Business valuation: theory and practice

Anthony Wilson
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You own Hurricane Rüzgar Enerji A.Ş. You want to sell it.

Who might buy it??

Details:
It has one location, with eight power units each 2.5 MW (total 20 MW) capacity.

Last year was the first year of operation. EBITDA was expected to be TL 6m but actually it was only TL 4 m because the wind was less than expected.

The cost of investment was TL 50m. Bank borrowings are TL 10m.
Some more on the valuation methods
Valuation methods

• Income-based

• Asset-based

• Market-based
## What are the methods?

<table>
<thead>
<tr>
<th></th>
<th>Income-based</th>
<th>Asset-based</th>
<th>Market-based</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Examples</strong></td>
<td>• Discounted cash flow</td>
<td>• Net assets at cost</td>
<td>• Comparison with recent deals</td>
</tr>
<tr>
<td></td>
<td>• Real Option Analysis</td>
<td>• Depreciated replacement cost</td>
<td>• Comparison with publicly traded companies (e.g. On the NYSE, IMKB)</td>
</tr>
<tr>
<td><strong>Why?</strong></td>
<td>Because the purpose of the investment is to earn future income (cash), it makes sense to look directly at the expected future income / cash.</td>
<td>A basic check on whether the result from an income-based method is reasonable. “Principle of substitution”.</td>
<td>“Real world” comparison gives comfort. “Principle of substitution”. Easy to defend.</td>
</tr>
<tr>
<td><strong>Who uses?</strong></td>
<td>Strategic investors</td>
<td>Nobody</td>
<td>Strategic investors</td>
</tr>
<tr>
<td></td>
<td>Private equity investors</td>
<td></td>
<td>Private equity investors</td>
</tr>
<tr>
<td></td>
<td>Analysts</td>
<td></td>
<td>Analysts</td>
</tr>
<tr>
<td></td>
<td>Professional advisors</td>
<td></td>
<td>Professional advisors</td>
</tr>
</tbody>
</table>

- Discounted cash flow
- Real Option Analysis
- Net assets at cost
- Depreciated replacement cost
- Liquidation value
- Comparison with recent deals
- Comparison with publicly traded companies (e.g. On the NYSE, IMKB)

*Principle of substitution*
What are the methods?

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<tbody>
<tr>
<td>What are the grey areas?</td>
<td>• Future growth rates</td>
<td>• Almost none</td>
<td>• Which companies to compare with.</td>
</tr>
<tr>
<td></td>
<td>• Future profit margins</td>
<td></td>
<td>• What measures to compare (Sales?</td>
</tr>
<tr>
<td></td>
<td>• Discount rate</td>
<td></td>
<td>EBITDA?)</td>
</tr>
<tr>
<td></td>
<td>• For real option analysis: assessment of the probabilities and variabilities of the various outcomes.</td>
<td></td>
<td>• premiums/discounts for control &amp; liquidity.</td>
</tr>
</tbody>
</table>
When to use DCF approach?

- When long term forecasts are available
- Forecast earnings / cash flows are expected to be variable and not represented by current profits/cash flows

**Advantages**

- Based on future performance, capturing the company specific long-term look
- Risk and duration of cash flows is reflected in discount rate
- Makes transparent assumptions that other methods may disguise

**Disadvantages**

- May be difficult to perform a quick approximation
- Reliable expected cash flows may be difficult to obtain
- Highly dependent upon long term assumptions and perceptions of future performance
- Requires in depth understanding of company and business drivers
When to use Real Option Analysis?

• When the value of a company depends on various different future scenarios, which have widely varying cash flow projections.

• When future decisions to maximise cash flow (e.g. invest in new factory or not) may depend on the outturn of events occurring in the meantime.

• Example: valuation of an oil exploration company.

Advantages
• Handles the modelling of alternative scenarios better than a basic DCF projection.

Disadvantages
• Needs very good sector expertise.
Valuation Methodologies: Market approach

Market Approach (Relative Valuation)

- **What is it?:** The value of any asset can be estimated by looking at how the market prices “similar” or “comparable” assets.

- **Philosophical Basis:** The value of an asset is whatever the market is willing to pay for it (based upon its characteristics)

- **Information Needed:** To do a relative valuation, you need
  - an identical asset, or a group of comparable or similar assets
  - and if the assets are not perfectly comparable, variables to control for the differences

- **Market Inefficiency:** Pricing errors made across similar or comparable assets are easier to spot, easier to exploit and are much more quickly corrected.
When to use market approach?

- Based on Principle of Substitution
- Guideline Public Company Method
- Merger and Acquisition Method

**Advantages**
- Direct method of valuation if similar companies can be found
- Captures both tangible & intangible value
- Relatively easy to get information and research on public companies

**Disadvantages**
- Can be very difficult to find truly similar companies
- More limited information available on transactions of entire private companies
- Secondary data sources can be inaccurate and need to be confirmed, particularly for private company transactions
Valuation Methodologies: Asset approach

Asset Approach:
• Useful for loss making companies with limited prospect of recovery
• Appropriate for asset based companies
• Useful check for worst case / minimum value

Methodologies:
• The orderly realisation of assets method:
  — Estimates market value by determining the amount that would be distributed to shareholders, after payment of all liabilities assuming the company is closed down.
• The liquidation method:
  — Similar to orderly realization of assets method but assumes that assets are sold in a shorter time frame and may therefore incur larger realisation costs.
• The net assets on a going concern basis method:
  — Estimates the market values of the net assets of a company but does not take account of realisation costs.
When to use asset approach?

• Rather than viewing the business as a whole it assumes that a prudent buyer will pay no more for a business than it would cost to assemble all of the individual assets and liabilities that comprise the business.
• Based on Principle of Substitution
• Useful for a holding company
• Useful if company is to be liquidated

Disadvantages
• Does not necessarily focus on the income assets produce as a whole
• May not value the unidentified intangible assets value of a business. It is difficult to know if you have captured all the intangibles without valuing the company
• The more intangible value in the business, the less relevant the asset approach becomes
• Less applicable in minority interest valuations, when minority shareholders have no means of accessing the values of assets underlying the business
What is value?

Standards of Value:
• The most commonly accepted definitions of value:
  – Fair value: “the amount for which an asset could be exchanged or a liability settled, in a current transaction between knowledgeable, willing parties in an arms’s length transaction”
  – Value in use: Value to owner based on existing use (same as “going concern value”)
  – Special value: Value to a specific party
What is value?

Book Value
• Assets are generally recorded at historical cost, net of any accumulated depreciation and/or value allowances, and liabilities are generally recorded at face value. The longer a particular asset or liability is carried on the books, the greater the potential for differences between book value and fair market value.

Replacement Value
• Replacement value refers to the current cost of a similar new property having the nearest equivalent utility to the property being valued.

Liquidation Value
• This is the value, at which the asset or assets are sold as quickly as possible, such as at an auction.
We must always define the date of our valuation

Tofaş share price: three years November 2007 – November 2010:
Valuation methods

• Market comparisons

• DCF
Valuation in one minute

Value of equity = Value of operations - debt

20 m TL = 30 m TL - 10 m TL

Value of equity = 6 x EBITDA - debt

Value of equity = Multiple of EBITDA - debt
Market comparisons Method - Guideline Companies
Market Multiples

Valuation

- Market value can be estimated based on the valuation multiples of similar publicly traded companies. Two of the most common multiples used in valuation are EV/EBITDA and EV/Sales multiples which we have utilized in our valuation work.
## Market Comparisons Method - Guideline Companies
### Market Multiples

<table>
<thead>
<tr>
<th></th>
<th>Sales 2011F</th>
<th>EBITDA 20011F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nasrettin Hoca Kimya - €m</td>
<td>87,2</td>
<td>6,9</td>
</tr>
<tr>
<td>Sectoral Multiple - Median</td>
<td>0,8</td>
<td>7,0</td>
</tr>
<tr>
<td><strong>Estimated Enterprise Value - €m</strong></td>
<td><strong>67,1</strong></td>
<td><strong>48,8</strong></td>
</tr>
<tr>
<td>Liquidity discount (-%10)</td>
<td>(6,7)</td>
<td>(4,9)</td>
</tr>
<tr>
<td>Control premium (+%20)</td>
<td>12,1</td>
<td>8,8</td>
</tr>
<tr>
<td><strong>Estimated Equity Value - €m</strong></td>
<td><strong>72,4</strong></td>
<td><strong>52,7</strong></td>
</tr>
<tr>
<td>Loans (-)</td>
<td>(17,8)</td>
<td>(17,8)</td>
</tr>
<tr>
<td>Cash and cash equivalents (+)</td>
<td>0,5</td>
<td>0,5</td>
</tr>
<tr>
<td><strong>Estimated Equity Value - €m</strong></td>
<td><strong>55,1</strong></td>
<td><strong>35,4</strong></td>
</tr>
<tr>
<td><strong>Average €m</strong></td>
<td></td>
<td><strong>45,0</strong></td>
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A DCF example

(Snow White Meşrubatlar A.Ş.)
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Valuation Results

Summary

• Discounted cash flow

The Discounted Cash Flow method is used to value Nasrettin Hoca Kimya based on business plans and projections prepared by the Company Management.

While preparing projections of the Company, Management predicted a conservative sales growth rate from 2012 to 2014. Management stated that the Company will not be able to keep revenue growth rates above 10.0% as it had been the case in the past. The projections are influenced by the recent global financial crisis and the ICTP policy applied to all Group Companies.

Based on discounted cash flow the equity value of the Company is EUR 30.0m.

We have adjusted the WACC and terminal growth rate in sensitivity scenario by -/+ 1.0% each and found the equity value between EUR 23.0m – EUR 40.0m.

In sensitivity scenario 2 we have changed WACC and EBIT margins by -/+ 1.0% each and found a range of EUR 19.0m – EUR 44.0m as equity value.

• Guideline companies

Guideline companies: We have used 14 foreign and 1 local publicly traded companies operating in the same business as Nasrettin Hoca Kimya. Based on this method the equity value of the Company is in the range of EUR 36.0m – EUR 55.0m with an average estimated value of EUR 45.0m.

• Guideline transactions

Guideline transactions: We have found 5 comparable transactions occurring in the last two years. Based on this method the equity value of the Company is in the range of EUR 37.0m – EUR 52.0m with an average estimated value of EUR 45.0m.

• Industry average multiples

Industry average multiples: We have used average sales and EBITDA multiples of 6 sectors where Nasrettin Hoca Kimya serves directly or indirectly. Based on this method the Company’s estimated equity value is in the range of EUR 28.0m – EUR 44.0m with an average value of EUR 36.0m.

Net Asset Valuations

Based on this method, the estimated equity value of the Company is EUR 27.0m. However, no independent appraisal report is available for the hi-speed Eşek.

Conclusion

Based on the different valuation methods, we propose that the value of a 100% shareholding in Nasrettin Hoca Kimya as of 30 September 2011 can be estimated as being in the range of EUR 30.0m – EUR 40.0m.
Why prepare a valuation?
And an overview of the methods
Why do we use valuations?

• **When considering selling**
  – Who prepares?  
    - the business owner
    - the investment banker
      or professional advisor

• **To assess a potential investment**
  – Who prepares?  
    – the professional investor (for themselves or for a fund they manage)
    - the strategic investor (for themselves)
    - the analyst (as a service for others)
    - the investment banker or professional advisor for the investor’s board
      (“fairness opinions”)
Why do we use valuations?

- **To satisfy a regulator or tax authority**
  - Who prepares? - the investor
    - the professional advisor
  Especially when the investor and seller are related: the transaction may not be “at arm’s length”

- **For financial accounting purposes** (“PPA” purchase price allocation; annual fair value appraisal or impairment testing)
  - Who prepares? - the investor’s accountants
    - the professional advisor (not the auditor)
Introducing some more players
Introducing the players (continued):

• The amateur investor: “widows and orphans” or “Mrs. Watanabe”
  - Risk-averse
  - Little idea what they are doing
  - Relatively long-term
Introducing the players (continued):

• The regulator

  – Mission: TO PROTECT THE WIDOWS AND ORPHANS
  – Independence is key
  – Clear understanding of the market important
  – Imposes regulations

Mary Shapiro
– head of SEC

Vedat Akgıray
– SPK başkanı
Introducing the players (continued):

• The analyst:
  – “Teenage scribbler”
  – Sectoral or country or regional specialist
  – Usually an optimist
  – Range from incompetent to superb
  – Often in a bank which also has client interests – hence “Chinese walls”
Manipulating the result:

(Şerafettin Rakı A.Ş.)
So you want to manipulate the result?
Manipulating the valuation result

• Why ever would you want to do a thing like that?
  – Because you’re not independent.
  – Because your income or your future career depends on doing what the client or the boss (“patron”) wants.
  – Because you don’t want your client/ company to pay more tax than they absolutely have to.
  – Because you’re trying to get a deal done.
  – Because you previously expressed a view and you don’t want to change your mind.
    [J.K. Galbraith – “faced with the choice between changing your mind or proving there is no need to do so, most people get busy on the proof”].
  – Because you’re inexperienced, don’t really know what valuation result you believe in anyway, and someone more experienced has persuaded you in a certain direction
  – Because you’re trying to avoid an impairment charge in your financial statements.

. . . . So when you see valuers in any of the categories above, be suspicious.
Manipulating the valuation result

• And how will you do it (without looking too obvious)?
  – You’ll choose the valuation methods that give the result you want.

  DCF:
  – You’ll choose a discount rate that doesn’t properly reflect the risks of the cash flows you are valuing.
    • The country risk premium; The equity risk premium
    • Above all, the size or specific risk factors premiums.
  – You’ll use a different discount rate for each year of the cash flows (“Turkey may be risky now but it will be much less risky in a few years’ time, so we’ll use a lower discount rate for those years”)
  – You’ll find an end period growth rate that moves the DCF result to what you want.
  – You’ll choose growth rates and profit margins that don’t allow for competition, globalisation etc etc.
  – You’ll assume working capital needs magically change
  – You’ll manipulate fixed asset investment needs
  – You’ll assume the first projected year will be magically different from the last actual year (and you’ll put the projections and actual past on different pages so no-one notices).
Manipulating the valuation result: market comparisons

• How will you do it (without looking too obvious)?

Market comparisons:
– You’ll compare with publicly traded companies and you’ll move the premium for control or the discount for lack of marketability to find the result you need.
– You’ll carefully select the companies you compare with, to give the optimal result.
– Your company has no profits? Never mind, compare with sales, or next year profits.

Note: the list of tricks (uncertainties) for DCF is much longer than for market comparisons: that’s why people view DCF with suspicion.
Valuation standards
Valuation standards

Who wants standards?

INTERNATIONAL VALUATION STANDARDS (IVS) . . . Almost identical to SPK standards

• The IVSC has been in existence for more than 25 years. Its origins were in the valuation approaches used in real estate markets. Over the past decade it has evolved and expanded and now produces standards for many types of assets, including plant and equipment, intangible assets and businesses, and for different applications such as financial reporting and bank lending.

• The International Valuation Standards (IVS) are already recognised and accepted by a wide range of organizations, such as:
  – IVS adopted as national standards, for example, in Australia, New Zealand, Romania, Turkey, South Africa
  – IVS adopted within national standards, for example, in UK and Ireland
  – Countries working towards adoption of IVS include The Philippines and Columbia
  – The UK Financial Services Authority required valuation reports for property companies to be prepared under either UK national standards or IVS
  – European Commission proposing draft regulation that for EU mortgage credit markets, member states have valuation standards that comply with IVS or European valuation standards
Valuation standards

Some Key points from IVS:

The valuer must state:
- whether he/she is independent
- whether his/her remuneration depends in any way on the value found
- whether he/she has relied on any other party in the preparation of the valuation

The **valuer** must choose the valuation methods to be used

Key assumptions should be backed by external evidence wherever possible

Comparisons must be documented

Workpapers must be kept to support key facts and judgements
Valuation standards

THE INTERNATIONAL PRIVATE EQUITY AND VENTURE CAPITAL VALUATION GUIDELINES
• Basic purpose is to achieve a degree of standardisation in the reporting by private equity and venture capital funds to their shareholders. The investments that these funds hold need to be valued at fair value each year end. These are short, sensible standards by people who understand the difficulties involved.
• A key point from those standards: don’t use DCF alone as a valuation method.

THE NATIONAL ASSOCIATION OF CERTIFIED VALUATION ANALYSTS (NACVA)
• Today, NACVA is the largest professional accounting organization in the valuation and litigation consulting communities.

AMERICAN SOCIETY OF APPRAISERS (ASA)
• ASA’s focus is on midsize to large companies that need valuations for actions such as mergers and acquisitions. Its members are involved in everything from business and real estate appraisals to the appraisal of antiques and gems.

INSTITUTE OF BUSINESS APPRAISERS (IBA)
• The Institute of Business Appraisers focuses mainly on the appraisal of small closely held businesses and offers education programs for accreditation as a certified business appraiser.
Valuation standards

AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS (AICPA)

• In November 1997, the AICPA began offering the Accreditation in Business Valuation (ABV) to its CPA members. This is the second designation awarded only to CPAs (CVA was first). To earn an ABV, the CPA needs to be a member in good standing of the AICPA, hold an un-revoked CPA certificate or license, provide evidence of 10 business valuation engagement demonstrating substantial experience and competence and pass a written examination.
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