Step 5. Financing

Development has a sequence of financing needs

A. Land acquisition and preconstruction
B. Construction
C. Gap or “mezzanine” financing
D. Postconstruction
A. Land acquisition and preconstruction costs
   - Cost of the land
   - Preconstruction costs ("soft costs"):
     - Title examination
     - Feasibility analysis
     - Market research and testing
     - Permitting process (legal and architectural fees)
   - Typical dilemma: Banks and other institutions are reluctant to lend on asset with no cash flow
   - Solutions
     - Option
     - Contract for deed
     - Joint venture with landowner or future tenant
     - Build-to-suit arrangements
     - Use of equity partners

B. Construction Financing
   - Covers cost of land; soft costs; hard costs
   - Typically from a bank
   - Floating rate (over prime rate or LIBOR)
   - Less risky than acquisition financing:
     - No title, environmental or ecological risks
     - Permits all in hand
     - May require "takeout commitment" for riskier projects
   - Repaid in stages as construction progresses on basis of invoices for construction costs or by degree of completion
5. Financing (continued)

C. Mezzanine debt
   - Problem: Banks usually lend only 70 – 80% of construction costs
   - Developer may seek high-interest-rate debt to fill gap
     - Can be second mortgage debt
     - Often secured instead by pledge of ownership shares
   - More expensive than first mortgage construction debt, but cheaper than equity financing

D. Post-construction financing
   - Usually pays off construction debt shortly after issue of certificate of occupancy
   - Funding may be in stages:
     - “Floor loan” for part of full amount until a certain occupancy or other conditions are achieved
     - “Gap” or mezzanine financing may be used until requirements for full loan are reached
5. Financing (continued)

D. Post-construction financing (continued)
   - Miniperm loan
     - Combines construction loan and short-term post-construction financing
     - Allows project to achieve a “track record” of operations
     - May extend for two or three years beyond completion of construction
     - Enables developer to seek better terms for the final ("permanent") financing

Risk Stages of an Income-Producing Property and Four Alternative Financing Sequences

<table>
<thead>
<tr>
<th>Construction Period</th>
<th>Lease-up Period</th>
<th>Stable Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Loan with Take-out Commitment</td>
<td>Risky Permanent Loan</td>
<td>Safe Permanent Loan</td>
</tr>
<tr>
<td>Construction Loan with Take-out Commitment</td>
<td>Mezzanine Loan</td>
<td>Safe Permanent Loan</td>
</tr>
<tr>
<td>Open-Ended Construction Loan</td>
<td>Floor Loan</td>
<td>Safe Permanent Loan</td>
</tr>
<tr>
<td>Miniperm Loan</td>
<td></td>
<td>Safe Permanent Loan</td>
</tr>
</tbody>
</table>
“Commercial” Mortgage Loans vs. Home Loans

- Commercial mortgages & notes for existing properties not as standardized as home loans
- Documents are longer & more complex
- Often no personal liability:
  - Legal borrower often is a single asset entity (usually a LLC or LP)
  - Actual investors shielded from personal liability
Nonrecourse loans dominate the lending practices of pension funds, life companies, and CMBS originators.

But...commercial banks are likely to require some form of credit “enhancement”.

Often a guarantee by organizer/sponsor of the investment to make lender whole in the event lender suffers a capital loss on loan.

Some lenders also unwilling to relieve borrowers from personal liability if a “willful” act of borrower cause a capital loss for lender.

Examples: borrower fraud, environmental problems, unpaid property tax obligations.

How is this accomplished?

A “carve-out” clause is often included in the note.

This “bad boy” clause holds borrower(s) personally liable for lender losses caused by such problems.
Fixed Rate Commercial Mortgage Loans

- Usually a partially amortized “balloon” mortgage
  - 25-30 year amortization of principal
  - 5-10 year loan maturity
  - Balance of loan at maturity must be
    - refinanced or
    - paid off with a “balloon” payment

Attractions of a Balloon Mortgage to Lender

- Reduces interest rate risk on “permanent” mortgages
- Reduces default risk
  - Default risk is generally much greater for commercial mortgage loans than home loans
    - Often no personal liability
    - No FHA/PMI insurance (as in home mtg. market)
    - Borrowers are more “ruthless” about exercising their default options than home owners
Commercial Mortgage “Spreads” over Treasuries

Correlation between monthly rates/yields on 10-yr mortgages & 10-yr Treasury securities: 0.69 from 1997-2011

Restrictions on Prepayment

- **Lock-out**: Prohibition against prepayment for up to, say, 5 years on permanent
- 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 that produce cash flows equivalent to those on the paid-off mortgage
    - Most common form of prepayment penalty on loans used for collateral in CMBS
Other Forms of Permanent Financing for Existing Properties

- Floating (i.e., adjustable) rate mortgage
  - Interest rate on loan changes periodically based on movement in an index rate
  - Index rate is typically LIBOR, but may be “prime” rate or other short term benchmark rate

Other Forms of Permanent Mortgage Financing (continued)

- Joint Venture
  - Lender likely:
    - provides a mortgage loan to project
    - also provides some equity capital
    - receives mortgage interest plus share of equity cash flows
  - Borrower likely:
    - provides the project
    - provides local market expertise & management effort
Joint Venture (continued)

- Often between a developer/organizer of a development/investment opportunity and a:
  - pension fund
  - life insurance company
  - REIT
- Institutional investor’s share of operating & sale cash flows are negotiated

Other Forms of Permanent Financing for Existing Properties

- Sale-leaseback
  - Owner-user (bank, restaurant, drug store, etc.) sells property to long-term RE investor such as a
    - pension fund
    - limited liability company
    - REIT
  - User then leases property back from the investor(s) & occupies it under a long-term net lease
Sale-Leaseback (continued)

- Benefits to original owner (now tenant):
  - Lease payment is deductible for income taxes
  - Capital from sale can be invested in core business of company
- Investor benefits:
  - Can be relatively safe investment (depending on credit worthiness of tenant)
  - Often long term triple-net leases to “credit” tenants

Second Mortgages & Mezzanine Financing

- Supplements underlying first mortgage loan
- Sometimes is a 2nd mortgage loan (i.e., secured by the property)
- In recent years, often is a non-mortgage loan secured by a pledge of borrower’s equity ownership interest in property
  - If borrower defaults, mezzanine lender takes over borrower’s ownership position...giving them more control
Why does increased leverage in this example increase expected first year return on equity?

Other Forms of Permanent Financing for Existing Properties

- FHA insured loans for investment in low & moderate income multifamily housing

- Freddie Mac & Fannie Mae multifamily lending programs
  - Many targeted to low & moderate income housing
  - See Fannie & Freddie websites
    [www.fanniemae.com](http://www.fanniemae.com) and [www.freddiemac.com](http://www.freddiemac.com)
Multifamily properties provide housing for \( \approx 17 \) million U.S. families
- There are \( \approx 115 \) million U.S. households
- In 2012Q1, outstanding mtg. debt on U.S. multifamily properties totaled \( $844 \) billion
  
  (Board of Governors of the Federal Reserve System, June 7, 2012, page 104)
- This is like a 3rd party taking out a $50,000 mortgage on behalf of the renter
- Fannie & Freddie held in portfolio, or had securitized, \( $352 \) billion (42%) of the \( $844 \) billion

\[ \frac{16}{25} \]

\[ \frac{16}{26} \]

\( \approx 49\% \) of multifamily units financed by Fannie Mae serve families earning < 80% of area median income (AMI)
- Which meets Federal Housing Finance Agency’s (FHFA) “special affordable” housing goal requirement for Fannie Mae & Freddie Mac
- 48% of multifamily units financed by Fannie Mae were in designated underserved markets
**Debt Coverage Ratio**

- Indicator of “cash flow cushion” from lender’s perspective
  \[ DCR = \frac{NOI_1}{DS} \]
  where:
  - NOI\(_1\) is first year (next 12 months) NOI
  - DS is annual debt service (monthly payment x 12)
- Lender’s want DCR to be as high as possible, but typically 1.35 or higher

**Loan-to-Value Ratio**

- An indicator of borrower’s incentive to maintain the loan (i.e., not default)
  \[ LTV = \frac{Loan\, Amount}{Acquisition\, Price} \]
- Higher initial LTVs increase the probability of subsequent default, all else equal
- Typical LTV at origination on a first mortgage loan:
  - 65% for industrial, office, and retail properties
  - 75% for apartments
  - Mezzanine & second loans can increase leverage
Debt Yield Ratio

- Indicator of lender’s mortgage “return”
  
  \[
  DYR = \frac{NOI}{\text{Loan Amount}}
  \]

- Cash-on-cash return lender would enjoy if it foreclosed & took title to property on day of loan origination
- Does not consider contract interest rate or amortization period
- \(DYR\) only considers how large loan is relative to property’s NOI
- Typical minimum \(DYR\) is 9.0% or higher

Borrower’s Decision Making Process: Loan Size

- Reasons for use of debt by investors:
  - Limited financial resources/accumulated wealth
  - Debt alters risk & equity return of investment
    - “Magnifies” rate of return on invested equity
    - This magnification known as positive (or negative) leverage
  - Diversify investment portfolio (that is can buy more buildings)
  - Increase after tax return
When is Use of Leverage Expected to be Favorable?

- Increased leverage will **increase** expected return when....
  - the rate of return without leverage exceeds the cost of debt
  - This is called positive leverage

- **MM Eqn:**
  - \( R_L = R_U + \frac{D}{E}(R_U - R_D) \)

Adding a Mezzanine Loan or Second Mortgage to the Capital Stack

Why does increased leverage in this example increase expected first year return on equity?
Borrower’s Decision Making Process (continued)

- Financial risk:
  - Risk that NOI will be insufficient to cover (“service”) the mortgage payment obligation
  - A negative annual cash flow may lead to default and foreclosure
  - This risk increases with leverage
  - Negative CF probably results from increased vacancy

Borrower’s Decision Making Process: Refinancing

- Refinancing involves a NPV decision
  - Even more focused on NPV than home mortgage refinancing
    - More sophisticated borrowers
    - Fewer non-financial considerations
Borrower’s Decision Making Process: Refinancing (continued)

- Must account for lockout periods and/or prepayment penalty
- \[ NPV = PV \text{ of payment savings} - \text{Refi Cost} - \text{Prepay Penalty} \]
  - Should discount monthly savings at current market mortgage rate
  - Expected holding period after refinancing is important assumption
  - Refinancing uncommon due to prepayment restriction (penalty or lockout)

Borrower’s Decision Making Process: Default

- For lenders, **default** is the signature risk of commercial mortgages
  - Borrower seldom can cover for long the loan payment for a crippled commercial property
  - Loan is often non-recourse (good for borrower, bad for lender)
**Loan Underwriting: Crunching the Numbers**

<table>
<thead>
<tr>
<th>Input</th>
<th>Assumption</th>
</tr>
</thead>
<tbody>
<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>6% per year</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>$610,000 in year 1</td>
</tr>
<tr>
<td>Reserve for Capital expenditures</td>
<td>$88,800 in year 1. Expenditures are reserved for in calculation of NOI (i.e., an above-line treatment)</td>
</tr>
<tr>
<td>This = $300 per unit</td>
<td></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 (annual)</td>
<td>5.25%</td>
</tr>
<tr>
<td>Amortization schedule</td>
<td>25 years, monthly payments</td>
</tr>
<tr>
<td>Loan term</td>
<td>10 years</td>
</tr>
<tr>
<td>Annual payment</td>
<td>$719,097 ($59,924.77 \times 12)^*</td>
</tr>
</tbody>
</table>

*The calculator keystrokes for finding the monthly payment are \( N = 300; I/YR = 5.25\%; PV = 10,000,000; PMT = ?; \) and \( FV = 0\). Loan payment calculations are discussed in detail in Chapters 14 and 15.*

---

**Gatorwood Before-Tax Cash Flow from Operations**

\[
\begin{align*}
\text{Potential gross income (PGI)} & = 1,900,000 \\
\text{Vacancy and collection loss (VC)} & = 114,000 \\
\text{Effective gross income (EGI)} & = 1,786,000 \\
\text{Operating expenses (OE)} & = 610,000 \\
\text{Capital expenditures (CAPX)} & = 88,800 \\
\text{Net operating income (NOI)} & = 1,087,200 \\
\text{Debt service (DS)} & = 719,097 \\
\text{Before-tax cash flow} & = 368,103
\end{align*}
\]
Gatorwood Debt Coverage Ratio

\[ DCR = \frac{NOI_1}{DS} = \frac{1,087,200}{8719,097} = 1.51 \]

- NOI in first year of operations is expected to be half again as large as mortgage payment
- Thus, there appears to be sufficient protection against a deterioration in the property’s operating performance
- Lenders set a minimum standard for this ratio

Debt Yield Ratio

- Indicator of lender’s mortgage “return”

\[ DYR = \frac{NOI_1}{\text{Loan Amount}} \]

- \( DYR = 1,087,200/10,000,000 = 10.87\% \)
- Cash-on-cash return lender would enjoy if it foreclosed & took title to property on day of loan origination
- Does not consider contract interest rate or amortization period
- \( DYR \) only considers how large loan is relative to property’s NOI
- Typical minimum \( DYR \) is 9.0% or higher
CAP rate of the building

- The CAP rate is the “dividend” on the building
- CAP rate = NOI/Building Value
- Going-In CAP rate = 1087200/13,375,000
- = 8.13%

- This is not the total return on the building as it does not consider the capital gain.

Cash on Cash for Investor

- Cash on Cash is the cash the investor receives divided by the cash the investor invested
- The cash received is the BTCF = NOI – Annual Debt Service
- BTCF = 1,087,200 – 719,097 = 368,103
- The cash invested is the Down Payment plus points: 3,375,000 + 0 (No points were specified)
- C on C = 368,103/3,375,000 = 10.91%
We will define the operating expense ratio as (note this is not the same as the textbook):

\[(\text{OpEx} + \text{CapEx})/\text{EGI}\]

\[(610,000 + 88,800)/1,786,000 = 39\%\]

Compare this to similar properties to make sure it is reasonable for this investment opportunity.

The break even occupancy is the occupancy that must be achieved to cover all of your expenses.

In other words you meet your expenses but there is no cash left for the investors.

\[(\text{OpEx} + \text{CapEx} + \text{Ann Debt Service})/\text{PGI}\]

\[(610,000+88,800+ 719,097)/1,900,000 = 75\%\]

As long as occupancy is above this number there are funds to pay the mortgage.
Gatorwood Debt Coverage Ratio

\[
\text{DCR} = \frac{\text{NOM}}{\text{DS}} = \frac{\$1,087,200}{\$719,097} = 1.51
\]

- NOI in first year of operations is expected to be half again as large as mortgage payment
- Thus, there appears to be sufficient protection against a deterioration in the property’s operating performance
- Lenders set a minimum standard for this ratio

Gatorwood: Determining Maximum Available Loan (for DCR=1.35)

\[
\text{Maximum debt service} = \frac{\text{NOM}}{\text{Minimum DCR}} = \frac{\$1,087,200}{1.35} = \$805,333
\]

- Implies a maximum monthly payment of $67,111 ($805,333/12)
- With a 5.25% interest rate and 25-year term, implies a maximum loan of $11,199,208 (or 83.7% LTV)
The property’s NOI can support an $11,199,208 loan to achieve a DCR=1.35. However, maximum loan will be determined by lender’s maximum allowable LTV if it is less than 83.7% (which is likely).

### Typical Terms on Commercial Mortgages: from Exhibit 16-4

<table>
<thead>
<tr>
<th>Permanent, Fixed-rate Financing: 2nd qtr 2012</th>
<th>Apartments</th>
<th>Industrial</th>
<th>Office</th>
<th>Retail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spread over 10-year Treasury (bps)</td>
<td>250</td>
<td>275</td>
<td>275</td>
<td>275</td>
</tr>
<tr>
<td>Debt coverage ratio</td>
<td>1.35</td>
<td>1.45</td>
<td>1.50</td>
<td>1.50</td>
</tr>
<tr>
<td>Loan-to-value ratio</td>
<td>75%</td>
<td>65%</td>
<td>65%</td>
<td>65%</td>
</tr>
<tr>
<td>Amortization term (yrs.)</td>
<td>30</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Loan term (yrs.)</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Lender reserve requirement</td>
<td>$300/yr</td>
<td>$0.15/SF</td>
<td>$0.20/SF</td>
<td>$0.20/SF</td>
</tr>
</tbody>
</table>
We now need to add some additional assumptions:
- Assume a 5-year holding period
- Assume a 2% pre payment penalty at 5-years
- Lender charges 2 points.
- Assume the PGI, OpEx and CapEx grows at 3% per year and V&C remains at 6%. This means the NOI will also grow at 3% per year.
- Assume the exit cap rate is .25% higher than the purchase cap rate
- Assume 5% selling expenses at time of sale.

Lenders do not want to lend on a project that does not appear beneficial to the investor.
- What are the Annual Cash Flows to the Investor?
- What is the NPV for the investor assuming a 12% discount rate?
- What is the IRR for the investor?
### Compute BTCF from operations by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>NOI</th>
<th>ADS</th>
<th>BTCF (Operating)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1,087,200</td>
<td>719,097</td>
<td>368,103</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>719,097</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>719,097</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>719,097</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>719,097</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOI is growing at 3% each year

### Compute Initial Investment

- This is different than shown in the earlier computation as we now assume there are 2 points on the loan.
- \[ \text{Purchase Price + Points - Loan Amount} \]
Compute (Net) Sale Price

- Projected sale price:
  - Terminal Cap = Going Cap Rate + 0.25%

- NOI6/Terminal CAP rate

- Net Sales Price: Subtract 5% Selling Expense

Cash Flow on Sale

- Net Sales Price – Mortgage Payoff
- Compute Mortgage Payoff which is the Balance after 60 payments, plus the 2% prepayment penalty.
### Table of Cash Flows

<table>
<thead>
<tr>
<th>Year</th>
<th>BTCF Buy &amp; Sell</th>
<th>BTCF Operating</th>
<th>Total BTCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>368013</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the Total BTCF to compute IRR and NPV

### Permanent Loan Application and Approval Process

- Borrowers seeking to acquire or refinance an existing commercial property may submit loan requests directly to commercial banks, life insurance companies, or other direct lenders.
- Informal discussions with loan officers in these firms can inform would-be borrowers of expected items in a loan submission package.
Another channel for loan requests is through mortgage bankers & brokers

- Mortgage brokers specialize in putting together loan application packages that meet requirements of both borrowers and lenders
- They also assist borrowers in assembling the loan submission package
- For these services, mortgage brokers receive a fee at loan closing that may range from 1/2 to 1 percent of loan amount

Relative to home loans, underwriting process for commercial loans is more complicated & more focused on property used as collateral for the loan

- Primary reason?
  - Payments on commercial RE loans are expected to come from income generated by property
  - Result? The commercial loan underwriting process focuses first on the property being pledged as collateral for loan
Permanent Loan Application and Approval Process

- For more details see textbook

Construction and Development Financing

- Land acquisition financing
  - To finance purchase of raw land, often on urban fringe
- Land development loan
  - To finance installation of improvements to the land (sewers, utilities, etc.)
- Construction loan
  - To finance vertical construction
- Mini-perm loan
  - Provides financing for development phase, plus a short-term permanent loan upon completion of project
Construction and Development Financing

- Land acquisition financing
  - VERY risky; most traditional lenders will not touch
- Land development loan
  - If land is ready for development, demand for the expected finished product is less uncertain
- Construction loan
  - Arguably, collateral securing a construction loan is more valuable than collateral securing land acquisition & development loans