WE KNOW WHAT THE CMBS DID LAST SUMMER AND WHY

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ABSTRACT

Much has been written about the financial crisis that engulfed the financial markets in the summer and fall of 1998. Little has been written about the effect of this crisis on the fledgling Commercial Mortgage-Backed Securities Market (CMBS). By comparing and contrasting the CMBS market with other comparative fixed-income securities, this thesis establishes that there were specific characteristics of the CMBS market that made it more vulnerable to the market turmoil than other fixed-income securities. First, the thesis seeks to clarify the series of events that culminated in the meltdown of CMBS. We also address CRIIMI MAE, at the time the largest buyer of subordinate CMBS and an emerging player in CMBS issuance, in a case study to assess structural vulnerability in the CMBS market. Finally, we explore the hedging potential of CMBS by regressing a range of domestic and international financial asset prices and various rated CMBS prices during three carefully chosen time periods within the summer and fall crisis period.

Thesis Supervisor: Timothy J. Riddiough
Title: Associate Professor

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Our sincere thanks and appreciation go to our advisor Professor Tim Riddiough for his guidance and the many intellectual discourses that steered us in the right direction.

Last but not least, we would like to thank our respective families. Malik would like to thank his whole family for their support and encouragement. Josphat would like to thank his wife Carol for her love, patience and encouragement and family back at home for their moral support

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PREAMBLE

A young man of noble lineage arrived at a remote desert oasis with his entourage of men and horses deadbeat. He proceeded to ask an old man siting under a palm tree, the directions to the nearest water well. The old man obliged him by pointing to a nearby well that had a strange contraption on top.

"What is that device on top of the well," inquired the young man.

"Oh, that's a saddiq (an Archemedes spiral). You use it to draw water by turning it using a horse or mule," replied the old man.

The young man, as directed, tied the horses to the device and lashed the horses to pull it. No sooner had the device started turning than it emitted a loud noise that scared the wits out of his thoroughbred horses.

"Cant this devise turn without all the racket," asked the young man angrily.

"Young man, in this part of the world, water comes with noise," replied the old man patiently.

Anthony De Mello–Prayer of the Frog

CHAPTER 1 – BACKGROUND

Figure 1

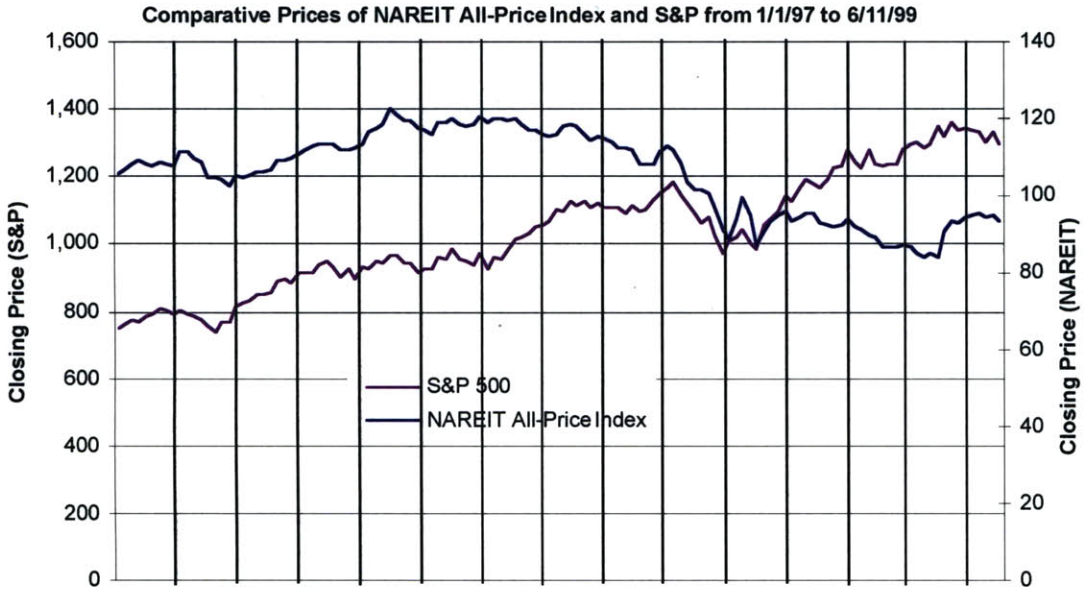
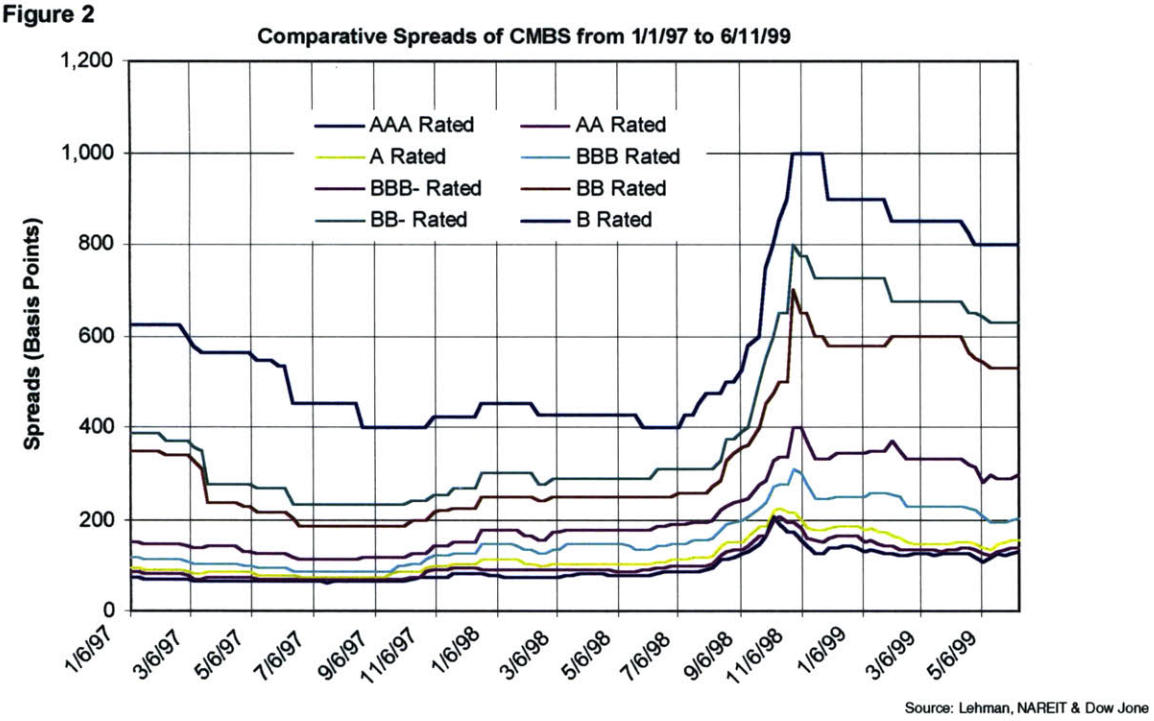


Figure 2



Source: Lehman, NAREIT & Dow Jone

INTRODUCTION

The maturation of real estate capital markets has been hailed as the beginning of forward-looking discipline in the real estate industry. A JP Morgan study by Giliberto showed public market

prices leading real estate cash flow changes while private market prices tended to lag cash flow changes.[1] The study indicates that, for the most part, Wall Street does a better job of pricing new information than the private markets. Eventually forward-looking pricing in the real estate capital markets may tame the notoriously cyclical real estate industry.[2] The consensus in the real estate industry is hope that REITs will bring forward-looking asset pricing and liquidity in the asset market while CMBS will introduce much needed competition to commercial lending and regulate overbuilding by choking capital whenever the market is perceived to be overheating. Looking at the events that occurred in the summer and fall of 1998, this thesis will illustrate that with the hopes of increased efficiency capital markets may also bring disappointment.

The economic crisis that engulfed the world financial markets in the third and fourth quarters of 1998 may have been one of the most endemic financial upheavals in recent times. Financial markets effectively panicked after Russia's de facto default sparked fears of a worldwide recession (see Figure 1 above). Krugman[3] and Sachs[4] studied the causes and effects of the Asian and Russian crisis on the world financial markets in general, however minimal study has been done to explain how and why the Commercial Mortgage Backed Securities industry was so adversely affected (see Figure 2 above). Gordon analyzed the effects of the crisis on the CMBS market and explored the structural weaknesses of CMBS, which made it vulnerable to the crisis.[5] Her analysis is a concise overview of events that led up to the crisis, however it strongly relies on anecdotal evidence and ties the CMBS disruption to the general "capital flight to quality." The

[1] Michael Giliberto, JP Morgan Investment Management, Spring 1996
[2] William C. Wheaton, "Real Estate Cycles & Outlook '99", Torto Wheaton Research CB Richard Ellis 1998
[3] Paul Krugman, "Paradigms of Panic: Asia Goes Back to the Future," Slate, March 12, 1998
[4] Jeffrey D. Sachs and Steven Radelet, "What We have Learnt so Far from the Asian Crisis?" National Bureau of Economic Research Working Paper, January 4, 1999
[5] Sally Gordon, "*The CMBS Market Learns a Lesson - Wall Street is a Two Way Street*" Moody's Investors Service, November 1998

bulk of analysis on the crisis has focused on the credit crunch that generally affected all the markets. This thesis will narrow the scope to CMBS in order to comprehend how and why the securities were so adversely affected.

This thesis consists of five chapters. The first chapter serves as a background of the crisis and an appraisal of the CMBS market before the crisis. Chapter two narrates a reconstructed story of how the Asian/Russian crisis caused the near collapse of the CMBS market. In addition we compare the performance of CMBS with that of other fixed-income securities before, during and after the crisis period to explore any structural deficiencies in the CMBS market that were highlighted by the crisis. In chapter three, we perform an in-depth case study of CRIIMI MAE, a dominant player in the low-rated CMBS sector. We examine the background, history and fate of CRIIMI MAE following the crisis as well as the critical link mortgage REITs play in the smooth functioning of the CMBS market. In chapter four, we examine the statistical relationships between CMBS and other financial securities to disentangle the factors that affected CMBS prices during the crisis and to determine whether those factors may be hedged. Hedging addresses the concerns brought by conduit-CMBS lenders who experienced enormous losses as interest rates on their credit lines soared while the value of their underlying mortgages declined. Chapter five is a summary of our findings and conclusion.

BACKGROUND – WORLD FINANCIAL CRISIS

Figure 3

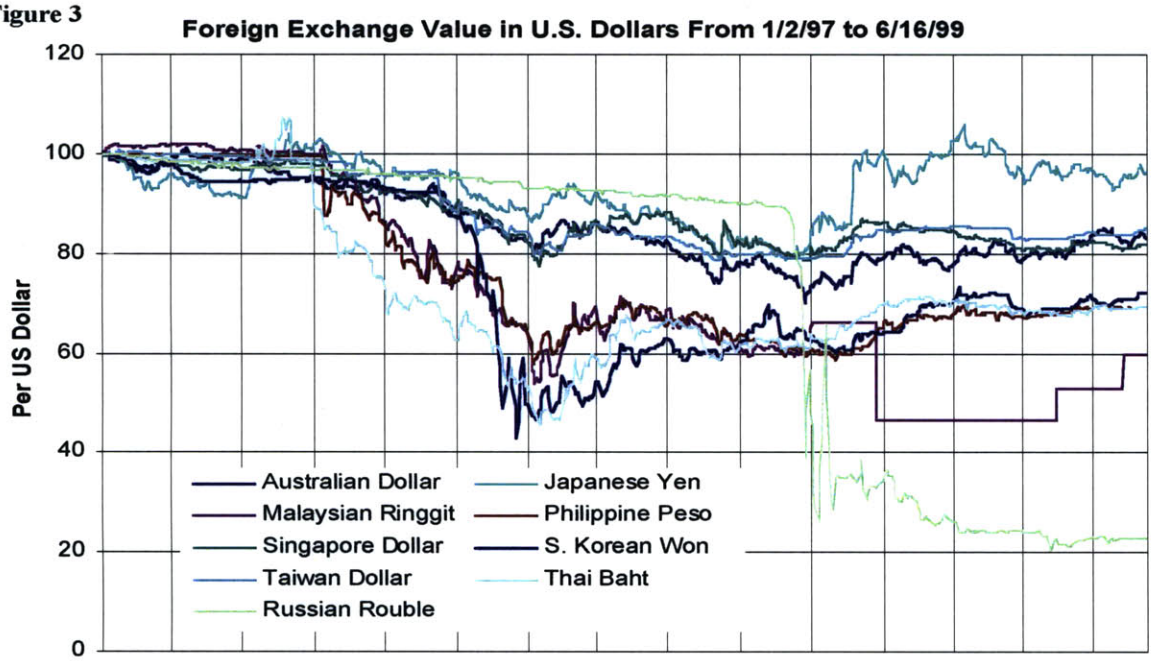
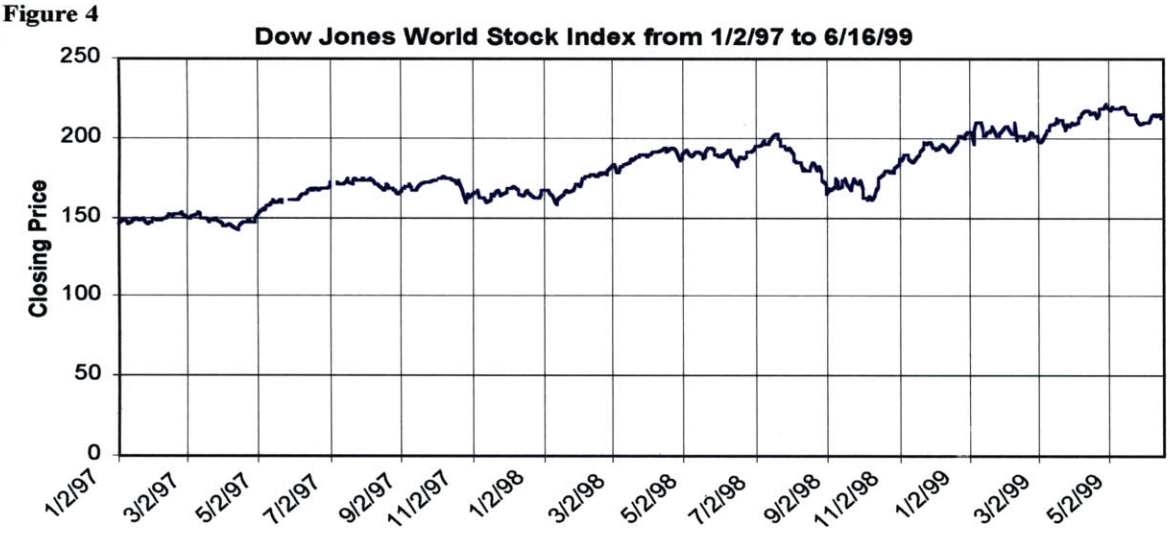


Figure 4



Source: Dow Jones

When the Thailand currency, the Baht, collapsed from a speculative real estate bubble in early July 1997, Korea, Malaysia and Indonesia soon followed in what quickly degenerated into an Asian contagion (see Figure 3 above). By August 1998, the crisis had spread as far as South Africa and Russia. When Russia defaulted on its domestic debt on August 17, 1998, investors,

fearing the beginnings of a global crisis, fled en mass to the safe haven of US Treasury securities. Massive capital outflows from the emerging market economies further compromised their already weakened state. The threat of a global depression loomed. Capital markets around the world were crashing (see Figure 4 above). In the last week of September, the Federal Reserve Bank of New York stepped in to restore confidence to an already weakened market by overseeing the bailout of Long-Term Capital Management, a large hedge fund whose near collapse threatened to take down the world financial markets.

The results of the crisis were staggering. In the three months between August and October 1998, Wall Street firms incurred trading losses of over $10 billion.[6] Union Bank of Switzerland lost an estimated $1.5 billion. Hedge funds, which had invested heavily in the emerging markets, incurred even heavier losses. Long-Term and Soro's Quantum Fund each lost approximately $4 billion. Tiger and Omega, two of the largest hedge funds, lost $2.3 and $1.2 billion respectively.[7] Other big losers included the Massachusetts Pension Reserves Investment Trust (PRIT) and the endowment funds of Harvard, Stanford and Princeton. PRIT and Harvard lost $1.3 billion apiece. In the United States alone, total estimated trading losses exceeded $30 billion.

Three competing hypotheses have been proposed by leading economists to explain the speed, severity and endemic nature of the crisis. One hypothesis by Roubini et al believes that the crisis was the result of "moral hazard" from excessive risk taking by investors in the belief that

[6] Compiled from reported losses of leading Wall Street firms such as Bankers Trust, Nomura, Lehman Brothers, Morgan Stanley, Merrill Lynch, Salomon Smith Barney and Goldman Sachs.
[7] Andrew Butcher, "Soros Legend Fades as Losses Mount," Sunday Times – London, November 11, 1998

troubled economies would be bailed out in the event of crisis.[8] Roubini argues that, with the bail out of Thailand in August and Indonesia in October 1997, the IMF implicitly guaranteed other emerging economies. Investors, relying on the IMF's implied guarantee to bail out other emerging market countries, took excessive risk in countries such as Russia. The other moral hazard argument relates to the pervasive issue of "crony capitalism" in many of the emerging market economies, where the government would provide explicit or implicit guarantees to banks to borrow funds from international sources. The moral hazards created structural and policy distortions that eventually hastened the crisis. The second hypothesis from Krugman et al believes that the crisis was caused by self-fulfilling, creditor panic.[9] In this scenario, a single event would trigger a wave of capital withdrawals where investors attempted to preemptively withdraw funds ahead of other investors. This lemmings rush hastened the crisis and exacerbated its trough. In the third hypothesis, Sachs et al attributes the crisis to investors ignoring the weaknesses in the Asian economies due to a change in risk perception. When export growth slowed in 1996, investor risk perception changed again and overall weaknesses became glaring.[10]

Although no generally accepted explanation for the cause, speed and severity of the Asian/Russian crisis exists, a couple lessons have emerged:

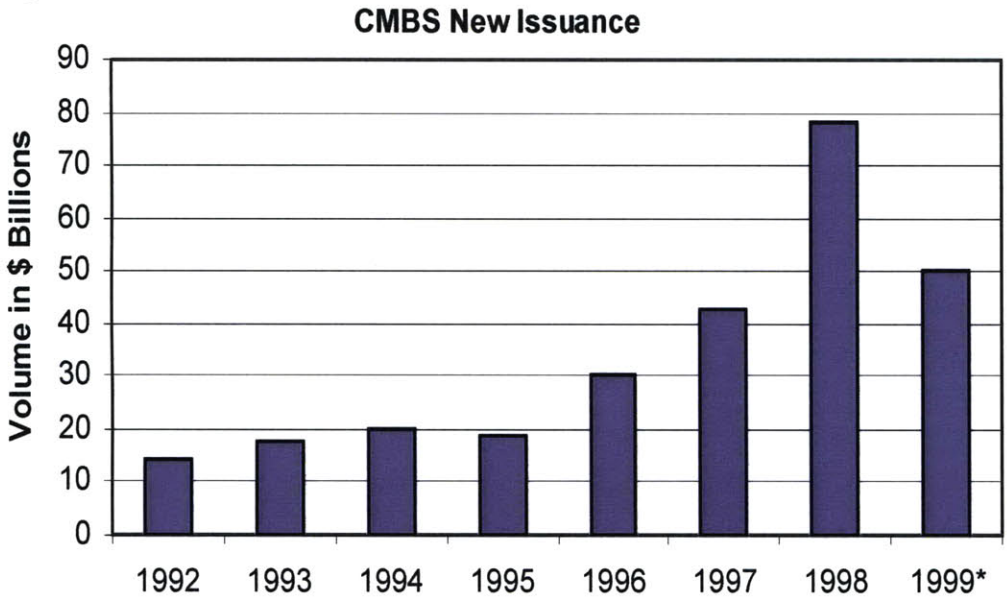
- Global markets are far more interconnected than previously imagined. The near collapse of the CMBS market in a very robust US real estate market is testimony to this fact.

[8] Nouriel Roubini, Paolo Pesenti and Giancarlo Corsetti, "*What Caused the Asian Currency and Financial Crisis,*" September 1998
[9] Paul Krugman, "*Paradigms of Panic: Asia Goes Back to the Future,*" Slate, March 1998
[10] Jeffrey Sachs and Steven Radelet, "*What We have Learnt so Far from the Asian Crisis*?" National Bureau of Economic Research Working Paper, January 4, 1999

- The global market has more structural weaknesses than was previously thought. As evidenced by a single hedge fund, Long-Term Capital Management, pushing the global financial markets to the brink of collapse.

BACKGROUND – COMMERCIAL MORTGAGE BACKED SECURITIES

Figure 5



Source: AEW

1999* Estimated number

In the early 1980's, deregulation of financial sector encouraged traditional financial intermediaries to increase debt flow to commercial real estate. Coupled with the 1981 tax law that allowed debt cash flows to be manipulated, it resulted in an overbuilt market. When the tax laws were changed in 1986, eliminating the attractive depreciation and income tax loss provisions, the commercial real estate market crashed and the savings and loans (S&L) debacle ensued. It resulted in a severe credit crunch between 1989-1993. For practical and political reason, the Resolution Trust Corporation (RTC) was formed to pool and sell in bulk the

institutional loan portfolios that were held by the collapsed S&Ls. The deep discounts offered in the RTC sales subsidized the start-up costs of the Commercial Mortgage Backed Securities market.[11]

In the early 1990's, the CMBS market was mainly dominated by RTC deals. Issuers borrowed and adapted the Collaterallized Mortgage Obligation (CMO) structure from the Residential Mortgage-Backed Securities industry to shift cash flow rights up and credit default risk down through the CMBS structure. Around 1993, many banks and insurance companies began to securitize some of their seasoned commercial loan portfolios through the CMBS structure. Rating agencies began evaluating deals to control for security design by determining subordination levels required to achieve specific security ratings. Around 1994, a special purpose vehicle, the Real Estate Mortgage Investment Conduit (REMIC or conduit) emerged as a potentially effective vehicle for securitizing commercial loans. Unlike traditional portfolio lenders, conduits originated loans with the sole intention of placing them in security pools. Though the conduits could not source capital as well as the portfolio lenders, they were very specialized and had minimal portfolio risks. Unlike portfolio lenders, they had no portfolio constraints imposed by regulators. Specialization led to standardization, which made conduit loans easier to securitize. By 1997, conduits originated more than 50 percent of securitized mortgages. The re-emergence of the mortgage REITs further served to diversify the participants in the CMBS market. Mortgage REITs became significant buyers of subordinated CMBS product, which allowed the conduits to offer better mortgage pricing to borrowers and compete

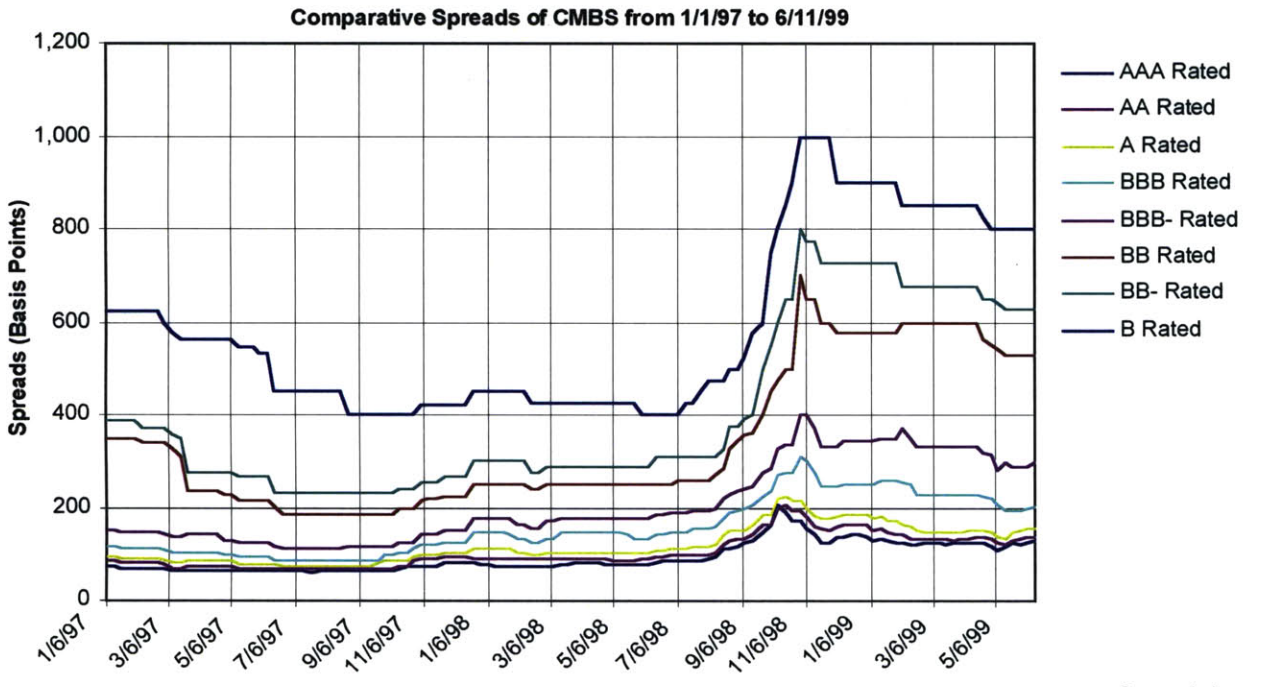
[11] Timothy J Riddiough, "Commercial Mortgage Backed Securities: An Exploration into Innovation, Information Production and Learning in Financial Markets," MIT Center for Real Estate, September 1998

with portfolio lenders. CRIIMI MAE, a mortgage REIT now under Chapter 11 bankruptcy protection, had captured around 50 percent of the below investment grade CMBS market.

From the mid '90s to the summer of 1998, due to the combination of a robust real estate market, decade-long economic expansion and aggressive bidders the CMBS market was one of the fastest growing sectors of the fixed-income securities industry. The market grew from a modest issuance of $19.9 billion in 1994 to a sizable $78 billion in 1998 (see Figure 5 above). The potential for growth in the securitization of commercial mortgages is tremendous. Currently, CMBS constitutes only a small portion of the entire fixed-income market where less than 15 percent of the entire $1.5 trillion commercial real estate market is securitized.

CHAPTER 2 – WHAT HAPPENED

Figure 6



Source: Lehman

SETTING THE STAGE

When Capstead, a mortgage REIT that specializes in residential mortgage-backed bonds, exited the residential mortgage market in June, citing deteriorating credit standards and losses from prepayments, CMBS market participants hardly took notice. Prior to 1998, the commercial mortgage industry took cues from the residential mortgage market. This time however, CMBS participants could not be bothered because CMBS was entering a banner year, where issuance for the first half of 1998 at $43.3 billion almost topped 1997's total issuance of $44 billion. Spreads across CMBS ratings were very tight due to competitive pressures from issuers and buyers (see Figure 6 above). Though fixed-income markets quickly moved past the Federal Funds hike at the end of March 1997, the Asian turbulence later that summer caused some jitters.

A wave of prepayments hit the Residential Mortgage Industry in June and July. Mortgage REIT's and hedge fund, significant buyers of Interest Only (IOs) notes incurred heavy losses. Hedge funds were also suffering from a worsening Russian economy, which triggered a wave of margin calls. Long-Term Capital Management, the 5-year-old hedge fund with substantial holdings in mortgage backed securities and an undisclosed exposure in Russia and other emerging markets, was one of the exposed hedge funds.[12] At this point in July, CMBS spreads started slowly widening.

On August 17, 1998, Russia announced it was restructuring its bond payments; a de facto default. Consequently, investors liquidated their position en-mass and fled to the safety of US Treasury securities. The flight to quality boosted Treasury prices while practically all other security prices sank. CMBS registered an unprecedented 20 basis point jump in spreads across the board on August 21, 1998.

THE LONG TERM CAPITAL MANAGEMENT ANGLE

In the last week of August, Long-Term courted Wall Street firms in an attempt to raise capital and avoid liquidation of its positions. In the process, Wall Street caught a peek at the investment strategies of the hedge fund. The news of Long-Term's problems caused further anxiety in the CMBS market as information on its $7 to 12 billion in senior and mezzanine CMBS holdings (16 to 28 percent of 1997' total issuance) trickled out. Driven by fears of an impending global meltdown, Wall Street firms liquidated positions in the month of September. According to Haghani, a Long-Term strategist, "*it was as if there was someone out there with our exact portfolio only it was three times as large as ours and they were liquidation all at once.*"

[12] Kolman J " LTCM Speaks" Derivatives Strategy winter 1999

At that time, Long-Term's market direction bets began hemorrhaging money. Long-Term had shorted US Treasuries and simultaneously invested in spread bonds, such as CMBS, locking in a profit as spreads tightened. When the fixed-income market bifurcated (declining Treasury yields and increasing spreads or risk premiums) in late August following the Russian bond default, Long-Term suffered on both sides of its market bets as Treasuries rose and spread bonds fell. It is estimated that Long-Term lost $550 million on August 21 alone. By mid September, Long-Term was teetering on the brink of collapse with a portfolio of $125 billion (notional value an estimated $1 trillion) on equity of less that $1 billion.[13] The hedge fund suffered $2.3 billion in accumulated losses in less than two months.

On September 24, 1998, in an effort to prevent a global financial crisis, the Federal Reserve Bank of New York initiated a bailout of Long-Term. Confidence however, did not begin to return to the markets until mid October following the second 25 basis point cut in the Federal Funds rate to a targeted 5 percent yield (the first rate cut occurred on September 29). During this crisis period CMBS spreads shot up by between 110 and 325 basis points. Table 1 below shows the performance of various CMBS ratings before, during and after the crisis.

[13] Franklin R. Edwards, "Hedge Funds and the Collapse of Long-Term Capital Management," Journal of Economic Perspectives, Volume 13, Number 2, Spring 1999. The notional value is the principal amount underlying each derivative contract.

Table 1: CMBS Spread Reactions

BOND TYPE	Change in bps from 1/1/98 to 08/14/98*	% Change bps from 1/1/98 to 08/10/98**	Change in bps from 8/10/98 to 10/9/98	% Change bps from 8/10/98 to 10/9/98*	Change in bps from 10/9/98 to 1/1/99	% Change bps from 10/9/98 to 1/1/99*
AAA	17	21.0 %	110	116.0 %	-69	-33.7 %
AA	15	10.0 %	195	91.0 %	-37	-18.5 %
A	10	9.0 %	100	83.0 %	-37	-16.8 %
BBB	15	9.4 %	170	68.8 %	-20	-7.4 %
BBB-	25	14.3 %	225	62.5 %	+20[14]	6.2 %
BB	20	8.0 %	205	75.9 %	+100	21.1 %
BB-	10	3.3 %	290	93.5 %	+125	20.8 %
B	25	5.6 %	325	68.4 %	+100	12.5 %

FURTHER WOES FOR CMBS

As other factors fed into the crisis, CMBS markets continued to suffer. Mortgage REITS, the major buyers of low-rated CMBS, were facing margin calls as the value of their portfolios decreased with widening CMBS spreads. Clarion Partners, CRIIMI MAE, Amresco, Lennar Partners and Impac, all of which had reported record profits for the second quarter of 1998, now posted heavy losses as their CMBS holdings were marked to market. On October 5, 1998, CRIIMI MAE, the single largest buyer of subordinate CMBS, filed for Chapter 11 bankruptcy protection. The filing came in the wake of massive margin calls from its creditors. News of CRIIMI MAE's Chapter 11 filing further undermined the mortgage REIT and CMBS markets (see Figure 7). Stock prices for the mortgage REITs, Clarion, Impac, Anthracite and Ocwen dropped by between 20 and 50 percent. In October, Amresco, Anthracite and Chastain Capital announced a CMBS restructuring plan to stem further losses (read exiting the market). Through the end of 1998, very few transactions took place in the subordinated CMBS market. In less than 2 months, participants in the subordinate CMBS market shrunk from 14 to 3.

*Percentage change in spread does not mean an equivalent change in risk. Spread and risk are connected in the the following generic bond pricing equation. Price of bond = Σ(Cfi)/(r + spread). Where Cfi and r represent cash flows and risk free rate respectively. The denominator serves as a proxy for risk

Due to the relative novelty, illiquidity and complexity of the CMBS market, very few new players were able to enter to take advantage of depressed prices and the fundamentally sound real estate market. The amount of due diligence for secondary offerings and "infrastructure" required to evaluate and service subordinate CMBS was too discouraging. Figures 7 and 8 below illustrate the correlation of B rated CMBS, CRIIMI MAE and mortgage REITs.

[14] The positive sign indicate that the spreads continued to widen despite the LTCM bailout.

Figure 7 **Comparison of Criimi Mae Share Price, B Rated CMBS Spreads and NAREIT Mortgage Index from 1/5/98 to 6/11/99**

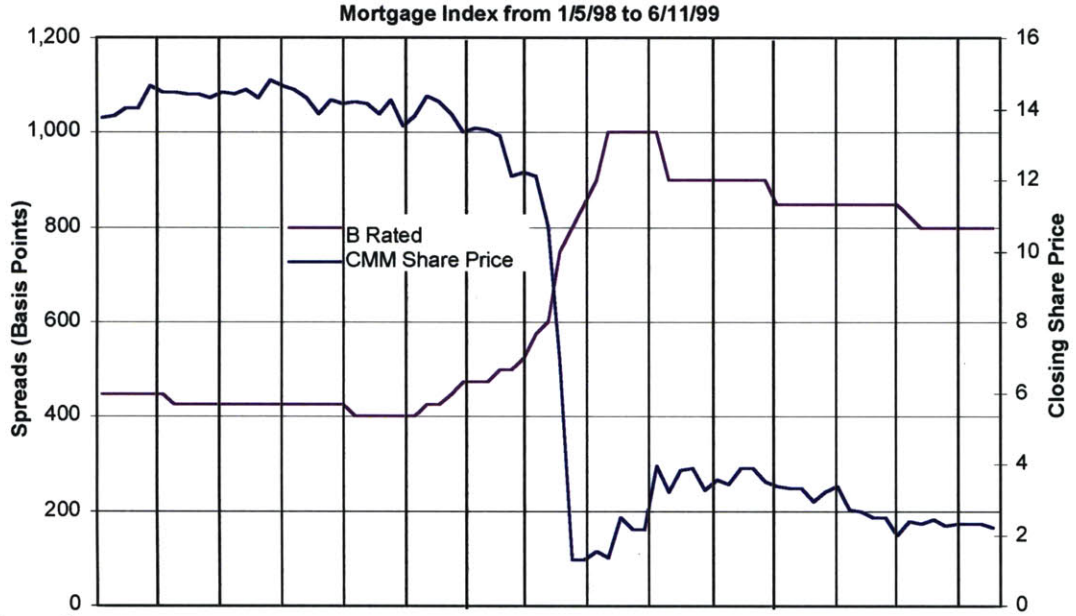
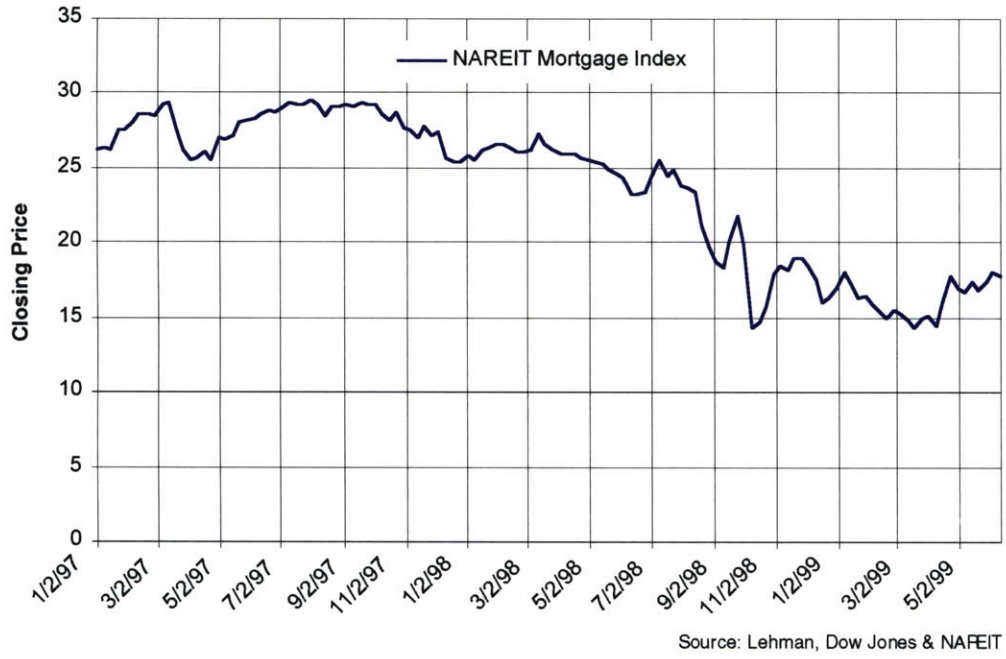


Figure 8



Source: Lehman, Dow Jones & NAREIT

...AS THE MORTGAGE PIPELINE FROZE

Before the market turmoil hit the CMBS market in late August, commercial loans worth over $35 billion had been slated for securitization in the second half of the year. Credit Suisse First Boston, Lehman Brothers and Capital America (Nomura) held approximately 70 percent of this

pipeline. As spreads rapidly widened, the value of the warehoused loans plummeted. In September, CSFB suspended its origination operations after incurring massive losses on its $7 billion in warehoused loans. Capital America reported an accumulated pipeline loss of $1.2 billion for the third quarter of 1998. The Nomura subsidiary announced major restructuring that included shutting down the $1 billion-a-month mortgage conduit issuer. Ethan Pennar, CEO of Capital America, subsequently resigned. Other major originators that opted out of the market included Merrill Lynch, CRIIMI MAE, Amresco Capital, and Daiwa Securities.

TWO HYPOTHESES ON THE CHAIN OF CAUSALITY

While recognizing the difficulty in disentangling the chain of events that started in the Russian bond default, we present two hypothesis that explore the web of relationships in the financial markets and how it culminated in the impairment of the CMBS market and a number of financial service firms.

Hedge Fund–Mortgage REIT–CMBS Spread Hypothesis[15]

In the "Hedge Fund–Mortgage REIT–CMBS Spread Hypothesis," hedge funds incurred heavy losses from investments in emerging market debt. Lenders pressed the hedge funds for additional collateral to offset insufficient claims. Under pressure to meet margin calls, hedge funds liquidated their mortgage REIT holdings, which depressed mortgage REIT stocks prices. Lenders concerned by the declining market value of mortgage REITs, also pressed the highly leveraged mortgage REITs for additional collateral. Under pressure to meet margin calls, mortgage REITs sold CMBS positions in a down market, which caused spreads to widen further.

[15] The hypotheses emerged from conversations with Professor Timothy Riddiough.

The additional widening in CMBS spreads further reduced the values of the mortgage REITs' CMBS assets, which triggered another round of margin calls (see Figure 9 below).

The Hedge Fund–CMBS Spread–Mortgage REIT Hypothesis[16]

In the "Hedge Fund–CMBS Spread–Mortgage REIT Hypothesis," hedge funds incurred heavy losses from investments in emerging market debt. Lenders pressed the hedge funds for additional collateral to offset insufficient claims. Under pressure to meet margin calls, hedge funds liquidated their significant holdings in CMBS, which caused the spreads to widen. Due to their significant holdings in CMBS, the widening spreads caused mortgage REIT stock prices to plunge. Lenders triggered by the depressed market value of the mortgage REITs called the highly leveraged mortgage REITs for additional collateral. Under pressure to meet margin calls, mortgage REITs sold CMBS positions in a down market, which caused spreads to widen further. The additional widening in CMBS spreads further reduced the values of the mortgage REITs' CMBS assets, which triggered another round of margin calls (see Figure 10 below).

Figure 9

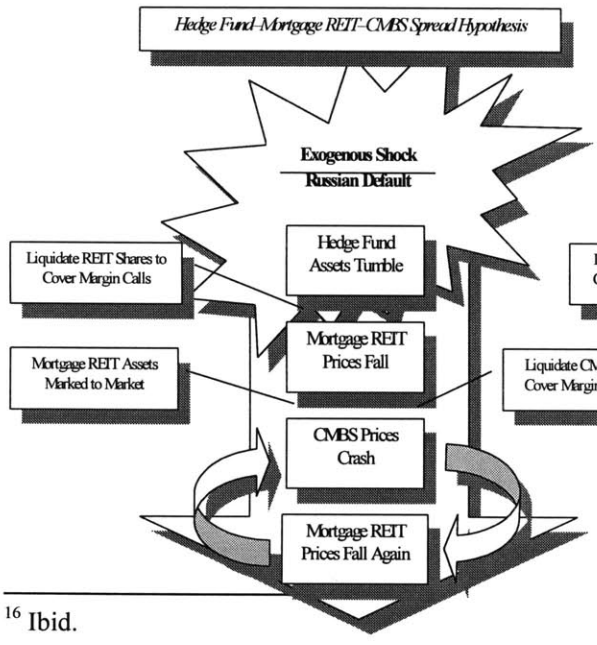
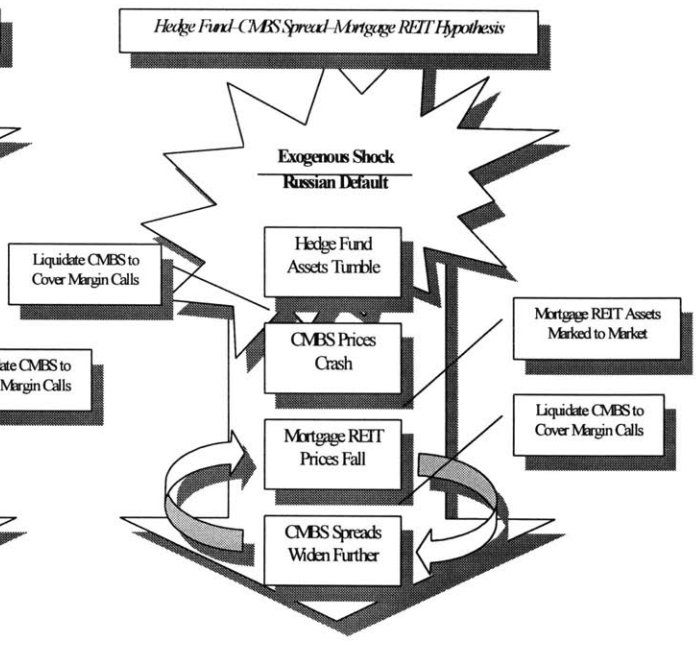


Figure 10



[16] Ibid.

The critical difference between the two hypotheses is whether CMBS spreads widened before the mortgage REIT stock prices fell or afterwards. Empirical evidence suggests that the two events occurred somewhat simultaneously (See Figures 9 and 10 above). The sale of significant positions in both mortgage REITs and CMBS by hedge funds would explain the simultaneous reaction. Long-Term Capital Management had between $7 and $12 billion invested in CMBS and Wall Street was known to have many Long-Term copycat funds (e.g., Solomon Brothers and Goldman, Sachs). There is a distinct possibility that either Long-Term or the copycat funds (or all of them) could have liquidated their positions in both CMBS and mortgage REITs around the same time. The highly secretive nature of the hedge fund industry and the fact that CMBS are privately traded make it impossible to reconstruct the truth. For now, it is difficult to validate either of the above hypotheses.

COMPARATIVE FIXED-INCOME SECURITIES

Figure 11

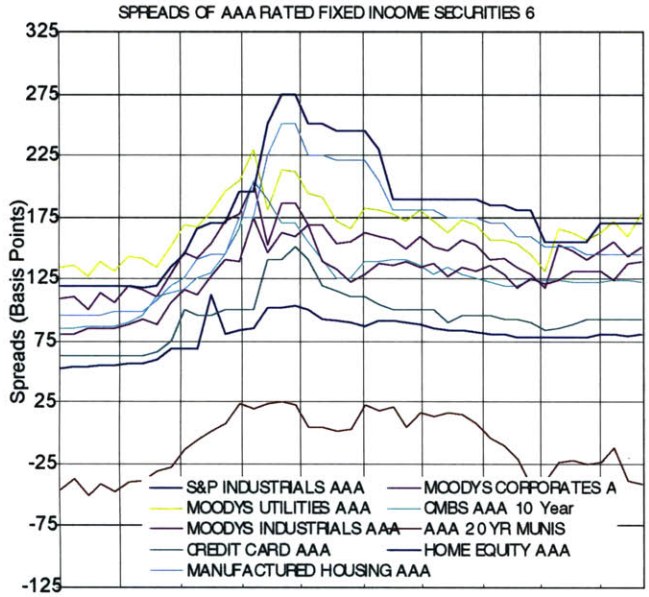


Figure 12

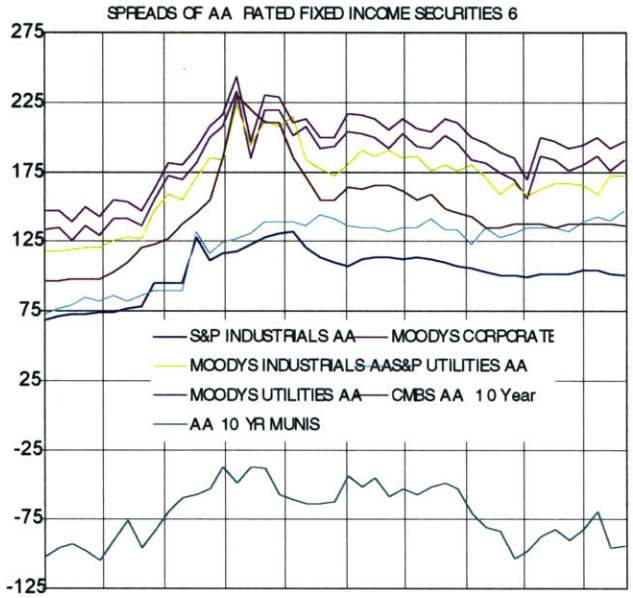


Figure 13

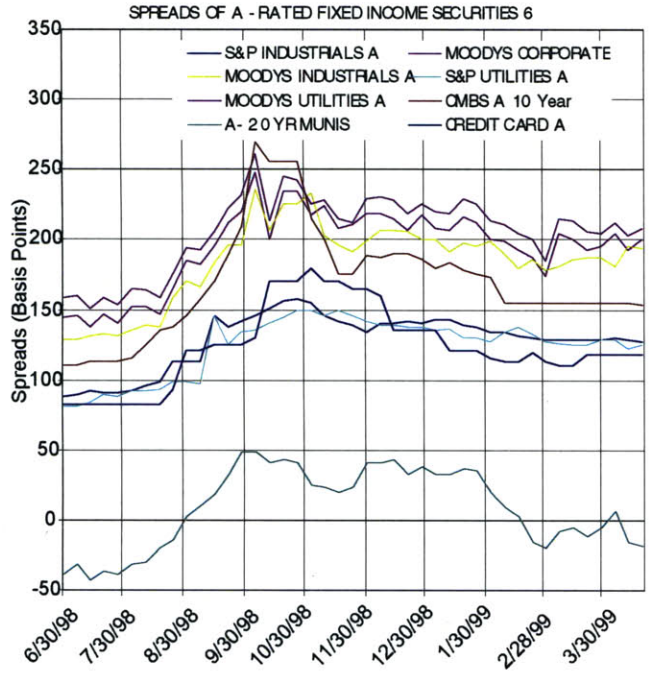
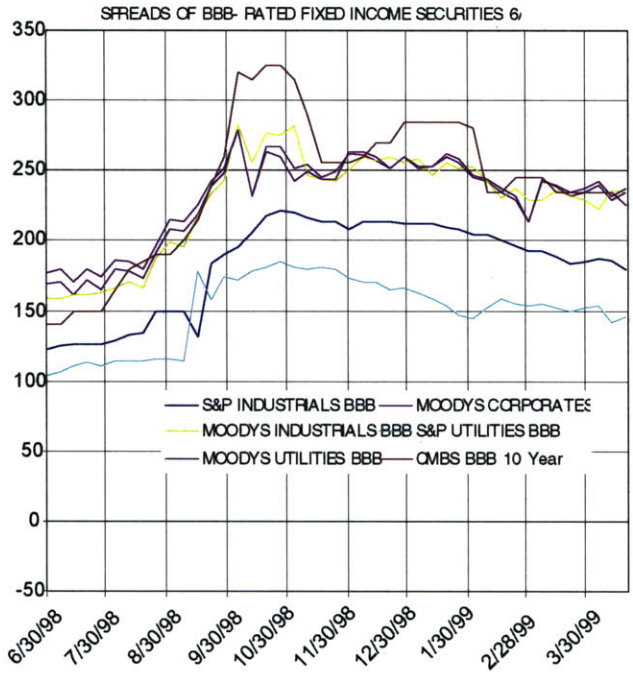


Figure 14



Source: Lehman, Bloomberg

Other investment grade fixed-income securities reacted to the crisis in the same way as investment grade CMBS. Due to a temporary liquidity crunch, spreads of investment grade corporate bonds and other asset-backed securities jumped by approximately 100 basis points

between mid August and mid October (see Figures 11, 12, 13 and 14 above). The drastic widening occurred as a result of the "flight to quality." By the end of October, after the second of the three Fed Fund rate cuts, spreads on other investment grade securities began narrowing (See Figures 11, 12, 13 and 14 above). Fears of a recession subsided and liquidity returned to the investment grade fixed-income markets. The wide investor base in investment grade fixed-income securities reduced the liquidity premium, which was demanded by investors immediately after the crash, and enabled the markets to recover quickly. The three rate cuts on September 29, October 15 and November 17 served to lower the yield of US Treasuries and also boost the liquidity on the other fixed-income securities.

Spreads on high-yield securities, like comparably rated subordinated CMBS, widened rapidly by between 250 and 350 basis points over the crisis period. During the same time period, spreads on CMBS widened by between 350 and 550 basis points. Unlike CMBS, high-yield securities and Asset-Backed Securities (ABS) bounced back with the announcement of Long-Term's bail out. However, several top issuers of sub prime home equity loans, such as FirstPlus Financial Group and Southern Pacific Funding Corporation, stopped operations during the crisis, which slowed down new issuances.[17] The return of high-yield mutual funds in November and December helped narrow spreads by between 50 and 100 basis points (see Figures 15, 16 and 17 below). The surging stock markets also helped reduced the spate of defaults and bankruptcies that had hit the market in October and dispel the fears of an economic downturn. Cautious investors were more comfortable with the relative simplicity of investing in high-yield securities as compared to low-rated CMBS.

Figure 15

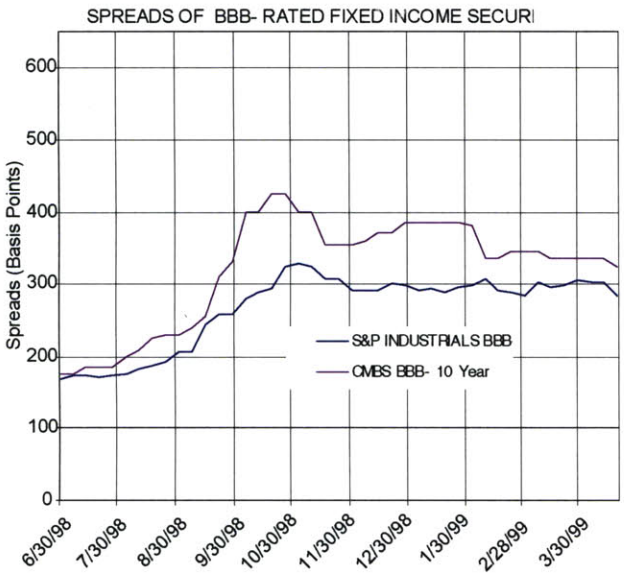


Figure 16

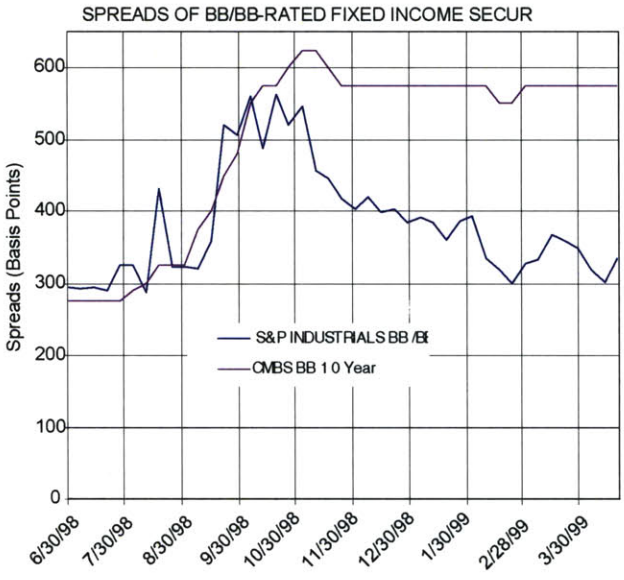
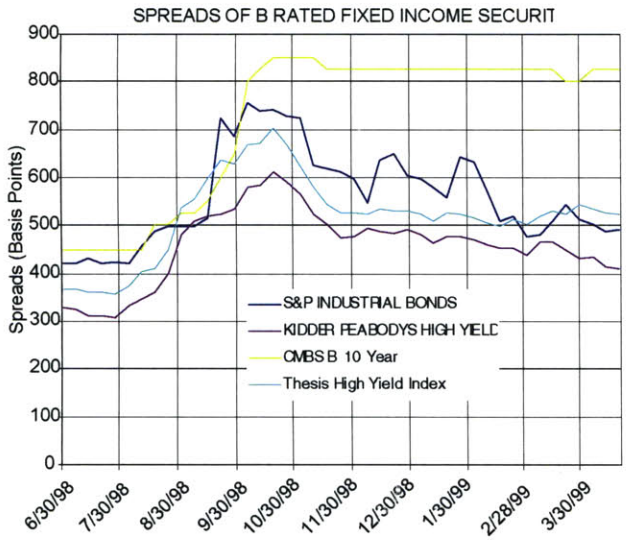


Figure 17



Source: Lehman, Bloomberg &

[17] Christopher O'Leary, "ABS and MBS Markets Were Humbled and Hardened in 1998: Despite record issuance, CMBS take a hard knock, Investment Dealers' Digest, January 11, 1999

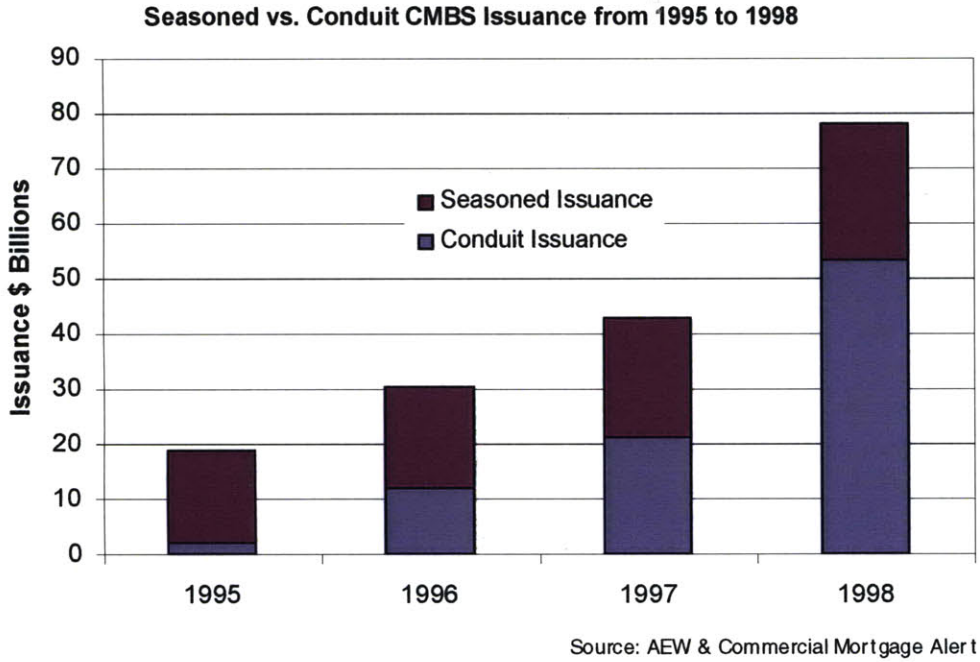
CHAPTER 3 – CRIIMI MAE CASE STUDY

INTRODUCTION

Up until the summer and autumn of 1998, mortgage REITs were critical to the continued growth of the public capital markets in real estate. As a group, they were the largest buyers of low-rated CMBS. The ability to sell the low-rated tranches at reasonable prices is a critical component to ensuring the competitiveness of conduit-CMBS with traditional portfolio lenders, which in-turn made mortgage REITs a critical component of the CMBS market.[18] In addition, though dominated by investment banks, mortgage REITs were developing a presence as conduit lenders, another crucial segment of the CMBS sector .[19] The immense growth of conduit-CMBS issuance, as opposed to CMBS originated from seasoned loan portfolios, from 1993 to 1998 shows the productivity and efficiency gains conduit lenders have achieved versus traditional portfolio lenders.[20] For example, conduit-CMBS issuance grew 290 percent from 1995 to 1996 and an average 32 percent thereafter (see Figure 18 below).

[18] Timothy J. Riddiough, "CMBS: Market Development, Security Structure and Market Structure," MIT Center for Real Estate, 1998 – 1999 Real Estate Capital Markets Class Notes, p.126
[19] "Conduits Bullish on Continued Growth," Commercial Mortgage Alert, February 2, 1998
[20] Timothy J. Riddiough, "Mortgage REITs: Mushrooms or Oak Trees?" MIT Center for Real Estate, 1998 – 1999 Real Estate Capital Markets Class Notes, p.93

Figure 18

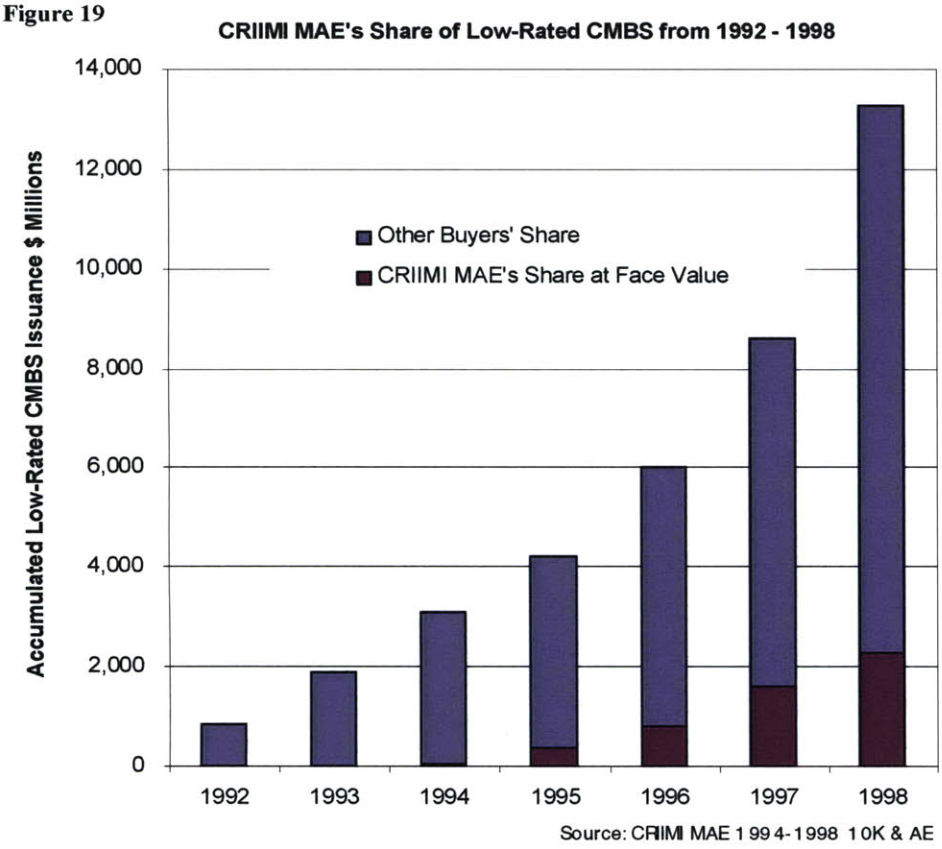


Source: AEW & Commercial Mortgage Alert

Prior to October 1998, CRIIMI MAE, a mortgage REIT, was the largest single buyer of low-rated CMBS. CRIIMI MAE began purchasing low-rated CMBS in the second half of 1994. Based on face value of CMBS, the mortgage REIT purchased a modest 5 percent of the low-rated CMBS issued that year.[21] In 1995, CRIIMI MAE's low-rated purchases increased over five-fold to 27 percent. From 1996 to 1997, the REIT purchased on averaged 28 percent of the total issuance volume for low-rated CMBS. In 1998, CRIIMI MAE's net purchases were just 15 percent of the total low-rated CMBS issuance (see Figure 19 below).

[21] To calculate the amount of low-rated CMBS issuance, we took the total CMBS issuance for any given year and assumed 6 percent of the total face value would be low-rated.

Figure 19



With over 50 percent of its assets invested in low-rated CMBS by 1998, CRIIMI MAE's fortunes were closely linked to the performance of low-rated CMBS. After the Russian government defaulted on its sovereign debt on August 17, 1998, fixed-income prices suffered severely. Low-rated CMBS prices were hit particularly hard. CRIIMI MAE, facing wave after wave of collateral calls, filed for Chapter 11 bankruptcy protection on October 5, to prevent its creditors from liquidating its portfolio at depressed prices (see Figures 20 and 21 below).

Figure 20

Comparison of Subordinate CMBS and CRIIMI MAE Share Price from 1/2/97 to 6/11/99

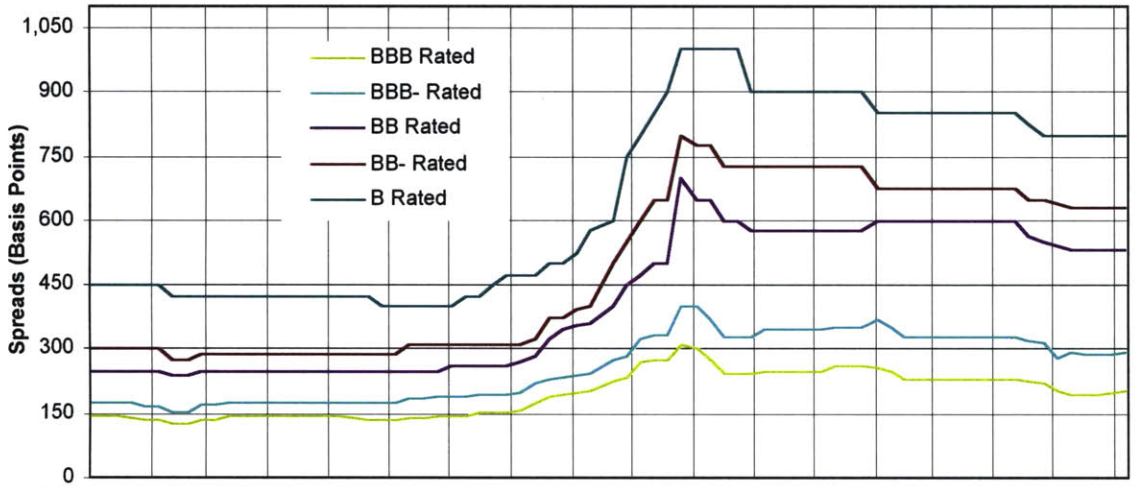
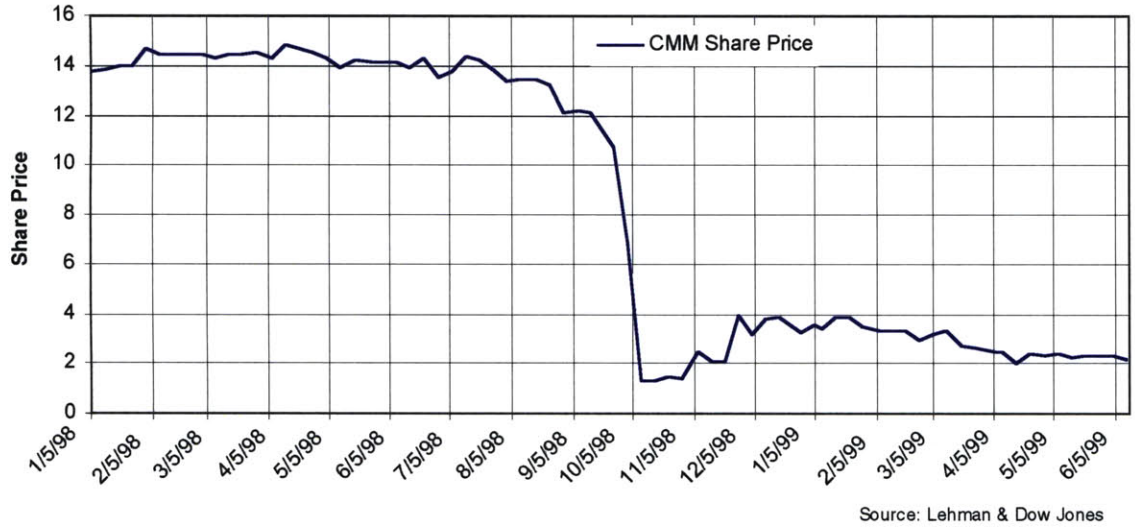


Figure 21



Source: Lehman & Dow Jones

Chapter three will build from the context established in chapters one and two to illustrate the rise and fall of CRIIMI MAE. The chapter is presented in three acts.

- Act One will examine the history and the rise of CRIIMI MAE in the mortgage industry from its evolution as a government insured mortgage investor to its status as the largest single buyer of low-rated CMBS in 1997.
- Act Two will narrate the chronology of events leading to and after CRIIMI MAE's Chapter 11 bankruptcy protection.

- Act Three will perform a postmortem of CRIIMI MAE to determine what factors contributed to its vulnerability and decline. It will also examine the implication of CRIIMI MAE's predicament on the mortgage REIT and CMBS sectors.

ACT 1 – HISTORY & BACKGROUND

Capitol Realty Investments, Inc. (CRI) based in Rockville, Maryland has been in business since 1974 providing real estate capital, management, and investment services to developers, builders, lenders and investors. William B. Dockser served as chairman and Martin C. Schwartzberg began as president later succeeded in 1990 by H. William Willoughby.

Prior to forming CRI in 1974, William B. Dockser served in various positions at the Department of Housing and Urban Development culminating in the Deputy Assistant Secretary for Housing Production and Mortgage Credit post at the Federal Housing Administration, where he was responsible for all federally insured housing production programs. Mr. Dockser's experience also included serving as President of Kaufman and Broad Asset Management, Inc., which managed publicly held limited partnerships created to invest in low- and moderate-income multifamily apartment complexes. Since 1974, Mr. Dockser has been chairman of CRI.

H. William Willoughby joined CRI as Senior Executive Vice President, Secretary and a Director in 1974, and has been President of CRI since Martin C. Schwartzberg stepped down in 1990. Prior to that, Mr. Willoughby was Vice President of Shelter Corporation of America and a number of its subsidiaries dealing principally with real estate development and equity financing.

From 1974, Dockser and Willoughby built a number of businesses under the CRI umbrella and created over 200 limited partnerships with interests in multifamily, office, hotel and retail properties. For more than 20 years, CRI and its affiliates originated, underwrote, invested and acquired tens of billions in properties.

Roll-Up

On April 18, 1985, CRI Insured Mortgage Investments Limited Partnership (CRIIMI), listed 9.1 million beneficial assignee certificates (BACs) on the New York Stock Exchange under the ticker symbol CRM. The CRIIMI-BACs represented an assignment of interest in the limited partnership and greatly increased the liquidity of LP units. CRIIMI-BACs was the first security of its kind to be listed on the exchange. The security was perceived as allowing the "little guy" get in on the limited partnership craze. A CRI subsidiary sponsored the $182 million limited partnership, which was organized to invest in federally insured mortgages.

On June 30, 1986, approximately 8.5 million shares of CRI Insured Mortgage Investments-II, Inc. (CRIIMI-II) were listed on the New York Stock Exchange under the ticker symbol CII. CRIIMI-II, a real estate investment trust, invested in discounted federally insured mortgages originated under government-sponsored programs. A subsidiary of CRI sponsored the $198 million fund.

On February 22, 1988, shares of CRI Insured Mortgage Investments III Limited Partnership (CRIIMI-III) were listed on the New York Stock Exchange under the ticker symbol CTH. The

$190 million limited partnership, previously traded over the counter, was also organized to invest in mortgage-backed securities and participating mortgage investments.

In March 1989, CRI filed a prospectus with the Securities and Exchange Commission proposing to roll-up CRIIMI I, II and III into a $410 million real estate investment trust. CRI, like other former multifamily syndicators, had been searching for investment money that mostly dried up after recent tax law changes, inflation worries and volatile stock markets. In Figures 22 and 23 below, the performance of the CRIIMI funds closely tracks the interest rate environment. As the markets rallied until 1986, the CRIIMI funds appreciated in value. As interest rates climbed in 1987 and 1988, the stock price for the three funds fell, although, REITs as a group fell only 9 percent on October 23, 1987 ("Bloody Monday") whereas the overall market fell more than 22 percent.

Figure 22

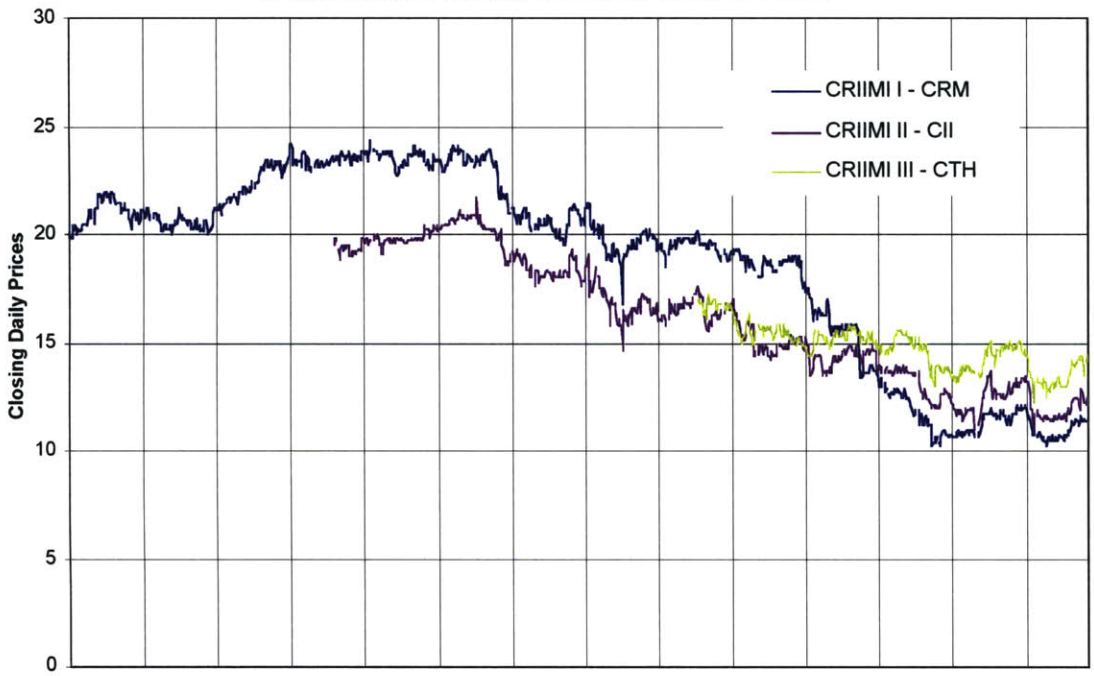


Figure 23

Source: Dow Jones & Federal Reserve

The roll-up worked as follows. All assets and liabilities of the three funds were transferred to a new entity, CRI Liquidating REIT Inc., to carry on the business of the three funds. The shares of

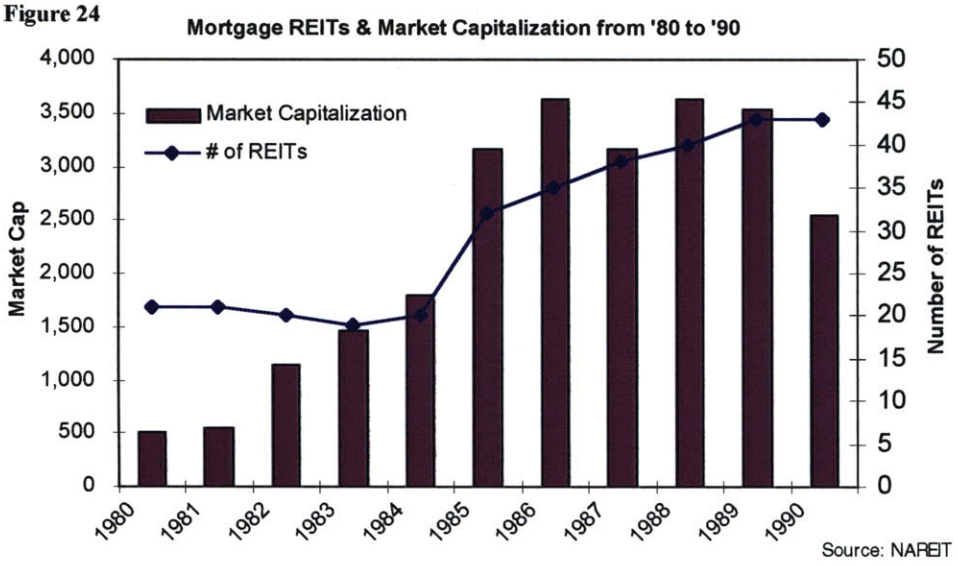
CRI Liquidating were issued either directly to the investors in the three funds or to a new company, CRI Insured Mortgage Association Inc. (CRIIMI MAE). If investors did not choose to receive shares in CRI Liquidating, they would receive shares in CRIIMI MAE by default. CRI Liquidating a finite life, self-liquidating, unleveraged entity would cease to exist when its mortgages either matured or were sold by the end of 1997. CRIIMI MAE, on the other hand, would go on operating as an actively managed fund, its assets being a 67 percent equity stake in CRI Liquidating and the mortgage investments it would eventually acquire. CRIIMI MAE would specialize in acquiring government insured or guaranteed mortgage investments on multifamily housing. Both REITs would continue to be advised by CRI.

On November 28, 1989, both new companies began trading on the New York Stock Exchange, CRI Liquidating REIT under the symbol CFR, and CRIIMI MAE under the symbol CMM. CRIIMI MAE also borrowed $280 million from Merrill Lynch to effectuate the merger and fund additional investments in federally insured mortgage-backed securities.

A February 1991 article in Business Week suggested investors sell their newly rolled-up shares on the day trading initiated. The article claimed that by selling on the first day investor would only experience a 39 percent loss as opposed to the 83 percent loss recent roll-ups had faced in the past three years. From 1987 to 1991, nine major roll-ups declined an average of 55 percent from the offering prices. The poor performance was attributed to a bad real estate market made worse by large transaction and off-the-top management fees and advisory agreements that made it almost impossible to remove the general partner. However, with the decline in popularity of the master limited partnerships due to tax code changes from the Tax Reform Act of 1986,

REITs became more popular as a real estate holding entity. See Figure 24 below highlighting the growth in numbers and market capitalization for mortgage REITs in the '80s.

Figure 24



After the roll-up, CRIIMI MAE proved the roll-up pundits right with over a year of poor performance. However, as the economy turned around so did CRIIMI MAE's share price. Performance was satisfactory until the economy headed down again at the end of 1993 (see Figures 25 and 26 below).

Figure 25

Figure 26

Source: Dow Jones & Federal Reserve Board

From CRIIMI MAE's formation in November 1989 to June 1995, CRIIMI MAE had no employees. Its advisor, a subsidiary of CRI owned by Dockser and Willoughby, managed the REIT's portfolio and day-to-day operations. The advisory fee was composed of four parts. Each quarter, the advisor would receive compensation based on the total size of CRIIMI MAE's

mortgage pool (0.375 percent), service fees on those mortgages, mortgage selection fees (0.75 percent) and incentive fees (25 percent of the return that the exceeded target return on equity). CRI also received master servicing (0.025 percent) and reimbursement fees for expenses in connection with the operation and administration of CRIIMI MAE. All fees were based on the post-roll-up mortgage investments.

CRI also had an advisory agreement with CRI Liquidating REIT. However, this agreement simply carried on the previous three agreements. CRIIMI I paid an annual fee equal to 0.75 percent of the average mortgage assets transferred in the roll-up, one-third of which was deferred and paid on a cumulative basis only during quarters where the 13.33 percent target yield was achieved. Deferred amounts were paid out of proceeds from mortgage dispositions. CRIIMI II had a similar fee structure, but only one-fourth of the fee was paid on a cumulative deferred basis when the 11.66 percent target yield was achieved. CRIIMI III's fee structures was similar to CRIIMI I, but the annual fee was equal to .25 percent of the average mortgage assets with a target yield of 10.89 percent.

In March 1991, CRIIMI MAE acquired four limited partnership funds with an investment group that included Goldman Sachs and Broad Inc., a Los Angeles financial firm. After over a year and a half of jockeying for control with the sponsor of the funds, who was in the middle of Chapter 11 bankruptcy proceedings, CRIIMI MAE acquired the general partnership interests in the funds for $24 million. The Goldman and Broad group acquired the advisory agreements for $11 million. The Goldman and Broad group advisor also entered into a subadvisory agreement with

an affiliate of CRI to manage investments and handle day-to-day operations. Further details of the four funds are outlined in Table 2 below.

Table 2: AIM Funds

Name	Abbreviation	Ownership Entity	Total Assets (millions)	Partners Equity (millions)
American Insured Mortgage Investors	AIM 84	California Limited Partnership	$ 174	$ 169
Integrated Resources American Insured Mortgage Investors - Series 85	AIM 85	California Limited Partnership	237	231
American Insured Mortgage Investors L.P. - Series 86	AIM 86	Delaware Limited Partnership	189	185
American Insured Mortgage Investors L.P. - Series 88	AIM 88	Delaware Limited Partnership	174	170
Total			$ 774	$ 755

On the annual meeting in May 12, 1993, shareholders of CRI Insured Mortgage Association Inc. officially changed the REIT's name. The next month CRIIMI MAE reincorporated in the state of Maryland.

Merger

On January 4, 1995, CRIIMI MAE announced it would acquire three CRI affiliates for approximately $21.4 million in stock, plus the assumption of $9.1 million in debt. With the acquisition, CRIIMI MAE sought to become an internally-managed REIT. CRIIMI MAE would succeed the mortgage investment, advisory, servicing and originating businesses of the three CRI affiliates by merging its assets, contracts and employees into newly formed, qualified subsidiaries of CRIIMI MAE. William B. Dockser and H. William Willoughby were the sole owners of the acquirees. Together, the CRI businesses employed 33 persons.

At the time CRIIMI MAE was formed, externally-managed REITs were fairly common. Over time, external management was becoming criticized for potential conflicts of interest between the advisor and shareholders. Typically, advisors were paid a percentage of assets under management, which ranged from one to two percent, and an incentive fee based on a hurdle rate. The fee arrangement created incentives to grow the fund quickly and take on excessive risk. Merrill Lynch advised CRIIMI MAE that self-managed REITs were generally more attractive to investors, particularly institutional investors, and at the time were trading at higher multiples than externally advised REITs.

Prior to the merger, Dockser and Willoughby owned just over 1 percent of the CRIIMI MAE. Following the merger they would own almost 11 percent. Formerly compensated on the amount of assets under management, CRI would be compensated from a combination of salary, bonus and stock to better align the interests of management with the stockholders of CRIIMI MAE. Table 3 below lists the ownership of outstanding common stock before and after the merger.

Table 3: Compensation Schedule

	Before Merger		After Merger	
	Number of Common Shares	% of Outstanding Common Shares	Number of Common Shares	% of Outstanding Common Shares
William B. Dockser	231,680	*	1,557,099	5.3
H. William Willoughby	89,681	*	1,415,100	4.8
Garrett G. Carlson, Sr	2,000	*	2,000	*
G. Richard Dunnells	1,533	*	1,533	*
Robert F. Tardio	349	*	349	*
Jay R. Cohen	41,435	*	81,599	*
Frederick J. Burchill	2,968	*	43,132	*
Deborah A. Linn	516	*	15,578	*
Cynthia O. Azzara	0	*	15,062	*
All directors and executive officers as a group (9 persons)	367,395	1.4	3,128,685	10.6

* Less than 1%.

CRICO Mortgage Company, Inc., CRI/AIM Management, Inc. and CRI Acquisition, Inc. were the affiliates of CRI through which CRI conducted its advisory, servicing and special servicing. CRICO Mortgage, originally formed in 1975 as a mortgage originator, was the servicer and special servicer of the CRI funds. CRI/AIM Management was formed in 1991 to act as the day-to-day subadviser to the AIM funds for a 0.28 percent of the total invested assets annual fee. CRI Acquisition sourced debt and equity for CRI and its affiliates.

Prior to the January 1995 announcement, Dockser consulted with Merrill Lynch in June 1994 regarding the possibility of CRIIMI MAE becoming self-advised. On September 29, 1994, Dockser and Willoughby presented the CRIIMI MAE and CRI merger proposal to the board of directors. Following the presentation, the board formed a special committee, consisting of the three unaffiliated members of the five-member board, to study the merger proposal. The board engaged Merrill Lynch to act as CRIIMI MAE's financial adviser, the special committee engaged Duff & Phelps and separate counsel to advise it and render a fairness opinion.

Duff & Phelps met with the special committee several times during November and December of 1994 to discuss its preliminary findings. In January and again in February of 1995, Duff & Phelps presented to the board its opinion that the merger proposal was fair "from a financial point of view" to CRIIMI MAE and the public stockholders. After voting approval of the merger proposal in February, CRIIMI MAE filed a merger agreement with the Securities and Exchange Commission. On June 21, 1995, the shareholders of CRIIMI MAE met to approve the merger scheduled to finalize on June 30.

As a stand alone entity, Duff & Phelps estimated the value of the CRI businesses at $34 million. Of this combined value, approximately $21 million was attributed to services performed under the CRIIMI MAE advisory agreement, $5 million to the CRI/AIM Management submanagement contract and $8 million to the CRICO Mortgage services.

CRIIMI MAE paid approximately $32 million based on a $8.27 share price. The principal components were common stock, the assumption of debt and options to purchase additional common stock. CRIIMI MAE issued more than 2.6 million shares of common stock to Dockers and Willoughby, subject to a maximum aggregate market value of $22 million at the closing. Half of the shares issued to the Dockers and Willoughby vested immediately. CRIIMI MAE also issued a total of 110,452 shares to CRI's four executive officers, Jay Cohen, Frederick Burchill, Deborah Linn and Cynthia Azzara, subject to a maximum aggregate market value of $916,000. The shares vested in three equal installments on the first three anniversaries of the merger date beginning June 30, 1996. The value of the shares issued were not to exceed $22.9 million thereby capping the total value of the acquisition at approximately $33.5 million.

Dockers and Willoughby entered into employment agreements for five year terms; the other executive officers entered into employment agreements for three years. In addition, Dockers and Willoughby received options to purchase 1 million shares at $9.77 (or $1.50 per share more than the average high and low sale prices on CRIIMI MAE's stock during the ten trading days prior to the June 30 closing date) and 500,000 shares at $12.27 (or $4.00 per share more than the trading price). The options vested in equal installments on the first five anniversaries of the merger date beginning June 30, 1996. The executive officers received options to purchase a total of 180,000

shares at $9.77. These options vested in equal installments on the first three anniversaries of the June merger-closing date. All the options expired on the eighth anniversary. The options, at the time of issuance, were valued at approximately $1.5 million.

As long as the executives remained at CRIIMI MAE, Dockers and Willoughby would each receive $2.5 million in deferred compensation over a 10-year period. The deferred compensation was structured as a $5 million note, which was transferred to an irrevocable grantor trust for the benefit of Dockers and Willoughby. However, in the event of bankruptcy or a similar event, the remaining trust assets would revert back to CRIIMI MAE and Dockers and Willoughby would become unsecured creditors of CRIIMI MAE. The complete benefits of the merger are summarized in Table 4 below:

Table 4: Merger Benefits

Description of Benefits	Aggregate Value
Issuance of Common Shares -- Maximum	$ 21,984,000
Assumption of Debt	9,100,000
Release from Loan Guarantee	1*
Employment & Non-Competition Agreements	250,000
Options to Purchase Common Shares	1,500,000
Services Corporation Shares	7,500
Deferred Compensation	4,742,000**
Avoidance of Risk of Nonrenewal of Advisory Agreement	1***
CRITEF Funds -- Nonpayment of Servicing Fees	1***
Total Aggregate Value to Principals	$ 37,583,503

* Value unknown, although Dockers and Willoughby's other companies not involved in the merger were no longer obligated under the guarantee.

** Estimated based on the present value of a 5-year payout of approximately $1 million at a 6.5 percent discount rate.

*** Value unknown

CRIIMI MAE incurred approximately $3 million in costs in connection with the merger related to coordination, accounting, legal, filing, printing and financial advisory services. The transaction costs were capitalized as part of the purchase price of the assets.

In part, to avoid violation of certain IRS restrictions regarding REIT status, the merger was structured in the following manner. Immediately prior to the merger, CRI/AIM Management and CRICO Mortgage exchanged substantially all of their contracts to CRIIMI MAE Services, Inc., a newly formed CRIIMI MAE subsidiary, for $6.57 million in 15-year interest bearing notes. CRIIMI MAE Services transferred the notes to CRIIMI MAE Services Limited Partnership, another newly formed CRIIMI MAE subsidiary, in exchange for a 92 percent sole limited partnership interest. CRIIMI MAE Management, Inc., a newly formed CRIIMI MAE subsidiary, contributed the assets of CRI Acquisitions in exchange for an 8 percent interest as the sole general partner. Finally, for $285,000 CRIIMI MAE purchased 100 percent of the non-voting stock of the limited partnership for 95 percent of its dividends. For $15,000 Dockser and Willoughby and the executive officers purchased 100 percent of the voting common stock for 5 percent of its dividends. The dividends from CRIIMI MAE Services LP would mainly come from the existing advisory contracts with CRI Liquidating REIT, the AIM Funds and other mortgage and advisory service contracts to third parties and affiliates of CRI.

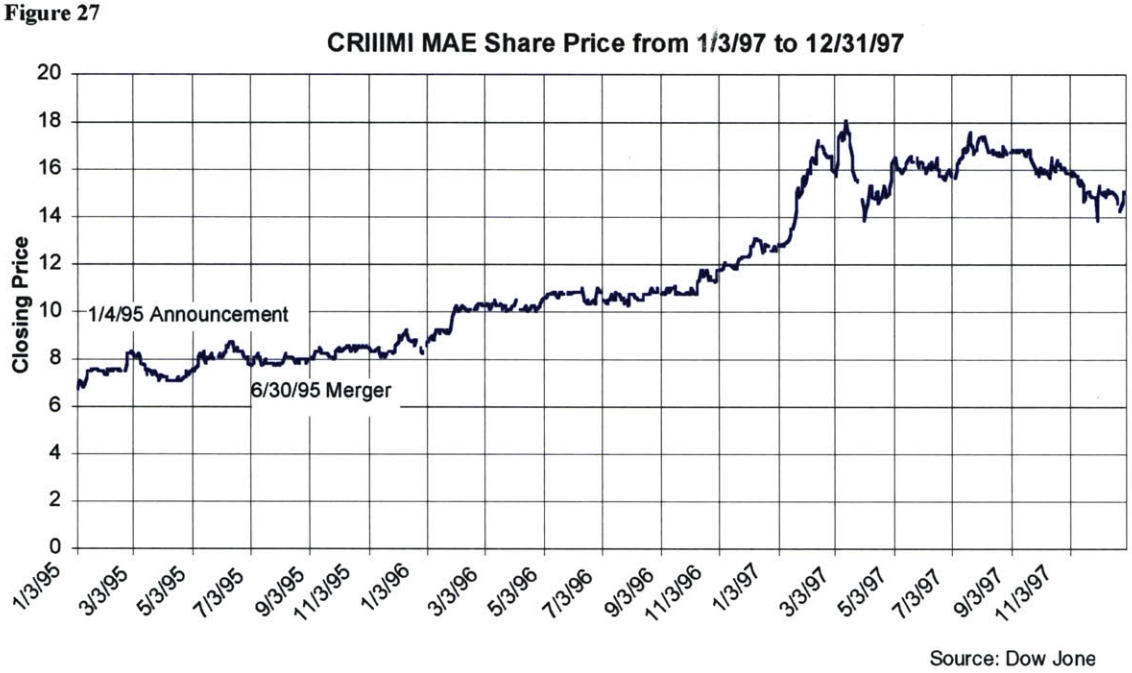
The income generated from servicing and advisory contracts is considered non-qualifying at the REIT level, therefore the CRI contracts were placed in CRIIMI MAE Services and the CRIIMI MAE Services Limited Partnership to avoid adverse tax consequences. Additionally, at the end of any quarter of its fiscal year, a REIT may not own more than 10 percent of any one issuer's outstanding voting securities and the value of any one issuer's securities may not exceed 5 percent of the value of the REIT's gross assets. In the unlikely event that the debt or non-voting stock of CRIIMI MAE Services were re-characterized as voting stock or if the voting stock were

attributed to CRIIMI MAE, then CRIIMI MAE could violate this rule and face significant tax penalties.

The CRI businesses that merged into CRIIMI Management ceased to exist, whereas certain subsidiaries of CRI that were not part of the merger continued to operate. The subsidiaries not part of the merger, according to the proxy statement, held a large number of partnership interests, conducted trading of mortgage-backed securities and maintained advisory contracts with other funds. The proxy statement outlined these side businesses as potential conflicts of interest between Dockser and Willoughby and CRIIMI MAE.

In its proxy statement, CRIIMI MAE stated the merger would be accretive to shareholders due to an increased revenue stream and decreased expenses from the termination of the advisory agreement. Indeed, after the announcement that CRIIMI MAE would become a self-advised REIT on January 4, 1995, the share price closed up 37.5 cents, or 5.6 percent, to $7.125 in New York Stock Exchange trading and continued to perform well until the summer of 1997. See Figure 27 below.

Figure 27



Source: Dow Jone

In the 1995 proxy statement, the board advertised its new investment strategy. Overturning its policy of limiting investments outside of government insured multifamily mortgages and construction loans to 20 percent, the board elected to pursue higher yielding, higher risk investments in subordinated securities.[22]

The board recognized the increased risk of investing in subordinated securities as compared to federally insured mortgage investments. Therefore, CRIIMI MAE would control for credit risk with thorough due diligence and close monitoring of the underlying mortgages through its servicing capacity. The REIT would also manage yield fluctuations from unpredictable interest rate changes by investing in subordinated securities where the underlying mortgages had substantial lockout periods and prepayment penalties. The board also set the following investment limitations:

- CRIIMI MAE's overall debt to equity ratio would not exceed 5 to 1.
- Certain specific asset types will have maximum debt to equity ratios.
- At least 75 percent of floating-rate debt must be hedged.

ACT 2 – A TALE OF WOES

Act Two narrates the chronology of events through the turbulent crisis period up to CRIIMI MAE's Chapter 11 bankruptcy protection.

Though CMBS spreads began widening in August 1998 after the Russian bond default, CRIIMI MAE did not acknowledge its erosive effects on its CMBS portfolio until a September 25 press statement. CRIIMI MAE contended that it was still able to meet collateral calls. Furthermore CRIIMI MAE continued to acquire more low-rated CMBS at what it considered "more attractive yields."

On September 30, after marking its portfolio to market, CRIIMI MAE decreased its June 30 unrealized gains estimates from $117 million to $47 million. In the last week of September, rating agencies put CRIIMI MAE on Watch Alert. Consequently, CRIIMI MAE's already sliding stock started losing value even more rapidly, triggering more of CRIIMI MAE's short-term lenders to make collateral calls. On October 2, Merrill Lynch Mortgage Capital, Inc. made a $20 million collateral call on CRIIMI MAE relating to 8 classes of CMBS with a face value of $558

[22] According to the 1994 10-K, those mortgages, at the time of acquisition, also had to have an expected yield of at least 150 basis points greater than the yield on government insured multifamily mortgages that could be acquired in

million. On October 5, to stem the imminent avalanche of margin calls and possible seizure of its assets the Merrill Lynch collateral call would trigger, CRIIMI filed for bankruptcy protection under Chapter 11. In a press release Chairman Dockers stated, "The recent turmoil in the debt and equity market has resulted in collateral calls from our lenders at a time when it is extremely difficult to raise additional capital due to volatility in the financial market."

To prevent a forced sale that would result less than fair valuations, CRIIMI MAE initiated discussions with potential equity sources. Capital providers included General Motors Acceptance Corporation, GE Capital and J. E. Roberts. In addition, CRIIMI MAE sued Citicorp Securities, in a bid to retain control of certain secured assets. On October 7, CRIIMI MAE shareholders filed a class action suit against the REIT citing misrepresentation of its financial position. Barely two weeks after filing for Chapter 11, CRIIMI MAE filed suit against Morgan Stanley for attempting to seize low-rated CMBS assets with a face value of $287 million. Morgan Stanley, like Citicorp Securities and Merrill Lynch had financed the acquisition of the low-rated CMBS with repurchase agreements.[23] CRIIMI MAE alleged Morgan Stanley was acting in "willful violation of the automatic stay imposed on creditors under the bankruptcy code" and foolishly liquidating assets in an already depressed CMBS market. On October 22, CRIIMI MAE filed a lawsuit against Merrill Lynch Mortgage Capital for attempting to seize the 8 classes of CMBS mentioned earlier, which triggered the Chapter 11 filing.

As the effects of Chapter 11 began to take hold, rating agencies also put CRIIMI MAE's bonds on Watch Alert. On November 5, 1998, in an effort to restore confidence, CRIIMI MAE

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the then current market.

designated BancOne Mortgage Capital Market LLC as special services on $29 billion of its CMBS holdings in 32 commercial mortgage pools. Third quarter reports showed the value of CRIIMI MAE's equity had declined by $208 million between July and September 1998, a 30 percent decline. On December 7, CRIIMI MAE reached an agreement with two of its main creditors Merrill Lynch Mortgage Capital and German American Capital Corporation to split monthly cash flows after debt service from 13 classes in CRIIMI MAE's subordinated CMBS portfolio. CRIIMI MAE had financed the acquisition of these bonds with a $452.3 million bond issue. Consequently, both CRIIMI MAE and Merrill Lynch dismissed without prejudice their respective lawsuits against each other. In the same spirit of reconciliation, CRIIMI MAE suspended litigation and agreed to cooperate in the sale of two classes of investment grade CMBS (CRIIMI MAE Commercial Mortgage Trust Series 1998-C1) with Morgan Stanley International Limited.

Meanwhile, in the second week of January 1999, the bankruptcy court granted CRIIMI MAE a six-month extension within which CRIIMI MAE and its two affiliates had exclusive right to file plans for reorganization and to solicit acceptances of those plans. Frederick J. Burchill, CRIIMI MAE's head of subordinate CMBS acquisitions and number 3 executive resigned. CRIIMI MAE had already suspended its acquisitions operations. In March, Morgan Stanley sold investment grade CMBS from CRIIMI MAE's Commercial Mortgage Trust Series 1998-C1 with face value $205 million, resolving the October 1998 dispute. CRIIMI MAE and Citibank also agreed to adjourn litigation for four months and cooperate on the sale of two classes of investment grade CMBS and $370 million of commercial mortgages. CRIIMI MAE intended to use its portion of

[23] It was CRIIMI MAE's investment policy to finance up to 75 percent of the purchase price its acquisitions, to later refinance the assets in resecuritizations.

net proceeds for its reorganization. CRIIMI MAE's financial report for 1998 showed a further 38 percent decrease in shareholders equity between September 1998 and December 1998. Despite not paying any dividends, CRIIMI MAE met its distribution requirements and was thus able to maintain its REIT status.

On May 12, 1999, the bankruptcy court extended CRIIMI MAE's exclusive right to file plans of reorganization. CRIIMI MAE was expected to file a plan of reorganization by August 2, 1999.

ACT 3 – THE AFTERMATH

Prior to the events of summer and fall 1998, the structure and modus operandi of mortgage REITs has not been extensively studied. Since then, Timothy J. Riddiough has produced two studies examining the weaknesses and strengths of mortgage REITS from an analysis of REIT rules, management and incentive structures, asset composition and capital structure. Riddiough concludes that due to the vulnerable state of mortgage REITs in the summer and fall of 1998 capital flow from CMBS issuance into the commercial property markets halted (Riddiough, 1999). Building on Riddiough's analysis, Act Three examines CRIIMI MAE in the light of its asset composition, management and incentives structure and risk management strategies.

Asset Composition and Capital Structure

Mortgage REITs generally invest in high-risk, medium- to long-term CMBS. To avoid excessive risk, an offsetting capital structure that employed low debt levels and matched medium- to long-term debt maturities would be the most responsible capital structure. Mortgage REITs, on the other hand, generally financed their assets with variable rate, short-term debt (Riddiough, 1999).

CRIIMI MAE's assets primarily consisted of mortgage-backed bonds. As at December 31, 1998 its assets were composed of 52 percent subordinated CMBS, 21 percent originated loans, 19 percent federally insured mortgage securities and 9 percent other assets. CRIIMI MAE's portfolio was financed with 13 percent equity and 87 percent debt, making it one of the most leveraged REITs. Having greater than 38 percent of its debt in variable-rate repurchase agreements exposed the REIT to some degree of interest rate volatility, however, management diligently maintained its policy of hedging 75 percent of its variable rate debt. CRIIMI MAE matched the duration of its debt and equity relatively well. In 1998, the weighted average life of CRIIMI MAE's low-rated CMBS were 16 years. Its weighted average maturity of its debt was 11 years. However, matching the liquidities of its assets and liabilities is more difficult in the emerging CMBS market. The low-rated CMBS assets were fairly illiquid whereas the liabilities were highly liquid. Through conversations with various participants in the CMBS market, at the CMBS market's peak there were only 10 or so buyers of low-rated CMBS.[24] See attached summary financial statements.

Management and Incentive Structure

Proper alignment of interests between managers and owners is a major problem in the mortgage REIT industry. Typically, mortgage REIT managers are paid a percentage of assets under management with incentive fees that rely on return-on-equity calculations. This compensation structure creates the incentive to grow assets quickly and maximize leverage. Additionally, the lack of loss carry forward provisions in incentive fee calculations and that mortgage REIT

[24] Conversations with underwriter at Bear Staerns, a former executive at CRIIMI MAE and Riddiough.

managers typically invest little of their own capital along with outside investors adds to the negative incentives (Riddiough, 1999).

Unlike many mortgage REITs, CRIIMI MAE was internally-managed. The chairman and president were two of its largest shareholders with 4.1 percent and 3.4 percent equity stakes respectively as of May 1998. The board of directors and executive officers formed CRIIMI MAE's largest shareholder group with over 14 percent of its stock. Compensation packages for the top four executives were within industry's averages, with stock options as the largest component, which, to an extent, minimized the potential misalignment of interests. See Table 5 below.

Table 5: Executive Compensation

Name	Year	Salary	Bonus	Restricted Stock Awards	Underlying Options (#)	All Other Compensation	Total Compensation
William B. Dockser	1998	$ 285,600	$ 59,000	$ 0	225,000	$ 334,916	$ 679,516
	1997	230,000	215,000	0	150,000	467,424	912,424
	1996	167,500	0	0	0	494,672	662,172
	1995	62,500	0	0	1,500,000	130,297	192,797
H. William Willoughby	1998	285,600	59,000	0	225,000	334,916	679,516
	1997	230,000	215,000	0	150,000	467,424	912,424
	1996	167,500	0	0	0	494,672	662,172
	1995	62,500	0	0	1,500,000	130,297	192,797
Frederick J. Burchill	1998	233,150	48,000	0	25,000	0	281,150
	1997	191,875	200,000	0	45,000	0	391,875
	1996	179,375	125,000	0	20,000	0	304,375
	1995	87,500	75,000	316,292	65,000	0	162,500
Cynthia O. Azzara	1998	185,150	45,000	0	20,000	0	230,150
	1997	147,500	77,500	0	25,000	0	225,000
	1996	135,000	50,000	0	10,000	0	185,000
	1995	63,333	25,000	118,613	25,000	0	88,333
Donald R. Drew	1998	525,500	30,000	0	10,000	0	555,500
	1997	166,596	0	0	0	0	166,596

Risk Management

As an owner of low-rated CMBS, CRIIMI MAE was exposed to both default and interest rate risks. CRIIMI MAE managed default risk through due diligence and maintaining a close relationship with the mortgagors by performing servicing and special servicing functions. However, CRIIMI MAE began moving away from traditional interest rate risk management with its new "no-lock" mortgage origination program. Contrary to conventional risk management wisdom, where most commercial mortgage loans originated for the CMBS market contained "lock-out" clauses, CRIIMI MAE's no-lock allowed borrowers to prepay at any time. By paying a prepayment penalty, borrowers who valued the prepayment feature had the option to call the loan. Riddiough has argued increased pre-payment risk increases due diligence costs for investors, which decreases liquidity and prices in secondary offerings. As an issuer CRIIMI MAE was responding to the needs of borrowers but not buyers.

On the liabilities side, CRIIMI MAE attempted to mitigate interest rate fluctuations by periodically refinancing its variable-rate debt with fixed-rate, non-recourse debt. The fixed-rate debt maturities better matched the underlying mortgage assets. CRIIMI MAE refinanced its debt by pooling and re-securitizing its seasoned, low-rated CMBS.

CRIIMI MAE was a "sharp shooter," a firm that employs a concentrated investment strategy. According to Commercial Mortgage Alert, at its peak, CRIIMI MAE owned 17.2 percent of all low-rated CMBS. Its narrow investment focus allowed the REIT to achieve superior returns, but at the same time exposed it to more systematic risk than the average mortgage REIT. From 1989 to the end of 1994, CRIIMI MAE returned a modest 9.7 percent versus just under 1 percent for

the NAREIT Mortgage Index and 8.5 percent for the S&P 500. From 1995 to 1996, CRIIMI MAE returned an average 54 percent versus 57 percent for the NAREIT Mortgage Index and 30 percent for the S&P 500.[25] Returns for both CRIIMI MAE and NAREIT fell sharply in late March due to a 25 basis point hike in the Federal Funds Rate and sank thereafter due to worries from Asia. The S&P, on the other hand, surged ahead, experiencing only a slight hesitation from the interest rate hike. See Figure 28 and 29 below.

[25] The figures assume an initial investment on November 1989 and reinvestment of all dividends.

Figure 28

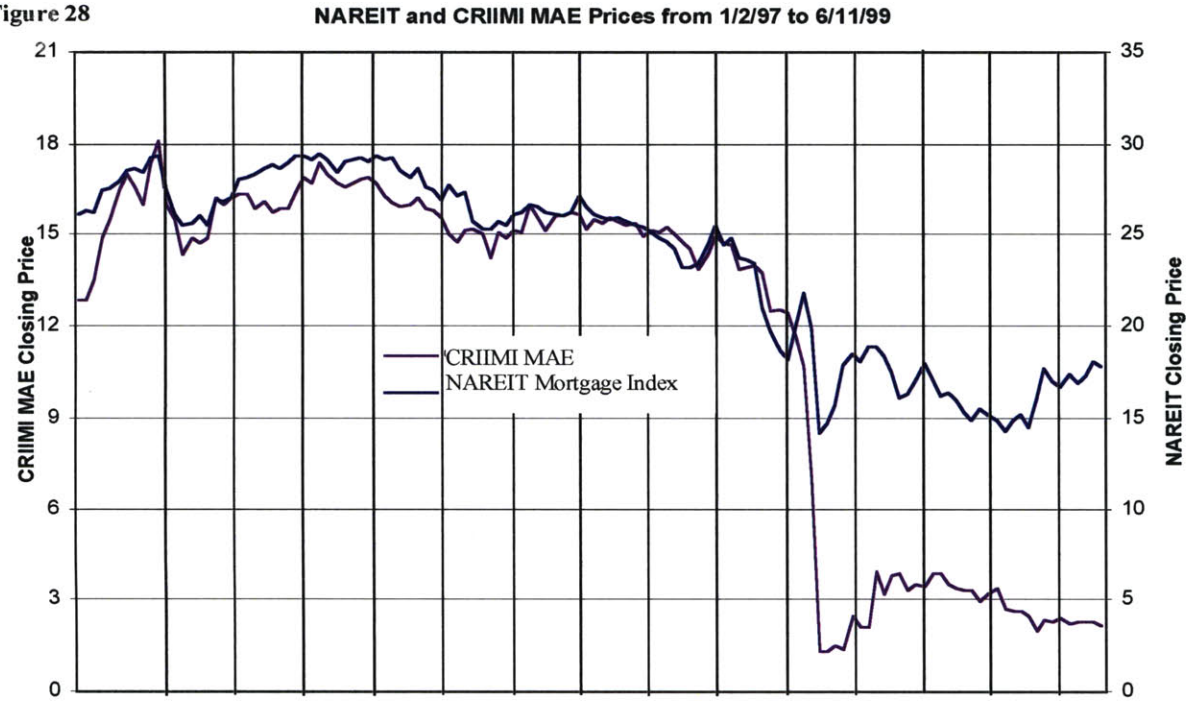
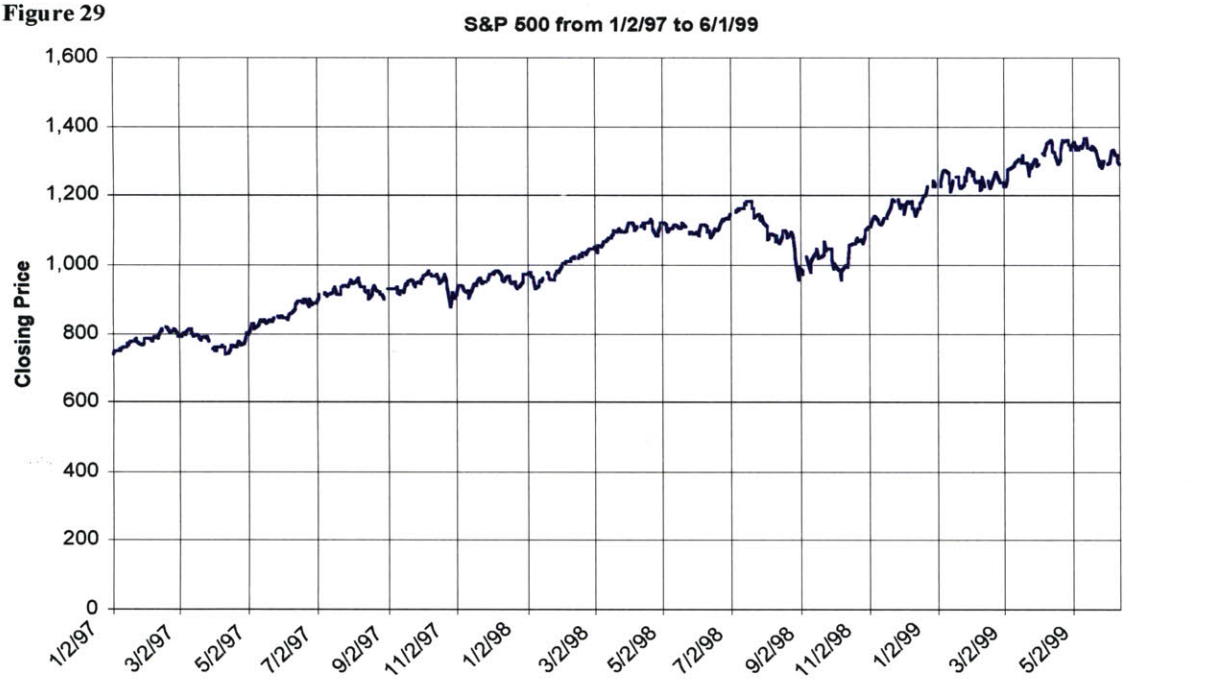


Figure 29

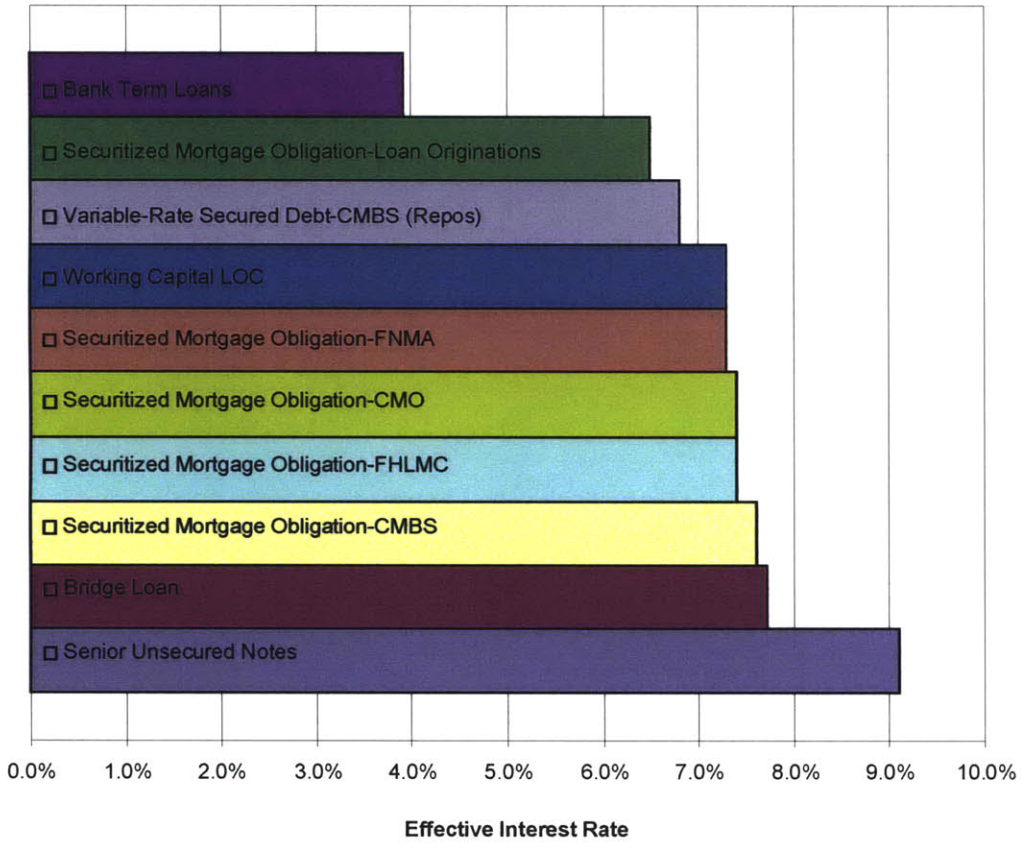


Source: NAREIT & Dow Jones

Additionally, as Riddiough points out, Wall Street banks, recognizing the need for a low-rated CMBS take-out sources, may have encouraged purchases by offering low-cost "repo" financing to the mortgage REITs. As Figure 30 below indicates, CRIIMI MAE's lowest finance source for

1998 was bank loans at 3.9 percent (due to rate reduction agreements) followed by the resecuritization financing for CRIIMI MAE's loan originations at 6.5 percent. Repo financing was 6.8 percent priced at 50 to 150 basis points above the one-month LIBOR for terms of one to two years. However, our findings are inconclusive on the encouragement of low-cost repo financing, therefore additional research comparing the finance structure of repo lines for various borrowers versus the mortgage REITs may shed more light on the matter.

Figure 30 **CRIIMI MAE's Stated Effective Interest Rate Costs for 1998**



CHAPTER 4 – HEDGING POSSIBILITIES

Before the crisis various players employed various hedging strategies to hedge their CMBS risks. Underwriting investment banks used swap instruments to hedge against interest rate changes during warehousing period. CRIIMI MAE, the largest buyer of B-piece bonds, used a combination of interest rate swaps and resecuritization to hedge its risks. Resecuritization involved issuing other CMBS backed by an underlying pool of CMBS held by CRIIMI MAE. In so doing, CRIIMI MAE transferred interest rate risks to the new bondholders. Before the crisis, prepayment, default and interest rate risks were the only visible risks in the CMBS markets. With the crisis came additional liquidity and emerging market risks.

In Chapter two we traced the performance of CMBS through the crisis and compared it to other comparable fixed income securities. In addition we observed the correlation between CMBS and other indices such as the mortgage REIT index and emerging market bonds. In this chapter we attempt to statistically disentangle the factors that we believe affect CMBS prices. This should pave the way for a more in-depth investigation into possible hedging strategies for the additional liquidity and emerging market risks.

METHODOLOGY

In chapters one, two and three, we determined that the emerging markets of Asia and Russia affected the performance of CMBS during the crisis. If categorized within the fixed-income market, we postulated that the performance of CMBS would correlate with the performance of corporate bonds. To establish statistical correlation, we performed regression analysis between CMBS prices and the prices of Treasury, Corporate, Russian and Asian Bonds, Asian currencies

and the NAREIT price index. Because we were unable to acquire CMBS and corporate bond prices, we generated relative prices using the following formula below. The formula assumes weekly issuance of a ten year bond with a semi-annual coupon payment at rate C. Prices for the NAREIT Index, JP Morgan Russian and Asian Bond Indices and Treasuries prices used in the regression were all publicly available.

$P=\sum C*100/(1+0.5*Yt)^{T} + 100/(1+0.5*Yt)^{20}$ where T ranges between 1 and 20

C - The coupon rate that is assumed to be the AAA bond yield as at 01/03/97. Corporate bonds and CMBS would have different derived annual coupons. The coupon is paid semi-annually.

Yt- The yield on the bond in week t is the sum of the spread and the risk free rate in week t.

T- the coupon payment interval

The Regression Analysis

We performed regression analysis using periodic price changes of CMBS, S&P Industrial Bond Index, NAREIT Equity Index, Asian bond index, Russian bond index and Treasuries. The resultant generic formula is:

$$(P_t - P_{t-1}) = \propto + \beta_1 *(C_t - C_{t-1}) + \beta_2 *(N_t - N_{t-1}) + \beta_3 * (A_t - A_{t-1}) + \beta_4 * (R_t - R_{t-1}) + \beta_5 * (T_t - T_{t-1})$$

where:
Pt is the price of CMBS bonds in week t
Ct is the price of S & P Industrial Corporate bonds in week t
Nt is the price of NAREIT Equity Index in week t
At is the price of J P Morgan Asian Bonds Index in week t
Rt is the price of J P Morgan Russian Bonds Index in week t
Tt is the price of Treasury CUSIP No 912827ZX in week t
$\propto$ is the intercept derived from the regressions
$\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 are the coefficients derived from the regressions

The regressions were performed for the periods before, during and after the crisis to isolate the different reactions. The entire period between January 1997 and June 1998 was divided into four time periods that corresponded to the various stages of the crisis. These periods were:

1) PRE CRISIS. Period between 01/03/97 and 08/14/98. This is the period before the Russian government defaulted on its domestic bonds triggering the global capital flight.
2) CRISIS. Period between 08/14/98 and 10/09/98. This is the period between the Russian bond default and the bailout of Long-Term Capital Management. It marks the peak of the crisis.
3) RECOVERY. Period between 10/09/98 and 12/31/98. This period marks the return of calmness and confidence in the market. The year-end is also a natural cutoff as it incorporates the normal end of year capital adjustments.
4) POST CRISIS. Period between 01/01/99 and 06/15/99.

Given that both CMBS and corporate bonds have different rated bonds, we matched the ratings of the bonds i.e. for AAA CMBS regression; we used AAA corporate bond prices.

Controlling for CRIIMI MAE Effects on Subordinated CMBS

CRIIMI MAE, as the largest buyer of below investment grade CMBS, played a key role in the performance of the subordinate sector. Therefore, for bonds rated BBB and below we repeated the above regressions but included the stock price of CRIIMI MAE to statistically verify the strong correlation between the performance of subordinate CMBS and the stock price of CRIIMI MAE.

RESULTS

Below are the analysis of the regression and a summary of the results for each bond rating.

Table 6: AAA Rated CMBS Regression Summary

		AAA S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	R^2	N
ALL	COEFF	0.635	0.019	-0.038	0.002	0.149	0.605	126
	T STAT	12.086	1.586	-1.922	0.192	0.678		
PRE CRISIS	COEFF	0.525	-0.006	-0.031	-0.004	0.190	0.690	83
	T STAT	11.643	-0.454	-1.890	-0.573	1.115		
CRISIS	COEFF	1.137	0.072	-0.263	-0111	7.144	0.932	8
	TSTAT	3.142	1.808	-2.828	-2582	2.602		
RECOVERY	COEFF	0.762	0.055	0.134	0.022	0.226	0.794	11
	T STAT	2.858	0.779	0.795	0.265	0.193		
POST CRISIS	COEFF	0.959	-0.016	0.075	0.040	0.268	0.934	24
	T STAT	11.932	-1.181	1.552	1.696	0.750		

The regression analysis is generally very reliable (see R^2 above). There is strong positive correlation between the change in price of AAA rated CMBS with S&P industrial corporate bonds. JP Morgan Russia and Asian bond indices display statistically significant strong negative correlation with CMBS during the crisis. The correlation between the changes in the prices of Treasuries and that of CMBS is generally weak with the exception of a strong positive correlation during the crisis. All the independent variables display statistically significant correlations during the crisis. The NAREIT index generally shows weak correlation with AAA rated CMBS.

Table 7: AA Rated CMBS Regression Summary

		AA S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	R^2	N
ALL	COEFF	0.670	0.003	-0.047	0.004	0.067	0.681	126
	T STAT	14.375	0.254	-2.719	0.571	0.349		
PRE CRISIS	COEFF	0.526	-0.001	-0.031	0.000	0.007	0.676	83
	T STAT	11.181	-0.047	-1.853	0.052	0.400		
CRISIS	COEFF	1.392	0.029	-0.219	-0.079	6.023	0.960	8
	TSTAT	4.990	0.912	-3.003	-2.463	3.350		
RECOVERY	COEFF	0.680	0.014	0.082	-0.034	-0.684	0.909	11
	T STAT	5.142	0.358	0.849	-0.747	-1.017		
AFTER CRISIS	COEFF	0.948	-0.022	0.092	0.00	-0.065	0.883	24
	T STAT	9.199	-1.227	1.484	-0.006	-0.140		

The regression analysis is generally very reliable (see R^2 above). There is statistically significant strong positive correlation between the change in price of AA rated CMBS with S&P industrial corporate bonds. JP Morgan Russia and Asian bond indices display strong negative correlation with CMBS during the crisis. The correlation between the changes in the prices of Treasuries and that of CMBS is generally weak with the exception of a strong positive correlation during the crisis. All the independent variables except the NAREIT index displayed statistically significant correlations during the crisis. The NAREIT index generally showed a weak correlation with AA rated CMBS.

Table 8: A Rated CMBS Regression Summary

		A S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	R^2	N
ALL	COEFF	0.699	-0.001	-0.038	0.005	0.079	0.714	126
	T STAT	15.658	-0.103	-2.363	0.692	0.444		
PRE CRISIS	COEFF	0.526	-0.0006	0.031	0.001	0.070	0.677	83
	T STAT	11.180	-0.0469	-1.853	-0.052	0.399		
CRISIS	COEFF	1.390	0.024	-0.163	-0.045	4.499	0.984	8
	TSTAT	8.026	1.252	-3.458	-2.216	4.232		
RECOVERY	COEFF	0.711	-0.002	0.103	-0.027	-0.645	0.925	11
	T STAT	-5712	-0.062	1.201	-0.637	-1.062		
AFTER CRISIS	COEFF	0.908	-0.015	0.047	-0.005	0.015	0.893	24
	T STAT	9.686	-0.932	0.853	-0.189	0.035		

The regression analysis is generally very reliable (see R^2 above). There is strong positive correlation between the change in price of A rated CMBS with S&P industrial corporate bonds. JP Morgan Russia and Asian bond indices display strong negative correlation with CMBS during the crisis. The correlation between the changes in the prices of Treasuries and that of CMBS is generally weak with the exception of a strong positive correlation during the crisis. All the independent variables except the NAREIT index displayed statistically significant correlations during the crisis. The NAREIT index generally showed a weak correlation with A rated CMBS.

Table 9: BBB Rated CMBS Regression Summary

		BBB S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	R^2	N
ALL	COEFF	0.681	0.009	-0.022	0.005	-0.299	0.661	126
	T STAT	13.905	0.809	-1.235	0.595	-1.521		
PRE CRISIS	COEFF	0.563	-0.012	0.018	0.000	0.099	0.641	83
	T STAT	10.638	-0.850	-0.986	-0.005	0.511		
CRISIS	COEFF	0.952	0.022	0.009	0.045	-0.345	0.937	8
	TSTAT	3.142	-0.308	0.169	0.422	-0.963		
RECOVERY	COEFF	0.969	0.003	0.069	0.005	-0.625	0.740	11
	T STAT	8.807	0.188	1.138	0.167	-1.333		
AFTER CRISIS	COEFF	0.954	-0.026	0.033	0.041	-1.377	0.866	24
	T STAT	3.142	-0.308	0.169	0.422	-0.963		

Table 10: BBB Rated CMBS With CRIIMI MAE Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	CRIIMI	R^2	N
ALL	COEFF	0.674	0.008	-0.026	0.004	-0.289	0.036	0.665	126
	T STAT	13.658	0.756	-1.396	0.462	-1.464	1.134		
PRE CRISIS	COEFF	0.550	-0.018	-0.021	0.000	0.137	0.186	0.649	83
	T STAT	10.263	-1.266	-1.110	-0.004	0.699	1.000		
CRISIS	COEFF	0.798	0.029	-0.076	0.017	-2.851	0.074	0.960	8
	TSTAT	2.333	0.686	-0.471	0.281	-1.274	0.758		
RECOV ERY	COEFF	0.846	-0.092	0.105	0.163	0.823	1.151	0.873	11
	T STAT	3.494	-1.242	0.684	1.701	0.533	2.056		
AFTER CRISIS	COEFF	0.959	0.003	0.064	0.007	-0.660	-0.028	0.867	24
	T STAT	8.189	0.162	1.020	0.233	-1.340	-0.329		

The regression analysis is generally reliable (see R^2 above). The inclusion of CRIIMI MAE somewhat increased the regression's reliability. There is strong positive correlation between the change in price of BBB rated CMBS with S&P industrial corporate bonds. JP Morgan Russia and Asian bond indices, Treasury bond and NAREIT display weak correlation with BBB rated CMBS overall. CRIIMI MAE's stock also displays weak positive correlation overall with the exception of a strong positive correlation with BBB rated CMBS during the recovery period.

Table 11: BB Rated CMBS Regression Summary

		BB S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TRSY NOTES	R^2	N
ALL	COEFF	0.440	0.011	-0.052	-0.004	-0.340	0.29	126
	T STAT	5.520	0.567	-1.609	-0.326	-0.942		
PRE CRISIS	COEFF	0.307	0.002	-0.017	-0.013	-0.377	0.36	83
	T STAT	5.080	0.103	-0.667	-1.191	-1.397		
CRISIS	COEFF	0.601	0.057	-0.028	-0.032	2.874	0.721	8
	TSTAT	1.451	1.190	-0.209	-0.609	1.211		
RECOVERY	COEFF	1.417	0.038	-0.627	0.097	-1.273	0.459	11
	T STAT	1.904	0.153	-1.180	0.367	-0.311		
AFTER CRISIS	COEFF	0.655	-0.000	-0.114	0.089	-0.058	0.761	24
	T STAT	5.700	-0.035	-1.735	2.466	-0.097		

Table 12: BB Rated CMBS With CRIIMI MAE Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TSRY NOTES	CRIIMI	R^2	N
ALL	COEFF	0.430	0.008	-0.063	-0.008	-0.296	0.140	0.325	126
	T STAT	5.520	0.450	-1.960	0.583	-0.840	2.514		
PRE CRISIS	COEFF	0.309	0.004	-0.017	-0.013	-0.387	-0.047	0.360	83
	T STAT	5.030	0.183	-0.640	-1.185	-1.410	-0.249		
CRISIS	COEFF	0.330	0.059	-0.147	-0.060	2.180	0.114	0.851	8
	TSTAT	0.640	1.185	-0.777	-0.975	0.850	0.934		
RECOV	COEFF	0.627	-0.194	-0.240	0.470	6.120	3.961	0.760	11
	T STAT	0.953	-0.922	-0.575	1.827	1.360	2.234		
AFTER CRISIS	COEFF	0.644	-0.001	-0.118	0.091	-0.120	-0.041	0.763	24
	T STAT	5.270	-0.040	-1.730	2.437	-0.189	-0.383		

The regression analysis is generally reliable (see R^2 above). The inclusion of CRIIMI MAE boosted the regression's reliability overall, but strongly over the crisis and recovery periods.

There is strong positive correlation between the change in price of BB rated CMBS with S&P industrial corporate bonds at all times except during the crisis and recovery periods. JP Morgan Russia and Asian bond indices, Treasury bond and NAREIT display weak correlation with BB rated CMBS overall. CRIIMI MAE's stock also displays weak positive correlation overall with the exception of a strong positive correlation with BB rated CMBS during the recovery period.

Table 13:BB/BB- Rated CMBS Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TSRY NOTES	R^2	N
ALL	COEFF	0.171	0.010	-0.060	-0.010	-0.277	0.185	126
	T STAT	3.500	0.535	-1.879	-0.893	-0.819		
PRE CRISIS	COEFF	0.375	-0.018	-0.030	-0.005	0.179	0.439	83
	T STAT	6.737	-1.040	-1.222	-0.473	0.738		
CRISIS	COEFF	1.131	0.176	1.010	0.052	-4.570	0.782	8
	TSTAT	1.910	1.679	1.537	0.477	-0.840		
RECOVERY	COEFF	0.257	-0.062	-0.130	0.027	-1.270	0.090	11
	T STAT	0.081	-0.292	-0.275	0.114	-0.355		
AFTER CRISIS	COEFF	0.051	0.003	-0.151	0.014	0.229	0.206	24
	T STAT	0.570	0.097	-1.770	0.279	0.283		

Table 14: BB/BB- Rated CMBS With CRIIMI MAE Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TSRY NOTES	CRIIMI	R^2	N
ALL	COEFF	0.199	0.006	-0.071	-0.018	-0.165	0.242	0.317	126
	T STAT	4.394	0.373	-2.397	-1.480	-0.528	4.815		
PRE CRISIS	COEFF	0.364	-0.027	-0.031	-0.004	0.233	0.249	0.455	83
	T STAT	6.555	-1.485	-1.349	-0.461	0.956	1.470		
CRISIS	COEFF	0.880	0.124	0.500	-0.029	-1.780	0.182	0.951	8
	TSTAT	1.710	1.640	0.968	-0.349	-0.452	1.860		
RECOV	COEFF	0.071	-0.232	-0.059	0.394	4.636	3.025	0.641	11
	T STAT	0.316	-1.417	-0.175	1.780	1.342	2.483		
AFTER CRISIS	COEFF	0.031	0.002	-0.159	0.018	0.113	-0.063	0.213	24
	T STAT	0.298	0.063	-1.770	0.343	0.128	-0.387		

The regression analysis is not reliable (see R^2 above) except during the crisis period. The inclusion of CRIIMI MAE significantly boosts the regression's reliability. There is strong positive correlation between the change in price of BB/BB- rated CMBS with BB/BB- S&P

industrial corporate bonds during the pre crisis period but the correlation weakens subsequently. Overall, the JP Morgan Russia and Asian bond indices, and NAREIT display statistically insignificant correlation with BB/BB- rated CMBS. Treasury bond displays a statistically significant positive correlation with CMBS during the crisis and recovery periods. CRIIMI MAE's stock also displays weak positive correlation overall with the exception of a strong positive correlation with BB/BB- rated CMBS during the crisis and the recovery periods.

Table 15: B Rated CMBS Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TSRY NOTES	R^2	N
ALL	COEFF	0.107	0.034	-0.094	-0.015	-0.457	0.173	126
	T STAT	2.095	1.774	-3.023	-1.164	-1.316		
PRE CRISIS	COEFF	0.158	0.015	-0.078	-0.003	0.005	0.214	83
	T STAT	2.643	0.641	-2.550	-0.210	0.014		
CRISIS	COEFF	-0.182	0.035	-0.181	-0.107	0.836	0.330	8
	TSTAT	-0.362	0.299	-0.509	-0.708	0.134		
RECOVERY	COEFF	0.300	-0.003	-0.210	-0.091	-0.676	0.276	11
	T STAT	0.469	-0.016	-0.304	-0.352	-0.227		
AFTER CRISIS	COEFF	0.081	-0.014	-0.087	0.031	0.322	0.187	24
	T STAT	1.073	-0.509	-1.088	0.702	0.441		

Table 16: B Rated CMBS With CRIIMI MAE Regression Summary

		S&P IND	NAREIT EQUITY	JPM ASIA	JPM RUSSIA	TSRY NOTES	CRIIMI	R^2	N
ALL	COEFF	0.103	0.030	-0.109	-0.02	-0.386	0.204	0.265	126
	T STAT	2.144	1.648	-3.659	-1.589	-1.169	3.861		
PRE CRISIS	COEFF	0.153	0.002	-0.081	-0.0022	0.083	0.324	0.235	83
	T STAT	2.577	0.077	-2.660	-0.177	0.253	1.454		
CRISIS	COEFF	-0.528	0.008	-0.552	-0.226	3.119	0.350	0.954	8
	TSTAT	-2.520	0.176	-3.320	-3.485	1.301	3.669		
RECOV	COEFF	0.199	-0.143	-0.037	0.147	3.636	2.274	0.629	11
	T STAT	0.388	-0.846	-0.066	0.616	1.120	1.955		
AFTER CRISIS	COEFF	0.072	-0.014	-0.091	0.032	0.282	-0.022	0.188	24
	T STAT	0.682	-0.480	1.031	0.69	0.345	-0.127		

The regression analysis is very unreliable (see R^2 above) except during the crisis. The inclusion of CRIIMI MAE significantly boosts the regression's reliability. There is weak but statistically

significant positive correlation between the change in price of B rated CMBS with B rated S&P industrial corporate bonds during the pre crisis and a strong negative correlation during crisis period. JP Morgan Asia bond index displays weak but statistically significant correlation in the pre crisis period. JP Morgan Russia indexes and Asian bond indices display strong and statistically significant negative correlation with CMBS during the crisis but the correlation is statistically insignificant in other periods. Treasury bond and NAREIT display statistically insignificant correlation with B rated CMBS overall. CRIIMI MAE's stock also displays a strong positive correlation with B rated CMBS during the crisis and the recovery periods.

SUMMARY AND CONCLUSION

Overall the investment grade CMBS, especially AAA, AA and A rated bonds were strongly positively correlated with S&P Industrial bonds and hence S&P industrial bonds could be used to replicate portfolios with AAA CMBS for hedging purposes. The strong positive correlation between investment grade CMBS and Treasuries during the crisis contradicts the bifurcation of the fixed-income markets that resulted from the "flight to quality." We find this puzzling. The negative correlation between investment grade CMBS and JP Morgan Asian and Russian indices before and during crisis also contradicts the widely observed bifurcation. Again this is puzzling. As evidenced by the generally low correlation between the NAREIT price changes and CMBS, real estate fundamentals were not an important factor in the performance of CMBS prices. The influence of CRIIMI MAE's stock increases as the bonds become more subordinated while the effect of Treasuries decreases with subordination reflecting that fixed-income influences are less important and structural influences are more important. The influence of CRIIMI MAE's stock prices on the prices of subordinated bonds is more subdued after the crisis reflecting the effects

of CRIIMI MAE's Chapter 11 filing. Overall, the reliability of the analysis decreases with subordination. Because the observed correlation between CMBS and the other variables change both depending on the bond rating and also the period understudy, it is difficult to establish reliable mathematical models to replicate the price change of CMBS. As a result, an effective hedging strategy is not feasible.

CHAPTER 5 – SUMMARY AND CONCLUSIONS

SUMMATION

In chapter one, we discussed some of the major factors that led to the Asian/Russian crisis, which led us to an understanding of two important phenomena in today's capital markets. Firstly, with the interconnectivity of international capital markets comes increased volatility both across continents and to seemingly unrelated financial assets. And secondly, our capital markets are open to cross-border investment without sufficient safety nets or an understanding of the structural requirements for productive growth. In chapter one, we also discussed the evolution of the CMBS industry from its initial stages as liquidator of sour S&L loans through Resolution Trust Corporation deals to the hegemony of today's conduit issuers. The conduit issuers have introduced an extremely efficient process to originating, structuring, rating and issuing CMBS. With its unique risk return characteristics and the abundance of unsecuritized real estate in the United States, opportunities for investors and suppliers of CMBS abound.

In chapter two, we followed the chronology of events leading up to and following the crisis. The seeds of crisis, expounded on in the first chapter, come to fruition during the third and fourth quarter of 1998 to ruin profits, which for many of the firms only a couple months earlier were at record highs. We also learned of the importance of Long-Term Capital Management and its copycats, who facing losses in an unrelated foreign country toppled two separate asset classes with billions in sales. We also explored comparative price changes of various rated fixed-income securities versus similarly rated CMBS during the crisis period. Due to the general panic and sole desire for US Treasuries both investment grade and high-yield fixed-income securities suffered

from liquidity issues. However, once fears subsided a large investor base familiar with both asset classes quickly re-emerged to snatch up deals and provide liquidity.

Chapter three explored the rise and fall of the mortgage real estate investment trust, CRIIMI MAE. We discovered for two major reasons, mortgage REITs were perfect investors of low-rated CMBS. In regards to the re-allocation of cash flows and credit risks in the CMBS structure, where low-rated buyers are most exposed to credit defaults, mortgage REITs were probably best able to make informed purchasing and work out decisions from their ample experience as servicers and special servicers. As conduit-CMBS issuers, mortgage REITs knew more about the underlying originated loans than outside investors, therefore retaining the low-rated CMBS to avoid information asymmetry discounting made economic sense. However, mortgage REITs in general are limited in their capacity to successfully invest in low-rated CMBS due to existing REIT rules, misalignment of interests, wrong capital structure and general "hedge fund envy." Though CRIIMI MAE did not appear limited by all of the above constraints, particularly unsound management practices, its employment of high leverage to acquire an existing highly leveraged asset accentuated volatility and caused it to suffer heavily in the fall of 1998.

In chapter four we explore the hedging potential of CMBS by regressing a range of domestic and international financial asset prices and various rated CMBS prices during four carefully chosen time periods from before the summer and fall 1998 crisis period to June 1999. In general the investment grade CMBS is highly correlated to corporate bonds, which indicates it is populated by the same category of buyers and can serve as a replicating security. As evidenced by chapter three, CRIIMI MAE was an influential factor in the performance of below investment grade

CMBS, the low correlation of below investment grade CMBS with other fixed income securities verifies CRIIMI MAE's dominance in the subordinate CMBS market. Real estate fundamentals were not very influential on the performance of CMBS over the period in question. This result reinforces the postulation that the persistent effects of the crisis, after the LTCM bailout, had more to do with structural defects within the CMBS market than with the fundamentals of the real estate market. Unfortunately, from our analysis the prospects of an effective hedging strategy are low due to the inconsistent nature of the observed relationships across the various time periods and bond ratings.

CHANGES ALREADY OCCURING

With the benefit of hindsight, the crisis was beneficial to the development of the CMBS industry. The crisis and its resultant slowdown highlighted structural weaknesses and allowed the market to proceed to the next stage of development without being destroyed. Issuers, for example, have already responded to potential, sudden interest rate volatility and the difficulty in effective hedging by shortening warehousing periods. So in order to reduce interest rate volatility exposure and continue to meet investor preference for large loan pools, conduits are teaming up rather than carrying large inventories on their own books. Other conduits continue to issue CMBS on their own, also with smaller deal sizes, but with less diversified loan pools. However, one benefit to less diversification is the absence of obscure property types.

Opportunity funds such as GE Capital, GMAC, Apollo, J. E. Roberts and Westbrook have entered the market and consequently boosted liquidity.[26] Nevertheless, the B-rated market is still

[26] L' Heureux, "*CMBS Market Update,*" AEW, November 1998

impaired due to the CRIIMI MAE bankruptcy. At this point, the wide spreads most likely reflect a liquidity and uncertainty premium.

CHALLENGES TO DEVELOPMENT

In the next stages of development in the CMBS market, issuers must develop an effective, low-cost hedging strategy. Although the unique characteristics of CMBS, which in part comes from its structural complexity, make them desirable to investors, unfortunately the characteristics also make CMBS very difficult to hedge. Furthermore, it is unlikely that the relationships we observed in chapter four during the crisis period appear will be repeated in another crisis.

The most challenging aspect to the development of the CMBS market is the illiquidity of below investment grade bonds. With changes in REIT regulations, a revised capital structure and better interest alignment between owners and managers, the mortgage REITs could play a more stable role as low-rated CMBS buyers. Without these changes, they will continue to be the weak link in the CMBS issuance process. Currently, the well capitalized opportunity funds investing in below investment grade CMBS represent a stronger buyer and link in the CMBS issuance process. However, it remains to be seen whether they will become permanent players.

The Lehman Brothers CMBS Index will improve liquidity in the CMBS industry by becoming a benchmark for fund managers. However, the index will improve liquidity where it is least needed, namely investment grade CMBS backed by pools with over $500 million worth of mortgages. On the other hand, the index may generate general interest in the CMBS market, which may rub off on subordinate CMBS.

Preliminary reports from the ongoing House Banking Committee hearings on hedge funds indicate the likelihood of new regulations for the hedge fund sector.[27] Most likely the regulations will force hedge funds to disclose more pertinent risk information for its investors. With better information on hedge fund holdings in the capital markets, stability should improve.

[27] "*Full Committee Hearing President's Working Group Study on Hedge Funds,*" House Banking Committee, May 6, 1999

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APPENDIX A: GLOSSARY OF TERMS

Arbitrage – Investment strategy that attempts to profit from different pricing of identical securities, often created when the asset is traded in two separate markets. The strategy may also work for two different assets that move in some sort of relationship.

Asset Backed Securities – Bonds whose underlying collateral are assets such as mortgages, credit card debt, car loans, etc.

BACs – Beneficial Assignee Certificates. A certificate that represents an assignment of interest in a limited partnership entity traded on a public exchange, thereby increasing the liquidity of the limited partnership.

CFR – See CRI Liquidating REIT Inc.

CII – See CRIIMI-II.

CMBS – Commercial Mortgage Backed Securities. Different rated bonds backed by a pool of commercial mortgages. The interest and principal are assigned based on a collateralized mortgage obligation waterfall structure.

CMM – See CRIIMI MAE.

CMO – Collateralized Mortgage Obligation. Bonds secured by whole loan mortgage pools.

Collateral – The assets that back a loan or security such as the underlying loans in a mortgage backed security.

Conduit – Government or private institutions that assembles commercial or residential mortgages into a large pool and issues securities in collaboration with investment banks.

CRI – Capitol Realty Investments, Inc. the real estate company formed by William B. Dockser, Martin C. Schwartzberg and H. William Willoughby in 1974. The company would go on to found a number of subsidiaries and limited partnerships which eventually became the mortgage REIT CRIIMI MAE.

CRI Insured Mortgage Association Inc. – See CRIIMI MAE.

CRI Liquidating REIT Inc. – The REIT formed as a result of the roll-up of CRIIMI I, II and III on November 28, 1989. The REIT planned to liquidate its assets either through payoffs or sales by the end of 1997.

CRIIMI I – CRI Insured Mortgage Investments Limited Partnership. A CRI sponsored $182 million limited partnership that invested in federally insured mortgages. It was listed on the New York Stock Exchange on April 18, 1985. On November 28, 1989, it was rolled-up along with CRIIMI II and CRIIMI III to form CRI Liquidating REIT and CRIIMI MAE.

CRIIMI MAE – The REIT formed as a result of the roll-up of CRIIMI I, II and III on November 28, 1989. Initially the REIT received income from its majority stake in CRI Liquidating REIT and its investments in federally insured mortgages. After the REIT absorbed its advisor, it began investing heavily in low-rated CMBS. On October 5, 1998, the REIT filed for Chapter 11 bankruptcy due to the dramatic price declines in the low-rated CMBS sector. Formerly called CRI Insured Mortgage Association Inc, the REIT changed its name to CRIIMI MAE on May 12, 1993.

CRIIMI-II – CRI Insured Mortgage Investments-II, Inc. A CRI sponsored $198 million REIT that invested in federally insured mortgages. It was listed on the New York Stock Exchange on June 30, 1986. On November 28, 1989, it was rolled-up along with CRIIMI I and CRIIMI III to form CRI Liquidating REIT and CRIIMI MAE.

CRIIMI-III – CRI Insured Mortgage Investments III Limited Partnership. A CRI sponsored $190 million limited partnership that invested in federally insured mortgages. It was listed on the New York Stock Exchange on February 22, 1988. On November 28, 1989, it was rolled-up along with CRIIMI I and CRIIMI II to form CRI Liquidating REIT and CRIIMI MAE.

CRM – See CRIIMI-I.

CSFB – Credit Suisse First Boston. A Wall Street investment bank that was a major player in the CMBS market.

CTH – See CRIIMI III.

Hedge Funds – Highly sophisticated, unregulated investment vehicles for high net worth individuals and institutions. Hedge funds typically employ high leverage to pursue various investment strategies such as arbitrage opportunities, bets on market directions, etc

Limited Partnership – An entity that holds real estate or other assets for the benefit of the investors, a majority of who have no involvement in any day-to-day management in exchange for limited liability status.

LP – See Limited Partnership.

LTCM – Long-Term Capital Management. A Greenwich, Connecticut based hedge fund whose famed management included two Nobel Prize winners and a bond trading guru. With only $7 billion in equity, the hedge fund commanded a $1 trillion notional market through its derivative positions and leverage.

Margin Call – A provision that gives lenders the right to request its borrowers to provide further collateral to cure the underlying loan once the value of the collateral is no longer sufficient to cover the original obligation.

Moral Hazard – Describes the tendency of a corrective mechanism to reinforce more of the act it was designed to prevent. For example, insuring a person who participates in dangerous sports may encourage them to participate in even more dangerous sports.

NAREIT – National Association of Real Estate Investment Trusts.

Opportunity Funds – Investment funds that normally arise to take advantage of a market inefficiencies, such as the temporary mispricing of risk that can occur from market crisis. Unlike hedge funds, opportunity funds are normally short lived.

REIT – Real Estate Investment Trust. Tax-exempt real estate investment vehicles that are required by law to pass through at least 95 percent of its taxable income to shareholders. They typically own and manage property and are restricted from trading in real estate.

REMIC – Real Estate Mortgage Investment Conduit. A mortgage security vehicle authorized by the Tax Reform Act of 1986 to hold mortgages in trust and issue securities representing an undivided interest in these mortgages.

Repo Debt – Repurchase Debt. Typically, a short-term agreement whereby a lender tenders cash in exchange for securities from the borrower. The borrower is then obligated to re-purchase the securities at a higher value, representing accrued interest, upon due date.

RTC – Resolution Trust Corporation. A special purpose entity formed by the federal government to oversee the sale of mortgages from defunct savings and loans corporations after the S&L debacle of the late 1980s and early 1990s.

APPENDIX B: CRIIMI MAE Consolidated Financial Statements

CRIIMI MAE Financial Statements

Income Statement (GAAP not Tax Basis)

	12/31/98		12/31/97		12/31/96	
Income:	$ (000,000)	% of	$ (000,000)	% of	$ (000,000)	% of
Insured Mortgages	43	20	49	37	57	54
Subordinated Securities	144	67	80	59	42	39
Originated Loans	21	10	0	0	0	0
Equity	3	1	4	3	4	4
Other Investment Income	4	2	3	2	3	3
Total Income	**214**	**100**	**135**	**100**	**106**	**100**
Expenses:						
Interest Expense	136	64	78	58	63	60
General and Administrative	15	7	10	7	8	8
Amortization of Merger Assets	3	1	3	2	3	3
Provision for Settlement of Litigation	0	0	0	0	0	0
Realized Loss on Reverse Repurchase Obligation	5	2	0	0	0	0
Unrealized Losses on Warehouse Obligations	30	14	0	0	0	0
Write-off of Capitalized Loan Origination Costs	3	2	0	0	0	0
Reorganization Items	10	5	0	0	0	0
Total Expenses	**202**	**94**	**90**	**67**	**74**	**70**
Income Before Gains on Mortgage Dispositions and Other Extraordinary	12	6	45	33	32	30
Gain on Mortgage Dispositions	30	14	17	13	10	9
Gain on Sale of CRI Liquidating REIT Shares	0	0	0	0	0	0
Minority Interests in Consolidated Subsidiary	(0)	(0)	(8)	(6)	(6)	(6)
Net Income	**42**	**20**	**54**	**40**	**35**	**33**
Preferred Dividends	(7)	(3)	(6)	(5)	(4)	(3)
Net Income Available to Common Shareholders	**35**	**17**	**48**	**35**	**32**	**30**
Net Income per Share (Basic)	0.75		1.29		1.03	
Net Income per Share (Diluted)	0.74		1.25		1.03	
Weighted Average Shares Outstanding	47,280,371		36,993,130		30,665,052	

CRIIMI MAE Financial Statements (continued)

	12/31/95		12/31/94		12/31/93	
Income:	$ (000,000)	% of	$ (000,000)	% of	$ (000,000)	% of
Insured Mortgages	66	81	67	94	50	89
Subordinated Securities	11	14	1	1	0	0
Originated Loans	0	0	0	0	0	0
Equity	3	3	2	3	3	4
Other Investment Income	2	3	1	2	4	6
Total Income	**82**	**100**	**71**	**100**	**56**	**100**
Expenses:						
Interest Expense	50	61	39	55	33	58
General and Administrative	10	12	8	11	7	13
Amortization of Merger Assets	1	2	0	0	0	0
Provision for Settlement of Litigation	(1)	(1)	(1)	(1)	2	3
Realized Loss on Reverse Repurchase Obligation	0	0	0	0	0	0
Unrealized Losses on Warehouse Obligations	0	0	0	0	0	0
Write-off of Capitalized Loan Origination Costs	0	0	0	0	0	0
Reorganization Items	0	0	0	0	0	0
Total Expenses	**60**	**73**	**47**	**65**	**42**	**74**
Income Before Gains on Mortgage Dispositions and Other Extraordinary	22	27	25	35	15	26
Gain on Mortgage Dispositions	2	2	13	18	7	13
Gain on Sale of CRI Liquidating REIT Shares	0	0	0	0	3	6
Minority Interests in Consolidated Subsidiary	(5)	(6)	(12)	(16)	(10)	(17)
Net Income	**19**	**23**	**26**	**36**	**16**	**28**
Preferred Dividends	0	0	0	0	0	0
Net Income Available to Common Shareholders	**19**	**23**	**26**	**36**	**16**	**28**
Net Income per Share (Basic)	0.65		1.07		0.78	
Net Income per Share (Diluted)	0.65		1.07		0.78	
Weighted Average Shares Outstanding	28,414,266		24,249,403		20,183,533	

CRIIMI MAE Financial Statements - % of Averages

	95 - '98 Average	93 - '94 Average	93 - '98 Average
Income:			
Insured Mortgages	48	91	62
Subordinated Securities	45	1	30
Originated Loans	2	0	2
Equity	3	4	3
Other Investment Income	2	4	3
Total Income	100	100	100
Expenses:			
Interest Expense	60	57	59
General and Administrative	8	12	10
Amortization of Merger Assets	2	0	1
Provision for Settlement of Litigation	(0)	1	0
Realized Loss on Reverse Repurchase Obligation	1	0	0
Unrealized Losses on Warehouse Obligations	4	0	2
Write-off of Capitalized Loan Origination Costs	0	0	0
Reorganization Items	1	0	1
Total Expenses	76	70	74
Income Before Gains on Mortgage Dispositions and Other Extraordinary	24	30	26
Gain on Mortgage Dispositions	9	16	11
Gain on Sale of CRI Liquidating REIT Shares	0	3	1
Minority Interests in Consolidated Subsidiary	(4)	(17)	(9)
Net Income	29	32	30
Preferred Dividends	(3)	0	(2)
Net Income Available to Common Shareholders	26	32	28

CRIIMI MAE Financial Statements - Growth

	12/31/98	12/31/97	12/31/96	12/31/95	12/31/94	Average
Income:	% Growth	% Growth	% Growth	% Growth	% Growth	
Insured Mortgages	(13)	(15)	(14)	(1)	25	(4)
Subordinated Securities	80	48	276	1,038	100	308
Originated Loans	N/A	N/A	N/A	N/A	N/A	N/A
Equity	(28)	(23)	71	12	(10)	5
Other Investment Income	64	(11)	28	103	(228)	(9)
Total Income	58	22	29	15	21	29
Expenses:						
Interest Expense	75	19	27	27	16	33
General and Administrative	52	17	(17)	19	9	16
Amortization of Merger Assets	0	(0)	101	N/A	N/A	34
Provision for Settlement of Litigation	N/A	N/A	(100)	18	369	96
Realized Loss on Reverse Repurchase Obligation	N/A	N/A	N/A	N/A	N/A	N/A
Unrealized Losses on Warehouse Obligations	N/A	N/A	N/A	N/A	N/A	N/A
Write-off of Capitalized Loan Origination Costs	N/A	N/A	N/A	N/A	N/A	N/A
Reorganization Items	N/A	N/A	N/A	N/A	N/A	N/A
Total Expenses	123	18	23	29	11	41
Income Before Gains on Mortgage Dispositions and Other Extraordinary	(72)	29	47	(12)	41	6
Gain on Mortgage Dispositions	73	45	539	(88)	43	122
Gain on Sale of CRI Liquidating REIT Shares	N/A	N/A	N/A	N/A	N/A	N/A
Minority Interests in Consolidated Subsidiary	(99)	21	32	(59)	18	(17)
Net Income	(22)	35	90	(29)	39	23
Preferred Dividends	8	46	N/A	N/A	N/A	27
Net Income Available to Common Shareholders	(26)	34	71	(29)	39	18
Net Income per Share (Basic)	(42)	20	58	(39)	27	5
Net Income per Share (Diluted)	(41)	18	58	(39)	27	5
Weighted Average Shares Outstanding	28	17	8	17	17	17

CRIIMI MAE Financial Statements

Balance Sheet Data

	12/31/98		12/31/97		12/31/96	
Assets:	$ (000,000)	% of	$ (000,000)	% of	$ (000,000)	% of
Cash & Cash Equivalents	24	1	2	0	11	1
Receivables & Other Assets	110	4	105	6	66	5
Insured Mortgages & Securities	488	20	605	32	691	51
Subordinated CMBS	1,274	52	1,114	59	564	41
Investment in Originated Loans	499	20	0	0	0	0
Equity Investments	43	2	46	2	35	3
Total assets	**2,438**	**100**	**1,873**	**100**	**1,367**	**100**
Liabilities:						
Payables & Accrued Expenses	44	2	12	1	12	1
Repurchase Agreements-Subordinated CMBS	932	38	585	31	241	18
Collateralized Variable Rate Bonds	961	39	696	37	732	54
Unsecured Senior Notes	100	4	100	5	0	0
Other Financing Facilities (Secured & Unsecured)	93	4	33	2	9	1
Total Liabilities	**2,130**	**87**	**1,427**	**76**	**994**	**73**
Minority interests in consolidated subsidiary	0	0	1	0	27	2
Shareholders' Equity:						
Common & Preferred Stock	1	0	0	0	0	0
Net Unrealized Gains on Mortgage Investments	(251)	(10)	1	0	9	1
Additional Paid-in Capital	559	23	449	24	342	25
Less Treasury Stock	0	0	(5)	(0)	(5)	(0)
Total Shareholders' Equity	**308**	**13**	**445**	**24**	**347**	**25**
Total Liabilities & Shareholders' Equity	**2,438**	**100**	**1,873**	**100**	**1,367**	**100**

CRIIMI MAE Financial Statements (continued)

	12/31/95		12/31/94		12/31/93	
Assets:	$ (000,000)	% of	$ (000,000)	% of	$ (000,000)	% of
Cash & Cash Equivalents	17	1	5	1	14	2
Receivables & Other Assets	64	5	24	2	23	3
Insured Mortgages & Securities	807	67	858	90	742	92
Subordinated CMBS	278	23	39	4	0	0
Investment in Originated Loans	0	0	0	0	0	0
Equity Investments	37	3	30	3	31	4
Total assets	**1,203**	**100**	**955**	**100**	**809**	**100**
Liabilities:						
Payables & Accrued Expenses	11	1	8	1	6	1
Repurchase Agreements-Subordinated CMBS	188	16	482	50	332	41
Collateralized Variable Rate Bonds	645	54	0	0	0	0
Unsecured Senior Notes	0	0	0	0	0	0
Other Financing Facilities (Secured & Unsecured)	21	2	145	15	147	18
Total Liabilities	**865**	**72**	**635**	**67**	**485**	**60**
Minority interests in consolidated subsidiary	52	4	70	7	108	13
Shareholders' Equity:						
Common & Preferred Stock	0	0	0	0	0	0
Net Unrealized Gains on Mortgage Investments	16	1	10	1	29	4
Additional Paid-in Capital	274	23	244	26	196	24
Less Treasury Stock	(5)	(0)	(5)	(0)	(10)	(1)
Total Shareholders' Equity	**286**	**24**	**250**	**26**	**215**	**27**
Total Liabilities & Shareholders' Equity	**1,203**	**100**	**955**	**100**	**809**	**100**

CRIIMI MAE Financial Statements - % of Averages

	95 - '98 Average	93 - '94 Average	93 - '98 Average
Assets:			
Cash & Cash Equivalents	1	1	1
Receivables & Other Assets	5	3	4
Insured Mortgages & Securities	42	91	59
Subordinated CMBS	44	2	30
Investment in Originated Loans	5	0	3
Equity Investments	2	3	3
Total assets	100	100	100
Liabilities:			
Payables & Accrued Expenses	1	1	1
Repurchase Agreements-Subordinated CMBS	26	46	32
Collateralized Variable Rate Bonds	46	0	31
Unsecured Senior Notes	2	0	2
Other Financing Facilities (Secured & Unsecured)	2	17	7
Total Liabilities	77	63	72
Minority interests in consolidated subsidiary	2	10	5
Shareholders' Equity:			
Common & Preferred Stock	0	0	0
Net Unrealized Gains on Mortgage Investments	(2)	2	(1)
Additional Paid-in Capital	24	25	24
Less Treasury Stock	(0)	(1)	(0)
Total Shareholders' Equity	21	26	23
Total Liabilities & Shareholders' Equity	100	100	100

CRIIMI MAE Financial Statements - Growth

	12/31/98 % Growth	12/31/97 % Growth	12/31/96 % Growth	12/31/95 % Growth	12/31/94 % Growth	Average
Assets:						
Cash & Cash Equivalents	1,047	(81)	(34)	222	(62)	218
Receivables & Other Assets	4	60	3	172	4	49
Insured Mortgages & Securities	(19)	(12)	(14)	(6)	16	(7)
Subordinated CMBS	14	97	103	616	N/A	208
Investment in Originated Loans	N/A	N/A	N/A	N/A	N/A	N/A
Equity Investments	(7)	32	(6)	24	(3)	8
Total assets	**30**	**37**	**14**	**26**	**18**	**25**
Liabilities:						
Payables & Accrued Expenses	256	6	8	34	36	68
Repurchase Agreements-Subordinated CMBS	59	143	28	(61)	45	43
Collateralized Mortgage Obligations	38	(5)	13	N/A	N/A	16
Unsecured Senior Notes	0	N/A	N/A	N/A	N/A	0
Other Financing Facilities (Secured & Unsecured)	**179**	**274**	**(58)**	**(85)**	**(1)**	**62**
Total Liabilities						
Minority interests in consolidated subsidiary	(100)	(96)	(49)	(25)	(36)	(61)
Shareholders' Equity:						
Common & Preferred Stock	29	24	11	18	24	21
Net Unrealized Gains on Mortgage Investments	(23,304)	(88)	(45)	56	(64)	(4,689)
Additional Paid-in Capital	25	31	25	12	25	24
Less Treasury Stock	(100)	0	2	4	(50)	(29)
Total Shareholders' Equity	**(31)**	**28**	**21**	**14**	**16**	**8**
Total Liabilities & Shareholders' Equity	**30**	**37**	**14**	**26**	**18**	**25**