
**REAL ESTATE DERIVATIVES:
DRIVE TO DERIVE**

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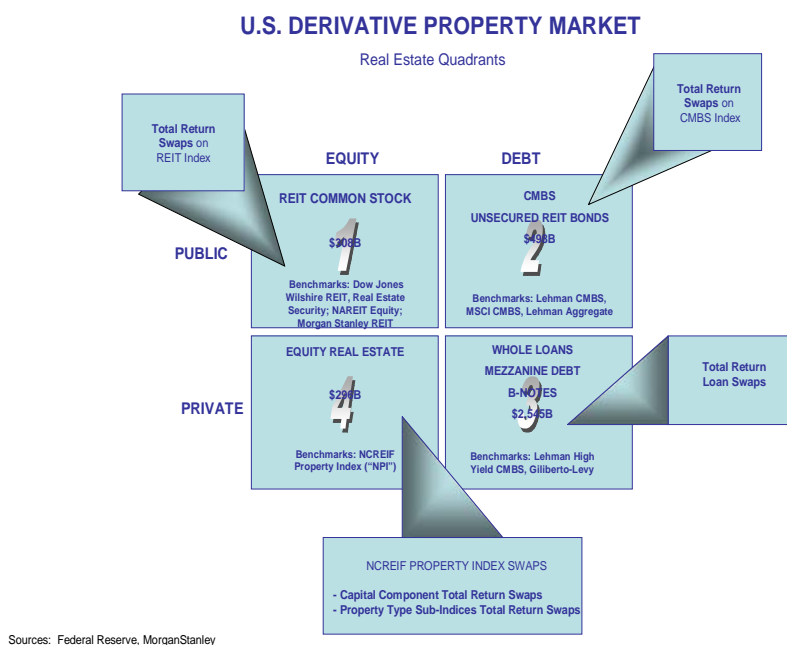
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REAL ESTATE DERIVATIVES

NEW PRODUCTS COULD BE BENEFICIAL TO INVESTORS

The \$151 trillion global over-the-counter derivatives market and the \$4.2 trillion domestic commercial real estate market have found each other. Although that may not be news within three quadrants of the real estate market, the introduction of NCREIF Property Index (NPI) swaps opens the door to the remaining sector — private equity real estate.

To date, the commercial real estate derivative marketplace has been comprised of total return swaps (TRS). (See “Glossary of Terms,” page 6). Acceptance and use of these vehicles not surprisingly have grown within the REIT and CMBS sectors. These sectors contain securities with returns that are correlated with those of broad stock and bond indices and much of the derivatives expertise and experience from those asset classes is applied. Though real estate in general does not lend itself to the standardization or component-of-return replication that has been fundamental to derivatives in the other asset classes, three quadrants have established derivatives markets (see “U.S. Derivative Market Real Estate Quadrants” chart below).



In general, advantages of the existing real estate derivatives over traditional investments are:

- The ability to obtain economic exposure or to obtain it more efficiently (in terms of liquidity, cost, and flexibility of the investment’s terms). A TRS involving an underlying loan, for example, provides a receiver exposure to that loan for a period of time without requiring the receiver to originate, purchase, or service it. Another example of the benefit of derivative products is a TRS for a high yield CMBS index which efficiently provides the receiver with the exposure of a diversified portfolio with superior liquidity.
- Synthetic leverage and the embedded financing rate. Because investors make no initial cash payment upon entering into a TRS, exposure can be obtained without selling existing assets or securing financing to access the capital to acquire the underlying assets. In essence, the derivative product enables the receiver to pay a LIBOR-based floating rate plus a premium to a counterparty for providing the use of its balance sheet, in return for receiving the desired asset’s returns. The payment of the LIBOR-plus is an embedded financing rate, which may be less than the borrowing rate would be to purchase that asset.

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- The ability to obtain short economic exposure or to obtain it more efficiently. An investor may enter a CMBS-Index TRS as the payor, for example, to temporarily hedge a large diversified portfolio or to hedge an upcoming securitization. In another case, a TRS may be a less-expensive alternative to shorting a REIT because a TRS requires a level of collateral posted with the counterparty that is substantially less than the margin required for the actual securities positions.

Given these advantages, demand for derivatives products comes from hedge funds, real estate lenders looking for hedge vehicles and public securities dealers looking for risk management tools.

SPEED BUMPS

Because of its low correlation and competitive risk-adjusted return, private equity real estate best complements equities and fixed income investments in a mixed asset portfolio. It decreases volatility, increases risk-adjusted returns and provides an inflation hedge. Trade-offs for these benefits include complex legal structures, relatively high transaction costs and limited liquidity.

The impediments to investing in the underlying market should serve as impetus for derivative development and innovation. To date, however, the challenges have proven immitigable by derivative solutions. The following features of private equity real estate differentiate it from the other quadrants:

- The idiosyncratic nature of individual properties relative to more commodity-like assets that can be securitized and structured.
- The low volatility of the quadrant. Appraisal-based valuations in the private equity sector serve to smooth and effectively decrease volatility. Volatility is key in the development of derivatives markets.
- No investable index. Indices that can be purchased allow investment banks to provide two-sided liquidity as a TRS dealer. Liquidity is not contingent upon middlemen finding counterparties. Alternatively, market liquidity can be enhanced if the index can be replicated with a weighted portfolio of the underlying assets.

PUBLIC EQUITY REAL ESTATE

The most common benchmarks used in real estate securities allocations are the NAREIT Equity Index, the Dow Jones Wilshire REIT Index and Real Estate Securities Index, and the MSCI US REIT Index. These are directly investable or replicable indices, so financial institutions can supply TRS market liquidity; they can fully hedge with minimal tracking error or basis risk by investing in the index or the underlying assets. An investment bank may borrow at LIBOR to buy the index, for example, and enter into a swap to pay away the index returns in return for receiving LIBOR plus a spread.

The swap receiver has the returns of the respective index without selling any other assets. It earns the index return less the LIBOR-plus payment it makes to the bank. If the investor wants to enter the derivative unleveraged, it would allocate cash in the amount of the notional amount of the swap agreement to a risk-free asset.

Say a portfolio manager with an ISDA master agreement and collateral support agreement enters into a one year swap agreement with an investment bank counterparty. The portfolio manager will receive quarterly the total return on a \$50 million notional amount of the NAREIT Equity Index in return for paying three-month LIBOR plus 25 basis points. The manager places the cash earmarked for the allocation, which otherwise would have been invested over time in a variety of individual REITs, in a risk-free, one-year Treasury or AAA

floating-rate security portfolio. If the strategy is to be in place longer than a year with continuous swap exposure, other portfolios may be considered, such as Treasury Inflation-Protected Securities — Treasuries with coupon payments based on a CPI-indexed principal. The swap can be collateralized with these securities to the extent agreeable within the swap documentation.

If the investor had a higher risk tolerance, it could choose to pursue an approach to produce a return greater than the LIBOR-plus amount being paid to the counterparty. It could invest its money, for example, in an actively managed portfolio of higher yielding, floating-rate securities.

Derivatives are also valuable tools for portable alpha strategies. It is not unique to this quadrant, but the quadrant's historic returns and volatility suggest this area will be a growing target for risk budgeting. Investors will seek to assemble a superior REIT portfolio of individual securities or long-only managed funds and pay the index's returns to a counterparty. This will remove the beta component of the returns.

PUBLIC REAL ESTATE DEBT

This quadrant consists of total return swaps on CMBS indices. It is a market that has been around for nearly a decade with increasing liquidity. It is not uncommon to see large CMBS index swaps among conservative pension plans' holdings.

Receiving on a TRS is an efficient method to replicate the returns of a diversified portfolio or a negotiated basket of securities. In the case of highly rated investment grade CMBS, an investor's embedded financing is usually LIBOR *minus* a spread — i.e., paying the floating-rate side of a swap at one-month LIBOR minus 30 basis points, in return for receiving the index return. This is because owners of the underlying securities finance them in the overnight or term repo market at rates below LIBOR and pass those rates on to swap counterparties. The market is active in below-investment grade indices as well, and advantages include diversification and liquidity superior to that of a portfolio of individual bonds. The trade-off for a receiver is that the upside is capped in terms of being able to beat the benchmark through security selection.

A payer of the index may choose to do so to create alpha with a superior portfolio in a down market, as opposed to owning less of the portfolio. Paying on a TRS also allows for the locking in of future issuance levels for upcoming securitizations. These uses enhance the liquidity and two-sidedness of the market.

PRIVATE REAL ESTATE DEBT

Traditional derivatives, such as interest rate swaps and options, are used to manage rate risk; credit derivatives, such as credit default swaps, increasingly are used to manage credit risk. The commercial real estate derivative in the private debt sector — a TRS on real estate loans, called a loan swap — is used to transfer the entire exposure. It transfers both interest-rate risk and credit risk to a counterparty, while the asset remains on the originator's balance sheet. All fees and interest earned, plus any appreciation or depreciation of the asset during the life of the trade — this often does not match the maturity of the asset — are transferred to the receiving party. The receiver pays the holder of the underlying loan a floating-rate payment equal to that holder's cost of funding plus a premium.

PRIVATE EQUITY REAL ESTATE

A private equity real estate derivative is not unprecedented, as a market has been developing in the United Kingdom. A confluence of factors — favorable derivative tax accounting rulings, new real estate tax expenses and increases in the investor base because of deregulation — have increased interest and market activity. Additionally, and not unlike the U.S. marketplace, large real estate lenders are motivated to support

and advance the market by their desire to increase the efficiency of hedge vehicles for the risks inherent in their substantial and growing lending businesses.

Well-known examples include property index certificates, which began in 1999 and are issued by Barclays Capital, and property index forwards, which began in 1994. Both derivatives offer investors exposure to the performance of the Investment Property Databank (IPD) UK Annual Index, which is the U.K. private equity property benchmark. In addition to these derivatives, four major investment banks currently are licensed to use IPD U.K. indices within real estate derivative products. The derivatives are primarily total return swaps. In the United States, a property swap market is under development similar to that in the United Kingdom.

DOWN A NEW PATH

Credit Suisse First Boston (CSFB) has been granted exclusive license to use the NCREIF indices to create derivatives transactions for a two-year period ending second quarter 2007. A CSFB-rated entity would act as counterparty to all transactions, which would facilitate the credit aspects of the market. This quadrant does not have an investable index, highly correlated hedge vehicles, or suitable replicating portfolios of assets and liabilities that can serve as an efficient dealer hedge. As a result, liquidity is likely to be contingent upon CSFB finding counterparties to match deals.

Capital-Component TRS

The first derivatives product is a TRS in which an investor receives or pays the quarterly capital value return component of the NPI and in return pays or receives a spread that will be established by the market. For many investors, the desired goal of this product will be to offer the opportunity to be short or long the appreciation component of the NPI. But the spread will be required to create liquidity – it is the market-clearing mechanism. It must be sufficient enough to interest a counterparty in the other side of the trade.

In an efficient market without fees, if the consensus view of the NPI capital return for a year were +3%, the market would set a payment of about 300 basis points to receive the NPI appreciation return. In 2004, the receiver of the index would have received the actual quarterly returns of 0.72 percent, 1.28 percent, 1.63 percent and 2.89 percent in return for paying 0.75 percent each quarter, which is the 300 basis point fixed spread. As a result, the product would not have allowed the investor to achieve its goal because the participant would not be truly short or long the appreciation component. The investor makes the investment decision based upon its view of the degree that actual returns will differ from the market's expected return, as represented by the spread set by the market.

It is important to note CSFB initially is suggesting these swaps be for two- to three-year periods. The longer period will increase the likelihood of a significant range of expectations and motivations of well-informed, sophisticated investors.

Property-Type Subindices for TRS

The second product is a TRS in which an investor receives the total return of one property type and pays the total return on a different property type. An investor that may be overweight in retail, for example, may want to re-weight to neutral by selling its retail properties and investing in office properties. But again, the market will place a spread on the swap based upon the market's expectation of the difference in the returns.

If this vehicle had been available in 2004, it would not have been unreasonable to see a retail-to-office plus 700 basis points swap for a one-year term, considering the recent historical returns of each sub-index. An investor overweight in retail properties might enter this swap to earn the office return plus 700 basis points, in return for

paying the retail return, considering the differential had averaged only about 550 basis points over the previous five years. This swap, however, would not have achieved the goal of exchanging the retail return for the office return and thereby rebalancing a portfolio in an illiquid asset class. Exposure would be rebalanced only to the degree the actual differential in sub-index returns differs from the spread set by the market.

The advantage of paying on a capital-value TRS is its potential as a tactical hedge vehicle for property owners in a down market, where actual NPI capital value depreciation exceeds market expectations, as reflected in the spread of the swap. From a hedge perspective, paying fees and the spread in addition to paying the index might be acceptable given the unavailability of any other correlated hedge vehicle and the issue of timing required to affect direct property transactions to offset exposure. When such use of derivative transactions meets certain criteria, it would qualify the investor for favorable hedge accounting treatment.

CSFB is proposing transaction costs for the swaps — both the payer and receiver pay 1 percent of the notional amount per year — that are less than direct property transaction costs. But they are significant when one considers the quadrant has low volatility with a historical average annual capital-component return of 1.47 percent.

Another potential advantage is replication strategies would become available, though they would be limited by the degree of the fixed spread (and fees). Also, for certain investors, one inherent advantage of TRS is the ability to leverage returns. This synthetic leverage is not considered “acquisition indebtedness” by the Internal Revenue Code and is not subject to UBIT for tax-exempt investors.

Property-type swaps could be a timely and cost-effective method to add alpha on a tactical basis once the strategic allocation to the asset class is made, similar to relative value sector or security trades in the fixed-income and equity markets. Tactical property over/underweights can be important to the generation of alpha in a diversified real estate portfolio and a vehicle that facilitates its efficiency — transaction costs, liquidity, and timeliness — further enables the potential for superior investment performance. “One-Year Total Returns of Property-Type Subindices” (shown in the chart above) shows recent NPI property type return data and the portfolio return outcomes under several scenarios.

Property Type	NPI Weighting	Optimal* Weighting	+/- 50% NPI** Weighting
Apartment	(.19) 13.78%	(.27) 13.78%	(.19) 13.78%
Industrial	(.19) 12.56%	(.08) 12.56%	(.09) 12.56%
Office	(.38) 13.12%	(.40) 13.12%	(.38) 13.12%
Retail	(.22) 24.72%	(.25) 24.72%	(.32) 24.72%
Hotel	(.02) 10.42%	—	(.02) 10.42%
Portfolio Return	15.55%	16.15%	16.86%
Alpha (bps)	0	60	131

*Risk-adjusted
 ** 50 percent overweight to highest return and 50 percent underweight to lowest return excluding hotel
 Sources: NCREIF, The Townsend Group

CSFB has indicated these swaps would be available for shorter time periods than the appreciation component swaps. In addition to tactical reweighting, the sub-index swaps would allow a manager to attain diversification without selling individual properties and to offset temporary unintentional over/underweights while building a portfolio over time. It will be critical to an investor’s assessment of the potential benefits of any proposed swap that the degree to which actual exposure would be adjusted will be limited by the amount of the spread set by the investor and his counterparty, plus fees.

THE ROAD AHEAD

It is reasonable to expect continued developments in the derivative products for private market equity real estate. The challenges of bringing efficiencies to investment within the quadrant are significant, however, and market acceptance of the recently introduced derivatives remains to be seen. It is a welcome initiative, though, as derivatives in the other quadrants are expanding and developing along an inevitable path.

GLOSSARY OF TERMS

Counterparty – One of the parties to a specific transaction; may be the payor or the receiver.

Embedded Financing Rate - In the case of assets and investable indices, a dealer with a LIBOR cost of funding can own the asset or underlying index components weighted to the index and “pay away” to a counterparty the returns being earned in exchange for receiving, for example, LIBOR plus 50 basis points, effectively earning 50 basis points for the use of the balance sheet. When a bank loan portfolio is the underlying asset, the Investor receives the loan returns inclusive of the assumption of the credit risk because it is receiving the total economic performance of the asset in return for paying the bank its cost of funding plus a spread. The receiver in these cases effectively pays for using the counterparty’s balance sheet and can benefit from a counterparty’s lower cost of funding.

International Swap and Derivatives Association (ISDA) Master Agreement - Documentation that needs to be in place between counterparties conducting over-the-counter (OTC) derivative transactions. It sets the ongoing legal and credit relationships between them.

Swaps and OTC derivative transactions contain characteristics of loans. Repeated renegotiation of credit terms for each transaction would be impractical in a liquid market. Counterparty credit terms, such as representations and warranties, events of defaults, and termination events are included and not part of negotiations of market terms, such as price, notional, maturity, reference rate (i.e., one-month or three-month LIBOR), etc. Type of collateral acceptable and margin requirements are specified in ISDA credit support documents.

Once the master agreement and any required schedules are in place, the only documentation needed for each transaction is a standardized confirmation.

Investment Property Databank (IPD) – A U.K.-based for profit research company that provides investors with property benchmarks and indices. The IPD UK Annual Index is comprised of 11,000 properties with a total value of £105 billion (\$190 billion) at the beginning of 2004, equivalent to 45 percent of the total property assets of U.K. institutions and listed property companies.

Property Index Certificates (PICs) – Eurobonds listed on the London Stock Exchange. Barclays Capital is the issuer and maintains a secondary market. These bonds have a coupon that matches the income return on the IPD UK Annual Index, less a management fee. The 2005 coupon is estimated to be 6.05 percent net, payable quarterly. Investors receive their principal back at maturity (typically one to seven years) based upon where the IPD UK Annual Index capital component is versus time of issuance. This portion serves as the hedge mechanism for the issuer against its real estate exposure.

Property Index Forwards (PIFs) - PIFs give investors capital exposure to the U.K. markets, based on the IPD Annual Capital Growth Index. They are OTC contracts for the difference between the contract price and the settlement price on a given date in the future of the specified property index.

Total Return Swap (TRS) – An agreement between two counterparties where one party (“payor”) pays the total return (income and capital components) of a specified underlying asset in return for receiving a stream of LIBOR-based cash flows over a specified period of time (the “tenor” of the swap). The “receiver” receives the total return and makes a LIBOR (Usually plus a spread, such as LIBOR plus 50 basis points) payment to the counterparty. These are very flexible instruments in that virtually every term can be varied, but typically cash flows are the quarterly return of the asset on one side and LIBOR on the other, based on a preset notional amount and netted so a single of quarterly payment is made/received.

The reference asset may be any index, asset or basket of assets. The notional amount on which payments are based may be adjusted periodically with the capital appreciation/depreciation of the asset for a true portfolio replication. Most agreements are collateralized. Most real estate-related TRS are in effect marked-to-market instruments, as gains and losses based on changes in an index are realized and paid each period.

Illustrative Example - The receiver of a hypothetical index receives 1.2 percent in quarterly income plus 2.7 percent in quarterly capital appreciation on \$50 million notional. In return, the receiver pays 1 percent – three-month LIBOR plus 50 basis points – on a quarterly basis. The net cash flow exchanged is 2.9 percent to the receiver. On the other hand, if the quarterly capital component was – 2.7 percent, the index receiver would receive 1.2 percent income and would pay the 2.7 percent representing capital depreciation and the LIBOR-based floating-rate payment of 1.0 percent. The net cash flow is 2.5 percent to the index payor.