Rating Agencies in the Below Investment Grade Commercial Mortgage-Backed Securities Market

by

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Bachelor of Science in Economics, 1997 University of Pennsylvania

Submitted to the Department of Urban Studies and Planning in Partial Fulfillment of the Requirements for the Degree of

Master of Science in Real Estate Development at the

Massachusetts Institute of Technology September 2001

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ABSTRACT

As the assigners of credit ratings and subordination levels, rating agencies play a critical role in the whole CMBS market. In an effort to investigate their influence in this market, we analyzed the business models, industry structure and rating methodologies of rating agencies. In addition, their functions in the capital markets and CMBS markets are discussed. These findings are then applied in an attempt to explain the variations of subordination levels. We found that rating agencies play a significant role in the below investment grade CMBS market, mainly through their evolving credit assessing methodologies. However, rating agencies’ business models and structure of the CMBS rating industry are not considered to have significant impact on subordination level decisions. It is found that most of the variations in the subordination levels can be attributed to non-rating agency factors such as change in CMBS pool compositions, change in CMBS loan structures and increasing scrutiny from the Below Investment Grade buyers.

Thesis Supervisor: Timothy J. Riddiough
Title: Associate Professor of Real Estate Finance
I would like to thank and acknowledge my thesis advisor Professor Tim Riddiough. Without his insights and guidance, this thesis would not have been completed.

I would also like to thank Tad Philipp and Sally Gordon, who have both inspired and taught me a lot about the CMBS industry.

My gratitude also goes to Josh Marston of MFS Investment Management and Swati Sharma of Capital Trust for providing invaluable information about this industry.

This thesis is dedicated to my parents, who have provided me with never ending support.
# TABLE OF CONTENTS

1. **INTRODUCTION**  
   1.1 SCOPE OF RESEARCH  
   1.2 TREND OF SUBORDINATION LEVELS IN THE B-PIECE MARKET  
   1.3 AREAS OF STUDIES  
   1.4 SUMMARY OF FINDINGS  

2. **THE BELOW INVESTMENT GRADE CMBS MARKET**  
   2.1 INTRODUCTION TO COMMERCIAL MORTGAGE BACKED SECURITIES  
   2.2 THE B-PIECE (BELOW INVESTMENT GRADE) CMBS MARKET  

3. **THE RATING AGENCY INDUSTRY**  
   3.1 WHAT IS A CREDIT RATING  
   3.2 WHY DO RATING AGENCIES EXIST IN THE CAPITAL MARKET  
   3.3 MAJOR RATING AGENCIES  
   3.4 BUSINESS AND REVENUE MODELS OF MAJOR RATING AGENCIES  
   3.5 RATING AGENCIES IN THE CMBS INDUSTRY  
   3.6 MONITORING OF THE RATING AGENCY BUSINESS  

4. **ROLE OF RATING AGENCIES IN CMBS B-PIECE MARKET**  
   4.1 RATING CMBS  
   4.1.1 THE RATING PROCESS  
   4.1.2 HOW IS CREDIT ANALYSIS OF STRUCTURED FINANCE PRODUCTS DIFFERENT FROM CREDIT ANALYSIS OF OTHER PRODUCTS  
   4.2 ROLE OF RATING AGENCIES IN THE CMBS MARKET  
   4.3 DO RATINGS MATTER IN THE CMBS MARKET  

5. **DETERMINATION OF BELOW INVESTMENT GRADE SUB-ORDINATION LEVEL**  
   5.1 MEANING OF SUBORDINATION LEVEL  
   5.2 RATING AGENCIES’ DETERMINATION OF CMBS SUBORDINATION LEVELS  

6. **TREND OF SUBORDINATION LEVELS IN THE B-PIECE MARKET**  
   6.1 TREND OF SUBORDINATION LEVELS IN THE B-PIECE MARKET  
   6.2 ANALYSIS OF SUBORDINATION TREND  

7. **CONCLUSION**  

**ENDNOTES**  

**BIBLIOGRAPHY**
CHAPTER 1

INTRODUCTION

1.1 SCOPE OF RESEARCH

Below Investment Grade market, also known as B-piece market, is a specialized area in the Commercial Mortgage Backed Securities (CMBS) industry. On the product side, subordinate tranches involve high credit risk and real estate risk. In addition, if the subordinate tranches cannot be sold, an issuer/undewriter will have a hard time selling the rest of the bond. On the market side, only qualified players are allowed in the market. Among the qualified players, few have the expertise, interest and capital to participate in the market, which cause both the primary and secondary market to be illiquid. As a result, B-piece buyers have tremendous influence over the structure of the security.

Many industry participants have noticed the uniqueness of B-piece market, but few studies have been conducted specifically on the B-piece market structure itself. The purpose of this thesis is to explain the trend of subordination levels in the below investment grade CMBS tranches. Since rating agencies are primarily responsible for determining the subordination levels, a detailed study on rating agency will also be included in order to investigate their influence.

There are many types of CMBS. A CMBS transaction can be backed by a pool (conduit) or by single property (large loan deal). For conduits, there are fixed rate and floating rate transactions. Since rating methodologies and subordination levels differ with each different type of CMBS transaction, our study will focus mainly on fixed rate conduits in this thesis.
1.2 TREND OF SUBORDINATION LEVELS IN THE B-PIECE MARKET

In recent years, studies have documented the trend of subordination levels, particularly in the conduit section of CMBS\(^1\). A study by Salomon Smith Barney in late 1999 showed that subordination levels had a decreasing trend in the investment grade area, but remained stable in the subordinate tranches (BB and B) (Wheeler, 2000). However, according to new available data, the below investment grade subordination levels seemed to have decreased since 1999\(^2\). This movement was interesting because it seemed to coincide with the Russian financial crisis of late 1998\(^3\).

![Tranches BB and B Subordination Level Trend](chart.png)

Source: Salomon Smith Barney, Moody's Investors Service

1.3 AREAS OF STUDIES

Many factors cause the subordination levels to change in the below investment grade area. In this thesis, analysis will be focused on the influence of rating agencies since they are the assigners of subordination levels. After introducing the below investment grade CMBS market in chapter 2, the rating agency industry and their business models will be studied in chapter 3. Chapter 4 and 5 will be an analysis of the rating agencies’ role in the CMBS market and their credit rating methodologies. In chapter 6, these results
will be applied in order to explain the variation in subordination levels. We will complete the analysis by examining factors other than rating agencies, as rating agencies may not exert as much influence in the below investment grade analysis as they do in the above investment grade area.

Although sometimes considered as B-piece, Non-rated tranche or the equity tranche poses different risks and thus requires different analysis. As a result, a study on the non-rated piece and equity tranches will not be included in this thesis.

1.4 SUMMARY OF FINDINGS

In our study, we reviewed CMBS rating methodologies published by different rating agencies. In addition, we interviewed industry participants in an attempt to gain understanding of the market dynamics. We also reviewed journal articles related to the B-piece CMBS market and subordination levels.

We found that rating agencies are crucial to the development of the below investment grade CMBS market, as rating agencies provide the industry with credit expertise and a common credit “language”. We also found that many factors affect the change in subordination levels in recent years. On the rating agency’s side, changes in credit assessment models help explain some of the variations in the subordination trends. On the underwriting side, changes in CMBS pool compositions and loan structures have improved the quality of the CMBS pools, which in turn decrease subordination levels needed. In addition, increasing scrutiny from investors, especially the below investment grade buyers, improves the pool quality indirectly by “kicking” out “bad loans”. As pointed out by one of the rating agencies, this factor is especially important to the subordinate pieces because their ratings are most sensitive to the few “bad loans” or “offenders”. Once these “bad loans” are removed, subordination levels in the B-piece market improve. However, industry structure and business models of the rating agencies are not found to affect ratings and subordination levels decisions greatly.
2.1 INTRODUCTION TO COMMERCIAL MORTGAGE BACKED SECURITIES

*The Product*

A Commercial Mortgage-Backed Security (CMBS) is a bond backed by a portfolio of commercial real estate mortgages. The CMBS structure allows the pass through of diversified interests in a portfolio of commercial real estate loans to investors (Hess & Liang, 2001). Normally, CMBS are structured as sequential-pay bonds and receive credit ratings from AAA/Aaa to below investment grade ratings. The senior/subordinate structure of CMBS helps to provide extra credit support (credit protection) for the senior classes. Principal payments, either scheduled or prepaid, are first distributed to the highest rated classes, and then the next rated class, and so on. On the other hand, losses are distributed from the lowest rated classes - first the Non-Rated class, then the B-pieces, and then the investment grade classes.

*Why Invest in CMBS*

According to Sally Gordon⁴, investors buy CMBS because of the following reasons:

1. Risk Based Capital: For some investors, it is cheaper to hold bonds rather than mortgages, even at a comparable yield.

2. Relative Value Investing: CMBS outperforms alternative investment in terms of yield advantage due to smaller investor base, less liquidity, less information availability, less market efficiency and investors’ unfamiliarity with the asset.

3. Different Risk Profile: CMBS provides investors with an opportunity to take on more credit risk and less prepayment risk (vs. Single Family MBS). However, CMBS picks up more extension risk than Corporate Bonds. In addition, CMBS market is highly illiquid, especially in the Below Investment Grade Market.
The Players

The CMBS investor base is broad and consists of investors with different objectives. Investors such as insurance companies, money managers, investment banks, thrift corporations, pension funds, investment advisors, foreign financial institutions and opportunistic funds are all interested in buying a certain class of CMBS (Gordon, 2000). However, due to their different risk profiles and investment restrictions, different investors are interested in different CMBS classes.

The Investment Grade CMBS market is dominated by companies that have risk-based capital reserve requirements. These include pension funds and insurance companies that look for real estate exposure. Pension funds only buy AAA classes because these classes are ERISA eligible. Other players that want to pick up extra yield may buy mezzanine classes (A and BBB classes). According to an article published by Hess & Liang (2001), the U.S. Department of Labor recently amended the ERISA regulations, and allows pension funds to investment in tranches rated BBB-/Baa3 or above, even if they are subordinate to higher rated tranches. It is unclear whether the relaxation of ERISA requirements will attract pension funds to expand their investment to other tranches.

The B-piece investors are more opportunitistic and usually hold the higher risk bonds for longer-term investment.

The non-rated tranches are often retained by the issuers. Sometimes, these classes are privately placed due to the confidential information involved.

Market Development and Recent Trends

The development of CMBS has been well documented. According to an investor’s guide published by Bear Stearns (1999), while the origin of CMBS can be traced to the early 1980s, it was in the early 1990’s that the Resolution Trust Corporation (RTC) accelerated the development of the CMBS market. RTC
created the model and platform for the new financing outlets. Issuance started to pick up as more and more commercial real estate mortgage holders look for ways to decrease their holdings. Traditional commercial real estate lenders began to use CMBS to increase the liquidity of their portfolios and to recapitalize their equity base. These institutions are motivated by the new capital requirements that made it more attractive to hold investment grade mortgage securities in their asset bases than to hold whole loans.

Hess and Liang, "Trends in the US CMBS Market", Real Estate Finance, Spring 2001 (Original data from Commercial Mortgage Alert)

2.2 THE B-PIECE (BELOW INVESTMENT GRADE) CMBS MARKET

The Product

B-pieces generally refer to the subordinate classes that carry below investment grade ratings: BB/Ba2 and B/B. The function of these tranches is to enhance the senior classes through over-collateralization. Overtime, credit enhancement can build up when loans are retired. Rating agencies may review the transaction and decide to upgrade the ratings.

There are many differences in structure between investment grade CMBS and non-investment grade CMBS. Sally Gordon (1999) provided a good summarized comparison between highest rated classes and lowest rated classes:

<table>
<thead>
<tr>
<th>Features of Highest and Lowest Rated Classes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Highest Rated Class</strong></td>
</tr>
<tr>
<td>Paid off first</td>
</tr>
<tr>
<td>Lowest yield</td>
</tr>
<tr>
<td>Least likely to suffer loss</td>
</tr>
<tr>
<td>Shortest average life</td>
</tr>
<tr>
<td>Most subordination</td>
</tr>
</tbody>
</table>

Source: Sally Gordon, “How to build a bond”, CMBS World, Volume 1 Number 3

E&Y Kenneth Leventhal, a real estate consulting firm, points out that when making investment decisions, B-piece buyers analyzes different features of a CMBS transaction:

- Attributes of the underlying collateral, including property performance and mortgage underwriting;
- Structure for the CMBS cash flows and how these cash flows maybe affected by mortgage prepayments and defaults;
- Role of third parties and their potential impact on B-pieces’ values;
- Rights and role an investor will gain with respect to loan workouts and REO decisions, plus regulatory impacts.
With non-investment ratings, B-pieces are expected to have higher default rates than those of investment grade tranches. According to a bond default study published by rating agency Fitch IBCA, Duff & Phelps (Fitch), the default rate of these CMBS tranches had been low compared to other bonds for the decade. The non-investment grade CMBS average annual default rate was only 0.14% during 1990-1999, compared with 3.07% of default rate in the corporate bond sector (Lans & Price, 2000). One of the reasons why CMBS default rates have been low maybe due to the healthy real estate condition since the early 1990's real estate downturn (Lans, 1999). Recently, in an updated default study report, Lans & Cain (2001) point out that default rate of CMBS has risen despite almost perfect economic conditions. Cumulative CMBS default rate has risen from 0.54% one year ago to 1.02% by May 2001.

![Annual Default Rates graph](image)

*Source: Lans and Cain, "Perfect to a Default: 2001 CMBS Conduit Loan Default Study", Fitch IBCA, May 2001*

Although B-pieces are considered risky investments and have less demand than above investment grade, they are a critical element in successfully selling the bond. Without buyers willing to invest in subordinate pieces, issuers have no choice but to warehouse the most risky pieces. Most issuers are unwilling to do so, especially after the lessons learnt during the 1998 Russian financial crisis: Capital America and CRIIMI MAE, the two largest players that warehoused a lot of risky CMBS classes, incurred tremendous losses when the spread widened significantly (Riddiough, 2001). Thus, most issuers are willing to negotiate with
potential B-piece buyers in modifying the structure of the portfolio until they are able to successfully place the B-pieces. Thus, B-piece buyers exert tremendous influence not only on pricing, but also on the structure of the security itself.

The Market

The below investment grade CMBS classes, or B-pieces, started in 1996 (E&Y Kenneth Leventhal, 1997). The B-piece market functions differently from its investment grade counterpart. Investment grade tranches are usually sold at near par value. B-pieces, on the other hand, are longer term “buy and hold” discount investments (CSSA, 1997). Due to the real estate expertise that is required to truly value these securities, the B-piece market is very illiquid. Since most of the B-piece buyers are long-term holders and the issuance of these classes are usually small, there is no active secondary trading market for these classes. Most of the classes are sold through private negotiation when a CMBS is issued. Due to the limited number of players participating in the market, B-piece buyers exert huge influence to the structure, portfolio composition and even ratings of CMBS. Further explanation about this relationship will be discussed in the next chapters.

The Players

Investors in the below investment grade markets are subject to Rule 144A (private placement rule)(CSSA, 1997). These buyers, known as Qualified Institutional Buyers (QIB), are large financial institutions that are allowed to trade unregistered securities among themselves (Brealey & Myers, 1991).

As the holder of the subordinate pieces, B-piece buyers look for higher yield by taking additional credit and real estate risks. Most B-piece buyers are sophisticated investment firms that have real estate expertise and want real estate exposure. In addition, these firms have ample knowledge in asset management as special servicing affects the yields of these classes greatly. Due to the tremendous real
estate and credit risk involved in these below investment grade classes, investors perform detailed due diligence on the portfolio as well as the underlying collaterals.

Subordinate bonds have become more popular, as investors are pricing the risks more accurately either through the aid of real estate joint ventures or increasing knowledge of the products. In secondary trading, subordinate bonds are becoming more liquid because of improving collateral information quality (Gichon, 1999).

Before the Russian financial crisis in 1998, the B-piece players are usually third party money management companies, special servicers, investment banks, pension fund advisors and mortgage REITs. CRIIMI MAE, a mortgage REIT that actively participated in the CMBS B-piece market, went bankrupt after the crisis. According to Commercial Mortgage Alert, the B-piece sector was “battered during the bond-market downturn in 1998, which effectively killed a group of mortgage REITS that were formed to invest in the high yield market.”

After the crisis, only about handful of B-piece players remain. Most of the buyers concern about the relative low return compared to other investments. Many B-piece buyers are not impressed by the typical blended return for the below investment grade classes of CMBS – 15-18% on a leveraged basis. Opportunistic investors want return of 20% or more, so they are placing their bets elsewhere.

Today, the B-piece market functions like a “club” in the sense that there is close relationship between the investors and the issuers. The issuers know the investors well and they know each player’s risk appetite. The B-piece market is also referred to as “The Cartel” by some in the industry, because of the influence exerted by a small number of investors in shaping CMBS pools (Commercial Mortgage Alert, 2000).
According to Commercial Mortgage Alert, B-piece players (with various degree of participation) currently include the following companies:\n
- Allied Capital
- Lennar Partners
- GMAC Commercial Mortgage
- ARCap
- Insigna Opportunity Partners
- Lend Lease
- Anthracite Capital
- Banc One Capital
- G2 Opportunity Fund (Joint Venture between Richard Rainwater & GMAC)

Nowadays, many B-piece buyers look to the Re-REMIC market and the Collateralized Debt Obligation (CDO) market for exit strategy. With these additional exit channels that can serve as risk-shifting vehicles, more investors may be willing to participate in this market in the near future. Furthermore, the growth of CDO market may even serve as a pull force for financial intermediaries to buy more below investment grade and mezzanine tranches to put into pools of CDO issues.

The B-piece CMBS market is a unique and important one: Only a limited number of players are present in the market but they exert a lot of influence on the structure of the bond. Having learnt this, their influence on the trends of subordination levels will be revisited in Chapter 6. After acquiring a preliminary knowledge about the product of CMBS and the B-piece market, the business model of the rating agency industry will be studied. Then, as subordination levels are related specifically to ratings, meaning of credit ratings will be explained. A discussion of why rating agencies exists as an intermediary in the capital markets will be provided. Afterwards, the economic and revenue models of each of the three largest
international rating agencies, which together account for 100% of the U.S. CMBS ratings, will be provided. The influence on subordination level determination based on rating agencies’ industry structure will then be discussed at the end of the chapter.
3.1 WHAT IS A CREDIT RATING

A credit rating is an invaluable tool for investors (Asiamoney, 1999). According to the rating agency Moody’s Investors Service (Moody’s), a rating is “an opinion on the future ability and legal obligation of an issuer to make timely payments of principal and interest on a specific fixed income security. A rating measures the probability that the issuer will default on the security over its life, which, depending on the instrument may be a matter of days to 30 years or more. In addition, long term ratings incorporate an assessment of expected monetary losses should a default occur.”

Although credit rating agencies pay attention to past credit records, credit ratings are “primarily intended to measure the risks associated with future debt servicing capability. They are meant to assess risk through cycles and not be overly influenced by temporary events.” (Asiamoney 1999)

According to Moody’s, since ratings only measure the credit risk component of an obligation, it does not measure other risks that may be involved in fixed-income investment. These risks may include liquidity risk, currency risk, interest rate risk, and in some case prepayment risks. Unlike stock ratings, credit ratings are not intended to measure a security’s potential for price appreciation. These are not buy or sell recommendations, merely an indication at a moment in time of the issuer’s ability to repay that debts (Moody’s, 1994).

Rating symbols

Different rating agencies utilize different rating symbols. The following is a chart that compares different ratings across different agencies:
<table>
<thead>
<tr>
<th>Moody's</th>
<th>S&amp;P and Others</th>
<th>Interpretation</th>
<th>Moody's</th>
<th>S&amp;P and Others</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aaa</td>
<td>AAA</td>
<td>Highest Quality</td>
<td>Ba1</td>
<td>BB+</td>
<td>Likely to Fulfill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ba2</td>
<td>BB</td>
<td>Obligation; Ongoing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ba3</td>
<td>BB-</td>
<td>Uncertainty</td>
</tr>
<tr>
<td>Aa1</td>
<td>AA+</td>
<td>High Quality</td>
<td>B1</td>
<td>B+</td>
<td>High Risk</td>
</tr>
<tr>
<td>Aa2</td>
<td>AA</td>
<td></td>
<td>B2</td>
<td>B</td>
<td>Obligations</td>
</tr>
<tr>
<td>Aa3</td>
<td>AA-</td>
<td></td>
<td>B3</td>
<td>B-</td>
<td></td>
</tr>
<tr>
<td>A1</td>
<td>A+</td>
<td>Strong Payment</td>
<td>Caa</td>
<td>CCC+</td>
<td>Current Vulnerability</td>
</tr>
<tr>
<td>A2</td>
<td>A</td>
<td>Capacity</td>
<td>Cc</td>
<td>CCC</td>
<td>to Default, or in</td>
</tr>
<tr>
<td>A3</td>
<td>A-</td>
<td></td>
<td>Cc</td>
<td>CCC-</td>
<td>Default (Moody's)</td>
</tr>
<tr>
<td>Baa1</td>
<td>BBB+</td>
<td>Adequate Payment</td>
<td>Ca</td>
<td>C</td>
<td>In Bankruptcy or</td>
</tr>
<tr>
<td>Baa2</td>
<td>BBB</td>
<td>Capacity</td>
<td>D</td>
<td>D</td>
<td>Default, or Other</td>
</tr>
<tr>
<td>Baa3</td>
<td>BBB-</td>
<td></td>
<td></td>
<td></td>
<td>Marked Shortcoming</td>
</tr>
</tbody>
</table>

Notes: The other agencies listed in the table use the rating symbols of the second column, with the exception of DBRS (H and L symbols in place of + and -) and CBRS (H and L symbols in place of + and -, and + symbols that correspond to second and third letters). The agencies follow a variety of policies with respect to the number of ratings symbols given below B-.  

Source: Cantor and Packer, "The Credit Rating Industry", FRBNY Quarterly Review, Summer/Fall 1994

Role of Ratings

The role of ratings, according to Moody’s, is “to provide, through a simple symbol system, objective and independent opinions of relative credit risk that investors can use as a supplement to, but not as a substitute for, their own internal credit research. Although often used as such, ratings are not predictors of default.” (Pinkes, 1997). In another report, Moody’s explains that ratings are “intended to provide capital market participants with a framework for comparing the credit quality of debt securities. A credit rating compresses an enormous amount of diverse information into a single symbol. Credit quality embraces relative default probability, loss severity, ‘financial strength’, and ‘transition risk’” (Moody’s, 1999).

Ratings in the CMBS area

Rating agencies use the same long-term credit rating for both fundamental and Structured Finance obligations, including ratings in the CMBS area. The rating agencies further explain what ratings mean in the CMBS area:
Standard & Poors

According to Standard & Poor’s (1999), a CMBS credit rating is “an opinion on the ability of the collateral to pay timely interest and repay principal by the rated final distribution date, according to the terms of the transaction. The rating does not reflect the impact of prepayment or any other factors that may affect investor’s yields but is only an opinion about the credit risks associated with the transaction.”

Moody’s

Moody’s (2000) points out that CMBS ratings “reflect Moody’s opinion about the credit quality of the underlying mortgage loan pool, the structural and legal aspects of the certificates, and the extent to which the mortgage loan pool’s cash flow is sufficient to make payments due under the certificates. Moody’s seeks to ensure that credit enhancement afforded to each class of certificates is consistent with expected loss for each rating category.”

3.2 WHY DO RATING AGENCIES EXIST IN THE CAPITAL MARKET

Rating agencies have existed in the capital market for about a century. They have benefited the capital market in several ways:

Credit Assessment (Rating Assignment)

The major function of the credit rating agencies is to provide credit assessment on financial obligations backed by various sources. For example, major international rating agencies such as Fitch, Moody’s and Standard & Poor’s provide credit ratings on financial obligations backed by corporate, municipalities, countries and derivatives. In recent years, rating agencies have been heavily involved in rating fixed income instruments in the Structured Finance area.

Rating agencies represent the investors, not the issuers (Cantwell, 2000). By providing a credit rating on a fixed income security, rating agencies help investors to assess the credit worthiness of the issuers and the
collateral backing the issues. With a letter-rating system, investors are able to compare a particular debt issue with other issuances. This is equivalent of creating a scaling system where investors can better analyze the credit risks associated with fixed-income securities. Ratings also create efficiencies in fixed income markets by providing reliable, credible and independent assessments of credit risk.

According to Moody’s (1994), ratings provide investors with the following uses:

- **Widen investment horizon** – Even sophisticated investors such as large financial institutions may not have the resources to analyze every potential debt instrument available to them. Rating agencies, by providing ratings, widen investors’ investment horizons to a wider variety of market segments across different industries, countries, and securities types.

- **Set Credit risk limits** – For many investors, ratings are used primarily as a benchmark for setting “yes/no” or “buy/don’t buy” limits on fixed income purchases.

- **Calculate Credit risk adjusted yields** – In well-developed markets, investors use ratings as a critical element in pricing the risk premiums in the securities they buy.

Ratings may be valuable for investors for other reasons:

- **Monitor existing issuance** – If the credit quality of an issue change, rating agencies may downgrade or upgrade the rating, depending whether the change is positive or negative.

- **Lower research cost** – Ratings reduce the cost of research by providing an objective benchmark for investors to judge companies and their specific bond issues (Asiamoney 1999).

On the other hand, issuers obtain benefits by having their issuances rated by rating agencies (Moody’s 1994):

- **Wider access to capital** – For ratings assigned by reputable rating agencies, issuers can have a wider access to capital, as various investors can easily understand the ratings. This helps increase the liquidity of the issuance.
- Financing Flexibility - The wider market access helps issuers to reduce financing cost, particularly for highly rated issuers. The higher the rating, the less the perceived likelihood of default, and thus the smaller the premium demanded by investors for holding that debt.

- Market Stability – Ratings and reports can help investors to understand the credit strength of an issuer, thus help to maintain investors’ confidence, especially during market stress when short term events may temporarily distort the long term credit worthiness of the issue.

With lower research cost and a comparable credit risk benchmark system, rating agencies help increase liquidity and market efficiency of the capital market. More investors are willing to participate in the areas they have less knowledge about. It also helps issuers to be able to reach a larger potential investor pool. Rating agencies definitely played a critical role in the development and expansion of the capital market in the past century.

Independent Opinion

Credit rating agencies are not the only institutions that provide credit assessment. Other financial intermediaries such as investment banks and commercial banks also issue credit reports to investors. However, it is the rating agencies’ independence that set them apart from other credit opinion providers. Since credit reports issued by the sell-side are considered somewhat biased due to alignment of business interest, investors turn to credit rating agencies for an unbiased judgment. For example, Moody’s points out independence as a major reason why its rating is desired: "Although quantitative to some extent, credit analysis relies heavily on judgment, requiring that ratings be provided by an independent, experienced organization. Moody’s is independent of any government or financial institutions. Its analysts have no direct involvement in trading or sale of securities, instead focusing exclusively on credit analysis.” (Moody’s, 1991)
Rating agencies continuously collect information relevant to the issues rated. Because of their position, rating agencies have the ability to obtain confidential information not available to investors. Although rating agencies cannot disclose this information, they can nonetheless incorporate the information into their analyses. Issuers can share information with rating agencies freely as they are granted “insider” status by the Securities and Exchange Commission (Cantwell, 2000). Thus, rating agencies are in effect obtaining the information for the investor’s behalf.

Credit analysts at rating agencies are generally regarded as experts in the field. As financial products become more complicated, investors look to credit rating agencies to provide advice. When new financial products are created, issuers and investors will work closely with rating agencies to develop a risk analysis method that is understood and acceptable by the industry. For example, rating agencies have been heavily involved in assisting the development of risk analysis for the Structured Finance products.

Many regulations have tied their monitoring criteria to credit ratings. For example, in 1989 ERISA allowed pension funds to invest in high-rated asset backed securities rated A or higher. Recently, the relaxation of ERISA allows investors to invest not only in highly rated classes, but all the way down to classes rated BBB/Baa\(^9\). The Basel Committee is also proposing to use credit rating agencies to set bank-capital requirements\(^{10}\). More examples of how ratings are used by regulatory bodies can be found in the following table:
The rating from an NRSRO (notionally recognized statistical rating organization) may be included in the registration without obtaining the NRSRO’s written consent. Disclosure burdens are minimized by using abbreviated forms and incorporation of information by reference for rated securities. Mortgage securities receiving one of the two highest ratings are treated as US government securities for purposes of state blue-sky laws unless the state acts to override this. Calculation of broker-dealers’ net capital requirements are based on the ratings of the securities held. Exemption from certain reporting requirements on rated securities transactions. Permission to trade future contracts on non-US sovereign governments. Purchases of investment grade municipal securities during underwriting. Eligibility for investment by taxable money market funds, including aggregate risk limits, single risk limits and downgrades linked to bond ratings of NRSROs. Exemption from registration and regulation of certain mortgage- and asset-backed securities of investment grade. Permission for a company to acquire securities of persons deriving more than 15 percent of the gross revenue for securities-related activities.

| Source: Caouette, Altman & Narayanan. Managing Credit Risk. Ch.6 |

The above table shows that regulatory bodies do utilize the widely recognized and accepted system of credit rating to help them achieve different monitoring purposes.

In summary, rating agencies play a critical role in the capital market. The rapidly expanding capital market creates inefficiency because investors cannot correctly analyze the credit risk of all the products.
present in the market. Investors maybe able to do so, but the analyses will incur high costs. Credit rating agencies fill the inefficiency gap by acting as the provider of credit assessment services at a relatively low cost. Consider an institutional investor that would like to diversify the risk of the portfolio by purchasing some bonds in other countries. The investor will have a better risk estimate when a foreign bond is rated by one of the credit rating agencies. The investor will be able to compare the risk to other known products in his or her country, and thus make a better-informed decision. If the bonds are not rated, the investor will need to spend significant amount of money and time to acquire the information needed in order to make the decision with same level of understanding. Thus, rating agencies will continue to exist as long as this market inefficiency is present.

3.3 MAJOR RATING AGENCIES

There are three major credit rating agencies in the U.S.: Fitch IBCA, Duff & Phelps (Fitch), Moody’s Investors Service (Moody’s) and Standard & Poor’s (S&P’s).

*Fitch IBCA, Duff & Phelps (Fitch)*

Fitch IBCA is the world’s third largest rating agency. Fitch’s parent company is Fimalac, a diversified conglomerate from France. Fitch IBCA’s successful acquisition of Duff & Phelps in 2000 has reinforced Fitch’s position as one of the three major international rating agencies. In October 2000, Fitch acquired Bankwatch, the world’s leading specialist bank rating agency.

*Moody’s Investors Service (Moody’s)*

Moody’s Investors Service was founded by John Moody in 1900. The company published manuals that provided information and statistics on stocks and bonds of financial institutions, government agencies, manufacturing, mining, utilities and food companies. Later, Moody’s offered investors with analysis on security values by expressing his conclusions using letter-rating symbols adopted from the mercantile and
credit rating system that was used by the credit-reporting firms since the late 1800s. Moody’s was acquired by Dun & Bradstreet in 1962 and went public in 2000\(^1\).

**Standard and Poor’s (S&P)**

The company started in 1860 when Henry Varnum Poor published information on U.S. railroads and canals. In 1941, Standard Statistics and Poor’s Publishing merged to form the Standard and Poors Corporation, which was subsequently acquired by McGraw Hill in 1966. S&P provides financial information and analysis in both the equity side and the debt side of financial market. It also created the S&P 500 Index \(^6\) which is used by many portfolio managers as a benchmark index\(^1^3\).

### 3.4 BUSINESS AND REVENUE MODELS OF MAJOR RATING AGENCIES

**Fitch**

**Business Model**

Similar to the other two major rating agencies, Fitch rates issues in the areas of Structured Finance, Financial Institutions, Corporate, Project Finance, public Finance and Sovereigns. Other non-rating services include credit information services such as CreditDisk and BankScope. According BIS data obtained by Economist, Fitch rates 27% of banks and 8% of companies.

**Revenue Model**

Fitch receives fees from issuers, insurers, guarantors, other obligors, and underwriters for rating securities. Such fees generally vary from $1,000 to $750,000 per issue. In certain cases, Fitch will rate all or a number of issues issued by a particular issuer, or insured or guaranteed by a particular insurer or guarantor, for a single annual fee. Such fees are expected to vary from $10,000 to $1,500,000\(^1^4\).

In 1999, 75% of Fitch’s revenue came from Asset-Backed Securities (Structured Finance). 12% of revenue came from publications and sales, another 12% came from corporate, financial institutions and
insurance and only 1% came from sovereigns and public finance. Most of the revenue was derived from USA (73%), 18% from Europe and the rest from other countries. Sales in 2000 was Euro 241 million, with an operating margin of 26.5\%^{15}.

**Moody's**

**Business Model**

Moody's currently offers ratings on sovereign, municipal, corporate, Structured Finance and derivative issues. In addition, it assesses strengths of financial institutions such as banks and insurance companies. It also provides analysis on mutual funds and risk management service. Its customers include investors, depositors, creditors, investment banks, commercial banks, and other financial intermediaries, and a wide range of corporate and governmental issuers of securities (Moody's, 1999). According to the Economist, Moody’s rates 80% of banks and 78% of corporates. On the other hand, Moody's has also been gathering risk-modeling expertise, most recently by linking up with Oliver Wyman, an American financial-services consultancy.

**Revenue Model**

Moody’s charges issuers for appraisal and rating fees ranging from $1,000 to $1,500,000, depending on the types of securities\(^{16}\).

According to Moody’s Year 2000 Annual Report, approximately 33\% of total revenue came from Structured Finance rating. Moody’s has also changed its revenue model and increase its dependency on annual fees transaction based pricing. About 50\% of Moody’s revenue in fiscal year 2000 came from sources other than rating fees on individual bond issues. The use of Internet has also increased rating subscription over the web. Relationship-based rating fees now represent over 1/3 of Moody’s total revenue, while research sales and other non-rating businesses account for almost 15\% of the total revenue. Revenue in year 2000 was about $600 million, with 47.8\% operating margin.
Standard & Poor’s

Business Model

The business model of S&P is more complicated than the other two rating agencies. Standard & Poor’s is a firm that provides various financial services. Credit rating is only one of its many services. According to BIS data obtained by the Economist, S&P covers 37% of banks and 66% of companies. The different businesses of S&P can be classified into the following categories:

- Credit Market Services - Provides objective financial information, credit ratings, and risk analysis to the global financial community.
- Funds - Serves the needs of mutual fund investors with analysis, advice, and database resources
- Information Services - Delivers financial information and investment advice via the Internet, CD-ROM, print, and direct feeds to corporate Intranets.
- Risk Solution - Offers a range of products and services to meet the credit risk management needs of financial institutions worldwide.
- Structured Finance - Covers the global markets for securitized and credit derivative transactions
- Index based products – such as S&P 500 and other composites, including S&P REIT Composite index.

According to its parent company McGraw Hill, S&P is diversifying its business and try to reduce its dependency in the ratings business. It is also providing rating evaluation services, a confidential, definite assessment of how potential acquisition, debt issues, stock repurchases, recapitalizations, consolidations and other actions that impact a company’s credit worthiness and credit rating. In addition to the various business information services already in service, new products such as School Evaluation Services, a rating systems on school district performance, and RatingDirect, an electronic distribution system that delivers financial information to top institutional markets, will also provide new sources of income.
In the real estate finance area, S&P also has minority equity investment in MortgageRamp.com and Percept Corporate, two newly formed Internet commercial mortgage origination and trading exchanges. S&P will work with these new exchanges to provide underwriting and credit reviews online for the auction of commercial real estate loans. S&P recently acquired Charter Research, an on-line CMBS information provider. S&P says that it is committed to providing information as it pertains to its ratings, and thus meets the need of investors.

**Revenue Model**

Standard & Poor's receives compensation for rating obligations. Such compensation is based on the time and effort to determine the rating and is normally paid either by the issuers of such securities or by the underwriters participating in the distribution.

According to its annual report, about 68% of S&P's revenue in year 2000 came from U.S. Operating revenue for year 2000 was $1,280 million, with a 31% operating margin. Operating margin has been in the low 30% for the past three years.

### 3.5 RATING AGENCIES IN THE CMBS INDUSTRY

**Revenue in CMBS rating industry**

Based on CSSA information, rating agencies typically charge approximately 810 basis points of the principal balance. For example, a transaction of a principal amount of $500 million will cost an issuer $450,000 to $500,000 for ratings per agency. Usually, credit ratings from two to three rating agencies are required by investors. In a rough estimate by CSSA, this account approximately 20% of total fee of securitization.
Rating Agency Market Share

Cumulatively, Fitch has rated most CMBS (59% of total amount of rated debt, based on dollars outstanding, in 2,199 ratings.) Moody’s has a 55% market share (1,439 ratings) and S&P has rated 53% of issuance (1,624) ratings (Fitch, 2001). According to Commercial Mortgage Alert, for the first half of 2000, Moody’s has a 78.1% market share, Fitch with a 60.4% market share and S&P with 56.9%. Since each issuance required more than one rating agencies to assign ratings, the market share numbers do not add up to 100%.

3.6 MONITORING OF THE RATING AGENCY BUSINESS

Rating agencies have been viewed as independent intermediaries that render opinion on credit risk. The situation has been generally true for the past, when rating agencies took a more passive role in rating. Usually, rating agencies do not solicit ratings. Rather, an issuer will request a rating before it issues a debt. With the development of the Structured Finance market, issuers can work closely with rating agencies to establish structures of the financial products. Investors start to question the unbiased position of the rating agencies, as their dependence on profit derived from issuers increased. In addition, some rating agencies are increasing their involvement in non-traditional credit services and non-credit services, such as S&P’s purchase of an online mortgage-trading platform. As pointed out by the Economist, “Rating agencies are for profit organizations. In their drive for new revenues, credit rating agencies are opening themselves up to conflicts of interest21”. To put it in different words, there is concern about whether an opinion on credit risk rendered by rating agency is independent or not.

Nonetheless, rating agencies are still perceived as the unbiased financial intermediaries in the capital market because they do not participate in selling issues they rate. Historically, rating agencies have been doing a good job in terms of monitoring themselves. Cantor & Packer (1994) argued that the disciplines provided by reputation considerations appear to have been effective for the ratings industry. With their
reputations on line, it is at the rating agencies’ best interest to maintain their independence and avoid potential conflicts of interest.

Credibility is crucial for credit rating agencies. If an agency loses its credibility, investors will have less confidence in its analysis and thus put less weight on its ratings and opinions. The market disciplines require a rating agency to sacrifice short-term profits for long-term reputation. In that case, when investors are dissatisfied with the rating, they will likely bypass the offering and buy other deals. Thus, in order to survive in the rating business, rating agencies have to constantly provide accurate credit rating, otherwise they will lose future business opportunities.

A similar argument can be obtained from the accounting industry. Accounting firms derive their revenue from rendering audit opinions to companies, and in order to maximize profit, the natural choice is for them to give audit opinion to as many firms as possible. However, this is not the case, because accounting firms will rather sacrifice revenue by not rendering unqualified opinion to firms they perceive as risky. Since accounting firms recognize their credibility as their most important business assets, they try to maintain their independent positions.

Second, competitive pressure from other agencies may actually be beneficial to the investors. According to one investor, business competition helps keep rating agencies to be more accurate in their credit opinion. Without competition, rating agencies will tend to be more conservative in their ratings, so as to protect the agencies’ reputation. However, investors will not get the best analysis from the agencies. Competitive pressure from peer agencies thus provides checks and balances for the rating agencies to provide more accurate ratings.

According to a report published by Federal Reserve Bank of New York, major rating agencies are all either independent or owned by non-financial companies. The authors of the article agreed that the
ownership structures of the U.S. rating agencies do not generally present serious conflict of interest problems (Cantor & Packer, 1994).

Then, how can one explain the changing market shares in the ratings business? One has to recognize that ratings agencies are not the same. They may have similar rating methodologies, but each agency derived their own analytical models and they often have different opinions on similar issues\textsuperscript{23}. In addition, different rating agencies have different business agendas and product focuses. For example, Fitch derived about 75\% of its revenue in 2000 from the Structured Finance area, but both Moody’s and S&P have a lot less exposure to Structured Finance products as compared to Fitch. With different rating agencies taking different business risks, it is not surprisingly to see some rating agencies putting more resources in a particular business area and thus building a better reputation for themselves in that area.

Sometimes a rating assignment is won not because of a better rating or lower subordination level, but because of better services or reputation. For example, Moody’s is reputed to be able to provide timely feedbacks to issuers in the CMBS area\textsuperscript{24}. Since timing is extremely important to issuers and underwriters because of capital market’s influence on the collateral’s values, many underwriters prefer to work with rating agencies with better services and in this case the ability to meet deadline.

Needless to say, some rating agencies have better reputation in particular sectors, and are preferred by investors. In those cases, opinion from these agencies will be weighed more heavily by both the investors and the underwriters, who usually choose the rating agencies. From some investors’ standpoint, they prefer to see Moody’s and S&P’s ratings on a deal because their charters require one of the two. This explains partly why Moody’s and S&P are sometimes preferred by the issuers because they want the issues to sell better. On the other hand, some issuers take a random approach and try to work with different rating agencies throughout the years\textsuperscript{25}. All these factors have nothing to do with subordination levels, but they determine which rating agency gets the business.
As a result, we believe there is not a high degree of correlation between subordination level and the way the rating agencies industry is structured. The stakes are too high for rating agencies, especially the reputed ones, to risk their long-term business credibility for short term profits by winning transactions. Nonetheless, this question is neither unique nor new to the rating agency industry. Even in 1993, the early days of CMBS, investors had similar concerns on ratings. Since rating agencies are acting as intermediaries in the capital market, disciplines in the public market will force these institutions to take actions ensuring their long term survival, which is to be independent and earn credibility with the financial community. Or else, these agencies would have lost business long time ago and investors would have gone to alternative sources for credit benchmarking and advisory. With relatively clean historical record (few lawsuits against rating agencies), acceptance by the regulators, and disciplines in the capital market, credit opinions from rating agencies can be regarded as independent.
CHAPTER 4

ROLE OF RATING AGENCIES IN THE CMBS B-PIECE MARKET

The next step is to study how rating agencies rate CMBS and determine whether the common practice in rating Structured Finance products such as CMBS will affect how the subordination level is determined. First the common CMBS rating process and how the practice affects subordination level determination will be described. Subsequently, the role of rating agencies in the CMBS market will be summarized, and an analysis of the rating agency business structured will be provided.

4.1 RATING CMBS

4.1.1 THE RATING PROCESS

Rating process for Structured Finance transactions, including CMBS, is different from that of corporate issuance. Since CMBS transactions can be “structured” with appropriate investor protections to achieve desired credit ratings, there may be iterations of certain parts of the rating process as issuers restructure the securities into their most profitable and most marketable forms (Moody’s 1994).

From a timetable published by CSSA, one can see that the rating process is one of the most important parts of the whole securitization process, and rating agencies are heavily involved in the process\(^{27}\).
Transaction Timetable

<table>
<thead>
<tr>
<th>Activity</th>
<th>Week</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial analysis</td>
<td>1</td>
<td>SL, IB</td>
</tr>
<tr>
<td>Due diligence phase</td>
<td>2</td>
<td>SL, IB</td>
</tr>
<tr>
<td>Structuring process</td>
<td>3</td>
<td>SL, IB</td>
</tr>
<tr>
<td>Rating agency review</td>
<td>4</td>
<td>SL, IB, US, SC</td>
</tr>
<tr>
<td>Selection of Servicer and Trustee</td>
<td>5</td>
<td>SL, IB</td>
</tr>
<tr>
<td>Legal documentation</td>
<td>6-9</td>
<td>IB, RA, TA, SV</td>
</tr>
<tr>
<td>Pre-marketing of privately offered</td>
<td>10</td>
<td>IB, CA, TA, UC, SC</td>
</tr>
<tr>
<td>securities</td>
<td>11</td>
<td>IB, CA, TA, UC, SC</td>
</tr>
<tr>
<td>Marketing/ pricing</td>
<td>12</td>
<td>IB, CA, TA, UC, SC</td>
</tr>
<tr>
<td>Closing</td>
<td>13</td>
<td>IB, CA, TA, UC, SC</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>IB, CA, TA, UC, SC</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>IB</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>All</td>
</tr>
</tbody>
</table>

Key Participants

- CA - Certified Accountant
- IB - Investment Bank
- RA - Rating Agencies
- SC - Seller's Counsel
- SL - Seller
- SV - Servicer
- TA - Trust Accountant
- UC - Underwriter's Counsel

The general rating process for rating a CMBS transaction is summarized below:

**Stage I: Preliminary discussion (Quote stage)**

At the quote stage, discussion between the rating agencies and the issuer begins. An underwriter may send preliminary data (called “tape”) that contains collateral information to the rating agencies. Rating agencies will respond to the underwriters with their assessment of credit risk and structure quickly (usually within a week).

**Stage II: Selection stage**

Underwriter will select two or three rating agencies based on several criteria. Often it is based on the level of subordination, as it determines the size of Aaa/AAA an issuer can sell. According to an underwriter, every issuer analyzes all rating agencies’ subordination levels and the economic impact of those
subordination levels before they choose the rating agencies\textsuperscript{29}. Sometimes it is based on other criteria such as a rating agency’s ability to rate a particular type of transaction, or a rating agency’s service. Occasionally, when an underwriter wants a particular rating agency to be on a transaction, it may change the pool composition to suit the requirement of that rating agency. With increasing bargaining power, B-piece buyers now have a lot of influence in determining the final pool composition by “kicking” out loans they do not desire. Sometimes, the B buyers are involved (in the form of bidding) even before the transactions are shown to rating agencies\textsuperscript{30}.

\textit{Stage III: Rating decision and dissemination}

When the rating agencies are selected, underwriters and issuers will send them collateral information to aid the credit rating process. Information such as legal documents, appraisal reports, engineering reports, environment assessment and underwriting documents are all sent to rating agencies. In addition, draft versions of prospectus are also sent to the lead analysts for comments.

At this stage, due diligence of the underlying mortgages (called “file reviews”) are performed. Data on a property such as operating statements and rent rolls are reviewed. Analysts also travel to properties to perform site inspections.

After analyzing the underlying collateral and pool portfolio, an analyst will come up with final credit assessment and the final structure of the pool. If the underwriter accepts, then the transaction is preliminary completed, and the underwriter will go on the “road show” to try to sell the above investment grade pieces. If the underwriter is not satisfied with the rating, it can modify the structure or the composition of the collateral pool and resubmit to the rating agencies. The rating agencies will re-evaluate the pool and assign credit assessment based on the new structure. In this way, the underwriter is able to achieve the best form of the security they desire.
Stage IV: Credit monitoring

After the ratings are assigned, rating agencies continue to monitor the performance of a transaction. For example, early amortization may build up credit support and certain classes may be eligible for upgrade. On the other hand, a certain sector of real estate may be facing difficulty (for example, the theatre industry in 2000), and rating agencies will pay close attention should the event affect any pools containing such credit.

Most rating agencies conduct their rating processes similar to the one described above. As mentioned before, timing is a critical criterion for an underwriter to decide whether an agency will provide feedback at a particular time or not.

4.1.2 HOW IS CREDIT ANALYSIS OF STRUCTURED FINANCE PRODUCTS DIFFERENT FROM CREDIT ANALYSIS OF OTHER PRODUCTS

Most credit rating agencies approach the rating of Structured Finance in a way that is consistent with rating methodologies in other sectors.

For example, Moody’s adopts a “Universal” approach to credit analysis. It uses a multidisciplinary or “universal” approach to risk analysis, which aims to bring an understanding of all relevant risk factors and viewpoints to every rating analysis. Then credit analysts will make the judgment to weigh different factors in light of a variety of plausible scenarios for the issuer and thus come to a conclusion on what the ratings should be.

Corporate or Fundamental Credit Analysis

Rating agencies provide similar rating approaches to corporate or industrial credits. Since credit analysis for corporate sector have existed for a very long time, credit assessment of these credit have become more
standardized across different financial sectors. Nonetheless, different financial institutions put emphasis on different criteria when analyzing credit risks.

Standard and Poor’s provides an excellent summary of rating corporate credits. Corporate rating assignment is a result of the analysis of the entire industry and a particular company’s strength within its industry. The rating agency looks at a vast array of factors that could affect the industry’s overall performance and uses a format that divides the analytical task into several categories, providing a framework that ensures all salient issues are considered:

Business Risks
- Industry Characteristics
- Competitive Position
  - Marketing
  - Technology
  - Efficiency
  - Regulation
- Management

Financial Risks
- Financial Characteristics
- Financial Policy
- Profitability
- Capital Structure
- Cash Flow Protection
- Financial Flexibility

For corporates, the first categories are oriented to fundamental business analysis; the remaining categories relate to financial analysis. Each category is scored in the course of the ratings process, and there are also scores for the overall business risk profile and the overall financial risk profile. There are no formulae for combining scores to arrive at a rating conclusion.
According to S&P, a rating decision may be influenced strongly by financial measures. At other times, business risk factors may dominate. If a firm is strong in one respect and weak in another, the rating will balance the different factors. Viewed differently, the degree of a firm’s business risk sets the expectations for the financial risk it can afford at any rating level. The analysis of industry characteristics and how a firm is positioned to succeed in that environment establish the financial benchmarks used in the quantitative part of the analysis.

Other rating agencies adopt a similar approach, with slight differences. Moody’s approach is very similar to that of S&P’s. On the other hand, Fitch places more weight on financial ratios.

**Rating a Structured Finance Transaction**

Structured Finance transactions typically involve full range of structured securities such as mortgage- and asset-backed securities, or what is often termed “securitization”. These securities are term “structured” because, by choosing different types and amount of assets and structural features, these securities may be structured to achieve a desired rating level (Moody’s, 1994).

Compared with the corporate credit sector, the Structured Finance sector is relatively young and is still undergoing significant changes in terms of analysis. Many analysts in the financial markets are still trying their best to improve the approach towards pricing as well as risk assessment of Structured Finance products.

For example, Moody’s focus of analysis on Structured Finance is different from that used to evaluate the fundamental, unsupported credit risk. However, the meaning of expected loss experience associated with structured financings ratings is comparable with those for any other debt obligations rated by Moody’s. Thus, there is a consistent and comparable meaning to the same ratings assigned. Since Moody’s ratings
measure the probability that an issuer will miss a payment on the rated bond and the likely severity of loss to investors if a default occurs, the same rating system can be used on assessing credit risk in the Structured Finance area. When a default occurs, the ratings on a Structured Finance transaction are intended to measure the probability (frequency) of default on expected payments and the expected severity of loss when a default occurs (Moody’s, 1994).

Specifically, Moody’s adopts the expected loss approach on the underlying assets. It analyzes the following items when rating a transaction:\(^{35}\):

- **Analysis of historical loss data** – A detailed analysis of historical data relevant to the loss performance of the underlying assets is performed. Then an analyst will weigh the frequency, severity and the timing of loss to determine a probability density function of future loss from collateral.

- **Credit analyses of obligors** – Analysts assess the credit strength of the specific obligor whose obligations back the deal. In addition, following risks are considered:
  - “Pool risks other than credit risk” – Other risks that may reduce total expected cash flow from the underlying assets are considered.
  - **Cash flow versus market-value transactions** – When the content of the underlying asset is “marked to market”, then the credit quality of the pool should be analyzed.
  - **Structural and Legal risks** – CMBS transactions have many legal and structural features that protect investors. Features such as bankruptcy remoteness and distribution priorities greatly affect an investor’s ability to receive cash flow.
  - **Risks in internal credit support** – Senior/subordinate with a multi-class structure can help generate internal credit support by shifting the credit risks to different tranches. The rating agency makes a separate analysis of expected impact to each class, because each class may differ significantly in terms of credit risks and cash flow.
  - **Quality of external credit support** – Insurance policies, letter of credit, corporate guarantees are important examples of external credit support that may enhance the credit quality.
Servicing and administrative risks – Quality of servicer is important in the Structured Finance area because a servicer is responsible in collecting payments on behalf of investors, which directly affect the amount of cash flow an investor can receive.

However, ratings on particular structured securities may indirectly reflect market risk, but only to the extent that market risk of asset backing the security will affect the risk of credit loss on the security itself.

Why are rating agencies assigning subordination levels instead of the underwriters in Structured Finance

Usually, ratings are the only products assigned by the rating agencies in the corporate bond area. However, in addition to ratings assigned, subordination levels are also given or “determined” by the rating agencies in the Structured Finance area. This is an interesting phenomenon because in other areas of capital markets, issuers or underwriters are the ones that determine the capital structures of the issuances. Afterwards, rating agencies will rate the securities as they are. However, this is not the case for Structured Finance products such as CMBS.

The main reason why underwriters “outsource” the subordination determination function to rating agencies is probably because of efficiency consideration. When one compares the Structured Finance rating procedures with that of corporate bonds, one can find that Structured Finance allows underwriters or issuers to alter virtually everything about the security in order to achieve a desired rating (for example, changing the pool composition or adding other forms of credit enhancements). In order to compare the two procedures fairly, let us now assume an underwriter is not willing to alter anything about the security. Even in that case, an underwriter will be better off “outsourcing” the subordination levels determination function to rating agencies. Because by “outsourcing”, rating agencies will determine the “right subordination level”, or indifference point and present the results to the underwriters. Underwriters can then use this indifference point and start the negotiation process. This enables both parties to minimize the
amount of communications needed to achieve a win-win situation—underwriters get the best out of the proposed structured, and rating agencies feel comfortable in putting their ratings on an issuance.

Let us now consider the case when an underwriter or an issuer decides it wants to determine the subordination levels of a security. First, an underwriter will need to accumulate knowledge of how rating agencies determine subordination levels. Although some rating agencies publish their rating methodologies, some do not. An underwriter will need to spend extra effort (money and time) in researching and reassembling rating agency models. In addition, more staff time is needed after rating agencies provide their feedback (in this case, only ratings). Now we can see that it is in an underwriter’s best interest to minimize this process and “outsource” the subordination level determination function to the rating agencies.

Comparison of the corporate rating method and the Structured Finance rating method

In order to facilitate risk comparison across all types of instruments, rating agencies typically use the same rating symbols (long term rating symbols) to rate structured financing and all other types of obligations.

Sometimes, investors are confused about the true meaning of the ratings across different sectors as they involve very different analytical approaches, and rating agencies have noticed the concern. To ensure investors understand that their ratings are consistent across different sectors, Moody’s published a report in 1999 to explain the “Evolving Meaning” of Moody’s ratings. In the report, the agency points out that ratings are intended to provide capital market participants with a framework for comparing the credit quality of debt securities. The agency explained that in the corporate sector, defaults (events of loss) have been relatively common but loss severities (degree of loss) have been unpredictable. The bulk of investment-grade corporate bonds have been held by institutional investors, who are generally averse to default risk (irrespective of severity) but nonetheless the agency have an overall expected-return
orientation. Responding to the needs of such investors, Moody’s ratings on industrial and financial companies have primarily reflected relative default probability, while expected severity of loss in the event of default has plated an important secondary role. In the speculative grade portion of the market, which has been developing into a distinct sector, Moody’s ratings place more emphasis on expected loss than on relative default risk.

In the Structured Finance sector, where default probabilities and expected loss severity are often estimated through statistical analysis, the agency’s ratings have placed greater emphasis on the expected loss concept, which places roughly equal weight on default probability and loss severity. Moody’s explained that largest institutional investors – who tend to take a highly sophisticated approach to the assessment of expected loss – have dominated this market from its inception. Moreover, because of the ability to divide a structured security into multiple tranches, this market is better served by ratings that place a heavy emphasis on expected investor loss (Moody’s, 1999).

In terms of issues rating agencies focus on, corporate rating approach emphasizes the ability of the issuer itself to pay interest and principal. However, Structured Finance approach is more concern about the credit risks of each pool, its external and internal credit supports and put less emphasis on its issuer. Cash flow is probably the most important criteria in rating a Structured Finance transaction.

In the corporate area, rating agencies have accumulated about a century worth of default data. Corporations do not usually issue debt obligations frequently (relative to say, mortgage originations). Nonetheless, corporate default data is believed to be very accurate because of the long history and the large number of issuing firms. However, this is not the case for Structured Finance. Structured Finance has a relative short history, and thus there is less available data on default history of underlying collateral. Due to the higher frequency of origination, the database is expected to improve dramatically in the future.
In essence, rating agencies try to provide a comparable rating system across different sectors. However, due to different structures of different financial products, they design different rating approaches to better estimate the credit risks associated with these products.

**Impact on subordination level determination**

Rating process for Structured Finance products has definitely more impact on subordination levels than corporate bonds. Although the rating processes of both sectors consist of communications between issuers and rating agencies, there is certainly more involvement of rating agency in shaping the structure of a security in the Structured Finance area. Actually, the ability to present rating agencies with different scenarios in order to achieve a desired rating is one of the major appeals to issuers of the Structured Finance securities. Because the rating process allows more communications between the parties, it gives the issuers more flexibility in structuring the best transactions they are able to create. “Best” transactions may mean best selling price to the issuer, or best structure that a potential investor desires. Whatever the meaning maybe, an issuer’s ability to modify a structure during the rating process certainly has great impact on the subordination levels.

4.2 ROLE OF RATING AGENCIES IN THE CMBS MARKET

Rating agencies’ roles in the CMBS market are similar to those in the capital market, which are described in Chapter 3. In order to avoid repetition, we will only provide a summarized version in this section.

Credit analysis is the most important function rating agencies perform in the CMBS market. Rating agencies help the CMBS market to achieve a higher efficiency by assigning credit ratings to different CMBS transactions.

Research and education are also two important tasks rating agencies perform in the CMBS market. Many industry participants have credited the rating agencies in helping to develop the CMBS market in the early
1990's. Rating agencies have helped the CMBS market to expand in the early 1990s when the market was still at its infant stage. Rating agencies have provided research and methodologies to the industry and helped make the product more “commodity like” and gain more acceptance by the capital market, according to Moody's Investors Service. S&P echoes the opinion and says that rating agencies have helped the CMBS industry by devising a “technology” to fit non-homogenous CMBS transactions into the securitization process which usually contains more homogenous assets\(^37\). On the other hand, rating agencies have also kept pace with the changing faces of CMBS and published many research reports to aid investors and underwriters to better analyze CMBS. New analytic models such as Moody’s (Economic Diversity Model\(^{TM}\)) and Fitch (Property Market Metric\(^{TM}\)) help investors to assess the real estate diversity risk in the CMBS pools.

Rating agencies are also monitors of the rated transactions. They perform surveillance functions and may change their original ratings if changes happen in the rated pools. In addition, rating agencies pay attention to servicers of CMBS. In Structured Finance, servicers are very important, as they are responsible for daily management of the transaction as well as workout trouble loans. The proven ability and financial strength of the commercial mortgage servicers are vital to the overall rating of the issue (Olasov, 1995). By assessing the credit quality of the servicer, the rating agencies help investors to better assess their ability to obtain cash flow. Some rating agencies assign ratings to servicers, while others incorporate the quality of servicer into their general ratings\(^38\).

Nowadays, rating agencies not only assess individual CMBS offering but also the issuers, providing another layer of analysis for investors (PriceWaterhouseCoopers & Lend Lease, 2001).

Last but not least, credit ratings are also being used by the regulatory authorities and industry index (such as Lehman Brothers Commercial mortgage-Backed Securities Index). Without ratings, these organizations have to find another substitute for benchmarking.
4.3 DO RATINGS MATTER IN THE CMBS MARKET

Many investors, as well as underwriters and issuers, often question the necessity of ratings. One can definitely apply the same question on the CMBS industry. In order to answer this question, one has to first separate the question into several parts: 1) Do ratings matter to CMBS investors? 2) Do ratings matter to CMBS issuers? 3) Do the existence of ratings help the CMBS market, in terms of lowering cost and increasing liquidity?

**Do ratings matter to CMBS investors**

Ratings matter to CMBS investors, although ratings have different impact to different investors. First, let us consider the AAA/Aaa buyers. They are usually established financial institutions that are looking for real estate exposure but do not necessarily have real estate expertise. Many investors also have to satisfy regulatory requirements, which usually limit them to invest only in products with certain ratings cutoff. To these investors, ratings serve as risk benchmarking and satisfying regulatory requirements.

For below investment grade investors, the story is different. Many B-piece buyers perform in depth due diligence for the tranches they are interested, and then determine their investment decisions (as well as price) based on a list of factors. Credit rating is included as one of the factors, and serves as a risk proxy. However, B-piece buyers rely less on ratings than their investment grade counterparts. Nonetheless, ratings are important to these investors. As one subordinate buyer puts it, "The investment decision begins with the ratings."  

Then one can ask, if ratings mean less to the below investment grade buyers, why not just rate the above investment grade tranches? Even if ratings mean less to below investment grade buyers, pressure from the above investment grade buyers may require ratings in the below investment grade classes. Similar to many products in the Structured Finance area, CMBS's tranches are inter-related. Credit loss in the
subordinate area will affect the risk as well as yields in the senior classes. It is natural for investment
grade buyers to ensure that their investment is well protected by ensuring the subordinate support is
adequate. One of the best and efficient ways is to require ratings for the subordinate classes. With the
subordination levels rated, there are more information and risk signaling for the senior buyers. Thus, even
if the B-buyers put less emphasis in using ratings in their investment decisions, other factors such as
demand from the investment grade buyers will influence the underwriters’ decision in whether the whole
transaction is rated.

Do ratings matter to CMBS issuers

Ratings do matter to CMBS issuers. Consider the following: First, ratings have been critical in helping to
develop the Structured Finance and the CMBS market. When an investment product is new and
unfamiliar to investors, efforts are made to make it look and act like more familiar, established products.
One of the obvious ways of doing so is to obtain an acceptable rating from an established rating agency.
The rating agencies maintain stringent credit standards and provide a common credit language. They can
perform an important service in bringing new credits to the market (Caouette, Altman & Narayanan,
1998).

Even when the CMBS market enters into a more mature stage, ratings are still important to issuers.
Rating agencies provide a link between the issuers and the bondholders. This situation is especially true
for Structured Finance products. According to Caouette, Altman & Narayanan (1998), the focus of market
shifts from what the issuer wants to what the investor wants. Structured Finance issuer now looks at
demand of investors and then structures a security to satisfy investors demand. By providing the capital
market a common credit language, rating agencies aid the issuers to bring new credit to the market
(Caouette, Altman & Narayanan, 1998). As a result, issuers can always explore new structures that are
best suited to the changing demand of investors. Without the common credit language, issuers will have
to incur a lot more cost in explaining and selling a new proposed security to investors, which in turn
decrease liquidity of the market and lead to inefficient pricing. Sometimes investors cannot buy a particular issue because they are bound by regulatory requirement to only invest in products with certain ratings. By having a security rated, the issuer satisfies the need of investors, as well as regulators, at the same time with a much lower cost.

*Do ratings matter in the CMBS market*

Since ratings matter to the issuers and the investors, one can conclude that ratings do matter in the CMBS market. In summary, rating is necessary to CMBS because it provides a common credit language to many participants of CMBS, including issuers, investors, underwriters and regulators. This lowers transaction costs and increases acceptance of the product, which in turn increases liquidity of the market. Ratings help issuers to design new products that appeal to investors, and communicate to investors in an efficient way. Even if ratings may not be as important in the investment decision making process in the B-piece markets as it is in other classes, it is nonetheless critical in facilitating the trading of the CMBS market.
CHAPTER 5

DETERMINATION OF BELOW INVESTMENT GRADE SUB-ORDINATION LEVEL

In chapter 4, the roles of rating agencies in the CMBS market were discussed. Among their different roles, rating agencies exert most of their influence by assigning subordination levels for the proposed CMBS structures. In this chapter, rating agencies methodologies to determine subordination levels will be studied. By understanding their views and methodologies, one can better understand how credit rating agencies influence the development of the B-piece market.

5.1 MEANING OF SUBORDINATION LEVEL

When mortgage pools are not strong enough to support a securitized instrument on their own, credit enhancement is necessary to add strength to the instrument. The most common form is overcollateralization, which means the collateral value exceed the amount of bonds (Perry, 1994). Credit enhancement means the extra credit needed to support a particular collateral given a certain rating.

Subordination is one of the credit enhancement methods available to a CMBS structure. Subordination means that some classes of bondholder receive principal repayment before other classes, even as some classes suffer losses before others, i.e., there is a priority of principal payment. Thus, the security structure has in effect reallocated risk among different classes. Some classes, such as below investment grade classes, assume greater risk of loss and therefore demand higher rewards, hence the higher yield\(^\text{42}\). The sequential payment structure has effectively enhanced the credit worthiness of a bond class by increasing the probability that one class will be repaid principal, at the expense of another class having increased probability of suffering losses. Hence the notion that subordination levels provide credit enhancement" to a bond. So the credit risk is disproportionally allocated (Gordon, 1999). The determination of subordination level of a tranche basically depends on what level of "protection" is
necessary for the rating assigned to that tranche. By requiring a 30% subordination level for a Aaa/AAA class, the rating agency is in effect saying that 70% of the total size of the transaction can be rated Aaa/AAA (i.e. 70% of the total will have 30% subordination behind it). Furthermore, by requiring a 25% subordination level for a AA/Aa rating, the next lowest, the size of the next class can be 5% of the total. The sum total of all classes below Aa/AA will thus be 25% (Gordon, 1999).

Standard and Poor’s (1999) provides a similar meaning on credit support, “Credit support is the amount of protection from losses that each class of securities requires at each rating category. The amount of recommended credit support is a function of the aggregate characteristics of the loan pool and will depended on the projected losses for each loan during various economic stress environments”.

In summary, with everything being equal, the higher the credit support, the riskier the class is perceived by the rating agencies as more credit enhancement has been built in.

5.2 RATING AGENCIES’ DETERMINATION OF CMBS SUBORDINATION LEVELS

Rating agencies have similar rating approaches in determining the credit risk of CMBS. All major credit rating agencies look at debt service coverage and loan to value ratio of the collateral pool as the two most important keys in determining the loss frequency and severity of the bond. Then, rating agencies look at portfolio issues such as diversity to fine-tune their analysis. Moody’s rating approach will be provided as an example, and then we will compare its methodology with those of the other two major CMBS rating agencies.

For Moody’s Investors Service, it combines both commercial real estate and Structured Finance analysis. Based on commercial real estate analysis, the agency determines the credit quality of each mortgage loan and calculates an expected loss on a loan specific basis. The pool’s expected loss is then adjusted for
issues such as concentration, information, legal risk, and structural issues consistent with Structured Finance analysis (Rubin & Levidy, 2000).

Under Structured Finance, credit enhancement needed to achieve a rating level for a proposed securitization typically depends on the expected frequency, severity and timing of future losses. But since commercial mortgages are not uniform in characters, and relevant historical loss information is limited, Moody’s analyzes the fundamental real estate credit risk of each asset to estimate the frequency and severity of losses within the legal and structural framework of Structured Finance. Moody’s also considers diversification effects on the portfolio (Rubin & Levidy, 2000).

To assess credit risk, Moody’s first performs a cash flow analysis on the underlying property based on information provided by the issuer and other third party reports. Cash flow generated by the underlying property is important in CMBS because it is the primary source of funds to pay debt service, as well as the basis of the property’s value (Moody’s, 1991). Documents such as financial statements, rent rolls, appraisal reports, engineering reports, seismic and environmental reports (Rubin & Levidy, 2000). Site inspections are also conducted.

Then an appropriate stabilized capitalization rate is applied to the property to determine the Loan-To-Value ratio of the property. At the same time, Moody’s compares a loan’s interest rate to a benchmark level, which allows the rating agency to determine the Debt Service Coverage Ratio for the loan. Other loan related issues such as amortization, quality of loan sponsors are all considered. Based on the DSCR, LTV and loan level information, a credit enhancement number is generated (Rubin & Levidy, 2000).

When the property level analysis is finished, the rating agency then looks at loan level and portfolio aspects that may affect the credit enhancement of the conduit pool. Issues such as diversity, trapping of capital reserves, cross collateralization, information quality and legal structures are all analyzed. When all
the factors are considered, the credit enhancement of the overall pool is determined. Then based on expected frequency and loss severity, these credit enhancement levels are tranched to different ratings, and each tranche is assigned a subordination level.

**General Methodology for Fixed Rate Conduit Transactions**

*Source: Moody's Investors Service*

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**Property Level Analysis**

- Real Estate Analysis & Credit Issues
  - Moody's NCF
  - Cap Rate
  - Moody's Value
  - Moody's LTV

**Loan Level**

- Borrower Quality
  - Amortization
  - Cash Management
  - Recourse
  - Cross-collateralization

**Portfolio Level Analysis**

- Diversity
- Information Quality
- Legal/Structural Issues
- Other Portfolio Issues
Fitch's model is very similar to that of Moody's. Similar to Moody's, Fitch utilizes DSCR to be the indicator of loan default probability. It then incorporates methods to estimate loss severity. The base subordination level is determined by multiplying default probability with loss severity of the loan. Then the rating agency adjusts the base subordination with other pool composition factor to come up with final subordination level (Vrchota & Kendra, 2001).

S&P's evaluation of a CMBS transaction can be divided into three major areas: the real estate analysis, 2) pooling and credit support determination, and 3) the legal and financial analysis of the transaction. The rating agency notes that it is the integration of the results of these analyses that will determine the ultimate credit support requirements and the final ratings for the transaction.

Subordination Level for the Below Investment Grade Tranches

Moody's Investors Service provides a separate rating methodology for the below investor grade tranches. According to a recent Moody's report, since below investment grade CMBS bonds are often tranched into fine slices, the expected loss approach is most relevant to such bonds where, due to higher likelihood of default, the impact of severity becomes more important (Philipp, Kirnon & Harris, 2001). The investment grade approach is heavily quantitative, involving portfolio theory scenarios with various multiple of expected loss. The below investment grade approach is more asset specific. Each loan is “written down” to a maximum Moody’s LTV of 90%, a reserve set aside of sorts. To this, an additional buffer of credit support is added due to the leveraging of loss and negative pooling effects. The extra credit support reduces the likelihood of default, which helps offset the potentially greater loss severity. Without the offsetting credit support, the ratings would be a notch or so lower, paralleling corporate ratings in which preferred stock is rated lower than senior unsecured due to diminished recovery expectations (Philipp, 2000). The agency also pointed out in a 1999 report that the new default study report by Esaki, Synderman and L’Heureux is less applicable to its determination of below investment grade levels because the assessment of risk for such classes is less a portfolio analysis and more a loan-level analysis.
Expectations based on a large sample might be valued for another large, comparable sample. However the lowest-rated class will not be rescued by the law of averages if a few of the larger loans were to default. As a result, Moody’s determines enhancement levels for the lowest rated classes primarily by assigning loss reserves to loans that exceed certain target leverage levels and secondarily by portfolio considerations (Philipp & Gordon, 1999).

In summary, although different rating agencies have very similar approach to above investment grade tranches, it is unclear whether they have a similar approach to rating the B-pieces.

**Different rating methodologies, different subordination level**

Some real estate professionals believe that there is probably significant deviation in CMBS underwriting among rating agencies, depending upon whether the loan-to-value ratio or debt-service coverage is considered to be more critical as the key determining factor. Accordingly, an issuer may select a particular agency for a transaction depending on the specific attributes of a target loan portfolio to maximize profits (Rubin, Barnes, Felletter & Kozel, 1996).

In addition, rating agencies have changed or improved their rating methodologies to provide a better estimate of credit risk. Fitch, in a recent report, pointed out that modifications in its rating approach have affected subordination levels. The rating agency also maintains that it will continue to update its methodology and refine its rating approach as the market matures and new information become available (Lans & Cain, 2001). Both Moody’s and S&P admit that they have changed their rating models since their original models were based on default data in the early 1990’s market, which was very different from today’s market.
Thus, a rating agency may analyze a transaction differently several years ago when the CMBS market was still immature. Nonetheless, the different rating methodologies, however similar, result in different subordination levels.
CHAPTER 6

TREND OF SUB-ORDINATION LEVELS IN THE B-PIECE MARKET

6.1 RECENT SUBORDINATION LEVEL TREND IN THE B-PIECE MARKET

Trend of BB and B classes subordination levels

Subordination trends, especially in the BB and B classes, had been stable for several years until 1999, according to a research conducted by Salomon Smith Barney. However, subordination levels decreased in both classes in the past two years. In the following section, some explanations of why subordination levels decreased in the recent two years will be provided.
6.2 ANALYSIS OF SUBORDINATION TREND

*Improving Pool Composition*

One of the most important determinants in driving the subordination further down in the recent two years is the change in pool composition.

Prior to the Russian Financial crisis, issuers did not have to concern that much about the subordination levels because of the relative abundance of liquidity in the B-piece market. However, after the crisis, with liquidity dried up, issuers had to “sharpen their pencils” in order to attract potential subordinate buyers. Thus, they started to design new pool composition that would achieve a lower subordination level approved by the rating agencies.

As discussed in previous chapters, subordination levels in the below investment tranches are heavily influenced by Loan to Value ratio, as loss severity is a critical concern. Collateral pools now have less high-risk properties types such as lodging and nursing home. In addition, there are less non-standard property types such as car washes, movie theatres, and car dealerships (Potthoff & Metz, 2001). Everything else being equal, these properties require more credit enhancement than other properties types.

From recent CMBS delinquency reports, one can conclude that collateral secured by lodging or healthcare cash flow have more defaults than other property types (Howard & Carosielli, 2001). Thus, rating agencies are likely to apply higher cap rates on these properties to derive a higher LTV, which in turn increase the subordination level. With less high risk and non-standard loans in the transactions, credit support is expected to trend down.
Comparison of B-piece subordination levels and % of lodging assets securitized in CMBS

![Graph showing subordination levels and lodging assets securitized in CMBS from 1998 to YTD 2001.]

Source: Moody’s Investors Service

As noted in the chart, one can see the percentage of hotel loans securitized has decreased in recent years, which in turn decreased the subordination level needed because of less real estate risk involved.

**Changing Loan Structure**

Loan structure has become more complex in recent years, which affect subordination levels. According to S&P, the distribution of rated classes has changed throughout the years. There are now 18% for BB and 14.1% for B class, where the historical average are 13.9% and 10.7% respectively. The drift spectrum of the rated classes reflects the increased complexity of deal structures.

The most obvious change in loan structure in recent two years has been the introduction of A/B note structure, which has helped trended down the subordination levels. By splitting a loan into a senior and junior portion, risk is shifted to the junior portion, which is usually retained by the issuer or privately placed, instead of included in a CMBS pool. Although the A note has the default probability commensurate with the whole loan (A+B), the loss severity is reduced since the B note is subordinate to
the A note in a default scenario (Fallick, 2001). Since only the A notes are securitized in a CMBS pool, pool quality improves. All agencies agreed that the popularity of A/B note concept to improve (lower) subordination levels\(^46\).

On the other hand, Commercial Mortgage Alert reports that some transactions have one time, non-senior/subordinate type credit enhancements, such as loan guarantees, or even include AAA/Aaa tranches from other CMBS transactions\(^47\).

**Improving Rating Methodology**

All major credit rating agencies in the CMBS industry admit that they have modified or improved their rating methodologies. As discussed in chapter 5, a change in rating methodology will affect subordination levels.

According to an article in Commercial Mortgage Alert\(^48\), Fitch altered its CMBS rating model in 2000. For conduits, the rating agency changed the way it grades loan diversity. It also started to factor in LTV in its calculation of subordination levels. The new model, according to Fitch, reflects some refinements on what Duff and Fitch were previously doing.

Moody’s also says that the CMBS group is engaged in an ongoing process of refining rating procedures and enhancing communications with investors. The rating agency says that it will continue to refine its approach using the latest available information and modeling tools. Their initial approach was created in the early 1990’s when the real estate market was at its downturn. At that time, the frequency and severity of defaults from that period has not been documented. Now that the research has become available, Moody’s concluded that investment grade rated tranches had more than adequate loss multiples for even that scenario. The rating agency has also revisited its macro-economic views of the way in which the real estate markets work, taking into account the increased role of the capital markets. The agency believes
that there is now less likelihood of the "perfect storm" scenario of sharply rising supply meeting sharply falling demand. In addition, the agency also incorporates observations from monitoring into the process, particularly by expecting some credit enhancement built up due to amortization. The rating agency will continue to focus on the adequacy of CMBS credit support levels and attempt to align them with the results from the agency’s corporate default study. In retrospective, the rating agency admits that some of the transactions were probably over-enhanced to a degree, and it is the extra buffer that has been trimmed, but not the core credit enhancement.

S&P explains that its original model was based in the early 1990 life insurance company mortgage default and loan recovery rates, when loans were significantly different from the structured mortgages being securitized today. S&P admits that recent strong commercial mortgage market has led to small adjustments in its criteria, which has in turn led to declining credit support.

The view is shared by CMBS research analyst Howard Esaki. Esaki, in an interview, noted that rating agencies typically are conservative with new investment instruments and gradually reduce subordination levels. According to Esaki, his default study with Mark Synderman showed that the Aaa/AAA CMBS was over-enhanced.

With changing rating methodologies, subordination levels across all classes are expected to decrease, as rating agencies are now less conservative and do not provide as much “buffer” as several years ago. This helps explain why the subordination levels, including levels in the below investment grade area, have gone down in recent years.

Increasing Influence of B-piece buyer

As mentioned in chapter 2, the handful of B-piece buyers are a group of very influential participants in determining the structure of CMBS, especially after the Russian financial crisis. Since potential B-piece
buyers are going to hold the first loss piece, they are very diligent in looking at deals on a loan-by-loan basis in order to make their credit decisions. Such B-piece buyer scrutiny, according to the S&P, has been a primary contributing factor in improving underwriting quality and pool composition and has led to declining credit support levels. This phenomenon results in fewer single-tenant properties occupied by unrated or non-investment grade tenants, less exposure to properties in tertiary markets, and fewer sponsor inexperienced in owning and managing real estate (Potthoff & Metz, 2001).

Although they were involved to determine the pool composition of CMBS several years ago, B-piece buyers have become more aggressive about “kicking out” weaker mortgage loans in recent years. S&P points out that the few Bpiece buyers “amassed tremendous buying clout”. They have been able to remove questionable loans from CMBS pools and request that certain property types not be included. According to Commercial Mortgage Alert, usually the bottom 5-10% of loans is often removed before a securitization, making the portfolio less risky. This is especially influential in determining the subordination levels of the bottom tranches, which usually consist only about 10% of the whole pool.

If the “unwanted” or “questionable” 10% of the proposed pool is removed by the B-piece buyers, the CMBS pool is in effect being “improved” by that amount. Compared to the older CMBS pools, today’s CMBS pools thus have more protection because of this improvement, and thus subordination levels in the B-pieces trend down.

**Lower LTV**

Loan to value has been documented to trend down in recent years. According to Moody’s research, LTV has decreased from its peak in 1998 and has stabilized in recent quarters. It explains that lenders are originating fewer leveraged loans and loans with high risk property types, because they are afraid these loans will be removed and they have to warehouse and loans and bear the risk.
For below investment tranches, high LTV loans are especially harmful, because they contribute a lot to the loss severity. In the Moody’s research report, loans that have a higher than 90% Moody’s LTV are called “offenders”, because these loans are considered very high risk by the rating agency and are penalized by adding additional credit supports. These credit support are meant to protect the below investment grade pieces. Thus, if there are less “offenders”, or high LTV loans, less subordination level will be needed.
In the research, Moody’s noted that there are less high-risk loans in recent pools. According to Moody’s, loans with Moody’s LTVs greater than 100% have been nearly eliminated and now constitute less than of 1% of recent deals\textsuperscript{54}.

\textit{Better Market Data}

Some market participants contributed the change in subordination levels to better market data and historical information. S&P believes that there are improvements in the transaction information quality. Assets securitized in the early 1990s were typically of poorer quality and had little or no historical information. With improved market data, better risk assessment can be made.

\textit{Conclusion}

Many participants have questioned the trend of falling subordination levels. However, based on better pool composition, better structure, increasing B-piece buyers influence, changing rating methodology and lower LTV are believed to be the most significant contributors to the current change in below investment grade subordination levels.
In this thesis, we explored the rating agency industry and its influence on the below investment grade CMBS market. Factors that may cause the subordination levels in the B-piece market to fall in recent years were also examined. We found that rating agencies play an important role in the below investment grade market by providing the CMBS industry with a common credit “language”. Rating agencies exert their influence mostly through their evolving credit assessing models, which directly determine the subordination levels in the B-piece area. However, business models of the CMBS rating industry are not considered to have significant impact on subordination level decisions. Other non-rating agency related factors such as change in pool composition, change in CMBS loan structures and increasing scrutiny from the B-piece buyers are found to account for most of the variations in the subordination levels.

To conclude, rating agencies perform a critical function in providing credit assessment of the CMBS bonds and other functions that have been extremely beneficial to the CMBS industry. They continue to be crucial in the CMBS market by assigning ratings and determining subordination levels. However, their influence may be less in the below investment grade market, as other participants, such as the B-piece buyers, are exerting a lot of influence in shaping the pool composition, which ultimately affect the structure and subordination levels of CMBS bonds.
ENDNOTES

1 See Wheeler (2000). Other reports that have mentioned the trend include, but not limited to, various reports from Fitch and CMBS World. See Potthoff & Metz (2001), and “Investors Aren’t Always Right, Are They? Responses from Rating Agencies, Investment Banks and Servicers to the CMSA Investors Forum Survey.” from CMBS World.

2 Data from 1997 to 1999 obtained from the report of Wheeler, Darrell. “CMBS Subordination Levels: Whatever Happened to 30%, 20%, 10%?” CMBS World 2.1(2000): 14:19. Data from 2000 and YTD 2001 were calculated from Moody’s published Pre-sale reports. Only U.S. fixed rate conduit transactions are considered.

3 Note that there was a time lag between Russian financial crisis and subordination levels, as it usually takes 3-6 months to securitize a pool of CMBS.

4 Gordon, Sally. “Introduction to Commercial Mortgage Backed Securities (CMBS).”

5 Source: Personal interview.

6 Source: Sally Gordon.

7 Source: Source: Personal interview.


10 However, rating agencies worry that their objectivity may be lost because of the new proposal. See article Anonymous. “Finance and Economics: Reluctant watchdogs.” The Economist 359.8225 Jun 9, 2001.
Data obtained from Fitch's website (www.fitchibca.com) and its parent company's website (www.fimalac.com).

Data obtained from various Moody's publications, including Moody's website (www.moodys.com), Moody's annual report 2000, Moody's Role in the Global Market and Moody's Credit Ratings and Research.


Data obtained from Fitch's reports.

See operating results from Fitch's parent company's (Fimalac) website: (www.fimalac.com).

Data obtained from Moody's reports.

Data obtained from Standard & Poor's website (www.standardandpoors.com) and The McGraw Hill Companies' Investor Fact Book.

See the article "Investors Aren't Always Right, Are They? Responses from Ratings Agencies, Investment Banks and Servicers to the CMSA Investors Forum, Survey." From CMBS World 3.1.


See CMSA (formally CSSA)'s CMBS Basic Overview.


Source: Personal interview.

Source: Personal interview.

Source: Personal Interview.

See Bergsman, 1999.

See Philipp, 1993.

See CMSA’s CMBS Basic Overview Handbook.
28 See Moody’s, 1991.

29 See Bergsman, 1999.

30 Source: Personal Interview.


33 Methodology from Moody’s Investors Service. “Moody’s Credit Ratings and Research.” Moody’s Investors Service (1994) is compared with S&P’s methodology.


37 Gale Scott, managing director of S&P’s CMBS group, explains to investors how Standard and Poor’s has aided the development of CMBS market in the article “Investors Aren’t Always Right, Are They? Responses from Ratings Agencies, Investment Banks and Servicers to the CMSA Investors Forum, Survey.” from CMBS World.

38 Fitch rates master servicer “Acceptable” or “Unacceptable”. If a master servicer is not publicly rated by Fitch, it will need to be approved to act as master servicer for a particular transaction. Fitch also rates special servicer “Unacceptable”, “Below Average”, “Average”, “Above Average” or “Superior”. Fitch points out that the special servicer’s ability to modify loan terms, including simple loan extensions to complex workouts, can be critical to the recovery rate for each defaulted loan (Fitch, 1998). Although it does not rate servicers, Moody’s does take the credit quality of servicer into account as it administers the day-to-day operations of the transaction.

39 See Monroe, Ann. “Do bond ratings matter to high-yield buyers?” The Investment Dealer’s Digest (1997):34-35. This article focuses mainly on high yield investors. Although this article does not refer
to the CMBS industry specifically, the same argument can be applied to the CMBS industry as high yield investors from different sectors are all affected by ratings to certain extent.

40 Source: Personal interview.

41 Source: Personal Interview.


43 Summarized from Bear Stearn’s “The Investors Guide to Commercial Mortgage Backed Securities (CMBS). This report provides summarized ratings agency approaches from major ratings agencies.


Gordon, Sally. “Introduction to Commercial Mortgage Backed Securities (CMBS).”


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