Introduction

♦ Cash flow drives values for income property
♦ Current and future returns are based upon cash flow estimates
♦ Appreciation is driven by increases in the cash flow
♦ Development, acquisition, leasing, marketing and management decisions are all driven by or intended to influence cash flows
Developing a Pro forma

- The Pro forma is an accounting style projection of operating statement over time
- It is a forecast of the future
- Typically on an annual projection basis
- Start with the initial operation of the property after the development and lease phase
- Alternatively, begin after acquisition of an existing property and run through the anticipated sale
- Provides the information that drives investment, financing and management decisions

Steps to Develop a Pro forma

Step 1. Estimate Gross Rent
Step 2. Subtract Estimated Vacancy
Step 3. Add other income
    = EGI (Effective Gross Income)
Step 4. Subtract Operating Expenses
    = NOI (Net Operating Income)
Step 5. Subtract Debt Service
    = BTCF (Before Taxes Cash Flow)
Steps to Develop a Pro forma (Contd.)

Step 6. Add the Mortgage Principal Repaid to BTCF
Step 7. Subtract Depreciation
Step 8. Subtract the Amortization Points, Leasing Commissions, and TI (tenant improvements)
= Taxable Income
Step 9. BTCF - Taxes
= ATCF (After Tax Cash Flow)

“Proforma” (Contd.)

1. Potential Gross Rent
   - Potential Gross rent is the rent that might be collected on a property if it is 100% occupied (Maximum Rent)
   - Projections of gross rent should consider:
     - Existing leases
     - Market rents on peer properties
     - Projected supply and demand
   - In a stable market rents might be expected to grow at the expected rate of inflation
2. Estimated Vacancy
♦ Vacancy results from:
   ▪ Normal mobility of tenants
   ▪ Need to retrofit units for new tenants
   ▪ Over-supply of similar property
♦ Estimate of forward vacancy rates should consider:
   ▪ Local peer group property vacancy rates
   ▪ Existing tenant leases

3. Other Income
♦ Other sources of income:
   ▪ Laundry vending
   ▪ Parking
   ▪ Percentage rents on retail leases
   ▪ Cable or network access
   ▪ Other additional services
“Proforma” (Contd.)

4. Operating Expenses
♦ Based on historical information and industry benchmarks (provided by trade associations)
♦ Estimated using simple per SF figures or through a detailed analysis of all the potential operating expense accounts:
  • Management expense
  • Leasing commissions
  • Tenant improvements
  • Property insurance
  • Property taxes
  • Cleaning/Security
  • Landscaping
  • Utilities not charged to tenants
  • Exterminators
  • Advertisements
  • Roof repair
  • Maintenance
  • Supplies

“Proforma” (Contd.)

5. Debt Service
♦ Debt service is the sum of all mortgage payments required for the year including principal loan repayment as well as interest payments
♦ Mortgage payment is an annuity
  • Input:
    ▪ PV- Projected mortgage loan
    ▪ N - Number of periods
    ▪ I - Interest rate per period
  • Solve for “PMT” i.e. payment
  • Multiply PMT by 12 to get debt service
6. Mortgage Principal Repaid to BTCF

♦ The mortgage principal repaid is the portion of the debt service that exceeded the interest due
♦ The loan balance is reduced each month
♦ The sum of the principal loan repaid for one year is the adjustment needed here

Alternative Approach:
♦ Start with NOI and deduct mortgage interest

7. Depreciation

♦ Non cash expense permitted by IRS as a deduction from income in calculation of taxable income
♦ Steps to calculate depreciation:
  ▪ Deduct the land value from property value (as land cannot be depreciated)
  ▪ Divide this number by total economic life of the property (27.5 for residential and 39 for commercial, as per 2001 tax laws)
  ▪ This is the straight line depreciation value
8. Amortization of Points, Leasing Commissions and Tenant Improvement

- Points is prepaid mortgage interest, paid at time of the loan origination
- Points are amortized in level fashion over the term of the loan until the end of loan term
- Leasing commissions are paid to leasing firms on percentage basis on the initial term of the lease (approx. 5% to 6%)
- Lease renewals also require some commission payment (approx. 3%)
- Tenant Improvements (T.I.) are an allowance to take care of tenant needs when the market requires
- Leasing commissions and T.I. are a function of tenant turnover and market conditions

Summary of Proforma

<table>
<thead>
<tr>
<th>Potential Gross Income</th>
<th>Less Vacancy</th>
<th>= Effective Gross Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Operating Expenses</td>
<td>= Net Operating Income</td>
<td></td>
</tr>
<tr>
<td>Less Debt Service</td>
<td>= BTCF</td>
<td></td>
</tr>
</tbody>
</table>

BTCF

Plus Principal Loan Repaid
Less Depreciation
Less amortization of points
Equals Taxable Income

OR

Net Operating Income
Less Mortgage Interest paid
Less Depreciation
Less Amortization of points
Equals Taxable Income
Proforma Summary (Contd.)

Taxable Income Times the Tax Rate
= Taxes Owed if Taxable Income is positive
= Taxes Saved if Taxable Income is Negative

BTCF Less Taxes Due OR Plus Taxes Saved
= After Tax Cash Flow (ATCF)

Financial Feasibility Ratios

- Financial feasibility/performance of a real estate investment can be judged by financial ratios
- Leverage and Operating Ratios:
  - Loan to Value Ratio (LTV)
  - Debt Coverage Ratio (DCR)
  - Breakeven Point
  - Expense Ratio
- Single Period Profitability Measures:
  - Cash on Cash
  - After Tax Return on Equity
  - Return on Asset (ROA); Value
- Multiple Period Return Measures:
  - NPV
  - IRR
LTV Ratio

Loan To Value Ratio = \[ \frac{\text{Mortgage Loan Balance}}{\text{Purchase Price}} \]

- Loan to Value ratio affects the financial risk of the investment
- Higher the LTV ratio means more risk to lender and greater the volatility of cash returns to equity for the property owner

Debt Coverage Ratio (DCR)

Debt Coverage Ratio = \[ \frac{\text{Net Operating Income (NOI)}}{\text{Debt Service}} \]

- The debt coverage ratio must exceed 1.0 in order for the property to make the mortgage payments and have something left over
- DCR can be used to calculate the supportable mortgage debt
- Supportable Mortgage with a given DCR:
  - NOI / DCR / 12 / Monthly Mortgage Constant
Breakeven Point

Operating expenses + Mortgage payments

Breakeven Pt. = \frac{\text{Operating expenses + Mortgage payments}}{\text{Gross Rent}}

- The breakeven point is the percentage of occupancy that a building must achieve in order to be able to pay all of its cash expenses and carry the financing.
- The lower the breakeven point the better.

Expense Ratio

\text{Expense Ratio} = \frac{\text{Operating expenses}}{\text{Effective Gross Income}}

- Expense ratio is used in comparison with similar property, but alone gives no information.
- Too low an expense ratio might imply inadequate repairs and upkeeps.
- Too high an expense ratio compared to peer properties may indicate that operating expenses are not being controlled properly.
Cash on Cash

Before Tax Cash Flow

\[ \text{Cash on Cash} = \frac{\text{Before Tax Cash Flow}}{\text{Cash Equity}^*} \]

* Cash Equity = Purchase price
  - Mortgage
  + Points

- Cash on Cash, is a crude but useful indicator of “going in” profitability of a property
- Higher is better, however that generally property with high cash on cash ratio has lower appreciation expectations

After Tax Return on Equity

Similar to Cash on Cash, taking into effect the tax adjustment
Return on Asset (Going In Cap Rate)

\[
\text{Return on Asset} = \frac{\text{Net Operating Income}}{\text{Purchase Price}}
\]

- The return on asset, also known as “cap rate”
- Used to determine ability of property to carry debt as well as a measure of overall profitability

Value

\[
\text{Value} = \frac{\text{Net Operating Income}}{\text{Cap Rate}}
\]

- Here cap rate is the “market cap rate”
- Market cap rate reflects the returns required for similar property:
  - Similar risk
  - Similar growth prospects
Multiple Period Return Measures

\[
\text{Equity} = PV_e = \frac{CF_1}{(1+i_{\text{IRR}})} + \frac{CF_2}{(1+i_{\text{IRR}})^2} + \frac{\text{Projected Resale CF}_T}{(1+i_{\text{IRR}})^T}
\]

♦ IRR: internal rate of return, solves the above equity
   where \(PV_e\) is the present value of the equity based
   on all future sources of returns

♦ The Equity IRR is compared to the required rate of
   return and if the IRR is equal to or greater than the
   required rate of return on equity the investment is
   acceptable

   ♦ Typical IRRs are in the 12% to 15% range

♦ Projected resale cash flow is proceeds from
   reversion value minus selling costs and tax

Multiple Period Return (Contd.)

♦ Estimating the resale price or Reversion
   Value is typically done using the following
   formula,

\[
\text{Resale Price}_T = \frac{\text{NOI}_{T+1}}{R}
\]

♦ Resale price value at time \(T\) based on the
   estimated NOI for the year following the sale

♦ \(R\) is the "going out" cap rate on the property

♦ \(R\) can be large, smaller or equal to Initial
   Year Cap Rate, depending on perception
Lease Analysis and Cash Flow Projection

- Reliable cash flow projections require tenant by tenant lease analysis
- Evaluation of existing leases on basis of comparisons to the market rent for similar credit risk and size tenants
- To map over time:
  - Lease terms such as burden of expenses passed on to tenant
  - Special features of allocation of unusual expenses
  - Lease expirations and options for renewal

Example: Lease Analysis

<table>
<thead>
<tr>
<th>Tenant</th>
<th>Year 1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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</thead>
<tbody>
<tr>
<td>ABC Co. base rent</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td>25,000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ABC Option to Renew at change in CPI estimated at 3%</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>28,982</td>
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<tr>
<td>Pass Through with a $5000 cap for 5 years</td>
<td>4,600</td>
<td>4,900</td>
<td>5,000</td>
<td>5,000</td>
<td>5,000</td>
<td>6,600</td>
<td>7,000</td>
<td>7,400</td>
<td>7,800</td>
<td>8,200</td>
</tr>
<tr>
<td>XYZ Co. Base rent Increasing at CPI no pass throughs</td>
<td>6,000</td>
<td>6,180</td>
<td>6,365</td>
<td>6,556</td>
<td>6,753</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>XYC Replacement Tenant with more supply expected</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>6,500</td>
</tr>
<tr>
<td>Summary to be collected</td>
<td>35,600</td>
<td>36,080</td>
<td>36,365</td>
<td>36,556</td>
<td>36,753</td>
<td>35,582</td>
<td>35,982</td>
<td>36,382</td>
<td>36,782</td>
<td>37,182</td>
</tr>
</tbody>
</table>

“Real Estate Principles for the New Economy”: Norman G. Miller and David M. Goelzer
The Impact of Cycles, marketing and Management on Cash Flows

- For management intensive properties, cash flows will be affected by the skill of the management and leasing team.
- On the other hand, an industrial warehouse filled with long-term fixed rate triple net leases (where all expenses are passed through) can not be affected as much by management and creative property managers will do little to affect the rent.
- A good tenant mix will enhance the drawing power and success of a mall.

Management Impact (Contd.)

The Potential Impact of Management and Marketing on Property NOI