REGIONAL SHOPPING CENTERS:
CREATING LIQUIDITY IN AN ILLIQUID MARKET

By

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SECURITIZING REGIONAL SHOPPING CENTERS: CREATING LIQUIDITY
IN AN ILLIQUID MARKET

by

WAYNE M. BRANDT

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ABSTRACT

In today's real estate market, characterized by overbuilding and capital shortages, real estate owners must identify new sources of capital to finance their projects. This paper suggests that Japanese investors are well positioned to take advantage of the current illiquidity in the U.S. real estate market. Historically, Japanese investors have invested primarily in "trophy" office buildings and resort hotels. This paper suggests that Japanese investors have much to gain by considering retail investments, particularly large, high-quality regional shopping centers. It further indicates that there are many advantages for these investors to purchase regional shopping centers using real estate securities.

The empirical portion of the study investigates which real estate security structure may be best suited for Japanese investors. The performances of two publicly traded regional shopping center securities -- EQK Green Acres M.L.P., a single-asset regional center security, and First Union Real Estate Investment Trust, a pooled-asset regional center security -- were analyzed. Additionally, a computer model was used to simulate the performance of four different security structures: participating debt, convertible debt, leveraged equity, and unleveraged equity. It was assumed that these structures were privately placed and backed by regional shopping centers. The model's results indicated that convertible mortgage securities performed the best while leveraged equity investments performed the worst. These results were tested using a sensitivity analysis and it was determined that, with some qualifications, the hybrid debt structures -- participating and convertible -- provided investors with the highest returns and the least volatility.

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CHAPTER 1

CRISIS AND OPPORTUNITY

Introduction

In the early 1980s, real estate securities were heralded by industry professionals as a new and innovative way to finance commercial real estate. Encouraged by the success of the residential mortgage-backed securities market, the opportunity to securitize the $800 billion commercial mortgage market generated much interest, particularly on behalf of Wall Street. Once securitized, commercial mortgages, in theory, would become liquid and tradeable like residential mortgage-backed securities. Today, however, only 5% (approximately $40 billion) of the commercial mortgage market has been securitized.

Despite this slow beginning, it is likely that commercial mortgage-backed securities will play a significant role in financing commercial real estate during the 1990s due to the current paralysis of real estate capital markets. Today, even owners with high-quality projects and strong operating histories are struggling to secure financing. Clearly owners need to identify new sources of capital to finance their projects; securitization may be a viable option. In order for securitization to be a viable financing alternative for owners, however, commercial mortgage-backed securities must be an

attractive investment option for investors.

This paper suggests that Japanese investors have much to gain by considering real estate security investments and that U.S. real estate owners would benefit from the increase in available capital a successful securities market would bring. Despite the overbuilding in most metropolitan markets, Japanese investors continue to see advantages in investing for the long term in U.S. real estate relative to other investment alternatives. Traditionally, these investors have purchased or financed high-profile or "trophy" office buildings and resort hotels. One of the objectives of this paper is to investigate the advantages to Japanese investors of buying securities backed by other high-quality asset classes, particularly regional shopping centers. The second objective is to explore how these securities can be structured for Japanese investors.

Liquidity Crisis

According to Anthony Downs, Senior Fellow at the Brookings Institution, the current lack of liquidity in the real estate market represents a fundamental shift from a 1980s' economy with significant capital surpluses available for real estate investment to a 1990s' economy with very little capital being invested in real estate. During the 1980s there were several factors that contributed to the capital surpluses of the decade: the deregulation of the U.S. savings and loan industry, the rise

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of tax-shelter-driven syndications, the increase in domestic pension fund assets, intensified competition among commercial banks, and the escalation of foreign investment.

Today, however, most things have changed. The savings and loan industry has collapsed, the tax laws have been changed, pension funds have slowed their real estate investment activity, and commercial banks have become much more regulated. In addition to these factors, the overbuilding in most major metropolitan areas and a drop in the demand for real estate as a result of a nationwide recession with its concomitant job loss have created a severe liquidity shortage. [5] The only factor that has not changed for the worse has been the level of foreign investment in the U.S., particularly on behalf of the Japanese.

Factors Causing the Capital Surplus and Shortage

From 1980 to 1989, commercial mortgages held by all thrifts rose from $61.6 billion to $136.3 billion. While such mortgages comprised only 10.2% of thrifts' entire mortgage portfolio in 1980, that proportion had risen to 17.5% by 1987. [5] In addition, thrifts invested billions of dollars in joint ventures with real estate developers during this period. In 1988 the thrift industry collapsed because of bad real estate loans, fraud, and mismanagement, among other things. Some of the results of the collapse were the disappearance of half of all thrift institutions that existed at the start of the 1980s and

the withdrawal of almost all surviving thrifts from investing equity or loan funds in commercial real estate. Today, the thrifts that survived have stopped making commercial loans and have focused their attention primarily on originating single-family mortgages. [5]

A second factor causing the current liquidity crunch is the demise of tax-shelter-driven syndications. During the 1980s, the Tax Act of 1981 permitted the offset of ordinary income against depreciation and other passive losses, the benefits of which provided ready capital for the real estate industry in large amounts. Between 1980 and 1986, $33 billion in public Real Estate Limited Partnerships (RELPs), were invested in real estate through such syndications. [40] In 1986 syndications were dealt a near fatal blow by the Tax Reform Act of 1986 (TRA). The TRA basically ceased to allow the deductibility of passive losses against ordinary income and required taxpayers to lengthen depreciation schedules. According to Downs, "Most of the major syndication firms active during the 1980s either went bankrupt, ceased to exist, consolidated or converted themselves into consulting or asset management firms. As a result, unless Congress reinstates some of the tax benefits that allowed this industry to flourish, it is very unlikely small, retail investors will provide funds the way they did in the 1980s to the real estate industry." [5]

A third factor responsible for the decrease in capital availability is the slowing of pension fund investment into real

estate. During the 1980s pension funds invested $100 billion in real estate equity and increased their total allocation of funds invested in real estate from nearly nothing to 3.5%. Today, with the total return on pension fund real estate investments barely beating yields on 90-day Treasury Bills (6.50%) [29], it is unlikely that pension funds will allocate additional funds to an investment with significantly greater risk.

The final factor that has decreased the availability of capital in the 1990s, is the regulatory crack down on commercial banks. In February of 1990 the Comptroller of the Currency issued stringent orders to examine all banks and compel them to tighten their underwriting standards. This policy was intended to keep banks from making bad loans but instead it has pressed banks to demand more equity contributions from existing borrowers and to foreclose on loans if these contributions are not forthcoming. Needless to say, these new regulations will discourage banks from originating new loans for commercial real estate projects. According to Downs, "This situation has contributed mightily to the reduction of capital available for financing real estate transactions, especially in 1990, and is likely to last ... well into 1991." [5]

The results of these events have clearly created a capital shortage. This liquidity crisis is particularly severe for owners of large real estate assets, specifically owners of regional shopping centers, because the amount of money necessary to refinance such an asset can easily exceed $50 million per

transaction. In the U.S. alone, there are 682 regional shopping centers of more than 800,000 square feet and another 1,148 between 400-800,000 square feet. The bulk of these centers were put in place in the 1970s and 1980s. [22] Assuming that each center requires refinancing every seven years, on average, and conservatively assuming only 50 centers are refinanced each year (4% of the total), if the average transaction size is $50 million, then the U.S. demand for capital to service these transactions will be at least $2.5 billion per year.

With little or no capital currently being provided by thrifts, small, retail investors, commercial banks, or pension funds, it appears that the only significant source of capital remaining for large real estate investments in the near future are foreign sources. Such a situation creates an opportunity for those foreign investors, such as the Japanese, who are interested in investing in income producing property.

An Opportunity for Japanese Investors

Since 1985, the Japanese have invested more than $66.5 billion in U.S. real estate, with the bulk of their investments concentrated in major metropolitan centers. Close to 56.7% of Japanese total investment through 1990 was divided among Honolulu, Los Angeles, and New York City, primarily in highly visible or trophy office buildings and hotels. In addition, they are continuing to invest in U.S. real estate despite a doubling

of Japanese interest rates, a 40% decline in the Tokyo stock market, and a weakening of the Japanese Yen.   As shown on Exhibit 1.1, Japanese investors increased their investment in U.S. real estate from $1.86 billion in 1985 to a high of $16.54 billion in 1988, with the fastest growing segment of this market being individual investors and investment companies who accounted for just 9% of the total in 1985 but 20% in 1989. According to Kenneth Leventhal and Company's prediction,[1] this segment of the Japanese investor market is likely to invest over $2 billion in U.S. real estate in 1991 alone. [28,46] While not enormous, when compared to the lack of funds provided by U.S. institutions, this amount is significant.   This growth in Japanese investment, according to David Shulman and Susan Jordan of Salomon Brothers Inc., is largely due to the historically low dollar/yen exchange rate (which makes U.S. property seem extraordinarily cheap to Japanese investors), the ongoing Japanese current account surplus (which contributes to keeping real interest rates in the U.S. high), Tokyo's exceptionally high real estate prices, and the extremely low current yields offered by commercial property in Tokyo and Europe (as low as 1%-2%). [44]

Although the bulk of Japanese investment in U.S. real estate has been in direct holdings [27], they have, since 1986, been active in the real estate securities market. Since that

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[1] Kenneth Leventhal and Company predicts the total Japanese investment could be as much as $10.0 billion in 1991.

Exhibit 1.1

JAPANESE INVESTMENT IN U.S. REAL ESTATE
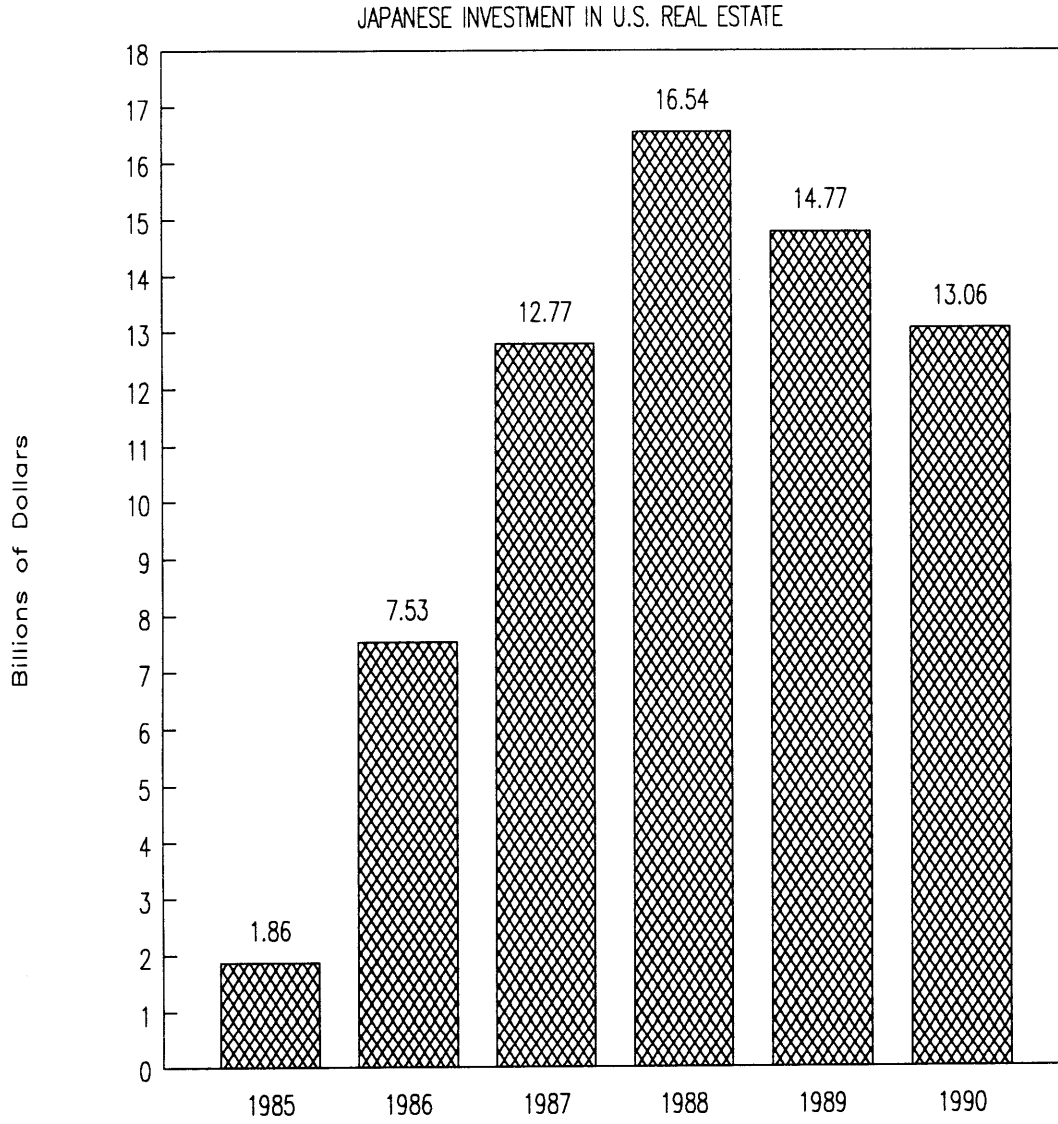
Source: Kenneth Leventhal & Company

time, Japanese investors have bought various real estate backed securities such as the Chicago Mercantile Exhcange, Chicago, IL, the JC Penney Building New York City, NY, and 55 Water Street, New York City, NY, to mention a few. [38,41]

Real estate securitization is a method of financing real estate through the use of stocks and bonds which are backed by mortgages on real property. They are known as mortgage-backed securities (MBS) and can be either publicly or privately issued.

Before securitizing commercial real estate, underwriters must determine the credit support or credit rating necessary to make the security saleable. Typically, credit ratings are established through nationally recognized rating agencies such as Standard and Poor's, Moody's Investors Service, and Duff and Phelps. The goal of the rating agency, which serves as an independent third party, is to rate the creditworthiness of the issuer and the likelihood of his repaying the debt, in such a way that potential investors can compare these securities directly with the ratings of corporate securities. (Thus, AA-rated mortgage-backed securities equal AA-rated corporate bonds.) The rating agency focuses on cash flow reliability and the quality of any credit supports such as corporate guarantees, letters of credit, or additional collateral. [41]

Obtaining a credit rating can be costly and require substantial disclosure on an annual basis on behalf of the issuer. For this reason, some issuers issue securities without a rating. For example, Japanese investors recently purchased

approximately $300 million in bonds for the Marriott Hotel at Moscone Center in San Francisco, in a transaction which used a Marriott corporate guarantee, in lieu of an investment grade rating to secure a portion of the debt. This type of structure may be acceptable to investors willing to evaluate the collateral without the aid of a rating agency. [41]

MBS obligations can be offered and sold as domestic private placements, as domestic public offerings, or as public offerings in the Euromarkets. Where and how a security is sold impacts the level of disclosure required of the issuer. Several financings have been privately placed to groups of large institutional investors who rely on the security's credit rating rather than on their own in-depth due diligence. Such private placements are exempt from registration under Section 4(2) of the Securities Act of 1933 (the "Act") and are not, therefore, subject to the Act's substantial disclosure and reporting requirements. In a domestic public offering, however, the entity issuing the bond would be highly regulated under the Act and required to submit annual 10Ks. Reluctance to comply with the detailed and time-consuming disclosure requirements of the Act is one reason many offerings of MBS are structured either as private placements or as domestically unregistered public offerings in the Eurobond market. [41]

The marketability and eventual liquidity of a security will be affected greatly by the type of offering the issuer pursues. For investors willing to rely on their own due diligence,

issuers can often raise the financing they require through a private placement without the level of full disclosure required under the Securities Act. In the past, many of the securities offered to Japanese investors have been private placements.[2]

To properly price a MBS, the issuer must consider the cost of transaction fees as well as the cost of annual expenses. For example, expenses such as legal fees, underwriting fees, rating agency fees, printing costs, and the like, which are specific to a securitized transaction, often average 100 to 200 basis points of the face amount of the MBS. Most of these private placements have been bought by a few, large institutional investors. Although this cost, along with annual expenses such as credit enhancement fees, rating agency fees, and trustee fees, can raise the pricing, if structured properly, the issuer could still save at least 50 basis points per annum, over conventional debt, even after factoring in these other expenses. [26,29,45] The challenge for underwriters is to structure a security that offers attractive yields to investors without pricing the security so that it is uncompetitive with conventional mortgage debt financing.

For investors, the purchase of securities has several advantages over direct real estate investment. First, MBS are easier to evaluate in terms of risk because, typically, the agency that rates the securities and the underwriter that issues

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[2] Most of these private placements have been bought by a few, large institutional investors.

them perform all of the due diligence on the underlying real estate asset. Second, MBS are, in theory,[3] more liquid than direct real estate investments because they are generally public securities, trading in the secondary market in the same way stocks and bonds trade. [41] Third, MBS make it possible to carve a large real estate investment into small pieces to give small to medium size companies and individual investors access to real estate investments that, if purchased directly, would be out of reach. [40] This is a particularly important point considering that the fastest growing segment of the Japanese investor market is individual investors and investment companies. Fourth, making the investment more desirable than direct investment for multiple investors permits issuers to reach a broad range of investors with different risk profiles. For example, Goldman Sach's financing in 1990 of the $500 million Saks Fifth Avenue acquisition by Investco, a Baharain investment group, was structured using a two-tier debt (senior/subordinated) structure to attract multiple investors with different yield orientations. [21] Finally, while MBS do not guarantee investors returns that are higher than direct real estate investments, they do offer investors returns that are consistently higher than similarly rated high grade corporate securities. For example, according to Giliberto, AAA MBS today

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[3] It is interesting to note, however, that according to Michael Giliberto, most of the Japanese investors who have purchased MBS to date have not sold their positions. This suggests that liquidity may not, in practice, be an important objective of Japanese investors in real estate.

trade at 100 to 125 basis points above high-grade corporate bonds and 200 basis points above comparable Treasuries.

For all of these reasons the real estate securities market has, in the past decade, emerged as an important financing vehicle for all segments of the real estate industry. Today, $800 billion worth of real estate securities, representing all classes of real estate assets, have been issued and sold to investors in both the private and public markets. Approximately, $113 billion (or 15% of the total) represents commercial mortgage-backed securities, public Real Estate Investment Trusts (REITs), and Public Real Estate Limited Partnerships (RELPs) while $675 billion (or 85% of the total) represents residential mortgage-backed securities (See Exhibit 1.2). [16,39,44]

Despite these rather compelling reasons to favor real estate securitization over direct investment, the MBS market has not grown at the rate it was predicted to grow, nor has it dominated the way in which commercial real estate is financed in the same manner that it dominates the financing of single-family real estate.

There are several reasons for this. One of the main reasons is because other sources of low-cost conventional financing were abundant during the 1980s when MBS were initially introduced. Compared to the complexity, cost, and disclosure requirements of issuing real estate securities, owners during this period chose to finance projects directly through thrifts, commercial banks,

Exhibit 1.2

U.S REAL ESTATE SECURITIES OUTSTANDING

RELATIVE TO U.S. CORPORATE DEBT
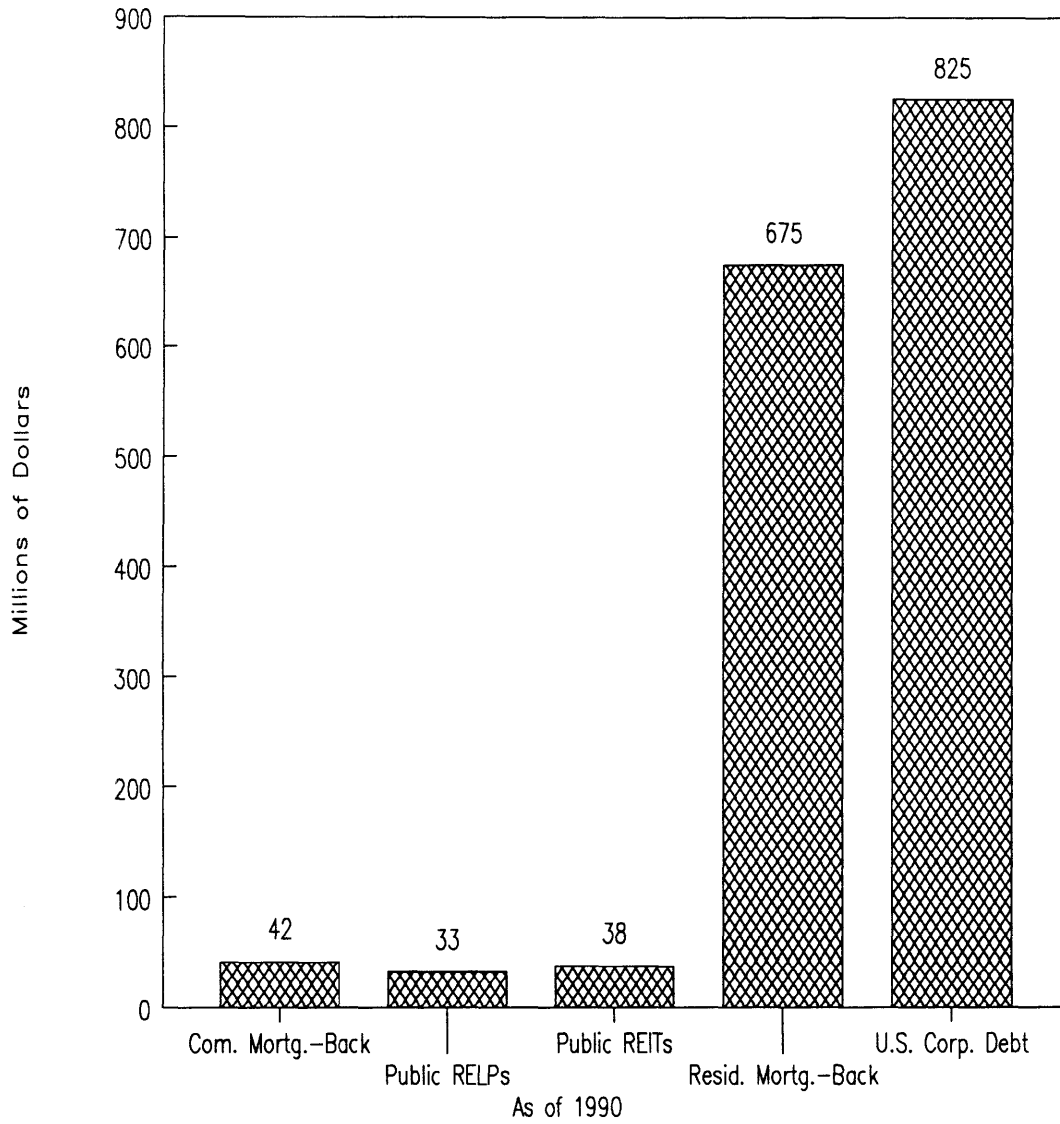
Source: Salomon Brothers and NAREIT

life insurance companies, pension funds, and foreign investors. [16]

A second reason why the commercial real estate security market has not expanded to the same degree as the single-family secondary market is because most single-family residential mortgage-backed securities[4] are guaranteed by the Federal government which makes them even more secure than either MBS or high-grade corporate bonds. [41]

A third reason is that home mortgages are relatively homogenous so that mortgage underwriting and documentation can be standardized. In contrast, no two commercial mortgages are alike; they obtain their respective values from various factors such as markets, leases, location, owners, and management. Therefore, these mortgages are more heterogenous and harder to pool. In addition, commercial MBS typically secure nonrecourse obligations of the borrower as opposed to single-family home mortgages which are always recourse. [41]

A fourth reason is that, in the past, pension funds have not purchased these securities to the same degree they have other corporate securities or single-family residential MBS. A fifth reason why the commercial real estate security market has not expanded to the same degree as the single-family security market is that life insurance companies and commercial banks have not purchased real estate securities, primarily because they prefer to do their own investing and underwriting and to be more

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[4] Only GNMA securities are backed by the Federal government.

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actively involved in asset management issues. [16]

A final reason is that during most of the 1980s, the bulk of the CMBS securities were purchased by the savings and loan industry. Fueled by a net increase of $60 billion of new deposits from 1980 to 1987, the thrifts were the primary buyers of junk bonds and commercial mortgage-backed securities. [5] For all the reasons discussed earlier, the thrifts are not buying these securities today.

Conclusion

Arguably, although these reasons help to explain why the MBS market did not take off during the 1980s they do little to predict the future of the MBS market in the 1990s. This is true because as this chapter has illustrated, the 1990s will be fundamentally different than the 1980s particularly in terms of sources and availability of capital. With no other sources to turn to, real estate owners will have to consider using the MBS securities market to finance their projects. The Japanese, as one of the few players left with any capital, have a unique opportunity. The question then becomes, given the number of commercial properties available for securitization, which properties offer the Japanese the best investment opportunity. This question is the subject of Chapter 2.

After determining, in Chapter 2, that regional shopping center securities offer an attractive investment opportunity for

the Japanese, Chapter 3 evaluates two existing shopping center securities in an effort to determine whether a single-asset shopping center security or a pooled-asset security offers the best return. The results do not permit comparisons to be drawn in a way that can be generalized to all single-asset or pooled-asset securities, but they do reveal that of the two securities, the single-asset security performed better.

Using a computer model, Chapter 4 compares four alternative security structures -- participating debt, convertible debt, leveraged equity, and unleveraged equity -- in an effort to determine whether one structure is preferable to the others in terms of the security's return, volatility, and sensitivity to different interest rate and equity participation structures. The results suggest that, with respect to these criteria, convertible debt performs the best.

Chapter 5 summarizes the results of this study and offers suggestions, based on these results, for how underwriters might approach designing a regional shopping center security for Japanese investors.

CHAPTER 2

THE CASE FOR SECURITIZING REGIONAL SHOPPING CENTERS

As Chapter 1 has shown, there exists a special opportunity for the Japanese to invest in U.S. commercial real estate by investing in commercial mortgage-backed securities. The focus of this chapter will be to compare various classes of commercial real estate assets in an effort to determine whether any particular class of commercial assets -- office, retail, R&D or industrial -- will offer the Japanese a better return and whether any particular asset class is more suitable for securitization.

Retail Assets versus Other Commercial Assets

To compare the historical returns of these four asset classes, the mean return for each class was calculated for 1978 to 1990 using quarterly return data provided by the Russell-NACREIF index (RN). This index, an industry benchmark, includes return data -- broken down into income and capital components -- on 1,506 unleveraged institutional-grade properties representing as of 1990 $22.18 billion in assets. Next, as

presented in Exhibit 2.1, the standard deviation and coefficient of variations for each class were calculated.

The standard deviation represents how volatile the quarterly returns were over the investment period. The coefficient of variation, calculated by dividing the standard deviation by the mean quarterly return, permits the classes of assets to be compared to one another in terms of return and volatility.

EXHIBIT 2.1
Quarterly Returns for Real Estate Assets
Russell-NACREIF Index
(1978:4-1990:4)

	Mean %	STD %	CV.
Office	2.51	2.61	1.04
Retail	2.72	1.12	0.41
R&D	2.53	1.73	1.28
Indust.	2.77	1.28	0.46
S&P 500	3.85	8.10	2.10

Source: Frank Russell Company

Exhibit 2.1 indicates that while the mean returns of the four asset classes are very similar, the volatility of the retail investments (per unit of return), as measured by the coefficient of variation, are the lowest. This result suggests that over a 12-year holding period, retail assets produce the most stable returns. To the extent that the mean returns among assets classes are similar, the lower volatility of retail could be a

reason for investors to prefer retail to other asset classes.

However, several qualifications regarding this method of valuation must be mentioned. First, as noted earlier, the RN only includes data for 1990 on 1,506 unleveraged properties representing $22.18 billion in assets. This index is not a perfect representation of the industry because it follows only investment grade real estate. Even more important for this study, however, is the fact that the index does not include many trophy real estate assets such as (super regional centers) which limits the value of comparisons. Second, the return data combines both the current return with estimates of capital returns which are based on current market appraisals. Often these appraisals lag actual market value by several months and can be subject to appraisal bias and smoothing effects [49], all of which could cause the volatility of the returns to be understated. Finally, the RN data for retail properties does not disaggregate returns for super regional malls, regional malls, neighborhood, or community centers. This lack of disaggregation coupled with the fact that there are very few regional or super regional malls in the index's sample, limit the usefulness of this index for this study; to the extent that regional malls outperform or under perform the other categories of retail assets, the true measure of their return is masked.

Because of these limitations, a second method of comparing retail to other asset classes was used to confirm the results. Using data supplied by Cameron Blake's 1988 study of REITs, [3]

retail REITs were evaluated with respect to a consolidated group of 22 mixed-asset REITs.

EXHIBIT 2.2

**Quartrely Return Measures of Three Retail REITs
Compared to a Consolidated
Group of 22 REITs
(1973:2-1988:1)**

	Mean %	STD%	CV.
Federal Realty	5.69	10.89	1.91
New Plan Realty	6.69	12.23	1.83
Pennsylvania REIT	5.88	12.56	2.14
Consolidated Sample	4.35	11.53	2.65

Source: Blake, Cameron, "The Real Estate Investment Trust: Performance over the Business Cycle", MIT Thesis, 1988.

As Exhibit 2.2 indicates, the coefficient of variations were slightly lower in all of the retail REITs than was the coefficient of variation for the consolidated group. Although the performance measures in this analysis are influenced to a large degree by the value the stock market places on the REIT security, as well as by other macroeconomic factors, [33,34] it is useful in a general way to support the notion that, over the long-term, retail returns may outperform other commercial assets. Again, to the extent that the mean returns of retail assets are similar to those of other classes, their lower volatility makes them a better investment.

In addition to somewhat stronger performance, the nature of

retail operations arguably make it preferable as a security investment from the investor's perspective. This is because retail assets are typically structured with percentage rent clauses which permit owners (and investors) to share in a potentially larger upside than standard escalating leases. While most commercial assets such as offices and industrial buildings have fixed lease structures that adjust periodically with inflation, retail leases typically have percentage rent features that kick in when a preset level of sales is reached by the tenant. [4,26] For example, in the Rockefeller Center Complex in New York City, the majority of the leases are office leases with average terms of 10 years. In 1997, NBC, which occupies 19.5% of the space in Rockefeller Center, will renew its existing lease for 20 years at a fixed net rental rate of $26.85 per square foot, compared to current market rents of $40-50 per square foot. Although the owners gain security knowing that NBC will remain in the complex after 1997, the upside potential of the complex is somewhat limited since several anchor tenants, in addition to NBC, have negotiated long-term below-current-market leases. [45]

In contrast, the Green Acres Mall in Long Island, a 1.4 million-square-foot super regional mall, has leases from both its non-anchor and anchor tenants that have percentage rent clauses. Since 1986, tenant sales have increased at a compounded annual rate of 6.5% and percentage rent has averaged 21% of the total rental income. Furthermore, JC Penney, Sears,

Gimbels, and Sterns (anchor tenants) have leases that average 25 years while non-anchor tenants have leases that range from 5 to 7 years. [10] Unlike Rockefeller Center, the owners of Green Acres will have an opportunity to adjust rents upward for non-anchor tenants at renewal. Aside from adjusting with inflation, these rent "step ups" combined with percentage rent can create greater upside for a regional mall such as Green Acres as compared to an office complex such as Rockefeller Center.

This retail lease structure creates two tiers of returns with different levels of risk to the owner. First, the base rent return is more secure than the percentage rent and reflects the credit quality of the tenant. Second, the percentage rent is less secure because it is contingent upon the tenant's ability to generate sales.

Because cash flow from the base rent is more secure than the percentage rent, this cash flow could be said to share the characteristics of a bond. Similar to a long-term high-grade corporate bond, base rents of anchor tenants often reflect long maturities (10-30 years), have fixed rates, and take into account the credit quality of the tenant. This is so because anchor tenants have historically had enormous leverage over shopping center owners.[5] Percentage rent resembles equity in that the return reflects the operating volatility of the tenant. Office and industrial properties most often do not have

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[5] See David Shulman, "Retail- The Next Office Market," Salomon Brothers Inc, 1990, which suggests this balance of power is shifting.

percentage rents, and thus do not have these two-tiered cash flow streams. This difference in the lease structure of the assets is what creates an opportunity for retail property securitization.

Although a debt security has not yet been created to take advantage of this existing two-tier lease structure, some interesting structures would be possible. For example, a vehicle could be created that offered senior notes and subordinated notes with correspondingly different yields. The senior class, representing the base rents, would have first claim on the real estate (similar to that of a first mortgagee) in the event of foreclosure and would, on that basis, carry a rating of AA or better. The subordinated class, representing the percentage rents, would be much less secure against a default or delinquency (similar to a second mortgagee) and would, therefore, offer higher yields. These notes would be unrated or carry a below-investment-grade rating, and would appeal to yield-driven investors with high-risk profiles.

To date, most retail developers such as DeBartolo Capital Corp., Ernest Hahn Co. and Melvin Simon and Associates, have successfully securitized regional centers using only single-tranche debt securities. In the cases of DeBartolo's $120-million Eurobond offering in July 1986 (secured by a pool of shopping centers) and Hahn's $40-million fixed-rate offering in the same year (secured by the Corte Madera shopping center in Marin County), both were structured as senior-class debt and

underwritten on the basis of the strength of the minimum base rent cash flows. [19] According to Goldman Sachs, the underwriter, both transactions were rated AAA by S&P largely because the base rents reflected the credit quality of the major department stores which anchored the centers.

Regional Shopping Centers Versus Other Retail Assets

Given that retail assets, in general, appear to outperform other classes of commercial assets, and lend themselves to securitization, is there any particular category of retail asset that recommends itself for purchase as a security by Japanese investors? This thesis argues that, as compared to other commercial assets and, in many cases, to neighborhood and community shopping centers, regional shopping centers have several characteristics that make the case for securitizing them compelling: (1) the potential for large, single transactions; (2) the existence of many strong mall managers/owners; and (3) the ease of marketing highly visible or trophy properties, as compared to less unique properties, to the Japanese.

Before discussing each of these characteristics, however, the composition of the retail industry will be examined briefly.

Composition of Retail Industry

According to the Urban Land Institute in 1990, retail

shopping centers are characterized as follows [47]:

(1) Super Regional Center - The principal tenants in a super regional center include at least three full-line department stores of generally not less than 100,000 square feet each. The median gross leasable area (GLA) is about 985,000 square feet and the median sales per square foot is $210.67.

(2) Regional Center - The principal tenants in a regional center include one or two full-line department stores of generally not less than 100,000 square feet each. The median GLA is about 470,000 square feet and the median sales per square foot is $168.41.

(3) Community Center - The principal tenants in a regional center often include a junior department store, variety store, or discount store. The median GLA is about 161,000 square feet and the median sales per square foot is $162.43.

(4) Neighborhood Center - A supermarket or superstore is the principal tenant in this type of center. The median GLA is about 68,000 square feet and the median sales per square foot is $181.07.

For purposes of this study, this paper groups regional and super regional shopping centers into one category refering to them as regional shopping centers. In Exhibit 2.3, the composition of the shopping center industry is broken down by total GLA, number of centers, and the sales per square foot for each center category. As shown, the majority of the centers in the U.S. are neighborhood and community centers. While there

Exhibit 2.3

U.S SHOPPING CENTER INDUSTRY — 1990

TOTAL NUMBER OF CENTERS BY TYPE

U.S. SHOPPING CENTER INDUSTRY — 1990

TOTAL GLA IN SQUARE FEET BY CENTER TYPE

U.S. SHOPPING CENTER INDUSTRY — 1990

SALES DOLLARS PER SF BY CENTER TYPE
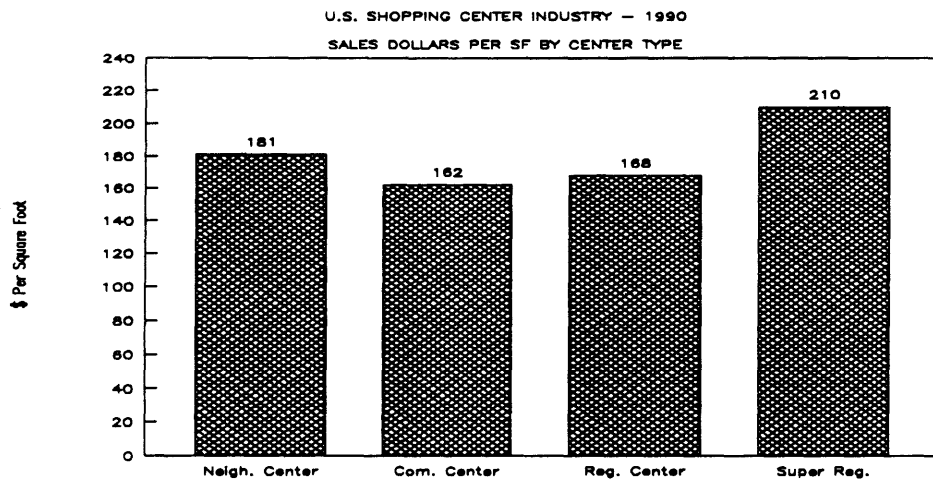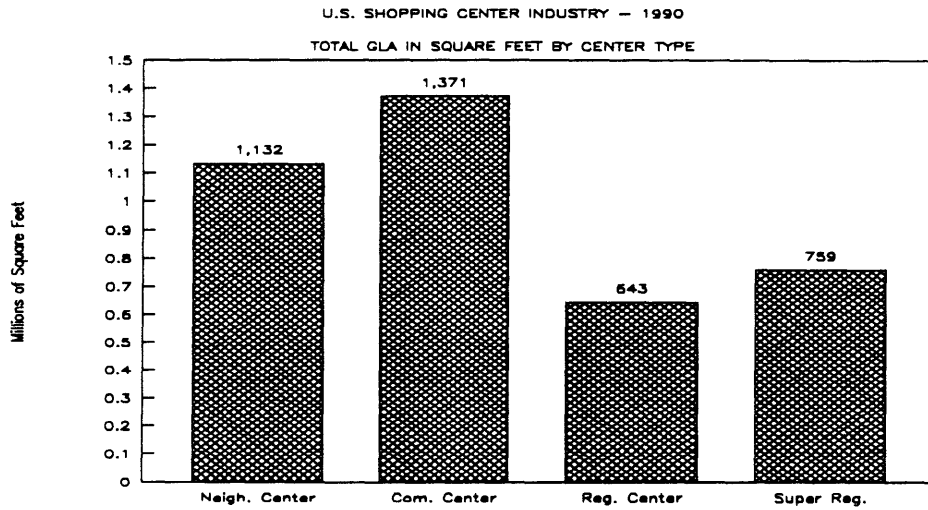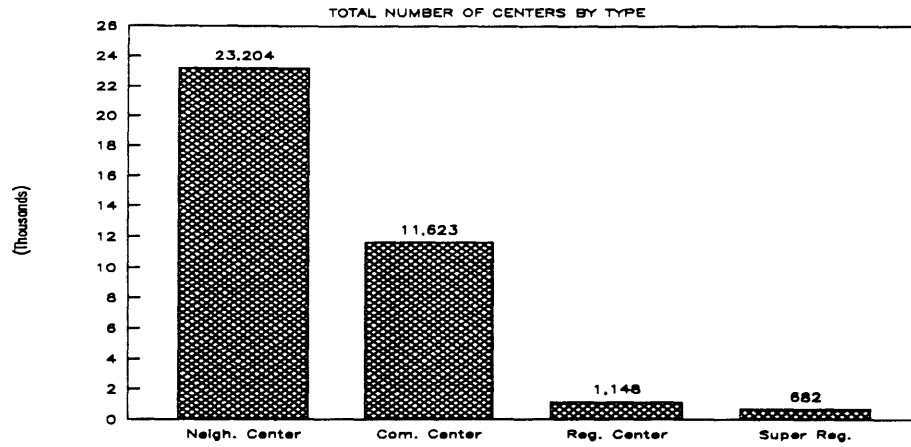
Source: Urban Land Institute, Dollars and Cents, 1990

are far more of these centers than regional and super regionalcenters, super regional malls and regional malls have a weighted average sales per square foot of $182 as compared to $172 for community and neighborhood centers. As shown in Exhibit 2.4, super regional and regional centers generate the most Net Operating Income (NOI) per square foot, which is likely due to the fact that they generally locate in areas where median household incomes are high (greater than $35,000). These figures suggest that regional and super regional shopping, as compared to other centers, may have the best profit potential. [26,47]

If regional centers are larger, have better quality tenant profiles, and generate more NOI per square foot than other retail products, then this segment of the retail market appears to have many of the attributes that are prerequisites for successful securitization, all of which will be discussed in more detail in the following section.

Factors Favoring Securitization of Regional Shopping Centers

As noted earlier, one of the factors favoring the securitization of regional shopping centers to that of other retail assets, is the potential for large, single transactions. In general, a securitized transaction must have a minimum transaction value of $50 million to be feasible. [19,28,41] While there have been security offerings of less than

32

Exhibit 2.4

U.S SHOPPING CENTER INDUSTRY – 1990

NOI PER SQUARE FOOT OF GLA
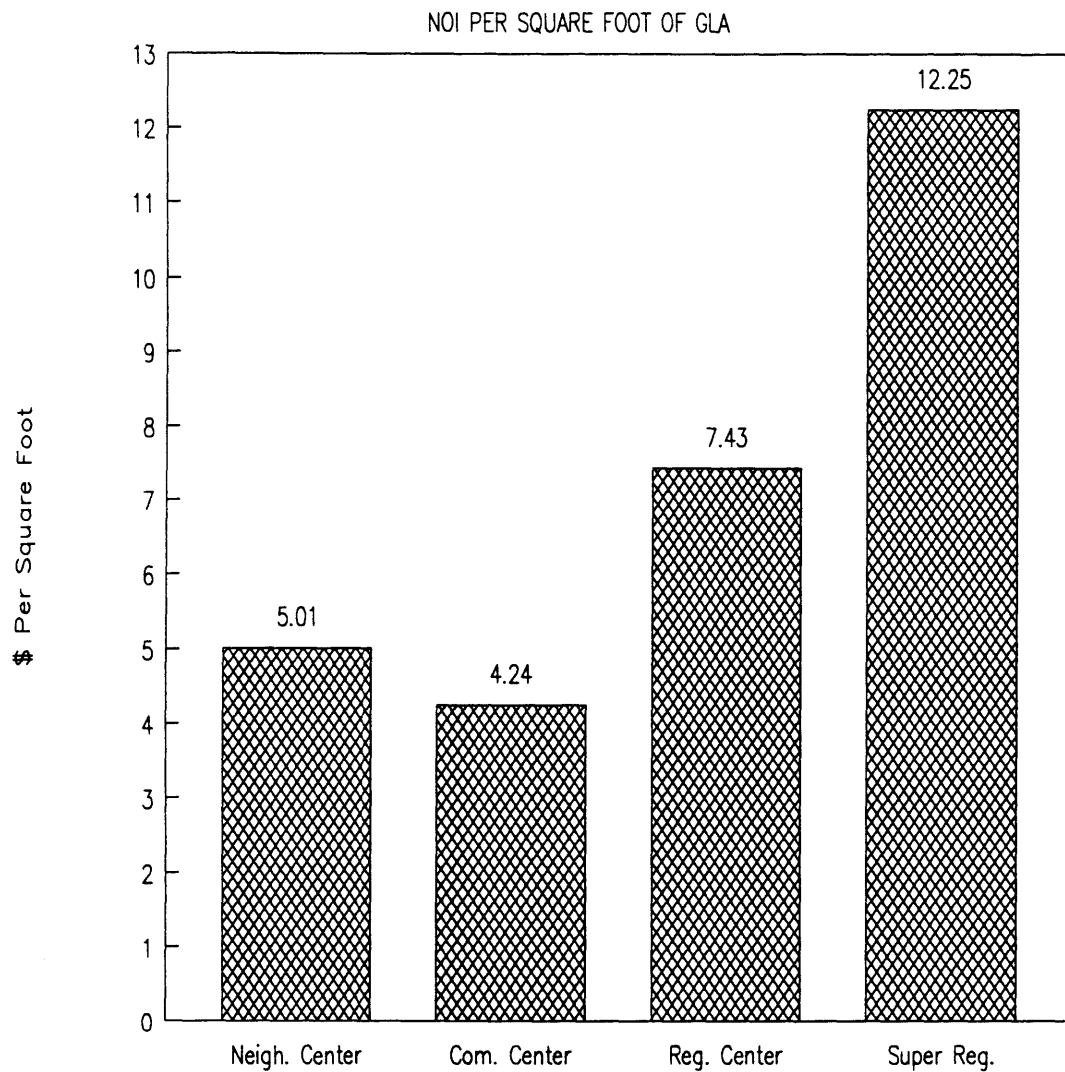
Source: Urban Land Institute, Dollars and Cents, 1990

this amount, typically most issuers avoid offerings for amounts less than $50 million because many of the costs in a securitized transaction are fixed regardless of its size. Because neighborhood shopping centers are much smaller than regional malls, many more assets must be pooled to reach an economic transaction size. This, in turn, requires much more due diligence on the part of the underwriter.

Another important factor is the existence of many strong regional shopping center owners/managers. One of the most important considerations for any investor purchasing a real estate security is the quality and experience of the underlying asset's management. Unlike a corporate security, real estate securities are evaluated by investors on the manager's ability to lease, operate, renovate, and generally create and increase value for the asset. When securities are offered either publicly or privately, one indication of how investors assess the strength of management is determined by how easily the issue sells. As compared to the other categories of retail assets, the regional shopping center segment of the industry has many more experienced and recognized managers/owners, (Edward DeBartolo, Melvin Simon, Ernest Hahn, Alfred Taubman, and the Rouse Company to mention the largest firms).[6] All of these developers have successfully accessed the capital markets through security offerings. When Melvin Simon offered his $145 million REIT on the American Stock Exchange in 1988, Goldman

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[6] These owner/managers also own and manage community centers.

Sachs, the lead underwriter, said the issue sold in a matter of days due in part to investors' confidence in Melvin Simon. In Hahn's financing of the Corte Madera Shopping Center in Marin County, the issue was over subscribed in a matter of days, presumably for the same reason. [9]

In addition, in rated transactions the rating agency considers the quality of management to be very important. Many of the rating criteria relate to areas strongly influenced by management such as leasing, renovations, and expense control, or other areas that have direct impact on cash flow. Even in unrated transactions, ongoing collateralization levels, often driven by financial ratio tests, are important guidelines management must consider to retain investor confidence. [7,8]

Finally, as noted earlier, the bulk of Japanese investments in U.S. real estate have been in highly visible office buildings or trophy resort hotels. Particularly when they would be investing in an unfamiliar asset class, it makes sense, from an underwriter's perspective, to stick with a tried and true formula. Regional shopping centers offer the most analogous "quality of investment" to these office buildings and hotels.

According to Hirokazu Minamida at Nomura Securities one reason why investors have not bought retail real estate is a function of investors unfamiliarity with the product. However, this product has potential as an asset class for Japanese investors, but it will take some time to educate investors on the concept of retail real estate and its performance relative

to office and hotels. [36] From a diversification perspective, Japanese investment in retail shopping centers is logical. With less than 4% of Japanese investment going into retail since 1985, diversifying investment dollars in the U.S. away from office and hotel and into retail shopping centers should help lower volatility of Japanese U.S. real estate portfolios and increase their yields. [27,35]

Risks of Investing In Regional Shopping Centers

Although, as outlined here, there are many reasons why regional shopping centers may be good candidates for securitization, there are operating risks that are specific to the underlying collateral of this asset class. In the last two decades, regional shopping centers have been thought of as a privileged asset class with superb fundamentals. Some professionals now argue that the impressive regional shopping center performance of the 1980s was an aberration, fueled by consumer spending, department store expansion, and growing markets. Some industry professionals such as David Shulman of Salomon Brothers Inc., believe regional center performance in the 1990s might not continue to be as strong as it has been in the past. According to Shulman, there are several factors that might portend trouble for the industry during the 1990s [46]:

(1) National recession. At present the US faces a recession which could end as early as the third quarter 1991. If the

recession drags on, retail sales could fall thus compromising retail tenant's ability to meet their rent obligations. A recession, while hurting all real estate values, could be particularly difficult for regional mall anchor tenants who are already heavily leveraged resulting from many of the LBOs of the 1980s.

(2) Excess Capacity. Unfortunately, from 1987 to 1990 retail construction contracts fell at a slower pace than the decline in retail sales. For example, the percentage change in construction contracts fell from 8.0% in 1987 to 6.0% while the change in retail sales fell from 6.0% to 2.0% indicating more supply was added during a period when retail sales did not support these additions. Moreover, competition in this segment has become more intense with the addition of competing retail products. With the introduction of hypermarts, outlet stores, membership clubs, and discount centers, regional shopping centers are having to compete more aggressively for customers who are time-value customers. [18,26]

(3) Shift in Income Distribution. During the 1980s, several industries such as financial services, legal services, defense production, entertainment, and real estate were associated with high per worker levels of compensation. These industries are for the most part in a state of restructuring, which implies income will stop shifting to these higher paid sectors of the economy. Unfortunately, during the 1980s many upscale regional shopping centers were built to target this customer. With lower

disposable income, these sectors will probably look to other low-cost means of retail consumption. As the consumption pattern of consumers changes and shoppers become more value and time-conscious, then this pattern will have an adverse impact, particularly on the high-end shopping centers.

(4) Transfer of Power from Owners to Tenants. As the retail industry restructures, many smaller tenants are achieving anchor-like status in regional malls. Some of these tenants, including The Limited, Gap Stores, Woolworth, and Melville are successfully negotiating lower rents from owners and gaining co-tenancy clauses with major anchors. Their new-found power is a result of these tenants now becoming the major draw for shopping centers. This does not appear to be a trend that will reverse any time in the near future.

(5) Retail Restructuring. Major department stores continue to operate in a difficult and complicated environment. Suffering from extraordinary debt burdens, falling consumption, and management turmoil, department stores will continue to muddle through the recession. This restructuring has hit all major retailers to some degree and may, in turn, negatively impact the performance of the regional centers.

(6) Low Going-In Capitalization Rates. At their peak regional shopping centers traded at capitalization rates of 5%. Investors paid handsomely for these assets because they believed in the potential for income growth to support a before-fee total returns of 9.5%-10.5%, over a ten-year holding period. As

retail sales slow and tenants negotiate lower rents, investors will demand higher yields to compensate them for these higher risks. Yields on regional shopping centers should then be expected to rise. [20]

These six market conditions have already made the securitization process quite onerous. For example, early this year when Goldman Sachs took on the assignment to raise $500 million for Investco to finance its acquisition of the Saks Fifth Avenue Department Store chain for $1.6 billion, Goldman underwrote the transaction but was left with $300 million of floating rate AAA rated notes it could not syndicate. While Goldman will ultimately be able to sell down the issue, a few years ago, according to industry observers, such issues sold out in a number of days. [21]

To the extent, however, that these factors impact one segment of the retail industry more than another, it seems likely that the regional mall sector of the shopping center industry will be hurt the least. This is so because, as noted earlier, regional centers make up such a small percentage of all retail centers and tend to be located in higher-income areas. Based on their fundamentals of being well-located, designed, occupied, and managed, regional centers could be of even more interest to investors now as compared to other real estate asset classes. Stated differently, holding regional centers in a securitized form for the long term, despite these market concerns, may be a better investment decision than holding other assets such as

suburban offices, warehouses, or strip shopping centers.

Summary

This chapter has analyzed the performance of retail assets relative to other commercial assets in an effort to determine whether retail outperforms the others. The historical analysis suggests that it does. This chapter also discussed whether retail assets lend themselves more readily than do other commercial assets, to designing a security for the Japanese investment market. Concluding that they do so lend themselves, the final section of this chapter discusses why regional shopping centers appear to be the best category of retail for such investments.

CHAPTER 3

PERFORMANCE OF REGIONAL SHOPPING CENTER SECURITIES

In Chapters 1 and 2 this paper demonstrated that Japanese investors are in an attractive position relative to U.S. sources of capital to finance regional shopping centers. In the next two chapters, this paper studies two existing shopping center securities and four alternative structures in an effort to offer underwriters guidance on how to design a security that maximizes investment performance for Japanese investors.[7]

There are two strategic issues which are critical for any underwriter considering structuring a real estate security composed of regional shopping centers. First, should assets be pooled or financed individually? And second, if the security is offered privately, which financial structure -- debt, equity or a hybrid -- maximizes performance for the investor? Issue one is the subject of this chapter. Issue two will be discussed in Chapter 4.

Selection of Securities for Evaluation

Since very little data exists to compare the performance of

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[7] As Stephen Roulac points out in his article, "Designing Real Estate Securities", despite demand in the 1980s, underwriters did not design products that the market needed.

privately-held regional shopping center securities, a methodology was created that used data available from public markets to approximate the performance of privately-held regional center securities. Taking the historical information from these public securities, a computer model was created that simulates the performance of private MBSs for regional centers and allows the author to evaluate the performance of both a single-asset security and a pooled-asset security.

To create this computer model several things were done. First, all public securities that had regional shopping centers in their portfolios were reviewed, in an attempt to select a representative single-asset security and a representative pooled-asset security. The selection process for the pooled security was limited to those securities where:

1. no less than 75% of the assets were regional shopping centers,
2. no more than 30% of the assets were invested in mortgages,
3. the portfolio was geographically diverse,[8]
4. the management was stable,[9] and
5. no more than 55% of capital was debt.

On this basis, the 1990 Moody's Investor Service Publication, Public Realty Trusts and Limited Partnerships was reviewed. [37] Two single-asset shopping center securities (EQK Green Acres M.L.P. and Equitable REIT) were identified as possible

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[8] Geographically diverse for purposes of this research was defined as not having more than 30% of the assets held in any specific region of the U.S.

[9] Each security's management was assessed to determine if, during the study period, senior management remained in place and did not change due to a buy out or other major transaction.

representative "single-asset securities" and two other securities (First Union Real Estate Trust and Western REIT) were identified as possible representative "multiple-asset" securities. From this sample, EQK Green Acres M.L.P. (EQK) and First Union Real Estate Trust (First Union) were selected. EQK was selected because Equitable REIT had two large regional shopping centers as opposed to one. Although neither First Union nor Western REIT met all the selection criteria exactly, First Union was selected because it was more geographically diverse than was the Western REIT.

Description of Securities

EQK Green Acres M.L.P.

EQK is a closed-end, self-liquidating master limited partnership that owns and operates the Green Acres Mall, an enclosed regional shopping mall consisting of about 1.4 million gross leasable square feet located on 93 acres in Long Island, New York. Built in 1958 and renovated in 1983, the center's major tenants include Sears, Gimbels, Sterns, and JC Penney. These four anchor tenants occupy 53% of the gross leasable area (GLA) or 713,000 square feet, while approximately 150 mall tenants and outparcel tenants occupy the balance. Managed and owned by a partnership between Equitable and Kravco, the center has, since 1986, maintained an average occupancy of 98%, an average sales per square foot of $267, and an average rent per

square foot of $24.65. The Urban Land Institute's 1990 statistics on super regional malls indicated that they generated, on average, $210.67 per square foot. [10,11,47]

The partnership purchased the mall on August 12, 1986 for $136 million. At that time, the purchase was financed with a $104-million (face amount) zero-coupon bond. The initial amount of the bond was $44 million. The remainder of the purchase price was funded by a $93-million limited partnership offering. [11]

Exhibit 3.1, presents EQK's operating history from 1987 through 1990. EQK has regularly increased its distribution at a compounded annual growth rate of 4.46%.[10] From 1987 to 1989, the unit price increased from $10.70 to $12.00 and then fell in 1990 to $10.30. From 1987 to 1990 the distribution increased from $1.10 to $1.31 per unit. The distribution yield fell from 1987 to 1988, indicating that the unit price increased at a faster rate than distributions rose over that period. From 1989 to 1990, the dividend yield rose because the unit price fell. [11]

The offering memorandum projected an annual yield of 7.5% for unit holders, which has been exceeded every year. This growth in yield was particularly rewarding for investors on an after-tax basis, given that the depreciation and amortization of the zero-coupon bond ensured that almost 100% of the return was tax

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[10] Cash distributions from a MLP are distributions. Cash distributions from a REIT are dividends.

EXHIBIT 3.1

EQK Performance Measures
As of Year End

	1987	1988	1989	1990
Net Operating Income (000)	$11,300	$12,500	$13,000	$13,733
Net Income (000)	$3,600	$4,300	$4,500	$4,400
Distributions per Unit	$1.10	$1.16	$1.25	$1.31
Distribution Yield	10.28%	9.28%	10.42%	12.72%
Debt as a Percent of Capital	26.00%	30.00%	40.30%	40.10%
Return on Unitholders Equity	3.70%	4.50%	4.45%	4.52%
Unit Price	$10.70	$12.50	$12.00	$10.30

Source: Author's calculations based on company 10Q and 10K reports.

deferred. EQK's low leverage ratio (40% in 1990) is of course a result of the zero-coupon bond which makes high distributions possible. Although return on unit holders' equity[11] increased from 3.70% to 4.52% from 1987 to 1990, it was low compared to distribution yield because of the heavy amortization of the zero-coupon bond each year.[12] This seemingly high distribution yield can also be explained by looking at the trend of both the unit price and the distribution, plotted in Exhibit 3.2. Since 1987, the unit price has remained, on a quarterly basis, relatively close to its original offering price of $10.00. This trading range indicates that the stock is fairly insensitive to major movements in the stock market such as the crash in October 1987, where stocks lost approximately 20% of their value. One reason for why EQK's unit price held firm during the crash may have been the strength of its NOI and the amount of tax benefits the investor received. Since the 1987 crash, the shopping center has experienced low vacancy, little tenant turnover, a backlog of tenants wishing to lease space, an aggressive expansion program, strong increases in retail sales per year (6.7%), and one of the highest non-anchor tenant sales per square foot ($350) of any center in the country. [10] All of these factors undoubtedly contribute to EQK's continued growth

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[11] Return on unit holders' equity is defined as net income divided by unit holder equity. Unit holders' equity equals net worth at the end of the year, as per the balance sheet.

[12] Adjusted for conventional debt, the yield would average approximately 6% for the period, according to Salomon Brothers.

Exhibit 3.2
EQK QUARTERLY SHARE PRICE
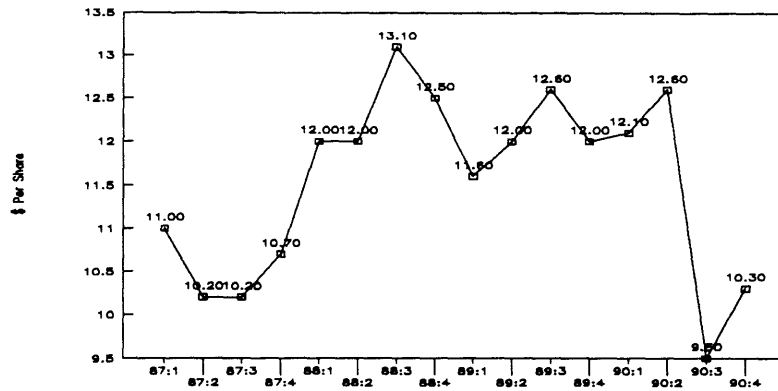
EQK QUARTERLY DIVIDEND
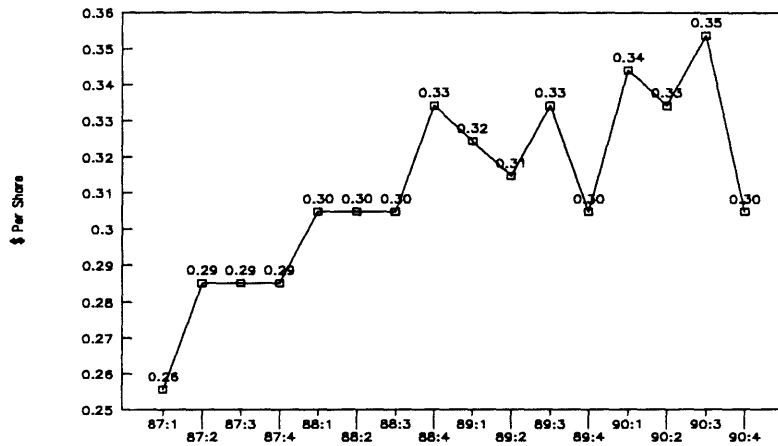
EQK QUARTERLY NOI
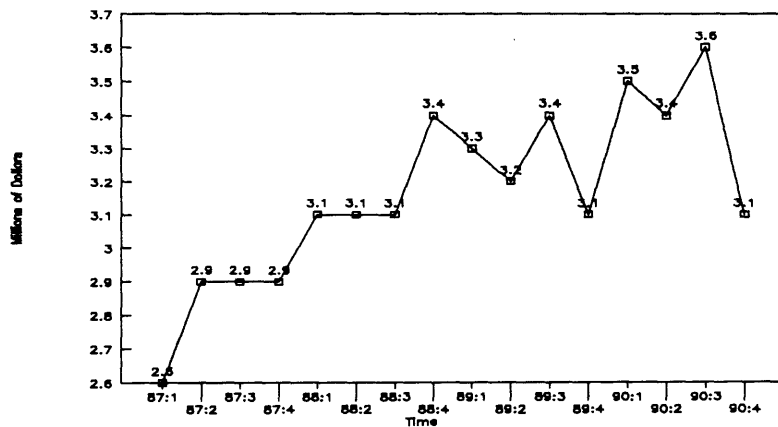
Source: Company 10K and 10Q Reports

in NOI. These increases in NOI and distributions, combined with the high yield and tax benefits, might explain why EQK's stock held relatively steady during the period despite a stock market crash, upheaval in the retailing industry, and general decline in real estate values nationwide.

In Exhibit 3.3, the net asset value of EQK is calculated to compare the underlying asset values to the stock market valuation in order to estimate to what extent the security trades at a premium or discount relative to the value of the underlying real estate asset. This performance measure, although rough, should be helpful in determining why investors might choose to invest directly in real estate as opposed to purchasing a real estate security. Market valuations are relatively straight forward; they are calculated by multiplying the number of shares outstanding by the share price at the end of the quarter for each security. Net asset values, however, are less easily calculated because the underlying illiquidity of the asset and its infrequent trading make it difficult to determine a true market price. As a result, net asset values must be estimated. In this study, the net asset value is estimated for each quarter by dividing the NOI of the asset by an income capitalization rate. NOI, as opposed to net earnings, is used because with many real estate securities being privately placed and trading infrequently, investors tend to evaluate them more like direct investments (using NOI) than public securities

Exhibit 3.3

STOCK MARKET DISCOUNT FROM NET ASSET

VALUE AS A PERCENTAGE BY QUARTER

□ First Union   + EQK
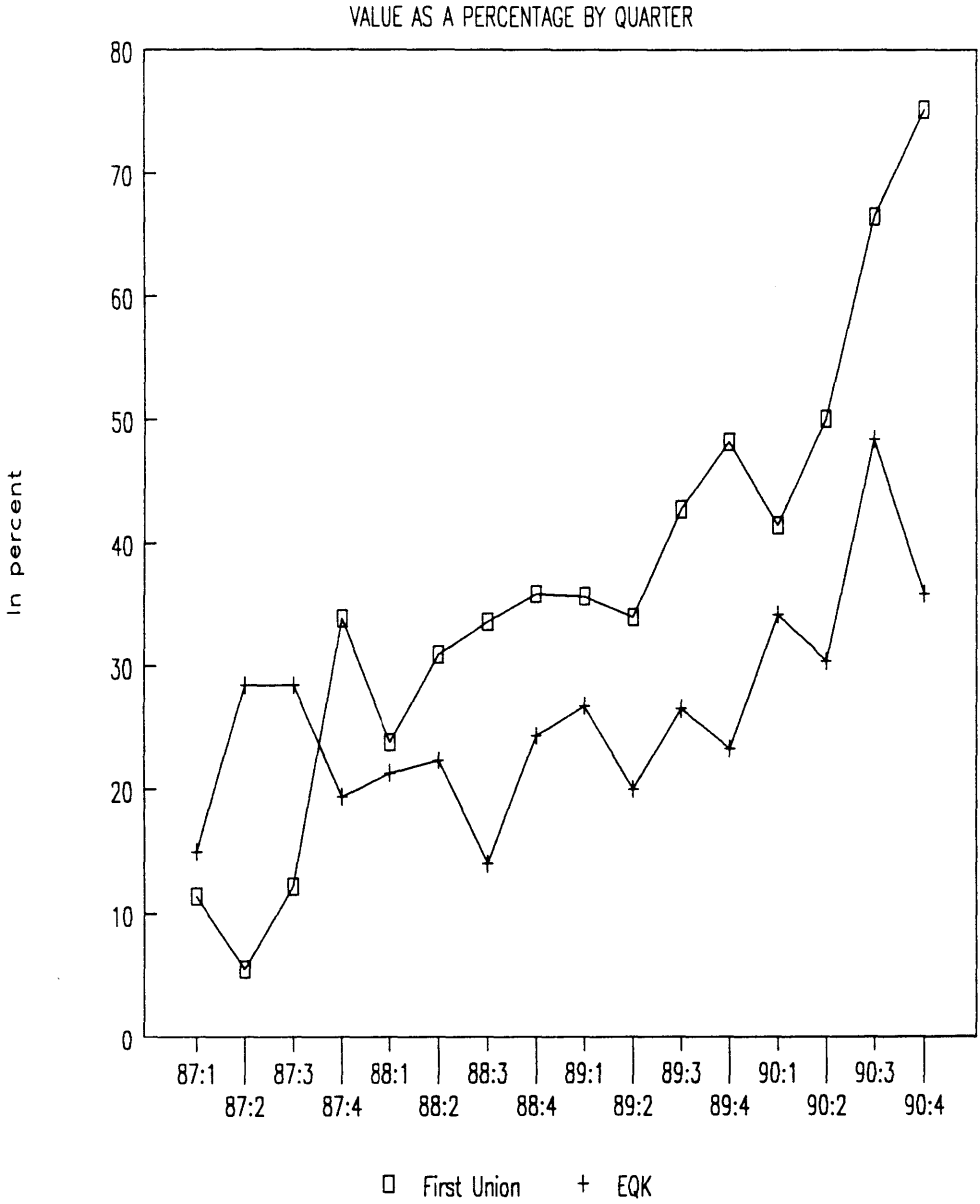
Source: Author's Calculations Based on Company 10Q and 10K Reports.

(using net earnings), according to many underwriters.[13]

There are four problems with this method of calculating net asset value that should be mentioned. One problem with this method is that capitalization rates used in this study were averages of capitalization rates tracked by life insurance companies originating mortgage loans, and, as such, reflect average rates for all geographic regions not just the specific markets for the assets analyzed here.[14] A second problem with these capitalization rates is that they also reflect commitments on mortgages, sometimes 2 years in the future, which could cause cap rates to be higher. Perhaps the biggest problem with this approach, individually for First Union as well as comparatively, is the fact that a portion of First Union's NOI comes from non-retail sources. First Union's "mixed" NOI means that the cap rates used in this study track EQK better than they do First Union. A fourth issue with these cap rates is that, being averages, they do not account at all for the quality of shopping center management. This becomes a problem when comparing net asset value with market value because stock prices do reflect the quality of management.

A more general problem with this comparative approach is

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[13] Most bond indentures require annual appraisals to determine collateral levels. The rating of the indenture often occurs annually. In both cases, NOI is the cash flow valued by S&P and the independent appraisal firms as compared to net income. [8]

[14] Rates taken from the American Life Insurance Council (ALIC), an industry organization which tracks income cap rates for all asset types. Only rates from the retail data set were used.

that it does not adjust for the fact that securities are much
more liquid than direct investments and that real estate
securities typically have higher dividend or distribution yields
(and thus lower stock prices) than other equities.

A final problem with this approach is that the capitalization
rates provided by ALIC do not distinguish between sizes of
regional centers. For example, super regional malls might have
capitalization rates that are lower than other regional centers,
and yet the ALIC data do not make this distinction.

With these qualifications in mind, net asset value was
compared to market value. As Exhibit 3.3 suggests, the value of
the assets in EQK are undervalued by the stock market, on
average, by 26.11% with a low of 15% in 1987 and a high of 48%
in 1990. Over this time period, the discount has grown,
possibly reflecting the stock market's relatively recent
disenchantment with real estate stocks.

Having analyzed the performance of EQK using traditional
indicators, the mean return, the standard deviation, and the
coefficient of variation, are now presented in Exhibit 3.4.

Exhibit 3.4
Quarterly Total Returns to EQK Green Acres
(1986:4-1990:4)

	Mean%	STD%	CV.
EQK	2.21	9.69	4.38
RN Index	1.33	0.86	0.65
S&P 500	2.11	8.81	4.18

Source: Author's calculations based on EQK 10K and 10Q reports.

As shown in Exhibit 3.4, EQK's performance was similar to the S&P 500 but was considerably poorer than RN. The RN index is, however, heavily weighted toward office buildings (which are currently overbuilt) and, for all of the reasons mentioned in the previous chapter, it may not be a particularly good index for comparison. Although EQK has a similar return to that of the S&P 500, it is more volatile. This volatility can be understood better by separating return into individual return components of income and capital appreciation which is shown in Exhibit 3.5. For example, the mean return for EQK's income component was 2.72% with a standard deviation of 0.31%, compared to the mean return for the capital component which was -0.5% with a standard deviation of 9.94%.

Exhibit 3.5

**Quarterly Returns By Income and Capital
to EQK Green Acres
(1986:4-1990:4)**

	Income		Capital	
	Mean%	**STD%**	**MEAN%**	**STD%**
EQK	2.72	0.31	-0.5	9.94

Source: Author's calculations based on EQK 10K and 10Q reports.

Clearly, the volatility was in the capital component, a common case with real estate securities. The strong growth in the income component is not met with a corresponding growth in share price. Given the previously discussed appraisal problems with

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the RN index, it is probably more meaningful to compare EQK to S&P than to RN. Such a comparison, suggests that EQK's unit prices are only slightly more volatile than rest of the market.

Next, risk-adjusted rates of return are calculated for EQK because investors consider them an important criteria by which to measure performance. Using a simple form of the Capital Asset Pricing Model, EQK's excess return (above the market as measured by the S & P 500) and sensitivity to systematic risk[15] (as measured by the degree of movement the security displays relative to the S&P 500)[16] is calculated.

EQK's risk-adjusted rate produces an excess quarterly return of 2.09% and a low beta of -0.17. Since neither of these measures are statistically significant at the 95% level, no statement can be definitively made about how EQK's return perform's relative to the market. Even though the beta is not statistically significant, its low value is consistent with the observed low volatility of its unit price. The fact that EQK has a low beta suggests that the asset's performance is not influenced by the stock market's performance. Investors purchasing EQK may be purchasing the stock because they have an expectation that their investment will behave similar to a

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[15] Systematic risk is the amount of market risk a security demonstrates compared to its unsystematic or company-specific risk. The index used in this analysis was the S&P 500.

[16] Degrees of movement relative to the S&P 500 are measured by negative or positive values with -1 indicating that the security moves in the opposite direction as from the S&P 500 and 1 indicating that the security moves in perfect correlation with the S&P. This measure is known as a beta.

direct real estate investment. These investors may be evaluating the stock on the basis of its real estate fundamentals, the high, tax-sheltered dividend it pays and the liquidity it offers.

First Union Real Estate Investment Trust

First Union is a real estate investment trust which invests primarily in enclosed regional shopping centers throughout the U.S. Organized in 1961, the Trust owns 17 shopping centers, seven office buildings, and 1 apartment complex. The shopping centers have a total square footage of 7.6 million. Two of the centers are larger than 800,000 square feet and 11 are in excess of 400,000 square feet. Only four centers contain less than 400,000 square feet. The average square footage of each center in the portfolio is 447,000 square feet. The retail component of the Trust comprises 82% of the total square feet of its holdings dispersed throughout the U.S: 35% in the midwest, 30% in the east, 20% in the south, and 15% in the west. Similar to EQK, the major retail anchor tenants include JC Penney, Sears, and Macy's. Since 1986, the average weighted occupancy of the centers has been 82%, while the weighted average sales per square foot has averaged approximately $166. Additionally, the Trust makes participating mortgage investments in retail centers and, in 1990, these investments represented 21% of the total book value of the assets. The office buildings, in 1990, totaled 1.5 million square feet with an average size of 375,000

square feet per building and represented 16% of the total portfolio. Since 1986, the office investment component has dropped steadily from approximately 25% to its current level. In 1989 it represented 20.2% of the book value of the assets. [14,17]

As of year-end 1990, the Trust had total book value assets of $378 million, debt of $199 million, and shareholder equity of $134 million, 59.7% as a percent of capital. Since 1986 leverage has averaged 55%. Because First Union is a REIT it is exempt from Federal taxation so long as it has at least 100 shareholders, no more than 50% of its shares are owned by 5 or fewer individuals, it distributes 95% of its net annual taxable earnings, it derives 75% of its annual gross income from real estate activities, and it holds at least 75% of its total invested assets in real estate. [3]

Exhibit 3.6, presents First Union's operating history from 1986 through 1990. As shown, First Union increased its dividend from $1.45 to $1.50 per share from 1986 to 1987 and then held the dividend constant at $1.50 through 1990, resulting in almost no growth over the study period (compounded annual growth rate of 1.45%). During this same period, the dividend yield increased from 5.80% in 1986 to 20.55% in 1990 (a compounded annual growth rate of 28.7%) solely due to a dramatic 75% fall in stock price from $25.00 to $7.30 during the period. Before 1986, First Union's stock had increased steadily from $11.00 per share in 1978 to $30.00 per share in the third quarter

Exhibit 3.6

First Union Performance Measures
As of Year End

	1986	1987	1988	1989	1990
Net Operating Income (000)	$46,684	$47,066	$45,124	$47,583	$46,772
Net Income (000)	$25,496	$26,016	$23,398	$30,004	$20,865
Dividends	$1.45	$1.50	$1.50	$1.50	$1.50
Dividend Yield	5.80%	8.29%	8.24%	9.20%	20.55%
Debt as a Percent of Capital	53.00%	57.00%	50.00%	54.00%	59.00%
Return on Stockholders Equity	20.70%	21.20%	20.50%	27.00%	15.70%
Stock Price	$25.00	$18.10	$18.20	$16.30	$7.30

Source: Author's calculations based on company 10K and 10Q reports.

of 1986. NOI was relatively stable compared to net income. From 1986 to 1990 NOI grew at a compounded annual rate of 0.04% while net earnings fell at a compounded annual growth rate of - 3.93%. These trends are plotted in Exhibit 3.7. In 1989 the company had an extraordinary gain of $12.7 million as a result of the sale of an office building in Atlanta, inflating net income enormously for that year. From 1989 to 1990 when NOI fell by only 2.0%, net income fell by 44% due to the fact that no large assets were sold in 1990 and, therefore, no extraordinary gain was recorded. This dramatic drop in net income could be one explanation of why the stock price fell so dramatically from 1989 to 1990 despite a stable level of NOI. Although NOI is a more accurate assessment of the operating health of a real estate company than is net income, if the stock market values First Union on a net income basis instead of NOI, dramatic differences in price and value could occur. Management feels the that stock market substantially under-values the company's assets. Donald S. Schofield, Chairman of First Union stated in 1989 that, "Although there has been no fundamental change in Trust's operations, the share price has declined along with share prices of other real estate investment trusts. This decline may be attributed to overbuilding ... , liquidation of real estate assets at bargain prices by troubled thrifts, and the overall slowdown of the national economy." [14] Comparing the net asset value of the company to the market value substantiates Schofield's assertions. Using the same method as

Exhibit 3.7

FIRST UNION QUARTERLY SHARE PRICE
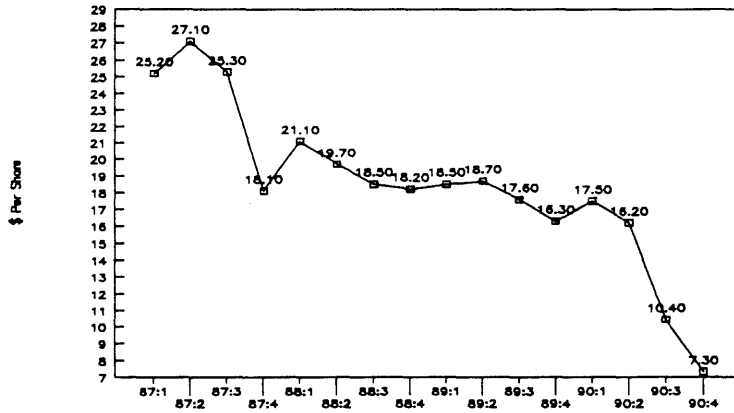
FIRST UNION QUARTERLY DIVIDEND
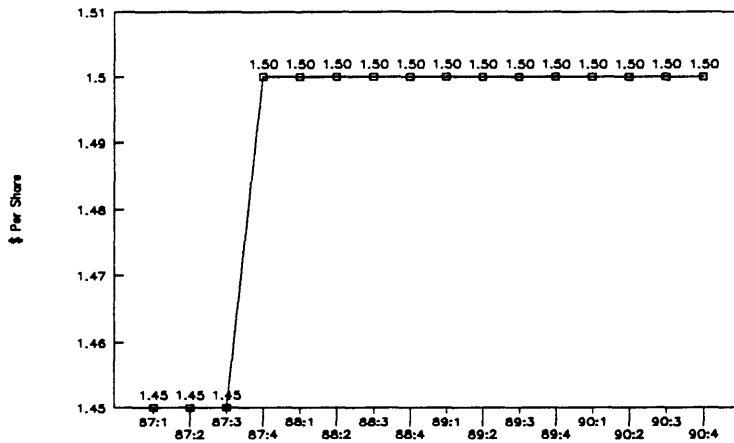
FIRST UNION QUARTERLY NOI

Source: Company 10K and 10Q Reports

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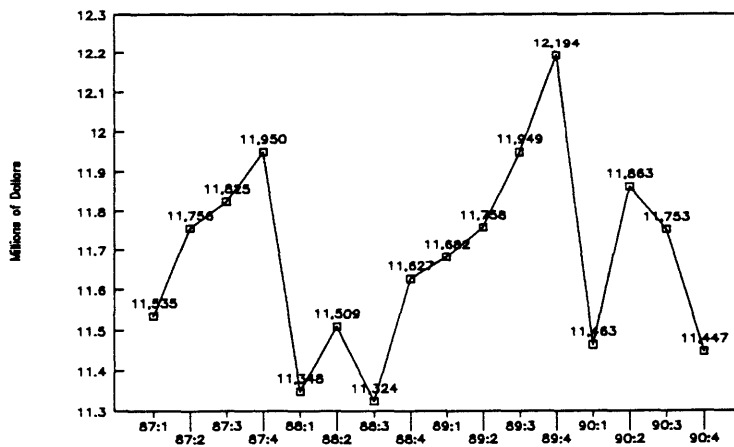
for EQK, Exhibit 3.3 reveals that the market value is 35% less than the capitalized value of the real estate. In addition to the fundamental problems with this valuation method, discussed in the previous section, there is the additional problem here that not all of the First Union cash flows are derived from shopping centers. Also, the trust does not separate cash flow by real estate asset type or by book value in its publicly reported data. As a way to adjust for these different cash flows, a weighted average capitalization rate is used. Beginning in 1986, the portfolio composition per year is used to weight the capitalization rates taken from the ALIC for each asset category (retail and office).[17]

Despite this relatively high discount of 35%, an investor who understands the historic trend of First Union's NOI might consider the stock an attractive investment. Being able to buy real estate assets that are undervalued due to market imperfections, may be one of the many advantages of financing a real estate security in the private markets as compared to the public markets.

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[17] Since no public information was available for the book value of the assets except for 1989, the percentage of square footage of the total portfolio represented by each asset type was used to weight the capitalization rate each year. Had book values for the assets been availble for each year, the composition of the portfolio would have been determined using that data. Furthermore, since mortgage interest income is not separated by asset type in the publicly available information, the captalization rate used for interest income is the same as the other assets. Since this method could understate or overstate net asset value, comparisons to other securities or other indexes must be qualified.

Having analyzed the performance of First Union using traditional indicators, the statistical measures of performance -- mean return, standard deviation, and coefficient of variation -- presented in Exhibit 3.8 are now discussed.

Exhibit 3.8

Quarterly Total Returns to First Union REIT
(1986:4-1990:4)

	Mean %	STD %	CV.
First Union	-7.21	18.23	-2.35
RN Index	1.33	0.86	0.65
S&P 500	2.11	8.81	4.18

Source: Author's calculations based on company 10K and 10Q reports.

Compared to the S&P 500 and the RN, First Union was an under performer. This relatively negative performance can be better understood by separating return into individual components of income and capital. For example, the mean quarterly return for the income component of First Union's return was 2.23% (with a standard deviation of 0.85%), compared to the mean return for the capital component, of -9.44% (with a standard deviation of 18.85%).

Exhibit 3.9

**Quarterly Returns By Income and Capital
to First Union
(1986:4-1990:4)**

	Income		Capital	
	Mean%	**STD%**	**MEAN%**	**STD%**
First Union	2.33	0.85	-9.44	18.85

Source: Author's calculations based on Company 10K and 10Q reports.

Calculating First Union's risk-adjusted return reveals a figure of -10.53% and more volatility than the S&P 500 as indicated by a beta of 1.28. Both these measures were statistically significant at the 95% level. In other studies First Union's beta, for the period 1973 through 1988 has been calculated to have been between .86 and .92. [3] The relatively high beta calculated by this author's study is not surprising considering that it was calculated for the period 1986 - 1990 (which can be described as a low growth portion of the real estate cycle) and that one study has discovered that the betas of REITs exceed 1 during recessionary times. [3,42] The extremely negative excess return is a result of the enormous drop in share price during this time.

Comparing the Returns of EQK and First Union

Although the basis for selecting these two securities was
to try to choose two assets -- one a single-asset regional
center security, the other a multiple-asset retail security -
- to compare performance, such comparisons are problematic in
many ways.

The first problem is the size of the sample from which the
securities were selected.   Unfortunately there was only one
single-asset real estate security and only two multiple-property
regional center securities from which to select.   Therefore, it
becomes difficult to make general statements regarding the
performance of all single-asset vs. multiple-asset securities.
For example, EQK's location in a wealthy northeast suburb could
have a lot to do with its exceptional performance.

The second problem is the difficulty of controlling quality
of management across entities.   Ideally, for the study to
eliminate this difference, both a single-asset security and a
multiple-property security should have the same management.
Although this was not the case here, each security did have
stable, well-regarded management, throughout the time period.

The third problem, and most important, is that each of these
securities are organized differently.   EQK is a master limited
partnership; First Union is a REIT.   Both REITs and MLPs are
valued very differently by investors.   MLPs, like typical real
estate partnerships, are allowed to pass through taxable losses

such as depreciation and bond amortization to limited partners. These losses are not passed through to investors in a REIT. Because EQK is financed with a zero-coupon bond, this difference is amplified because each year a large amount (approximately $1.4 million) of the bond is amortized. This amortization combined with the depreciation of the mall almost totally shelters the unitholder's distributions from taxation, thereby, increasing his total return on an after tax-basis. First Union investors do not have this benefit; their dividend distributions, to the extent that they do not represent a return of capital, are subject to taxation. As a result of this key difference, EQK's stock should be more desirable to investors independent of the operating performance of the underlying real estate. Because an adjustment for this difference cannot be made, it is likely that the results of this study overstate EQK's performance, from a real estate perspective, relative to that of First Union.

The last problem making it difficult to compare these securities is that First Union represents a mixed-asset portfolio.

Given these limitations, the income components of the return is probably the only meaningful way to compare the securities. Comparing the income component of EQK with that of First Union, reveals that performance is quite similar.

Exhibit 3.10

**Comparison of Statistical Measures of Quarterly Performance
EQK and First Union
(1986:4-1990:4)**

Income Component

	Mean%	STD%	CV.
EQK	2.72	0.31	0.11
First Union	2.23	0.85	0.38
RN	1.68	0.06	0.04
S&P 500	2.11	8.81	4.18

Source: Author's calculations taken from company 10K and 10Q reports.

Based on the individual performance results of the two securities, it is not surprising that EQK outperformed First Union with respect to the coefficient of variation. In terms of this measure, neither security outperforms the RN, perhaps because the income yield calculation depends upon the stock price which, because of its volatility, adds more volatility to the income yield than what the RN captures. Furthermore, as mentioned earlier the RN coefficient is likely to be understated because of the appraisal-bias problems.

Conclusions

Evaluating the performance of EQK and First Union has shown that the volatility of the income component of the return for

both EQK and First Union outperformed that of the S&P 500 and under performed the RN. Although other performance measures suggest that EQK outperformed First Union, the limitations detailed in this chapter prohibit a generalization to be made that single-asset regional shopping centers securities outperform pooled-asset regional shopping center securities. One of the main reasons why an accurate comparison cannot be made is the lack of information which permits the mixed-asset portfolio of First Union to be properly analyzed.

Based on these results, the analysis indicates that the public markets probably do not accurately value the underlying real estate in both EQK and First Union. As noted, this under-valuation is something that underwriters should consider when deciding whether to issue a security in the public market or the private market. With such a large difference in value, it is likely that the private markets would generate greater proceeds for issuers.

CHAPTER 4

REGIONAL SHOPPING CENTER SECURITY SIMULATION

Introduction

In the previous chapters it was determined that an opportunity existed for Japanese investors to invest in U.S. regional shopping centers and that real estate securities would be an efficient way for Japanese investors to acquire such centers. If this is the case, then understanding which real estate security structures maximize return while minimizing volatility should be important for investors. Thus, the focus of this chapter will be to evaluate four representative real estate security structures in an effort to determine which type of security, if issued privately and marketed to Japanese investors, would offer the best financial return. Due to the lack of publicly available information for private securities, a computer model was developed to simulate the performance of the four real estate security structures, using the historical NOIs of the two securities analyzed in Chapter 3 (EQK and First Union). The results of these simulations should enable underwriters to evaluate more effectively than before, which security structures will produce the highest returns with the

lowest volatility when the securitized assets are regional shopping centers.

Financial Structures and Structuring Issues

Since 1987, many equity-oriented foreign investors who have invested in trophy properties have chosen to use convertible and participating mortgage investments as opposed to direct equity investments. [30] In a convertible mortgage, the lender agrees to lend at a fixed, below-market interest rate[18] in exchange for an option to convert all or a portion of the loan into an equity position at some later date. A participating mortgage is similar in that the lender also agrees to accept a fixed, below-market rate of interest. In exchange, however, instead of granting the lender a conversion option, the borrower agrees to pay the lender contingent interest, based on the asset's cash flow and/or to make additional payments that are related to the property's appreciated value, when the principal is due. By accepting a below-market current yield in either of these instruments, the lender, in effect, trades current yield for potentially greater total yield. This trade-off can be advantageous for a borrower because with low current interest rates, he can produce a pro forma that justifies a higher level of debt on the asset and he can, therefore, raise more financing. Another advantage to the borrower is that such a

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[18] Below-market in terms of conventional mortgage rates.

structure shifts a significant amount of the risk associated with the asset's economic performance to the lender. For example, if the asset's NOI does not meet projections, or if the property does not appreciate, the value of the conversion option or the participation in the residual diminishes and the lender's overall yield suffers. Additionally, if the property depreciates, the lender runs the risk that, at the end of the mortgage term, there may not be adequate take-out financing available. On the other hand, the structure does offer the lender the advantage of preserving a first lien on the asset which would not be possible in the case of an equity investment. In addition, if the asset performs, as or better than expected, the investor may be in a position to receive an equity-like return with the security of mortgage debt. [12,30]

For Japanese investors willing to take on more risk than that of a straight mortgage loan, these hybrid configurations could be used to structure securities that offer them potentially greater returns than those available with securities structured as conventional debt. Since the Japanese have used these two hybrid structures to invest in U.S. real estate [30], they were the two selected to compare to leveraged and unleveraged equity structures. Thus, the computer model used in this chapter simulates the following four security structures: (1) participating debt (PD), (2) convertible debt (CD), (3) leveraged equity (LE), and (4) unleveraged equity (UE).

Of course, in structuring a real estate security for the

private market, there are many issues to consider beyond the financial performance of the security, such as legal and tax concerns, marketability and liquidity issues.

These issues are significant and the way in which they could influence the decision to pursue one structure over another cannot be overstated. For example, there are U.S. laws that prevent or severely restrict investment by foreigners; nine states completely prohibit such investment.[19] The balance of the states have some restrictions. [2]

In addition to the multitude of legal issues having an impact on how a security should be structured, there are also substantial tax issues that will have an impact. For example, in 1980, Congress enacted the Foreign Investment in Real Property Tax Act of 1980 (FIRPTA) meant to impose significant burdens on foreign investors in U.S. property. One of the consequences of the Act was to tax capital gains for foreign investors at the same rate they were taxed for U.S. real estate owners. (Prior to 1980 there was no U.S. capital gain tax on investments made by foreigners.) Additionally, the Act required foreign investors to pay U.S. withholding tax on any capital gain earned in the U.S. According to Mark Eppli, Lecturer at the University of Wisconsin, one result of FIRPTA is that Japanese investors have used participating and convertible mortgages to invest in U.S. real estate, as a way to avoid paying capital gain and withholding taxes. [2]

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[19] The nine states are CN, IN, KN, MI, MO, NE, and OK.

In addition to legal and tax issues there are other issues
that could affect an underwriter's selection of one structure
over another. For example, to the extent that an underwriter
perceives potential investors as preferring an equity investment
to a debt investment, the issuer is likely to prefer structuring
a leveraged or unleveraged equity security into a participating
or convertible mortgage instrument. In addition, to the extent
that a participating mortgage structure requires a certain type
of credit rating or enhancement which is unavailable, that
structure would have to be eliminated from consideration.
Finally, the transaction costs involved in issuing an equity
security are typically higher than those involved in issuing
debt instruments and could influence an underwriter to issue a
debt instrument as opposed to an equity security.

Methodology and Simulation Assumptions

To measure the hypothetical performance of the four financial
structures, the quarterly data from EQK and First Union (1986:4-
1990:4) were used to simulate the investor's total quarterly
return. This simulation was accomplished by taking the current
quarterly cash flow (income component of total return) received
by the investor, adding it to the change in the capital
component for that quarter, and then dividing that sum by the

market value of the bond or equity investment.[20] (This method of determining quarterly return, dependent as it is on the estimated net asset value of an investment, is, as previously noted, problematic.) The model assumed that the investment was sold and reinvested the next quarter using the same financial structure.[21]

For purposes of this chapter, the model evaluated performance using the same statistical measures as before: mean return, standard deviation, and coefficient of variation. The risk-adjusted rates were not used as a method of comparison because none of the rates calculated exhibited any statistical significance at the 95% level.

The financial assumptions used for the simulation of EQK and First Union are outlined in Exhibit 4.1. In all cases, the financial results of the model are calculated on a before tax basis.[22] These assumptions were developed using historical Treasury Bill rates and mortgage rates for regional shopping center debt as well as the information contained in the prospectuses of several real estate bond issues.

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[20] The cash flow the investor receives is NOI less any debt service imposed by the simulated capital structure. Upon sale, the residual value is calculated after the repayment of debt, if any. Net asset value, as it is used here, refers to the same calculation as in Chapter 3.

[21] Transaction costs are assumed to be 3%. The cost of credit enhancement and annual rating fees are not included.

[22] This is done to maintain comparability between the structures without the influence of withholding, capital gains, and ordinary taxes on the return and volatility measures of the model.

Exhibit 4.1

Base Case
Simulation Model Assumptions

Structure	Loan-to-Value	Fixed-Rate Base Coupon	Equity Participation Level (1)
Participating Debt	80.00%	8.00%	50.00%
Convertible Debt	80.00%	8.00%	50.00%
Leveraged Equity	70.00%	8.75%	100.00%
Unleveraged Equity	0.00%	0.00%	100.00%

(1) Equity participation level is the amount of equity participation the investor shares in for each financial structure.

Source: Author's assumptions

In the case of the participating debt and convertible debt, the security was assumed to have received an investment-grade rating (A or better) by Duff & Phelps Inc., a nationally recognized rating agency. To be so rated, Duff and Phelps requires a security to have a debt coverage ratio of at least 1.25 and a loan-to-value ratio of at least 75%. In all quarters of 1987, both EQK and First Union had loan-to-value and debt service coverage ratios that would qualify for such a rating. For example, EQK's debt service coverage was 1.45 and First Union's was 1.41. The loan-to-values ratios for each were 80%.[23]

The fixed-rate base coupons for the model's participating debt (8.00%), convertible debt (8.00%), and leveraged equity (8.75%) structures were determined by adding 32, 32, and 107 basis points respectively, to the 10 year Treasury Bill rates at year end in 1986. At that time the 3-year, 5-year and 10-year Treasury bill rates were 7.06%, 7.31%, and 7.68% respectively. The spread over Treasury rates was selected by reviewing a transaction similar to that modeled here, the Corte Madera Shopping Center located in Marin County, CA., and by interviews with underwriters to discuss pricing. These underwriters stated that the Corte Madera issue was likely the most representative transaction near 1986 which was a $40 million bond rated AAA by S&P and priced at 9.68%, reflecting a

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[23] According to Goldman Sachs, a 75%-80% loan-to-value ratio is common for hybrid structures and drops the base rate coupon approximately 50-75 basis points below the straight market-rate mortgage-backed security rate (approximately 100 basis points over Treasury Bills in 1986).

spread of 83 basis point spread over the 10-year Treasury Bill rate at that time (8.85%). These underwrites pointed out that this was not a hybrid issue, and if it had been, the spread would have been approximately 25-50 basis points over the Treasury Bill.[24] Based on these market rates, the base case coupon rate for hybrid and leveraged equity simulations were selected. These rates reflect the range for retail bond issues offered in 1986. None of the structures assumed any bond amortization since few hybrid bonds issued to date have any bond amortization. [9,38] Later in this chapter, these rates along with other structuring assumptions will be varied to evaluate how sensitive each financial structure's return is to changes in interest rates and equity participation levels.

The formulas used in the model to value the quarterly market value of the bonds (participating mortgage and convertible mortgage) as well as the option on the convertible mortgage are detailed in Appendix 1. [48] For the participating and convertible mortgages, the participation and convertible features were initially structured with a 50% participation and a 50% conversion option. This assumption was based on a comparison of non-retail participating and convertible mortgages that Goldman Sachs had previously marketed to Japanese investors. Again, these levels will be varied in the sensitivity analysis.

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[24] As a point of reference, the 10 year ALIC mortgage rate in 1986 was 10.00% for retail projects reflecting a spread of 232 basis points over the Treasury Bill.

Since the model assumed that the security was sold at the end of each quarter and then reinvested using the same structure, the calculation of the income yield and the capital yield should be explained. For the participating structure, when the bond was sold each quarter, the income yield was calculated by taking the current cash flow to the investor (interest income plus any contingent interest) and dividing it by the market value of the bond. The market value of the bond was determined using a standard corporate finance technique for valuing bonds: the formula for which is detailed in Appendix 1. [48] The market value was determined by discounting the future interest income (including contingent interest) of the bond back to the current period. This present value was then added to the discounted value of the face amount of the bond at maturity for the current period. The sum of these two present values (the discounted interest income stream and the discounted face amount of the bond) represent the market value of the bond in the current period. The discount rate selected, according to the formula, should be the market interest rate for non-hybrid debt issues of equivalent risk. For purposes of this model, the equivalent non-hybrid debt instrument used was the comparable Treasury Bill rate for the period, plus 100 basis points. (These rates were chosen because they are close to high-grade corporate bond yields, which are what investors will compare these securities to.) [9,38]

The capital component for the participating debt was

calculated by taking the change in the residual value each
quarter, and dividing it by the same denominator used for the
income component -- the market value of the bond.

The income and capital yield calculations for the convertible
debt were slightly different. Although the market value of the
bond, excluding the conversion option, was calculated exactly as
described previously, calculating the value of the option was
more complicated. To do so it was assumed that 50% of the
mortgage balance was converted to equity in the fourth quarter
of 1990. The residual value of the asset to the investor was
calculated by taking its net asset value, subtracting the
mortgage balance and the equity conversion value, and then
multiplying by 50%. The result was the value of the option.
Each quarter, the value of the option was discounted back from
its exercise date (1990:4) using the same discount rate as that
used in the participation calculations. (The formula for
valuing the option is detailed in Appendix 1.) As the option
approaches its exercise date, it rises in value. The value of
the conversion option is added to the market value of the debt,
because, in theory, a potential investor would be willing to pay
more for the debt if it contained an option on the future value
of the asset. The more the underlying asset is worth, the
greater the value of the option and the more an investor would
be willing to pay for the bonds.

The capital yield for the convertible debt was calculated by
taking the change in the value of the option each quarter, and

dividing it by the same denominator used for the income component -- the market value of the bond. Depending upon the value of the asset, the value of the option will change each quarter which results in either a capital gain or loss to the investor. At the exercise date, the value of the conversion option is divided by the market value of both the debt and the equity components, since the investor's role in the transaction is that of both a lender and equity owner.

The leveraged equity income yield for each quarter was calculated by taking the cash flow after debt service and dividing it by the net asset value. The capital yield was calculated by taking the change in each quarter's residual value, divided by the net asset value. The residual value was calculated by subtracting the repayment of the debt from the net asset value.

As mentioned earlier, these assumptions will be varied to test the sensitivity of each security relative to interest rates and equity participation levels.

Performance Results

The next section evaluates the performance of each security structure for both EQK and First Union and then compares the results. In addition, the sensitivity of each structure to different interest rates, levels of equity participation and loan-to-value ratios is explored.

EQK

The quarterly total yields of the simulation model for EQK are displayed in Exhibit 4.2. As shown in this exhibit, all four structures have different levels of return and volatility depending upon the security structure. These trends are described statistically in Exhibit 4.3 which follows:

Exhibit 4.3

Simulated Quarterly Performance Results for EQK
(1986:4-1990:4)

	Mean %	STD %	CV.
Participating Debt	3.44	6.46	1.88
Convertible Debt	4.65	6.67	1.43
Leveraged Equity	3.59	20.95	5.83
Unleveraged Equity	3.00	8.28	2.76

Source: Author's calculations based on company 10K and 10Q reports.

(1) Participating Debt

As Exhibit 4.3 shows, the PD structure has the second lowest coefficient of variation of the group. This low coefficient of variation occurs because the PD structure provided a stable return over the period as indicated by its low STD. This relative stability is due to the fact that PD, as compared to

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Exhibit 4.2

EQK SIMULATED QUARTERLY RETURNS
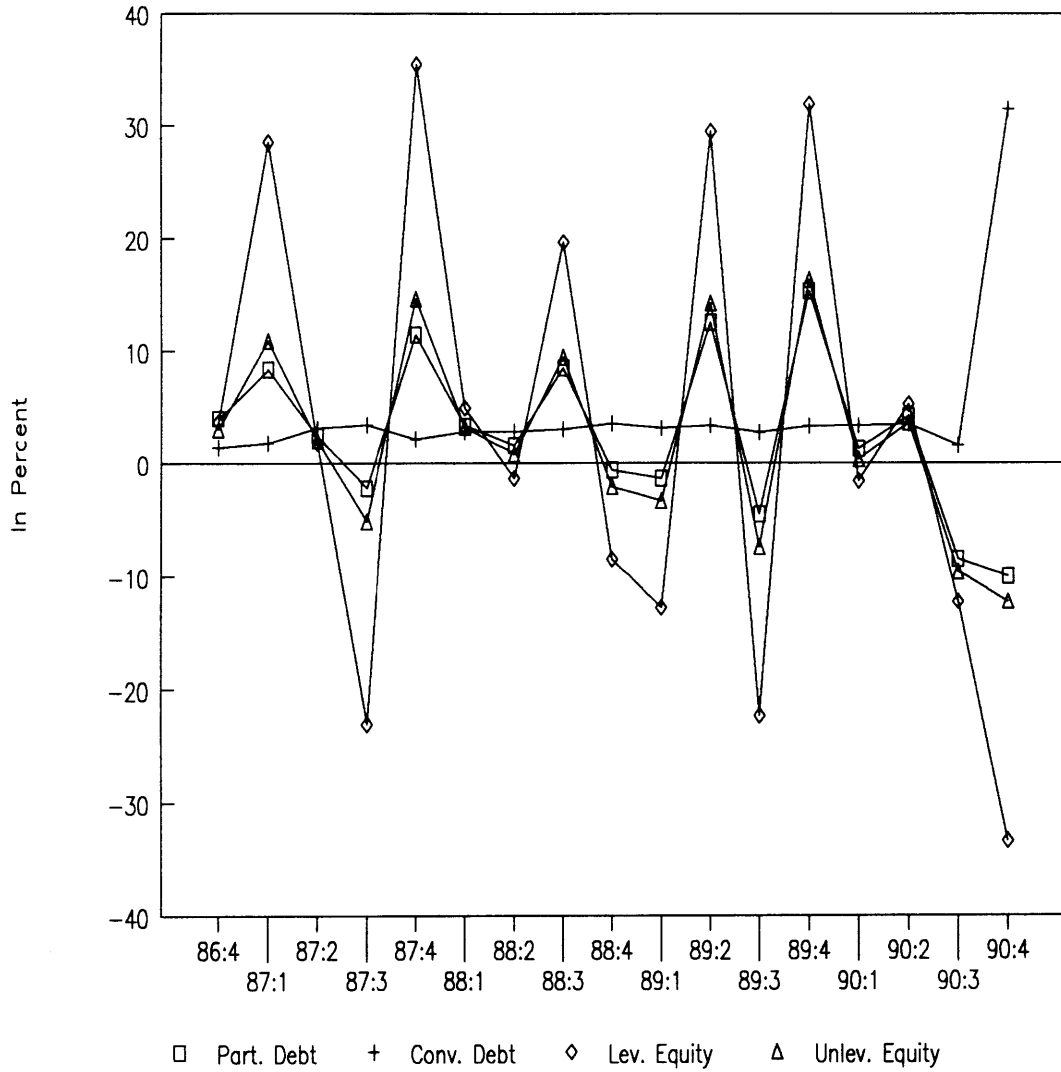
Source: Author's Calculations Based on Company 10K and 10Q reports.

equity, has a more secure residual return. This is so because with a leveraged or unleveraged equity structure, the investor is in a subordinated -- and thus more risky -- position vis a vis the debt holder. Furthermore, since the contingent interest typically is structured as a percentage of net operating income after debt service, as it is here, it may have a more volatile return than a straight mortgage instrument since a component of the interest income for a participating mortgage is variable.

When the income and capital components of the PD's quarterly return are evaluated separately, the amount of the return generated from income is shown to be 2.50% and from capital to be only 0.94% (See Exhibit 4.4) The standard deviations are 0.03% and 6.43% respectively. Since the PD generates a current participation in cash flow and is in a senior position to equity, it seems appropriate that the majority of the return comes from income rather than residual. As will be shown, the equity structures have more of the return shifted toward capital. Although the capital component of the PD return is volatile, it is less than that of the other structures.

(2) Convertible Mortgage

The convertible mortgage structure has the lowest coefficient of variation of all the structures (see Exhibit 4.3). With With respect to the income and capital components of the return for CD, the model indicates that although the income return is the lowest of the three structures, the capital return is the highest. The income is lowest because the fixed-rate base

Exhibit 4.4

Simulated Performance of Income and Capital
For EQK and First Union
(1986:4-1990:4)

	MEAN %		STD %	
	Income	Capital	Income	Capital
SECURITY				
EQK				
Participating Debt	2.50%	0.94%	0.03%	6.43%
Convertible Debt	1.82%	2.84%	0.12%	6.63%
Leveraged Equity	1.85%	1.74%	0.18%	20.77%
Unleveraged Equity	1.98%	1.02%	0.08%	8.20%
FIRST UNION				
Participating Debt	2.41%	0.10%	0.03%	2.51%
Convertible Debt	1.91%	1.26%	0.09%	2.63%
Leveraged Equity	2.62%	0.04%	0.33%	11.16%
Unleveraged Equity	2.33%	0.12%	0.08%	3.15%

coupon does not rise in value the way the participating or leveraged equity and unleveraged equity structures do. The capital component is high because it reflects the quarterly appreciation of the option and the equity return when the option is exercised in the last quarter. These two factors also create greater volatility for CD. While the income component demonstrates little volatility, the capital component is more volatile than the PD. This greater volatility is largely a result of the option being exercised in the last quarter.

(3) Leveraged Equity

LE has the highest coefficient of variation of the three structures. This high coefficient of variation is due to the high standard deviation (20.99%) which is related to the capital component of the security. This high standard deviation makes sense given that LE investors face greater risk than those investing in the other three structures because their position is subordinated to that of the debt holders and the debt must be serviced before the equity holders can receive a return. The relatively low return on the income component is a function of the capital structure. In the case of LE, the mortgage is fixed at a market rate of interest, whereas in the hybrid structures some of the risk is shifted to the lender by way of a below-market interest rate. If the LE interest rate is lowered, as will be shown, then the return for LE is higher than the other structures except for CD.

(4) Unleveraged Equity

UE, the final structure evaluated, generates a coefficient of variation that is higher than the two hybrid structures, but lower than LE. (See Exhibit 4.3) The coefficient of variation is higher than the hybrids' because although UE's total return is lower (3.00% vs. 3.44% and 4.65%), the standard deviation is higher (8.28% vs. 6.46% and 6.67%). Similar to LE, UE's capital component of return is higher than the PD because when a increase in value occurs, both LE and UE feel the full impact of it, unlike the PD investors who share in only part of the increase.

First Union

In Exhibit 4.5, the quarterly total returns for the four security structures are graphed while Exhibit 4.6 displays the statisitical performance measures for First Union.

Exhibit 4.6

Simulated Quarterly Performance Results for First Union
(1986:4-1990:4)

	Mean %	STD %	CV.
Participating Debt	2.51	2.54	1.01
Convertible Debt	3.21	2.66	0.83
Leveraged Equity	2.66	11.49	4.32
Unleveraged Equity	2.53	3.23	1.37

Source: Author's calculations based on company 10K and 10Q reports.

Exhibit 4.5

FIRST UNION SIMULATED QUARTERLY RETURNS
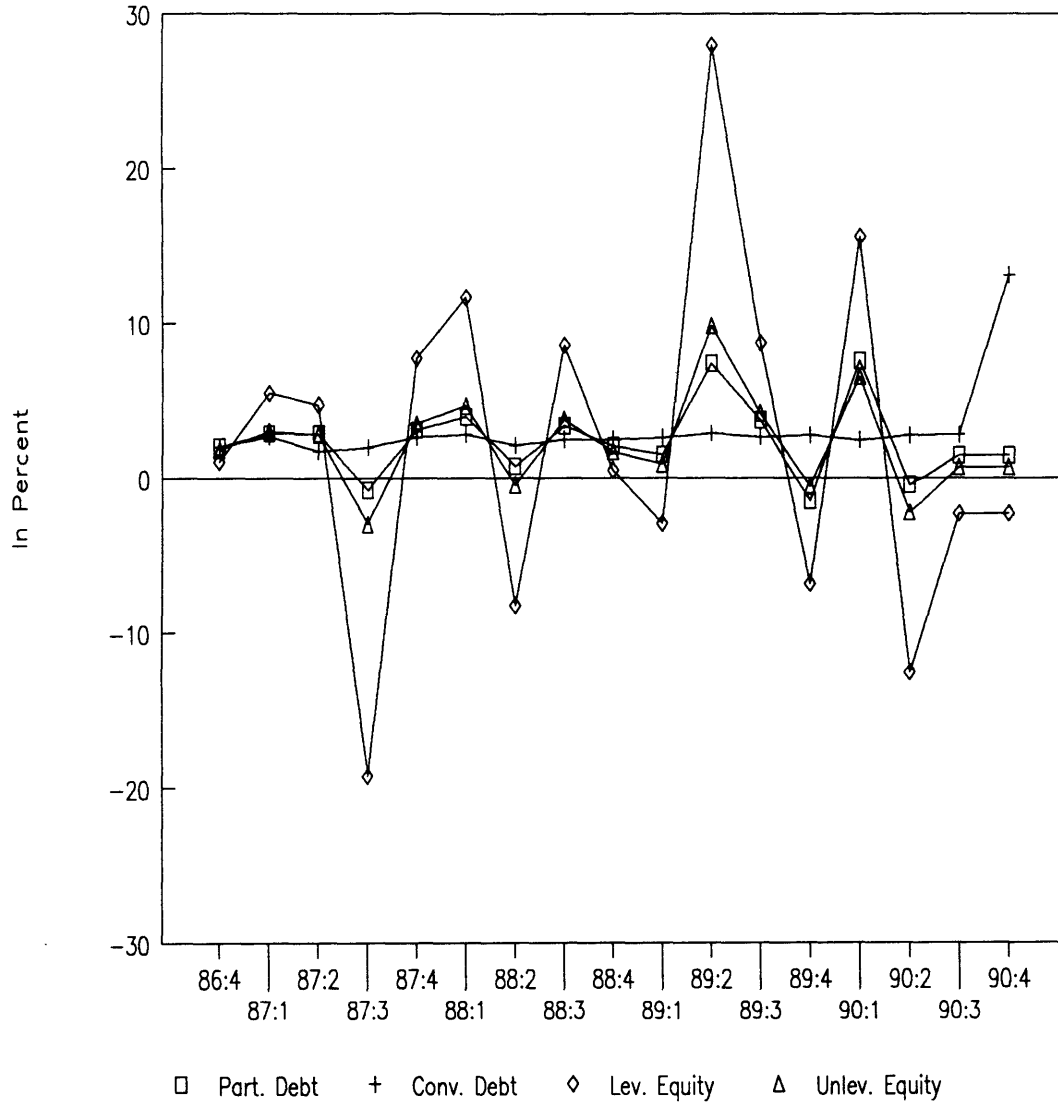
Source: Author's Calculations Based on Company 10K and 10Q reports.

(1) Participating Debt

As Exhibit 4.6 shows, the PD structure has the second lowest coefficient of variation of the group. This low coefficient of variation occurs because the PD structure provided a stable return over the period as indicated by the relatively low STD. When the income and capital components of the PD's return are evaluated, the amount of the return generated from income is shown to be much higher than the capital component, while the opposite is true for the standard deviation. Since the participating mortgage generates a current participation in cash flow, (unlike a convertible mortgage), and is in a senior position to equity, it seems appropriate, as noted earlier, that the majority of the return comes from income rather than residual. The investor who wishes to have a more bond-like investment (more current income) may find this investment more suitable than the other three.

(2) Convertible Mortgage

The convertible mortgage structure has the lowest coefficient of variation of the four structures (see Exhibit 4.6). This is so because the convertible had a higher mean return due to the rising value of the option as well as the option being exercised in the last period. However, this option caused greater volatility in the return than did the PD's participation in the asset's residual value since the convertible option is more similar to an equity investment than the residual of the

participation.

With respect to the income and capital components of the quarterly return, the model indicates that a substantial amount of the return is generated by the capital component. The capital component is higher than the other structures because the investor can sell the option at a gain based on the positive value of the residual. As the option approaches its exercise price, investors are willing to pay more for the option since its value is more certain. Furthermore, the higher volatility of the CD's total return is attributable to the capital component. This suggests that a CD structure (in addition to a PD structure) behaves more like equity than a straight mortgage instrument, by shifting a greater portion of the return toward the future value of the asset.

(3) Leveraged Equity

LE has the highest coefficient of variation of the three structures -- as it did in the EQK simulation -- largely due to the high standard deviation. Unlike EQK, however, the high total return is due almost entirely to the income component as opposed to the capital component. This difference may be explained by the fact that there were larger drops in the net asset value of First Union than for EQK. These drops impact the return on equity structures more than they do the return on hybrid instruments.

(4) Unleveraged Equity

UE, the final structure evaluated, generates a coefficient

of variation that is higher than the two hybrid structures, but lower than LE. (See Exhibit 4.6). The coefficient of variation is higher than the PD's and CD's because while UE's total return is the lowest, its standard deviation is higher than the hybrids'. Similar to LE, UE has the same problem of a low capital return. Again, these low capital returns suggest that although equity investors may expect larger yields from capital appreciation, the asset and the security do not meet this expectation.

Comparison Between EQK and First Union

In both the EQK and First Union simulations, CD performed the best and LE performed the worst. The return components for all securities in both simulations ranged from a quarterly low of 2.35% (UE, First Union) to a high of 4.65% (CD, EQK). During the simulation period (1986:4-1990:4) the mean quarterly yield on comparable Treasury bills was only 2.37% meaning that the majority of these structures beat the "risk-free" rate. Even when 100 basis points were added to this Treasury yield to increase the hurdle rate to 3.37%, the returns from all of EQK's structures except UE exceeded it. These results reflect the underlying operating strength of the Green Acres Mall. However, despite the mall's strong cash flow, its return is almost two times as volatile as First Union's, an event that should not be unexpected, given that, in theory, the return on single assets

should be more volatile than on a portfolio of assets. [13]

These results suggest that underwriters should consider pooling assets as a way to lower volatility. However, if an underwriter were considering securitizing a single-asset, the hybrid structures would be a way to lower the volatility of the investment, while still providing a return to investors that would be higher than an equity structure.

Sensitivity Analyis

To test the results of these simulations, key assumptions in the model were varied. The assumptions varied were the interest rate spread between hybrid debt and leveraged equity, the level of equity participation and the loan-to-value ratios.

In the first case the spread between the hybrid structures and the leveraged equity was changed from the base case of 75 basis points to a smaller spread of 25 basis points and a higher spread of 100 basis points. The results of the sensitivity are displayed in Exhibit 4.7. As shown, changing the spread between the securities did not have a substantial impact on the performance rankings of the securities. In both the low and the high case, the coefficient of variation for the leveraged equity did not change more than 6% in either direction. With a spread of 25 basis points, however, the return is greater for LE than other structures in both the EQK and First Union simulations. In order for LE to have the lowest coefficient of variation the

EXHIBIT 4.7
Interest Rate
Sensitivity Analysis For Quarterly Simulation
For EQK and First Union
(1986:4-1990:4)

	Base Case (1)			Low Case			High Case		
	(Interest Rate 8.00% and 8.75%)			(Interest Rate 8.00% and 8.25%)			(Interest Rate 8.00% and 9.00%)		
	Mean%	STD%	CV.	Mean%	STD%	CV.	Mean%	STD%	CV.
SECURITY									
FIRST UNION									
Participating Debt	2.51%	2.54%	1.01	2.51%	2.54%	1.01	2.51%	2.54%	1.01
Convertible Debt	3.21%	2.66%	0.83	3.21%	2.66%	0.83	3.21%	2.66%	0.83
Leveraged Equity	2.66%	11.49%	4.32	2.74%	11.48%	4.19	2.42%	11.50%	4.75
Unleveraged Equity	2.35%	3.23%	1.37	2.35%	3.23%	1.37	2.35%	3.23%	1.37
EQK									
Participating Debt	3.44%	6.46%	1.88	3.44%	6.46%	1.88	3.44%	6.46%	1.88
Convertible Debt	4.65%	6.67%	1.43	4.65%	6.67%	1.43	4.65%	6.67%	1.43
Leveraged Equity	3.59%	20.95%	5.83	3.69%	20.95%	5.68	3.50%	20.96%	5.99
Unleveraged Equity	3.00%	8.28%	2.76	3.00%	8.28%	2.76	3.00%	8.28%	2.76

(1) The 8.00% base coupon is the interest rate for the participating and convertible structures. The 8.75% interest rate represents the interest rate for the leveraged equity structure. In each case (low and high) the interest rate on the leveraged equity is varied.

base coupon rate would have to be less than the hybrid base coupon, which does not make sense. Therefore, what the model suggests is that changing the interest rate will not diminish the volatility of the LE investment which in turn does not change its ranking relative to the other securities.

In the second case, the results were tested by varying the level of equity participation and the loan-to-value ratios of each "base case" security. In this instance, the base case was compared to a "high case" scenario where the equity participation and conversion levels for the hybrids were increased from 50% to 75% while the loan-to-value ratio for the LE was increased from 70% to 75%. Because LE participation is always 100%, the only way to model a "high case" or "low case" is to change the loan-to-value. For the "low case" scenario, the equity participation and conversion levels were decreased from 50% to 25% while the LE loan-to-value was decreased from 70% to 60%. Exhibit 4.8 displays the results of the sensitivity. If all the assumptions of the base case are held constant except for the loan-to-value ratio of the leveraged equity, the leveraged equity security achieves its optimal, or lowest, coefficient of variation at a 65% loan-to-value, however, its ranking to the other securities does not change. At higher loan-to-value ratios its return diminishes substantially due to the higher debt service.

This sensitivity analysis demonstrates that the hybrid structures outperform the equity structures even when return the

Exhibit 4.8
Equity Participation (1)
Sensitivity Analysis For Quarterly Simulation
For EQK and First Union
(1986:4-1990:4)

SECURITY	Base Case 50% Part./ Lev. Eq. 70%			Low Case 25% Part./Lev. Eq. 60%			High Case 75% Part./Lev Eq. 75%		
	Mean%	STD%	CV.	Mean%	STD%	CV.	Mean%	STD%	CV.
FIRST UNION									
Participating Debt	2.51%	2.54%	1.01	2.29%	1.27%	0.55	2.73%	3.73%	1.37
Convertible Debt	3.21%	2.66%	0.83	2.66%	1.40%	0.53	2.65%	1.35%	0.51
Leveraged Equity	2.66%	11.49%	4.32	2.60%	8.47%	3.26	2.49%	14.03%	5.64
Unleveraged Equity	2.35%	3.23%	1.37						
EQK									
Participating Debt	3.44%	6.46%	1.88	2.77%	3.28%	1.18	4.07%	9.54%	2.35
Convertible Debt	4.65%	6.67%	1.43	3.37%	3.33%	0.99	5.20%	10.19%	1.96
Leveraged Equity	3.59%	20.95%	5.83	3.55%	17.25%	4.86	3.57%	23.55%	6.6
Unleveraged Equity	3.00%	8.28%	2.76						

(1) Equity participation refers to the level of participation in cash flow or residual or the amount of debt that is converted into equity at conversion.
(2) Leveraged Equity percentage refers to loan-to-value ratio. Loan-to-value ratios for Participating Debt
and Convertible Debt are held constant at 80%.

"base case" assumptions are varied.

Conclusion

Comparing the four security structures for both EQK and First Union suggests that the hybrid structures have greater returns with less volatility than do the equity structures. The hybrid returns appear to be driven by the combination of the low volatility of the fixed-rate base coupon plus the equity-like returns of the participation and convertible features. Although leveraged equity provided the second highest return, its return was the most volatile of the group, due to its subordinated nature.

These findings, suggest that in some circumstances, hybrid structures may provide higher returns with less volatility than the equity structures. This does not, however, suggest that equity structures are not appropriate for certain investors. Since every transaction must match the needs of the investor and the issuer there are many reasons an equity structure may be more approriate than hybrid structures. Furthermore, given the limitations of this study, it is difficult to use these results to generalize about structuring real estate securities for Japanese investors in today's market. They do, however, offer some guidance.

From the investor's perspective, these results suggest that owners who make equity investments may not be compensated adequately for the risks they are bearing. Given the choice

between a hybrid structure or an equity structure, purely from a return and volatility perspective, the investor may be better off selecting a hybrid structure.

This has implications for Japanese investors. If the investor is seeking an equity return, then hybrid real estate securities may generate similar yields as equity real estate securities with the added security of being a senior mortgagee. By shifting more of the yield toward the residual value of the asset through a mortgage security, the investor may achieve higher yields than he would with comparable Treasury or high-grade, corporate bonds.

Additionally, as pointed out earlier, these instruments may offer more tax and legal flexibility for Japanese investors as compared to direct investment. [30] By using the participating mortgage instrument in particular, investors could avoid paying capital gains tax on the residual value, since it would be treated as additional interest income. These instruments would also allow Japanese investors to invest in those states where direct ownership of real estate by foreigners is prohibited or severely restricted. This factor becomes very important if the investor were considering investing in a portfolio of properties located throughout the U.S.

The following chapter will consider the implications of these results for designing a regional-shopping-center-backed security for Japanese investors.

CHAPTER 5

Conclusion

This paper has suggested that because of the current capital shortage existing in the U.S. real estate market, Japanese investors, despite the changing financial climate in Japan, are well positioned to acquire and finance U.S. property. This paper argues that, for the Japanese, real estate securities may be the best method of so investing. Particular opportunities exist for investment in retail assets, a segment of the market in which the Japanese have not yet invested heavily. In particular, regional shopping centers, due to their high quality, large size, strong management, and healthy profits offer attractive investment opportunities. In Chapter 4, the performance of four hypothetical, privately placed security structures was simulated using the historical operating results of a single-asset regional shopping center and a portfolio of regional shopping centers, to determine if one structure or another provided better returns with less volatility.

The results of this simulation suggested that hybrid securities provide the investor with higher returns and less volatility than leveraged or unleveraged equity securities. This result held true even when different interest rates, equity

participation and loan-to-value levels were simulated. Although the sensitivity analysis changed the returns and standard deviations of each structure, it did not change the ranking of the structures; convertible debt performed the best and leveraged equity performed the worst. In all cases, the single-asset security had slightly higher returns with more volatility than the pooled-asset security.

These findings have several implications for underwriters attempting to structure a privately placed security to be marketed to Japanese investors. While every potential transaction will have its own particular legal, tax, and other constraints, which may make it necessary for underwriters to choose one structure over another, from a purely financial perspective, these findings suggest that hybrid securities, and convertible debt in particular, provide higher returns with less risk to the investor. With the hybrid structures, the investor has the security of a first lien on the asset at the same time that he participates in the equity or "upside" of the asset. Due to the subordinated nature of a leveraged equity position, its return, while comparable to the hybrid returns, has substantially higher volatility.

In today's market, where Japanese investors want higher yields and greater levels of collateral than they did even a year ago, a hybrid structure may be a good alternative to an equity structure. In addition to offering potentially greater total yields, these hybrid structures have the added tax

advantage for Japanese investors that contingent interest earned from a bond is considered ordinary income and is not, therefore, taxed as a capital gain. Note, however, that in the case of convertible debt, once the option to convert from debt to equity is exercised, the investor would become liable for capital gains tax if a sale of the asset were to occur.

Although the research conducted for this study revealed no evidence of an active secondary market for real estate securities in Japan, it is likely that, if that market evolves, a rated debt instrument would be more easily valued and understood by investors than a private equity interest where no convenient market place exists to price such an investment. Since the hybrid structure can be rated and valued more easily by investors than an unrated, equity interest in a property, it should be preferable to investors.

From a legal and tax perspective, participating mortgages should give underwriters more flexibility in structuring a security than do equity investments. As mentioned in Chapter 3, the Foreign Investment Real Property Tax Act of 1980 imposed taxes on investment by foreigners, and some states in the U.S. severely restrict or prohibit such investment. Since participating mortgages are considered debt instruments -- at least presently -- they should be exempt from these restrictions.

With any real estate security offering, the underwriter must match the vehicle to the needs of both the issuer and the

investor. Based on the results of this study, a hypothetical security structure can be proposed.

As discussed in Chapter 2, the two-tier lease structure of most retail operations allows for a convenient partitioning of the debt into senior and subordinated classes. The senior note holders would have a claim on mortgage cash flows, which, in the case of a regional center, could match the minimum base rents of the tenants. The sale of the subordinated notes could be structured to match the percentage rents as well as the appreciated value of the asset, which, in effect, would be like an equity option since they represent a bet on the residual value of the asset. Pricing may explicitly acknowledge this relationship by providing participation in the residual on a percentage basis rather than on a fixed basis.

Although this structure has been used for other commercial assets, it may be more efficient for retail because of the special retail lease structure. With a retail-based security, risk and return could be better matched with separate classes of debt than with other commercial assets which do not have base and percentage rent structures.

Although this study has addressed many issues pertaining to the structuring of regional-shopping-center-backed real estate securities for Japanese investors, there are many areas that require further study. More research needs to be done on the performance of private real estate securities so that the simulations can be made more realistic. Furthermore, this

research focused only on the time period 1986-1990, and more research over broader time horizons (more business cycles) would help test some of the findings. In addition, it would be worthwhile to separate regional centers and super regional centers and evaluate their performance separately. Because the real estate securities market continues to evolve and will become an even more important source of capital for the U.S. real estate industry, this study should be helpful in guiding issuers, underwriters, and investors toward real estate security structures that are both profitable and efficient as well as in pointing out other areas of research that would be valuable to explore.

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APPENDIX 1

Formula for Calculating the Market Value of a Bond: [53]

$$B_t = \sum_{j=1}^{t} \frac{C}{(1+k_b)^j} + \frac{M}{(1+k_b)^t}$$

Where:

B_t =   Market value of a bond at time t,

C =   Dollars of interest paid each year,

j =   Time subscript from 1 to t,

k_b =   Market rate of interest on equivalent risk, non convertible debt issues,

M =   Maturity value,

t =   Number of years remaining until maturity.

Formula for Calculating the Market Value of an Option: [53]

$$C_t = \sum_{j=1}^{t} \frac{C_d}{(1+k_b)^t}$$

Where:

C_t =   Market value of option at time t,

C_d =   Value of option at conversion date,

j =   Time subscript from 1 to t,

k_b =   Market rate of interest on equivalent risk, non convertible debt issues,

t =   Number of years remaining until maturity.