Fundamental Skills for Real Estate Development Professionals I

Financial Analysis

Wednesday, October 17
9:15 a.m. – 10:30 a.m.
Topics we’ll cover today

• Key aspects of financial analysis
  – Are the inputs good?
  – Stages of financial analysis – simple to complex
  – Is the return adequate for risk?

• Time value of money
  – PV, DCF, NPV & IRR

• Capital Structure

• Partnership Structure

• Case Study – Georgetown Towers
Are the Inputs Good?

- Or at least as good as you can make them?
- Property seasoning
- Two areas of focus
  - Operating budget (stabilized)
  - Construction cost budget
- Gets you to the magical return on cost
- No point in running returns on unrealistic numbers
Operating Budget

- Revenue
  - Reasonability of rental rates?
  - Plausible lease-up timing?
    - Watch the back door
  - Realistic stabilized occupancy?
    - Really going to 100%?
    - Vacancy and collection loss?
  - Overage rent?
  - Other income?
  - Reimbursement revenue?
Operating Budget

- **Operating Expenses**
  - Controllable vs. Non-controllable (taxes & insurance)
  - Controllable Expenses
    - Assess for reasonability – management fee, contract services, etc.
    - Proper ramp up or ramp down?
      - Marketing goes down over time
      - R&M & make-ready generally go up
  - Non-Controllable Expenses
    - Taxes properly adjusted for assessor’s reaction to development?
    - Quote from an insurance provider?
      - Additional coverage needed?

- **Revenue – Operating Expenses = Net Operating Income**
Construction Cost Budget

- Review key line items for reasonability
- Land cost
  - Can be a touchy issue
- Hard costs
  - Employ $/SF to asset reasonability
  - Adequacy of TI/LC budget
- Soft costs
  - Watch the fees
  - Contingencies
  - Construction loan interest
  - Operating shortfalls
Simplicity First – Return on Cost

• Keep it simple in the early stages

• Return on Cost Analysis
  – Stabilized Net Operating Income/Total Construction Cost
  – Trended vs. Untrended ROC – impact of rent growth?
  – Build wholesale & sell retail
  – Spreads today = 150-250bps
  – Should I continue w/ deal?
  – Compensated for risk?

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Rental Revenue</td>
<td>$1,023,903</td>
<td>$2,047,807</td>
<td>$4,095,613</td>
</tr>
<tr>
<td>Recovery Income</td>
<td>$349,500</td>
<td>$699,000</td>
<td>$1,398,000</td>
</tr>
<tr>
<td>Other Income</td>
<td>$185</td>
<td>$370</td>
<td>$739</td>
</tr>
<tr>
<td>Vacancy Loss</td>
<td>($59,672)</td>
<td>($119,345)</td>
<td>($238,689)</td>
</tr>
<tr>
<td>Effective Gross Income</td>
<td>$1,313,916</td>
<td>$2,627,832</td>
<td>$5,255,663</td>
</tr>
<tr>
<td>Operating Expenses</td>
<td>$368,050</td>
<td>$736,099</td>
<td>$1,472,198</td>
</tr>
<tr>
<td>Net Operating Income</td>
<td>$945,866</td>
<td>$1,891,733</td>
<td>$3,783,465</td>
</tr>
<tr>
<td>Total Construction Cost</td>
<td></td>
<td></td>
<td>$63,000,000</td>
</tr>
<tr>
<td>Return on Cost</td>
<td></td>
<td></td>
<td>6.0%</td>
</tr>
</tbody>
</table>
• If someone offered you $10,000 today or $10,000 in 1 year, what would you choose...why?

• Dollars at one time, not equivalent to dollars at another

• Not just because of inflation
  – Due to real productivity of capital & risk
  – Future dollars worth less than present dollars

• RE requires comparison of dollars at different time periods

• Solution – present value mathematics
• Future Value (2 periods)
  – FV = (1+r)PV
    • FV = Future Value
    • r = Interest Rate
    • PV = Present Value

– Savings Account Example
  • Deposit $10 today earning 5% interest; value in 1 year
  • FV = (1+.05)*$10
    – FV = $10.50
• **Present Value (2 periods)**
  - \[ PV = \frac{FV}{(1+r)} \]
    - \( r \) = discount rate
  - **Inverse of savings account example**
    - You get $10.50 in one year, if you require a 5% return on your investment; how much should you pay?
    - \[ PV = \frac{10.50}{1+.05} \]
    - \( PV = $10.00 \)
  - **Multiple periods**
    - \[ PV = \frac{FV}{(1+r)^n} \]
      - \( n = \# \) of periods
Multiple periods (cont.)

- Same example but $10.50 earned in 2 years instead of 1
  - $PV = \frac{10.50}{(1+.05)^2}$
  - $PV = 9.52$
  - Less than $10 because of add’l year of 5% interest required.

- Again, savings example is inverse
  - You have $9.52 today. What is that worth in 2 years at 5% interest.
  - $FV = 9.52(1+.05)^2$
  - $FV = 10.50$
• Discounted cash flow
  – Measures the present value of all future cash flows.
  – Fully accounts for the time value of money
  – Allows for variable cash flows
  – Allows for differential growth rates of income and expense components
  – Incorporates value appreciation through reversion
  – Allows cash flows pre- and post-construction

• Produces two key metrics
  – Net Present Value
  – Internal Rate of Return
Net Present Value

- The value \textit{(in terms of today’s dollars)} of all future cash flows, \textit{positive} and \textit{negative}, from the project as discounted by the required rate of return (aka discount rate – 12%), \textit{minus} the cost of acquiring the property.

<table>
<thead>
<tr>
<th>Present Value (@ i = 12%)</th>
<th>Initial investment</th>
<th>Income for each period</th>
</tr>
</thead>
</table>
| \begin{tabular}{c|c|c|c|c|c} \hline ($100.00) & ($100.00) & \$6.00 & \$7.00 & \$8.00 & \$110.00 \\ \hline $5.36 & \$5.58 & \$5.69 & \$69.91 & \end{tabular} | \begin{tabular}{c}
\text{($13.46$)} = NPV (sum of all PV's)
\end{tabular} |
The Internal Rate of Return (IRR) is the discount rate (stated as a percentage) at which the present value of future cash flows is exactly equal to the initial capital investment. Specifically:

- It is the rate of return where Net Present Value (NPV) = 0.
- In this example, the IRR of the cash flows is 7.63%.

### Table: Income for each period

<table>
<thead>
<tr>
<th>Present Value @ i = 7.63%</th>
<th>Initial investment</th>
<th>Income for each period</th>
</tr>
</thead>
<tbody>
<tr>
<td>($100.00)</td>
<td>($100.00)</td>
<td>$6.00</td>
</tr>
<tr>
<td>$5.57</td>
<td></td>
<td>$7.00</td>
</tr>
<tr>
<td>$6.04</td>
<td></td>
<td>$8.00</td>
</tr>
<tr>
<td>$6.42</td>
<td></td>
<td>$110.00</td>
</tr>
<tr>
<td>$81.97</td>
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</tbody>
</table>

$0.00 = NPV (sum of all PV's)
**NPV & IRR**

- **NPV > $0 = IRR > required return**
  - Ideal arrangement; definitely pursue

- **NPV = $0 = IRR = required return**
  - Meets return requirements; pursue though less inspired

- **NPV < $0 = IRR < required return**
  - Doesn’t meet return requirements; pass

- IRRs and NPVs are not all created equal
  - Assumptions drive returns
  - Ensure equivalent risk when comparing investments
  - Risk-adjusted returns – fundamental issue
Capital Stack

- Components (% of total capitalization)
  - Construction loan – 50-75%
  - Limited partner equity – 15-45%
  - General partner equity – 5-10%

- Construction Loan
  - Commercial banks are large construction lenders
  - Based upon % of total construction cost (LTC)
  - Lender performs own underwriting - naturally
  - Construction loan types
    - Front-end – most secure for lender
    - Back-end – generally a thing of the past
    - Pari-passu – compromise
Construction Loan – cont.
  - Requires take-out lender in place first
    - More traditional lenders – Life companies
    - Pre-sale concept
  - Generally have 1-4 years of term
  - Interest rate generally Libor based
  - Development costs are funded through draw requests
  - Depending on loan size, can be syndicated
    - LP/GP struggles
    - Net worth covenants – partner
    - Cure rights?
• Already talked about GP & LP
  – Equity contribution 90/10 or 95/5
  – Make sure fees don’t constitute equity
    • “Skin in the game”
  – Key terms
    • Pari Passu – Latin for “on equal footing”
    • Promote – chance for GP to exceed pari passu status
  – Partners participate financially in 2 ways
    • Cash flow
    • Reversion (appreciation)
  – Cash flow generally pari passu, but limited in development deals.
  – Reversion – pari passu until hurdles met
    • GP increases participation in profits as total return increases
Interpreting IRRs

• Generally speaking – 3 sets of IRRs
  – Unleveraged
  – Leveraged
  – Structured
• Unleveraged – limited value; ROC only
• Leveraged – Not diluted by partnership
• Structured – IRR to LP
  – Always compare Leveraged to Structured IRRs
  – Demonstrates impact of partnership terms
  – How much of deal are you giving away?
    • 200-300 bps is typical
## Case Study – Georgetown Towers

<table>
<thead>
<tr>
<th>Deal Parameters</th>
<th>Year</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Total Cost</td>
<td>$100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Debt</td>
<td>$65</td>
<td></td>
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<tr>
<td>GP Equity</td>
<td>$5</td>
<td></td>
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<td>GP Equity (millions)</td>
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<td>LP Equity</td>
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<tr>
<td>GP/LP Funding</td>
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<td>$22.5</td>
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<td>Loan Funding</td>
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<td>$0.0</td>
<td>$42.5</td>
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### Reversion Calc

<table>
<thead>
<tr>
<th></th>
<th>Year</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<tbody>
<tr>
<td>Year 4 NOI</td>
<td>$6.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOI</td>
<td>$0.0</td>
<td>$1.6</td>
<td>$3.3</td>
<td>$4.9</td>
<td>$6.5</td>
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<tr>
<td>Exit Cap</td>
<td>5.50%</td>
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<td></td>
<td></td>
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<tr>
<td>CF</td>
<td>$(5.0)</td>
<td>$(20.9)</td>
<td>$(4.3)</td>
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<tr>
<td>Reversion (less debt)</td>
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<td></td>
<td>$53.2</td>
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<tr>
<td>Total CF</td>
<td>$(5.0)</td>
<td>$(20.9)</td>
<td>$(4.3)</td>
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<td>Value</td>
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<td>Less Debt</td>
<td>$53.20</td>
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### Financial Metrics

- **U/L Return on Cost**: 6.5%
- **Exit Cap Rate**: 5.5%
- **Leveraged IRR**: 37%

### Cash Flow Rates

- **GP CF IRR**: $(0.71) 77%
- **LP CF IRR**: $(4.29) 29%