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## **Commercial Mortgage Backed Securitization in Singapore: The Challenges Ahead**

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### **Abstract:**

The success of Commercial Mortgage Backed Securitization (CMBS) market in the US and the internationalization of CMBS have significant impact on the real estate financing landscape in many Asian markets. Innovative structuring of real estate financing via the CMBS framework has been adopted by real estate investment trusts (REITs) in Singapore. In a mailed questionnaire conducted by this study to evaluate the feasibility of CMBS in Singapore, the results showed that 86% of the respondents were positive on the potential of establishing a CMBS market in Singapore. Banks and finance companies are reluctant to sell the valuable commercial mortgage assets through CMBS because of the current excess liquidity in the market. The fear of disrupting the good relationships with their preferred clients is also another factor that hinders the sale of mortgages by the banks. On the demand side, investors would like to see better supporting services in credit protections, if they were to include CMBS in their portfolio. 83% of the respondents were in favor of setting up a government sponsored secondary mortgage institution (SMI) to jumpstart a sustainable CMBS market.

Keywords: *Commercial Mortgage Backed Securitization, Credit Risks, Liquidity*

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## **Commercial Mortgage Backed Securitization in Singapore: The Challenges Ahead**

### **1. Introduction**

There have been a slew of real estate capital market activities in Singapore after the Asian financial crisis in 1997. The active secondary market activities were not motivated by liquidity problem. In contrary, commercial banks and finance companies in Singapore were flushed with liquidity following the announcement of two major changes to the banking industry by the Monetary Authority of Singapore (MAS), the de-facto central bank of Singapore, which include the lowering of the minimum cash balance from 6% to 3% in July 1998, and the reduction of the Tier-1 Capital Adequacy Ratio (CAR) from 12% to 8% in September 2000. As of March 2003, the total loan-to-deposit ratio was 0.87, which means that on every S\$1 of deposit received by banks, only S\$0.87 was converted into loans (Sing and Ong, 2004). There was a dearth of commercial property transactions in the post-crisis periods, and the commercial property prices as represented by the Urban Redevelopment Authority (URA) office price indices declined by more than -56% from 163.3 point in 1996Q3 to 71.9 in 2004Q1. The low interest rate environment with three-month inter-bank rate declining from 7.19% in 1997Q4 to 0.56% in 2004Q1 was also not favorable for a sustainable capital market development in Singapore.

What are the push factors for the development of securitization market in Singapore in the late 1990s and the early 2000s? The vulnerability of stock market experienced in the 1997 crisis has encouraged companies to explore alternative long-term funding sources through bond issuance. Diversification of funding source has been identified as one of the effective way to cushion companies against mismatch in funding. The government has also supported the strategy of deepening and broadening the debt market in Singapore.<sup>1</sup> The advancement of financial innovation and securitization technology has facilitated the development of more sophisticated off-balance-sheet financing for real estate companies. Real estate companies rather than the financial institutions have taken the lead in employing the securitization innovations to optimize their capital costs in Singapore.

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<sup>1</sup> This was expressed in the keynote address “*Opportunities in Asian Debt Markets – Strategies to Deepen the Singapore Debt Market*,” by the Second Minister for Finance, Singapore, Mr Lim Hng Kiang, at the Finance Intelligence Asia (FIA) - Asian Financial Markets Conference, (02 May 2000)

Three securitization vehicles have been used by Singapore's property companies to divest real estate assets – commercial mortgage-backed bonds, real estate investment trusts and commercial real estate backed securitization. Securitizing equity interests in real estate via a special purpose vehicle (SPV) has first been arranged for the Neptune Orient Line (NOL) 26-storeys headquarter building at Alexander Road in 1999. By removing the quality real estate off the companies' balance sheets, companies can tap into lower cost capitals in the market by securitizing the direct real assets and/or mortgages pledged on the real estate.

Securitizing non-recourse commercial mortgages is a process commonly known as commercial mortgage backed securitization (CMBS), in which tradable securities are created for investors to diversify their portfolio into commercial mortgages. These commercial mortgages are secured by real estate like office buildings, shopping malls, multi-family apartments, hotels, warehouses and factories, or mix developments with hybrid property use types. In the US, the CMBS market has developed rapidly and the dollar volume of commercial mortgages securitized increased more than five times from US\$4.9billion in 1989 to US\$27.2 billion in 1996 (Harding and Sirmans, 1997). The issuance of CMBS by the Resolution Trust Corporation (RTC) and the emergence of active conduit-CMBS activities contribute to a significant growth of CMBS in the US.

In Singapore, pooling of commercial mortgages for securitization purposes is a relatively new innovation, which has yet to be initiated by local commercial banks. The healthy liquidity position, the low default risks of commercial mortgages and the reluctance of banks to sever the good relationships with their corporate mortgagors are factors that hold many banks back on the idea of selling their valuable commercial mortgages. Instead, the banks are more prepared to use the securitization technology to hedge the credit risks in the corporate loans, so as to reduce the risk-weighted assets for their capital adequacy ratio requirement. In December 2001, the Development Bank of Singapore (DBS), the largest listed bank in Singapore, successfully securitized US\$1.53 billion (S\$2.8 billion) corporate loans using the synthetic collateralized loan obligations (Synthetic CLOs)<sup>2</sup>.

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<sup>2</sup> "DBS securitises \$2.8b corp loans," *Business Times Singapore*, 22 December 2001.

The synthetic CLOs issued by the SPV - ALCO 1 Ltd, consist of a 8% collateralized mezzanine tranche worth US\$122.41 million (S\$224.37 million), a top 87.5% “super senior” tranche hedged via unfunded credit default swaps and a bottom 4.5% “first loss” tranche retained by the issuer.

The first synthetic CLO by the DBS bank may not have paved the way for the creation of a CMBS market in Singapore. However, increasing competition with the entrance of several foreign banks granted with qualifying full bank licenses by the MAS will exert pressure on local banks to explore new and innovative ways of injecting new capital. The potential for real estate securitization in Singapore is immense. The outstanding real estate loans comprising building, construction and housing loans issued by banks and finance companies in Singapore totaled S\$72.2 billion as of March 2003 (*source: the MAS*). This represents over 42% of the total loans granted by the financial institutions in Singapore. The rapid growth in real estate-related loans has been underpinned by the strong property market from 1993 to 1996.

This study aims to evaluate the feasibility of CMBS in Singapore, the challenges and obstacles faced by banks, investors and fund managers. It would review the institutional landscape in the financial and banking sectors in the light of the impending introduction of the Basel Capital Accords by the Bank of International Settlements (BIS). The results are derived mainly through a questionnaire survey conducted with a sample of banks, insurance and fund management firms in Singapore. This paper is organized into six sections. Section 1 gives a background review of the real estate securitization market development in Singapore. Discussions of push and pull factors relating to the setting up of a CMBS market are also covered in this section. Section 2 reviews the historical development of CMBS market in the US. The relatively short history of the CMBS market in Singapore is described with reference to the CapitaRetail Singapore CMBS case in Section 3. Section 4 discusses the methodological and sampling design adopted for the survey exercise. The results of the survey responses are also analyzed in this section. Section 5 concludes the paper with highlights of key findings.

## 2. CMBS Market: the US Experience

The development of CMBS market in the US can be broadly categorized into three phases. The first phase of development took place in the mid 1980s, which involves packaging of commercial mortgages on single properties into CMBS. The earlier CMBS were mainly issued in a single tranche (Harding and Sirmans, 1997). Despite the legislative passage that facilitates the creation of non-taxable Real Estate Mortgage Investment Conduit (REMIC) in 1986, the use of the multi-tranche securities structure was infrequent in the 1980s (Hess and Liang, 2001).

The setting-up of the Resolution Trust Corporation (RTC) under the Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) was the catalyst of the second phase development of CMBS market in the US. The RTC was government agency created to liquidate non-performing loans of distressed thrifts and banks that were severely hit by the crash in commercial property market in late 1980s. Faced with pressure to dispose off the non-performing assets quickly, the RTC was able to sell the non-performing loan assets to investors in the Wall Street by introducing proper credit rating for loans that are pooled into the CMBS portfolio. By putting in subordinated structure to the CMBS securities<sup>3</sup>, RTC was able to provide adequate risk protection to investors of senior CMBS tranche without having to obtain credit enhancement by government sponsored agencies like the Federal Housing Administration (FHA), the Veteran Administration (VA) in the residential mortgaged backed securities. Liquidation of non-performing loans by the RTC contributed to the rapid expansion of the CMBS market, especially in 1992 and 1993. The RTC's CMBS constitutes nearly 60% of the total US\$14 billion CMBS issuance in 1992 (Hess and Liang, 2001).

After accomplishing the objective of recapitalizing the distressed thrifts and banks and also liquidating the non-performing commercial loan assets, the RTC was disbanded in 1995. However, the RTC's model of CMBS continues to be adopted by other commercial real estate lenders to tap into capital sources in the CMBS markets. The strong demand

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<sup>3</sup> The senior-subordinated structure of CMBS distributes the cash flows received in a top-down direction, whereas the losses, if incurred, are allocated in the reversed direction, with the junior tranche holders being put in the first loss position (Harding and Sirmans, 1997).

coupled with the attractive yield spreads for the CMBS issued by the RTC further boosted investors' confidence in the instruments. More CMBSs were issued by private lending institutions, which accounted for 126 and 124 deals in 1993 and 1994 respectively (Harding and Sirmans, 1997). The loans pool of these conventional lenders, which consists mainly of seasoned secured loans, was gradually depleted by 1996 (Hess and Liang, 2001). However, the growth of CMBS market continued to expand in the third phase of development by shifting the CMBS loans pool to small and low-quality commercial properties that are riskier. The gap in financing this sector of commercial property was filled quickly by conduit mortgage lenders<sup>4</sup> after the mid 1990s (Han, 1996). Diversified portfolios of "jumbo-grade" commercial mortgages with asset values in a range of US\$1million to US\$10million (Han, 1996) provide a stable supply of the conduit-CMBS, which was estimated to be US\$25billion to US\$30 billion a year on average (Hess and Liang, 2001). Liquidity creation, specialization in loan production specialization and customization of securities were three important factors that underpin the continuous growth of conduit-CMBS market (Muldavin, 1994; Riddiough, 2000).<sup>5</sup>

### 2.1 *Challenges facing the CMBS market in the US*

Hess and Liang (2001) provide a thorough review of the characteristics of loan pools and the structure of the CMBS in the US. Han (1996) believes that there is sufficient segmentation in the commercial mortgage markets for the co-existence of whole loans and conduit-CMBS financing in the US. The cost structure and risk profile of the conventional whole loan lenders were significantly different from the conduit CMBS lenders. The whole-loan lenders would continue to upkeep the competitive advantage in the long-term whole-loan financing for commercial properties despite a lower spread margin.

From an investor's perspective, there were also differences between commercial whole-loans and CMBS mortgages in a number of dimensions (Fathe-Aazam, 1995). Generally,

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<sup>4</sup> Conduit lenders are commercial or investment banks that originate and warehouse commercial loans with the intention of securitizing them into CMBS. They are active in providing financing to the small and low-quality commercial property owners, which are largely neglected by conventional lenders.

<sup>5</sup> The conduit-CMBS securitization process and structure are explained in details by Riddiough (1995).

CMBS were more liquid and easy to structure compared to whole-loans. The relative lack of liquidity in whole loans was compensated by a net yield spread of 14 to 34 basic points below that for the CMBS loan portfolios (Rubin, Barnes, Felletter and Kozel, 1996).

On the issues of tranching and credit risks in CMBS, senior tranches with a double A and above rating with negligible credit risks can be created in the subordination structure of CMBS. On the other hand, the riskier tranches of CMBS in double rating offer more attractive yield spread of 75 basic points above that for comparable double-B rated corporate bonds as estimated by Corcoran and Kao (1994) using a risk-neutral credit risk model. The differences in yield spreads may reflect the trade-off between credit risk and cash-flow uncertainty between the two instruments (Harding and Sirmans, 1997). The paucity of CMBS historical data has limited the empirical analysis of credit risks in the past (Harding and Sirmans, 1998). However, the data limitation is no longer critical with the rapid growth of new CMBS creation in today's market.

Gordon (1994) predicts three paradigm shifts in the real estate capital market following the healthy growth of CMBS. Firstly, CMBS offers an alternative source of capital for commercial real estate owners and reduces their reliance on conventional lenders' funds. Secondly, more conventional lenders will securitize their loan pools and retain the CMBS assets under the risk-based capital adequacy requirement. They require smaller capital reserve in their balance sheets to support the lower risk-weighted CMBS assets. Increasingly, the attractive yield spreads of CMBS will attract more institutional investors to include CMBS as an important asset class in their portfolio diversification strategy. Thirdly, internalization of CMBS has also started to revolutionize the financing landscape in Asia and other part of worlds. In anticipation of the intense competition created by conduits in the CMBS markets, efficiency and transparency of the mortgage origination and underwriting will significantly improved. The efficiency gain in loan origination and warehousing process will further shorten the securitization process, another trend predicted by Muldavin (1994).

### **3. Development of CMBS Market in Singapore**

Securitization of commercial mortgage in Singapore can be traced as far back to 1986, where many pay-through bonds backed by mortgages on single commercial assets were structured (Ong, Ooi and Sing, 1999). In this earlier securitization process, banks took the commercial real estate mortgages off the balance sheet and released the operating capital for other loans.<sup>6</sup> At the same time, the banks expanded the fee-based incomes through offering the mortgage backed bond structuring services. The first CMBS of S\$18.5 million was issued in 1986 by Hong Leong Holdings Limited, a private company involves in property development and financing, on the first legal mortgage pledged on the Hong Leong Building, an office building in downtown central business district. The next mortgage-backed bond (S\$ 51 million) was issued six years later in 1992 by Orchard Parade Holdings, the listed property arm of Far East Organization, one of the largest property developers in Singapore. The MBB market started to become more active only in 1994 onwards with seventeen MBB issues in a short a period of five years. The total value of MBB issued since 1986 was S\$ 2.53 billion (Table 1). The Far East Organization has been the most active player in the market with a total of eleven MBBs issued: three through its listed property arm, Orchard Parade Holdings, and eight through its subsidiaries.

In 1999, securitization of commercial real estate has taken a different route. It moved away from mortgages secured on commercial properties to direct off-balance-sheet sale of the equity interests in commercial properties to a special purpose vehicle (SPV). Rental streams generated from the securitized properties were used to pay the coupon obligations of the bonds. The first securitization deal in Singapore involved the sale of the Neptune Orient Lines (NOL) office building. The transaction of the 26-storey building valued at \$185 million as of December 1998 was funded by 10-year fixed rate mortgage-backed bonds issued via a SPV, Chenab Investments Ltd. Six commercial properties were securitized through the issuance of two-tier (senior and junior tranches)

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<sup>6</sup> Banks are restricted under the Singapore's Banking Act, Chapter 19, (1999 revised edition) to grant credit facilities exceeds 25% of its capital funds to any single borrower. Based on the total non-bank customer deposit of S\$184.06 billion, the credit loans available for commercial properties lender will be capped at S\$46.02 billion.

fixed rate bonds with a total bond values of S\$1,842 million (Table 2).

The securitization of commercial real estate becomes more sophisticated in the S\$945 million Raffles City Complex securitization. Tincel Limited, a SPV, was set up to hold 55% stake in the Raffles City (Private) Limited, which owns the Raffles City Complex, a mix development comprising convention, hotel, office and retail uses. Tincel SPV funds the S\$984.5 million purchase through the issuance of two tranches of 10-year fixed rate secured bonds in June 2001.<sup>7</sup> In 2002, Real Estate Investment Trusts (REITs) have become the new divestment channel for developers to dispose-off their commercial real estate. The initial public offers of the two Singapore-dollar denominated REITs: CapitaMall Trust (CMT) and Ascendas REIT (A-REIT) were overwhelmed with the share allotments being more than five-time oversubscribed.<sup>8</sup>

Constrained by 35% gearing limit imposed by the Monetary Authority of Singapore (MAS), REITs have been actively exploring CMBS as an innovative way to convert the mortgages secured on the portfolio of quality real estate assets into medium- to long-term bonds with fixed coupons. CMT has obtained three tranches of financing using the CMBS structure via the issuer: Silver Maple Investment Corporation Limited (SMICL). The CMBS finance comprises S\$172 million term loans and S\$28 million revolving credit facilities secured on three of the retail properties in CMT portfolio in February 2003, and S\$125 million term loans used in the acquisition of a retail mall, IMM building in June 2003. There were four CMBS deals transacted till date and the details are summarized in Table 3.

### *3.1. CapitaRetail Singapore Case Study*

The statutory 35% borrowing limit and the difficulty in securing medium to long-term fixed rate loans on commercial real estate have motivated REITs to actively explore

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<sup>7</sup> This was the first commercial real estate securitization after the revision of the MAS guidelines on Asset Securitization by Bank in the MAS note 628 on 20 August 2000, which impose stricter requirement on clean sale and separation requirement. Under these rules coupled with the adoption of new accounting standards, the commercial buildings securitized in 1999 have to be consolidated back to the developers' book (see Fan, Sing, Ong and Sirmans, 2004 for further discussion).

<sup>8</sup> The first cross-border REIT, Fortune REIT, with a portfolio of retail malls in Hong Kong was also well over-subscribed in its initial public offering in August 2003.

alternative sources of financing. CMT has been tapping the international money market for capital by restructuring its existing medium-term floating rate loans through CMBS issuance.

CMBS with bond-like characteristics is an attractive option for institutional investors and RETIs to diversify into commercial real estate, without having to directly own the equity interests in the physical real estate. The CMBS issued by CapitaRetail Singapore (CRS)<sup>9</sup> offers an interesting case for study in this section. CMT invested S\$60 million on the junior E-class CMBS using both equity (\$45 million) and debt (\$15 million) capital. CMT is able to obtain yield accretion through the junior CRS-CMBS tranche, which is expected to give CMT an attractive return of more than 8.2%. The indirect route of acquisition without having to directly include the three CRS's properties into the portfolio reduces the impact on the gearing of CMT, which rose only marginal from 29.7% to 31.2%.<sup>10</sup>

CRS issued two 4-year CMBS tranches denominated in Euro-dollar and Singapore dollar respectively with a total issue value of US\$294.6million (S\$506.0million). The senior class A and class B bonds are floating rate tranche (€1 million), whereas the junior tranche, which is divided into three classes (D to E), carries fixed rate interests (S\$329million). The senior and junior CMBS tranches are categorized as follows:

	<b>Issue Value</b>	<b>Interest Rate</b>	<b>Moody's</b>	<b>Standard &amp; Poor's</b>
• Class A	€7.5 million	Floating rate	Aaa	AAA
• Class B	€13.5 million	Floating rate	Aa2	AA
• Class C	S\$33.0 million	Fixed rate	A2	A
• Class D	S\$83.0 million	Fixed rate	Not rated	Not rated
• Class E	S\$213.0 million	Fixed rate	Not rated	Not rated

*Source: Moody's and Standard & Poor's*

The scheduled maturity of the CMBS is on 27 February 2008 with a possible extension to a final maturity date of 27 August 2009 at stepped up interest rates. The CMBS issues

<sup>9</sup> CRS is a private property fund set up by CapitaLand Limited to hold acquisition of three suburban mall properties worth S\$500 million in September 2003.

<sup>10</sup> "CapitaMall Trust – An Indirect Route to Asset Acquisition," *Asia Pacific Equity Research Report* published by investment bank, J.P. Morgan Securities, on 10 September 2003.

were secured on three commercial real estate loans collateralized on three retail malls: Lot 1, Buking Panjang Plaza and Rivervale Mall, located in the suburbs of Singapore. The property details are described in Table 4.

The loan to value ratio of 60% in the three mortgages provides adequate protection against credit risk. The subordination structure offers another layer of protection against default risk for investors of the senior-tranche bonds, who have priority of claims on the collateralized properties if default occurs. The three loans are cross-collateralized to give further credit enhancement to the CMBS. CMT subscribe to 30% of the junior E-class bonds at S\$60 million using a combination of new equity issues and debts.

#### **4. Market Response to CMBS Market in Singapore: A survey**

##### *4.1. Research Design*

A mailed questionnaire was conducted from the end December 2003 to February 2004. 500 questionnaires were sent out to Singapore based financial institutions, which include banks (local, foreign, wholesale, offshore, merchant), finance companies, insurance companies, asset management companies, licensed financial advisers, fund management companies, pension funds, and relevant associations. The distributions of sample firms included in the survey were shown in Table 5, and the listing of firms was obtained mainly from the MAS directories for financial institutions and insurance companies. Out of the 500 questionnaires posted, 18 firms were unable to participate in the survey exercise<sup>11</sup>, and 17 questionnaires failed to reach the respondent firms due to relocations. The effective sample size of this survey was reduced to 465.

After three rounds of mailing and following-ups, and with the assistance of the Investment Management Association of Singapore (IMAS) in distributing the questionnaire to their members, we received 80 completed questionnaires achieving a reasonable response rate of 17.2%. Out of these 80 sample respondent, 15 were banks that involve in various supply-side activities such as origination, underwriting and

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<sup>11</sup> Reasons cited for not participating in the survey include lack of knowledge in investing CMBS and disclosure restrictions imposed by clients and companies.

servicing of commercial real estate mortgages. The remaining 81% of the responding companies are in one way or another interested in participating in the demand side of the CMBS activities. Majority of the respondents hold the top management positions in their respective companies, and have more than 10 years of experience in the finance, investment and banking industries.

The questionnaire is structured into 4 broad sections. The first section is designed to obtain information on the profiles of the respondents and their companies. The second section is directed only to banks, which are directly involved in the origination, underwriting and servicing of commercial mortgages. The questions in this section are related mainly to the characteristics of typical commercial mortgages originated by the local banks. We also attempt to find out how these sample banks deal with risks and protect their exposure to commercial mortgages. Section three of the questionnaire focuses on issues in the demand-side of the CMBS in Singapore, which include market perspective on yield spread, term to maturity, size of mortgage pool, and factors to be considered when investing in CMBS. The last section gathers the views of respondents on the potential of CMBS, the impediments faced in introducing CMBS, and the likely economic benefits a CMBS market can offer.

## *4.2. Analysis of Survey Results*

### *4.2.1. Characteristics of Typical Commercial Mortgages*

15 banks or finance companies involved in loan origination businesses provided information on typical commercial mortgages originated by them. The characteristics of these loans are summarized in Table 6. In Singapore, floating interest rate commercial mortgages and those with preferential fixed rate for first few years and subsequently converted to floating rate for the remaining term were the two most common types of mortgages originated by the banks and finance companies. Unlike in the US, fixed interest rate mortgages were less popular in Singapore.

Lower loan to value ratio and stringent underwriting requirement in the underwriting process were the two measures widely adopted by banks and finance companies in

mitigating their risk exposure to commercial real estate loans (Figure 2).

When we asked whether they would sell their commercial mortgages in the secondary market as a way of injecting new capital, 60% of the sample firms responded positively. For those who would not consider selling their commercial mortgages, the need to keep the good relationship with their clients and no shortage of liquidity in bank reserve were the two reasons cited against the mortgage sale.

#### *4.2.2. Preferred Structure of CMBS*

Generally, the awareness of the sample companies in the finance, banking and fund advisory sectors towards CMBS is high with 74% of them said that they were familiar with CMBS. However, only 33% of them have ever invested in CMBS. The shortage of supply of CMBS in the local market for institution investment could be one of the possible reasons for the result.

Investors of CMBS are subject to credit risks caused by the borrowers' default in meeting their interest rate and principal payments obligations. Therefore, a spread over the yield of the risk-free Treasury bills is expected for CMBS to compensate for its higher exposure to default risks. Based on the CMBS statistics of Maris and Segal (2002), the mean yield spreads for senior AAA to A CMBS tranches in the US ranged from 125.3 to 184.2 bps. In our survey, 21% of the respondents expected the same yield spread range of 100 to 200 bps for 5-year CMBS senior tranche, if listed in Singapore. A high 401 to 500 bps yield spread range was also chosen by 24% of the respondents, who demand higher expected premiums for undertaking the CMBS credit risks (Figure 3). Other factors like rating given by credit rating agencies, market liquidity of CMBS (ease of selling in the market) and the presence of credit enhancements/guarantees are important to the potential CMBS investors (Figure 4).

The respondents were then asked to indicate the structure and features of CMBS that would appeal to investors. 5-year was the most preferred term to maturity for the CMBS, as indicated by 56% of the respondents. Figure 4 shows that S\$200.1 to S\$200 million

(29%) and above S\$500.1 million (35%) were the two optimal tranche sizes that were deemed to provide adequate liquidity in the market. 69% of the potential CMBS investors prefer non-US\$ denominated issuance. Some concerns of investors with respect to investing in US\$-denominated (foreign currency) CMBS include withholding taxes, volatility of US\$, currency exchange risk, and the hedging costs incurred.

#### *4.2.5. Feasibility of CMBS in Singapore*

Despite the slow take-off of CMBS market in Singapore vis-à-vis other Asian markets like Hong Kong and Japan, 86% of the sample respondents felt that there is potential for a CMBS market to be developed in Singapore.

We asked the respondents to indicate the demand-side and supply-side factors that may impede the development of a CMBS market in Singapore. The current excess liquidity situation in the financial system appears to be the main impediment that holds back the potential mortgage suppliers' plan in securitizing their valuable commercial mortgage assets. From the potential investors' perspective, the lack of supporting services such as default and credit protections is the main cause of concern in investing in CMBS.

The absence of secondary mortgage institutions (SMIs)<sup>12</sup> was also pointed out by the respondent as a potential impediment for the CMBS market in Singapore. 59 sample respondents felt strongly that the establishment of a government sponsored SMI in facilitating CMBS issues would help to jumpstart a CMBS market. Government sponsored SMIs with strong financial support will be able to broaden the secondary mortgage markets through acquisition of diversified pools of commercial mortgages by type, size and geographical distributions.

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<sup>12</sup> The SMIs that have supported active residential mortgage securitization activities in some countries include the Federal National Mortgage Association (FHMA) and Federal Home Loan Mortgage Corporation (FHLMC) in the US, the CAGAMAS (National Mortgage Corporation) in Malaysia, Hong Kong Mortgage Corporation (HKMC) in Hong Kong, Korean Mortgage Corporation (KoMoCo) in Korea.

## 5. Conclusion

The success of CMBS market in the US and the internationalization of CMBS have significant impact on the real estate financing landscape in many Asian markets. We have seen some CMBS market activities in Singapore, though at a slower pace vis-à-vis developments in other markets like Hong Kong, Japan and Korea. In Singapore, innovative structuring of real estate financing via the CMBS framework has been introduced through various initiatives of CMT.

This study conducted a mailed questionnaire to evaluate the feasibility of CMBS market in Singapore. Institutional frameworks that are needed for a sustainable CMBS market in Singapore were also examined. The response rate has been positive with 80 companies responded to the questionnaires. The companies comprise banks, finance companies, insurance companies, asset and fund management and other major players in the financial industry.

The results showed that 86% of the respondents are positive about the potential of establishing a CMBS market in Singapore. In view of current excess liquidity condition in the financial market, there may be resistance in banks and finance companies to part their valuable commercial mortgage assets through CMBS. The fear of disrupting the good relationships with their preferred mortgage clients may also hold back the sale of mortgages by the banks. On the demand side, investors demand for better supporting services in default and credit protections, if they were to invest and include CMBS in their portfolio.

Compared to other developed CMBS markets, the lack of SMI's support was also deemed to be an institutional set-back in the effort of promoting CMBS in Singapore. 59 respondents (83%) were in favor of setting up a government sponsored SMI to jumpstart the CMBS market. The SMI would be able to create the depth and breadth of security types in the market, which is essential for a sustainable CMBS market.

The initiative steps taken by the REIT in utilizing the CMBS market to secure medium to long-term fixed rate capital has opened up new opportunity for real estate developers to tap onto international money market for funding. Government's support through setting up of a SMI to facilitate issuance of CMBS and also provide credit enhancements will be an additional push for more CMBS activities in Singapore. The success of CMBS issuance and distributions will give the necessary depth and breadth in the capital markets to position Singapore as a financial hub in the region.

More empirical tests using the survey data will be intended in future studies to assess how various institutional factors will influence the respondents' support for the creation of a CMBS market in Singapore. Discrete dependent variable regression models will be used to determine factors that are important in creating a successful CMBS market in the views of the respondents.

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**Table 1: Mortgage-Backed Bonds Issued in Singapore**

S/NO.	ISSUER	ISSUE DATE	TERM	PRINCIPAL	COUPON (%)
1	Hong Leong Holdings Ltd	1986	5	18,500,000	7.250
2	Orchard Parade Holdings Ltd	1992	5	51,000,000	5.625
3	Avenbury Property Ltd	1994	5	50,000,000	4.700
4	Goldenview Properties Ltd	1994	5	88,000,000	5.125
5	Orchard Parade Holdings Ltd	1994	5	93,000,000	6.090
6	Orchard Parade Holdings Ltd	1995	5	150,000,000	5.700
7	Branbury Investment Ltd	1996	5	210,000,000	4.930
8	CDL Properties Ltd	1996	5	280,000,000	5.500
9	Eunos Link Technology Park Ltd	1996	5	100,000,000	5.625
10	PLPM Properties Ltd	1996	7	350,000,000	5.060
11	Seasons Green Ltd	1996	5	60,000,000	6.500
12	Century Square Development Ltd	1997	5	146,000,000	5.060
13	Dover Rise	1997	3, 4	130,000,000	6.07-6.20
14	Guthrie GTS	1997	5	75,000,000	3.020
15	MCL Land (RQ) Ltd	1997	5	90,000,000	5.090
16	Orchard 290 Ltd	1997	5	270,000,000	4.600
17	Orchard 300 Ltd	1997	5	180,000,000	4.875
18	Superbowl Holdings Ltd	1997	5	30,000,000	3.530
19	Leonie Condotel Ltd	1998	5	162,000,000	7.120

*Source: Ong, Ooi and Sing (1999)*

**Table 2: Details of Asset Backed Securitization in Singapore in 1999**

Property Securitized	Neptune Orient Line HQ	Robinson Point	Century Square Shopping Mall	268 Orchard Road	Tampines Centre	Six Battery Road
Location	Alexander Road Office	Shenton Way Office	Tampines Shopping Centre	Orchard Road Office	Tampines Shopping Centre	Raffles Place Office
Owner	NOL	Birchvest Investment Pte Ltd. (DBS Land)	First Capital Corporation	RE Properties (DBS Land)	DBS Bank	Birchvest Investments Pte Ltd (DBS Land)
Net floor area (sqf)	217,153	132,869	197,055 <sup>#</sup>	132,111	177,500	482,955
Value of bond issued	\$185 million	\$193 million	\$200 million	\$184 million	\$180 million	\$878million
Unit Price (\$psf)	\$851	\$1,450	\$1,015	\$1,392	\$1,014	\$1,729
Special Purpose Vehicle	Chenab Investments Ltd	Visor Limited	N.A.	Baronet Limited	Tampines Assets Limited	Clover Holdings Limited
Underwriter	DBS Bank	DBS Bank	DBS Bank	DBS Bank	DBS Bank	DBS Bank
Bond Yield	6.75%	6%	N.A.	6.0%	5.625%	6.0%
coupon rate <sup>@</sup>	7.25%	2%		6.5%	6.0%	6.5%
Bond Tenure	10 year	10 year	7 year	10 year	7 year	10 year
Issue date	Mar 1999	22 Jul 1999	Jun 1999	1 Sep 1999	7 Dec 1999	15 Dec 1999

\* The bonds are securitized by receivables or sales proceeds from the Clearwater Condominium project, which was still under construction at the date of issuing of the bond.

# Century Square has a total lettable area of 217,759 sqf, of which 197,055 sqf of the shopping mall were under the ownership and securitized by the First Capital Corporation.

@ The first coupon rate quoted is for the senior bonds while the second one is for the junior bonds in the respective securitization issues.

Source: Sing, Ong and Sirmans (2003)

**Table 3: Summary of CMBS Deals in Singapore**

Issue Date	Maturity Date	Duration	Number of Tranche	Issue size (US\$/S\$)	Collateral Assets	CMBS Issuer	CRE mortgagor	Credit Rating / Agency
26-Feb-02	26-Feb-07	5 years	2 tranches: 1 Fixed Rate Notes @3.86%* and 1 Floating Rate Notes at 0.43% above Singapore dollar swap rate	US\$116.4 million / S\$200 million <sup>&amp;</sup>	3 retail malls in CMT portfolio: Funan the IT Mall, Junction 8, Tampines Mall	Silver Maple Investment Corporation Limited	CapitaMall Trust (CMT)	Rated AAA by Fitch & Standard & Poor's and Aaa by Moody's
26-Jun-03	26-Jun-10	7 years	1 Floating Rate Note @ 0.62% above the US Dollar London Interbank Offered Rate (LIBOR) <sup>#</sup>	US\$72.1 million / S\$125 million	Acquisition of IMM Building for inclusion in CMT portfolio	Silver Maple Investment Corporation Limited	CapitaMall Trust (CMT)	Rated AAA by Fitch & Standard & Poor's and Aaa by Moody's
27-Feb-04	27-Feb-08	4 years	5 tranches: A, B, C, D and E (D & E are unrated) <sup>%</sup>	US\$294.6 million / S\$506 million <sup>&amp;</sup>	3 retail malls: Reivervale Mall, Lot One Shoppers Mall, Bukit Panjang Plaza	CapitaRetail Singapore Limited	3 Single Purpose Trusts (SPTs) that hold the 3 assets	AAA, AA and A for first 3 tranches by Standard & Poor's
16-Mar-04	16-Mar-09	5 years	4 rated tranches: A1 to A4	US\$343 million / S\$580 million	4 office buildings, 1 mixed use commercial and retail complex and two commercial carpark facilities in Singapore	Silver Loft Investment Corporation Limited	CapitaCommercial Trust (CCT)	AAA & Aaa for A1& A2; AA & Aa2 for A3; and A & A2 for A4 by Standard & Poor's & Moody's respectively

\* The Fixed Rate Notes if not redeemed by 26-Feb-2007, it would accrue at the rate of 2.38% above 3-month Singapore Dollar Swap Rate to the final date of redemption on 26 August 2008.

# The Floating Rate Notes in not redeemed by 26 June 2010, will accrue interest at 2.30% above the US dollar LIBOR to the final redemption date on 26-December 2011

& Conversion into US\$ based on exchange rate US\$1: S\$1.7176 (26 May 2004).

% CMT subscribe to S\$60 million of the junior class E-tranche of the CapitaRetail Singapore CMBS, which is expected to pay a minimum 8.2% yield

Source: Author's compilation based on information in CMT Annual reports, Standard & Poor's and Moody's reports.

**Table 4: Details of Three Collateralized Properties in CRS CMBS**

Property	Property Type	Location	Net Lettable Area (sqm)	Tenure	Year of completion	Mortgage Loan (S\$)	Independent Valuation% (S\$)	Loan to Value (L/V) Ratio	Projected Yield <sup>#</sup>
Rivervale Mall	Retail	Sengkang New Town	7,499	99-year w.e.f. 6 Dec 1997	Early 2000	\$40,674,000	\$67,800,000	60%	6.40%
Lot One Shoppers Mall	Retail	Choa Chu Kang	19,327	99-year w.e.f. 1 Dec 1993	End 1996	\$151,956,000	\$253,300,000	60%	6.00%
Buiking Panjang Plaza	Retail	Bukit Panjang	13,572	99-year w.e.f. 1 Dec 1994	End 1996	\$100,544,000	\$167,600,000	60%	6.10%
			<b>40,397</b>			<b>\$293,174,000</b>	<b>\$488,700,000</b>		

*N.B. w.e.f denotes "with effect from"*

*% Independent valuation reported by CB Richard Ellis Pte Ltd*

*# Based on acquisition price)*

*Source: Author's compilation from information in CapitaLand Limited, Moody's and Standard & Poor;s reports.*

**Table 5: Distribution of Sample Firms**

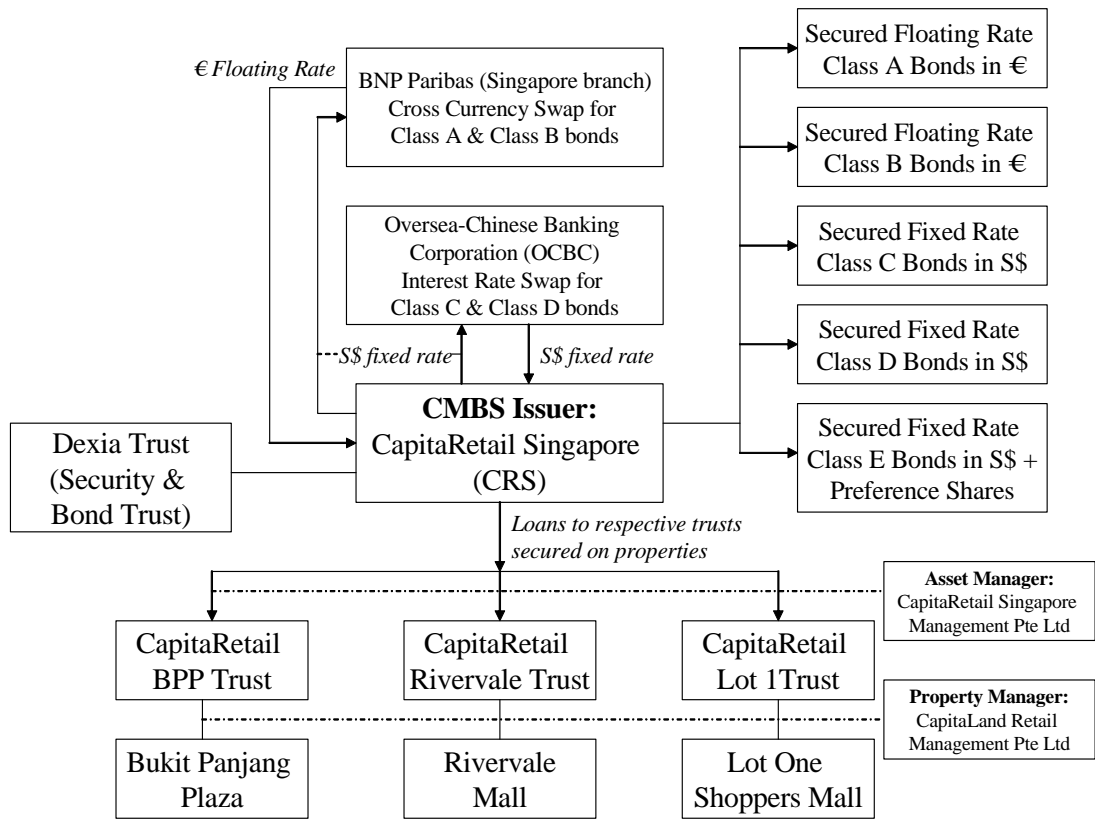
	MAS Directory/ Statistics*	Survey Sample
Full Banks (Local & Foreign)	27	27
Wholesale banks	39	38
Offshore banks	50	50
Finance Companies	4	3
Merchant Banks	51	50
Insurance Companies	143*	94
Fund Management Companies	n.a.	91
Financial Advisers	49*	47
Others: (Associations, asset management companies, securities, corporate finance etc)	n.a.	100
	Total	500

\*2003 statistics on financial institutions in Singapore by MAS  
n.a. denotes "not available"

**Table 6: Characteristics of Typical Commercial Mortgages**

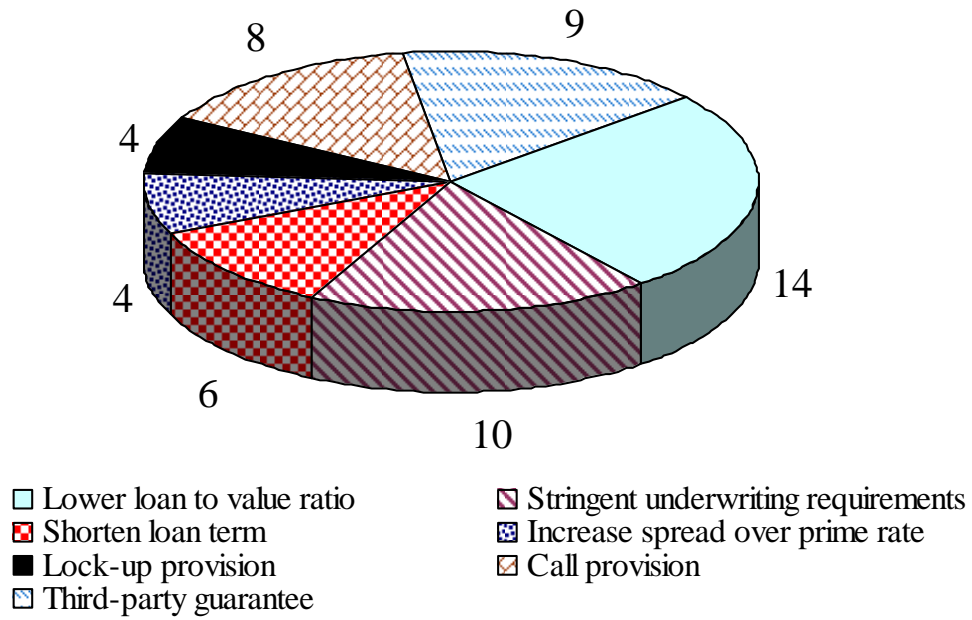
Mortgage Feature	Typical Characteristics
a) Type of mortgages	<ul style="list-style-type: none"> <li>• Interest-only balloon mortgages</li> <li>• Constant amortization mortgages</li> </ul>
b) Mortgage size	<ul style="list-style-type: none"> <li>• Below \$10 millions</li> <li>• \$100 to \$250 millions</li> </ul>
c) Mortgage interest rate	<ul style="list-style-type: none"> <li>• Floating interest rate</li> <li>• Preferential fixed rate for first few years which will be converted to floating rate</li> </ul>
d) Review of mortgage rate	<ul style="list-style-type: none"> <li>• No consensus. Mostly ranging from monthly, quarterly to half-yearly</li> </ul>
e) Mortgage term	<ul style="list-style-type: none"> <li>• 1-5 years</li> </ul>
f) Require collateral	<ul style="list-style-type: none"> <li>• Required for all respondents</li> </ul>
g) Common underwriting criteria	<ul style="list-style-type: none"> <li>• Debt coverage ratio</li> <li>• Loan to value ratio</li> </ul>
h) Special term and conditions incorporated	<ul style="list-style-type: none"> <li>• Prepayment penalty/fee</li> </ul>

**Figure 1: Structure of CapitaRetail Singapore CMBS**

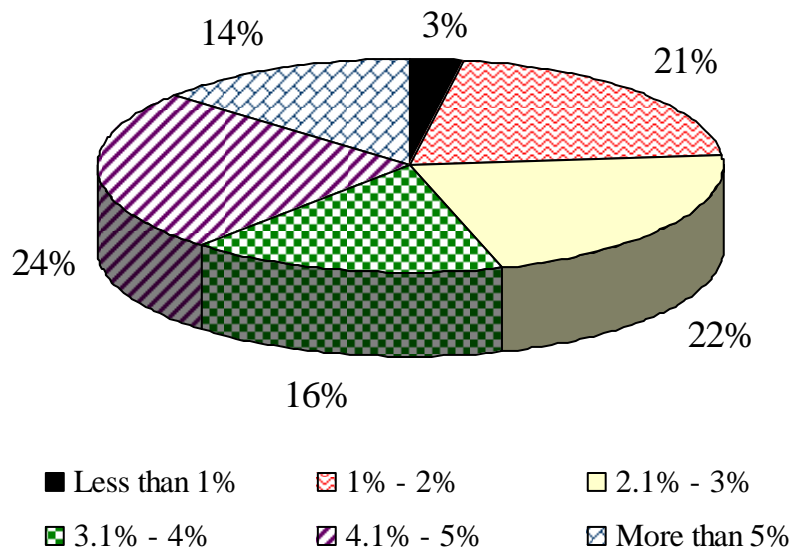


Source: Author

**Figure 2: Measures adopted by banks and finance companies against default risks**



**Table 3: Yield Spread Choices of Sample Respondent for 5-year Senior CMBS**



**Figure 4: Factors (Ex-Positive Yield Spread) that are Attractive to CMBS Investors**

