Basics of Business Valuation
Presented by:
Alon Wexler, CPA, CA, CBV
Richter Advisory Group Inc.

2017
Objective

• Brief overview of the Basics of Business Valuation
• There is more to it than 5x EBITDA!
Topics

• Examples of situations where business valuations are required
• Price vs. FMV
• Valuation Process
• Valuation Approaches
• Examples
• Discount Rate vs. Capitalization Rate
• Enterprise Value vs. Equity Value
Examples of situations where business valuation may be required

• Consult in the context of:
  • Sale or purchase of a business or an interest in a business

• Independent determination of value in the context of:
  • Business reorganization, tax or estate planning
  • Financial reporting (value of goodwill and intangibles)
  • Employee stock option plans
  • Fairness Opinions
  • Commercial litigation and marital disputes
Price vs. Fair Market Value

Price

- Price is what you pay
- Arm’s length negotiation in an open market transaction
- Possibility of compulsion to transact, unequal knowledge and negotiating skills of the parties
- May include special purchaser synergies (premium over FMV)
- May include non-cash consideration such as earn-outs, balance of sales, buyer equity?

Fair Market Value

- FMV is what it is worth
- Necessity to determine FMV in the absence of an open market transaction
- Assumes equal knowledge and negotiating skills
- No compulsion to transact. Imprudent actions, emotions are not considered
- Generally no Special Purchaser considerations
- Assumes cash equivalent value

- There may be significant differences between price and FMV
The Valuation Process

• **Identify what is being valued**
  • Are you valuing the business (enterprise value), all of the equity or a portion of the equity in the business?
    • Are there multiple classes of shares?

• **Identify the purpose of the valuation**
  • Open market transaction vs. notional context
  • Who is impacted and what are the biases
The Valuation Process

- **Select the relevant definition of value**
  - Defined formula in a shareholder agreement (net book value, multiple of EBITDA)
  - Fair Market Value (applied in most notional valuations)
  - Fair Value
    - FMV without regard to discount for lack of control or liquidity
The Valuation Process

- Select the relevant definition of value – FMV?
  - The value standard most frequently applied in notional market valuations is “fair market value”.
  - Definition: “The highest 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.”

- Identify potential purchasers and presumes transaction with the purchaser willing to pay the highest price
- Non-cash transactions need to be converted to cash equivalent
- Both parties are motivated but not compelled to transact. Buyer has the financial resources to transact. Distressed transactions are not necessarily at fair market value – need to have sufficient time to run a sale process
- Presumes that non-arm’s length / related parties are not transacting at fair value
- Presumes buyer has access to information and will conduct due diligence
The Valuation Process

- **Select the valuation date**
  - Consider the financial position and outlook based on information as at a specific date.
  - Often fiscal year-end
  - Day before death of shareholder in an estate matter
The Valuation Process

- **Understand the business**
  - Analyze the historical trending (last 5 years) vs. projections
    - Revenues, expenses, working capital, capital expenditures
    - Who was involved in the preparation of the projections?
  - Quality of management and employees
  - Identify the key value drivers (product, location, patent, key person, commodity price, FX rate, etc…)
  - Identify strengths, weaknesses, opportunities and threats (SWOT analysis)
  - Gain insight into the industry trends and economic publications
The Valuation Process

• **Select a valuation approach and methodology**
  • No single formula exists to determine the value of every company in every situation (5x EBITDA does not apply in all situations);
  • Common approaches and methodologies:

<table>
<thead>
<tr>
<th>Asset-Based Approach</th>
<th>Income-Based Approach</th>
<th>Market Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Going concern basis</td>
<td>▪ Earnings Method</td>
<td>▪ Guideline Companies</td>
</tr>
<tr>
<td>▪ Liquidation basis</td>
<td>▪ Cash Flow Method</td>
<td>▪ Prior Transactions</td>
</tr>
<tr>
<td></td>
<td>▪ Discounted Cash Flow (DCF) Method</td>
<td></td>
</tr>
</tbody>
</table>

• **Calculate the value**
• **Communicate conclusion**
  • Report – comprehensive vs. estimate vs. calculation
Asset Approach

• Adopted where either
  (a) liquidation is contemplated because the business is not viable as a going-concern
  (b) the nature of the business is such that asset values constitute the prime determinant of corporate worth (i.e. vacant land, a portfolio of real estate or marketable securities, etc.), or
  (c) There is nominal cash flow and the adjusted net book value is higher than the capitalized cash flow value

• Common method:
  • Adjusted book value method: adjust the value of the assets and liabilities from accounting value to fair value (e.g. real estate, investments).
Asset Approach
– Example under Going Concern Scenario

- Value of a going concern business using the adjusted net book value method
  - Example: holding company with investments in marketable securities and a wholly owned operating subsidiary
- No adjustment for liquidation costs or occupancy commitments in a going concern scenario
- Adjust for latent income taxes

<table>
<thead>
<tr>
<th></th>
<th>NBV</th>
<th>Adjustment</th>
<th>FMV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketable securities</td>
<td>$ 1,000</td>
<td>$ 3,000</td>
<td>$ 4,000</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>1,200</td>
<td>-</td>
<td>1,200</td>
</tr>
<tr>
<td>Inventory</td>
<td>500</td>
<td>-</td>
<td>500</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>20</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Investment in operating subsidiary</td>
<td>2,720</td>
<td>3,000</td>
<td>5,720</td>
</tr>
<tr>
<td>Fixed assets</td>
<td>2,000</td>
<td>500</td>
<td>2,500</td>
</tr>
<tr>
<td></td>
<td>34,720</td>
<td>31,500</td>
<td>66,220</td>
</tr>
<tr>
<td>Bank debt</td>
<td>10,000</td>
<td>-</td>
<td>10,000</td>
</tr>
<tr>
<td>Accounts payable</td>
<td>1,000</td>
<td>-</td>
<td>1,000</td>
</tr>
<tr>
<td>Equity value</td>
<td>$23,720</td>
<td>$ 31,500</td>
<td>$55,220</td>
</tr>
</tbody>
</table>
Income Approach

- Value is determined by converting anticipated benefits (cash flows).
- This approach contemplates the continuation of the business’ operations (going concern).
- Common methodologies are:
  - Capitalized Cash Flow Method
    - Typical for mature businesses with constant growth rate / rate of decline.
    - Project out a single period and apply a capitalization multiple
  - Discounted Cash Flow Method
    - Typical for a start-up or a business projecting varying rates of annual growth.
    - Project multiple periods and present value using a discount rate.
Income Approach

- Capitalized cash flow method:
  - Step 1: Calculate after-tax discretionary cash flow:
    - Analyze five years historical results and budget. Normalize for non-recurring items
    - Apply a weighting to the results to arrive at the best indication of future cash flow
    - Adjust for income taxes, capital expenditures and changes in working capital
Income Approach

- **Example**
- **Capitalized Cash Flow Method**
- **Step 1: Normalize Cash Flow**

### Example: Capitalized Cash Flow Method

#### Step 1: Normalize Cash Flow

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenues</th>
<th>Annual growth</th>
<th>Earnings before income taxes</th>
<th>Adjusted EBITDA</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>$17,052</td>
<td>14.3%</td>
<td>525</td>
<td>1,443</td>
<td>1.0</td>
</tr>
<tr>
<td>2015</td>
<td>$15,688</td>
<td>18.6%</td>
<td>366</td>
<td>790</td>
<td>1.0</td>
</tr>
<tr>
<td>2014</td>
<td>$13,639</td>
<td>0.2%</td>
<td>193</td>
<td>643</td>
<td>-</td>
</tr>
<tr>
<td>2013</td>
<td>$13,430</td>
<td>-6.3%</td>
<td>(77)</td>
<td>242</td>
<td>-</td>
</tr>
<tr>
<td>2012</td>
<td>$13,880</td>
<td></td>
<td>755</td>
<td>818</td>
<td>-</td>
</tr>
</tbody>
</table>

#### Add (deduct):

- **(a) Amortization**: 204, 211, 193, 159, 164
- **(b) Loss (gain) on sale of assets**: (30), -9, -9, 34, 20
- **(c) Pension plan costs**: -1, 1, 34, 133, -
- **(e) Travel and entertainment**: 38, 74, 36, 34, 20
  - Normalized travel and entertainment: (35), (35), (35), (35), (35)
- **(f) Professional fees**: 72, 29, 62, 78, 34
  - Normalized professional fees: (30), (30), (30), (30), (30)
- **(g) Repairs and maintenance**: - - - 80 -
- **(h) Rent adjustment to reflect market rates**: (100), (100), (100), (100), (100)
- **(i) Discretionary bonus accrual**: 800 - - -
- **(j) Full year impact of Calgary expansion**: - 275 300 - -

**Adjusted EBITDA**

- 2016: 1,443
- 2015: 790
- 2014: 643
- 2013: 242
- 2012: 818

**Weighting**

- 2016: 1.0
- 2015: 1.0
- 2014: -
- 2013: -
- 2012: -

**Indicated EBITDA**

- 2016: 1,117

**Less: Income taxes on adjusted earnings**

- 2016: 19.0% (95)
- 2015: 26.8% (165)
- 2014: -
- 2013: -
- 2012: -

**Less: Change in working capital**

- 2016: (100)
- 2015: -
- 2014: -
- 2013: -
- 2012: -

**Less: Sustaining capital reinvestment net of tax shield**

- 2016: -
- 2015: -
- 2014: -
- 2013: -
- 2012: -

**Indicated After-Tax Discretionary Cash Flow**

- 2016: $356
Income Approach

- **Example:**
- **Capitalized Cash Flow method:**
  - Step 2: Calculate Enterprise Value
    - Divide after-tax discretionary cash flow by capitalization rate
    - Add tax shield on fixed assets

<table>
<thead>
<tr>
<th>After-Tax Discretionary Cash Flow</th>
<th>$ 356</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Range</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Low</strong></td>
<td></td>
</tr>
<tr>
<td><strong>High</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Midpoint</strong></td>
<td></td>
</tr>
</tbody>
</table>

Capitalized at multiples of:

- 7.7 - 13.0%: $2,744
- 8.5 - 11.8%: $3,029

Tax shield on fixed assets:

- 128
- 128
- 128

Enterprise value:

- 2,872
- 3,157
- 3,015

CCA Tax NPV of

<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
<th>UCC Rate</th>
<th>UCC balance</th>
<th>Rate</th>
<th>Tax Shield(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Machinery and equipment</td>
<td>20.0%</td>
<td>200</td>
<td>26.77%</td>
<td>33</td>
</tr>
<tr>
<td>10</td>
<td>Automotive equipment</td>
<td>30.0%</td>
<td>400</td>
<td>26.77%</td>
<td>76</td>
</tr>
<tr>
<td>50</td>
<td>Computer hardware</td>
<td>55.0%</td>
<td>89</td>
<td>26.77%</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 689</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$ 128</td>
</tr>
</tbody>
</table>

(1) Net present value of the tax shield on UCC balance:

\[
\text{NPV} = \frac{\text{UCC} \times \text{CCA rate} \times \text{Tax rate}}{\text{Discount rate} + \text{CCA rate}}
\]

(2) Discount rate corresponds to WACC: 12.4%
Income Approach

- Capitalized Cash Flow method:
  - Step 3: Calculate Equity Value
    - Add redundant assets
    - Deduct redundant liabilities
    - Deduct indebtedness (line of credit, short term and long-term debt)
    - Allocate value amongst classes of shares
  - Assets and liabilities not necessary to the ongoing operations are considered redundant and added / deducted to arrive at the equity value. Examples include:
    - Cash
    - Investments
    - Land and building
    - Related party loans
### Income Approach

- **Example:**
- **Capitalized Cash Flow method:**
  - Step 3: Calculate Equity Value

<table>
<thead>
<tr>
<th></th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Enterprise value</td>
<td>$ 2,872</td>
</tr>
<tr>
<td>Add redundant assets</td>
<td></td>
</tr>
<tr>
<td>Land and Building</td>
<td>1,200</td>
</tr>
<tr>
<td>Deduct interest bearing debt</td>
<td>(1,000)</td>
</tr>
<tr>
<td>Equity Value</td>
<td>$ 3,072</td>
</tr>
<tr>
<td>Allocated as follows</td>
<td></td>
</tr>
<tr>
<td>First</td>
<td></td>
</tr>
<tr>
<td>Preferred shares</td>
<td>$ 1,430</td>
</tr>
<tr>
<td>Balance</td>
<td></td>
</tr>
<tr>
<td>Common shares</td>
<td>1,642</td>
</tr>
<tr>
<td></td>
<td>$ 3,072</td>
</tr>
</tbody>
</table>
## Income Approach

- **Discounted Cash Flow Method**

<table>
<thead>
<tr>
<th>Discounted Cash Flow</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Flow</td>
<td>$100.00</td>
<td>$102.00</td>
<td>$104.04</td>
<td>$106.12</td>
<td>$108.24</td>
<td>$110.41</td>
</tr>
<tr>
<td>Discount Rate</td>
<td>14.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>2.0%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capitalization Rate</td>
<td>12.3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capitalization Multiple</td>
<td>8.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Present Value Factor</td>
<td>0.8749</td>
<td>0.7654</td>
<td>0.6697</td>
<td>0.5859</td>
<td>0.5126</td>
<td>0.5126</td>
</tr>
<tr>
<td>Net present value</td>
<td>$813.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capitalized Cash Flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash Flow</td>
</tr>
<tr>
<td>Capitalization Multiple</td>
</tr>
<tr>
<td>Net present value</td>
</tr>
</tbody>
</table>
Market Approach

• Compare the subject to similar businesses, business ownership interests and securities which have been sold.

• Examples of methods:
  • the “Guideline Company Method” and
  • Analyses of prior transactions in the ownership of the subject company or of comparable businesses

• Commonly used for public and / or larger corporations.
  • Analyze comparable public company information
    • Financial trending, profitability, growth
  • Apply market assumptions as relevant to the target company:
    • EBITDA multiple, debt leverage, beta
Discount Rates and Capitalization Multiples

- **Discount Rates and Capitalization Multiples**
  - The cost of capital is the expected rate of return that market participants require in order to attract funds to a particular investment. The cost of capital is an opportunity cost.
  - Commonly referred to as a discount rate. A **discount rate** reflects the risk of achieving the projected cash flow. The rate is used to determine the present value of projections. The rate does not capture a growth factor because the growth factor is incorporated directly into the projections.
  - Estimating a cost of capital is necessary for the capitalized cash flow (capitalization rate) and discounted cash flow (discount rate) methods. It factors a **cost of equity**, a **cost of debt** and a **weighting** of equity and debt (WACC = Weighted Average Cost of Capital).
## Discount Rates and Capitalization Multiples

### Cost of equity

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term selected Government of Canada benchmark bond yield&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>1.99%</td>
</tr>
<tr>
<td>Long-horizon expected equity risk premium&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>5.00%</td>
</tr>
<tr>
<td>Multiplied by levered beta</td>
<td>1.00&lt;sup&gt;(4)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Size premium&lt;sup&gt;(2)&lt;/sup&gt;</td>
<td>9.00%</td>
</tr>
<tr>
<td>Company specific premium&lt;sup&gt;(3)&lt;/sup&gt;</td>
<td>4.00%</td>
</tr>
<tr>
<td><strong>After-tax cost of equity (illiquid, control)</strong></td>
<td><strong>19.99%</strong></td>
</tr>
</tbody>
</table>

*Note 1: Long-term Government of Canada benchmark bond.*

*Note 2: Based on the Duff & Phelps 2015 Risk Premium report.*

*Note 3: Richter estimate based on the risk factors noted in the report.*

*Note 4: Adjusted beta based on 5-Year historical weekly data per Eikon (2013 Comps)*

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Size Premium has a significant impact.

- Smaller companies require a higher rate of return = lower valuation multiple

- Dependence on key man, customer, supplier, product

- History of profitability

- Risk of achieving projections

- Tangible assets

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Duff & Phelps publishes historical equity rates of return after-tax return at the corporate level (dividends and price increase) but before taxation at the individual investor level.
Discount Rates and Capitalization Multiples

- **Cost of debt**

<table>
<thead>
<tr>
<th>Cost of debt</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canadian Prime Business Rate</td>
<td>2.70%</td>
</tr>
<tr>
<td>Borrowing spread</td>
<td>2.50%</td>
</tr>
<tr>
<td>Estimated cost of debt</td>
<td>5.20%</td>
</tr>
<tr>
<td>Effective average income tax rate</td>
<td>27.00%</td>
</tr>
<tr>
<td>After-tax cost of debt</td>
<td>3.80%</td>
</tr>
</tbody>
</table>

Spread determined based on risk profile (security, Debt / EBITDA, Fixed charge coverage, etc../

Cost of Debt and Equity presented on an after-tax basis at the corporate level

- **Debt Leverage**
  - Multiples of EBITDA
  - Fixed Charge
  - Asset base
  - Public company comp
Discount Rates and Capitalization Multiples

- Weighted Average Cost of Capital (Discount Rate)

<table>
<thead>
<tr>
<th></th>
<th>Rate</th>
<th>Weighting</th>
<th>WACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated cost of senior debt</td>
<td>3.80%</td>
<td>35.0%</td>
<td>1.33%</td>
</tr>
<tr>
<td>Cost of equity</td>
<td>19.99%</td>
<td>65.0%</td>
<td>12.99%</td>
</tr>
<tr>
<td>Enterprise Value</td>
<td></td>
<td>100.0%</td>
<td>14.32%</td>
</tr>
</tbody>
</table>

- Capitalization Rate = Discount Rate – Terminal Growth Rate
  - Example:
    - Discount Rate = 14.3%
    - Growth Rate = 2%
    - Capitalization Rate = 12.3%

- Capitalization Multiple = 1 / Capitalization Rate
  - $1 / 12.3\% = 8.1x$
Enterprise Value vs. Equity Value

- Enterprise value is the value of the business
- Equity value is the value of the enterprise plus the value of the net redundant assets less the interest bearing debt.

<table>
<thead>
<tr>
<th>Enterprise Value</th>
<th>EBITDA</th>
<th>Net working capital</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>x</td>
<td>Fixed assets</td>
</tr>
<tr>
<td></td>
<td>Multiple</td>
<td>Goodwill and intangibles</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Equity Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add: Redundant assets / liabilities</td>
<td></td>
</tr>
<tr>
<td>Less: Interest bearing debt</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enterprise Value</th>
<th>Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Equity</td>
</tr>
</tbody>
</table>
Alon Wexler, CPA, CA, CBV
Partner
Phone: 514.934.3531
E-mail: awexler@richter.ca

Richter Advisory Group Inc.
1981 McGill College
Mtl (Qc) H3A 0G6
richter.ca

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