

Averaging Across Multiples

- This procedure involves valuing a firm using five or six or more multiples and then taking an average of the valuations across these multiples.
- This is completely inappropriate since it averages good estimates with poor ones equally.
- If some of the multiples are “sector based” and some are “market based”, this will also average across two different ways of thinking about relative valuation.

Weighted Averaging Across Multiples

- In this approach, the estimates obtained from using different multiples are averaged, with weights on each based upon the precision of each estimate. The more precise estimates are weighted more and the less precise ones weighted less.
- The precision of each estimate can be estimated fairly simply for those estimated based upon regressions as follows:

$$\text{Precision of Estimate} = 1 / \text{Standard Error of Estimate}$$

where the standard error of the predicted value is used in the denominator.

- This approach is more difficult to use when some of the estimates are subjective and some are based upon more quantitative techniques.

Picking one Multiple

- This is usually the best way to approach this issue. While a range of values can be obtained from a number of multiples, the “best estimate” value is obtained using one multiple.
- The multiple that is used can be chosen in one of two ways:
 - Use the multiple that best fits your objective. Thus, if you want the company to be undervalued, you pick the multiple that yields the highest value.
 - Use the multiple that has the highest R-squared in the sector when regressed against fundamentals. Thus, if you have tried PE, PBV, PS, etc. and run regressions of these multiples against fundamentals, use the multiple that works best at explaining differences across firms in that sector.
 - Use the multiple that seems to make the most sense for that sector, given how value is measured and created.

Self Serving Multiple Choice

- When a firm is valued using several multiples, some will yield really high values and some really low ones.
- If there is a significant bias in the valuation towards high or low values, it is tempting to pick the multiple that best reflects this bias. Once the multiple that works best is picked, the other multiples can be abandoned and never brought up.
- This approach, while yielding very biased and often absurd valuations, may serve other purposes very well.
- As a user of valuations, it is always important to look at the biases of the entity doing the valuation, and asking some questions:
 - Why was this multiple chosen?
 - What would the value be if a different multiple were used? (You pick the specific multiple that you want to see tried.)

The Statistical Approach

- One of the advantages of running regressions of multiples against fundamentals across firms in a sector is that you get R-squared values on the regression (that provide information on how well fundamentals explain differences across multiples in that sector).
- As a rule, it is dangerous to use multiples where valuation fundamentals (cash flows, risk and growth) do not explain a significant portion of the differences across firms in the sector.
- As a caveat, however, it is not necessarily true that the multiple that has the highest R-squared provides the best estimate of value for firms in a sector.

A More Intuitive Approach

- As a general rule of thumb, the following table provides a way of picking a multiple for a sector

<i>Sector</i>	<i>Multiple Used</i>	<i>Rationale</i>
Cyclical Manufacturing	PE, Relative PE	Often with normalized earnings
High Tech, High Growth	PEG	Big differences in growth across firms
High Growth/No Earnings	PS, VS	Assume future margins will be good
Heavy Infrastructure	VEBITDA	Firms in sector have losses in early years and reported earnings can vary depending on depreciation method
REITa	P/CF	Generally no cap ex investments from equity earnings
Financial Services	PBV	Book value often marked to market
Retailing	PS	If leverage is similar across firms
	VS	If leverage is different

Sector or Market Multiples

- The conventional approach to using multiples is to look at the sector or comparable firms.
- Whether sector or market based multiples make the most sense depends upon how you think the market makes mistakes in valuation
 - If you think that markets make mistakes on individual firm valuations but that valuations tend to be right, on average, at the sector level, you will use sector-based valuation only,
 - If you think that markets make mistakes on entire sectors, but is generally right on the overall market level, you will use only market-based valuation
- It is usually a good idea to approach the valuation at two levels:
 - At the sector level, use multiples to see if the firm is under or over valued at the sector level
 - At the market level, check to see if the under or over valuation persists once you correct for sector under or over valuation.

A Test

- You have valued Earthlink Networks, an internet service provider, relative to other internet companies using Price/Sales ratios and find it to be under valued almost 50% .When you value it relative to the market, using the market regression, you find it to be overvalued by almost 50%. How would you reconcile the two findings?
 - One of the two valuations must be wrong. A stock cannot be under and over valued at the same time.
 - It is possible that both valuations are right.

What has to be true about valuations in the sector for the second statement to be true?

Reviewing: The Four Steps to Understanding Multiples

- Define the multiple
 - Check for consistency
 - Make sure that they are estimated uniformly
- Describe the multiple
 - Multiples have skewed distributions: The averages are seldom good indicators of typical multiples
 - Check for bias, if the multiple cannot be estimated
- Analyze the multiple
 - Identify the companion variable that drives the multiple
 - Examine the nature of the relationship
- Apply the multiple