Received February 2004
Accepted March 2004

Governance and optimal financing for asset-backed securitization

Gang-Zhi Fan, Tien Foo Sing and Seow Eng Ong
Department of Real Estate, National University of Singapore, Singapore
C.F. Sirmans
School of Business, University of Connecticut, Storrs, Connecticut, USA

Keywords *Assets management, Governance, Singapore*

Abstract *Asset-backed securitization (ABS) is an interesting financial innovation whereby debt instruments backed by cash flows generated from income-producing assets are issued for investment purposes in the capital markets. This study examines the characteristics of ABS transactions in Singapore and evaluates whether proper governance mechanisms have been developed to protect ABS investors. We examined the unique features of the Visor case, such as rental guarantee, large block ownerships of junior bonds, credit enhancement, embedded options, managerial relationships between the SPV and servicers, and critically evaluated the effects of these characteristics on the governance of ABS. Rules on separation of banks' participation in ABS and the accountant's requirement of "clean sale" that affect the ABS structure were also discussed. We also develop a simple information asymmetric model to evaluate the pecking order choice of two different financing methods: collateralized loans and ABS.*

1. Introduction

Asset-backed securitization (ABS) is a creative way of raising funds through the issuance of marketable securities backed by predictable future cash flows from revenue-producing assets. Over the past two decades, ABS has grown to become an attractive funding avenue for developer in the capital markets. However, ABS is a relatively new instrument in Asia and research on this instrument has been scarce. Many issues relating to ABS transactions are still not rigorously examined at the current stage. ABS process is a more complex transaction compared to the traditional funding approaches provided by financial intermediaries. In this study, we investigate the characteristics of ABS transactions in Singapore and the governance structure provided to protect ABS investors, using a case study methodology.

Corporate governance is referred to the check and balance mechanisms put in place in corporations to protect investors' interests and assure that returns on their investment are fairly distributed. Issues of corporate governance have attracted great interests from academics, legislators and practitioners in the past decades. Academic studies, however, focus mainly on corporate governance of publicly held companies. Unlike the traditional collateralized loans, ABS is a more sophisticated financial innovation that involves off-balance sheet transfer of assets into a special purpose vehicle (SPV), which in turn issues marketable securities to fund the purchase of the assets. The creation of the SPV structure separates the suppliers of financial capital

The authors wish to thank National University of Singapore for providing research grants for this project.

Journal of Property Investment & Finance
Vol. 22 No. 5, 2004
pp. 414-434
© Emerald Group Publishing Limited
1463-578X
DOI 10.1108/14635780410556898

from the management. Will this structure create potential governance problem in ABSs? Are the ABS investors adequately protected in the ABS structure? These are the questions that will be examined in this study.

The SPV structure has been a key and indispensable element in the ABS transactions (Cooper, 2000). It is also a feature that distinguishes ABS deals from other traditional collateralized bond issues. Studies have been undertaken by researchers to examine various issues relating to ABS transactions. Thomas (1999, 2001) examined wealth effects of securitization transactions of non-government guaranteed assets. Lockwood *et al.* (1996) investigated the wealth changes in the securitization of auto loans, credit card receivables, and trade and lease receivables. In Singapore, buy-back options (Sing *et al.*, 2003) and credit risks (Sing *et al.*, 2004) associated with the ABS transactions were evaluated. Studies that examine governance in SPV structure have, however, been limited. Riddiough (1997) developed a model of asymmetric asset value information to examine how governance can be optimally designed through the proportional split of senior and subordinate bond structure to ensure efficient liquidation payoffs in ABS. This study also attempts to look at the organizational form and managerial structure of special purpose vehicles (SPVs) and evaluates whether they are effective form of governance mechanisms for ABS transactions.

In Singapore, ABS transactions are a recent phenomenon with the first securitization transaction involving the Neptune Orient Line Headquarter located at Alexandra Road in 1999. Nine other ABS transactions involving income-producing properties were subsequently concluded in the subsequent years. The details of the six early ABS transactions are given in Table I. Owing to the small number of ABS deals and the paucity of transaction data, case study approach is used instead of the empirical analyses to study the issues of governance in ABS in this study. This paper is organized as follows. Section 2 reviews concepts and common mechanisms in governance theories. In Section 3, the landscape of capital market in Singapore and the typical structure features of ABS transactions are discussed. Section 4 examines governance issues and mechanisms associated with ABS transactions using the case of SPV, Visor Limited. Section 5 develops a simple information asymmetric model to explain the optimal choice problem faced by the originator between two alternative financing sources. The paper is concluded in Section 6.

2. Corporate governance mechanisms

Shleifer and Vishny (1997) formally define corporate governance as "the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment". Corporate governance consists of a set of mechanisms designed to protect investors against expropriation by insiders and management. Some of these mechanisms include large block investors, board independence and composition, legal protections and external market control via debt issuance. The agency problems arising from the separations of the ownership, the management, and the suppliers of finance in many modern corporations are the potential problems in governance structure (Shleifer and Vishny, 1997). Information asymmetry between the three parties could be mitigated by optimal designs.

2.1 Large/block investors

The ability of individual investors to exert significant influence on corporation management via his/her voting rights is limited when investment shareholdings are

Table I.
Details of asset backed securitization deals in Singapore in 1999

	Property securitized						
	Neptune Orient Line HQ	Robinson Point	Century Square Shopping Mall	268 Orchard Road	Tampines Centre	Six Battery Road	Raffles City
Location	Alexander road	Shenton Way	Tampines	Orchard Road	Tampines	Raffles Place	City Hall
Property type	Office	Office	Shopping Centre	Office	Shopping Centre	Office	Mixed Development
Owner	NOL	Birchvest Investment Pte Ltd (DBS Land)	First Capital Corporation	RE Properties (DBS Land)	DBS Bank	Birchvest Investments Pte Ltd (DBS Land)	Raffles Holdings Ltd (owned 55 percent share)
Net floor area (square feet)	217,153	132,869	197,055[a]	132,111	177,500	482,955	661,011[b]
Value of bond issued	$185 million	$193 million	$200 million	$184 million	$180 million	$878 million	$984.5 million
Unit price ($psf)	$851	$1,450	$1,015	$1,392	$1,014	$1,729	$1,489
Special purpose vehicle	Chenab Investments Ltd	Visor Limited	NA	Baronet Limited	Tampines Assets Limited	Clover Holdings Limited	Tincel Limited
Underwriter	DBS Bank	DBS Bank	DBS Bank	DBS Bank	DBS Bank	DBS Bank	DBS Bank
Bond yield	6.75	6	NA	6.0	5.625	6.0	5.0
Coupon rate[c] (percent)	7.25	2		6.5	6.0	6.5	7.4
Bond tenure (years)	10	10	7	10	7	10	10
Issue date	March 1999	22 July 1999	June 1999	1 September 1999	7 December 1999	15 December 1999	12 June 2001

Notes: [a] Century Square has a total lettable area of 217,759 square feet, of which 197,055 square feet of the shopping mall were under the ownership and securitized by the First Capital Corporation. [b] The lettable floor area of Raffles City comprises an office tower of 379,346.5 square feet and a retail podium that house convention space and shopping space with a lettable floor area of 281,665 square feet. [c] The first coupon rate quoted is for the senior bonds while the second one is for the junior bonds in the respective securitization issues dispersed. On the other hand, large or block investors through concentration of shareholdings in a small number of investors were found to be effective in solving governance problems in the modern corporations (Shleifer and Vishny, 1997). Large investors, usually represented by institutional investors, possess professional knowledge and assets management skills, are more able to carry out effective monitoring and control of the managers' activities.

2.2 Legal protection

Minority shareholders and creditors are well protected by the law against expropriation by controlling the shareholders or managers (Hart, 1995; Porta *et al.*, 2000). When managers act in their own interest, minority investors have the legal rights to extract their investment returns from the managers. Creditors, who possess legal liens on the firm's assets, have the power to repossess and dispose of the mortgage assets in the case of default. Shareholders can also exercise their voting rights to replace the inefficient board of directors (Porta *et al.*, 1998).

2.3 Board composition

The board of directors is an important organization mechanism in monitoring and disciplining the management's activities (Fama and Jensen, 1983a). The board of a public firm is usually composed of independent outside directors and executive or inside directors. The number of outside directors on the board is an indication of the board's independence. The outside directors play an important role in resolving agency problems between the management and the shareholders, and to ensure that minority shareholders' interests are fairly represented in the firm (Fama, 1980; Fama and Jensen, 1983a; Zahra and Pearce, 1989).

2.4 Debt issuance and external market control

Debt is an effective mean of disciplining managers and reducing agency costs (Jensen, 1986). Debt issuance creates an effective external control to discipline manager's action by cutting down free cash flows for spending at their discretion. The liquidation threat also forces the managers to generate sufficient cash flows to meet the periodic debt repayment needs (Aghion and Bolton, 1992; Gale and Hellwig, 1985; Hart, 1995; Hart and Moore, 1989). The managers' reputation will be at stake if they fail to meet the debt repayment obligation of the firm (Diamond, 1989).

2.5 Information asymmetric and security design

Adverse selection and moral hazard are the two common types of asymmetric information problems in financial markets. Lenders face the adverse selection problem when they do not possess private or hidden information as the managers do to distinguish between investment projects with different credit risks. Moral hazard, on the other hand, occurs when borrowers apply funds to uses other than those agreed on with the lenders. It is therefore, in the interests of the lenders to design a set of contractual arrangements that will ensure that the interests of the borrowers and lenders are aligned[1].

Adverse selection caused by the asymmetry of information available to investors and security issuers is also prevalent. DeMarzo and Duffie (1999) developed a liquidity-based model of security design assuming that the security issuer or underwriter has superior information about the distribution of the cash flows from the underlying assets. Rational investors will consider the securities issued as "lemon" (Akerlof, 1970), and will only purchase them at lower prices. To resolve this problem, the seller needs to retain fractions of the issued security as a credible, but costly, signal.

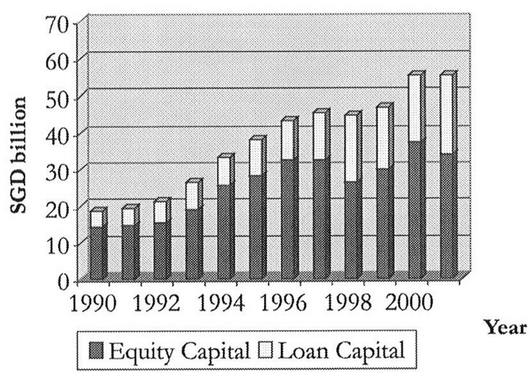
In the asset-backed securities, the debt cash flows can be reengineered into a risk less security that is marketed to outsiders and a risky security that is retained internally. Riddiough (1997) shows that adverse selection risk can be internalized through retention of the risky or junior security. He also suggests that governance is more efficiently structured by allowing junior security holders to control the debt renegotiation process when default occurs. When a higher level of subordination is set, the actual collateral quality of the senior security can be preserved by explicitly restricting the extension flexibility. The issue of moral hazard in ABS has also been addressed by Fan *et al.* (2003), who found that ABS structure offers an effective way to reduce information asymmetry and manage agency problems.

3. Financial market landscape in Singapore

3.1 Traditional sources of real estate capital in Singapore

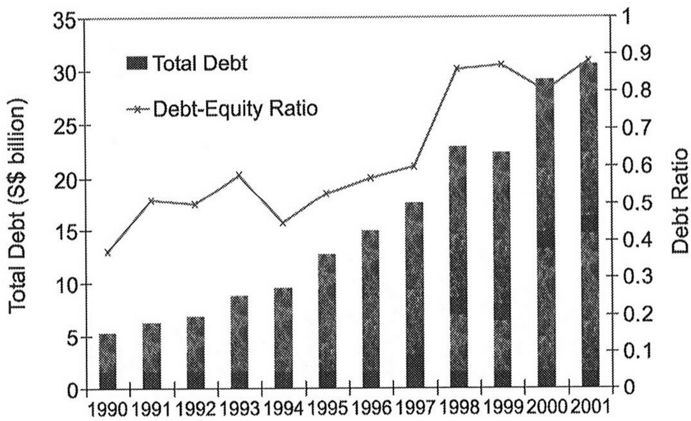
Equity market and wholesale loans from banks and financial institutions are the two most common sources of capital for listed property companies in Singapore. The total capital employed as in 2001 stood at S$56.82 billion, which was composed of S$21.13 billion loans and S$34.05 billion equity (Figure 1). The average gearing (debt over equity) ratio of Singapore property companies was estimated at 0.66 over the period from 1990 to 2001. The debt-equity ratio of the sector has increased substantially after 1998, and the ratio was 0.88 at the end of 2001 (Figure 2).

The cost of borrowing from banks is relatively competitive at 5.37 percent compared to the 12-month fixed deposit rate of 3.8 percent. The historical spread of the interest rate was estimated at 2.83 percent on average (Figure 3). The low cost of borrowing cum the flush of liquidity of commercial banks (Figure 4) in Singapore make the wholesale loans from bank an attractive and relatively cheap source of funding for most of the property companies in Singapore. The only constraint faced by the property companies is the high gearing ratio, which motivates them to look for alternative sources of finance other than bank loans.



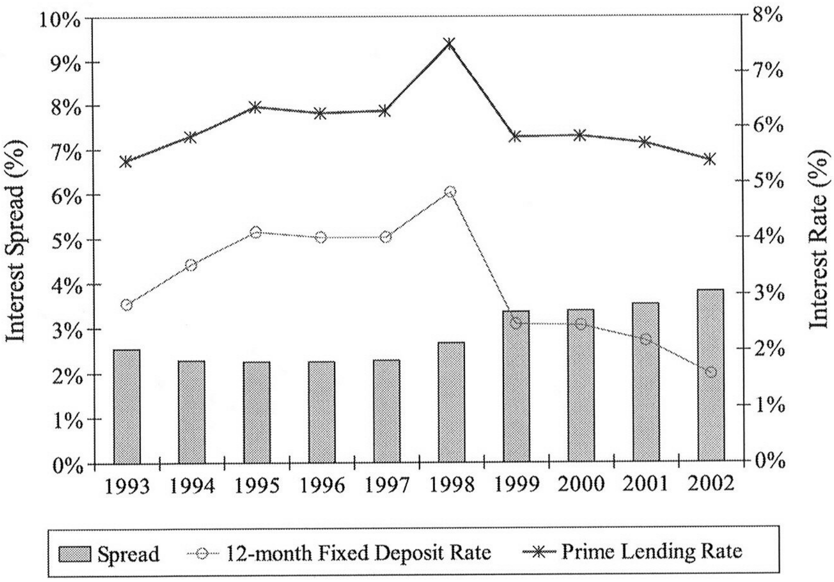
Source: Ooi *et al.* (2002)

Figure 1.
Capital composition of listed property companies in Singapore



Source: Ooi *et al.* (2002)

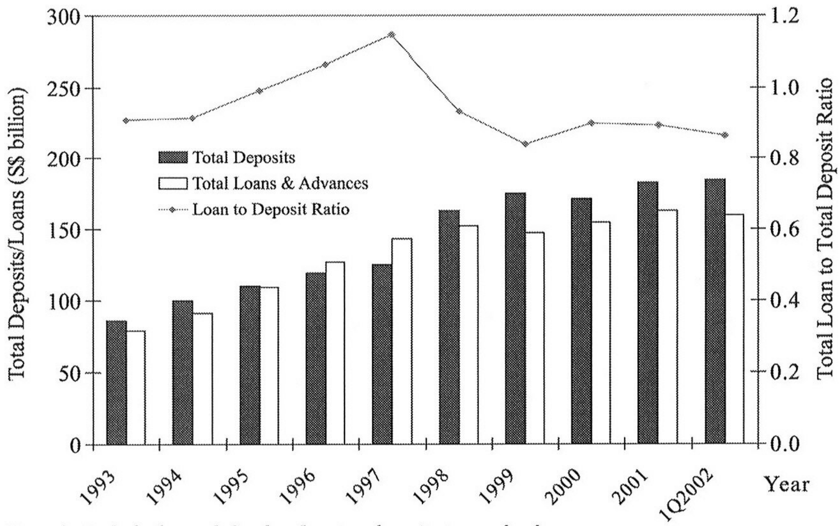
Figure 2.
Capital structure of listed property companies in Singapore



Source: Monetary Authority of Singapore (MAS)

Figure 3.
Prime lending rate and interest spread

3.2 Development of ABS market in Singapore
ABS is a relatively new financial innovation in Singapore. In Singapore, ABS is referred to a contractual arrangement whereby debt instruments backed by the cash flows generated from real estate assets are securitized into tradable securities, which are issued and traded in the capital market. Following the Asian financial crisis in 1997 and the 1998 liberalization of the financial policies by the Monetary Authority of Singapore (MAS)[2], ABS transactions started to become popular providing an



***Deposits** include demand, fixed and saving deposits to non-bank customers and S$ negotiable certificate of deposit*

***Loans & advances** include overdraft, term loan and others*

Source: MAS

Figure 4.
Liquidity of commercial banks

alternative source of funding for developers, and at the same time opened up a new investment medium for institutional funds in Singapore.

The first securitization transaction in Singapore involved the sale of the headquarter office building of the largest shipping company in Singapore – Neptune Orient Lines (NOL), in 1999. A SPV, Chenab Investments Ltd, was established to purchase the 26-storey building valued at S$185 million. It funded the purchase by issuing ten-year fixed-rate bonds. The success of the NOL transaction has spun-off a series of securitization deals involving prime commercial buildings in Singapore. In 1999 alone, a massive S$1.82 billion worth of bonds securitized on six commercial properties were issued. The details of the securitization transactions are summarized in Table I.

3.3 Structure of ABS deals

In the ABS transactions, a SPV is established with the intention to create a "bankruptcy remote" structure by separating the real estate asset off the originator's balance sheet. This structure insulates the ABS investors against the credit risks of the originator. The SPV obtains all the ownership rights and obligations of the assets via the equitable assignment. This arrangement distinguishes it from the traditional collateralized loans and mortgage pay-through securities, where real estate assets are retained on the balance sheet of the originator (Sing *et al.*, 2003). Figure 5 shows a diagrammatic illustration of the structure of the ABS deals.

SPV was a legal entity incorporated under the company act with the sole objective to facilitate the purchase of the securitized real estate and to issue bonds and preference shares to finance purchase. There are strict restrictions imposed on the scope of activities and operations, the appointment of independent directors and

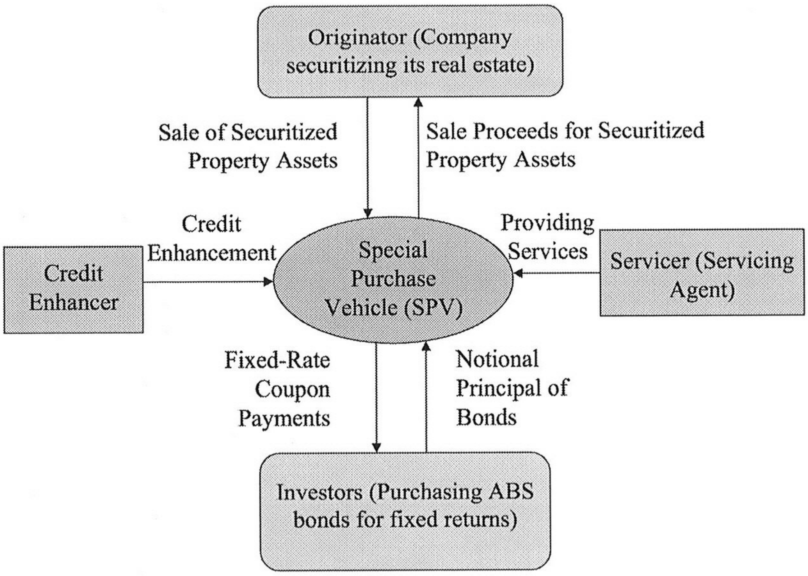


Figure 5.
Structure of asset-backed securitization

debt issuance policy of the SPV. The ABS bonds are non-recourse debt securities. These restrictions are put in place to ensure that bankruptcy remoteness is maintained and the probability of bankruptcy of the SPV is reduced. The SPVs are restricted from incurring recourse debt and they rely only on the cash flows generated from the securitized real estate to refund interests and principals.

The debts securities issued by the SPVs can be partitioned into two classes: senior bonds and junior bonds, distinguished by different priority of claims on the cash flows accrued to the SPVs. The senior bonds with higher priority and better credit quality are distributed to investors who prefer limited credit risk through either private or public placement arrangements. Junior bonds, on the other hand, are retained by the originator or sold to firms that demand higher returns at the expense of higher risks. When the ABS bonds are redeemed, the senior bonds will be paid off first before the junior bondholders.

In ABS case, the bonds are normally issued up to the market value of the commercial real estate. The credit enhancement takes the form of leasing back and selling back options against the originator. The originator in leasing back the building as the lessee will also guarantee generated cash flows that are sufficient to meet the bondholder's debt obligation. The SPV has also obtained a sell-back option, which gives the right to the SPV to sell back the real estate to originator at the market price at the maturity of the bond. This will ensure that the outstanding balance can be fully redeemed at the maturity.

The underwriting of the ABS bonds by reputable financial institutions such as the DBS bank, the second largest listed bank in Singapore, also sends a positive signal to the investors. With the knowledge and experience in the capital market, the financial institutions are able to design different classes of securities and set offering prices that will meet different investing requirements of investors. Investors of ABS bonds include banks, financial companies, insurance companies, as well as individual investors.

A professional management company (servicer) was normally appointed by the SPVs to perform the day-to-day operations of the underlying property, the collection of rental incomes, or the provision of services to property tenants. Other than the routine property management function, SPV is also required to carry out cash flow management, property tenant services, monitoring underlying property condition, and reporting duties. It will also have to ensure that the collections of rental revenues are distributed as coupon payments to the investors.

4. Governance mechanisms in ABS – a Visor limited case

In ABS transactions, the securitized assets are real estate assets. Real estate assets are differentiated and heterogeneous due to the uniqueness of their location and architectural characteristics. Three major features of real estate transactions are identified by Sirmans (1999) as the main causes of governance problems – non-standardization of product, information asymmetry and potential for generating quasi-rents[3] that must be distributed *ex post*. The SPV management's action (hidden action) is not observable. It is difficult for the ABS investors to force the SPV to pick a pareto-optimal managerial action. Investors can only set appropriate incentive structures that will condition the management's utility to the observable variables, and thus eliminate the moral hazard problem.

ABS offers an interesting case of examination for governance problems. We will evaluate various governance mechanisms and possible conflicts in the principal agent relationships in the ABS using the Visor limited case.

4.1 The Visor ABS

The Visor Limited (Visor) is the SPV set up by the originator the former DBS Land[4] to acquire and hold the sale shares of Robinson Point Private Limited (RPPL), a holding company that owns the 21-storey prime office building located at Robinson Road. The sale and purchase agreement was completed in June 1999 with Birchvest Investment Private Limited (BIPL), a wholly owned subsidiary of DBS Land, that possesses the 100 percent issued share capital of the RPPL. Visor issues S$193,000,000 in principal of bonds and 19,300 preference shares with the subordination structure of S$125,000,000 senior bonds and 12,500 "A" preference shares, and S$68,000,000 junior bonds with 6,800 "B" preference shares to finance the purchase of the RPPL. Out of the $125 million senior bonds, only S$20,000,000 senior bonds and 2,000 "A" preference shares were placed by public offer. The bonds will be secured by, *inter alia*, a first charge over the shares held by RPPL, and also subsequently be additionally secured by the Robinson Point office property. The preference shareholders will be entitled to the preference dividend and a special preferential dividend upon the sale of the RPPL shares or property. The structure of the Visor ABS is shown in Figure 6.

The senior secured bonds bear interest at a fixed rate of 6 percent per annum payable semi-annually in arrears, whereas the junior secured bonds bear interest at a fixed rate of 2 percent per annum payable semi-annually in arrears. All sale shares of RPPL are held by Bermuda Trust (Singapore) Limited on behalf of a charitable trust[5].

4.2 Embedded option features in Visor ABS

The sale of Robinson Point from BIPL was not a simple "clean sale" arrangement. Underlying the transaction, there were complex options embedded in

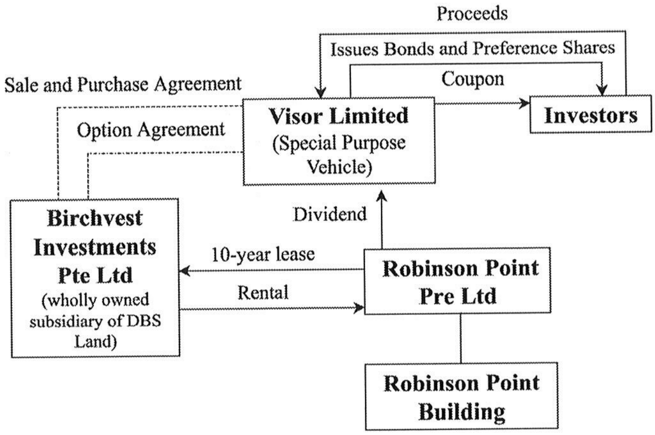


Figure 6.
Visor limited – SPV in Robinson point ABS

the agreement as shown in Figure 7. These embedded option features, if not fairly executed, could be the roots of potential managerial conflicts and governance problems. The lease-back options were granted to BIPL, which will lease the Robinson Point office property back from RPPL for a period of ten years coinciding with the maturity of the bonds. The leases are subject to the existing tenancy agreement between RPPL and the tenants as at the date of the agreement. BIPL will pay RPPL rental and other income, which will be equivalent to or exceed the interest payments to be made by Visor under the bonds. The originator, DBS Land, guaranteed the obligations and undertaking of Birchvest under the lease agreements.

The call and put options built into the sale and purchase agreement are also unique features in the Visor and other ABS deals in Singapore. The call option, if exercised, allows BIPL to buy-back the share capitals of RPPL from Visor at a price, which is equivalent to the original price of the property plus a fraction of between 25 and 35 percent of potential capital gains. The buy-back options can be exercised anytime from the first day of 37th month to the last day of 114th month from the issue date.

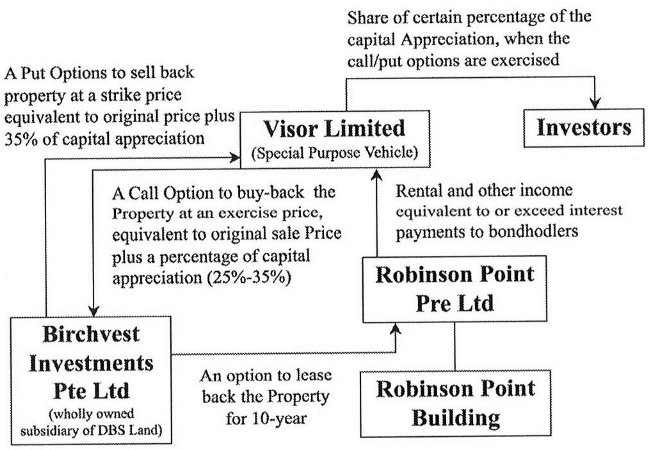


Figure 7.
Embedded options structured in visor ABS

In return, Visor is also granted a put option, which gives the SPV the right to sell back the issued RPPL shares at the original price plus a 35 percent of the capital appreciation of Robinson Point at the exercise date of the option. The sale-back option will only commence on the first day of the 115th month to the date falling 30 days after the date of maturity of the bonds. The embedded options are valuable and they are valued using the binominal tree option-pricing model by Sing *et al.* (2003).

4.3 Potential governance problems in ABS

4.3.1 Rental guarantee. In the leasing agreement between BIPL and RPPL, BIPL will pay rent and hiring charge of approximately S$740,000 per month and a naming fee of S$70,00 for the first year of the lease as specified in the prospectus of initial public offerings. These cash flows amount to a gross yield of 4.63 percent, which is lower than the fixed bond coupon rate of 6 percent promised to the senior bondholders. The gross revenue received from BIPL will be S$8,950,000, and the coupon payment obligations of Visor is S$8,860,000 per year comprising of S$7,500,000 interest for senior bonds and S$1,360,000 interest for junior bonds. The surplus from the rental revenue of S$90,000 will not be able to cover the property tax, which was approximately estimated at $895,000 based on the current tax rate of 10 percent, prior to other expenses like maintenance and insurance. The originator and BIFL will guarantee any shortfalls in the revenue collection of RPPL to meet the interest obligations of Visor. This rental guarantee provides a form of credit enhancement for bond investors. This lease-back arrangement removes the uncertainty associated with the management of the leases by RPPL, and transfers the risks to BIPL, which will have to ensure that the property is competitively leased at market rate, and the condition of the property is well kept.

Given the current office market yield from 4 to 5 percent (gross) and the current glut in the office market, the lease-back agreement is important from the Visor's point of view. It is also the bondholders' interest to ensure that the lease-back provision is binding throughout the life of the bonds. The rental guarantee offers a form of credit enhancement, which not only mitigates the financial uncertainty in ABS transactions, but also helps to protect the ABS investors against being expropriated.

4.3.2 Credit risks and credit rating. In Visor ABS, the standard two-tiered subordination structure is adopted to provide credit enhancement to the bond issues. The SPV finances the purchase of the securitized properties by issuing two classes of debt securities, which are divided by a ratio of 65 : 35 percent between the senior and junior tranches. Junior bonds are subordinated in payment of principal and interest to senior bonds. The junior bondholders bear more uncertainty and risks because they absorb losses in the pecking order before the senior bondholders. Riddiough (1997) proposes that the junior bondholders be given the control in the distress renegotiation process in the case of default, because they hold the first loss position in the RPPL shares. The Visor SPV was incorporated with only ordinary issued share capitals of S$10,000, which are held by Bermuda Trust Limited on behalf of a charitable trust. The monitoring role of this trustee on the company performance is limited. Moreover, the external market of control is thus solely relied on the bondholders, in particular the junior bondholders.

The Visor ABS, like other ABS issued in 1999, credit rating by independent agencies was not carried out. Owing to the large block of junior bond tranche retained by the originator, rating agency will be reluctant to assess the severity and the probability of losses for the ABS bonds. Sing *et al.* (2004) developed a swap valuation model to evaluate the credit risk of the ABS bonds by assuming the ABS deal as a simple swap of floating rate risk (rental cash flows) for a fixed rate risk (bond interest payments) between the originator/SPV and the bondholders. The results show that the risk premium of the ABS bonds increases as the rental volatility increases.

4.3.3 Ownership of junior tranche. The originator of the Visor ABS, through its wholly-owned subsidiary BIPL, fully subscribed to the S$68,000,000 junior bonds and the "B" preference shares issued. The junior bonds bear interest at a fixed rate of 2 percent per annum, which was lower than the interest given to the senior bondholders of 6 percent per annum. Is this a positive signal sent by the originator on the credit quality of the ABS bonds? Compared to other ABS bonds as summarized in Table I, this is the only one that contains bond interest structure that is not commensurate with the risk level of the bonds. If the incentive structure given to the junior bondholders were inadequate in the Visor ABS, it would add to the costs of securitizing the RPPL to the originator. The signal on the low junior bond interest, which though intends to remove lemon-related problem, if not communicated effectively to the market may lead to different lemon problem arising from the increased fear that the high costs incurred in the securitization may cause further distress to the originator. The good reputation of the originator, the CapitaLand, however, provides a credit assurance to investors in Singapore, which may alleviate to some extent the fear of investors on the likelihood of default of the originator.

In the Visor ABS, BIPL assumes dual roles as both the large block holders[6] of junior bonds and also the head lessee of Robinson Point. It helps to mitigate information asymmetry problems with respect to the management of the leases and maximization of the revenue of the properties. If the office property does not generate sufficient incomes or cash flows to meet the bond coupon payment obligations, BIPL and the originator will have to cover the shortfalls in the cash flows. Like Riddiough (1997) suggests, there is an incentive for BIPL as the block junior bondholders in this case exert control in the negotiation of leases and the distribution of the cash flows in the event of default. In this case, it may not be always to BIPL's advantage to negotiate for an extension of the term, if the costs of having to guarantee the shortfalls in rental revenue becomes excessive. This observation may contradict that suggested in Riddiough's (1997) model.

4.3.4 Buy-back options. In November 2002, just merely after the three-year "lock-up" period for redeeming the bonds, CapitaLand (the merged entity of the former DBS Land), the originator of the Visor ABS, exercised the call option to buy-back Robinson Point at the issued ABS bond price of S$193 million. The sale proceeds were used by the SPV to redeem all the bonds issued to finance the acquisition of RPPL and Robinson Point at the time of securitization. There were no preferential dividends distributed as the property was repurchased at the original par value. The exercise of the buy-back options allows the originator, CapitaLand, to refinance the debt at the current lower interest rates from bank, which according to analysts, may help the originator to save S$12 to S$16 million per annum in interest expenses (Rashiwala, 2002).

The buy-back options were also exercised in two other ABSs on 268 Orchard Road and Century Square Shopping Centre (CSSC). In the case of the CSSC, the originator repurchased and redeemed the S$200 million bonds in December 2002. It then divested the property to a private property fund GRA Singapore and reaped a net profit of about S$24.7 million. The buy-back options embedded in the ABS deals were clearly valuable, which could be estimated simply as the pay-off over the original price at 12.5 percent in the CSSC case, which was close to the estimation of 15.5 percent for 268 Orchard Road by Sing *et al.* (2003) using hypothetical inputs. Since the originator and BIPL was both the holder of the call option and also the beneficial holder of the junior tranche bonds, moral hazard problem may arise if the exercise of the call option was not done to the interest of the senior bondholders. In other words, the senior bondholders' interest in the "A" preference shares is dependent on the fair market price set in the purchase and the capital sharing profit can then be distributed to the senior bondholders as special preferential dividends.

4.3.5 Board independence and composition. The Bermuda Trust (Singapore) Limited holds the 10,000 ordinary issued shares of Visor on behalf of a charitable trust. The board is composed of only two independent directors, who would carry the duties. The same board composition and structure have been adopted for Baronet, the SPV for the securitization of 268 Orchard Road. The independence of the directors in the Visor's board is important for the purposes of monitoring and disciplining managers (Byrd and Hickman, 1992; Lee *et al.*, 1992; Rosenstein and Wyatt, 1990). Although a SPV is a separate legal entity especially created for the purpose of bankruptcy remoteness from its originator, it does not, however, prevent employees or directors of the originator firms from being appointed as a director on the board of SPV (Chen, 2001)[7].

The SPV is created with the objective of issuing debt securities to finance the acquisition of the office property. The role of running the day-to-day operations of the property will be relegated to either an external or existing management team. The SPV though adopting a pay-through structure does not have an active involvement in management of the property, since the leases of the property have been transferred fully to BIPL at the beginning of the securitization.

4.3.6 Managerial relationship between SPV and the property manager. In the ABS transactions, the suppliers of capital are the investors and holders of ABS bonds issued by the originators, and they do not have equity ownership of the SPV although they own the preferential shares of the Visor SPV, which however do not grant them any executive voting rights. "For debt investors and employees, everything (literally) is open to contract; for equity investors, almost everything is open to choice", as Easterbrook and Fischel (1989) indicate, the SPV manager has little or no room to expropriate the free cash flow of the bond investors' vis-à-vis other public listed companies.

In the Visor ABS, RPPL, the holding company for Robinson Point, will act as the "servicer" to collect rental and other revenues from BIPL on behalf of the SPV. The rental revenue will then be distributed by the SPV to the bondholders on a semi-annual basis in the following order:

(1) setting aside funds to fulfill the required reserves;

(2) payment of any income tax;

(3) payments of fees, costs, expenses and indemnities of trustee or service providers;

(4) payments of any costs, charges, liabilities, expenses and indemnities of the SPV;

(5) on a *pari passu* basis, repayment of interests and principal payable; and

(6) the surplus as a performance-related payment (or benefit) to the servicer[8] (Ng, 2000).

For publicly held companies, incentive contract is a widely used strategy to control corporate governance problems. Incentive contract aims to align managerial behavior with the interest of shareholders through strengthening the link between managers' interest and corporate performance. It can adopt a variety of forms such as basic salary, cash bonuses, stock options, and performance-based dismissal threat. Basic salaries are determined by firm-external salary levels, which are independent of the firm's performance, whereas, cash bonuses are usually linked to the current firm accounting earnings and/or stock market returns, and they are used to reward the manager for short-term firm's performance. Stock options are effective long-term financial incentives that can be relied on to align managers' interests with those of shareholders (Ezzamel and Watson, 1997). Murphy (1985) shows that without the stock options, the effect of managerial remuneration on corporate performance is quite limited (Barro and Barro, 1990). In the ABS transactions, long-term incentive structure is not used to motivate the effort of the managerial and board of directors, as the ABS will have a finite lifespan of ten-years. The leasing risks in the Visor case have been transferred to BIPL. The performance-based compensations including basic salary, cash bonuses and dismissal threat are likely to be more effective for the management of the SPV properties.

4.3.7 Changes to ABS guidelines and accounting standard. Legal rights of ABS bondholders can be roughly partitioned into two classes: rights before default and rights after default. The rights before default may include the right to have complete information regarding the bonds being issued publicly, to be kept reasonably informed of any developments that may influence the investment, the lien against the securitized property assets, and even to demand certain forms of credit enhancements. On the other hand, the rights after default include the right to remove or replace the servicer when it fails to assume its responsibility, to elect the specific type of bankruptcy proceeding when the SPV cannot perform the debt obligations, and to vote in deciding how to liquidate or reorganize the debtor, while the enforcement of these rights should be based on the principle of the consent of bondholders of more than a stated percentage.

To better monitor banks participation in the SPV and securitization, the Monetary Authority of Singapore has issued Notice 628 on 4 December 2000 to require a clear separation of bank from the SPV. The role of banks as seller, manager, servicer or provider of credit enhancement or liquidity facilities in an asset securitization transaction shall be de-linked from the role of SPV. The separation requirement limits banks' participation in the SPV activities through owning share capital in the SPV. The close association of the banks with the SPV may compel the bank, which attempts to protect its reputation, to support the SPV beyond the legal obligation. This new requirement will restrict the banks' action in trying to securitize SPV's property by allowing the originator to be converted into ABS preference shares or bonds.

One of the important advantages of setting up the SPV is to facilitate off-the-balance sheet transfer of asset from the originator's book. In an accountant's term, the asset is derecognized from the originator's book, and the gearing ratio is improved correspondingly. With the move towards adopting the new International Accounting Standard (IAS) and the Standard of Interpretation Committee (SIC) rule, more stringent requirement is imposed on the definition of "clean sale" of the asset. The originator's actions in terms of holding large block of junior tranche, providing rental guarantee, holding on to the buy-back right and the option to wind-up the ABS, suggest that the originator has not fully surrendered his control on the asset. Under the IAS 39 and SIC 12, the sale of securitized asset falls short of a "clean" sale, and the asset will be consolidated back to the originator's balance sheet. The ABS is downgraded to the usual collateralized borrowing structure. This is one of the reasons that motivate the originators to repossess their securitized properties, and redeem the ABS bonds.

5. Optimal choice of financing alternatives

The pecking order of financing sources faced by the originator under information asymmetric condition is evaluated in a single project framework in this section. Let us assume that the originator is faced with only two sources of financing for a project worth $\$P$. In the traditional collateralized loan arrangement, the originator will have to folk up equity through internal fund equivalent to a fraction of the project value, i.e. $E = (1 - \phi)P$, where the loan advanced by a bank is not more than $L = \phi P$. The equity or internal fund, if not invested in the project, is expected to carry an opportunity cost of r_f to the originator, i.e. the originator expects a return of r_f if the equity E is invested in a risk-free investment. In advancing the loan, the bank's cost of capital is r_L, and it would have the seniority of claim on the property in the case of default.

Let the aggregate rent of the leaseable space of the property be a stochastic variable denoted by X. The subject property, if fully let, will generate a cash inflow of CF_i with a probability of α_s that the property will generate positive cash flow. The term $1 - \alpha_s$ denotes the probability that the property will fail and the borrower will default on the debt payments. The cash flow will be used to make the periodic debt services to the bank. The expected profit, $E\pi_L$, in acquiring the property using traditional bank financing can be represented as:

$$E\pi_L = \alpha_s[CF_i(X) - (1 + r_L)L] - (1 + r_f)E \quad (1)$$

The second financing alternative available to the originator is to structure the property acquisition in an ABS arrangement, where the property will be sold at $\$P$ to a SPV. In return, the originator will use the sale proceeds to pay-off the loan of $L = \phi P$, and the remainder of the sale proceeds is the equity capital of the originator, which will be used to subscribe to the junior bond trance that give a coupon rate of r_j. The coupon for the senior bond is given at r_s. The cost of securitization in this case is assumed to take the form of guarantee of shortfalls in rental revenue, $\{S = \mathrm{Max}[CF_i(X) - (1 + r_s)B_s - (1 + r_j)B_j, 0]\}$, to meet the interest payment of both junior and senior bond tranches, the combined principal of which equals to the property price, i.e. $P = B_s + B_j$, where $B_j = (1 - \phi)^*P$. The expected profit to the originator when the ABS option, $E\pi_S$, is chosen can be represented as:

$$E\pi_S = (1 + r_j)B_j - S \quad (2)$$

The originator's choice of the two financing alternatives is dependent on whether the difference in the expected profits derived from the collateralized loan and the ABS is negative or positive:

$$E\pi_L - E\pi_S = \alpha_s\left[CF_i(X) - (1 + r_L)L\right] - (1 + r_f)E - (1 + r_j)B_j + S < 0 \quad (3a)$$

$$E\pi_L - E\pi_S = \alpha_s\left[CF_i(X) - (1 + r_L)L\right] - (1 + r_f)E - (1 + r_j)B_j + S > 0 \quad (3b)$$

If the difference is negative, i.e. equation (3a), there will be economic incentives for the originator to securitize the property compared with taking the traditional loans in financing the property, and vice versa in equation (3b). The choice of the alternative financing methods is very much dependent on the volatility of the rental, the loan interest rate, the bond yields for both senior and junior tranches, and also the proportion of the equity to loan in the investment[9]

6. Conclusion

ABS is an interesting financial innovation whereby marketable securities backed by cash flows generated from revenue-producing assets are offered for investment purposes in the capital markets. The study, reviewed the current market landscape for real estate finance in Singapore and discussed in details the structure and characteristics of the ABS transactions in Singapore.

Corporate governance is a set of mechanisms used to protect outside investors against expropriation by managers and controlling directors. Using the Visor ABS as the reference case in this study, several governance problems and managerial issues were discussed with some anecdotal evidences and facts. Some of the unique features in the Visor ABS structure that have effects on the effective governance in the ABS like rental guarantee, block ownership of junior bonds, credit risk, embedded options, board independence and managerial relationships between the services and the SPV were critically discussed. We also highlight the important changes to the ABS guidelines and the accounting rules that have implications on the development of the ABS. The de-recognization of the asset from the originator's book is one of the main obstacles to the development of ABS market. The existing originators of ABS, with sophisticated control mechanisms put in place in the transfer agreement like buy-back options, has "defeated" the clean sale purposes as required by the IAS and SIC accounting rules. The securitized properties have been consolidated back to the originator's books, and have nullified the economic benefits of creating the off-balance-sheet financing through ABS.

The optimal choice in the pecking order of two different financing sources between traditional collateralized loan and ABS was explained using a simple information asymmetric model. More analyses need to be done to improve the structure of the model. Fan *et al.* (2003) have examined some of the moral hazard issues in ABS.

ABS was one of the most important innovations in financial markets over the past two decades, and has provided an attractive source of finance for a broad range of companies. A better structuring of ABS that will meet the accountant's clean sale requirement, and at the same time, provide sufficient governance mechanisms to protect the interests of bondholders will be crucial for the development of ABS as a viable financing tool in real estate market in Singapore.

Notes

1. For a comprehensive survey on security design studies, see Harris and Raviv (1992).
2. MAS is the *de facto* central bank of Singapore
3. The notion of quasi-rent is similar to economic profit, which is the total returns from an investment in capital goods if they have no alternative use, or the returns over the alternative use if such a use exists.

4. The listed DBS Land was renamed CapitaLand after the successful merger with the government property company, Pidemco Land. CapitaLand is the biggest listed property company on the Singapore Exchange in terms of market capitalization.
5. The charitable trust is created to hold the sale shares for tax efficiency purposes. The issues and type of charitable trusts are not discussed in this paper.
6. There is an increasing evidence of large shareholders carrying out the functions of corporate governance (Gugler, 2001b; Nesbitt, 1994). Similar to the large shareholders, large creditors have the potential to exert positive influence on the corporate governance of firms (De Long, 1991; Gilson, 1990; Gorton and Schmid 1996).
7. However, for banks participating in ABS deals, the Guidelines on Asset Securitization by Banks, issued by the MAS on 6 September 2000, prescribes that the banks (serving as a seller, manager, servicer or provider of credit enhancement of liquidity facilities in the ABS process) shall not have any directors, officers or employees on the board of the SPV unless the board is made up of at least three members and where there is a majority of independent directors.
8. This refers to any surplus income generated from the underlying assets after meeting all abovementioned payment obligations.
9. This study, however, does not intend to provide any numerical simulation to analyze sensitivity of various parameters in the model.

References

Aghion, P. and Bolton, P. (1992), "An incomplete contracts approach to financial contracting", *Review of Economic Studies*, Vol. 59, pp. 473-94.

Akerlof, G. (1970), "The market for 'Lemons': qualitative uncertainty and the market mechanism", *Quarterly Journal of Economics*, Vol. 89, pp. 488-500.

Barro, J.R. and Barro, R.J. (1990), "Pay, performance and turnover of bank CEOs", *Journal of Labor Economics*, Vol. 8 No. 3, pp. 448-81.

Byrd, J.W. and Hickman, K.A. (1992), "Do outside directors monitor managers? Evidence from tender offer bids", *Journal of Financial Economics*, October, pp. 195-221.

Chen, J. (2001), "An overview of asset securitization in Singapore", *Journal of International Banking Law*, Vol. 16, pp. 246-54.

Cooper, I. (2000), "Comments on the paper by Ernst-Ludwig von Thadden: liquidity creation through banks and markets: a theoretical perspective on securitization", *Economic Notes*, Vol. 29 No. 3, pp. 393-7.

De Long, J.B. (1991), "Did Morgan's men add value? An economist's perspective on financial capitalism", in Temin, P. (Ed.), *Inside the Business Enterprise: Historical Perspectives on the Use of Information*, University of Chicago Press, Chicago, IL.

DeMarzo, P. and Duffie, D. (1999), "A liquidity-based model of security design", *Econometrica*, Vol. 67 No. 1, pp. 65-99.

Diamond, D. (1989), "Reputation acquisition in debt markets", *Journal of Political Economy*, Vol. 97, pp. 828-62.

Easterbrook, F.H. and Fischel, D.R. (1989), "The corporate contract", *Columbia Law Review*, Vol. 89 No. 7, p. 1418.

Ezzamel, M. and Watson, R. (1997), "Executive remuneration and corporate performance", in Keasey, K. and Wright, M. (Eds), *Corporate Governance*, Wiley, New York, NY, pp. 61-92.

Fama, E.F. (1980), "Agency problems and the theory of the firm", *Journal of Political Economy*, Vol. 88, pp. 288-307.

Fama, E.F. and Jensen, M.C. (1983a), "Separation of ownership and control", *Journal of Law and Economics*, Vol. 26, pp. 301-25.

Fan, G.Z., Ong, S.E. and Sing, T.F. (2003), "Asset backed securitization: an alternative solution to moral hazard?", working paper, Department of Real Estate, National University of Singapore.

Gale, D. and Hellwig, M. (1985), "Incentive-compatible debt contracts: the one-period problem", *Review of Economic Studies*, Vol. 52, pp. 647-63.

Gilson, S. (1990), "Bankruptcy, boards, banks, and block holders", *Journal of Financial Economics*, Vol. 27, pp. 355-87.

Gorton, G. and Schmid, F. (1996), "Universal banking and the performance of German firms", working paper 5453, National Bureau of Economic Research, Cambridge, MA.

Gugler, K. (2001b), "Direct monitoring and profitability: are large shareholders beneficial?", in Gugler, K. (Ed.), *Corporate Governance and Economic Performance*, Oxford University Press, Oxford, pp. 12-25.

Harris, M. and Raviv, A. (1979), "Optimal incentive contracts with imperfect information", *Journal of Economic Theory*, Vol. 20, pp. 231-59.

Hart, O. (1995), *Firms, Contracts, and Financial Structure*, Oxford University Press, London.

Hart, O. and Moore, J. (1989), "Default and renegotiation: a dynamic model of debt", working paper, Harvard University.

Jensen, M.C. (1986), "Agency costs of free cash flow, corporate finance, and takeovers", *American Economic Review*, Vol. 76, pp. 323-9.

Lee, C.I., Rosenstein, S., Rangan, N. and Davidson, W.N. (1992), "Board composition and shareholder wealth: the case of management buyouts", *Financial Management*, pp. 58-72.

Lockwood, L.J., Rutherford, R.C. and Herrera, M.J. (1996), "Wealth effects of asset securitization", *Journal of Banking & Finance*, Vol. 20, pp. 151-64.

Murphy, K.J. (1985), "Corporate performance and managerial remuneration", *Journal of Accounting and Economics*, Vol. 7 No. 2, pp. 11-42.

Nesbitt, S.L. (1994), *Long-Term Rewards from Corporate Governance*, Wilshire Associates Incorporated, Santa Monica, CA.

Ng, K.H. (2000), "Asset securitization in Singapore", *Journal of International Banking Law*, pp. 270-4.

Porta, R.L., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1998), "Law and finance", *The Journal of Political Economy*, Vol. 106 No. 6, pp. 1113-55.

Porta, R.L., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (2000), "Investor protection and corporate governance", *Journal of Financial Economics*, Vol. 58, pp. 3-27.

Rashiwala, K. (2002), "CapitaLand seen buying back 2 more securitized buildings", *Business Times*, Singapore, 22 November.

Riddiough, T.J. (1997), "Optimal design and governance of asset-backed securities", *Journal of Financial Intermediation*, Vol. 6, pp. 121-52.

Rosenstein, S. and Wyatt, J.G. (1990), "Outside directors, board independence, and shareholder wealth", *Journal of Financial Economics*, August, pp. 175-91.

Shleifer, A. and Vishny, R.W. (1997), "A survey of corporate governance", *Journal of Finance*, Vol. 52 No. 2, pp. 737-83.

Sing, T.F., Ong, S.E. and Sirmans, C.F. (2003), "Asset-backed securitization in Singapore: value of embedded buy-back options", *Journal of Real Estate Finance and Economics*, Vol. 27 No. 2, pp. 173-89.

Sing, T.F., Ong, S.E., Fan, G.Z. and Sirmans, C.F. (2004), "Analysis of credit risks in asset-backed securitization transactions in Singapore", *Journal of Real Estate Finance and Economics*, Vol. 28, pp. 233-51.

Sirmans, C.F. (1999), "Governance issues in real estate investing: the case of REITs", RICS research conference paper.

Thomas, H. (1999), "A preliminary look at gains from asset securitization", *Journal of International Financial Markets, Institutions and Money*, Vol. 9, pp. 321-33.

Thomas, H. (2001), "Effects of asset securitization on seller claimants", *Journal of Financial Intermediation*, Vol. 10, pp. 306-30.

Zahra, S.A. and Pearce, J.A. II (1989), "Boards of directors and corporate financial performance: a review and integrative model", *Journal of Management*, Vol. 15, pp. 291-334.

Further reading

Aghion, P., Hart, O. and Moore, J. (1992), "The economics of bankruptcy reform", *Journal of Law, Economics, and Organization*, Vol. 8, pp. 523-46.

Barnhart, S.W., Marr, M.W. and Rosenstein, S. (1994), "Firm performance and board composition: some new evidence", *Managerial and Decision Economics*, Vol. 15 No. 4, pp. 329-40.

Bathala, C.T. and Rao, R.P. (1995), "The determinants of board composition: an agency theory perspective", *Managerial and Decision Economics*, Vol. 16 No. 1, pp. 59-69.

Bebchuk, L. (1988), "A new method for corporate reorganization", *Harvard Law Review*, Vol. 101, pp. 775-804.

Bhattacharya, A.K. and Fabozzi, F.J. (Eds) (1996), "The expanding frontiers of asset securitization", *Asset-Backed Securities*, Frank J. Fabozzi Associates, New Hope, PA, pp. 1-20.

Bhattacharyya, S. and Lafontaine, F. (1995), "Double-sided moral hazard and the nature of share contracts", *RAND Journal of Economics*, Vol. 26 No. 4, pp. 761-81.

Cadbury Committee (1992), *Report on Committee on the Financial Aspects of Corporate Governance*, Gee & Co, London.

Cornforth, C. (Ed.) (2003), "Introduction: the changing context of governance-emerging issues and paradoxes", *The Governance of Public and Non-Profit Organizations: What do boards do?*, Routledge, London and New York, NY.

DBS (1999), DBS Bank announces another Bond IPO Securitization of 268 Orchard Road, DBS News Room.

Donaldson, L. and Davis, J.H. (1994), "Boards and company performance-research challenges the conventional wisdom", *Corporate Governance*, Vol. 2 No. 3, pp. 151-60.

Easterbrook, F.H. and Fischel, D.R. (1983), "Voting in corporate law", *Journal of Law and Economics*, Vol. 26, pp. 395-427.

Ee, T.L. (1999), "Singapore asset securitization", *Asia-Pacific Tax Bulletin*, Vol. 5, pp. 217-24.

Fama, E.F. and Jensen, M.C. (1983b), "Agency problems and residual claims", *Journal of Law and Economics*, Vol. 26, pp. 327-52.

Fama, E.F. and Miller, M. (1972), *The Theory of Finance*, Holt, Rinehart and Winston, New York, NY, p. 179.

Fischel, D.R. (1982), "The corporate governance movement", *Vandabilt Law Review*, Vol. 35, p. 1262.

Friday, H.S. and Sirmans, G.S. (1998), "Board of director monitoring and firm value in REITs", *Journal of Real Estate Research*, Vol. 16 No. 3, pp. 411-27.

Friday, H.S., Sirmans, G.S. and Conover, C.M. (1999), "Ownership structure and the value of the firm: the case of REITs", *Journal of Real Estate Research*, Vol. 17 Nos 1/2, pp. 71-90.

Golec, J.H. (1994), "Compensation policies and financial characteristics of real estate investment trusts", *Journal of Accounting and Economics*, Vol. 17 No. 1, pp. 177-205.

Gugler, K. (2001a), "Managerial compensation", in Gugler, K. (Ed.), *Corporate Governance and Economic Performance*, Oxford University Press, Oxford, pp. 42-6.

Hall, B.H. and Liebman, J. (1997), "Are CEOs really paid like bureaucrats", NBER working paper No.6213.

Heinrich, R.P. (2002), *Complementarities in Corporate Governance*, Springer, Berlin.

Henderson, J. (1997), *Asset Securitization: Current Techniques and Emerging Market Applications*, ING Barings, Euromoney, London.

Holmstrom, B. (1979), "Moral hazard and observability", *Bell Journal of Economics*, Vol. 10, pp. 74-91.

Holmström, B. and Milgrom, P. (1987), "Aggregation and linearity in the provision of intertemporal incentives", *Econometrica*, Vol. 55 No. 1, pp. 303-28.

Jensen, M.C. (1998), *Foundations of Organizational Strategy*, Harvard University Press, Cambridge, MA.

Jensen, M.C. and Meckling, W. (1976), "The theory of the firm: managerial behavior, agency costs and ownership structure", *Journal of Financial Economics*, Vol. 3, pp. 305-60.

Klein, A. (1998), "Firm performance and board committee structure", *Journal of Law and Economics*, Vol. XLI, pp. 275-303.

Kotecha, M.K. (1998), "The role of financial guarantees in asset-backed securities", in Fabozzi, F.J. (Ed.), *Issuer Perspectives on Securitization*, Frank J. Fabozzi Associates, New Hope, PA, pp. 93-107.

Landau, R.I. and Krueger, J.E. (1998), *Corporate Trust Administration and Management*, 5th ed., Columbia University Press, New York, NY.

McIntosh, W., Rogers, R.C., Sirmans, C.F. and Liang, Y. (1994), "Stock price and management changes: the case of REITs", *The Journal of the American Real Estate and Urban Economics Association*, Vol. 22, pp. 515-26.

Monks, R.A.G. and Minow, N. (2001), *Corporate Governance*, 2nd ed., Blackwell, Malden, MA.

Obay, L. (2000), *Financial Innovation in the Banking Industry: The Case of Asset Securitization*, Garland Publishing, Inc, New York, NY.

Ong, S.E. (1999), *Real Estate Information Economics*, School of Building and Real Estate, National University of Singapore, Singapore, pp. 5-8.

Roever, W.A. (1998), "The joy of securitization: understanding securitization and its appeal", in Fabozzi, F.J. (Ed.), *Issuer Perspectives on Securitization*, Frank J. Fabozzi Associates, New Hope, PA, pp. 1-16.

Rosen, S. (1992), "Contracts and the market for executives", in Werin, L. and Wijkander, H. (Eds), *Contract Economics*, Blackwell, Cambridge, MA and Oxford, pp. 181-211.

Salanié, B. (1997), *The Economics of Contracts: a Primer*, MIT Press, Cambridge, MA.

Short, H. and Keasey, K. (1997), "Institutional shareholders and corporate governance", in Keasey, K. and Wright, M. (Eds), *Corporate Governance*, Wiley, New York, NY, pp. 23-60.

Silver, A.A. (1998), "Rating structured securities", in Fabozzi, F.J. (Ed.), *Issuer Perspectives on Securitization*, Frank J. Fabozzi Associates, New Hope, PA, pp. 67-91.

Sirmans, C.F. (1997), "Research on REIT corporate governance", *Real Estate Finance*, pp. 75-9.

Smith, C. and Warner, J. (1979), "On financial contracting: an analysis of bond covenants", *Journal of Financial Economics*, Vol. 7, pp. 117-61.

Solt, M. and Miller, N.G. (1985), "Managerial incentives: implications for the financial performance of real estate investment trusts", *Real Estate Economics*, Vol. 13 No. 3, pp. 404-23.

Tricker, R.I. (1994), *International Corporate Governance*, Simon & Schuster, Singapore.

Turnbull, S. (1997), "Corporate governance: its scope, concerns and theories", *Corporate Governance: An International Review*, Vol. 5 No. 4, pp. 180-205.

Vives, X. (2000), "Corporate governance: does it matter?", in Vives, X. (Ed.), *Corporate Governance: Theoretical and Empirical Perspectives*, Cambridge University Press, Cambridge.

Wang, K., Erickson, J., Gau, G. and Chan, S.H. (1995), "Market microstructure and real estate returns", *Real Estate Economics*, Vol. 23 No. 1, pp. 85-100.

Williamson, O.E. (1985), *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, Free Press, New York, NY.

Yin, R.K. (2003), *Case Study Research: Design and Methods*, 3rd ed., Sage, Thousand Oaks, CA.

Zingales, L. (1998), "Corporate governance", *The New Palgrave Dictionary of Economics and the Law*, McMillan, New York, NY, pp. 497-503.