Business and Intangible Asset Valuation Concepts for Fixed Asset Appraisers

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Presenter’s Contact Information

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   a. Definitions
   b. Accounting Requirements for Fair Value

Objectives

1. Increase awareness of technical guidance on business and intangible asset valuations
2. Understand key elements of the Income Approach to valuation
3. Understand concepts of allocation of business income to different assets (Excess Earnings Method to valuation)
4. Understand key concepts related to risk and cash flow
5. Understand different types of cash flows
6. Understand values from economic and tax benefits from an asset
7. Recognize discount rate relationships for different assets
8. Contrast business, fixed asset and intangible asset valuation
9. Recognize relevance of economic, tax and financial reporting lives
10. Understand capital budgeting concepts and their usefulness in assessing economic values
Introduction

Increased Emphasis on Intangibles – Skills Required of a Valuation Specialist
Business Valuation vs. Asset Valuation

<table>
<thead>
<tr>
<th>Analytical Variable</th>
<th>Business Valuation</th>
<th>Fixed Asset Valuation</th>
<th>Intangible Asset Valuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income subject to analysis</td>
<td>All operating income of BE</td>
<td>Portion of operating income</td>
<td>Portion of operating income</td>
</tr>
<tr>
<td>Life of income projection</td>
<td>Typically into perpetuity</td>
<td>Usually limited RUL</td>
<td>Usually limited RUL</td>
</tr>
<tr>
<td>Discount rate</td>
<td>Usually lower</td>
<td>Usually lower</td>
<td>Usually higher</td>
</tr>
<tr>
<td>Effect of obsolescence</td>
<td>Assume business adapts (going concern)</td>
<td>Assume effect on RUL</td>
<td>Assume effect on RUL</td>
</tr>
<tr>
<td>Highest and best use</td>
<td>Usually obvious</td>
<td>Requires analysis</td>
<td>Requires analysis</td>
</tr>
<tr>
<td>Transactional data</td>
<td>More obvious</td>
<td>Limited for many assets, comparability concerns for auction values</td>
<td>Difficult to find</td>
</tr>
<tr>
<td>Control</td>
<td>Control or minority value</td>
<td>Control value</td>
<td>Control value</td>
</tr>
<tr>
<td>Level of value</td>
<td>Various — TIC, equity, minority interest in equity</td>
<td>Total value of asset</td>
<td>Total value of asset</td>
</tr>
</tbody>
</table>

Increased Emphasis on Intangibles—Relative Values of Tangible and Intangible Assets

**Components of S&P 500 Market Value**

- 1975: 17% Tangible Assets, 32% Intangible Assets
- 1985: 32% Intangible Assets
- 1995: 68% Intangible Assets
- 2005: 80% Intangible Assets
- 2010: 80% Intangible Assets

Source: Ocean Term
### Increased Emphasis on Intangibles —Market Value to Book Value at January 12, 2012: Key Industry Sectors

<table>
<thead>
<tr>
<th>Industry Sector</th>
<th>Number of Firms</th>
<th>Price/BV</th>
<th>ROE</th>
<th>Expected Growth in EPS</th>
<th>Payout</th>
<th>Beta</th>
<th>EV/Invested Capital</th>
<th>ROC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace/Defense</td>
<td>112</td>
<td>1.38</td>
<td>-8.79%</td>
<td>14.01%</td>
<td>1.52</td>
<td>0.35</td>
<td>12.35%</td>
<td>NA</td>
</tr>
<tr>
<td>Auto Parts</td>
<td>11</td>
<td>1.65</td>
<td>14.75%</td>
<td>16.03%</td>
<td>11.97%</td>
<td>1.07</td>
<td>1.65</td>
<td>15.72%</td>
</tr>
<tr>
<td>Automotive</td>
<td>12</td>
<td>1.05</td>
<td>11.06%</td>
<td>44.50%</td>
<td>22.24%</td>
<td>1.59</td>
<td>1.02</td>
<td>6.96%</td>
</tr>
<tr>
<td>Bank</td>
<td>426</td>
<td>0.85</td>
<td>6.08%</td>
<td>10.22%</td>
<td>33.53%</td>
<td>0.77</td>
<td>0.93</td>
<td>NA</td>
</tr>
<tr>
<td>Biotechnology</td>
<td>158</td>
<td>3.19</td>
<td>4.53%</td>
<td>20.53%</td>
<td>59.34%</td>
<td>1.03</td>
<td>4.36</td>
<td>-13.33%</td>
</tr>
<tr>
<td>Chemical (Basic)</td>
<td>16</td>
<td>2.64</td>
<td>17.91%</td>
<td>15.45%</td>
<td>30.79%</td>
<td>1.36</td>
<td>2.18</td>
<td>13.66%</td>
</tr>
<tr>
<td>Chemical (Diversified)</td>
<td>31</td>
<td>2.96</td>
<td>14.48%</td>
<td>16.55%</td>
<td>31.68%</td>
<td>1.51</td>
<td>2.41</td>
<td>13.61%</td>
</tr>
<tr>
<td>Chemical (Specialty)</td>
<td>70</td>
<td>3.08</td>
<td>15.15%</td>
<td>19.21%</td>
<td>40.43%</td>
<td>1.28</td>
<td>2.43</td>
<td>12.25%</td>
</tr>
<tr>
<td>Computer Software</td>
<td>184</td>
<td>3.74</td>
<td>25.64%</td>
<td>17.66%</td>
<td>21.61%</td>
<td>1.04</td>
<td>5.63</td>
<td>45.06%</td>
</tr>
<tr>
<td>Drug</td>
<td>279</td>
<td>2.73</td>
<td>16.53%</td>
<td>15.04%</td>
<td>49.12%</td>
<td>1.12</td>
<td>2.53</td>
<td>15.02%</td>
</tr>
<tr>
<td>E-Commerce</td>
<td>57</td>
<td>4.55</td>
<td>9.06%</td>
<td>22.85%</td>
<td>1.89%</td>
<td>1.03</td>
<td>5.47</td>
<td>13.08%</td>
</tr>
<tr>
<td>Electric Util. (Central)</td>
<td>21</td>
<td>1.57</td>
<td>10.31%</td>
<td>6.23%</td>
<td>63.88%</td>
<td>0.75</td>
<td>1.25</td>
<td>6.38%</td>
</tr>
<tr>
<td>Electronics</td>
<td>139</td>
<td>1.65</td>
<td>14.75%</td>
<td>16.03%</td>
<td>11.97%</td>
<td>1.07</td>
<td>1.65</td>
<td>15.72%</td>
</tr>
<tr>
<td>Entertainment Tech</td>
<td>40</td>
<td>1.97</td>
<td>8.22%</td>
<td>21.77%</td>
<td>11.57%</td>
<td>1.23</td>
<td>2.42</td>
<td>11.69%</td>
</tr>
<tr>
<td>Environmental</td>
<td>82</td>
<td>2.22</td>
<td>10.13%</td>
<td>19.46%</td>
<td>46.73%</td>
<td>0.81</td>
<td>1.65</td>
<td>7.56%</td>
</tr>
<tr>
<td>Financial Svcs. (Div.)</td>
<td>225</td>
<td>1.79</td>
<td>-26.07%</td>
<td>13.76%</td>
<td>NA</td>
<td>1.31</td>
<td>1.17</td>
<td>5.95%</td>
</tr>
<tr>
<td>Food Processing</td>
<td>112</td>
<td>1.38</td>
<td>-7.98%</td>
<td>20.01%</td>
<td>NA</td>
<td>1.45</td>
<td>1.23</td>
<td>-2.09%</td>
</tr>
<tr>
<td>Foreign Electronics</td>
<td>156</td>
<td>2.58</td>
<td>15.65%</td>
<td>13.87%</td>
<td>45.25%</td>
<td>0.91</td>
<td>1.97</td>
<td>11.88%</td>
</tr>
<tr>
<td>Funeral Services</td>
<td>6</td>
<td>1.93</td>
<td>10.87%</td>
<td>16.50%</td>
<td>49.81%</td>
<td>1.14</td>
<td>1.47</td>
<td>7.81%</td>
</tr>
<tr>
<td>Homebuilding</td>
<td>23</td>
<td>1.38</td>
<td>-7.98%</td>
<td>20.01%</td>
<td>NA</td>
<td>1.45</td>
<td>1.23</td>
<td>-2.09%</td>
</tr>
<tr>
<td>Hotel/Gaming</td>
<td>51</td>
<td>2.64</td>
<td>4.59%</td>
<td>15.60%</td>
<td>40.37%</td>
<td>1.74</td>
<td>1.77</td>
<td>6.95%</td>
</tr>
<tr>
<td>Household Products</td>
<td>26</td>
<td>3.33</td>
<td>20.17%</td>
<td>11.76%</td>
<td>48.97%</td>
<td>1.07</td>
<td>2.50</td>
<td>14.52%</td>
</tr>
<tr>
<td>Industrial Services</td>
<td>137</td>
<td>2.40</td>
<td>11.48%</td>
<td>15.11%</td>
<td>24.98%</td>
<td>1.45</td>
<td>2.46</td>
<td>12.50%</td>
</tr>
<tr>
<td>Medical Services</td>
<td>122</td>
<td>2.09</td>
<td>16.89%</td>
<td>14.37%</td>
<td>8.82%</td>
<td>0.91</td>
<td>1.71</td>
<td>18.55%</td>
</tr>
<tr>
<td>Petroleum (Producing)</td>
<td>176</td>
<td>1.76</td>
<td>8.94%</td>
<td>18.51%</td>
<td>9.50%</td>
<td>1.34</td>
<td>1.55</td>
<td>13.50%</td>
</tr>
<tr>
<td>Power</td>
<td>93</td>
<td>1.06</td>
<td>5.30%</td>
<td>11.43%</td>
<td>13.75%</td>
<td>1.35</td>
<td>1.03</td>
<td>7.56%</td>
</tr>
<tr>
<td>Precious Metals</td>
<td>84</td>
<td>2.15</td>
<td>7.92%</td>
<td>16.38%</td>
<td>26.74%</td>
<td>1.15</td>
<td>2.12</td>
<td>9.73%</td>
</tr>
<tr>
<td>Restaurant</td>
<td>63</td>
<td>6.66</td>
<td>28.84%</td>
<td>17.41%</td>
<td>46.73%</td>
<td>1.27</td>
<td>4.55</td>
<td>20.32%</td>
</tr>
<tr>
<td>Semiconductor</td>
<td>141</td>
<td>2.62</td>
<td>20.68%</td>
<td>20.66%</td>
<td>30.53%</td>
<td>1.50</td>
<td>3.22</td>
<td>28.41%</td>
</tr>
<tr>
<td>Thrift</td>
<td>148</td>
<td>0.94</td>
<td>-1.07%</td>
<td>11.41%</td>
<td>NA</td>
<td>0.71</td>
<td>0.94</td>
<td>NA</td>
</tr>
<tr>
<td>Wireless Networking</td>
<td>57</td>
<td>2.72</td>
<td>15.56%</td>
<td>19.66%</td>
<td>9.13%</td>
<td>1.27</td>
<td>2.19</td>
<td>-18.21%</td>
</tr>
<tr>
<td>Total Market</td>
<td>5,891</td>
<td>2.00</td>
<td>11.44%</td>
<td>15.61%</td>
<td>37.92%</td>
<td>1.15</td>
<td>1.62</td>
<td>12.21%</td>
</tr>
</tbody>
</table>
Five Primary Groups of Intangibles

- ASC 805, Business Combinations, lists five principal classes of intangible assets:
  - Contract–based intangibles
  - Marketing-related intangibles
  - Customer or supplier-related intangibles
  - Technology-related intangibles
  - Artistic-related intangibles

- Similar guidance is provided in IVSC Guidance Note 4, Valuation of Intangible Assets and IFRS 3, Business Combinations.

Identification of Intangibles—Marketing Related

- Marketing-related intangible assets are primarily used in the marketing or promotion of products or services. The non-exhaustive listing includes:
  - Trademarks, trade names, service marks, collective marks, certification marks
  - Trade dress (unique color, shape, or package design)
  - Newspaper mastheads
  - Internet domain names
  - Non-competition agreements

Source: ASC 805-20-55-14 and IFRS 3 (non-exhaustive list), IVSC, GN 4 paragraph 3.3 and ASC 805-20-55-14 (non-exhaustive list).
Identification of Intangibles—Customer Related

- Customer-related intangible assets related directly to the customer including:
  - Customer lists
  - Order or production backlog
  - Customer contracts and related customer relationships
  - Non-contractual customer relationships

Source: ASC 805-20-55-20 and IFRS 3 (non-exhaustive list). See also IVSC, GN 4 paragraph 3.4.

Identification of Intangibles—Artistic Related

- Artistic-related intangible assets are those intangible assets of an artistic nature reflecting the creativity of the creator. These can include such items as:
  - Plays, operas, ballets
  - Books, magazines, newspapers, other literary works
  - Musical works such as compositions, song lyrics, advertising jingles
  - Pictures, photographs
  - Video and audiovisual material, including motion pictures, music videos, television programs

Source: ASC 805-20-55-29 and IFRS 3 (non-exhaustive list). IVSC, GN 4 paragraph 3.6 provides a similar but abbreviated listing of artistic-related intangibles.
Identification of Intangibles—Contract-Based

• Contract-based intangible assets are established by contracts and include:
  • Licensing, royalty, standstill agreements
  • Advertising, construction, management, service or supply contracts
  • Lease agreements
  • Construction permits
  • Franchise agreements
  • Operating and broadcast rights
  • Servicing contracts such as mortgage servicing contracts
  • Employment contracts
  • Use rights such as drilling, water, air, timber cutting, and route authorities

Source: ASC 805-20-55-31 and IFRS 3 (non-exhaustive list).

Identification of Intangibles—Technology Based

• Technology-based intangible assets protect or support technology and include:
  • Patented technology
  • Computer software and mask works
  • Unpatented technology
  • Databases, including title plants
  • Trade secrets, such as secret formulas, processes, recipes

Source: ASC 805-20-55-38 and IFRS 3 (non-exhaustive list). IVSC, GN 4 paragraph 3.5 provides a similar listing of technology-related intangibles.
Increased Emphasis on Intangibles — Changes in Accounting Requirements

- Increases in role of intangibles led to changes in accounting guidance
  - Purchase Price Allocation Guidance
    - IAS 3 and ASC 805, Business Combinations
  - Impairment Guidance
    - IAS 36, Impairment of Assets (one standard for finite and indefinite lived intangibles)
    - ASC 350-20, Intangibles-Goodwill and Other-Goodwill (indefinite lived)
    - ASC 360—Impairment and Disposal of Long-Lived Assets
  - General Guidance on Fair Value Estimates
    - IFRS 3 and ASC 820, Fair Value Measurement
  - At present, there is discussion of simplification of accounting rules for purchase price allocations and goodwill impairment calculations

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Valuation Theory
Valuation Theory — Importance of the Income Approach

Premises
• Valuation is forward looking
  • Value should reflect future cash flows rather than historical amounts. This is the impetus for the move to fair value concepts in financial reporting
  • Historical performance can be meaningful as an indicator of future performance
• Obsolescence from physical, functional and economic factors could lower value of an asset due to a potential reduction in future cash flows
• BV appraisers are facing significant scrutiny in US (auditors, SEC, Public Company Accounting Oversight Board in US, others)

Conclusion
• MTS appraisers should have good knowledge of business valuation concepts to better address obsolescence factors
• Teaming of MTS and BV valuation professionals

Income Approach—Business Valuation: Alternative Methods

• For Income Approach, two methods are available to value a business:
  • Discounted Cash Flow Method (DCF Method)
    • Project cash flows until cash flows stabilize (as %)
    • Residual value (typically from Capitalized Income Method)
    • Cash flow includes deductions for capital expenditures and any working capital required to support growth.
  • Capitalized Income Method (CIM)
    • Assumes growth is stabilized as a percent
    • Three key inputs include
      • Cash flow base
      • Discount rate
      • Long-term growth rate
Income Approach—
Business Valuation: Alternative Methods

• For larger firms, CIM is infrequently used. Generally only used to calculate the residual value of the business once growth is forecast to stabilize (on a percentage basis).
• CIM is frequently used to value small businesses.
• Market approach uses market data to develop the same value estimate as the Income Approach.
  • The market data in the multiples (after appropriate adjustments) should capture the risk and growth expectations of the subject.
  • Market approach does not adequately address non-stable growth situations.

Capitalized Income Method to Valuation

\[ V = \frac{CF_0 \times (1 + g)}{(k - g)} \]

Three variables:
• CF—Benefit stream to capitalize. Almost always cash flow stream
• K—Discount rate reflective of risk of cash flows
• G—Expected constant growth factor as a percent
Discounted Future Benefits Formula

Value = \frac{Income_1}{(1+k)^1} + \frac{Income_2}{(1+k)^2} + \frac{Income_3}{(1+k)^3} + \ldots + \frac{Income_n}{(1+k)^n}

Discounted Future Benefits—Simplified Formula

Value = \sum_{n=1}^{n=t} \frac{Income_n}{(1+k)^n} + \frac{Terminal value}{(1+k)^t}

- Terminal value could be many different things depending on what is being valued:
  - Business—Business enterprise cash flows into perpetuity
  - Land fill, other—Liability to perform remediation
  - Fixed asset, plant, other—Salvage value of an asset
Invested Capital is Preferred Basis for Many Valuations

WACC - Capital Based

<table>
<thead>
<tr>
<th>Market Value of Invested Capital</th>
<th>Fair Value of Interest Bearing Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fair Value of Equity</td>
</tr>
</tbody>
</table>

WARA - Asset Based

<table>
<thead>
<tr>
<th>Fair Value of Net Working Capital</th>
<th>Fair Value of Tangible Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fair Value of Intangible Assets</td>
</tr>
<tr>
<td></td>
<td>Fair Value of Goodwill</td>
</tr>
</tbody>
</table>

Calculation of Equity vs. Invested Capital Cash Flow

Equity Cash Flow

- Revenue
- Less Cost of sales
- Less Operating expense
- Less Interest expense
- Less Income taxes
- = Pretax income
- Less Income taxes
- = Net income
- Plus Depreciation & amortization
- = Gross cash flow
- Less Increase in working capital
- Less Capital expenditures
- +/- Change in debt principal
- = Equity Net Cash Flow

Invested Capital Cash Flow

- Revenue
- Less Cost of sales
- Less Operating expense
- = Operating income (EBIT)
- Less Taxes on EBIT
- = Net operating profit after tax (NOPAT)
- Plus Depreciation & amortization
- = Gross cash flow
- Less Increase in working capital
- Less Capital expenditures
- +/- Change in debt principal
- = Invested Capital Net Cash Flow

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Equity vs. Invested Capital Cash Flows: Example

<table>
<thead>
<tr>
<th>Equity</th>
<th>Invested Capital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$23,000</td>
</tr>
<tr>
<td>Less Cost of sales</td>
<td>(15,000)</td>
</tr>
<tr>
<td>Equals Gross profit</td>
<td>8,000</td>
</tr>
<tr>
<td>Less Operating expense</td>
<td>(4,500)</td>
</tr>
<tr>
<td>Equals EBITDA</td>
<td>3,500</td>
</tr>
<tr>
<td>Less Non-cash items</td>
<td>(2,000)</td>
</tr>
<tr>
<td>Equals EBIT</td>
<td>1,500</td>
</tr>
<tr>
<td>Less Interest expense</td>
<td>(300)</td>
</tr>
<tr>
<td>Equals Pretax Income</td>
<td>1,200</td>
</tr>
<tr>
<td>Less Income taxes</td>
<td>(480)</td>
</tr>
<tr>
<td>Equals Net Income</td>
<td>$720</td>
</tr>
<tr>
<td>NOPAT</td>
<td>$900</td>
</tr>
</tbody>
</table>

NOPAT = Net Operating Profit After Taxes (Debt Free Net Income)

Financial Statement Adjustments

1. **Accounting translation adjustments** (Comparability) – Financial statement adjustments to make the subject (or GPCs) comparable to peer group (e.g., RMA, GPCs) accounting (e.g., LIFO to FIFO, cash to accrual).

2. **Non-recurring adjustments** (Predictability) – Adjustment of historical financial statements to be more predictive of future financial performance.

3. **Non-operating or excess asset adjustments** (Core Operations) – Adjustments so that the past financial performance reflects only the economic performance of the core operations which are expected to continue on an indefinite basis (and sometimes those non-core operations which are expected to continue on an indefinite basis).

4. **Discretionary adjustments** – Adjustments to eliminate any discretionary items such as excess officers compensation or similar factors.
Adjustments to Income Statement - Example

Example | Adjustment to Income Statement
--- | ---
Private firm CEO is paid $1,200,000. Analyst estimates market rate for CEO is $800,000. | Reduce SG&A expenses by $400,000.
Firm leases a warehouse for $200,000/year from a family member. Analyst estimates market rate is $300,000. | Increase SG&A expenses by $100,000.
Firm owns a vacant building that has reported expenses of $90,000 and depreciation expenses of $15,000. The building is noncore. | Reduce SG&A expenses by $90,000. Reduce depreciation expenses by $15,000.
Firm may be acquired by a strategic Buyer A that expects synergies with cost savings of $230,000. Buyer B is a financial buyer. | Reduce SG&A expenses by $230,000 when calculating normalized earnings for Buyer A, but not for Buyer B.

<table>
<thead>
<tr>
<th>Current Year</th>
<th>Adjustment</th>
<th>As Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues</td>
<td>$10,000,000</td>
<td>-</td>
</tr>
<tr>
<td>Cost of Sales:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beginning Inventory</td>
<td>275,000</td>
<td>65,000 A</td>
</tr>
<tr>
<td>Purchases</td>
<td>2,450,653</td>
<td>(480,000)</td>
</tr>
<tr>
<td>Less: Ending Inventory</td>
<td>(315,000)</td>
<td>(100,000)</td>
</tr>
<tr>
<td>Total Cost of Sales</td>
<td>2,410,653</td>
<td>-</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>7,589,347</td>
<td>35,000</td>
</tr>
<tr>
<td>Operating Expenses:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Officer Compensation</td>
<td>726,423</td>
<td>(376,423) B</td>
</tr>
<tr>
<td>Salaries and Wages</td>
<td>1,254,000</td>
<td>60,000 C</td>
</tr>
<tr>
<td>Rent</td>
<td>180,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Auto Expense</td>
<td>34,750</td>
<td>(25,000) D</td>
</tr>
<tr>
<td>Travel and Entertainment</td>
<td>36,425</td>
<td>(40,000) D</td>
</tr>
<tr>
<td>Other Operating Expenses</td>
<td>3,284,623</td>
<td>(256,000) E</td>
</tr>
<tr>
<td>Depreciation and Amortization</td>
<td>798,503</td>
<td>60,000 G</td>
</tr>
<tr>
<td>Total Operating Expenses</td>
<td>6,363,724</td>
<td>-</td>
</tr>
<tr>
<td>Income From Operations</td>
<td>1,225,623</td>
<td>666,423</td>
</tr>
<tr>
<td>Other Income (Expenses):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest Income</td>
<td>26,425</td>
<td>(26,425) F</td>
</tr>
<tr>
<td>Gain (Loss) on Sale of Assets</td>
<td>133,458</td>
<td>(133,458) G</td>
</tr>
<tr>
<td>Total Other Income (Expenses)</td>
<td>(107,033)</td>
<td>-</td>
</tr>
<tr>
<td>Earnings Before Taxes</td>
<td>1,118,590</td>
<td>740,006</td>
</tr>
<tr>
<td>Income Taxes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal Income Tax</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>State Income Tax</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Income Taxes</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Net Income</td>
<td>$1,152,040</td>
<td>$740,006</td>
</tr>
</tbody>
</table>

A - Change FIFO to LIFO  
B - Normalize Officer's Compensation  
C - Normalize Rent to Fair Market Value  
D - Adjust for Discretionary Auto and Travel and Entertainment Expenses  
E - Adjust Accelerated Depreciation Method  
F - Adjust Non-Operating Income (Expenses)  
G - Remove Interest Expense to Determine Net Income Available to Invested Capital
Income Approach—Sources of Incremental Cash Flows

- The cash flows generated by an asset may include any/all of the following:
  - **Increased revenue**—due to higher quality or unique features:
    - Premium price per unit, and/or
    - Increased number of units sold.
  - **Cost savings**—lower costs
    - Production
    - Marketing
    - Warranty / repair
    - Other
  - **New profit generation**—potential development of new technologies / products
    - Mix of the above.

Many of the above factors would relate to intangibles but may also be relevant to fixed assets.

Income Approach—Asset Valuations: Alternative Methods

- For intangible assets, different methods of the Income Approach reflect different roles of intangibles and means of quantifying the benefit stream:

  - **Multi-Period Excess Earnings Method (MPEEM) (Primary asset)**
    - Starting point is total income for business or business unit.
    - Deduct shares of income associated with other required assets.
    - Calculate present value of residual income using a risk-adjusted discount rate.

  - **Cost Savings Methods (Secondary assets)**
    - Relief from Royalty Method (RFR Method)
    - Direct estimate of cost savings
Income Approach—Asset Valuations: Alternative Methods

- Greenfield or Build-Out Methods
  - Only asset owned is the subject asset (raw land, an FCC license)
  - All other assets must be built or bought. Models typically result in negative cash flows in initial periods due to
    - Investments in various assets
    - Operating losses until stabilized revenue and earnings levels achieved

- With and Without Method (“WWM”)
  - Comparative valuations with and without an asset in place
  - Difference is the value from the asset being appraised
  - As will be discussed later, WWM has other applications

Tax Assumptions: Inclusion of Tax Rate and Cash Flows from Tax Benefits

- Business Appraiser Perspective
  - After Tax Cash Flows and After Tax Discount Rate
  - Plus Value of Tax Benefits

- Some valuation practice (real estate) relies on
  - Pretax cash flows and pretax discount rate
  - No explicit tax benefit

Examples of pretax – real estate valuations

- Key reason for difference
  - Business assets are often viewed as owned by corporations that are often assumed to pay corporate level taxes.
  - Real estate and other assets are often assumed to be held by non-taxable entities (partnerships / REITs / closed end funds) or directly by individuals, hence, no entity level tax
Tax Assumptions in Business and Intangible Asset Valuations

• In valuation, two levels of taxes must be addressed:
  • Entity level taxes
  • Individual investor taxes

• Most business and intangible asset valuation models reflect valuation:
  • After entity level taxes, if any.
  • Before individual level taxes

• While individual taxes are important, these are generally viewed as being captured in market return requirements / yields. (They are indirectly captured in the actions of buyers and sellers of securities that are used to develop rate of return estimates used to develop discount rate estimates.)

Income Approach—Intangible Asset Challenges

• Determination of appropriate method may be challenging.
• Significant informed judgment is required when assigning cash flows of an acquired enterprise to specific assets.
  • Need to properly reflect risk associated with the cash flows in question and determine appropriate discount rate.
  • Need to determine the term of the cash flow forecasts.
  • Limited observable market data to support many variables.
Valuing a Business Enterprise Using the Excess Earnings Method

Excess Earnings Method - Introduction

- Intangible assets are valued using a variation of the Capitalized Income Method of the Income Approach. The CIM valuation formula:
  - Value = Benefit stream / (Discount rate less growth rate)
- Adjustments can be made to allow for benefit streams and discount rates related to the intangible components of a business enterprise.
- The business enterprise value is estimated by using the Adjusted Book Value Method of the Cost Approach. Value estimates for the working capital, fixed assets and intangibles (previously valued using the CIM) are summed resulting in the BEV estimate.
- The value of debt can be deducted to arrive at an indication of equity value.
Steps in the EEM Valuation Process

1. Segregate any non-operating assets from the operating assets of the business enterprise
2. Determine normalized operating earnings for the operating business enterprise
3. Determine whether an income metric or cash flow metric such as debt free net cash flow should be used (debt free benefit streams are preferred as valuation of the equity in intangible assets would add further complications)
4. Determine values of working capital and fixed assets (fair values / fair market values are preferred over book values)
5. Determine reasonable rates of return for WC and fixed assets (individually or jointly) (Key Issue)
6. Calculate required return on working capital and fixed assets by multiplying each rate of return by the fair value of each group of assets (essentially the calculation of contributory asset charges)

Steps in the EEM Valuation Process (cont.)

7. Subtract the required returns on working capital and fixed assets from the operating earnings of the business enterprise to develop the “excess earnings” (residual income) from the intangible assets
8. Estimate capitalization rate (k – g) for the residual income (frequently residual cash flow) from intangible assets (Key Issue)
9. Divide the excess earnings by the cap rate to determine intangible value
10. Add intangible value to working capital and fixed asset value to determine the value of the operating business enterprise
11. Add value of non-operating assets, if any
### Valuation Using Capitalized Income Method

#### Valuation of Business Enterprise:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Free Net Cash Flow</td>
<td>$540,000</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>15.0%</td>
</tr>
<tr>
<td>Long Term Growth Rate</td>
<td>3.0%</td>
</tr>
<tr>
<td>Capitalization Factor</td>
<td>12.0%</td>
</tr>
<tr>
<td><strong>Indicated Value of Business Enterprise</strong></td>
<td><strong>$4,500,000</strong></td>
</tr>
</tbody>
</table>

#### Pro Forma Income Statement:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$10,000,000</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td>70.0%</td>
</tr>
<tr>
<td>Gross Profit</td>
<td>3,000,000</td>
</tr>
<tr>
<td>SG&amp;A Expenses</td>
<td>20.0%</td>
</tr>
<tr>
<td>EBITDA</td>
<td>2,000,000</td>
</tr>
<tr>
<td>Depreciation</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Operating Income (EBIT)</td>
<td>900,000</td>
</tr>
<tr>
<td>Tax Expense</td>
<td>40.0%</td>
</tr>
<tr>
<td>Net Income</td>
<td>$540,000</td>
</tr>
</tbody>
</table>

#### Calculation of Debt Free Net Cash Flow:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Income</td>
<td>$540,000</td>
</tr>
<tr>
<td>Adjustment for Working Capital</td>
<td>-</td>
</tr>
<tr>
<td>Plus: Depreciation</td>
<td>100,000</td>
</tr>
<tr>
<td>Less: Capital Expenditures</td>
<td>(100,000)</td>
</tr>
<tr>
<td>Debt Free Net Cash Flow</td>
<td>$540,000</td>
</tr>
</tbody>
</table>

### Valuation Using EEM

#### Asset Accumulation Method for BEV and Excess Earnings Method for Intangibles

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Capital</td>
<td>$500,000</td>
</tr>
<tr>
<td>Fixed Assets</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Goodwill and Other Intangibles</td>
<td>3,000,000</td>
</tr>
<tr>
<td><strong>Indicated Value of Business Enterprise</strong></td>
<td><strong>$4,500,000</strong></td>
</tr>
</tbody>
</table>

#### Valuation of Intangible Assets and Goodwill - Excess Earnings Method:

<table>
<thead>
<tr>
<th>Component</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt Free Net Cash Flow</td>
<td>$540,000</td>
</tr>
<tr>
<td>Required Working Capital Balance</td>
<td>$500,000</td>
</tr>
<tr>
<td>Working Capital Rate of Return</td>
<td>6.5%</td>
</tr>
<tr>
<td>Return Attributable to Working Capital</td>
<td>32,500</td>
</tr>
<tr>
<td>Required Fixed Asset Balance</td>
<td>$1,000,000</td>
</tr>
<tr>
<td>Fixed Asset Rate of Return</td>
<td>9.5%</td>
</tr>
<tr>
<td>Return Attributable to Fixed Assets</td>
<td>95,000</td>
</tr>
<tr>
<td>Residual Available to Intangible Assets</td>
<td>412,500</td>
</tr>
<tr>
<td>Plus: Growth of WC Balance ($500,000 * 3%)</td>
<td>15,000</td>
</tr>
<tr>
<td>Plus: Growth of FA Balance ($1,000,000 * 3%)</td>
<td>30,000</td>
</tr>
<tr>
<td>Residual Available to Intangible Assets with Growth Allocation</td>
<td>$457,500</td>
</tr>
<tr>
<td>Intangible Asset Rate of Return</td>
<td>18.25%</td>
</tr>
<tr>
<td>Long Term Growth Rate</td>
<td>3.0%</td>
</tr>
<tr>
<td>Capitalization Factor</td>
<td>15.25%</td>
</tr>
<tr>
<td><strong>Indicated Value of Intangible Assets and Goodwill</strong></td>
<td><strong>$3,000,000</strong></td>
</tr>
</tbody>
</table>

**Notes:**

- Residual income for intangibles includes growth associated with WC and FA.
- Growth for WC and FA cannot be capitalized based on discount rates for these asset classes.
Important Concepts

Types of Valuation Methods for Going Concerns and Intangibles

<table>
<thead>
<tr>
<th>Business</th>
<th>Intangible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Replacement Cost</td>
</tr>
<tr>
<td>Market</td>
<td>Guideline Transactions</td>
</tr>
<tr>
<td>Guideline Public Companies</td>
<td>Guideline Transactions</td>
</tr>
<tr>
<td>Income</td>
<td>DCF Method</td>
</tr>
<tr>
<td>DCF Method</td>
<td>- Excess Earnings</td>
</tr>
<tr>
<td>Capitalized Income</td>
<td>- Relief From Royalty</td>
</tr>
</tbody>
</table>
Use of Valuation Methods for Going Concerns and Intangibles

<table>
<thead>
<tr>
<th></th>
<th>Business</th>
<th>Intangible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td>Rare</td>
<td>Frequent</td>
</tr>
<tr>
<td>Market</td>
<td>Frequent</td>
<td>Very Rare</td>
</tr>
<tr>
<td>Income</td>
<td>Frequent</td>
<td>Frequent</td>
</tr>
</tbody>
</table>

Stage of Development - Public vs. Private Valuation - Differences

Private Firms
- Less mature
- Smaller – more risk
- Limited ownership – Mgmt.
- Less diversification
  - Management
  - Geographic
  - Customers
  - Products
- Lower quality information
- Long-term shareholders
- Taxes important

Public Firms
- Later in life cycle
- Larger, public capital avail
- Broad ownership base
- More diversification
- Timely, high quality info
- Shorter-term shareholders
- Accounting earnings impt.
Types of Cash Flows—Introduction

Investor Specific Cash Flows—Reflect investor specific expectations
• May not reflect market participant expectation
• Could reflect a single set of projected future cash flows
• If different from market participant cash flows, it is very difficult to accurately estimate a discount rate for these cash flows

Market Participant Cash Flows—Reflect negotiations between buyers and sellers in the marketplace
• Reflect market’s perspective on degree of risk
• Incorporate the weighting of views of the market

Certainty Equivalent Cash Flows—Reflect the weighted expectation of ALL possible future outcomes
• Rarely viewed as possible
• If projections truly reflect all possible outcomes, risk free rate would be used

Required Relationship of Risk and Return

Return (CF)

Risk (K)

WACC
WACC - Discount
WACC + Premium

Conservative Cash Flows – WACC less a discount
Market Participant Cash Flows – WACC
Optimistic Cash Flows – WACC plus a premium
Risk and Cash Flows—Importance of Consistency

- To correctly apply the Income Approach, cash flows and discount rates must reconcile
  - Level of value—Business enterprise or equity
  - Degree of risk—high risk cash flows imply high discount rate
  - Tax characteristics—post tax cash flows require post tax discount rate

- IFRS 13 and ASC 820 provide insights for using future cash flows as the basis for accounting measurements.
- IFRS 13 and ASC 820 distinguish “the single most-likely amount” from the “expected amount”; the latter is a concept that refers to the sum of probability-weighted amounts within a range of estimated amounts.
- In financial reporting valuations, there is an increasing focus on capturing risk in cash flows rather than in a discount rate
  - If cash flow projections are incredibly optimistic, how does one adjust a discount rate for this. (Informed judgment or based on my experience are not good answers)
Risk and Cash Flows—Estimation of Future Revenues: Forms of Projections

- IFRS 13 and ASC 820 note two types of present value techniques:
  - Traditional approach uses a specific set of cash flow projections.
    - Risk of achieving forecast cash flows is captured in discount rate.
    - Discount rate includes risk free rate plus a risk premium.
  - Expected cash flow approach uses a composite set of expected cash flow projections which capture probabilities of scenarios. The Expected Present Value Technique, which translates the expected cash flows into a present value indication, is described in ASC 820 and includes two methods.
    - Method 1 of the expected present value technique adjusts the expected cash flows for the systematic (market) risk by subtracting a cash risk premium (risk-adjusted expected cash flows).
    - Method 2 of the expected present value technique adjusts for systematic (market) risk by adding a risk premium to the risk-free interest rate.

- Traditional approach is more typically seen but expected cash flow approach would be theoretically preferable.
- “The Board found the expected cash flow approach to be a more effective measurement tool than the traditional approach in many situations. In developing a measurement, the expected cash flow approach uses all expectations about possible cash flows instead of the single most-likely cash flow.” (paragraph 45, Concepts Statement 7).
- While expected present value technique is technically preferable, as stated at paragraph 51 “Like any accounting measurement, the application of an expected cash flow approach is subject to a cost-benefit constraint.”
Risk and Cash Flows—Estimation of Future Revenues: Forms of Projections

Certainty Equivalent Cash Flows

- In addition to traditional and expected cash flows, the concept of certainty equivalent cash flows highlights the challenge of capturing risk in a discount rate rather than in cash flow estimates.
- Certainty equivalent cash flows represent the weighting of all possible cash flow scenarios. In many situations, certainty equivalent cash flows may not be easily developed. In some simple situations, an estimate of certainty equivalent cash flows might be developed.
- As certainty equivalent cash flows represent the average of all possible cash flow scenarios, they incorporate all risk. Therefore, a risk-free rate of return is appropriate as a discount rate for PV calculation. If expected cash flows don’t capture all risk, a risk adjustment requires inclusion in the discount rate estimate.
- Certainty equivalent cash flows might be considered a subset of expected cash flow approach where the “expected cash flows” capture all scenarios and, hence, all risk.

<table>
<thead>
<tr>
<th>Scenario 1 Cash Flows</th>
<th>Probability Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>25,000</td>
<td>12,500</td>
</tr>
<tr>
<td>50,000</td>
<td>25,000</td>
</tr>
<tr>
<td>100,000</td>
<td>50,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scenario 2 Cash Flows</th>
<th>Probability Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Certainty Equivalent Cash Flows: 12,500 25,000 50,000

Discount Rate and PV Factors (2)

<table>
<thead>
<tr>
<th>Year</th>
<th>Probability Adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.9759</td>
</tr>
<tr>
<td>2</td>
<td>0.9294</td>
</tr>
<tr>
<td>3</td>
<td>0.8852</td>
</tr>
</tbody>
</table>

Present Value of Cash Flow: 12,199 23,236 44,259

Sum of PV of Cash Flows (rounded): 80,000

Traditional Cash Flow Approach

<table>
<thead>
<tr>
<th>Year</th>
<th>Mid-Year Convention</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5000</td>
</tr>
<tr>
<td>2</td>
<td>1.5000</td>
</tr>
<tr>
<td>3</td>
<td>2.5000</td>
</tr>
</tbody>
</table>

Discount Rate and PV Factors (1)

<table>
<thead>
<tr>
<th>Year</th>
<th>Discount Rate and PV Factors (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.8058</td>
</tr>
<tr>
<td>2</td>
<td>0.5233</td>
</tr>
<tr>
<td>3</td>
<td>0.3398</td>
</tr>
</tbody>
</table>

Present Value of Cash Flow: 20,146 26,163 33,978

Sum of PV of Cash Flows (rounded): 80,000

Notes:

1) Example assumes only two scenarios exist - receive designated cash flows or receive nothing. Both have equal probability.
2) Certain equivalent CF is weighting of two scenarios. Discount rate for certainty equivalent CF reflects risk-free rate.
3) Discount rate for traditional approach includes risk premium. There is only one positive CF scenario.
4) Traditional CF represents Scenario 1 estimate. If Scenario 1 CF are used, a risk premium should be included in discount rate.

Key Observation:
In this example, the value from the Certainty Equivalent Cash Flow Approach can be used to backsolve for the discount rate required in the Traditional Cash Flow Approach. This demonstrates the benefit of reflecting certain risks in the cash flows rather than in a discount rate.
Discount Rates

Discount Rate Estimates—Overview

• Estimating discount rates for a business and the different assets of a business is one of the more challenging areas of valuation.
• No (or limited) market data available for returns on fixed assets
• No market data available for intangible assets - customers, technology, trade names, work forces, other
• Although there is often limited direct market evidence to estimate discount rates for specific business assets, there are several means of confirming that estimates are within a range of reason.
• The following slides present information pertaining to:
  • Return requirements for different asset classifications
  • Return requirements within the spectrum of intangible assets
  • General methods of confirming the reasonableness of discount rate estimates
Discount Rate Estimates—Risk and Rate of Return

Assets within a business enterprise have different risk and return characteristics.
Rate of return of a particular asset is commensurate with its risk.
Assets within a business enterprise typically have different liquidity and return characteristics.

Discount Rate Estimates
Reconciliation—Weighted Average Cost of Capital

WACC - Capital Based

Market Value of Invested Capital =
Fair Value of Long Term Interest Bearing Debt +
Fair Value of Equity

WARA - Asset Based

Fair Value of Net Working Capital
Fair Value of Tangible Assets
Fair Value of Intangible Assets
Fair Value of Goodwill
Discount Rate Estimates Reconciliation—Weighted Average Cost of Capital

- The Weighted Average Cost of Capital (WACC) is the overall rate of return for an investment in a business enterprise.

- WACC represents the return required for long term debt and equity capital.

- Long term debt and equity capital are conceptually equivalent to net assets.

- A business enterprise is an assemblage of a variety of assets including:
  - Working capital
  - Tangible assets
  - Identifiable intangible assets
  - Goodwill

Discount Rate Estimates Reconciliation—Weighted Average Return on Assets (WARA)

A business enterprise represents a portfolio of assets with different levels of investment and return requirements

<table>
<thead>
<tr>
<th>Fair Value of Net Working Capital</th>
<th>Weights</th>
<th>After Tax Required Rate of Return</th>
<th>=</th>
<th>Weighted Average Rate of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.7%</td>
<td>4%</td>
<td></td>
<td>0.5%</td>
<td></td>
</tr>
<tr>
<td>Fair Value of Tangible Assets</td>
<td>15.7%</td>
<td>8%</td>
<td>1.3%</td>
<td></td>
</tr>
<tr>
<td>Fair Value of Intangibles</td>
<td>52.9%</td>
<td>15%</td>
<td>8.0%</td>
<td></td>
</tr>
<tr>
<td>Fair Value of Goodwill</td>
<td>19.6%</td>
<td>22%</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100%</td>
<td></td>
<td>14.1%</td>
<td></td>
</tr>
</tbody>
</table>

14.0% Rounded
Discount Rate Estimates—Different Assets: Per 6.89 of IPR&D Practice Aid

- The IPR&D Practice Aid provides guidance on discount rates for different assets.
- Working capital – Short-term lending rates for market participants (for example, working capital lines or short-term revolver rates) and cost of equity for market participants
- Fixed assets – Financing rate for similar assets for market participants (for example, terms offered by vendor financing), or rates implied by operating leases, capital leases, or both (typically segregated between returns OF [that is, recapture of investment] and returns ON) and cost of equity.
- Assembled workforce – Frequently, the weighted average cost of capital (WACC).
- Enabling technology – Frequently the WACC
- Other intangibles – Rate appropriate to risk of each intangible

- The CAC Best Practices document provides expanded discussion of rates of return for contributory assets.

Discount Rate Estimates—CAC Final Document: Rate of Return for Contributory Assets

4.1.01 “The fundamental premise is that the required rate of return should be commensurate with the relative risk associated with investment in each particular asset. However, there is a paucity of authoritative data on asset-specific returns.

4.1.04 “Using relevant market data, valuation specialists can estimate the market participant cost of equity and cost of debt related to financing a particular type of asset. From that the valuation specialist can use market-based debt capacity ratios to develop the required rate on specific classes of assets.”

4.2.03 “Contributory real estate owned by a high technology entity might not exhibit risk characteristics specific to the high technology industry, but instead would require equity and debt rates of return specific to real estate investments. Conversely, if the working capital or fixed assets are very risky or very specific to the entity (which may limit the liquidity of the assets due to the lack of a secondary market), the required rate of return may be higher than otherwise indicated ...”
Discount Rate Estimates—CAC Final Document: Rate of Return for Contributory Assets—Working Capital

4.2.05 “The required return on working capital is typically considered to be at the lower end of returns of most, if not all, other asset classes and is assumed to be equal to the after-tax rate that would be charged to finance working capital...

The Working Group believes that these approaches could understate the required return since very few companies are able to borrow 100% of the value of working capital assets. The Working Group believes that a best practice, if it creates as significant difference, would be to consider the level of debt and equity financing required to fund working capital.

When inventory has a limited specific market or when receivables are in a high default industry it may be appropriate to adjust the various reference rates noted in this paragraph to reflect additional risk.”

Discount Rate Estimates—Asset Based Lenders Advance Rates

<table>
<thead>
<tr>
<th>Collateral Type</th>
<th>Typical Loan (Median Advance %)</th>
<th>Upper Limit (Median Advance %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketable Securities</td>
<td>80</td>
<td>90</td>
</tr>
<tr>
<td>Accounts Receivable</td>
<td>80</td>
<td>85</td>
</tr>
<tr>
<td>Inventory - Low Quality</td>
<td>25</td>
<td>40</td>
</tr>
<tr>
<td>Inventory - Intermediate Quality</td>
<td>40</td>
<td>50</td>
</tr>
<tr>
<td>Inventory - High Quality</td>
<td>55</td>
<td>60</td>
</tr>
<tr>
<td>Equipment</td>
<td>60</td>
<td>80</td>
</tr>
<tr>
<td>Real Estate</td>
<td>60</td>
<td>70</td>
</tr>
<tr>
<td>Land</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Discount Rate Estimates—Return on Assets and Cost of Debt

- Cost of debt may vary based on:
  - Risk of asset
  - Duration of financing for each specific asset.

- Table on the following page assumes the same cost of debt for different assets, but a changing mix of debt/equity capital.

- Some appraisers will further adjust the cost of debt on an asset specific basis.
- In many cases, source of cost of debt would be obtained from banks or other financing sources.

Discount Rate Estimates—Returns on Specific Assets: Sample Calculation

PE Buyer, Inc.
Valuation of Intangible Assets of Tuff Tables, Inc. for ASC 805

Weighted Average Cost of Capital - Specific Assets

<table>
<thead>
<tr>
<th>BEV</th>
<th>Working Capital</th>
<th>Fixed Assets</th>
<th>Trade Name</th>
<th>Customer Relationships</th>
<th>Current Technology</th>
<th>Assembled Workforce</th>
<th>IPR &amp; R&amp;D</th>
<th>Goodwill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt-to-Capital</td>
<td>16.0%</td>
<td>100.0%</td>
<td>70.0%</td>
<td>16.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Cost of Debt (After-tax)</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Pro Rata Amount</td>
<td>0.6%</td>
<td>3.9%</td>
<td>2.7%</td>
<td>0.6%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Equity-to-Capital</td>
<td>84.0%</td>
<td>0.0%</td>
<td>30.0%</td>
<td>84.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Asset Specific Risk Premium</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
<td>4.0%</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
<td>20.2%</td>
</tr>
<tr>
<td>Pro Rata Amount</td>
<td>13.6%</td>
<td>0.0%</td>
<td>4.8%</td>
<td>13.6%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Weighted Average Cost of Capital</td>
<td>14.2%</td>
<td>3.9%</td>
<td>7.6%</td>
<td>14.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Rounded</td>
<td>14.0%</td>
<td>4.0%</td>
<td>8.0%</td>
<td>14.0%</td>
<td>16.0%</td>
<td>16.0%</td>
<td>16.0%</td>
<td>16.0%</td>
</tr>
</tbody>
</table>

Notes:
(a) Estimates of capital type percentages are somewhat judgmental.
Reconciliation with the WACC and IRR and a detailed understanding of appraised entity will assist in making these estimates.
(b) Return on goodwill results in a WARA that is equal to the WACC
## Discount Rate Reconciliation—WARA Calculation

**PE Buyer, Inc.**

**Valuation of Intangible Assets of Tuff Tables, Inc. for ASC 805**

**Weighted Average Cost of Capital - Specific Assets**

<table>
<thead>
<tr>
<th>Weighted Average Cost of Capital</th>
<th>Working Capital</th>
<th>Fixed Assets</th>
<th>Trade Name</th>
<th>Customer Relationship</th>
<th>Internal Use Software</th>
<th>Customer Contracts</th>
<th>Customer Relationships</th>
<th>Patented Technology</th>
<th>Tradenames</th>
<th>Unpatented Technology (In-Use)</th>
<th>IPR&amp;D</th>
<th>Assembled Workforce</th>
<th>Goodwill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of Debt (After-tax)</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Pre Rate Amount</td>
<td>0.6%</td>
<td>3.9%</td>
<td>2.7%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Equity-to-Capital (After-tax)</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
<tr>
<td>Cost of Equity</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
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</tr>
<tr>
<td>Equity factor applied</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

**Notes:**

(a) Estimates of capital type percentages are somewhat judgmental.

- Reconciliation with the WACC and IRR and a detailed understanding of appraised entity will assist in making these estimates.

(b) Return on goodwill results in a WARA that is equal to the WACC.

## Discount Rate Estimates—Illustrative Return Ranges for Various Intangibles

Discount rate should reflect the risk associated with the income attributable to the intangible asset. A general risk spectrum associated with various intangible asset classes follows:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Capital</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intangible Assets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal Use Software</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Contracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customer Relationships</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patented Technology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tradenames</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpatented Technology (In-Use)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPR&amp;D</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assembled Workforce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Goodwill</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of Debt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WACC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of Equity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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Discount Rate Estimates—
Return on Specific Assets

- Returns on individual assets are selected in light of:
  - Current costs of funds
  - Type of asset and its liquidity
  - Acceptance as collateral for debt-financing purposes
  - Special purpose nature vs. broader use
  - Discussions with asset-based lenders on current trends

- Higher liquidity of an asset corresponds to:
  - Increased marketability
  - Greater acceptance as collateral
  - Less equity required to finance the asset
  - Lower required rate of return

Benefits from
Depreciation or Amortization of
Tax Basis in an Asset
Sources of Value of an Asset

- The value of an asset includes two elements:
  - Cash flows generated (directly or indirectly) by the asset
  - Cash flow increase due to tax shield from depreciation or amortization of the tax basis in an asset. Depreciation or amortization of the tax basis of an asset reduces the taxable income of the owner and therefore its tax expense.

- Tax rules for depreciation or amortization of the tax basis of an asset impact the value of an asset. All other things held equal, an asset with more favorable tax attributes (i.e., shorter tax depreciation or amortization period) will be worth more than an otherwise identical asset with a more delayed period for tax basis recovery.

- Tax depreciation is jurisdiction-specific and needs to incorporate the tax rates, amortization periods, and any limitations of the specific country in which it is domiciled.

Tax Benefits and The Three Valuation Approaches

The value of tax benefits differs for the three valuation approaches:

- **Market approach**—Tax benefit included in market price of similar assets. Tax rule changes often lead to value changes.
- **Cost approach**—Depends on valuation of asset. (Area where practice varies)
  - Not included if pretax costs used (preferred methodology). (Somewhat like the market approach.)
  - Included if pretax costs are adjusted to an after-tax basis.
- **Income approach**—The value of tax benefits should be included.
  - The tax depreciation/amortization benefit, if any, should be included to reflect the incremental cash flows (incremental value) provided by the tax deduction and related tax savings.
  - Tax benefit should only be included for assets where the benefit is appropriate. (Tax amortization is not universal.)
  - Some assets may not directly include a calculation of the value of tax benefits (real estate).
Tax Benefits—Impact of Tax Jurisdiction

• Tax benefit calculation should follow the rules applicable to the jurisdiction where a market participant is expected to domicile the acquired asset.

• The length and pattern of the asset depreciation/amortization lives under different tax regimes varies.

• The tax rate should reflect the governing tax regime, which may not be where the cash flows are generated.

Tax Depreciation (Amortization) Benefit—Formula

• Value of an asset equals:
  • Present value of after tax cash flows attributable to the asset plus
  • Present value of tax depreciation/amortization benefit

• Answer would appear to involve circular arguments
  • Need to know tax depreciation/amortization benefit to know full value of asset but can’t know full value without knowing the value of the tax benefit
  • Formulas are available to avoid this apparent circularity

• As depreciation/amortization decreases, the value of this benefit increases.
### Tax Depreciation / Amortization Benefit—Sample Calculation with 15 Year Recovery Period

#### Fifteen Year Amortization / Depreciation Assumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Period</th>
<th>Amortization</th>
<th>Tax Rate</th>
<th>Disc. Rate</th>
<th>PV Factor</th>
<th>Tax Benefit Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.94</td>
<td>0.0250</td>
</tr>
<tr>
<td>2</td>
<td>1.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.82</td>
<td>0.0219</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.72</td>
<td>0.0192</td>
</tr>
<tr>
<td>4</td>
<td>3.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.63</td>
<td>0.0169</td>
</tr>
<tr>
<td>5</td>
<td>4.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.55</td>
<td>0.0148</td>
</tr>
<tr>
<td>6</td>
<td>5.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.49</td>
<td>0.0130</td>
</tr>
<tr>
<td>7</td>
<td>6.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.43</td>
<td>0.0114</td>
</tr>
<tr>
<td>8</td>
<td>7.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.37</td>
<td>0.0100</td>
</tr>
<tr>
<td>9</td>
<td>8.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.33</td>
<td>0.0088</td>
</tr>
<tr>
<td>10</td>
<td>9.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.29</td>
<td>0.0077</td>
</tr>
<tr>
<td>11</td>
<td>10.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.25</td>
<td>0.0067</td>
</tr>
<tr>
<td>12</td>
<td>11.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.22</td>
<td>0.0059</td>
</tr>
<tr>
<td>13</td>
<td>12.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.19</td>
<td>0.0052</td>
</tr>
<tr>
<td>14</td>
<td>13.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.17</td>
<td>0.0045</td>
</tr>
<tr>
<td>15</td>
<td>14.5</td>
<td>6.7%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.15</td>
<td>0.0040</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.1749</td>
</tr>
</tbody>
</table>

0.1749 is the tax benefit factor – application of this factor will be discussed in a subsequent slide.

### Tax Depreciation / Amortization Benefit—Sample Calculation with 5 and 3 Year Recovery Periods

#### Five Year Depreciation / Amortization Assumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Period</th>
<th>Amortization</th>
<th>Tax Rate</th>
<th>Disc. Rate</th>
<th>PV Factor</th>
<th>Tax Benefit Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
<td>20.0%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.94</td>
<td>0.0749</td>
</tr>
<tr>
<td>2</td>
<td>1.5</td>
<td>20.0%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.82</td>
<td>0.0657</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>20.0%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.72</td>
<td>0.0577</td>
</tr>
<tr>
<td>4</td>
<td>3.5</td>
<td>20.0%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.63</td>
<td>0.0506</td>
</tr>
<tr>
<td>5</td>
<td>4.5</td>
<td>20.0%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.55</td>
<td>0.0444</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.2932</td>
</tr>
</tbody>
</table>

#### Three Year Depreciation / Amortization Assumption

<table>
<thead>
<tr>
<th>Year</th>
<th>Period</th>
<th>Amortization</th>
<th>Tax Rate</th>
<th>Disc. Rate</th>
<th>PV Factor</th>
<th>Tax Benefit Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.5</td>
<td>33.3%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.94</td>
<td>0.1249</td>
</tr>
<tr>
<td>2</td>
<td>1.5</td>
<td>33.3%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.82</td>
<td>0.1095</td>
</tr>
<tr>
<td>3</td>
<td>2.5</td>
<td>33.3%</td>
<td>40.0%</td>
<td>14.0%</td>
<td>0.72</td>
<td>0.0961</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td>0.3358</td>
</tr>
</tbody>
</table>

The tax benefit factor increases as the recovery period is shortened. As tax benefits are received over a shorter period, this leads to a higher value for the tax benefits and for the asset overall.
Tax Depreciation / Amortization — Calculation of Step Up Factor

• In determining the fair value of an asset where both direct cash flows and tax benefits need to be specifically address, the correct application of the tax amortization benefit factor is key.

• The general formula for the factor is as follows:

\[
\text{Step Up Factor} = \frac{1}{1 - \text{tax benefit factor}} - 1
\]

• For 15 year amortization (standard for tax amortization of value of most intangible assets in the US), the factor is calculated as follows:

\[
\begin{align*}
\text{Step Up Factor} &= \frac{1}{1 - 0.1749} - 1 \\
&= \frac{1}{0.8251} - 1 \\
&= 1.21 - 1 \\
&= 21%
\end{align*}
\]

• The step up factor (21%) is multiplied by the value of the asset before tax amortization benefits and the two values are summed to determine the fair value of the asset.

Illustration of Impact of Differing Tax Benefits

• For the depreciation calculations in the two prior slides, assume the present value of the after tax cash flows from the asset is $500,000. The values with the tax benefits from the different depreciation figures can be calculated as follows:

<table>
<thead>
<tr>
<th>Depreciation Period</th>
<th>15 Years</th>
<th>5 Years</th>
<th>3 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV of After Tax Operating CF's</td>
<td>$500,000</td>
<td>$500,000</td>
<td>$500,000</td>
</tr>
<tr>
<td>PV of Tax Depreciation Benefits</td>
<td>105,973</td>
<td>207,456</td>
<td>246,837</td>
</tr>
<tr>
<td>Fair Value of Asset</td>
<td>605,973</td>
<td>707,456</td>
<td>746,837</td>
</tr>
<tr>
<td>Fair Value of Asset (Rounded)</td>
<td>$610,000</td>
<td>$710,000</td>
<td>$750,000</td>
</tr>
</tbody>
</table>

Formula for Inclusion of Tax Depreciation / Amortization Benefits

\[
\text{Value of Operating Cash Flows} / (1 - \text{Tax Depreciation Factor})
\]

Calculated Step Up Factors

121% 141% 149%
Tax Benefits and the Impact of Transaction Structure

• There is some confusion on whether tax benefits should be included in asset valuations when acquisitions are made using different transaction structures.

• Acquisitions of the stock of a firm may not lead to a change (frequently a step up) in the tax basis of the underlying assets. A business acquisition structured as a purchase of assets would result in a step up in the tax basis of the underlying assets in many tax jurisdictions.

• For financial reporting purposes, tax benefit is included irrespective of whether transaction is a stock purchase or asset acquisition. (An asset cannot be worth different amounts depending on the tax structure of a transaction.)

• 3.1.08 of the Contributory Assets document states “The Working Group believes that the fair value of an asset should not differ depending on the tax structure of a particular transaction.”

• “When the business combination is structured as an asset sale for tax purposes (as opposed to a stock sale), practice typically includes the associated tax benefits in the valuation of the assets acquired because it is assumed that the assets acquired will be amortized for both book and tax purposes.” (IPR&D Practice Aid, p. 97, 5.3.99)

Tax Benefits and Transaction Structure

• “When a stock sale occurs without a corresponding change in the bases of assets acquired and liabilities assumed for tax purposes, some have argued that no tax benefit should be included in the valuation of the intangible assets acquired because the buyer will not amortize the intangible assets acquired for income tax purposes.” (IPR&D Practice Aid, p. 97, 5.3.99)

• “The task force believes that the determination of fair value would take into account future income taxes that a market participant purchasing the asset would be expected to pay, without regard to how the transaction is structured for income tax reporting purposes (that is, whether the transaction is structured to result in a change in bases of assets acquired and liabilities assumed for income tax reporting purposes).” (IPR&D Practice Aid, p. 98, 5.3.102)

• Transaction prices paid for stock vs. asset acquisitions should differ due to different tax bases the buyer will receive.

• Financial reporting impact of a stock purchase where the tax basis of an asset is less than its fair value would be captured in a deferred tax liability recorded by the buyer. This would approximate the TAB foregone.
Tax Benefits —Selection of Discount Rate

- Tax benefit reflects future tax savings and requires a discount rate estimate.
- There is diversity in practice in selecting discount rate

<table>
<thead>
<tr>
<th>Reference Rate</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset discount rate</td>
<td>Consistency with the risk associated with the underlying asset being valued</td>
</tr>
<tr>
<td>Risk free rate</td>
<td>The tax benefit is received from the appropriate government agency. This would suggest use of government debt cost. Use of risk free rate is rarely observed.</td>
</tr>
<tr>
<td>Cost of debt</td>
<td>The uncertainty associated with the receipt of the tax benefit is rooted in the company's ability to generate enough profit to cover its losses (similar to the risk of generating just enough profit to make interest payments on debt)</td>
</tr>
<tr>
<td>Overall business risk</td>
<td>The ability to generate future profit and use tax amortization benefits is a risk of the overall business</td>
</tr>
</tbody>
</table>

- Observed practice primarily includes use of return of the overall business (WACC) or using the asset’s own rate of return
- Discount rate lower than the WACC may be appropriate if market participant buyer has significant earnings allowing use of the tax benefit

Economic vs. Tax vs. Financial Reporting Lives for an Asset
Alternative Lives for an Asset

• Three different lives may be observed for an asset. These include:
  • Economic life— The period over which an asset is expected to be economically useful to one or more users
  • Tax life— The period over which the tax basis of an asset can be depreciated (tangible asset) or amortized (intangible asset)
  • Financial reporting life— The period over which the book basis of an asset can be depreciated (tangible asset) or amortized (intangible asset)

• In valuation, the concepts of economic and tax lives are relevant.
  • Economic life reflects the period that benefits from the cash flows generated by an asset are received.
  • Tax life reflects the period of time that tax benefits from expensing the tax basis can be received.
  • Although financial reporting depreciation is the relevant concept for financial reporting, this concept would be of no value in a valuation context.

Alternative Lives for an Asset — Use of Tax and Economic Depreciation

The following table from the CAC document highlights the use of economic depreciation concepts.

<table>
<thead>
<tr>
<th>EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less: Tax Depreciation</td>
</tr>
<tr>
<td>EBIT (Amortization assumed to be zero)</td>
</tr>
<tr>
<td>Less: Taxes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Debt Free Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add: Tax Depreciation</td>
</tr>
<tr>
<td>Less: Return of the fixed assets (economic depreciation of fair value)</td>
</tr>
<tr>
<td>Less: Return on the average balance of the fixed assets (at fair value)</td>
</tr>
<tr>
<td>Less: Other CACs (as necessary)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Excess earnings or cash flow</th>
</tr>
</thead>
</table>

Source: CAC Document paragraph 3.4.07
Cost Approach Insights

Cost Approach —Definition from ASC 820

• “The cost approach is based on the amount that currently would be required to replace the service capacity of an asset (often referred to as current replacement cost). From the perspective of a market participant (seller), the price that would be received for the asset is determined based on the cost to a market participant (buyer) to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence.

• Obsolescence encompasses physical deterioration, functional (technological) obsolescence, and economic (external) obsolescence and is broader than depreciation for financial reporting purposes (an allocation of historical cost) or tax purposes (based on specified service lives).”

  (ASC 820-10-35-34)

• The approach assumes that the fair value would not exceed what it would cost a market participant to acquire or construct a substitute asset of comparable utility, adjusted for obsolescence.
Cost Approach —Other Definitions

- “Definition of Cost Approach in Real Estate:

- In real estate, the Cost Approach is defined as “a set of procedures through which a value indication is derived for the fee simple interest in a property by estimating the current cost to construct a reproduction of, or replacement for, the existing structure plus any profit or incentive [emphasis added]; deducting depreciation from the total cost; and adding the estimated land value.

- Other adjustments may then be made to the indicated fee simple value of the subject property to reflect the value of the property interest being appraised.”
  (Appraisal Institute – The Appraisal of Real Estate)

Specific Elements of the Cost Approach

- In applying the Cost Approach, all relevant costs require consideration. These include:
  - Costs of development
    - Labor—Fully-burdened direct labor including all related payroll benefits (primarily taxes, pension, and insurance)
    - Material—All materials directly consumed in the development of the intangible asset development process. (Rare for many intangibles.)
    - Overhead—Facility costs, management and administrative support, and other unallocated expenses
    - Investment return—Return on capital invested (often not seen)
  - Opportunity costs (foregone profits)

- Many asset valuations only consider direct costs and overhead.
- Investment returns and opportunity costs should also be considered!
Return on Investment and the Cost Approach—Introduction

- For real estate assets, a provision for **profit or incentive on the costs associated with the development of an asset** is regularly included and is a specific element of the definition of the Cost Approach.

- An asset acquired from a third party would presumably reflect both their costs associated with creating the asset and a profit mark-up required to provide a return on the required investment.

- A profit element should be considered in applying the cost approach for tangible or intangible assets.

Return on Investment and the Cost Approach—Introduction

- Return on Investment—Any investment requires returns to incentivize / compensate market participant investors to assume risks. **Alternative forms of calculating the return** required to motivate an investor include:
  - **Return on Capital Invested**—Adds an estimated return requirement to the investment (costs) in an asset. Best for assets requiring significant investment over a lengthy period (and therefore higher development risk). Infrequently observed in intangible asset valuations.
  - **Mark-up on Costs**—Mark-up factors applied to costs incurred. Could be based on analysis of guideline data. Better for assets with a shorter development period and required investment where market alternatives are available.
Return/Profit Elements—
Return on Capital Invested: Discussion

• A return on capital invested would be most appropriate for an asset investment where there is significant risk with the development of the asset. This development effort would not be expected to be outsourced to a third party. An example would be the development of a new drug.

• The following slides provide an example.

Return/Profit Elements—
Return on Capital Invested: Example

• A pharmaceutical company invested in developing a new drug for three years prior to the current valuation date of December 31, 2011.

• The investment in each of the prior years was: $100mm in 2009, $120mm in 2010 and $140mm in 2011. For an investment of this nature, Management believes a market participant rate of return is 25 percent. Management indicated that the historical investment was “well spent” with no “wasted” investment.

• The total annual investments include all direct costs associated with development plus appropriate overhead allocations. The overhead allocations do not include any form of return for the support functions required.

• Based on the Cost Approach, what is the value of this development stage drug with and without a return on the capital invested (for ease of computation assume all investment made at start of each year)?
Return/Profit Elements—
Return on Capital Invested: Example

- The value of the development stage drug based on the costs incurred is $360.0 million.
- Including annual returns on the capital invested (with compounding) using a 25 percent return requirement yields a value of $560.0 million.

<table>
<thead>
<tr>
<th>Initial Investment</th>
<th>Investment Return</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>$100.0</td>
<td>$25.0</td>
<td>$31.3</td>
<td>$39.1</td>
<td>$195.3</td>
</tr>
<tr>
<td>2010</td>
<td>120.0</td>
<td>-</td>
<td>30.0</td>
<td>37.5</td>
<td>187.5</td>
</tr>
<tr>
<td>2011</td>
<td>140.0</td>
<td>-</td>
<td>-</td>
<td>35.0</td>
<td>175.0</td>
</tr>
<tr>
<td>Total</td>
<td>$360.0</td>
<td></td>
<td></td>
<td></td>
<td>$557.8</td>
</tr>
</tbody>
</table>

Indicated Fair Value of IPR&D, Rounded $560.0

Cost Approach—Inclusion of Opportunity Costs: SEC Perspective

- SEC Speech on December 10, 2007 by Sandie E. Kim
  - “For certain intangible assets, it may be appropriate to use a replacement cost approach. In order to determine the replacement cost of an intangible asset, do not forget to ask the following questions: “Would a market participant pay a premium for the benefit of having the intangible asset available for use today, rather than waiting until the asset is obtained or created?”
  - If the answer is yes, and the premium for immediate use would be material, we believe that an “opportunity cost” should be considered in the fair value of the intangible asset under a replacement cost approach. That opportunity cost represents the foregone cash flows during the period it takes to obtain or create the asset, as compared to the cash flows that would be earned if the intangible asset was on hand today.”
  - This concept could be relevant for certain fixed assets or assemblages of fixed assets.
Cost Approach— Inclusion of Opportunity Costs: SEC Perspective

- SEC Speech on December 10, 2007 by Sandie E. Kim

- “Some of the questions to keep in mind include, but are not limited to, the following:
  - Is the asset difficult to obtain or create?
  - Is there a long period of time required to obtain or create the asset?
  - Is the asset scarce?
  - Is the asset critical to the business operations?”

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Advanced Technical Guidance on Business and Intangible Asset Valuation
Technical Guidance on Business and Intangible Asset Valuations

Intangible Asset Valuation
- AICPA Practice Aid entitled “Assets Acquired to Be Used in Research and Development Activities”, Working Draft Released November 18, 2011
- The Appraisal Foundation, “The Valuation of Customer-Related Assets”, discussion draft issued June 5, 2012

Business and Stock Valuation
- AICPA, “Valuation of Privately-Held-Company Equity Securities Issued as Compensation”, final document issued June 2013
- IVSC has prepared various materials as well. At the current time, these are generally viewed as standards rather than technical guidance.

Technical Guidance—Contributory Assets and Economic Rents Document: Key Elements

- Document developed to assist in the valuation of intangible assets pursuant to ASC 805, Business Combinations. Key elements include:
  - Comprehensive discussion of the Multi-Period Excess Earnings Method ("MPEEM")
  - Discussion of role of different assets in contributing to generation of cash flows
  - Explain relationships of rates of return for different asset classes
  - Reconciliation of WACC and WARA (and IRR for a transaction)
    - WACC—Weighted Average Cost of Capital
    - WARA—Weighted Average Return on Assets
  - Discussion of concepts of return ON and OF different assets
  - Differences between economic, tax and accounting depreciation
  - Relationship of contributory asset charges for an asset to its value
Technical Guidance—IPR&D Guide: Key Elements

• First released in 2001; in process of update to reflect subsequent accounting and valuation changes.
• Detailed discussion of valuation of in-process technology
  • In-process technology is technology which is not yet completed.
  • It can have significant value to the buyer of a business.
  • Valuation involves numerous complex elements.
• Technical overlap with many valuation concepts of the Contributory Asset and Economic Rent document
• Added guidance specific to in-process technology
• Detailed discussion of accounting considerations

Technical Guidance—Customer-Related Assets: Key Elements

• Developed to enhance understanding of customer-related assets for IFRS 3 and ASC 805 reporting purposes
• Presents alternative valuation methodologies
  • Customer is primary asset
    • MPEEM
  • Customer is NOT the primary asset
    • Distributor Method – value customers based on profit margins of distributors (brand name is often the enabling asset)
    • With and Without Method
    • Differential Cash Flow Method
• Discussion of frequent areas of concern
• Provide limited guidance on selection of amortization method and life for financial reporting
• A primary asset is the most important asset of an entity which drives the profitability of the entity.
Technical Guidance—Market Participant Acquisition Premium: Key Elements

- Control premiums are an important consideration in performing business enterprise valuations for goodwill impairment reporting purposes.
- When public companies are acquired, in many cases, the acquisition price exceeds the stock price prior to the announcement of the acquisition.
- This difference is commonly referred to as a “control premium”.
- Guide introduces a new term for a control premium—market participant acquisition premium (MPAP).
- MPAP would be expected to be paid when multiple interested strategic buyers would be interested in acquiring the firm.
- Strategic buyers typically have synergies that enhance cash flows to be received from the target.
- Synergies include:
  - Revenue
  - Cost
  - Other

Questions
Presenter’s Bio—Raymond Rath

Area of Focus
Managing Director at Globalview Advisors LLC. Independent valuation firm with offices in Irvine, Boston and London.
Recognized leader in the valuation of businesses, securities interests and intangible assets. Performs valuation projects for financial and tax reporting, transactions and litigation projects.
Extremely active in enhancing the quality of valuation practice both domestically and internationally. Organize and moderate eight annual one-day conferences for the American Society of Appraisers on fair value issues including presentations by staff of the SEC, PCAOB, FASB and IASB. Led the development of two three-day valuation courses for the American Society of Appraisers (ASA) - Valuation of Intangible Assets and Special Topics in the Valuation of Intangible Assets. Led efforts resulting in an education and certification program for an Intangible Assets valuation specialty designation.

Professional Experience
Managing Director, Globalview Advisors, LLC, November 2012 to present.
Director, Transaction Services, Valuation Services Practice, PricewaterhouseCoopers LLP, April 2002 to October 2012.
Senior Manager, Valuation Services Practice, KPMG LLP and KPMG Consulting, Inc. 1994 to April 2002.
Presenter’s Bio—Raymond Rath

Professional Affiliations
Member, AICPA Investment Companies Task Force for AICPA Accounting and Valuation Guide, *Determining Fair Value of Portfolio Company Investments of Venture Capital and Private Equity Firms and other Investment Companies*. Guide is presently in development.
Treasurer, Business Valuation Committee of the American Society of Appraisers.
Past Secretary and Member, Business Valuation Committee of the ASA. Elected by ASA international business valuation membership twice (maximum allowed).
Member, Appraisal Issues Task Force.

Course Development and Instruction
Lead Developer and Instructor, ASA courses *Valuation of Intangible Assets* (BV 301) and *Special Topics in the Valuation of Intangible Assets* (BV 302).
Organize and moderate eight one day annual fair value conferences (May 2006 - 2013) for the ASA BVC. Presenters include SEC, PCAOB, FASB and IFRS.
Instructor, ASC courses BV 201, 202, 203 and 204.
Course Developer and Instructor, IIBV 301, Valuation of Intangible Assets, in Sao Paolo, Brazil. June 2012.
Instructor, Current Developments in Valuation, Beijing, China, December 2010.
Presenter’s Bio—Raymond Rath

Presentations
Presenter, Valuation Developments in the United States, 2nd International Forum on New Developments in Valuation, WuHan, China, November 2012.
Lecturer, Valuation of Intangible Assets, Zhongnan University of Economics and Law, WuHan, China, November 2012.
Moderator, Fair Value Auditor Panel, ASA Conference, Chicago, IL 2011.
Panelist, IPR&D Toolkit Update Panel, ASA Conference, Chicago, IL 2011.
Presenter, Valuation of Debt, ASA, Miami, FL 2010.

Publications
Author, Private Company Valuation chapter in the CFA Institute text Equity Asset Valuation. Chapter is a required reading for CFA level 2 candidates globally.

Education
M.B.A., University of Southern California.
B.S., Business Administration, University of Kansas, Cum Laude.
Appendices

I - Definitions
II - Accounting Requirements for Fair Value
Appendix I: Definitions

Definitions—Asset (IFRS)

An asset is a resource controlled by the entity as a result of past events or transactions and from which future economic benefits are expected to flow to the entity (IFRS SME Framework Par 49a).

This means that:

- The probable present benefit involves a capacity, singly or in combination with other assets, in the case of profit oriented enterprises, to contribute directly or indirectly to future net cash flows, and, in the case of not-for-profit organizations, to provide services;
- The entity can control access to the benefit;
- The transaction or event giving rise to the entity’s right to, or control of, the benefit has already occurred.
Definitions—Asset (US GAAP)

FASB Concepts Statement No. 6, Elements of Financial Statements, paragraph 25 defines an asset as follows:

- Assets are probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.

An asset has three essential characteristics:

- It embodies a probable future benefit that involves a capacity, singly or in combination with other assets, to contribute directly or indirectly to future net cash inflows.
- A particular entity can obtain the benefit and control others’ access to it.
- The transaction or other event giving rise to the entity’s right to or control of the benefit has already occurred.

To identify an asset, ask yourself the following:

- Is there a future economic benefit? If so, to which entity does it belong? What made it an asset of that entity?

Definitions—Business

IFRS 3 and ASC 805 provide a business is “an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return in the form of dividends, lower costs, or other economic benefits directly to investors or other owners, members, or participants. A business consists of inputs and processes applied to those inputs that have the ability to create outputs. Although businesses usually have outputs, outputs are not required for an integrated set to qualify as a business.” The three elements of a business are defined as follows:

- Input: Any economic resource that creates, or has the ability to create, outputs when one or more processes are applied to it.
- Process: Any system, standard, protocol, convention, or rule that when applied to an input or inputs, creates or has the ability to create outputs.
- Output: The result of inputs and processes applied to those inputs that provide or have the ability to provide a return in the form of dividends, lower costs, or other economic benefits directly to investors or other owners, members, or participants.

Source: ASC 805-10-55-4. See also ASC 805-10-55-5 through ASC 805-10-55-9.
Definitions—Business

An integrated set of activities and assets in the development stage might not have outputs. If not, the acquirer should consider other factors to determine whether the set is a business. Those factors include, but are not limited to, whether the set:

- Has begun planned principal activities;
- Has employees, intellectual property, and other inputs and processes that could be applied to those inputs;
- Is pursuing a plan to produce outputs; and/or
- Will be able to obtain access to customers that will purchase the outputs.

Not all of those factors need to be present for a particular integrated set of activities and assets in the development stage to qualify as a business.

Source: ASC 805-10-55-7

Definitions—Intangible Assets

International Accounting Standard 38, paragraph 8 defines intangible assets as "identifiable non-monetary asset without physical substance."

ASC 350, Intangibles-Goodwill and Other defines intangible assets as "Assets (not including financial assets) that lack physical substance. (The term intangible assets is used in this Statement to refer to intangible assets other than goodwill.)"

IVSC GN 4 Valuation of Intangible Assets paragraph 3 defines an intangible asset as "A non-monetary asset that manifests itself by its economic properties. It does not have physical substance but grants rights and economic benefits to its owner or the holder of an interest.

The International Glossary of Business Valuation Terms (IGBVT)¹ defines intangible assets as "non-physical assets such as franchises, trademarks, patents, copyrights, goodwill, equities, mineral rights², securities and contracts (as distinguished from physical assets) that grant rights and privileges, and have value for the owner."

Note difference in definition of goodwill between accounting bodies (IAS and ASC 350) and IGBVT.

¹ IGBVT 2001 is a glossary of business valuation terms prepared jointly by the AICPA, ASA, CICBV, IBA, and NACVA.

² EITF 04-02 states that mineral rights are a tangible asset.
Definitions—Going Concern and Liquidation Value

Going Concern Value—The value of a business enterprise that is expected to continue to operate into the future. The intangible elements of Going Concern Value result from factors such as having a trained work force, an operational plant, and the necessary licenses, systems and procedures in place. [IGBVT]

Liquidation Value—The net amount that would be realized if the business is terminated and the assets are sold piecemeal. Liquidation can be either "orderly" or "forced."

Orderly Liquidation Value—Liquidation value at which the asset or assets are sold over a reasonable period of time to maximize proceeds received. [IGBVT]

Forced Liquidation Value—Liquidation value, at which the asset or assets are sold as quickly as possible, such as at an auction. [IGBVT]

The liquidation value and going concern value of specific assets may differ dramatically depending on the characteristics of the asset and the facts and circumstances unique to the business. For a going concern, the liquidation value of an asset would often be significantly reduced (or $0) as the value of many assets can often best be recognized as a part of a ongoing business enterprise.

Definitions—Fair Value in a Financial Reporting Context

Fair Value (Accounting Definition under IFRS 13 and ASC 820):

"Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." (IFRS 13 and ASC 820-10-20).

"An orderly transaction is a transaction that assumes exposure to the market for a period prior to the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities . . . " (IFRS 13 and ASC 820-10-20)

"The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received to sell the asset or transfer the liability at the measurement date (an exit price)." (IFRS 13 and ASC 820-10-35-3)

Fair value was previously thought to be an entry price (buy-side); what a company would pay to acquire an asset or pay to settle a liability.
Definitions—Fair Value in a Financial Reporting Context

A fair value measurement is for a particular asset or liability. Therefore, the measurement should consider attributes specific to the asset or liability, for example, the condition and/or location of the asset or liability and restrictions, if any, on the sale or use of the asset at the measurement date. (IFRS 13 and ASC 820-10-35-19)

“The asset or liability might be a standalone asset or liability (for example, a financial instrument or an operating asset) or a group of assets and/or liabilities (for example, an asset group, a reporting unit, or a business).” (IFRS 13 and ASC 820-10-35-21)

It is essential to view fair value from the point of view of market participants rather than a specific entity. Market participants are unrelated parties, knowledgeable of the asset or liability given due diligence, willing and able to transact for the asset/liability, and may be hypothetical. (IFRS 13 and ASC 820-10-20)

Definitions—Fair Market Value

Fair Market Value: Fair market value (FMV) is a common standard of value used in many appraisals. Two definitions are classically given to this standard:

- The price, expressed in terms of cash equivalents, at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller acting at arm’s-length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts. [IGBVT]

- The price at which the property would change hands between a willing buyer and a willing seller, when the former is not under any compulsion to buy and the latter is not under any compulsion to sell; both parties having reasonable knowledge of relevant facts. [U.S. Revenue Ruling 59-60 – tax related definition]
Definitions—Intrinsic Value and Investment Value

Intrinsic Value

• The value that a prudent investor considers, on the basis of an evaluation or available facts, to be the "true" or "real" value that will become the market value when other investors reach the same conclusion. [IGBVT]
• What the value should be based on analysis of all the fundamental factors inherent in the business or the investment. Intrinsic value does not consider extreme aspects of market conditions and behavior (such as observed during the peak of the 1998-2001 bubble).
• Does NOT reflect current market but expectation of what the market will eventually realize as value.

Investment Value—The value to a particular investor based on individual investment requirements and expectations. [IGBVT]

Accounting Requirements on Fair Value—Key Releases

Fair Value Measurement

• IFRS 13 (May 2011 final release) and ASC 820 (formerly FAS 157)
• Two standards are fully converged – joint presentation by FASB and IASB Valuation Specialists at ASA Fair Value conference in May 2011

Business Combinations

• IFRS 3, ASC 805 (formerly FAS 141R)
• Two standards are highly converged

Intangible Assets

• IAS 38, Intangible Assets
• ASC 360, Property, Plant and Equipment
Accounting Requirements on Fair Value—Key Releases

Goodwill Impairment
- IAS 36, Impairment of Assets (one standard for finite and indefinite lived intangibles)
- ASC 350-20, Intangibles-Goodwill and Other-Goodwill (formerly FAS 142)

Impairment of Finite Lived Assets
- IAS 36, Impairment of Assets
- ASC 360, Property, Plant and Equipment (formerly FAS 144, Accounting for the Impairment and Disposal of Long-Lived Assets)

Reorganizations
- ASC 852-10-45-19, Reorganizations (formerly SOP 90-7, Financial Reporting by Entities in Reorganization Under the Bankruptcy Code)

Appendix II: Accounting Requirements
IFRS 13 and ASC 820—Introduction

Both IFRS 13 and ASC 820, Fair Value Measurement, establishes a framework for “how” to apply fair value concepts; however, it does not provide further guidance on “what” to fair value or “when.”

Over 60 FASB pronouncements require or allow FV measurement. Many of these deal with financial and assets other than intangible assets which are the focus of this course. Much of IFRS 13 and ASC 820 relate to financial assets rather than intangible assets.

Prior to IAS13/ASC 820, there was diversity in practice as to what represents “fair value” for financial reporting purposes.

- Is fair value the same as the transaction price?
- Various accounting standards defined “fair value” differently.

IFRS 13/ASC 820—Definition/Concept of Fair Value

Fair value is defined in IFRS 13—IN8 and ASC 820-10-35-3 as “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (ie an exit price).”

- Fair value is now an exit price (sell-side), which means the price a company would receive if they were to sell the asset in the marketplace or paid if they were to transfer the liability.
- Fair value was previously thought to be an entry price (buy-side), which is generally what a company would pay to acquire an asset or would receive to assume the liability.
- The exit price for an asset or liability is conceptually different from its transaction price (an entry price). While exit and entry price may be identical in many situations, the transaction price is no longer presumed to represent the fair value of an asset or liability on its initial recognition.
IFRS 13/ASC 820—Definition/Concept of Fair Value

• It is essential to view fair value from the point of view of market participants rather than a specific entity. Market participants are unrelated parties, knowledgeable of the asset or liability given due diligence, willing and able to transact for the asset/liability, and may be hypothetical.

• The transaction to sell the asset or transfer the liability is a hypothetical transaction as of the measurement date and assume an appropriate period of exposure to the market, such that the transaction is considered orderly.

IFRS 13/ASC 820—Market Participants

Market participants are buyers and sellers in the principal or most advantageous market for the asset or liability.

Market participants are:
• Unrelated (i.e., independent) to the reporting entity
• Knowledgeable about factors relevant to the asset or liability and the transaction
• Financial and legal ability to transact
• Willing to transact without compulsion

Market participants may be either strategic or financial buyers.
IFRS 13/ASC 820—Key Elements of a Transaction

Key elements of a transaction:
- Transaction between unrelated parties
- Transaction is orderly and not carried out under duress
- Does not include transaction costs (not inherent part of an asset)
- Price available in principal (or most advantageous) market

Principal Market—The market with the greatest volume and level of activity for the asset or liability

Most Advantageous Market—The market where the highest selling price for an asset or the lowest price to transfer a liability

Principal and most advantageous market distinction are more relevant for assets (certain financial assets or liabilities as an example) other than intangible assets.

IFRS 13/ASC 820—Highest and Best Use

Fair value assumes the highest and best use for an asset.

Highest and Best Use:
- Maximizes the value of the asset
- Use must be physically possible and legally and financially feasible
- Market participant perspective

Reporting entities to determine if highest and best use for an asset is in-use or in-exchange (valuation basis) regardless of management's intended use for the asset. (Market participant perspective)
IFRS 13/ASC 820—Highest and Best Use

Highest and Best Use is **In-Use** if:
- Asset has maximum value in combination with other assets as a group (installed or configured)
- Typically non-financial assets

Example: Land that is used as site for a plant. Operating the plant provides a higher return than considering the land for resale after demolition of the plant. Therefore, land is valued on an in-use basis as it is the highest and best use of the land.

Highest and Best Use is **In-Exchange** if:
- Asset has maximum value on a stand-alone basis
- Typically financial assets

Assets may be grouped under guidance of ASC 350-30-35-21 through ASC 350-30-35-28.
Grouping of assets doesn’t change pursuant to the guidance in ASC 820.19

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IFRS 13/ASC 820—Exit Price: Overview

IAS13/ASC 820 indicates that fair value should be **based on an exit price** for an asset rather than an entry price.

An **exit price** is the amount **received to sell the asset or paid to transfer a liability**.

An entry price is the amount paid to acquire the asset or received to assume the liability.

In the context of intangible asset valuations, the implications of this requirement are still being evaluated by practitioners.
IFRS 13/ASC 820—Exit Price: Details

ASC 820-10-35-3 states “The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the objective of a fair value measurement is to determine the price that would be received to sell the asset or paid to transfer the liability at the measurement date (an exit price).”

ASC 820-10-30-2 indicates: “Conceptually, entry prices and exit prices are different. Entities do not necessarily sell assets at the prices paid to acquire them. Similarly, entities do not necessarily transfer liabilities at the prices received to assume them.”

IFRS 13/ASC 820—Exit Price: Details

ASC 820-10-30-3 provides “In many cases, the transaction price will equal the exit price and, therefore, represent the fair value of the asset or liability at initial recognition. In determining whether a transaction price represents the fair value of the asset or liability at initial recognition, the reporting entity shall consider factors specific to the transaction and the asset or liability. For example, a transaction price might not represent the fair value of an asset or liability at initial recognition if:

• The transaction is between related parties.
• The transaction occurs under duress or the seller is forced to accept the price in the transaction. For example, that might be the case if the seller is experiencing financial difficulty.”
IFRS 13/ASC 820—Exit Price: Details

• The unit of account represented by the transaction price is different from the unit of account for the asset or liability measured at fair value. For example, that might be the case if the asset or liability measured at fair value is only one of the elements in the transaction, the transaction includes unstated rights and privileges that should be separately measured, or the transaction price includes transaction costs.

• The market in which the transaction occurs is different from the market in which the reporting entity would sell the asset or transfer the liability, that is, the principal or most advantageous market. For example, those markets might be different if the reporting entity is a securities dealer that transacts in different markets, depending on whether the counterparty is a retail customer (retail market) or another securities dealer (inter-dealer market).

The first two recognition factors are of more concern to BV practitioners focusing on ASC 805 and ASC 350 issues.

Factors C and D are more relevant for financial assets.

IFRS 13—Defined Terms

**Active market**—A market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

**Entry price**—The price paid to acquire an asset or received to assume a liability in an exchange transaction.

**Exit price**—The price that would be received to sell an asset or paid to transfer a liability.

**Expected cash flow**—The probability-weighted average (ie mean of the distribution) of possible future cash flows.

**Unit of account**—The level at which an asset or a liability is aggregated or disaggregated in an IFRS for recognition purposes.

**Unobservable inputs**—Inputs for which market data are not available and that are developed using the best information available about the assumptions that market participants would use when pricing the asset or liability.
IFRS 13—Defined Terms

**Observable inputs**—Inputs that are developed using market data, such as publicly available information about actual events or transactions, and that reflect the assumptions that market participants would use when pricing the asset or liability.

**Orderly transaction**—A transaction that assumes exposure to the market for a period before the measurement date to allow for marketing activities that are usual and customary for transactions involving such assets or liabilities; it is not a forced transaction (e.g., a forced liquidation or distress sale).

IFRS 13—Valuation Premise for Non-financial Assets

B3 When measuring the fair value of a non-financial asset used in combination with other assets as a group (as installed or otherwise configured for use) or in combination with other assets and liabilities (e.g., a business), the effect of the valuation premise depends on the circumstances. For example:

(a) the fair value of the asset might be the same whether the asset is used on a stand-alone basis or in combination with other assets or with other assets and liabilities. That might be the case if the asset is a business that market participants would continue to operate. In that case, the transaction would involve valuing the business in its entirety. The use of the assets as a group in an ongoing business would generate synergies that would be available to market participants (i.e., market participant synergies that, therefore, should affect the fair value of the asset on either a stand-alone basis or in combination with other assets or with other assets and liabilities).
IFRS 13—Valuation Premise for Non-financial Assets

(b) an asset's use in combination with other assets or with other assets and liabilities might be incorporated into the fair value measurement through adjustments to the value of the asset used on a stand-alone basis. That might be the case if the asset is a machine and the fair value measurement is determined using an observed price for a similar machine (not installed or otherwise configured for use), adjusted for transport and installation costs so that the fair value measurement reflects the current condition and location of the machine (installed and configured for use).

(c) an asset's use in combination with other assets or with other assets and liabilities might be incorporated into the fair value measurement through the market participant assumptions used to measure the fair value of the asset. For example, if the asset is work in progress inventory that is unique and market participants would convert the inventory into finished goods, the fair value of the inventory would assume that market participants have acquired or would acquire any specialized machinery necessary to convert the inventory into finished goods.

(d) an asset's use in combination with other assets or with other assets and liabilities might be incorporated into the valuation technique used to measure the fair value of the asset. That might be the case when using the multi-period excess earnings method to measure the fair value of an intangible asset because that valuation technique specifically takes into account the contribution of any complementary assets and the associated liabilities in the group in which such an intangible asset would be used.

(e) in more limited situations, when an entity uses an asset within a group of assets, the entity might measure the asset at an amount that approximates its fair value when allocating the fair value of the asset group to the individual assets of the group. That might be the case if the valuation involves real property and the fair value of improved property (i.e., an asset group) is allocated to its component assets (such as land and improvements).
END