Commercial Mortgage-Backed Securities: An Investors’ Primer

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Commercial Mortgage-Backed Securities: Investors’ Primer

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Summary

• The total size of the commercial real estate mortgage market is approximately $800 billion. In the past four years, commercial mortgage-backed securities have been developed that facilitate nontraditional investors’ participation in the commercial mortgage market. We estimate that only 3% of these outstanding mortgages have been securitized, compared with nearly 31% of the $1.7 trillion single-family mortgage market.

• Three general categories of commercial mortgage-backed security structures can be identified. The first type resembles a bond, where investors receive specified interest payments, and principal is repaid at maturity. The second is comparable with single-family mortgage-backed securities in that principal and interest payments are passed through to investors as they are paid by mortgagors. A third category, derivative pass-throughs, which include collateralized mortgage obligations (CMOs), combines certain characteristics of bonds and pass-throughs by segmenting the maturity exposure of investors.

• The introduction of criteria for rating commercial mortgage-backed securities is a key element in the development of the market. A pivotal component of the rating process is credit enhancement; the degree of such enhancement can be determinant of the rating grade. Some form of credit enhancement has been used in virtually all of the transactions rated to date.

• Yields on commercial mortgage-backed securities exceed those available on securities with comparable risk and maturity in other, more established markets. This partly reflects the lower liquidity resulting from the newness of the market and the predominance of private and Eurobond distribution, rather than public domestic issuance.

• By enhancing structural flexibility, new developments and recent tax law changes should contribute to the future growth of the secondary commercial mortgage market. Key developments include the real estate mortgage investment conduit (REMIC) provisions of the 1986 tax act, expanded rating agency coverage, senior/subordinate structures, and application of interest rate swaps.

Introduction

Since 1983, new securities have been introduced that provide flexibility for lenders with commercial loan portfolios and increase funding sources for developers and property owners. These securities have the potential to change the traditional commercial mortgage funding system in much the same way that securitization altered the single-family mortgage market in the 1970s. The commercial mortgage-backed sector offers investment opportunities through its yield advantage relative to comparably rated securities.

The total size of the commercial real estate mortgage market is approximately $800 billion — about the same size as the domestic corporate and tax-exempt bond markets (see Figures 1 and 2). For corporate bonds, and to a lesser extent for tax-exempts, there is significant trading in secondary markets. For commercial mortgages, however, relatively little trading is done after origination.
Liquidity for commercial mortgages, historically, has come through the trading of whole loans and participation certificates, primarily among institutions already in the mortgage-lending business. Life insurance companies, thrifts, commercial banks, and other lenders sell whole loans and participation certificates to restructure their portfolios. Because of the private nature of these transactions, an estimate of trading volume is not available.

Commercial mortgage-backed securities are financial assets which, if publicly placed, are traded in an open market. We estimate that only 3% of outstanding commercial mortgages have been securitized, compared with
nearly 31% of outstanding single-family mortgages as of year-end 1986 (see Figure 3 and 4). In this report, we cover securities backed by mortgages on office, industrial, retail, and hotel properties.¹

Figure 3. Mortgage Market: Outstanding and Securitized,a 31 Dec 86

![Diagram showing mortgage market: Outstanding and Securitized](image)

a Salomon Brothers Inc estimates includes issuance of Government agency multifamily mortgage-backed securities.

Sources: Board of Governors of the Federal Reserve and Salomon Brothers Inc.

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Figure 4. Issuance of Commercial Mortgage-Backed Securities,a 1983-86

(Estimated Dollars in Billions)

![Bar chart showing issuance of commercial mortgage-backed securities](image)

a Salomon Brothers Inc estimates excludes issuance of Government agency multifamily mortgage-backed securities.

A fundamental element in the development of single-family and agency multifamily mortgage-backed securities has been the guarantees provided by Government and quasi-governmental agencies. Credit risk on the majority of these offerings is limited by guarantees of timely principal and interest payments. The analogue for Government and agency guarantees in the nonagency commercial mortgage sector is issuer guarantees and third-party credit supports. Such credit support can be applied to any of the commercial mortgage security structures to ensure timely debt service payments.

¹ The present discussion excludes detail on securities backed by multifamily mortgages, although they are commercial mortgages. The total estimated issuance as of December 31, 1986, of both Government agency and private sector multifamily mortgage-backed securities is $12 billion, approximately one half of the total commercial mortgage-backed securities market. Much of the discussion in this report also applies to multifamily mortgage-backed securities issued by the private sector. For background on agency issues, see FHA Projects 221 (a)(4) 7.45% The Refinancing Potential and Investment Characteristics of the GNMA 221(f) Multifamily Security, Judy Hustick, Salomon Brothers Inc, June 18, 1986 and September 11, 1986, respectively, and Long Mortgages: The High Total Returns of Project Notes, Michael Youngblood, Salomon Brothers Inc, July 25, 1986.
In general, commercial mortgages include lockout provisions that prevent prepayment at the mortgagor’s option for a portion of the mortgage’s life. Thereafter, prepayment fees are typically assessed. Lockouts and prepayment fees in commercial mortgage contracts provide significant prepayment protection that is lacking in single-family mortgage agreements. The degree of prepayment protection depends on the date of loan origination. Generally, lockout provisions are more stringent on loans originated after 1980. Since 1984, yield maintenance has become a common substitute for fixed prepayment fees based on a percentage of principal. If a borrower prepays mortgage principal, yield maintenance is intended to provide the lender with either an index-based yield for the remainder of the maturity of the loan, or a lump-sum fee at the time of prepayment, which is intended to protect against loss of yield.

### Types of Commercial Mortgage-Backed Securities

Commercial mortgage-backed securities can be divided into three categories: bond structures, pass-through structures and derivative pass-through structures, which exhibit both bond and pass-through characteristics. In Figure 5, we highlight the legal status and the issuer’s accounting and tax treatment of the various structures within each category. The first category includes fixed-payment bonds, property-specific bonds and pooled property financings. As with corporate bonds, these offerings generally carry call protection for a portion, or all, of the bond life. Fixed-payment bonds usually are backed by pools of mortgages, with the majority of bonds issued to date being backed by seasoned mortgages. Property-specific bonds and pooled property financings allow borrowers to directly access the capital markets to finance or refinance commercial properties.

#### Figure 5. Commercial Mortgage-Backed Securities: Overview of Structures

<table>
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<tr>
<th>Bond Structures</th>
<th>Legal Status</th>
<th>Accounting and Tax Treatment for Issuer</th>
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<tbody>
<tr>
<td>Fixed-Payment Bond</td>
<td>General obligation secured by mortgage pool</td>
<td>Debt</td>
</tr>
<tr>
<td>Property-Specific Bond</td>
<td>Nonrecourse obligation secured by mortgage on</td>
<td>Debt</td>
</tr>
<tr>
<td></td>
<td>specific property</td>
<td></td>
</tr>
<tr>
<td>Pooled Property Financing</td>
<td>Nonrecourse obligation secured by mortgages</td>
<td>Debt</td>
</tr>
<tr>
<td></td>
<td>on specified properties</td>
<td></td>
</tr>
</tbody>
</table>

| Pass-Through Structures                | Ownership interest in a mortgage or pool of      | Sale                                   |
|                                        | mortgages                                       |                                        |
| Participation Certificate              | Ownership interest in mortgage pool held in     | Sale                                   |
|                                        | trust                                           |                                        |

| Derivative Pass-Through Structure      | General obligation secured by mortgage pool      | Debt                                   |
| Collateralized Mortgage Obligation     |                                                 |                                        |

* Under the REMIC election option, sale tax treatment is allowed for issuers of multiclass securities.

The second category of commercial mortgage-backed securities resembles the pass-through structures developed for issuing securities backed by mortgages on single-family homes. For these securities, mortgage payments are passed from mortgagors to investors through the servicer. All scheduled principal and interest payments (at the pass-through rate net of servicing fees), and any prepayments of principal, and in many cases, prepayment
fees are passed through to the investor. Investors' yields can be affected significantly by the amount and timing of principal prepayments and the receipt of prepayment fees. Most pass-through securities issued to date have been backed by pools of seasoned mortgages, although we expect future issuance to include pools of newly originated mortgages and single mortgages. Participation certificates, the traditional mechanism by which lenders have sold portions of their mortgage portfolios, also pass along principal and interest payments.

The third category is derivative pass-through securities, such as CMOs, which share characteristics of bonds and pass-throughs. Although CMOs do not have definite maturities, principal repayments are allocated to investors holding securities representing tranches that differ by maturity. Principal payments (and prepayments) are directed first to the shorter maturity tranches and, sequentially thereafter, to the tranches of longer maturity.

A fundamental feature of the commercial mortgage-backed market is the ongoing development of new applications and structures. Through 1986, fixed-payment bonds, pass-throughs and CMOs were used for securitizing pools of seasoned mortgages, whereas property-specific bonds and pooled property financings were used in the origination of mortgages. However, bonds and pass-through securities can both be collateralized by a pool of seasoned loans, a pool of newly originated mortgages on a group of properties, or a large new or seasoned mortgage on a single property.

**Bond Structures**

**Fixed-Payment Bonds**

Fixed-payment bonds are general obligations secured by a mortgage pool, which may be diversified by location and property type. Although the issuer retains prepayment risk, a segmented structure composed of a series of coupon bonds with different maturities and frequently a zero-coupon bond is used to handle the different maturities of the underlying mortgages and take advantage of the slope of the yield curve.

Rated bonds are usually issued through a subsidiary corporation. A separate subsidiary typically enters a contractual agreement to service the mortgages (see Figure 6). The trustee maintains a collection account for deposits of scheduled principal and interest payments, less servicing.

---

**Figure 6. Flow of Funds — Fixed-Payment Bonds with Sinking Fund Redemptions**

- Monthly Principal and Interest (less servicing fee)
- Prepayments and Balloon Principal Payments
- Trustee's Prepayment Account
- Semiannual or annual Bond Coupon Payments
- Short Maturity Bondholders
- Intermediate Maturity Bondholders
- Zero-Coupon Bondholders
- Trustee's Collection Account
- Servicer's Fee Income Account
- Bond Principal Payments

*a* Payments reinvested at guaranteed reinvestment rate.

*b* Mandatory sinking fund redemptions.
fees, from the servicer. Principal prepayments and any balloon payments are placed in a separate prepayment account also held by the trustee. Bond coupon payments are made from the collection account. The prepayment account and additional credit supports are applied to any shortfall, thereby ensuring timely bond payments regardless of the timing of mortgage payments.

The prepayment account accumulates prepayments and interest earned from reinvestment at a guaranteed rate to periodically redeem a preset percentage of the bonds’ original principal at par. For most fixed-payment bonds with sinking funds issued through 1986, mandatory redemption normally begins one year from issuance for the five-year bonds and six to eight years from issuance for the ten-year bonds, continuing annually until the year prior to maturity. No principal payments are made to bondholders prior to sinking fund redemptions.

Property-Specific Bonds

Property-specific offerings are bonds secured by a mortgage on a single property (see Figure 7). They are written mostly for income-producing — as opposed to owner-occupied — properties. Therefore, cash flow to meet debt service depends on contractual lease agreements with tenants and the market conditions in the building’s locality. Depending on the objectives of the issuer and the property type being financed, property-specific bonds can be rated or unrated and structured with or without credit enhancement.

Figure 7. Flow of Funds — Property-Specific Bonds

The dominant property type associated with rated property-specific financings to date has been major office buildings — primarily in urban locations — partly because the first criteria developed for the rating of such transactions by Standard & Poor’s Corporation (S&P) were for office buildings. Other properties that have been financed with property-specific bonds include hotel/casinos, regional shopping centers and suburban office buildings. For hotel/casinos, cash flow may be dependent on business operations, rather than contractual lease agreements. Bonds backed by nonoffice properties have typically not received ratings from the credit rating agencies.

Because real estate debt in the United States is typically not a general obligation of the borrower, the mortgages underlying these bonds are usually non recourse, that is, secured solely by the property. Credit enhancement is used to extend recourse beyond the property. The issuer, affiliate or third party can guarantee to meet cash flow shortfalls during the bond’s life and at maturity, thus providing supplemental credit. A new approach is the provision of a letter of credit or other mechanism by an institution, which makes the principal and interest payments to the bondholders. In this case, the first mortgage on the underlying property secures the obligation of the property owner to reimburse the institution providing the letter of credit. These types of transactions have received the letter of credit provider’s rating.
Properties that are individually too small to be financed efficiently through a property-specific bond can be grouped through the pooled property financing vehicle. Offerings typically include geographically diverse pools of a single property type — for example, smaller office buildings, hotels, shopping centers, nursing homes, or retail stores.

A pooled property bond is backed by newly originated mortgages on two or more properties. The bond structure links the properties in the pool either through a single blanket mortgage or through cross-collateralization and cross-defaulting of individual mortgages on each property. This joining of liens takes advantage of the geographic and business diversification in the property pool (see Figure 8).

Cross-collateralization and cross-defaulting of individual mortgages provide security to lenders beyond that received from a single mortgage. If the mortgages in a pool are cross-collateralized, each property secures the entire debt represented by the bonds. If the mortgages are cross-defaulted and one mortgage defaults, the lender has the right to declare all others in default and accelerate payment on all of them. To date, pooled property financings have included both cross-default and cross-collateralization provisions.

Pass-Through Structures
Participation certificates evidence ownership of up to 100% of a single loan or pool of loans. The documents transferring the ownership interests are typically held in recordable form — but are unrecorded — by a custodian for the benefit of the certificate holders. The certificates evidence direct participating ownership interest in the collateral and the loan cash flows. They are issued pursuant to a participation and servicing agreement between the buyer and seller/servicer, which includes certain representations and warranties by the seller/servicer about itself and the mortgage loans.

Typically, the seller/servicer is required to advance any delinquent principal and interest payments for up to 90 days, regardless of whether the transaction is recourse or nonrecourse to the seller/servicer. The advance is intended to maintain cash flow, while the servicer determines the severity of the default. In the case of a nonrecourse sale, the seller/servicer would initiate foreclosure proceedings after the 90-day period at the request of certificate holders and would be reimbursed for the earlier advances from the foreclosure proceeds.
Pass-Through Certificates

Pass-through certificates represent fractional undivided ownership interests in a trust containing a mortgage or pool of mortgages. All notes and mortgages are owned or recorded by the trustee. The seller, an affiliate or a third party services the mortgages pursuant to a pooling and servicing agreement.

A distinct pool of mortgages underlies each series of a pass-through. Any number of series may exist, with different stated maturities and initial interest rates, depending on the terms of the mortgages in the underlying pool. The mortgages in each pool may be diversified by property type and location.

The flow of funds for pass-through certificates with only one mortgage pool — and therefore one series — is illustrated in Figure 9. Each month, certificate holders receive their pro rata share of the mortgages’ scheduled payments of principal and interest at the pass-through rate. The pass-through rate may be fixed, floating, adjustable, or weighted average. A weighted-average pass-through rate is the average of each individual loan’s coupon rate less servicing fee weighted by its unpaid principal balance. The weighted-average pass-through rate will change slightly over time as individual loans with different net coupons amortize or prepay.

Figure 9. Flow of Funds — Pass-Through Certificates

While the mortgages underlying the pass-through certificates have stated maturities, borrowers may have an option to prepay or a borrower may default, which could result in prepayment under credit support arrangements, or a loss if there are no credit support agreements. Because prepayments are difficult to predict, the actual maturity of the pass-through security is difficult to estimate, thus investors bear the reinvestment risk arising from prepayments. However, a probable maturity can be estimated by examining prepayment restrictions and fees in the underlying mortgage agreements. The scheduled weighted-average life assumes that only scheduled principal payments and payments due on the exercise of a call on a loan are made. The actual weighted-average life and duration of the pass-through certificates will be shorter to the extent that prepayments are made.

Derivative Pass-Through Structure

The CMO structure is derived from the pass-through certificate structure, with certain modifications to create a less frequent cash flow stream and to allocate prepayment risk among investors. In a CMO, the cash flows from a single pool of loans are allocated to several classes or tranches. The stated maturities of the classes are based on the actual repayment schedules of the underlying mortgages and assumes there will be no prepayments. In the most common form of CMO, investors in the shortest maturity class

\[2\] See An Investors Guide to CMOs, Janet Sprattin and Paul Vianna, Salomon Brothers Inc, May 1996.
receive scheduled payments of interest and principal, plus all the unscheduled prepayment until that class is paid off. Prior to that time, investors in the longer maturity classes receive only scheduled interest payments, with the exception of interest accrual notes. In this manner, each class is retired in sequence. Generally, principal is not paid to holders of the longest maturity notes until all other classes are retired.

CMO investors, like pass-through investors, bear all prepayment risk. However, in a CMO, investors can more accurately match maturities of assets and liabilities by investing in the tranche with the most appropriate expected maturity. Unlike pass-through certificates, where monthly principal and interest payments are immediately passed along to the investor, in a CMO, monthly mortgage payments are frequently reinvested until quarterly or semiannual payment dates.

Credit Rating Agencies

A key element in the development of the market for commercial mortgage-backed securities is the introduction of rating criteria by the major rating agencies. Three agencies offer criteria for selected securities and property types. Although no one agency provides ratings for the entire market, all the rating agencies continue to expand their breadth of coverage. In cases where letters of credit or other guarantees of principal and interest payments are provided by third parties, securities are rated according to the credit quality of the insurer and not based on the criteria outlined below.

Standard & Poor’s Corporation

S&P provides criteria for rating office and multifamily property-specific financings. They also rate securities backed by pools of mortgages. In rating property-specific financings, S&P applies a "worst case" set of assumptions to the property's projected cash flows and applies stringent underwriting standards to the artificially reduced cash flows. Measurement of the potential cash flow shortfall below required debt service is used to determine the amount of credit support required to achieve A, AA or AAA ratings.

For rating securities backed by pools of mortgages, S&P has developed an actuarial model where the lender's underwriting experience is of primary importance, as opposed to a property-by-property analysis of the loans included in the pool. Minimum loan eligibility standards have been established, and S&P determines an expected loan loss rate. As in the property-specific approach, third-party credit support and overcollateralization can be applied to meet anticipated shortfalls and to achieve a rating as high as AAA. We expect several issues to be rated under the actuarial model in 1987.

Moody’s Investor Service

Moody's rating system differs somewhat from the S&P criteria for property-specific bonds in that S&P focuses primarily on the property and its projected cash flows, while Moody's focuses more on the local market in which the property is located. The basis for Moody's published criteria for rating office properties is similar to S&P's in that a "worst case" set of assumptions is used to project the property's cash flows. The major difference is that Moody's uses market-specific economic variables to determine the potential cash flow reduction, while S&P applies a national "worst case" scenario. Credit support can be provided to achieve higher ratings than those warranted solely by the property's cash flow.
Duff & Phelps

Duff & Phelps (D&P) has developed criteria for rating office, industrial, retail, and apartment projects. The criteria are based on quantitative and qualitative factors, which affect the property, its cash flow and its local market area. As with the other agencies’ criteria, credit enhancement requirements are specified to cover prospective cash flow shortfalls and ensure timely payment of principal and interest. In addition to the property-specific financings, D&P rates pooled property financings, consisting of the four major property types, using the same qualitative and quantitative factors.

Credit Enhancement

A central component of the rating agencies’ criteria is the application of credit enhancement to obtain an investment-grade rating. Virtually all of the transactions rated to date have included some form of credit support (see Figure 10).

Figure 10. Types of Credit Enhancement

<table>
<thead>
<tr>
<th>Issuer Guarantee</th>
<th>Repurchase Agreement</th>
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<tbody>
<tr>
<td>Surety Bond</td>
<td>Lease Assignment</td>
</tr>
<tr>
<td>Letter of Credit</td>
<td>Overcollateralization</td>
</tr>
<tr>
<td>Payment Advance Agreement</td>
<td>Subordinated Position</td>
</tr>
<tr>
<td>Substitution Agreement</td>
<td>Cross-Collateralization</td>
</tr>
</tbody>
</table>

The most basic form of credit support is a guarantee of bond or pass-through debt service. Guarantees can be provided by the issuer, the issuer’s parent company or an affiliate. Alternatively, guarantees can be provided by a third party. In each case, an important distinction is made between guarantee of timely payment and guarantee of ultimate principal repayment, as well as whether the guarantee fully meets a cash flow shortfall — or only meets shortfalls up to a specified dollar amount.

Surety bonds and letters of credit are third-party financial guarantees offered by insurance companies and commercial banks, respectively. By guaranteeing the bond and certificate payments, the institutions essentially assume the credit risk of the supported financing in exchange for fees paid by the issuer. Such guarantees can be supplemental to the payment of principal and interest by the issuer, or can be the first line of credit, as in the case where an issuer of the letter of credit makes principal and interest payments directly and looks to the issuer for reimbursement.

Under a payment advance agreement, the servicer agrees to make scheduled payments to bond or certificate holders regardless of when payments are received from the mortgagor(s), thereby ensuring timely payment. Payment advance can be limited to a specified number of delinquent payments.

Loan substitution and repurchase agreements mitigate the effects of a mortgage default on cash flow to bond and certificate holders. They are most commonly applied to securities backed by mortgage pools in conjunction with payment advance agreements. Substitution and repurchase agreements, either separately or in concert, function to protect ultimate principal repayment in the event of mortgage default. Depending on the agreement, the servicer is required to repurchase the defaulted mortgage at some predetermined price or to substitute a mortgage or other eligible collateral that provides a comparable cash flow. Bond and certificate documents specify whether these agreements fully or partially guarantee principal repayment.

Lease assignments provide additional security to holders of bonds or certificates. This form of credit support confirms that lease payments
will be made directly to the lender, ensuring that cash flow required for
debt service payment will be available. An affiliate of the lessee may also
provide a guarantee of lease payments.

Overcollateralization is a form of partial credit support that enhances the
likelihood of both timely and complete payment. Overcollateralization
agreements in commercial mortgage securities generally require that a
prespecified debt service coverage ratio be maintained. By contrast,
overcollateralization agreements for single-family mortgage-backed
securities typically call for replenishment of collateral as necessary to ensure
that a prespecified loan principal-to-bond principal ratio is maintained.

Current Market Yields and Yield Spreads

Currently, commercial mortgage-backed securities offer higher yields than
those on securities with comparable maturities and ratings. Whether this
represents relative value will depend on how commercial mortgage
securities perform as investors become more familiar with them. Higher
yields are partly the result of lower liquidity, reflecting the newness of the
market and a predominance of private and Eurobond market distribution,
rather than public domestic issuance.

Fixed-Payment Bonds

Fixed-payment bonds have been issued in the Eurodollar bond market by
United States insurance companies. Currently, new issue yield spreads on
AAA-rated fixed-payment bonds with no sinking fund redemptions are 105
basis points, compared with 95 basis points for an unsecured life insurance
company general obligation bond (see Figure 11).

Figure 11. New Issue Yield Spreads over Ten-Year Government Bonds for Fixed-
Payment Bonds,\(^a\) 30 Apr 87 (Noncallable)

<table>
<thead>
<tr>
<th>Eurodollar Bond Market</th>
<th>Yield</th>
<th>Spread</th>
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<tbody>
<tr>
<td>AAA-Rated Fixed-Payment Bond</td>
<td>9.24%</td>
<td>105bp</td>
</tr>
<tr>
<td>AAA-Rated Unsecured Life Insurance Co. General Obligation</td>
<td>9.14</td>
<td>95</td>
</tr>
</tbody>
</table>

\(^a\) Bond equivalent yield.
bp basis points.

Both bonds are issued by life insurance companies that are not well-known
in Europe. Therefore, yield spreads are wider than a comparably rated
corporate bond issued by a corporation familiar to European investors. The
ten-basis-point difference between the two life insurance company issues
reflects the perceived complexity of the fixed-payment bond structure.\(^3\)

Property-Specific Bonds

Rated property-specific bonds collateralized by office properties have been
issued publicly and privately in the United States as well as in the
Eurodollar bond market. Property-specific bonds offer higher yields than
corporate bonds of the same rating, but the differential is significantly
smaller in the Eurodollar bond market (see Figure 12).

The difference between public domestic AA-rated property-specific bonds
without surety and domestic corporate bonds is 45 basis points, while the
difference is only 30 basis points in the Eurodollar bond market. As more
public property-specific bonds are issued domestically, the yield difference
between property-specific bonds and corporate bonds in the domestic
market should narrow.

\(^3\) See Spreads of Collateralized Eurobonds to Conventional Eurobonds Near All-Time Wides, Richard Segal,
Figure 12. New Issue Yield Spreads over Ten-Year Government Bonds for Property-Specific Bonds,\(^a\) 30 Apr 87 (Noncallable)

<table>
<thead>
<tr>
<th>Office Property-Specific</th>
<th>Yield</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA-Rated Public Domestic with Surety or Letter of Credit</td>
<td>8.99%</td>
<td>80bp</td>
</tr>
<tr>
<td>AA-Rated Private Domestic</td>
<td>9.64</td>
<td>145</td>
</tr>
<tr>
<td>AA-Rated Public Domestic</td>
<td>3.34</td>
<td>115</td>
</tr>
<tr>
<td>AA-Rated Eurobond</td>
<td>9.29</td>
<td>110</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Corporate Bond</th>
<th>Yield</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA-Rated Public Domestic</td>
<td>8.74%</td>
<td>55bp</td>
</tr>
<tr>
<td>AA-Rated Public Domestic</td>
<td>8.89</td>
<td>70</td>
</tr>
<tr>
<td>AA-Rated Eurobond</td>
<td>8.99</td>
<td>80</td>
</tr>
</tbody>
</table>

\(^a\) Bond equivalent yield. 
bp basis points.

The public issuance of AAA-rated office property-specific bonds with surety in the United States began in 1987. To date, three securities have been offered totaling more than $800 million. At the end of April, new issue yield spreads were 25 basis points over AAA-rated industrial corporate bonds.

**Pooled Property Financings**

The unrated pooled property financings currently provide among the higher yields of the commercial real estate securities. Investors who understand the underlying real estate and the financing structure have the greatest ability to assess the risk/return trade-offs implied in these spreads (see Figure 13).

Figure 13. New Issue Yield Spreads over Ten-Year Government Bonds for Cross-Collateralized Pooled Property Financings,\(^a\) 30 Apr 87 (Noncallable, Private and Unrated)

<table>
<thead>
<tr>
<th>Pooled Property Financing</th>
<th>Yield</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office</td>
<td>10.54%</td>
<td>225bp</td>
</tr>
<tr>
<td>Hotel</td>
<td>10.99</td>
<td>260</td>
</tr>
<tr>
<td>Apartment</td>
<td>10.59</td>
<td>240</td>
</tr>
</tbody>
</table>

\(^a\) Bond equivalent yield. 
bp basis points.

Part of the 235- to 280-basis-point spread over ten-year U.S. Treasuries reflects the liquidity premium resulting from the private placement of these securities. The perception of credit risk is the major contributor to the premium on these bonds. The bonds are unrated, and the only enhancements to the credit are provided within the structure of the bonds. The 40- to 43-basis-point premium on hotel properties over the other properties reflects the higher business risk of hotels resulting from the lack of a long-term contractual rental stream.

**Participation Certificates**

Participation certificates (PCs) traded through a secondary market intermediary are priced at the same spread over U.S. Treasuries as whole loans with similar call protection. Certificates backed by mortgages on apartments yield 20 basis points less than other commercial mortgage-backed certificates. This difference reflects qualifying asset status and greater familiarity of apartment mortgage assets to the thrifts comprising the bulk of the market for PCs (see Figure 14).
Figure 14. New Issue Yield Spreads\(^a\) Over Ten-Year Government Bonds for Participation Certificates, 30 Apr 87 (Ten-Year WAL,\(^b\) private, unrated, five-year prepayment protection, and seasoned loans)

<table>
<thead>
<tr>
<th>Participation Certificates</th>
<th>Yield</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apartments, current coupon</td>
<td>10.54%</td>
<td>235bp</td>
</tr>
<tr>
<td>Other Commercial, current coupon</td>
<td>10.74</td>
<td>255</td>
</tr>
</tbody>
</table>

\(^a\) Bond equivalent yield. \(^b\) Zero percentage prepayment assumed, according to commercial mortgage pricing convention. bp basis points. WAL Weighted-average life.

**Pass-Through Certificates**

The yield spreads of rated commercial mortgage pass-throughs are tighter than unrated participation certificates. A range of yields are shown for pass-throughs, because yields vary with the call protection of the underlying mortgages (see Figure 15). Pass-throughs with longer lockout provisions and larger prepayment fees have narrower yield spreads than pass-throughs with less stringent provisions.

Figure 15. New Issue Yield Spreads over Ten-Year Government Bonds for Pass-Throughs,\(^a\) 30 Apr 87 (Ten-Year WAL,\(^b\) private, and seasoned loans)

<table>
<thead>
<tr>
<th>Pass-Throughs</th>
<th>Yield</th>
<th>Spread</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAA-Rated Private</td>
<td>9.54-9.94%</td>
<td>135-175bp</td>
</tr>
<tr>
<td>AA-Rated Private</td>
<td>9.64-10.04</td>
<td>145-185</td>
</tr>
</tbody>
</table>

\(^a\) Bond equivalent yield. \(^b\) Zero percentage prepayment assumed, according to commercial mortgage pricing convention. bp basis points. WAL Weighted-Average Life.

**New Developments**

The continuing evolution of the commercial mortgage-backed securities market will be affected by several recent developments, including the following changes that will most affect investors: (1) the ability of issuers to receive multiple ratings on commercial mortgage-backed securities; (2) the REMIC provisions of the 1986 Tax Reform Act; (3) the use of senior/subordinated structures to provide credit enhancements; and (4) the combination of capital markets technology, particularly interest rate swaps, with commercial mortgage-backed securities.

**Multiple Ratings**

As the rating agencies continue to expand their coverage of commercial mortgage-backed securities, the ability of issuers to obtain as many as three independent ratings will allow investors who require multiple ratings to participate in the market. Certain pension funds and other investors are precluded by charter from investment in securities with single ratings.

Independent credit ratings will provide all investors with greater information concerning true levels of credit risk for the securities. This will be particularly true given the variation in the rating agencies' approaches.

**Real Estate Mortgage Investment Conduit (REMIC)**

The Tax Reform Act of 1986 allows issuers of commercial mortgage-backed securities greater flexibility through its REMIC provisions.\(^4\) Under previous law, multiple-class pass-through certificates with payments

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allocated disproportionately among the various classes of investors were not permitted; therefore, CMOs were issued and classified as debt on issuers' balance sheets. REMIC allows multiple-class security issuers to use asset sale tax treatment and sale or financing accounting treatment. The most important effects for investors relate to benefits that arise from the removal of certain tax restrictions. The effects relevant for commercial mortgage securities relate directly to the following investors:

- REMIC regular interests serve as qualifying real estate assets for real estate investment trusts (REITs).  
- Foreign investors are exempt from the 30% withholding tax previously levied on pass-through securities backed by seasoned mortgages.  
- Pension funds are granted a partial tax exemption on income from REMIC residual interests. Prior law treated income received from such equity interests as fully taxable.

**Senior/Subordinated Credit Enhancement**

While CMOs allow investors the opportunity to achieve specific maturity preferences, the senior/subordinated structure allows for the creation of separate securities that differ according to the priority of the claim on the cash flows provided by the underlying mortgages. The senior note holders with priority to mortgage cash flows, in effect, receive credit enhancement from the subordinated note holders (see Figure 16).

**Figure 16. Flow of Funds — Senior/Subordinated Security**

Prior to the Tax Reform Act, the subordinated piece in a senior/subordinate security could not be traded. REMIC allows full transferability of the subordinated interests, which will appeal to investors who can accurately assess the risk of discontinuance of cash flows. Issuers will have the option of retaining the subordinated interest, or selling it to other investors with substantial knowledge of real estate risks and desiring the correspondingly high yields.

**Interest Rate Swaps**

The underlying characteristics of the payments to investors from commercial mortgage-backed securities make them particularly amenable to interest rate swaps. For example, with their lockout provisions and the more certain nature of the cash flows relative to single-family mortgage-backed securities, investors have the opportunity to modify mortgage security receipts to match asset/liability structures more effectively.

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5 See REMICs: The Tax Bill Creates a New Opportunity in the Mortgage Securities Market, Andrew E. Furer, Salomon Brothers Inc, September 26, 1986. Briefly, regular interests have the characteristics of pass-throughs or CMOs, in that there are stated principal and interest payments. By contrast, residual interests receive any income remaining after the regular interests have been paid.

6 In the REMIC legislation, seasoned refers to a mortgage originated before July 19, 1984.

7 See Fixed-Income Investment Opportunities: Creating High-Yielding Synthetic Commercial Mortgage-Backed Floating-Rate Notes Through Interest Rate Swaps, David J. Hartzell and Julia D. Fernald, Salomon Brothers Inc, October 17, 1986.
The combination of a commercial mortgage-backed security and an interest rate swap allows investors to exchange fixed receipts from the mortgage security with a swap dealer — usually an investment bank or a commercial bank — who is willing to pay a floating rate (see Figure 17). In this example, investor A invests in a property-specific bond and receives a fixed-rate coupon. The investor exchanges the fixed coupon for a floating rate that is based on the London Interbank Offered Rate (LIBOR).

Figure 17. Flow of Funds — Interest Rate Swap

Depending on the bond's coupon and the interest rate swap spread at execution, the investor can receive a prespecified spread over LIBOR until the maturity of the commercial mortgage-backed security. The ultimate effect of such a transaction can be a yield advantage over the cash floating-rate note market.

The ability to apply capital markets technology to commercial mortgage-backed securities broadens the base of investors, because increased cash flow flexibility can be attained. For example, foreign investors with floating-rate liabilities tied to LIBOR can swap fixed-rate mortgage coupons for a LIBOR-based floating-rate security using the process for creating a floating-rate note similar to that shown in Figure 17. Conversely, an exchange can be made from a floating rate to a fixed rate. Similarly, a basis swap can be structured to effect an exchange of Treasury bill-based receipts for LIBOR. This flexibility allows more investors to control asset/liability mismatches, while participating in the commercial mortgage market.

Conclusion

The increasing securitization of commercial mortgages and changes in tax laws allow more investors to participate in the risk-adjusted returns earned by traditional lenders. The three broad categories of commercial mortgage-backed securities — bond, pass-through and derivative pass-through structures — exhibit different types of risks because of the differing nature of cash flows, credit and underlying properties. An awareness of these factors is crucial to understanding the relative value and investment opportunities available in the commercial mortgage-backed security market.

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