Lesson 8
Using the right multiple?

- PE versus EV/EBITDA – Why multiples give different answers and how to interpret the differences

This presentation

“IT'S expensive on a P/E basis but cheap if you look at EV/EBITDA”
Or something similar is not an uncommon statement in equity analysis.

BUT...
- Which valuation method is correct?
- Why can 2 valuation multiples give conflicting advice?
- What are the reasons for the difference and what could be learned about value from understanding these

The objective of this seminar is to show how P/E and EV/EBITDA can be reconciled and how this can be used in equity analysis.

Equity and enterprise value multiples

<table>
<thead>
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<th>Enterprise value multiples</th>
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<tbody>
<tr>
<td>Based on measures relevant to the</td>
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<td>equity shareholders’ interest</td>
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<tr>
<td>- Earnings per share</td>
<td>- Sales</td>
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<td>- Cash earnings per share</td>
<td>- EBITDA</td>
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<td>- Equity free cash flow per share</td>
<td>- BBIT</td>
</tr>
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<td>- Debt adjusted equity free cash flow per share</td>
<td>- NOPAT (taxed EBIT)</td>
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<td>- Dividends per share</td>
<td>- Operating free cash flow</td>
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<td>- Net assets per share</td>
<td>- Enterprise cash flow</td>
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<td></td>
<td>- Total capital employed</td>
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<td>- Other business activity measures</td>
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Calculating EV/EBITDA

Both components of EV/EBITDA can be measured differently and mistakes are often made.

- EV can be ...
  - Incomplete ... claims such as minorities excluded
  - Inconsistent with EBITDA ... particularly as regards non-core assets

- EBITDA can be ...
  - Subjective ... different treatment of exceptional items
  - Inconsistent with EV ... such as the treatment of the interest cost of unfunded pensions.

EV multiples do have significant advantages particularly for cross-border valuations.

Enterprise value multiples

Permits the use of statistics less affected by accounting policy variations

Less affected and easier to interpret when there are capital structure differences

More comprehensive - focuses on the business and not just the equity investors' stake

More flexible - can be modified to exclude non-core assets

UBS Warburg standard valuation multiples

Equity multiples:
- Price earnings ratio
- Price to cash earnings
- Dividend yield
- Price to book

Enterprise value multiples:
- EV to sales
- EV to EBITDA
- EV to EBIT
- EV to Operating free cash flow
- EV to invested capital

Global 'back page' data

Enterprise Value (EV, avg)
Less: Non-core assets
Plus: Buy out of minorities
Plus: Pension provisions
Plus: Core net debt / (cash)
Market capitalisation (Em)

P/BV (average) 2.1x 2.7x 2.5x 2.2x 1.9x
P/E
P/CE
EV/Invested Capital 1.6x 1.9x 1.7x 1.6x 1.6x
EV/OpFCF 10.4x 12.1x 8.4x 7.8x 6.6x
EV/EBIT (core) 10.0x 12.0x 9.4x 8.4x 7.3x
EV/EBITDA (core) 5.5x 7.0x 5.6x 5.3x 4.7x
EV/Sales (core) 0.68x 0.90x 0.73x 0.68x 0.63x
UBS Warburg Enterprise value calculation

Market capitalisation ➔ Net debt ➔ Minority interests ➔ Unfunded pensions ➔ Other claims ➔ Total enterprise value ➔ Core enterprise value ➔ Non-core assets

Common mistakes in enterprise value calculations

♦ Incomplete
  — missing a claim on company profits
♦ Book values not market values
  — Particularly for minorities and non-core assets
♦ Seasonal variations not reflected in average net debt
  — Year end debt is often not representative of the true debt burden
♦ Not comparable with profit measures
  — Inconsistent treatment of associates and unfunded pensions

UBS Warburg EBITDA

EBITDA should be ...

♦ Pre-exceptional / extraordinary items
  — Generally capital transactions
♦ Before income from non-core activities
  — Generally associates and other investments
  — Core EV must then exclude the value of this non-core activities
Using EV/EBITDA

- It is a relative not absolute measure
- It is simplistic and yet incorporates many different value drivers
- Comparisons over time and between companies can be helpful in valuation but no multiple can provide ‘the answer’
- Specific problems ...
  - Capital intensity
  - Taxation

UBS Warburg price earnings ratio

- PE ratios should be based upon a pre-exceptional or ‘adjusted’ earnings figure
- Exclude:
  - Non-recurring exceptional or extraordinary items
  - Impact of accounting policy changes
  - Goodwill amortization

P/E or EV/EBITDA?

- Although many others are used in equity analysis, P/E and EV/EBITDA are perhaps the most common
- But they are very different measures...
  ... and often give quite different answers
Different answers using PE and EV/EBITDA

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All multiples are historically priced based upon 2000 average share price and data

Why are there different answers?

Five factors.....
- Depreciation
- Non-core assets
- Leverage
- Taxation
- Minority interests

Reconciliations for Hotel stocks

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Adjustment factors
1. Depreciation 1.41 1.86 1.12
2. Non-core assets 1.02 1.00 1.03
3. Leverage 0.88 1.46 1.00
4. Taxation 1.50 1.33 1.11
5. Minorities 1.03 1.07 1.02

All multiples are historically priced based upon 2000 data
1. The depreciation factor

- **EBITDA** is pre-depreciation but earnings are post-depreciation
- Companies with high depreciation look relatively cheaper on EV/EBITDA

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Why do these differ significantly from the average? Does this mean that comparison on EV/EBITDA for these companies is misleading?

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Should one ignore depreciation?

- **EV/EBITDA** is affected by the capital intensity of a business
  - Investors should not be willing to pay much for EBITDA where most is used to replace fixed assets
- **EV/EBITDA** is not suitable as a comparison where capital intensity differs
2. The non-core asset factor

- UBS EBITDA multiples are based upon core EBITDA and core EV measures where as P/Es reflect all activities.
- The exclusion of the income and value of these assets is designed to produce EBITDA multiples which are more comparable within the sector.
- The influence of assets valued at very different multiples is eliminated.
- **BUT** this introduces greater subjectivity into the valuation.

Always ensure that non-core assets are treated consistently in both income statement and in enterprise value.

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3. The leverage factor

- Enterprise value multiples eliminate the impact of differences in capital structure.
- The impact of leverage on PE is complex - a function of...
  - The level of debt (or cash)
  - The rate of interest paid (or received)
  - The underlying valuation of the business (the EV/EBIT multiple).
- **For companies where EV/EBIT is lower than 1/Interest rate** ...
  - Higher leverage gives a **higher** P/E.
- **For companies where EV/EBIT is higher than 1/Interest rate** ...
  - Higher leverage gives a **lower** P/E.
Distortion of the Movenpick PE ratio

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<td>17.3x</td>
<td>19.2x</td>
</tr>
<tr>
<td>Int. payable / (rec.) as % of EBIT</td>
<td>24%</td>
<td>-23%</td>
</tr>
<tr>
<td>Net debt / Total EV</td>
<td>34%</td>
<td>-</td>
</tr>
<tr>
<td>Net cash / Market capitalisation</td>
<td>-</td>
<td>46%</td>
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The Movenpick PE is distorted by the net cash balance - EV/EBITDA is a better measure of relative value.

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Price earnings ratio 17.3 19.2 15.7

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Leverage and P/Es

- P/E, being based upon post interest earnings, take account of financing...
- There is both an advantage and disadvantage of this...
  - The disadvantage: P/Es vary not only due to differences in the quality of the underlying business but also because of differences in leverage - Generally higher leverage means higher equity risk and a lower P/E - P/Es are therefore difficult to interpret where leverage differs
  - The advantage: P/Es focus on returns to equity investors and therefore take account of differences in the efficiency of financing...
The debt burden and valuation

- All other things being equal more debt reduces the value of equity holders claim.

**BUT equity and enterprise value multiples deal with the burden of debt financing differently.**

**Equity multiples**
- Interest charge reduces profit and increases P/E.

**Enterprise multiples**
- Absolute debt included in EV increases multiple.

This approach makes multiples more comparable but it is vital that a realistic level of debt is included.

Net debt - ensuring net debt is ‘realistic’

For enterprise value multiples to be useful it is vital that the net debt component is realistic.

**Market value of debt**
- Ideally include net debt at **market value**.
  - Check for significant fixed rate debt with interest rates different from market rates and with maturity at least (say) 5 years.
  - Check for convertibles.

**Average value of debt**
- Ideally include net debt at an **average value** and allow for seasonal variations.
  - Check interest charge in the income statement.

4. The tax factor

- **EV/EBITDA** is pre-tax whereas a P/E is based upon a post tax profit.
- Differences in effective tax rates of different companies explains why relative valuations using P/E and EV/EBITDA can differ.

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**EV/EBITDA** ignores tax differences. If a low tax rate is sustainable then this should justifiably affect value.
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### EV/EBITDA and taxation

- **Pre-tax multiples can give greater comparability**
  - due to different accounting policies for deferred tax
  - due to variations in effective tax rates which are only temporary
    - effective rates may regress towards the marginal rate
    - marginal rates in different countries may converge
- **BUT long-term differences in tax rates are an important driver of value**

Where tax differences are expected to persist, use post-tax multiples.

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### 5. The minority interest factor

- **PE reflects the parent company shareholder interest in the business only**
- **EV multiples reflect the value of all equity claims**
- The valuation of minorities compared to other equity interests affects relative values using EV/EBITDA and PE

Minorities must be included in enterprise value at a realistic market value for EV multiples to be realistic.
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**BOTH ...**

But remember - all multiples are gross simplifications of reality - none can give a perfect and unbiased measure of relative value.

Relative merits of EV/EBITDA and PE

**Advantages of EV/EBITDA**
- Not affected by differences in depreciation policies
- Focuses more on cash flow (gross cash flow) rather than profit
- Not affected by variations in the tax charge or differences in accounting methods used for deferred tax
- Allows for the exclusion of non-core assets which can distort P/E ratios
- Less affected by differences in capital structure
- Is more comprehensive in considering the whole enterprise

**Advantages of P/E**
- More familiar - investors have a better feel for difference in P/E and what this means
- Takes account of differences in capital intensity and is therefore comparable across sectors unlike EV/EBITDA
- Focuses on post-tax profit and therefore takes account of differences in tax rates. A tax effect is built into EV/EBITDA multiples
- Is more reliable in that it is not dependent upon subjective assessment of what is non-core and the values of the components which make up enterprise value
Conclusion

- Multiples provide useful information about the market’s valuation of companies... but they are simplistic.
- EV/EBITDA is not a magic formula of identifying cheap stocks—in particular it ignores:
  - Taxation
  - Capital expenditure
- PE is difficult to interpret where there:
  - Accounting differences
  - Differences in capital structure

Reconciling the multiples can help understand differences in relative value and the contributions of different value drivers.