3, P. 383-408.
- Jorion, Philippe, Liu, Zhu and Shi, Charles. 2005, “Informational effects of regulation FD: Evidence from rating agencies”. *Journal of Financial Economics*. 76: Page 309–330.
- Jorion, Philippe and Zhang, G. 2007, “Information effects of bond rating changes: The role of the rating prior to the announcement”. *The Journal of Fixed Income*, 16(4): page 45-59.
- Jorion, Philippe, Shi, Charles, and Zhang, Sanjian. 2009 “Tightening credit standards: The role of accounting quality”. *Revue Accounting Study*, 14: P. 123–160.
- Kamstra, Mark; Kennedy, Peter, 1998, “Combing qualitative forecasts using logit”. *International Journal of Forecasting*, March 1998, v. 14, issue. 1, pp. 83-93.
- Kamstra, Mark; Kennedy, Peter; Suan, Teck-Kin. 2001, “Combing bond rating forecasts using logit”, *Financial Review*. May2001, Vol. 36 Issue 2, p75. 22p.
- Kaplan R.S. and Urwitz G., 1979, “Statistical Models of Bond Ratings: A Methodological Inquiry”, *Journal of Business*, 52(2):231-261.
- Kenjegaliev, Amangeldi, Duygun Meryem, Mamedshakhova, Djamila, 2016, “Do rating grades convey important information: German evidence?”, *Economic Modeling* 53, page 334-344.
- Kennedy Scott. “China’s Credit Rating Agencies Struggle for Relevance.” *China Business Review*, November–December 2003: 36–40.
- Kerwer, Dieter. 2001. “Standardizing as Governance: The Case of Credit Rating Agencies”. In A. Héritier, ed., *Reinventing European and International Governance*, P. 293–315. Lanham: Rowman & Littlefield.
- Kerwer, Dieter. 2005. “Holding global regulations accountable: The case of CRAs”. *Governance*, Vol. 18, No. 3, July 2005, P. 453–475.
- Kim, Seil; Kraft, Pepa; Ryan, Stephen G.; 2013, “Financial Statement Comparability and Credit Risk”, *Review of Accounting Studies*, v. 18, issue. 3, pp. 783-823
- Kisgen, Darren J. 2006, “Credit ratings and capital structure”, *Journal of Finance*. 61: page 1035-1072.

Kisgen, Darren J. 2007, "The Influence of Credit Ratings on Corporate Capital Structure Decisions". *Journal of Applied Corporate Finance*. Vol. 19 Issue 3, Page 65-73.

Kisgen, Darren J. 2009, "Do firms target credit ratings or leverage levels?", *Journal of Financial and Quantitative Analysis* 44, page 1323-1344.

Kisgen, Darren J. 2010, "Do Regulations Based on Credit Ratings Affect a Firm's Cost of Capital?" *Strahan, Philip E. Review of Financial Studies*. Dec 2010, Vol. 23 Issue 12, p4324-4347. 24 pages.

Klein, Benjamin and Keith B. Leffler, 1984, "The Role of Market Forces in Assuring Contractual Performance", *The Journal of Political Economy*, Vol. 89, No. 4., P. 615-641.

Kliger D. and O. Sarig, 2000, "The information value of bond ratings", *Journal of Finance* 55, page 2879-2902.

Kraft, Pepa, 2010, "The Impact of the Contractual Use of Ratings on the Rating Process - Evidence from Rating Agency Adjustments", *Working paper*.

Kraft, Pepa, 2015a, "Rating Agency Adjustments to GAAP Financial Statements and Their Effect on Ratings and Credit Spreads", *Accounting Review*, March 2015, v. 90, Issue 2, P. 641-74.

Kraft, Pepa, 2015b, "Do rating agencies cater? Evidence from rating-based contracts." *Journal of Accounting & Economics*. Apr 2015, Vol. 59. Issue 2/3, P. 264-283.

Kranton, Rachel E. 2003, "Competition and the Incentive to Produce High Quality", *Economica* (2003) 70, 385-404.

Kruck, Andreas, 2013, "The Regulatory Use of Credit Ratings in Germany and the US: A Resource Dependence View on the Transfer of (Quasi-)Regulatory Authority" *German Policy Studies/Politikfeldanalyse*, Vol. 9 Issue 1, P. 141-176.

Kun Wang, Sewon O, M. Cathy Claiborne, 2008, "Determinants and consequences of voluntary disclosure in an emerging market: Evidence from China", *Journal of International Accounting, Auditing and Taxation* (17), 14-30.

Laitinen, Erkki K. 1999. "Predicting a corporate credit analyst's risk estimate by logistic and linear models." *International Review of Financial Analysis*. Vol. 8 Issue 2, p97. 25pages.

Lal Jawahar and Mamta Mitra. 2011, "Effect of Bond Rating on Share Prices: A Study of Select Indian Companies". *Vision* 15(3) 231-238.

Lam and Du, 2004, "Information asymmetry and estimation risk: preliminary evidence from Chinese equity markets". *Pacific-Basin finance Journal*, 12, page 311-331.

Li, Hong Xiang et al. 2004, “Market Reaction to Credit Rating Announcements in the Irish Stock Market”, *Working Paper*.

Li Hui et al. 2004, “Effects of Credit Rating Announcements: The Swedish Stock Market”. *The International Journal of Finance*. Vol. 16, No. 1.

Li Joanne, Shin Yoon S., Moore William T. 2006 “Reactions of Japanese markets to changes in credit ratings by global and local agencies”. *Journal of Banking & Finance* 30: page 1007–1021.

Li, S., Brockman, P., Zurbuegg, R., 2015. “Cross-listing, firm-specific information, and corporate governance: evidence from Chinese A-share and H-share”. *Journal of Corporate Finance* (32): 347–362.

Li Shan, Brockman, Paul and Zurbuegg Ralf. 2015, “Cross-listing, firm-specific information, and corporate governance: Evidence from Chinese A-shares and H-shares”. *Journal of Corporate Finance* 32. P347-362.

Linciano N. 2004, “One reaction of seek prices to rating changes”, *Working paper*, Commissions nazionale per le societa e la borsa (CONSOB).

Ling Ding, 2012, « Dagong ou les contradictions d'une agence de notation à la fois internationale et patriotique », *Outre-Terre*, 2012/2, n° 32, p. 67-72.

Liu Jianwei and Liu Chunjiao. 2007 “Value Relevance of Accounting Information in Different Stock Market Segments: The Case of Chinese A-, B-, and H-Shares”. *Journal of International Accounting Research*. Vol. 6, No. 2, pp. 55–81.

Livingston, Miles, Andy Naranjo, and Lei Zhou. 2007 “Asset Opaqueness and Split Bond Ratings.” *Financial Management*, 36, P. 49–62.

Livingston, M., A. Naranjo, and L. Zhou, 2008. “Split bond ratings and rating migration”, *Journal of Banking and Finance* 32, 1613–1624.

Livingston, Miles, and Lei Zhou. 2010 “Split Bond Ratings and Information Opacity Premium.” *Financial Management*, 39, 515–32.

Livingston, M., J. Wei, and L. Zhou, 2010. “Moody’s and S&P ratings: Are they equivalent? Conservative ratings and split rated bond yields”, *Journal of Money Credit and Banking*: 42, page 1267–1293.

Löffler, Gunter., 2004a. “Ratings versus market-based measures of default risk in portfolio governance”. In Cantor, R. (Ed.), Recent Research on Credit Ratings (special issue). *Journal of Banking and Finance*. 28(11).

Löffler, Gunter., 2004b. "An Anatomy of Rating through the Cycle." *Journal of Banking & Finance*, 28(3): page 695–720.

Löffler, Gunter., 2005. "Avoiding the Rating Bounce: Why Rating Agencies Are Slow to React to New Information." *Journal of Economic Behavior & Organization*, 56(3): 365–81.

Löffler, Gunter., 2013a, "Can Market Discipline Work in the Case of Rating Agencies? Some Lessons from Moody's Stock Price." *Journal of Financial Services Research*. Vol. 43 Issue 2, P. 149-174. 26 pages.

Löffler, Gunter., 2013b, "Can rating agencies look through the cycle?", *Review of Quantitative Finance & Accounting*. Vol. 40, Issue 4, P.623-646. 24 pages.

Löffler, Gunter., 2013c, "Tower building and stock market returns". *Journal of Financial Research*, Vol. 36 Issue 3, P. 413-434. 22pages.

Lynch, Timothy, E. 2010, "Deeply and persistent conflicted credit rating agencies in the current regulatory environment", *Legal Studies Research Paper* 33, Indiana University. P268.

Lynn, Bai. 2010, "The Performance Disclosures of Credit Rating Agencies: Are they Effective Reputational Sanctions?" New York University, *Journal of Law & Business*. University of Cincinnati Public Law *Research Paper*, No. 11-03.

Mariano, B., 2012, "Market power and reputational concerns in the ratings industry," *Journal of Banking & Finance*.

Matolcsy Z.P. and Lianto T., 1995, "The incremental information content of bond", *Journal of Banking & Finance* 19, 891-902.

Matthew S. Kraatz and Edward J. Zajac, 1996, "Exploring the Limits of the New Institutionalism: The Causes and Consequences of Illegitimate Organizational Change", *American Sociological Review*, 61[5], Page. 812-836.

Mathis, Jérôme. et al. 2008. "Rating the raters: Are reputation concerns powerful enough to discipline rating agencies?", *Journal of Monetary Economics* 56, 657-674.

Matthies. Alexander B., 2013, "Empirical Research on Corporate Credit-Ratings: A Literature Review", SFB 649 *Discussion Paper* 2013-003, Christian Albrechts Universität zu Kiel, Berlin, Germany.

May A.D. 2010, "The impact of bond rating changes on corporate bond prices. New evidence from the over-the-counter market", *Journal of Banking & Finance*. 34: page 2822-2836.

McMillan, John; Naughton, Barry, 1992, "How to Reform a Planned Economy: Lessons from China", *Oxford Review of Economic Policy*, 8 [1], P. 130-43.

- Merton R., 1974 “On the pricing of Corporate debt: the risk structure of interest rates”, *Journal of Finance*, page 449-470.
- Meyer, John W. and Rowan, Brian, 1977, “Institutionalized Organizations: Formal Structure as Myth and Ceremony”, *American Journal of Sociology*, 83(2), p 340-363.
- Millon, M.H. and A.V. Thakor, 1985, “Moral hazard and information sharing: A model of financial information gathering agencies”, *Journal of Finance* 40(5): 1403-1422.
- Möllers, Thomas M.J. and Niedorf, Charis, 2014, “Regulation and Liability of Credit Rating Agencies-A more efficient European Law”. *European Company & Financial Law Review*, 11(3):333-363.
- Moon, C.G. and J.G. Stotsky, 1993. “Testing the differences between the determinants of Moody’s and Standard & Poor’s ratings”, *Journal of Applied Econometrics* 8, 51–69.
- Morgan, Donald P. 2002 “Rating Banks: Risk and Uncertainty in an Opaque Industry”. *American Economic Review*, 92, page 874–88.
- Murcia et al. 2013, “The informational content of credit ratings in Brazil: an event study”. *Working paper*.
- Naya, Nandkumar and Rozeff, Michael S., 1994, “Ratings, Commercial Paper, and Equity Returns”, *The Journal of Finance*: Vol. XLIX, NO. 4.
- Nee, V. 1992, “Organizational Dynamics of Market Transition: Hybrid Firms, Property Rights, and Mixed Economy in China”, *Administrative Science Quarterly*, 31, 1, 1–27.
- Nickell, P., Perraudin, W., Varotto, S., 2000a. “Stability of rating transitions.” *Journal of Banking and Finance* 24, P. 203–227.
- Nickell, P., Perraudin, W., Varotto, S., 2000b. “Ratings-versus equity-based credit risk modelling: An empirical analysis”. *Journal of Banking and Finance* 24 (1/2), page 167-201.
- Nie, Weizhun. 2009. “The worrying situation: 30 out of 80 CRAs on record running at a loss”. *National Business Daily*. Beijing. (In Chinese, translated by the author).
- Norden, L. and Weber, M, 2004, “Informational efficiency of credit default swap and stock markets: the impact of credit rating announcements”. *Journal of Banking & Finance*, 2004, vol. 28, issue 11, 2813-2843.
- North D. 1991, “Institutions”, *The Journal of Economic Perspectives* [5](1).
- Oliver, Christine. 1992. “The antecedents of deinstitutionalization”. *Organizational Studies*, 13: page 563-588.
- Ory J. N., Raimbourg P., 2008, “Credit Rating Agencies’ Function on Bond Markets: Price Stability vs Information Transmission”, *21st Australasian Finance & Banking Conference Program*, Sydney, December, Australia.

- Ory J. N., Raimbourg P., 2015, “European Rating Actions, Investor Reaction, and Bond Spread Volatility”, *Economic Notes by Banca Monte dei Paschi di Siena SpA*, Vol. 44, No. 2-2015: P. 333–360.
- Pacheco, Luís, 2012, “Moody’s Credit Ratings and the stock market performance of Portuguese rated firms”, *Journal of Advanced Studies in Finance*, Volume III: 1 (5).
- Pagano, Margo and Volpin, Paolo, 2009, “Credit Ratings Failures: Causes and Policy Options”. *Working paper*.
- Palthe, Jennifer. 2014. “Regulative, Normative, and Cognitive Elements of Organizations: Implications for Managing Change”, *Management and Organizational Studies*. Vol. 1, No. 2.
- Partnoy, Frank, 1999, “The Siskel and Ebert of Financial Markets? Two Thumbs Down for the Credit Rating Agencies”, *Washington University Law Review*. Volume 77, Issue 3.
- Partnoy, Frank, 2006, “How and why CRAs are not like other gatekeepers”, *Legal Studies Research Paper Series*, Research Paper: No. 07-46.
- Peng, Xiukun., 2015, “Research on the International Community’s Regulation and Reformation of Credit Rating Agencies”, *Press of Chinese Democratic Legal Institutions*, P73. (The original text is in Chinese and translated by the author).
- Pesaran, M.H., Schuermann, T., Treutler, B.J. and Weiner, S.M., 2006, “Macroeconomic dynamics and credit risk: a global perspective”. *Journal Money Credit & Bank.*, 2006, 38, page. 1211–1261.
- Pessarossi P. and Weill, L. 2013, "Choice of Corporate Debt in China: The Role of State Ownership", *China Economic Review*, Vol. 26, 2013, pp. 1-16.
- Petersen, Mitchell, A. 2004. “Information: hard and soft” *Working Paper*.
- Pettigrew, A. M., Woodman, R. W., & Cameron, K. S. 2001. “Studying organizational change and development: challenges for future research”. *Academy of Management Journal*, 44(4), 697-713.
- Pinches, G. E. and Mingo, K. A., 1973. “A multivariate analysis of industrial bond ratings”. *Journal of Finance* 28(1), P. 1–18.
- Pinches G. E. and Clay, S. J., 1978, “The adjustment of stock prices to bond rating changes”. *Journal of financial research*, vol.10, P. 211-226.
- Poon, Winnie P.H. 2003, “Are unsolicited credit ratings biased downward?”, *Journal of Banking & Finance*. Vol. 27 Issue 4.
- Poon, Winnie P.H. and Chan Kam C. 2007, “An Empirical Examination of the Informational Content of Credit Ratings in China”. *Journal of business research*, 61, p.790-797.
- Poon, Winnie P.H. and Chan Kam C. 2008, “The Effects of Credit Ratings on Stock Returns in China” *The Chinese Economy*, vol. 41, no. 2, March–April 2008, P. 34–55.
- Poon, Winnie P.H., Chan, Kam C. and Firth, Michael A. 2013, “Does having a credit rating leave less money on the table when raising capital? A study of credit ratings and seasoned equity offerings in China” *Pacific-Basin Finance Journal*. Vol. 22, P. 88-106.

- Poornima B.G, Umesh N. P, and Reddy Y.V. 2015, “The impact of Changes in Credit Ratings on Stock Returns”, *Journal of Financial Risk Management*, Vol. XII No.
- Pottier, S.W. and D.W. Sommer, 1999, “Property-liability insurer financial strength ratings: differences across rating agencies”, *Journal of Risk and Insurance* 6, 621–642.
- Prime Penelope B. and Qi Li, 2013, “Determinants of Firm Leverage: Evidence from China”. *The Chinese Economy*, vol. 46(2), page 74–106.
- Prohaska, Zdenko and Draženovic, Bojana Olgic, 2013, “Financial Regulation and Supervision in Croatia”, *Working paper*.
- Purda, Lynnette D. 2007, “Stock market reaction to anticipated versus surprise rating changes”, *Journal of Financial Research*. Vol. 30 Issue 2, p301-320. 20pages.
- Raimbourg P., and Ory J-N., 2011, “Are Credit Rating Agencies Useless? The Role of Rating Agencies in European Bond Markets: Information Transmission vs. Spread Stabilization”, *International Conference of the French Finance Association (AFFI)*, page 11-13.
- Raja Bouzouita; Arthur J. Young. 1998, “A probit analysis of best ratings”, *Journal of Insurance Issues*. 21(1):23-34; Western Risk and Insurance Association.
- Rajgopal, S., & Venkatachalam, M. 2005. “Financial reporting quality and idiosyncratic return volatility over the last four decades”. *Working Paper*, University of Washington and Duke University.
- Ricks, William. E, 1984, “Discussion of A Comparison of Event Study Methodologies Using Daily Stock Returns: A Simulation Approach”, *Journal of Accounting Research*, Vol, 22.
- Roland, Gerard, 2014, “Understanding Institutional Change: Fast-Moving and Slow-Moving Institutions, Culture and Economic Growth”. *Studies in Comparative International Development*, December 2004, Volume 38, Issue 4, pp 109–131, in Elgar Research Collection. International Library of Critical Writings in Economics, vol. 292.
- Rousseau, Stéphane. 2006, “Enchanting the accountability of credit rating agencies: the case for a disclosure-based approach”. *McGill Law Journal*.
- Sangiorgi, Francesco, Sokobin, Jonathan and Chester, Spatt, 2009, “Credit-Rating Shopping, Selection and the Equilibrium Structure of Ratings,” *working paper*.
- Santos, J.A.C., 2006. “Why firm access to the bond market differs over the business cycle: A theory and some evidence”, *Journal of Banking and Finance*. 30: page 2715–2736.
- Sasso, Lorenzo, 2016, “A critical analysis of the recent Russian regulation on CRAs”. *Russian Law Journal*, Volume IV, Issue 2.
- Scalet, Steven; Kelly, Thomas. 2012, “The Ethics of Credit Rating Agencies: What Happened and the Way Forward” *Journal of Business Ethics*. Dec2012, Vol. 111 Issue 4, P. 477-490.
- Schüler, M. and F. Heinemann, 2005, “The Costs of Supervisory Fragmentation in Europe”, *ZEW Discussion Paper*, No. 05-01, Mannheim University, Mannheim.

- Schwarcz, Steven. L. 2002. "Private Ordering of Public Markets: The Rating Agency". *University of Illinois Law Review*.
- Selznick, 1996. "Institutionalism, "old" and "new"", *Administrative science quarterly*, 41:275.
- Sehgal Sanjay and Mathur Shruti, 2013, "Cross-sectional variation in Stock Price Reaction on bond rating changes: evidence from India". *Asia Journal of Finance & Accounting*. Vol.5, No2.
- Shin, Yoon S., Moore William T. 2003, "Explaining credit rating differences between Japanese and U.S. Agencies". *Review of Financial Economics*, Issue 12, page 327–344.
- Skreta, Vasiliki and Laura Veldkamp, 2008, "Rating Shopping and Asset Complexity: A theory of Ratings Inflation," *working paper*.
- Spence M., "Job Market Signaling", 1973, *Quarterly Journal of Economics*.
- Strobl, G. and H. Xia, 2012. "The issuer-pay rating model and rating inflation: Evidence from corporate credit ratings". *Working Paper*.
- Steiner, M and Volker H, 2001, "Event study concerning international bond price effects of credit rating actions", *International Journal of Finance and Economics*, P 139-57.
- Stigler, George. J. 1972. "The theory of economic regulation", *Bell Journal of Economics and Management Science*, 11, page 3-21.
- Strier, F. 2008. "Rating of the raters: Conflicts of interest in the credit rating firms". *Business and Society Review*, 113(4), 533–553.
- Tallapally, Pavani; Luehlfing, Michael S.; Cochran, James J.; Johnson, Gene H. 2010, "The impact of Split Bond Ratings on accounting research results: some additional evidence and some preliminary insights", *Academy of Accounting & Financial Studies Journal*. Jun2010, Vol. 14 Issue 3, p113-124.
- Taylor, M., "Twin Peaks: A Regulatory Structure for the New Century", *Center for the Study of Financial Innovation*, London, 1995.
- Teiletche Jérôme, Pochon Florent, Iankova Evguenia, 2009, « L'Impact des décisions des agences de notation sur le prix des actions: une comparaison du cas français avec les cas européen et américain ». *Economie et prévision*, No 188.
- Terence Tai-Leung, Chong, Tau-Hing Lam and Isabel Kit-Ming Yan, 2012, "Is the Chinese stock market really inefficient?" *Chinese Economic Review* 23, page 122-137.
- Thiele, Thomas, A, 2014, "Multi-scaling and Stock Market Efficiency in China". *Review of Pacific Basin Financial Markets and Politics*, 17(4).
- Tolbert, Pamela S. 1985, "Institutional Environments and Resource Dependence: Sources of Administrative Structure in Institutions of Higher Education". *Administrative Science Quarterly*, 30 [1].
- Tolbert, P. S. & Zucker, L. G. 1996. "The institutionalization of institutional theory". In S. Clegg, C. Hardy and W. Nord (Eds.), *Handbook of organization studies*. London: SAGE.
- Thompson and Vaz, 1990, "Dual Bond Ratings: A Test of the Certification Function of Rating Agencies", *Financial Review*, 25(3).

Wang, Tao, 2010, "Determinants of Corporate Default: Systematic Distress, Sectoral Distress and Credit Contagion". 23rd *Australasian Finance and Banking Conference 2010 Paper*.

Wang, Tao., 2012, "Can reputation concerns always discipline credit rating agencies? Evidence from corporate bond issuance ratings", *Working Paper*.

Wansley James W. et al. (1992), "Institutional Bond Pricing and Information Arrival: The case of Bond Rating Changes", *Journal of Business Finance & Accounting*, 19(5), 0306-686X.

Weber, M, 1922, "The Three Types of Legitimate Rule, translated from original German version", by Hans Gerth, 1958, *Journal Berkeley Publications in Society and Institutions* [4](1).

Weill, L and Klein P.O. 2018. "Bond Offerings in China: The Role of Ownership", *Economics of Transition*, Vol. 26, n° 3, July 2018, page 363-399.

White, L. J., 2010, "Markets: The Credit Rating Agencies," *Journal of Economic Perspectives*, (2), P. 211-26.

Xia, Han. 2013, "Can investor-paid credit rating agencies improve the information quality of issuer-paid rating agencies?". *Journal of Financial Economics*. Vol. 111, Issue 2, P. 450-468.

Xiao Huafang, Yuan Jianguo, 2007, "Ownership structure, board composition and corporate voluntary disclosure: Evidence from listed companies in China", *Managerial Auditing Journal*, Vol. 22 Issue: 6, pp.604-619.

Xiaojian Yu, Zewei Chen, Weidong Xu, and Junhui Fu, 2017, "Forecasting Bull and Bear Markets: Evidence from China", *Emerging Markets Finance & Trade*, Vol 53, Page 1724.

Xiao-Ping Chen and Chao C. Chen. 2004, "On the Intricacies of the Chinese Guanxi: A Process Model of Guanxi Development", *Asia Pacific Journal of Management*, 21, 305–324, Page 307, *The Confucian heritage of guanxi*.

Xie, Y. A., Shi, J., & Wu, C. 2008. "Do macroeconomic variables matter for pricing default risk?" *International Review of Economics and Finance*, 17, 279–291.

Xin, K.R. and Pearce, J.L. 1996, "Guanxi: Connections as substitutes for formal institutional support," *Academy of Management Journal*, vol. 39, pp. 1641–1658.

Xu, Xiaonian and Wang, Yan. 1999, "Ownership structure and corporate governance in Chinese stock companies". *China Economic Review*, Vol. 10 Issue 1, p75. 24p.

Yang Lan, Lili Wang, Xueyong Zhang, 2013, "Determinants and features of voluntary disclosure in the Chinese stock market", *China Journal of Accounting Research*, 6(4), 265-285.

Yang, Jingjing; Jing Chi; 2011, "A review of corporate governance in China", *Martin Young. Asian-Pacific Economic Literature*. Vol. 25 Issue 1, p15-28.

Yao, Chengxi. 2013. "Market Structure of the Chinese equity Markets". *Fordham Journal of Corporate & Financial Law*. Vol. XIX.

Yermack, D., 1996. "Higher market valuation of companies with a small board of directors". *Journal of Financial Economics* 40,185–211.

Zaima, Janis K.; McCarthy, Joseph E. 1988. "The Impact of Bond Rating Changes on Common Stocks and Bonds: Tests of the Wealth Redistribution Hypothesis". *Financial Review*, Vol 23, Issue 4, pp. 483-98.

Zeng, L. 2009. "Chinese Bond Markets—An Introduction". *Working Paper*, Standard & Poor's.

Zopounidis, Constantin and Doumpos, Michael; 2002, "Multicriteria classification and sorting methods: A literature review", *European Journal of Operational Research*, 138: 229–246.

Zou H., Wong, S., Shum, C., Xiong, J. and Yan, J., 2008. "Controlling-minority shareholders incentive conflicts and directors' and officers' liability insurance: evidence from China". *Journal of Banking and Finance*, 32, page 2636-2645.

Annex 1

Code of Conduct of Expert RA Europe

We did not find the Code of Conduct of Expert RA Russia, but Rating-Agentur Expert RA GmbH, European “part of the International group of rating agencies “Expert RA” (International group “RAEX”)” has released its code on its official website.

The group is active since 1997 and is represented in Russia, Kazakhstan, Belorussia, European Union (Frankfort) and Hong Kong.”⁸⁷⁵ We put the result analyses on the Annex, to avoid the repetition since it is a European registered CRA, which is supposed to follow EU/IOSCO instructions about rating norms for their business.

Word frequency query result in 2015⁸⁷⁶

Word	Length	Count	Weighted Percentage (%)	Similar Words
methodology	11	54	1.57	methodological, methodologies, methodology
information	11	46	1.34	inform, information, informed
employees	9	41	1.19	employee, employees
entity	6	37	1.07	entities, entity
public	6	28	0.81	public, publications, publicly
regulation	10	23	0.67	regulation, regulations, regulators
participating	13	21	0.61	participant, participants, participate, participated, participating
assigning	9	20	0.58	assign, assigned, assigning, assignment, assigns
internal	8	20	0.58	internal, internally, international
procedures	10	20	0.58	procedure, procedures
disclose	8	19	0.55	disclose, disclosed, discloses, disclosing
review	6	18	0.52	review, reviewer, reviewing
conflicts	9	17	0.49	conflict, conflicts

⁸⁷⁵ Version 4, 05/10/2010, page 4.

⁸⁷⁶ Federal Law of 13 July 2015 No 222-FZ On the Activities of Credit Rating Agencies in the Russian Federation, On the Amendment to Article 76.1 of the Federal Law ‘On the Central Bank of the Russian Federation (Bank of Russia)’ and the invalidation of certain provisions of legal acts of the Russian Federation (Adopted by the State Duma on 30 June 2015 and Approved by the Council of the Federation on 8 July 2015).

process	7	17	0.49	process, processes
confidential	12	16	0.46	confidential, confidentiality, confidentially
reports	7	16	0.46	report, reporting, reports
instruments	11	15	0.44	instrument, instruments
responsible	11	14	0.41	response, responses, responsibilities, responsibility, responsible
update	6	14	0.41	update, updated, updates, updating
financial	9	13	0.38	financial
issuer	6	13	0.38	issuer, issuers
obligor	7	13	0.38	obligor, obligors
timely	6	13	0.38	time, timely
assessment	10	12	0.35	assess, assessed, assessing, assessment, assessments
committee	9	11	0.32	committee
obligation	10	11	0.32	obligation, obligations, obliged
independence	12	10	0.29	independence, independent
issued	6	10	0.29	issue, issued, issuing
securities	10	10	0.29	securities, security
integrity	9	9	0.26	integrity
publish	7	9	0.26	publish, published, publishing
quality	7	9	0.26	quality
records	7	9	0.26	record, records
relationship	12	9	0.26	relationship, relationships
arranger	8	8	0.23	arrangements, arranger, arrangers
material	8	8	0.23	material, materially, materials
officer	7	8	0.23	officer
regions	7	8	0.23	region, regions
applies	7	7	0.20	applied, applies, apply, applying
council	7	7	0.20	council
employed	8	7	0.20	employ, employed, employment
measures	8	7	0.20	measurable, measured, measures
resources	9	7	0.20	resource, resources
trading	7	7	0.20	trading
underwriter	11	7	0.20	underwriter, underwriters
				Number of words: 45

We found, after the comparison with the code of conduct on the international level in general (IOSCO's version) and that of Expert RA main competitor: ACRA (in Russia), that:

Expert RA's code looks more similar to European version of code, only with more details in description. It makes sense since the CRA itself is under EU rating registration and supervision.

Besides, it's the only CRA repeatedly mentioned its role played in front of regions, instead of serving purely as infrastructure on the financial market (entity and instruments, especially for obligation securities), either for information or for (risk) assessment.

Redistribution of words by five chapters

Chapters	Words
Quality and integrity	Methodology, procedures, review, process, reports, update, timely, integrity, quality, records, material, applies, measures
Independence and the avoidance of conflicts of interests	Employees(employed), assigning, internal, conflicts, independence, officer, council, committee, (human) resources
Responsibility to the investing public and issuers	participating, responsible, issuer(issued), obligor, arranger, underwriter, relationship
Disclosure and communication with market participants	public, disclose, confidential, publish
Roles	Entity, information, (EU)regulation, assessment, obligation, instruments, securities, regions, trading, financial

Annex 2

Code of Conduct of Dagong Europe

We found the Code of conduct of Dagong Europe, which is also registered under *ESMA* (Europe). It is supposed to conform to European rating regulation and norms of IOSCO's code.

If we compare it to the code used in Europe rating business, Dagong proposed more concise structure (divided into 5 sections) and more detailed content (with 58 eligible words).

Word frequency query result in 2016⁸⁷⁷

Word	Length	Count	Weighted Percentage (%)	Similar Words
informed	8	47	1.73	inform, information, informed
entity	6	45	1.66	entities, entity
conflicts	9	32	1.18	conflict, conflicts
procedures	10	26	0.96	procedure, procedures
process	7	25	0.92	process, processes
disclose	8	23	0.85	disclose, disclosed, discloses
independence	12	22	0.81	independence, independent
analyst	7	19	0.70	analyst, analysts
employees	9	19	0.70	employee, employees
committee	9	18	0.66	committee
public	6	17	0.63	public, publication, publicly
report	6	13	0.48	report, reporting, reports
content	7	12	0.44	content, contents
ethics	6	12	0.44	ethics
rules	5	12	0.44	rule, rules
securities	10	11	0.41	securities, security
manage	6	10	0.37	manage, management, manager
criteria	8	9	0.33	criteria

⁸⁷⁷ Federal Law of 13 July 2015 No 222-FZ On the Activities of Credit Rating Agencies in the Russian Federation, On the Amendment to Article 76.1 of the Federal Law 'On the Central Bank of the Russian Federation (Bank of Russia)' and the invalidation of certain provisions of legal acts of the Russian Federation (Adopted by the State Duma on 30 June 2015 and Approved by the Council of the Federation on 8 July 2015).

disclosure	10	9	0.33	disclosure, disclosures
fees	4	9	0.33	fee, fees
issue	5	9	0.33	issue, issued, issuing
members	7	9	0.33	member, members
published	9	9	0.33	publish, published, publishes, publishing
relationship	12	9	0.33	relationship
issuer	6	8	0.29	issuer, issuers
material	8	8	0.29	material
risk	4	8	0.29	risk, risks
timely	6	8	0.29	time, timely
assignment	10	7	0.26	assigned, assigning, assignment, assigns
directors	9	7	0.26	director, directors
financial	9	7	0.26	financial
immediately	11	7	0.26	immediate, immediately
meeting	7	7	0.26	meet, meeting
participate	11	7	0.26	participant, participants, participate, participated, participation
quality	7	7	0.26	quality
regulation	10	7	0.26	regulation, regulations, regulators
file	4	6	0.22	file, filing, filings
investment	10	6	0.22	investment
measures	8	6	0.22	measures
statement	9	6	0.22	statement, statements
users	5	6	0.22	user, users
analyses	8	5	0.18	analyses
appeal	6	5	0.18	appeal, appeals
arrangements	12	5	0.18	arranged, arrangement, arrangements, arranger
compensation	12	5	0.18	compensated, compensation
definitions	11	5	0.18	definitions
derivatives	11	5	0.18	derivative, derivatives, derives
employed	8	5	0.18	employed, employment, employs
internal	8	5	0.18	internal
judgment	8	5	0.18	judgment
market	6	5	0.18	market
obligation	10	5	0.18	obligation, obligations
officer	7	5	0.18	officer
operations	10	5	0.18	operation, operationally, operations,

				operative
opinions	8	5	0.18	opinion, opinions
research	8	5	0.18	research
responsible	11	5	0.18	responsibilities, responsibility, responsible
standards	9	5	0.18	standard, standards
				Number of words: 58

Dagong Europe is the only CRA, in our study scope, that proposes to its clients the possibility of “rating appeal”; however, at the same time, it also reminds the rating-users that their ratings are merely “opinions”. It seems that it tries to dodge to be held accountable for any misjudgment, especially for the complicated securities and derivatives, for example.

It is curious to see that Dagong not only suggests a *Code* for its own behaviors but also for other market participants. It suggests them of the “disclaimers”, in the case of the possible doubts on the ratings activities.

Redistribution of words by five chapters

Chapters	Words
Quality and integrity of the process	Procedures, process, report, content, criteria, material, timely, immediately, quality, file, measures, statement, arrangements, definitions, operations, research, standards, appeal
Independence and the avoidance of conflicts of interest	Conflicts, independence, analyst(analyses), employees (employed), committee, ethics, manage, fees, members, relationship, assignment, directors, meeting, participate, users, compensation, internal, judgment, officer
Disclosure and transparency	Disclose(disclosure), public, published
Disclaimers	Opinions, responsible
Others	Informed, entity, rules, regulation, securities, issue(issuer), risk, financial, investment, derivatives, market, obligation

Annex 3

Code of Conduct of Chengxin (Asia Pacific) ⁸⁷⁸

Chengxin (Asia Pacific) is registered under SFC (HK) and we found, generally speaking, that the Code proposed by CCXAP is a shorter and briefer version of that we have analyzed in Hong Kong rating market, but the main idea remains the same.

Word frequency query result ⁸⁷⁹

Word	Length	Count	Weighted Percentage (%)	Similar Words
representatives	15	47	1.85	representative, representatives, representatives'
entity	6	42	1.66	entities, entity
informed	8	37	1.46	inform, information, informed
securities	10	26	1.03	securities
disclose	8	24	0.95	disclose, disclosed, disclosing
employees	9	24	0.95	employee, employees
public	6	24	0.95	public, publications, publicly
product	7	19	0.75	product, products
process	7	18	0.71	process, processes
structured	10	18	0.71	structure, structured
methodologies	13	17	0.67	methodologies, methodology
confidential	12	15	0.59	confidential, confidentiality, confidentially
finance	7	14	0.55	finance
issued	6	14	0.55	issue, issued, issues, issuing
timely	6	13	0.51	time, timely
responsible	11	12	0.47	response, responsibilities, responsibility, responsible
review	6	12	0.47	review, reviewing, reviews
conflicts	9	11	0.43	conflict, conflicts
issuer	6	11	0.43	issuer, issuers
procedures	10	11	0.43	procedures

⁸⁷⁸ China Chengxin (Asia Pacific) Credit Ratings Company Limited, Code of Conduct for Credit Rating Services At <http://www.ccxap.com/Process.aspx?Id=36>.

⁸⁷⁹ Federal Law of 13 July 2015 No 222-FZ On the Activities of Credit Rating Agencies in the Russian Federation, On the Amendment to Article 76.1 of the Federal Law 'On the Central Bank of the Russian Federation (Bank of Russia)' and the invalidation of certain provisions of legal acts of the Russian Federation (Adopted by the State Duma on 30 June 2015 and Approved by the Council of the Federation on 8 July 2015).

updating	8	11	0.43	update, updated, updates, updating
disclosure	10	10	0.39	disclosure, disclosures
subscribers	11	9	0.35	subscriber, subscribers
target	6	9	0.35	target, targets
assessment	10	8	0.32	assess, assessment, assessments
investors	9	8	0.32	investor, investors
participate	11	8	0.32	participant, participants, participate, participated
report	6	8	0.32	report, reporting, reports
agreement	9	7	0.28	agreement, agreements
apply	5	7	0.28	applied, applies, apply
compensation	12	7	0.28	compensated, compensation
internal	8	7	0.28	internal
officer	7	7	0.28	officer, officers
regulated	9	7	0.28	regulated, regulations
relationship	12	7	0.28	relationship
revision	8	7	0.28	revise, revising, revision
debt	4	6	0.24	debt
fees	4	6	0.24	fee, fees
historical	10	6	0.24	historic, historical
independence	12	6	0.24	independence, independent, independently
practices	9	6	0.24	practical, practices
preferred	9	6	0.24	preferably, preferred
quality	7	6	0.24	quality
			Number of words: 43	

Redistribution of words by four keywords

Keywords	Words
Quality and Integrity of the process	Process, methodologies, review, procedures, updating, report, apply, revision, historical, practices, quality, regulated
Independence and the avoidance of the conflict of interest	Representatives, employees, conflicts, compensation, internal, officer, relationship, fees, independence
Responsibilities to the participants	Entity, product, structured, finance, issued(issuer), responsible, debt, preferred, timely, assessment, securities, subscribers, target, investors, participate, agreement
Disclosure and communication	Informed, disclose(disclosure), public, confidential

Annex 4

Dagong's (HK) LT Credit Rating Scale⁸⁸⁰

Credit Rating Scale	Definition
AAA	Highest Credit Quality: "AAA" ratings denote the lowest expectation of default risk. It indicates that the issuer has exceptionally strong capacity to pay its financial commitments. Although the debt protection factors may change, this capacity is highly unlikely to be adversely affected by any foreseeable event.
AA+	Very High Credit Quality: 'AA' ratings denote expectations of very low default risk. It indicates that the issuer has very strong capacity to pay its financial commitments, with no significant vulnerability to any foreseeable event. 'AA+' indicates the highest position within the 'AA' rating category.
AA	Very High Credit Quality: 'AA' ratings denote expectations of very low default risk. It indicates that the issuer has very strong capacity to pay its financial commitments, with no significant vulnerability to any foreseeable event. 'AA' indicates the middle position within the 'AA' rating category.
AA-	Very High Credit Quality: 'AA' ratings denote expectations of very low default risk. It indicates that the issuer has very strong capacity to pay its financial commitments, with no significant vulnerability to any foreseeable event. 'AA-' indicates the lowest position within the 'AA' rating category.
A+	High Credit Quality: 'A' ratings denote expectations of relatively low default risk. The capacity to pay its financial commitments is considered adequate. However, this capacity may be more vulnerable to adverse business or economic conditions than those of higher rating categories. 'A+' indicates the highest position within the 'A' rating category.
A	High Credit Quality: 'A' ratings denote expectations of relatively low default risk. The capacity to pay its financial commitments is considered adequate. However, this capacity may be more vulnerable to adverse business or economic conditions than those of higher rating categories. 'A' indicates the middle position within the 'A' rating category.
A-	High Credit Quality: 'A' ratings denote expectations of relatively low default risk. The capacity to pay its financial commitments is

⁸⁸⁰ "Credit Rating Scales and Definitions of Corporate and Financial Institution Issuer, Borrowing Companies, and Long-term Debt Facility Credit Ratings", at http://www.dagonghk.com/Procedures.php?act=list&parent_id=54&menu_id=870

	<p>considered adequate. However, this capacity may be more vulnerable to adverse business or economic conditions than those of higher rating categories.</p> <p>'A-' indicates the lowest position within the 'A' rating category.</p>
BBB+	<p>Medium Credit Quality: 'BBB' ratings indicate that expectations of default risk are moderate. In normal conditions, the capacity to pay financial commitments is considered sufficient, whereas under adverse business or economic conditions the risk of default is more likely to exist.</p> <p>'BBB+' indicates the highest position within the 'BBB' rating category.</p>
BBB	<p>Medium Credit Quality: 'BBB' ratings indicate that expectations of default risk are moderate. In normal conditions, the capacity to pay financial commitments is considered sufficient, whereas under adverse business or economic conditions the risk of default is more likely to exist.</p> <p>'BBB' indicates the middle position within the 'BBB' rating category.</p>
BBB-	<p>Medium Credit Quality: 'BBB' ratings indicate that expectations of default risk are moderate. In normal conditions, the capacity to pay financial commitments is considered sufficient, whereas under adverse business or economic conditions the risk of default is more likely to exist.</p> <p>'BBB-' indicates the lowest position within the 'BBB' rating category.</p>
BB+	<p>Speculative Credit Quality: 'BB' ratings indicate that the issuer faces major ongoing uncertainties and if exposed to adverse business, financial, or economic conditions, its capacity to meet financial commitments could be potentially affected.</p> <p>'BB+' indicates the highest position within the 'BB' rating category.</p>
BB	<p>Speculative Credit Quality: 'BB' ratings indicate that the issuer faces major ongoing uncertainties and if exposed to adverse business, financial, or economic conditions, its capacity to meet financial commitments could be potentially affected.</p> <p>'BB' indicates the middle position within the 'BB' rating category.</p>
BB-	<p>Speculative Credit Quality: 'BB' ratings indicate that the issuer faces major ongoing uncertainties and if exposed to adverse business, financial, or economic conditions, its capacity to meet financial commitments could be potentially affected.</p> <p>'BB-' indicates the lowest position within the 'BB' rating category.</p>
B+	<p>Highly Speculative Credit Quality: 'B' ratings indicate that expectations of credit default risk are relatively high but a limited margin of safety remains. Adverse business, financial, or economic conditions will likely impair the issuer's capacity to meet its financial commitments.</p> <p>'B+' indicates the highest position within the 'B' rating category.</p>
B	<p>Highly Speculative Credit Quality: 'B' ratings indicate that</p>

	<p>expectations of credit default risk are relatively high but a limited margin of safety remains. Adverse business, financial, or economic conditions will likely impair the issuer's capacity to meet its financial commitments.</p> <p>'B' indicates the middle position within the 'B' rating category.</p>
B-	<p>Highly Speculative Credit Quality: 'B' ratings indicate that expectations of credit default risk are relatively high but a limited margin of safety remains. Adverse business, financial, or economic conditions will likely impair the issuer's capacity to meet its financial commitments.</p> <p>'B-' indicates the lowest position within the 'B' rating category.</p>
CCC+	<p>High Credit Risk: 'CCC' ratings indicate very high credit risk. The issuer is vulnerable, and is highly dependent upon favorable business, financial, and economic conditions to meet its financial commitments. Default risk is highly probable.</p> <p>'CCC+' indicates the highest position within the 'CCC' rating category.</p>
CCC	<p>High Credit Risk: 'CCC' ratings indicate very high credit risk. The issuer is vulnerable, and is highly dependent upon favorable business, financial, and economic conditions to meet its financial commitments. Default risk is highly probable.</p> <p>'CCC' indicates the middle position within the 'CCC' rating category.</p>
CCC-	<p>High Credit Risk: 'CCC' ratings indicate very high credit risk. The issuer is vulnerable, and is highly dependent upon favorable business, financial, and economic conditions to meet its financial commitments. Default risk is highly probable.</p> <p>'CCC-' indicates the lowest position within the 'CCC' rating category.</p>
CC	<p>Very High Credit Risk: 'CC' ratings indicate that the issuer is currently highly vulnerable and faces a very high probability of defaulting on its debt obligations.</p>
C	<p>Highest Credit Risk: 'C' ratings indicate the highest credit default risk. The issuer is in a position of imminent credit default on its debt obligations.</p>
D	<p>Default: Failed or delayed payment of interest and/or principal on any financial obligation except for the missed payment of interest on the due date provided that is remediated within the agreed grace period. The issuer files for bankruptcy or legal receivership occurs or other legal impediment to the timely payment of the obligations. The creditors are forced to accept a distressed debt exchange with new security or package of securities that leads to a less valuable financial obligation (such as debt/equity swap or debt with a lower coupon or face value, lower seniority or with longer maturity) or the exchange seems aimed at avoiding the default of the issuer.</p>

Annex 5

Credit Rating Scale of Chinese local CRAs

AAA	<p>Highest Credit Quality:</p> <p>“AAA” ratings denote the lowest expectation of default risk. It indicates that the issuer has exceptionally strong capacity for payment of financial commitments. Although the debt protection factors may change, this capacity is highly unlikely to be adversely affected by any foreseeable event. ‘AAA’ is the highest issuer credit rating assigned by Dagong.</p>
AA	<p>Very High Credit Quality:</p> <p>‘AA’ ratings denote expectations of very low default risk. It indicates that the issuer has very strong capacity for payment of financial commitments. Although due to its relatively higher long-term risk, this capacity is not significantly vulnerable to any foreseeable event.</p>
A	<p>High Credit Quality:</p> <p>‘A’ ratings denote expectations of relatively low default risk. The capacity for payment of financial commitments is considered sufficient. However, this capacity may be more vulnerable than those of the higher ratings to adverse business or economic conditions due to any foreseeable event.</p>
BBB	<p>Medium Credit Quality:</p> <p>‘BBB’ ratings indicate that expectations of default risk are currently low and it has medium default risk. In normal conditions, the capacity for payment of financial commitments is considered adequate, whereas under adverse business or economic conditions risks of default are more likely to exist under this scale.</p>
BB	<p>Low Medium Credit Quality:</p> <p>‘BB’ ratings indicate that the issuer faces major ongoing uncertainties and exposure to adverse business, financial, or economic conditions, which could lead to the obligor’s inadequate capacity to meet its financial commitments.</p>
B	<p>Relatively Low Credit Quality:</p> <p>‘B’ ratings indicate that expectations of default risk are relatively high but a limited margin of safety remains. Adverse business, financial, or economic conditions will likely impair the obligor’s capacity or willingness to meet its financial commitments. This is a lower scale than that of the ‘BB’ rating and an obligor rated ‘B’ is more vulnerable to adverse developments than the obligors rated ‘BB’.</p>
CCC	<p>Low Credit Quality:</p> <p>‘CCC’ ratings indicate very high default risk. The issuer is currently vulnerable, and is dependent upon favorable business, financial, and economic conditions to meet its financial commitments. Some practical risks exist and this will impair the obligor’s ability to meet its financial commitments.</p>
CC	<p>Very Low Credit Quality:</p> <p>‘CC’ ratings indicate that the issuer is currently highly vulnerable and entities with this rating have a seriously high risk of default.</p>
C	<p>Lowest Credit Quality:</p> <p>‘C’ ratings indicate the highest default risk and the issuer is currently unable to meet its financial commitments or may even be in the process of compulsory debt reconstruction, or a takeover by regulatory organizations or in bankruptcy liquidation.</p>

PBoC stipulates ⁸⁸¹ that the sign of +/- can be used to modify slightly the major rating categories to show the nuances, except for the category of AAA, CCC and below CCC.

⁸⁸¹ PBoC, 2006, Guiding Opinions for the Management of Credit Rating (Guiding Opinions).

Annex 6

Guidelines for the Industry Classification of Listed Companies (2012 Revision)

Code	Classification structure	Number of companies of SSE ⁸⁸²	Number of companies of SZSE ⁸⁸³	Number of companies of HK ⁸⁸⁴
A	Agriculture, forestry, animal husbandry and fishery	15	30	
B	Mining industry	47 (4.18%)	27	Materials 132
C	Manufacturing industry	599 (53.24%)	1420	Industrial 213
D	Industry of electric power, heat, gas and water production and supply	57 (5.07%)	45	Energy 71
E	Construction industry	36	53	Properties & construction 309
F	Wholesale and retail industry	94 (8.35%)	71	
G	Transport, storage and postal service industry	65 (5.78%)	32	
H	Accommodation and catering industry	4	7	
I	Industry of information transmission, software and information technology services	30	187	Tele-communications 16 Information technology 132
J	Financial industry	36 (3.2%)	22	Financials 168
K	Real estate industry	78 (6.93%)	63	
L	Leasing and commercial service industry	12	32	

⁸⁸² <http://english.sse.com.cn/listed/statistics/>. The website is accessed by the author on September 2017.

⁸⁸³ <http://www.szse.cn/main/en/MarketStatistics/BySectors/>. The website is accessed by the author on September 2017.

⁸⁸⁴ There are 224 Chinese (mainland) companies listed on HK with label of “H shares”. <https://www.hkex.com.hk/eng/stat/smstat/chidimen/chidimen.htm>, updates to 31/08/2017. The website is accessed by the author on September 2017.

M	Scientific research and technical service industry	7	21	
N	Water conservancy, environment and public facility management industry	11	25	Utilities 61
O	Industry of resident service, repair and other services			
P	Education	1	1	
Q	Health and social work	1	6	
R	Industry of culture, sports and entertainment	14	29	
S	Diversified industries	18	8	Conglomerates 18
				Consumer goods 433+ Consumer services 205
In total		1125	2079	1758

Annex 7

Results of coefficients (1) for logistic model with all variables, except those representing CRAs

```
. logit rating_speculativel logasset TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO FCF_TO_TOTAL_DEBT PROF_MARGIN
> internationalisation firstsector thirdsector concentration private HYB duality boardsize Pricetobook priceebitda markettu
> rbulance gdp inflation sovereignrating
```

```
Iteration 0: log likelihood = -120.38399
Iteration 1: log likelihood = -99.766978
Iteration 2: log likelihood = -99.343561
Iteration 3: log likelihood = -68.906533
Iteration 4: log likelihood = -63.556466
Iteration 5: log likelihood = -62.774936
Iteration 6: log likelihood = -62.770402
Iteration 7: log likelihood = -62.770402
```

```
Logistic regression                Number of obs   =      419
                                   LR chi2(20)      =     115.23
                                   Prob > chi2       =      0.0000
Log likelihood = -62.770402        Pseudo R2      =      0.4786
```

rating_speculativel	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
logasset	.3933851	.6659062	0.59	0.555	-.9117671	1.698537
TOT_DEBT_TO_TOT_ASSET	.083328	.0215562	3.87	0.000	.0410786	.1255774
CUR_RATIO	.2435201	.222826	1.09	0.274	-.1932109	.6802511
INTEREST_COVERAGE_RATIO	.0062105	.012953	0.48	0.632	-.0191769	.0315979
FCF_TO_TOTAL_DEBT	.0029125	.0585066	0.05	0.960	-.1117584	.1175834
PROF_MARGIN	.0307939	.0158175	1.95	0.052	-.0002079	.0617956
internationalisation	1.529197	.7026805	2.18	0.030	.1519688	2.906426
firstsector	.5080711	.9003202	0.56	0.573	-1.256524	2.272666
thirdsector	-.7129151	.5835796	-1.22	0.222	-1.85671	.4308799
concentration	1.036285	.661232	1.57	0.117	-.259706	2.332276
private	1.256055	1.000244	1.26	0.209	-.704386	3.216497
HYB	-.1543394	.6804034	-0.23	0.821	-1.487906	1.179227
duality	-.0895993	.7710467	-0.12	0.907	-1.600823	1.421625
boardsize	-.1139979	.1571496	-0.73	0.468	-.4220054	.1940097
Pricetobook	.0218491	.0770984	0.28	0.777	-.1292609	.1729592
priceebitda	.0154501	.008956	1.73	0.085	-.0021032	.0330035
marketrbulance	-.3301984	.5422278	-0.61	0.543	-1.392945	.7325484
gdp	-.2377265	.2110546	-1.13	0.260	-.6513859	.1759329
inflation	.0906114	.2014542	0.45	0.653	-.3042316	.4854544
sovereignrating	-.5859024	.1196279	-4.90	0.000	-.8203687	-.3514361
_cons	.3259719	3.394335	0.10	0.923	-6.326802	6.978746

Annex 8

Results of coefficients (2) for logistic model with all variables, including Globalxinhua: comparative analysis

```
. logit rating_speculativel logasset TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO FCF_TO_TOTAL_DEBT PROF_MARGIN
> internationalisation firstsector thirdsector concentration private HYB duality boardsize Pricetobook priceebitda markettu
> rbalance gdp inflation sovereignrating globalxinhua

Iteration 0: log likelihood = -120.38399
Iteration 1: log likelihood = -102.80699
Iteration 2: log likelihood = -63.639339
Iteration 3: log likelihood = -56.491593
Iteration 4: log likelihood = -56.081779
Iteration 5: log likelihood = -56.079391
Iteration 6: log likelihood = -56.079387

Logistic regression               Number of obs   =       419
                                LR chi2(21)      =       128.61
                                Prob > chi2       =       0.0000
Log likelihood = -56.079387      Pseudo R2      =       0.5342
```

rating_speculativel	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
logasset	-.1343341	.6508288	-0.21	0.836	-1.409935 1.141267
TOT_DEBT_TO_TOT_ASSET	.085543	.0230181	3.72	0.000	.0404283 .1306577
CUR_RATIO	.2497975	.2409405	1.04	0.300	-.2224373 .7220323
INTEREST_COVERAGE_RATIO	.0026054	.0147901	0.18	0.860	-.0263826 .0315935
FCF_TO_TOTAL_DEBT	-.0025445	.1217409	-0.02	0.983	-.2411522 .2360632
PROF_MARGIN	.0281348	.0169456	1.66	0.097	-.005078 .0613476
internationalisation	.638732	.7743576	0.82	0.409	-.878981 2.156445
firstsector	.1803317	1.030546	0.17	0.861	-1.839501 2.200164
thirdsector	-.9024493	.627977	-1.44	0.151	-2.133262 .3283631
concentration	.8135185	.7055649	1.15	0.249	-.5693632 2.1964
private	.5249819	1.08079	0.49	0.627	-1.593328 2.643292
HYB	-.2122594	.7191975	-0.30	0.768	-1.621861 1.197342
duality	-.216028	.8535647	-0.25	0.800	-1.888984 1.456928
boardsize	-.1384451	.1672007	-0.83	0.408	-.4661525 .1892623
Pricetobook	.0423128	.074155	0.57	0.568	-.1030284 .187654
priceebitda	.0166389	.0095513	1.74	0.082	-.0020814 .0353591
markettrbalance	-.1762787	.590944	-0.30	0.765	-1.334508 .9819502
gdp	-.224011	.2713045	-0.83	0.409	-.7557579 .307736
inflation	-.0584506	.2287723	-0.26	0.798	-.5068361 .3899348
sovereignrating	-.0917756	.1755344	-0.52	0.601	-.4358167 .2522656
globalxinhua	4.390745	1.273793	3.45	0.001	1.894156 6.887334
_cons	-3.956589	3.726076	-1.06	0.288	-11.25956 3.346387

Annex 9

Stata output (odds ratio) of ordered multinomial logistic model applied to the local rating sample (with Lianhe and Chengxin as reference).

```
. ologit ordered TOT_DEBT_TO_TOT_ASSET CUR_RATIO INTEREST_COVERAGE_RATIO PROF_MARGIN firstsector thirdsector concentration priva
> te hybrid duality boardsize priceebitda markturbulance dagong sbcr ccrc, or
```

```
Iteration 0: log likelihood = -282.28313
Iteration 1: log likelihood = -266.03829
Iteration 2: log likelihood = -265.44952
Iteration 3: log likelihood = -265.44751
Iteration 4: log likelihood = -265.44751
```

```
Ordered logistic regression          Number of obs   =       351
                                   LR chi2(16)        =       33.67
                                   Prob > chi2         =       0.0060
                                   Pseudo R2           =       0.0596

Log likelihood = -265.44751
```

ordered	Odds Ratio	Std. Err.	z	P> z	[95% Conf. Interval]	
TOT_DEBT_TO_TOT_ASSET	.9874864	.0088022	-1.41	0.158	.9703842	1.00489
CUR_RATIO	.8641797	.1341835	-0.94	0.347	.6374347	1.171581
INTEREST_COVERAGE_RATIO	1.010911	.0050601	2.17	0.030	1.001042	1.020877
PROF_MARGIN	1.003348	.008739	0.38	0.701	.9863652	1.020623
firstsector	1.000812	.4368333	0.00	0.999	.4254233	2.35442
thirdsector	1.250865	.3254945	0.86	0.390	.7511294	2.083082
concentration	.9485484	.2867299	-0.17	0.861	.5245126	1.715391
private	.6489325	.2872064	-0.98	0.329	.2725664	1.544994
hybrid	.9719931	.3294009	-0.08	0.933	.5002621	1.888551
duality	.9015612	.2640596	-0.35	0.723	.5077916	1.600682
boardsize	1.128448	.070167	1.94	0.052	.9989728	1.274704
priceebitda	.9970489	.0051305	-0.57	0.566	.9870438	1.007155
markturbulance	2.238675	.6258737	2.88	0.004	1.294249	3.872258
dagong	.559983	.1742783	-1.86	0.062	.3042729	1.030591
sbcr	1.023719	.2814297	0.09	0.932	.5972797	1.754623
ccrc	.0958972	.1098612	-2.05	0.041	.0101545	.9056371
/cut1	-4.804446	1.073195			-6.907869	-2.701022
/cut2	-.7175068	.8122459			-2.30948	.874466
/cut3	3.374676	.8465321			1.715504	5.033849

As we showed before, the results are consistent: there are three variables that are significant: interest-coverage ratio (**), boardsize (*) and market turbulence (***), in addition to those variable representing CRAs. The fact that all odds ratio compute 1 means that, with higher value of each variable, there is significantly more probability for a listed-public issuer to get a better initial issuer rating on the investment grade, in comparison to the low rating level.

In addition to that, in comparison to Lianhe and Chengxin, the probability to get a worse rating on the investment grade (with odds ratio less than 1), is significantly higher in the case of Dagong (*) and CCRC (**). It means that these Chinese local CRAs are in average less generous than Chinese rating duopoly, *ceteris paribus*.

Detailed table of contents

Cover

Dedication

Acknowledgments	1
Figures	6
Graphs	7
Tables	9
Abbreviation	15
Abstract in English	20
Résumé en français	22
Brief table of contents	24

General introduction

I. Objective	25
II. Research question	27
1. Theoretical framework and application to CRAs, under Chinese market institutional environment.....	27
2. Three-dimensional examination of the role, strategy and impact of CRAs.....	30
III. Content and Structure of the thesis (1)	32
IV. Quintuple Contributions	34
1. Contribution to the theoretical framework and the classic theories.....	34
2. Contribution to the background information.....	36
– Two principal characteristics.....	36
○ Chinese State-capitalism.....	36
○ Chinese Socialist-market economics.....	36
– Three market actors and their interaction with CRAs.....	37
3. Contribution to the epistemology.....	38
4. Contribution to the methodology.....	39
5. Contribution to the sample construction.....	42

§I. Preparatory Part One: Why the discussion of the characteristics of “Chinese institutional environment” is essential to a research on “Credit Rating Agency (CRAs)”?	44
--	-----------

Introduction of Part One §I	45
– Main content.....	45
– Structure of the thesis (2)	46

Chapter I. One theoretical framework and effects of institutional environment on CRAs	47
--	-----------

Introduction of Chapter I	48
--	-----------

Section 1. Historical, evolutionary and analytic perspective of institutionalism.49

Introduction of Section 1	49
1.1. Genesis of institutionalism.....	50
1.1.1. In the scope of Economics.....	50
1.1.2. In the scope of Politics.....	51
1.1.3. In the scope of Sociology.....	51
1.2. Institutionalism under the setting of organizations.....	52
1.2.1. Survival as the foremost rational of organizations.....	52
1.2.2. Informal structure on organizational behaviors.....	53
1.2.3. Interaction organization-environment.....	54
1.3. Analytic summary: Three points of enlightenment of New-institutionalism.....	55
1.3.1. Strategic responses to institutional pressure.....	56
1.3.2. Challenges for legitimacy from three sources.....	57
1.3.3. Process of institutionalization.....	59
Conclusion of Section 1	60
– Organizational population.....	60
– Organizational field.....	60
– Organizational set.....	61
– Societal level.....	61
– Transnational level.....	62

Section 2. Application of New- institutionalism Theory to CRAs.....63

Introduction of Section 2	63
2.1. Evolutionary approach of institutional environment of CRAs.....	64
2.1.1. Factors and Process of institutional changes.....	64
2.1.2. Behavioral isomorphism and motives.....	67
– Mimetic isomorphism.....	67
– Normative isomorphism.....	67
– Coercive isomorphism.....	69
2.1.3. Distinctiveness as a balancing strategy.....	70

2.2. Comparisons of three pillars.....	72
2.2.1. Reputation Pillar.....	75
2.2.2. Normative Pillar.....	76
2.2.3. Regulative Pillar.....	76
2.3. Causes and consequences of CRAs’ institutionalization.....	77
2.3.1. From viewpoint of regulatory pillar.....	77
2.3.2. From viewpoint of normative pillar.....	78
2.3.3. From viewpoint of cognitive pillar.....	78
Conclusion of Section 2.....	79
– Comments on the “component process of institutionalization” (Graph I.1).....	79
– Structure of Section 2, Chapter I.....	80
– Content of Section 2, Chapter I.....	81
– Inspirations for the following Chapters.....	82
<u>Section 3. Chinese environmental effects on classic theories concerning CRAs..83</u>	
Introduction of Section 3.....	83
3.1. On Theory of Agency and CRAs.....	83
3.1.1. Synthetic description.....	83
3.1.2. Application to CRAs.....	84
3.1.3. Application to China	87
3.2. On Theory of Information asymmetry and CRAs.....	88
3.2.1. Synthetic description.....	88
3.2.2. Application to CRAs	89
3.2.3. Application to China.....	90
3.3. On Theory of Signal and CRAs	91
3.3.1. Synthetic description.....	91
3.3.2. Application to CRAs.....	91
3.3.3. Application to China.....	92
Conclusion of Section 3.....	94
– Content of Section 3, Chapter I.....	94
– Inspirations for the following Chapters.....	94
Conclusion of Chapter I.....	95
– Structure of Chapter I.....	95
– Limits of the institutionalism, solutions and inspirations for the following chapters.....	97

Chapter II. Two characteristics of Chinese institutional environment.....	98
Introduction of Chapter II.....	99
<u>Section 1. Financial sector under Chinese State-Capitalism</u>.....	100
Introduction of Section 1.....	100
1.1. Reform policy.....	100
1.2. Opening-up policy.....	102
1.3. Ideas of Chinese Policies on capital flows.....	103
Conclusion of Section 1.....	105
<u>Section 2. The segmented Chinese stock market</u>	106
Introduction of Section 2.....	106
2.1. Approval system and multi-layered market structure.....	108
2.2. Existence of dual-listing in Hong Kong market.....	109
2.3. The access of investors (domestic, foreign, individual and institutional) to market segments and evolution.....	111
2.4. Important events during the reforms of Chinese stock market.....	116
Conclusion of Section 2.....	117
- Structure of Section 2, Chapter II.....	117
- Inspirations for the following chapters.....	117
<u>Section 3. Financing by Corporate bonds (CBs)</u>	118
Introduction of Section 3.....	118
3.1. Types and segments of CB market.....	119
3.2. Increasing issuing and investing of CBs with regulatory reforms.....	120
3.2.1. On the issuing side of CBs.....	120
3.2.2. On the investing side of CBs.....	121
3.3. Rethinking capital structure theories with Chinese institutional features.....	123
Conclusion of Section 3.....	124
- Structure of Section 3, Chapter II.....	124
- Bondholders vs. shareholders.....	124
Conclusion of Chapter II.....	125
- Two discussions of Chapter II.....	125
- Chinese institutional characteristics of the market environment.....	125
- Inspirations for the following chapters.....	126

Chapter III. Three consequences of CRAs on Chinese market actors.....128

Introduction of Chapter III.....129

Section1. Regulatory mechanism and comparison.....129

Introduction Section 1.....129

- Structure of Chapter III..... 129
- Inspirations for the following chapters.....130

1.1. Chinese sectoral rating regulation..... 132

1.1.1. Issuing supervision..... 132

- People Bank of China (PBOC) 132
- National Development and Reform Commission (NDRC) 132
- Chinese Security Regulatory Commission (CSRC) 133
- Chinese Banking Regulatory Commission (CBRC) and Chinese Banking Regulatory Commission (CBRC) 134

1.1.2. Trading supervision..... 135

- Chinese Security Regulatory Commission (CSRC) 135
- Chinese Banking Regulatory Commission (CBRC) 135
- Chinese Insurance Regulatory Commission (CIRC) 136

1.1.3. Analytic summary..... 137

1.2. Learn from European experiences..... 141

1.2.1. A more consolidated supervisory system..... 141

1.2.2. Empowerment of regulator, the case of ESMA..... 143

1.3. Fitting into each specific environmental context..... 146

1.3.1. The case of Germany..... 146

1.3.2. The case of China..... 147

Conclusion of Section 1.....149

Section 2. Issuers and information collection.....150

Introduction Section 2.....150

2.1. Quality of hard information..... 151

2.1.1. Generally speaking..... 151

2.1.2. In the case of China..... 151

2.2. Soft information: corporate governance factors among others..... 153

2.2.1. Generally speaking..... 153

2.2.2. In the case of China..... 154

2.3. Look beyond firm-specific information: cross industrial and cross regional factors..... 156

2.3.1. Generally speaking..... 156

2.3.2. In the case of Germany..... 157

2.3.3. In the case of China..... 158

Conclusion of Section 2.....159

- Content of Section 2, Chapter III..... 159

- Structure of Section 2, Chapter III..... 160

- Inspirations for the following chapters.....	160
o Different kind of information is interconnected.....	160
o Differences among CRAs (agency-conduct effect).....	161
o Differences between the past, the present and the future, for one single CRA (time-varying effect).....	161
o All elements combined.....	161
<u>Section 3. Reactions of Chinese investors</u>	162
Introduction of Section 3	162
3.1. Domestic and Foreign investors in front of cross-market information.....	163
3.2. Two competing spirits, comparison with European case.....	164
3.3. Individual vs. institutional investors.....	166
Conclusion of Section 3	167
 Conclusion of Chapter III	 168
 Conclusion of Part One §I	 169

§II. Empirical Part Two: How does the three-dimensional examination of CRAs’ interactions with “Chinese market actors” bring originality to the empirical findings?.....170

Introduction of Part Two §2.....171

- Recalls from Theoretical Part One §1.....171
- The purpose of the three-dimensional empirical examination: main content....173
- Structure of the thesis (3).....174
- Hypothetical-deductive epistemological approach.....175
- Methodology: qualitative study, quantitative study, comparative study.....175

Chapter IV: Expected role of CRAs and functions of multi-ratings.....178

Introduction of Chapter IV.....179

Section 1. Qualitative study for rating regulations and norms.....180

Introduction of Section 1.....180

- Recalls from Subsection 2, Chapter I.....180
- Content of the Section 1, Chapter IV.....181
- Structure of the Section 1, Chapter IV.....182
- Choices of methodology: comparative study and qualitative study.....183

1.1. European regulative and normative sources of institutional pressure, a comparative perspective.....186

1.1.1. ESMA and rating regulation in Europe (2013)186

1.1.2. International rating norm and its use in Europe (2015).....189

1.1.3. Synthetic summary of two European results: institutional comparison of regulations and norms.....193

- In terms of rating regulations.....193

- In terms of comparison with norms: common points.....194

- In terms of comparison with norms: different points.....195

1.2. Two facts from Russian case: comparison with European case.....196

1.2.1. Rating regulation in the Federal Law (2015).....196

1.2.2. ACRC’s Code of conduct (2015)196

1.2.3. Synthetic summary of two Russian results: institutional comparison of regulations and norms.....201

1.2.4. Conclusive results from the horizontal comparison: Europe vs. Russia..202

- From the point of view of Russian regulator.....202

- From the point of view of European regulator.....203

- From the point of view of the codes of conduct.....203

1.3. Application to Hong Kong and Mainland China.....204

1.3.1. Common law (SFO, 2011), reports (Q&A) and Moody’s case (2016) in HK.....204

1.3.2. HK’s version of Code of conduct (2011)205

1.3.3. Sectorial rating regulators in Mainland China.....208

1.3.4. Security Association of (Mainland) China: in charge of rating norm.....212

1.4. Hypotheses on Chinese segmented market: in comparison with European markets (inspirations from the vertical comparison).....	215
1.5. Analytic summary of Chinese results.....	218
1.5.1. Results for HK case.....	218
1.5.2. Results for Mainland China case.....	220
1.5.3. Conclusive results from the horizontal comparison: HK vs. Mainland China.....	222
1.5.4. Conclusive results from the vertical comparison.....	223
Conclusion of Section 1.....	224
– Structure of the Section 1, Chapter V.....	224
– Inspiration for the following chapters.....	225
<u>Section 2. Sample constitution for quantitative study and preliminary tests.....</u>	226
Introduction of Section 2.....	226
– Objective of the Section 2, Chapter IV.....	226
– Structure of the Section 2, Chapter IV.....	227
2.1. Eligible ratings for the quantitative study.....	228
2.2. Translating rating scale of global/local CRAs into numeric rank.....	229
2.3. A general glance of Chinese rating business.....	230
2.3.1. Data collection since CRAs' entry into Chinese rating market (since 1988).....	232
2.3.2. Evolution of rating activities' number and explanations.....	235
2.3.3. Rating level throughout the history.....	237
2.4. A study of initial ratings.....	239
2.4.1. First initial ratings in Chinese rating history.....	239
2.4.2. Description of sample by agency (1) for initial ratings.....	241
2.4.3. Segmentation of the market.....	245
2.4.4. χ^2 test for initial ratings ((listing places) * (global/local agencies)).....	246
2.5. A study of credit rating changes.....	247
2.5.1. Description of sample by agency (2) for CRCs.....	247
2.5.2. Migration tables for upgrading.....	248
2.5.3. Migration tables for downgrading.....	250
2.5.4. χ^2 test for CRCs ((investment/speculation grades) * (global/local agencies))	253
2.6. A study of watch-lists (WLs): description of sample by agency (3).....	254
Conclusion of Section 2.....	256
– Results of Section 2, Chapter IV.....	256
– Inspirations for the following section and chapter.....	256
<u>Section 3. Study of multi-ratings from viewpoint of issuers and investors.....</u>	257
Introduction of Section 3.....	257
– Inspirations from the literature review.....	257
– Content of the Section 3, Chapter IV.....	258
3.1. Issuers' motivation for multi ratings and investors' reactions: hypotheses, methodology and sample description.....	259
– Sample description.....	259

– Hypotheses in the Subsection 3.1, Chapter IV	260
– Methodology and structure of the Subsection 3.1, Chapter IV.....	262
3.1.1. Better coverage for issuers: investment communication effect?	263
3.1.2. Rating shopping for issuers: threshold effect?	264
3.1.3. Descriptive analysis for split ratings: tiebreak effect for issuers?	267
– Sample description.....	267
– Equations (Correlation test and Mean test)	268
– Results.....	269
– Analyses of results.....	270
3.1.4. Incentive for split ratings: opaqueness for financial issuers (industry effect)?	272
3.1.5. Investors’ discretion in avoidance of rating inflation.....	275
3.2. Causes and consequences of asynchronous Credit Rating Changes (CRCs) ...	277
3.2.1. Endogenous and exogenous causes.....	278
3.2.2. Leader-follower analysis.....	282
3.2.3. Magnitude of CRCs on the same day.....	283
3.3. Watch-lists (WLs), a balance of different quality properties.....	284
3.3.1. Attitude of issuers and investors in the case of WLs.....	284
3.3.2. WLs issued by Big Two and S&P vs. S&P national.....	285
Conclusion of Section 3.....	287
Conclusion of Chapter IV.....	288
– Content of Chapter IV	288
– Connection with Part One.....	289
– Inspirations for the following chapters.....	290

Chapter V: Strategy of CRAs in giving initial issuer ratings.....291

Introduction of Chapter V.....292

- Content of Chapter V.....292
- Structure of Chapter V.....293

Section 1. Reasoning for strategic rating behaviors.....294

Introduction of Section 1294

- 1.1. Literature review: agency-conduct effect and time-varying effect.....297
 - 1.1.1. Inspirations from duopoly-split ratings.....295
 - 1.1.2. Competition with new-market entrants.....297
 - 1.1.3. Considering the time-varying effect.....298
- 1.2. Chinese local rating market analysis: What is different from global CRAs?.....299
 - 1.2.1. Survival in the competition-driven environment: comparison with European rating market.....301
 - European rating market.....301
 - Chinese rating market.....302
 - 1.2.2. Distinctiveness by CRAs' governance.....304
 - 1.2.3. Distinctiveness by flattering ratings of new-market entrants.....306
 - 1.2.4. Distinctiveness by business internationalization.....307
 - 1.2.5. Distinctiveness by conflicting business model.....309
- 1.3. Constitution of Hypotheses (1)311
 - 1.3.1. Nutshell for rating market position.....312
 - 1.3.2. Speculation on strategic behavioral beliefs: how does reputation mechanism deal with the competition ?.....315
 - 1.3.3. Testing hypotheses on strategic rating behaviors.....318
 - 1.3.4. Descriptive statistics of sampling.....320

Conclusion of Section 1.....323

Section 2. Strategic choices of rating determinants.....325

Introduction of Section 2.....325

- 2.1. Literature review for information selection.....326
 - 2.1.1. Characterizing firm-specific accounting numbers and financial ratios.....327
 - 2.1.2. Considering external and internal corporate governance329
 - External corporate governance.....329
 - Internal corporate governance330
 - Complexity of corporate governance-related information.....332
 - 2.1.3. Stock market-related information.....333
- 2.2. Introducing Chinese institutional factors.....334
 - 2.2.1. Chinese external and internal corporate governance.....336
 - Chinese external corporate governance.....336
 - Chinese internal corporate governance.....337
 - o First cycle in red (regarding shareholding structure)338
 - o Second cycle in green (regarding management)339

○ Third cycle in blue (regarding board information)	340
○ Fourth circle in orange (regarding the interconnection of three kinds of internal corporate governance elements and their interaction with CRAs)	341
2.2.2. Evolving quality of public information in China.....	342
2.2.3. Voluntary disclosure for private information in China.	346
– One side of story relative to private information, from the point of view of CRAs.....	346
– One other side of story relative to private information, from the point of view of issuers.....	347
– Voluntary disclosure under Chinese institutional environment.....	348
2.2.4. Supplementary information of Chinese macroeconomic indicators.....	349
2.3. Constitution of Hypothesis (2)	353
2.3.1. Testing hypothesis for strategic choices of rating determinants.....	354
– Accounting numbers and financial ratios: hard information.....	354
– Chinese external and internal corporate governance: soft information.....	355
○ External corporate governance.....	355
○ Internal corporate governance.....	356
– Stock market-related information.....	357
– Supplementary information of macroeconomic indicators.....	358
2.3.2. Descriptive statistics of sampling.....	359
– Data description for hard information.....	359
– Data description for soft information.....	361
– Data description of stock market-related information.....	362
– Data description of macro-economic indicators.....	363
2.3.3. Calibration of variables.....	364
– As for variables of hard information.....	364
– As for variables of soft information.....	366
– As for variables of stock market-related information.....	366
– As for variables of macro-economic indicators.....	366
Conclusion of Section 2.....	367

Section 3. Execution of logistic models and analysis of results.....369

Introduction of Section 3.....369

– Structure of Section 3, Chapter V.....	369
– Sample description of Section 3, Chapter V.....	370
– Recalls of Section 1, Chapter V.....	371
○ Agency-conduct effect.....	371
○ Time-varying effect.....	373
– Recalls of Section 2, Chapter V.....	374
– Correlation test.....	374
3.1. Methodology for logistic models.....	375
3.1.1. Binomial logistic model: investment grade vs. speculation grade.....	376
3.1.2. Ordered multinomial logistic model for ratings of investment grade.....	377

3.2. Results of binomial logistic model and analysis.....	379
3.2.1. Logistic model with all variables, except those representing CRAs (1).....	380
3.2.2. Logistic model with the sole-variable: the quasi-separability of Globalxinhua.....	383
3.2.3. Logistic model with all variables, including Globalxinhua: comparative analysis.....	384
3.3. Results of ordered multinomial logistic model and analysis.....	387
3.2.1. Logistic model with all variables, except those representing CRAs (2).....	389
3.2.2. Logistic model with all variables, Chinese local CRAs vs. Globalxinhua...	393
Conclusion of Section 3.....	400
Conclusion of Chapter V.....	401

Chapter VI. Informative impact of rating events and cause analysis of investors' significant abnormal stock returns.....402

Introduction of Chapter VI.....403

- Recalls of “classic theories concerning CRAs” in Chapter I (Section 3).....403
- Structure and content of Chapter VI.....404

Section 1. From previous inspirations to hypotheses and data description.....406

Introduction of Section 1.....406

- CRAs' *information content* and stock market reaction.....409
 - Structure of Section 1.....409
 - 1.1. Literature review for informative impacts of CRCs.....409
 - Structure of Subsection 1.1, Chapter VI.....409
 - Theory of information content.....409
 - Theory of Wealth redistribution.....410
 - Comparison of two theories.....411
 - Precautions to take.....411
 - 1.1.1. Application to Anglo-Saxon markets.....412
 - 1.1.2. Application to Continental European markets.....413
 - 1.1.3. Application to Emerging markets.....415
 - 1.2. Hypotheses sorted by Chinese institutional factors417
 - 1.2.1. Crisis effects (2008)418
 - 1.2.2. Segmentation of the stock market.....419
 - 1.2.3. Global and local CRAs.....420
 - 1.2.4. Consideration of anticipation: a proxy of ownership.....421
 - 1.2.5. Watch-lists (WLs)-preceded Credit rating changes (CRCs)422
 - 1.3. Descriptive statistics and the treatment of contamination.....423
- Conclusion of Section 1.....426**

Section 2. Research design and results for CRCs.....427

Introduction of Section 2.....427

- 2.1. Methodology.....428
 - 2.1.1. Estimation windows and event windows.....428
 - 2.1.2. Market model for a classic event study.....429
 - 2.1.3. Refined estimation model: Garch vs. OLS.....431
 - 2.1.4. Parametric tests: one sample T test and paired-samples T test.....434
 - One sample T test.....434
 - Paired-samples T test.....435
 - 2.1.5. Non-parametric tests: one sample and paired-samples.....436
 - One sample non-parametric test.....436
 - Paired-samples non-parametric test.....437
- 2.2. General results (tables and graphs)438
 - 2.2.1. Downgrading (OLS estimation model)440
 - 2.2.2. Downgrading (Garch)441

2.2.3. Upgrading (OLS estimation model)	442
2.2.4. Upgrading (Garch)	443
2.3. Analysis for downgrading results sorted by Chinese institutional factors.....	444
2.3.1. Subsample of CRCs before vs. after the crisis (2008).....	445
2.3.2. Subsample of segmentation of the stock market: A share, H share and double-listing share.....	447
2.3.3. Subsample of global vs. local CRAs.....	450
2.3.4. Subsample of concentrated vs. dispersed ownership.....	452
2.3.5. Subsample of CRCs, with vs. without preceding WLS.....	454
2.4. Analysis for upgrading results sorted by Chinese institutional factors.....	456
2.4.1. Subsample of CRCs before vs. after the crisis (2008)	456
2.4.2. Subsample of segmentation of the stock market: A share, H share and double-listing share.....	458
2.4.3. Subsample of global vs. local CRAs.....	461
2.4.4. Subsample of concentrated vs. dispersed ownership.....	464
2.4.5. Subsample of CRCs, with vs. without preceding WLS.....	466
Conclusion of Section 2.....	469
- Contributions.....	469
- Methodology.....	469
- Analyses of results.....	470
<u>Section 3. More evidence of CRCs and event study on WLS.....</u>	471
Introduction of Section 3.....	471
3.1. Cross-sectional analysis for the causes of abnormal returns (ARs).....	471
3.1.1. Literature review.....	473
3.1.2. Data description.....	475
3.1.3. Variables selection (downgrading)	478
3.1.4. Variables selection (upgrading)	480
3.1.5. Methodology and results (OLS and Garch)	482
3.2. Event study on Watch-lists (WLS)	484
3.2.1. Literature review, hypotheses and data description.....	485
3.2.2. Results for OLS.....	486
3.2.3. Robust test results for Garch.....	488
Conclusion of Section 3.....	492
Conclusion of Chapter VI.....	493
Conclusion of Part Two §2.....	495

General Conclusion.....	497
- Structure of the thesis (4)	499
- Inspirations from the Preparatory Part One §1	500
- Analyses of results from Empirical Part Two §2	504
- Perspectives and future projects	511
Bibliography.....	513
- Books.....	513
- Articles.....	517
Annexes.....	539
- Annex 1.....	539
- Annex 2.....	542
- Annex 3.....	544
- Annex 4.....	547
- Annex 5.....	550
- Annex 6.....	551
- Annex 7.....	553
- Annex 8.....	554
- Annex 9.....	555

« L'université n'entend donner aucune approbation ni improbation aux opinions émises dans cette thèse: ces opinions doivent être considérées comme propres à son auteur. »

Synthèse en français

Les agences de notation n'ont cessé d'étendre leur influence au cours du mouvement de globalisation et du décloisonnement des systèmes financiers, jusqu'à ce qu'une crise mondiale éclate, en 2008. Les plus grandes agences, souvent surnommées « The Big Three » ont été critiquées par les médias et le grand public, pour leur participation à cette turbulence systémique. Une volonté de régulation est alors apparue aux niveaux national, régional et international, afin de mieux encadrer leurs activités, qui restaient jusqu'alors essentiellement auto-régulées.

L'actualité concernant le *rating* a aussi attiré l'attention du monde académique. Cependant, la plupart des articles publiés jusqu'alors sur ce sujet, ont porté sur les marchés développés, et plus particulièrement les États-Unis. Les quelques études traitant des marchés émergents, quant à elles, reposaient plus sur des « faits stylisés » que sur des résultats empiriques étayés. De plus, les études existantes reposant sur les théories classiques dans ce domaine (Théorie de l'agence, Théorie d'asymétrie d'information et Théorie du signal, entre autres), omettent souvent de prendre en compte les éléments institutionnels dans leur analyse.

Ces observations nous ont poussée à faire une étude de *rating*, dans l'environnement institutionnel de la Chine. Faire des recherches sur la Chine est dorénavant devenue populaire, en raison de sa réussite économique. L'objectif de cette thèse doctorale est de contribuer à l'ensemble de la recherche sur les agences de notation.

Nos recherches ont couvert les trois aspects : théorique, conceptuel et empirique.

La première partie de notre étude se focalise sur l'examen du cadre théorique : le *Néo-Institutionnalisme*. Dans cette optique, nous avons parcouru son histoire, son évolution et ses applications au domaine des organisations et aux agences de notation. L'objectif de ce bilan est d'illustrer les éléments institutionnels utiles à la construction et à la discussion des chapitres empiriques. Ainsi, nous pouvons citer entre autres, la structure formelle vs. la structure informelle de l'environnement institutionnel,

l'interaction des agences de notation avec leur environnement du marché, le changement de l'environnement institutionnel, la stratégie de distinction vs. la stratégie d'isomorphisme des agences de notation, les trois piliers de l'analyse néo-institutionnelle... (Chapitre I)

Le *Capitalisme d'État* propre au marché chinois est mis en avant, et une analyse comparative a été menée entre les marchés des actions et marchés d'obligations chinois et européens. Nous avons examiné non seulement les pays européens occidentaux, mais aussi les pays de la « Nouvelle Europe ». Cette dernière fait partie de l'économie en transition post-communiste. Nous nous intéressons également à l'intégration de la notation financière, au niveau de l'Union Européenne. (Chapitre II)

Par ailleurs, nous menons une analyse dynamique, afin de mieux comprendre l'évolution de l'industrie de la notation en Chine. Cela nous permet ensuite d'illustrer l'interaction des agences de notation avec les autres acteurs du marché : les autorités régulatrices, les émetteurs de titres financiers, et les investisseurs. Plus précisément, dans un premier temps, nous avons mis en évidence que le système sectoriel de la régulation de *rating* en Chine est très compliqué à comprendre et qu'il reste au coeur de la mutation financière du pays. Dans un deuxième temps, nous nous sommes rendu compte qu'il faut catégoriser différents types d'informations communiquées par les émetteurs sur le marché. Enfin, nous nous intéressons aux différents types d'investisseurs présents sur ce marché chinois segmenté. (Chapitre III)

Dans la seconde partie, nous avons réalisé une vaste revue de la littérature, et proposé d'ajouter les spécificités institutionnelles chinoises aux variables déjà prises en compte dans les études sur le *rating*. Tout cela nous amène à remettre en question les évidences et les constats théoriques et empiriques retrouvés dans les études habituelles sur la notation financière, et à mettre en avant des hypothèses à tester empiriquement. Nous nous situons essentiellement dans un cadre épistémologique reposant sur une démarche hypothético-déductive.

Au niveau de la *méthodologie*, certains outils comparatifs, qualitatifs et quantitatifs ont été envisagés. Diverses approches sont choisies en fonction du contenu de chaque chapitre : le rôle (Chapitre IV), la stratégie (Chapitre V), et l'impact (Chapitre VI) des agences de notation en Chine. Nous les adaptons également aux échantillons les plus pertinents selon l'étude à mener.

Le rôle des agences de notation (Chapitre IV)

Section 1 : Dans cette section nous revenons sur les textes (législatifs, réglementaires et normatifs) relatifs à la notation, afin de faire ressortir les mots les plus employés dans ces textes officiels sur le business de *rating*. Nous déduisons ensuite que ces mots-clés témoignent du rôle des agences de notation tel qu'il est « le plus attendu » par les régulateurs et par les codes de conduite existant dans ce domaine. Nous intégrons également dans notre analyse, par une démarche comparative, la segmentation du marché en Chine (Chine continentale vs. Hong Kong) et la différence existant entre les marchés développés et les marchés émergents. Cette étude qualitative consiste enfin à comparer les différences entre les deux piliers institutionnels (régulation vs. norme des affaires) que nous avons établies dans la discussion théorique sur le *Néo-Institutionnalisme*.

Section 2 : Cette section est principalement consacrée à construire et à préparer les échantillons pour les tests quantitatifs qui seront menés dans la suite de la recherche. Y sont également développées certaines descriptions des données et des premiers tests statistiques (pour la première notation : « initial ratings », la modification de notation : « credit rating changes » et la mise sous surveillance : « watch-lists »). De plus, les éléments institutionnels (le type d'agences de notation: locale *versus* internationale, la segmentation du marché et l'évolution du « marché de la notation » dans le temps, entre autres) ont servi à construire des tableaux croisés.

Section 3 : Nous avons construit des échantillons de « multi-ratings » qui ont servi à étudier les utilités des agences de notation, du point de vue des émetteurs et des investisseurs. Nous avons notamment observé comment les émetteurs communiquent leurs motivations à solliciter et à utiliser des « multi-ratings » auprès de leurs investisseurs. Nous avons investigué également sur le « rating shopping », le « split rating » et le « rating inflation », tout en nous appuyant sur des statistiques descriptives et des tableaux migratoires.

La stratégie des agences de notation (Chapitre V)

Section 1 : Dans cette section, nous avons réalisé une analyse du marché du *rating* en Chine, ce qui nous a permis de distinguer non seulement les agences de notation internationales : « the Big Three » vis-à-vis des agences locales chinoises, mais aussi les « nouveaux entrants » du marché de *rating* (SBCR et CCRC) vis-à-vis des

trois plus anciennes agences chinoises: « Chinese Top Three » (Chengxin, Lianhe and Dagong). Nous supposons que leur position sur le marché conduit chacune de ces agences à adopter une stratégie spécifique de *rating*, afin de pouvoir continuer à survivre et à pratiquer leurs activités sur ce marché très marqué par la concurrence.

Section 2 : Cette section formalise une sélection des déterminants de la notation, tels qu'ils existent dans la revue de littérature (« hard » : ratios financiers, « soft » : gouvernance externe et interne des entreprises, l'information relative au marché des actions et à la macroéconomie du pays). Simultanément, nous y avons introduit les variables représentatives des spécificités de l'environnement institutionnel en Chine, qui nous semblent les plus marquantes.

Section 3 : Nous avons mis en œuvre un modèle de type logistique binomial, pour mieux comprendre la catégorie de *rating* (« speculation grade » vs. « investment grade ») décerné par les agences de notation, et plus particulièrement les déterminants influençant la probabilité de décerner un premier *rating* des émetteurs (« initial issuer rating »). Au-delà de certains déterminants propres à l'émetteur ou à l'environnement institutionnel du marché, il apparaît que le fait d'avoir été noté par une agence « globale » (Big Three) ou par une agence locale (Xinhua Credit Rating Agency) influence fortement cette probabilité.

Ensuite, au sein des émetteurs notés dans la même catégorie « investment grade », nous avons appliqué un modèle de régression logistique multinomiale ordonné, afin de mieux comprendre les déterminants influençant la probabilité d'appartenance à une sous-catégorie de *rating* plutôt qu'à une autre. Il en ressort notamment que « l'agence de notation ayant octroyé le *rating* » est un déterminant important. Ce qui tend à confirmer le fait que les agences de notation locale ont une stratégie de notation qui leur est spécifique, en lien avec les résultats que nous avons obtenus dans la description des données précédemment.

L'impact sur le(s) marchés d'actions chinois (Chapitre VI)

Section 1 : Nous avons dressé une liste très extensive et exhaustive des changements de notation survenus en Chine et de leur impact informationnel sur le marché des actions. Dans un premier temps, une analyse théorique de l'impact attendu des changements de note est menée grâce à une revue de littérature, qui intègre la distinction entre marchés développés (marchés anglo-saxons et marchés de l'Europe continentale) et marchés émergents. Les conclusions d'ordre empirique que nous en tirons nous servent alors de base pour construire notre échantillon (de l'année 1988 à 2016), afin de pouvoir tester cet impact sur le(s) marché(s) d'actions chinois. C'est un marché qui est resté très peu étudié jusqu'alors.

Section 2 : Nous avons mené une étude d'évènements du contenu informationnel de la modification de notation (en testant la présence de rendements anormaux), tout en tenant compte des éléments institutionnels sur le marché chinois tels que la prise en compte de la période de la crise financière (à partir de 2008), la segmentation du

marché entre la Chine continentale et Hong Kong, la différence entre les agences internationales et les agences locales chinoises, le niveau de concentration de la propriété des entreprises et l'existence possible d'une « mise sous surveillance » préalable la modification définitive de la notation). Nous avons cherché à raffiner la démarche classique des études d'événements, notamment en mettant en oeuvre en parallèle deux méthodes d'estimation (OLS et Garch), et en menant des séries de tests tant paramétriques que non-paramétriques.

Section 3 : Nous avons appliqué une étude d'événements à l'échantillon des « mises sous surveillance (watch-lists) » afin de pouvoir comparer les résultats obtenus avec ceux prévalant sur l'échantillon des modifications de note (« credit rating changes »), et voir si l'apport informationnel de ces deux types d'annonces d'événement de *rating* s'avère différent. Pour les changements de note, nous complétons l'étude d'événements par un modèle de régression linéaire multiple tenant de faire ressortir les principaux déterminants des rendements anormaux significatifs (avec une option de « stepwise »).

Au niveau des *résultats*, nous sommes arrivée à plusieurs découvertes empiriques:

Premièrement, nous avons montré qu'en Chine, le rôle des agences de notation ne se limitait pas à celui qui leur est habituellement assigné (consistant à évaluer le « risque de crédit »), par une approche comparative. C'est contraire à ce qu'elles font en Europe ou sur d'autres marchés plus matures. Après avoir exécuté, sur le logiciel NVivo, une étude des textes de lois et de « codes de conduite » relatifs à la notation (deux piliers institutionnels). Nous en sommes arrivée à la conclusion que leur rôle était également différent en Chine continentale et à Hong Kong, en raison de la segmentation du marché. La structure de surveillance formelle des activités de notation en « Mainland China » est complétée par une structure informelle (*Guanxi*, c'est-à-dire le réseau ou la connection interpersonnelle). (Section 1, Chapitre IV)

Il semble aussi que les agences de notations se laissent tenter par le « rating shopping », le « split rating » et le « rating inflation », sous la pression des émetteurs. En revanche, les investisseurs sont relativement prudents à cet égard, surtout quand les émetteurs sont motivés pour solliciter de « multi-ratings ». (Section 3, Chapitre IV)

Deuxièmement, nous avons mis en évidence que les agences de notation internationales (« the Big Three ») ont tendance à noter plus strictement que les agences locales, *ceteris paribus*, en employant des modèles logistiques (sur le logiciel Stata). Nous nous sommes rendu compte que les comportements stratégiques variaient d'une agence à l'autre, lorsque l'on étudie les déterminants à l'origine des notations initiales des émetteurs (Chapitre V). Ces résultats confirment le constat que nous avons établi préalablement, à partir des tests préliminaires (sur le logiciel SPSS) appliqués à l'analyse descriptive des données quantitatives. Par exemple, la segmentation du marché chinois est significativement liée au type d'agences sollicitées pour fournir les *ratings* par leurs clients à tel ou tel segment du marché. Par ailleurs, les agences locales sont généralement plus enclines à fournir une notation favorable, en comparaison des « Big Three ». (Section 2, Chapitre IV)

Troisièmement, nous ne sommes pas parvenue à trouver l'impact des « modifications de notation » sur le marché chinois des actions, de manière générale. Nous avons utilisé une étude d'événements, sur les logiciels Stata et EViews. Seuls des rendements anormaux significatifs sont apparus sur quelques sous-échantillons, même après avoir affiné notre méthodologie, en complétant le modèle du marché par différentes méthodes d'estimation (OLS et Garch) et par divers tests paramétriques et non-paramétriques. Par ailleurs, les « mises sous surveillance » négatives sont apparues comme étant plus informationnelles que les « mises sous surveillance » positives. Nous avons constaté que les variables liées au type d'industrie arrivent à expliquer les rendements anormaux significatifs. (Chapitre VI)

Enfin, les analyses et résultats que nous avons apportés au cours de chaque chapitre dans la partie empirique, ont enrichi en retour, nos discussions sur l'environnement institutionnel du marché chinois abordées dans la première partie de cette thèse.