"Commercial" Loans vs Home Loans

- Commercial mortgages and notes are not as standardized as home loans
  - Although this is changing with growth in commercial mortgage-backed securities market
- Documents are longer and more complex.
- Often no personal liability:
  - Legal borrower often is a single asset corporation.
  - Actual persons are shielded from liability.
  - Credit enhancement sometimes is required.

Commercial Mortgage Loans

- Usually a partially amortized "balloon" mortgage.
  - 25 to 30 year amortization of principle.
  - 5 to 10 year maturity
  - Balance of loan at maturity must be refinanced or paid off with a "balloon" payment
- **Bullet loans** are non amortizing for a fixed term at which point the principal is repaid

Attractions of Balloon Mortgage to Lender

- Reduces interest rate risk.
- Reduces default risk.
  - Default risk is much greater for commercial mortgage loans than for home loans.
  - As with residential lending, default risk varies over time
    - 7% delinquent in late 1992
    - 0.1% delinquent in 2004
    - 1.05% in 3rd quarter of 2005
  - Actual yield to lender will generally be lower than scheduled yield due to defaults

Commercial Mortgage "Spread" over "Treasuries"

Exhibit 17-2

<table>
<thead>
<tr>
<th>Year</th>
<th>Survey Rate 10-Year</th>
<th>10-Year U.S. Treasury Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>10%</td>
<td>6%</td>
</tr>
<tr>
<td>2000</td>
<td>8%</td>
<td>4%</td>
</tr>
</tbody>
</table>

Mortgage rates highly correlated with 10-Year Treasury Securities

Restrictions on Prepayment

- **Lock-out**: Prohibition against prepayment for up to 5 years.
- **Prepayment penalties**:
  - Percentage of loan: Say, 2-4% of loan balance.
  - **Yield maintenance penalty**: Borrower must pay lender PV of losses due to prepayment.
  - **Defeasance penalty**: Borrower must replace mortgage loan with a set of U.S. Treasury securities producing equivalent cash flows
    - Recently has become most common form of prepayment penalty
    - This replaces a risky promised set of CF's with a risk free set of CF's so its good for a lender
Other Forms of Commercial Mortgage Financing

- Floating (i.e., adjustable) rate mortgage
  - Index rate most commonly is LIBOR
- Installment sale financing
  - Buyer makes installment payments.
  - Seller only pays capital gain taxes over time in proportion to amount of the price received.

Joint Venture

- Lender:
  - Provides a mortgage loan
  - Provides additional equity investment.
  - Receives mortgage interest plus equity cash flows.
- Borrower:
  - Provides the project.
  - Provides expertise and management effort.
  - Provides some of the equity.

Joint Venture - continued

- Usually between a developer of a large project and a:
  - Pension fund.
  - Life Insurance company.
  - REIT
- Institution provides construction financing and/or long-term mortgage, in addition to some of required equity capital
- Institution’s share of operating & sale cash flows are negotiated

Other Forms of Commercial Mortgage Financing - continued

Land Sale-leaseback:

- Investor owns land and mortgage on building.
- User owns building subject to mortgage and pays a land lease (both deductible for taxes)

Sale-leaseback

- User sells property to a long-term investor.
  - Pension fund.
  - Trust.
  - Life insurance company.
- User leases property back from the investor and occupies it under long-term net lease.

Sale-Leaseback - continued

- User benefits:
  - Lease payment is deductible for income taxes.
  - Equity capital is freed up to invest in core business of company.
- Investor benefits:
  - Can be safe investment (depending on credit worthiness of tenant).
  - Inflation hedged (especially if lease payments increase with inflation).

Other Forms of Commercial Mortgage Financing - continued

Mezzanine Debt (growing in popularity):

- Supplements underlying first mortgage debt.
- Sometimes is a second mortgage loan (i.e., secured by the property)
- More often is a non-mortgage loan secured by a pledge of ownership shares
  - If borrower defaults lender takes over the borrower’s ownership position rather than having a lien on the real estate (which the first mortgage holder has)
Adding Mezzanine to the Capital Stack

![Bar chart showing equity capital changes]

Implications: Equity capital decreases from 25% to 10% of total required.

Other Forms of Commercial Mortgage Financing - continued

- Participation loan:
  - Lender receives interest payments on loan plus:
    - Share of the cash flow from operations and/or
    - Share of the proceeds from sale.
  - Lender gets equity-like interest in property
  - Borrower gets higher loan-to-value ratio and/or lower interest rate in exchange for giving lender a percentage of the cash flows.

Other Forms of Commercial Mortgage Financing - continued

- FHA insured loans for low and moderate income multifamily housing.
- Freddie Mac and Fannie Mae multifamily lending programs
  - Many targeted to low and moderate income housing.
  - See Fannie and Freddie websites ([www.fanniemae.com](http://www.fanniemae.com) and [www.freddiemac.com](http://www.freddiemac.com))

Important "Underwriting" Ratios

- Loan-to-value ratio: indicator of equity incentive to maintain the loan.
  \[ LTV = \frac{\text{Loan}}{\text{Value}} \]
- The higher the LTV, the greater the probability of default, all else equal

Important "Underwriting" Ratios

- Debt coverage ratio: indicator of "cash flow cushion" from lender’s perspective
  \[ DCR = \frac{NOI}{DS} \]
  where:
  - NOI is first year NOI
  - DS is annual debt service (12 monthly payments)
- Lender’s want DCR to be as high as possible, but certainly greater than 1.20

Average Terms on Commercial Mortgages—RealtyRates.com

<table>
<thead>
<tr>
<th>Spread over 10-year Treasury</th>
<th>Apartments</th>
<th>Industrial</th>
<th>Office</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt coverage ratio</td>
<td>1.51</td>
<td>1.47</td>
<td>1.55</td>
<td>1.43</td>
</tr>
<tr>
<td>Loan-to-value ratio</td>
<td>74%</td>
<td>71%</td>
<td>70%</td>
<td>73%</td>
</tr>
<tr>
<td>Amortization term</td>
<td>26</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Maturity term</td>
<td>21</td>
<td>12</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Lender reserve requirement</td>
<td>$300/yr.</td>
<td>$0.20/SF</td>
<td>$0.25/SF</td>
<td>$0.25/SF</td>
</tr>
</tbody>
</table>
The Leveraging Question  
(How much debt?)

- Reasons for use of debt by investors:
  2. Diversify the use of one's equity.
- Financial risk: Risk of default on mortgage loan.
  1. Risk of negative cash flow.
  2. Increases with greater leverage.
- Leverage increases variability of equity returns.

---

Reasons for use of debt by investors:

- "Magnify" equity returns.
- Diversify the use of one’s equity.
- Financial risk: Risk of default on mortgage loan.
  - Risk of negative cash flow.
  - Increases with greater leverage.
- Leverage increases variability of equity returns.

---

Leverage “Bottom Line”

- In a typical cash flow forecast, increased leverage will increase the estimated NPV and going-in IRR.
  - Why must this be true?
  - However, this increased NPV/IRR comes at a price….increased riskiness of the equity investment
  - The more leverage used, the more the equity resembles an option

---

When Will Leverage Increase NPV and Going-in IRR?

- Increased leverage will increase the estimated NPV when….
  - opportunity cost of equity capital (discount rate) exceeds the effective borrowing cost
- Increased leverage will increase the going-in IRR when….
  - unlevered going-in IRR exceeds the effective borrowing cost

---

Refinancing and Default with Commercial Mortgage Loans

- Refinancing involves a NPV decision.
  - Even more focused on NPV than home mortgage refinancing.
  - Bigger finance issues.
  - Fewer non-financial considerations.
  - \[ \text{NPV} = \text{PV}_{\text{OLD}} - \text{PV}_{\text{NEW}} - \text{Refi Cost} - \text{Prepay Penalty} \]
  - \( \text{PV}_{\text{NEW}} \) is presumably smaller due to lower pmts.
  - The prepay penalty is often so large that it negates any advantage to refinancing.

---

Refinancing and Default with Commercial Mortgage Loans

- Default is the signature risk of commercial mortgages.
  - Borrower seldom can cover the loan payment for a crippled commercial property.
  - Borrower often is in a non-recourse position (good for the borrower, bad for the lender).

---

Financing Income-Producing Property: Borrower Perspective

<table>
<thead>
<tr>
<th>Property Asset Price Risk</th>
<th>Straight Debt</th>
<th>Joint Venture</th>
<th>Land Sale-Leaseback</th>
<th>Complete Sale-Leaseback</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Influence on Management of Property</td>
<td>Strong</td>
<td>Share</td>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Depreciation Deductions</td>
<td>Full</td>
<td>Share</td>
<td>Full</td>
<td>None</td>
</tr>
<tr>
<td>Priority of Claims to Cash Flow</td>
<td>Second to Lender's</td>
<td>Partners with Lender</td>
<td>Claim Junior to Lender's and Landowner's</td>
<td>No Ownership Interest</td>
</tr>
<tr>
<td>Maximum Leverage (75-80% of Value)</td>
<td>75-80% of Value</td>
<td>100% of Value</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Obtaining a Commercial Mortgage Loan

The Loan Submission Package
- Loan application with the exact terms proposed.
- Financial statement
- Credit report
- Borrower experience resume
- Property description
  - Legal description
    - Easements and encroachments
    - Environmental concerns
  - Detailed physical description
    - Photos and aerial photos
    - Survey
    - Site plan
    - Structure drawings and specifications

The Loan Submission Package - continued
- Cash flow pro forma
  - Existing cash flows and rent rolls (leases) if available
  - DCF analysis
  - Appraisal – independent and state certified

Obtaining a Commercial Mortgage Loan

Sources of loans (direct submission)
- Larger commercial bank
- Large thrift institution
- Other direct sources including pension funds and life insurance companies

Sources of Commercial Loans - continued
- "Correspondent" lender
  - Mortgage banker
  - Mortgage broker
  - Presents loan "package" to:
    - Life insurance companies
    - Pension funds
    - Trusts
    - Large banks
    - Credit companies (GE Capital, Ford, other)
  - Receives fee of one-half to one percent of loan.

The Lender’s Decision: Loan Underwriting

“Qualitative” considerations
- Property type
- Location
- Tenant quality
- Lease terms
- Property management
- Building quality (Age, class, deferred maintenance?)
- Environmental issues
- Borrower quality

Loan Underwriting: Crunching the Numbers

<table>
<thead>
<tr>
<th>Exhibit 17-6</th>
<th>Assumptions for a Loan on Gatorwood Apartment Complex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input</td>
<td>Assumption</td>
</tr>
<tr>
<td>Number of units</td>
<td>296 units with average monthly rent of $534.91</td>
</tr>
<tr>
<td>Purchase price</td>
<td>$13,375,000</td>
</tr>
<tr>
<td>Vacancy and collection losses</td>
<td>10% per year</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>$400,000 in year 1</td>
</tr>
<tr>
<td>Capital Expenditures</td>
<td>$37,500 in year 1. Expenditures are reserved for in calculation of NOI (i.e. an above line treatment)</td>
</tr>
<tr>
<td>Financing:</td>
<td></td>
</tr>
<tr>
<td>Loan amount</td>
<td>$10,000,000 (equals 74.7664% of price)</td>
</tr>
<tr>
<td>Interest rate</td>
<td>7.625%</td>
</tr>
<tr>
<td>Amortization schedule</td>
<td>30 years, annual payments</td>
</tr>
<tr>
<td>Loan term</td>
<td>30 years</td>
</tr>
<tr>
<td>Annual Payment</td>
<td>$857,037.69*</td>
</tr>
</tbody>
</table>

* The calculator keystrokes for finding the annual payment are: N=30; I/YR=7.625; PV=-10,000,000; PMT=?; and FV=0. Loan payment calculations are discussed in detail in Chapter 15.
Gatorwood Before-Tax Cash Flow from Operations

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Gross Income (PGI)</td>
<td>$1,900,000</td>
</tr>
<tr>
<td>Vacancy and Collection Loss (VC)</td>
<td>190,000</td>
</tr>
<tr>
<td>Effective Gross Income (EGI)</td>
<td>1,710,000</td>
</tr>
<tr>
<td>Operating Expenses (OE)</td>
<td>400,000</td>
</tr>
<tr>
<td>Capital Expenditures (CAPX)</td>
<td>37,500</td>
</tr>
<tr>
<td>Net Operating Income (NOI)</td>
<td>1,272,500</td>
</tr>
<tr>
<td>Debt Service (DS)</td>
<td>857,038</td>
</tr>
<tr>
<td>Before-Tax Cash Flow</td>
<td>$415,462</td>
</tr>
</tbody>
</table>

Loan Underwriting: Crunching the Numbers

- Focus on first-year NOI
- Debt coverage ratio:
  - DCR = NOI÷DS
  - For Gatorwood: DCR = $1,272,500÷$857,038 = 1.5
- Maximum loan:
  Max debt service = NOI÷Required DCR
  - For Gatorwood:
    Max debt service = $1,272,500÷1.25 = $1,018,000

Loan Underwriting: Determining Maximum Loan

- Maximum Loan - continued
  - Assume the lender’s terms would be
    - Term for amortization: 30 years
    - Interest rate: 7.625 (Annual)

<table>
<thead>
<tr>
<th>N</th>
<th>i</th>
<th>PV</th>
<th>Pmt</th>
<th>FV</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>7.625</td>
<td>$1,018,000</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$11,878,124.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N</th>
<th>i</th>
<th>PV</th>
<th>Pmt</th>
<th>FV</th>
</tr>
</thead>
<tbody>
<tr>
<td>360</td>
<td>7.625</td>
<td>$84,333.33</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$11,914,958.34 / 13,175,000 = 90.4% LTV</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Loan Underwriting: Break-Even Ratio

- Break-even Ratio: when income = expenses
  - BER * PGI = (OE + CAPX + DS)
  - Gives Required occupancy level (approx.)
  - Gatorwood example:
    BER = (400,000 + 37,500 + 857,038) + 1,900,000
    = 0.681 or 68%

Loan Underwriting: Lender’s Decision

- Due-diligence: review and verification of the facts and analysis in the loan submission package.
  - Verify facts (check for credibility and consistency).
  - Check for missing or undisclosed information.
  - Verify computations and analysis.

- Loan commitment
  - 45 to 90 days after receipt of “package”
  - Lender often offers buyer/borrower a "rate lock" option for a fee.
    - This protects borrowers from a rise in interest rates before the loan is actually closed
  - Lenders can hedge their lock agreements if they wish (called “pipeline” hedging)
Construction and Development Financing

- Land acquisition financing
  - Finance the purchase of raw land
- Land development loan
  - Finance the installation of improvements to the land (sewers, utilities, etc.)
- Construction loan
  - Finance the vertical construction
- Mini-perm loan
  - A permanent loan with a short term

Summary

- For commercial lending, the building produces the income that is used to pay off the lien
- The ability of the building to produce cash flows is what the lender evaluates
- Priced off the 10 year Treasury Securities (2-3% average spread)
- Loans typically are balloon loans with a 5-7 year term and 25-30 year amortization
- Prepayment penalties common
- Underwriting focuses on DCR and LTV
- CMBS is a growing source for placement of commercial mortgages