Erasmus School of Economics

Multiples

Types of Multiples

The multiples method represents a 'quick and dirty' approach to performing corporate valuation. By benchmarking against peer companies, multiples are used to crosscheck values obtained through fundamental valuation methods. Comparability is crucial if you want multiples to be good indicators of value. For that reason, choosing the right type of multiple is important. In this worksheet we will discuss various types of multiples and their advantages and limitations to help you can make informed choices about which multiple to use.

Earnings Multiples

Earnings multiples relate corporate value to a profitability metric. This type of multiple is most commonly used in company valuation, because a company's earnings are the fundamental driver of long-term value. The drawback of earnings multiples is that they can be sensitive to differences in accounting treatment and they can encourage earnings management practices. This can make them susceptible to over- and undervaluation. Furthermore, they cannot be applied to firms with negative (operational) earnings, while high valuations may still be justified for these companies due to their future growth opportunities.

Examples:

- **P/E Ratio** – computed as the share price divided by earnings per share. It is the most widely used equity multiple and it indicates how high the price paid per share is relative to how much profits are earned per share. The main limitation is that the P/E ratio is affected by the capital structure, which limits its usefulness when comparing companies with very different capital structures. Furthermore, it includes non-operating items, such as restructuring charges or write-offs, which are often one-off events and do not reflect business as usual. Lastly, the ratio does not account for differences in growth rates between companies. Because of these limitations, the P/E ratio is considered less useful as a measure for relative comparison.

- **EV/EBITDA** – computed as enterprise value divided by earnings before interest, tax, depreciation and amortization. This is the most commonly used enterprise value multiple in company valuation by the financial community, as EBITDA is often seen as a proxy for operational cash flows. It is often preferred over EBIT, because EBIT is sensitive to the accounting method chosen for depreciation (i.e. straight-line or double declining balance), and managers may be encouraged to play around with depreciation to manipulate earnings.

By adding back depreciation you can normalize for this. The main disadvantage of this multiple is that it does not account for the capital expenditures required to maintain and grow a business, which are particularly relevant in capital intensive industries. EBITDA multiples are popular among private equity investors, because they often look at mature businesses with low required levels of capital expenditures.

- **EV/EBIT** – computed as enterprise value divided by earnings before interest and tax. If you assume that capital expenditures are roughly equal to depreciation and amortization (in that case a company can at least maintain its operations), then EBIT may considered to be a better proxy for cash flows than EBITDA. However, amortization is an accounting item that typically arises from previous acquisitions and is not necessarily related to future cash flows; therefore, it is not a direct value driver. By including amortization EV/EBIT multiples may lead to distorted valuations and incorrect comparative conclusions.

- **EV/EBITA** – computed as enterprise value divided by earnings before interest, tax and amortization. This multiple is sometimes considered superior to EV/EBITDA and EV/EBIT, because you still account for capital expenditures by assuming they are roughly equal to depreciation, but by adding back amortization you avoid the distortions that might arise when linking value to items that do not directly drive value.

- **EV/EBITDAR** – computed as enterprise value divided by earnings before interest, tax, depreciation, amortization, and rental costs. This multiple is commonly used for the valuation of companies in the hotel and transport sectors, because their business models revolve around property ownership. Some companies in these sectors own property while others lease it, but the two are treated differently from an accounting perspective; in general, leasing requires rent to be expensed, while ownership requires rent to be capitalized. In addition, owning or leasing property leads to very different levels of depreciation, with ownership involving much higher levels of depreciation relative to leasing. By using EBITDA and adding back rental expenses, you therefore correct for the differences in accounting treatment and depreciation levels, allowing for better comparison between companies with different ownership/leasing arrangements.

Sales Multiples

Sales multiples relate value to revenue. They can be useful when valuing companies with (temporary) negative earnings, for instance, companies that are investing heavily (e.g. early stage tech companies). However, the main drawback of these types of multiples is that, by not taking profitability into account, they ignore a company's efficiency. Ultimately, if a company cannot convert sales into profits it will not be able to create value in the long run. Furthermore, in order for a sales multiple to be an accurate comparative metric, one must assume that the companies have similar operating margins, which is rarely the case.

Examples:

- **P/Sales** – computed as share price divided by revenue per share, or alternatively, as market capitalization divided by total revenue. This multiple is an indicator of the equity value that is placed on each dollar of a company's revenue.

- **EV/Sales** – computed as enterprise value divided by total revenue. It indicates how much value a company generates from its sales, or from an investor's perspective, how much it costs to purchase a company's sales. This type is preferred over the P/Sales ratio, since the latter fails to take a company's debt into account. The enterprise value multiple is therefore more useful for comparing between companies with different capital structures. In addition, the ratio is more internally consistent, since it links the sales generated by the entire firm to the value that accrues to all capital providers, not just the equity holders.

Market-to-Book Multiples

Market-to-Book multiples relate the market value of a company to its book value. These types of multiples are often used when valuing companies with business models in which assets play a critical role, for instance, when valuing financial institutions. Financial institutions have completely different business models than other companies, involving a different use of capital structure. Consider a bank as an example. Debt plays a fundamentally different role for a bank: Its liabilities (mostly deposits) can be seen as 'factors of production' since they are used to create 'products', e.g. loans. These assets in turn are a crucial driver of their earnings, through the so-called net interest margin. Hence, a bank's balance sheet is a crucial determinant of value. The main limitation of this type of multiple is that it does not take return on equity into account. Even though companies might have an excellent balance sheet, there is no guarantee that they also have a great profitability profile. Furthermore, balance sheets are highly influenced by accounting conventions, which limits the usefulness of these multiples when comparing companies that are subject to different accounting regulations.

Examples:

- **M/B Ratio** – computed as market capitalization divided by book value of equity, or on a per share basis, as share price divided by book value of equity per share. The multiple reflects how much value the market ascribes to a company's equity. This type is preferred due to its simplicity and intuitive interpretation. A disadvantage is that this multiple cannot be used when a firm's book value of equity is negative, which could be the case if it has experienced a long series of negative earnings or in the event of a leveraged buyout with dividend recapitalization.

Industry Specific Multiples

Industry specific multiples relate the value of a company to a particular industry specific metric. These are typically used when the value of a company is primarily driven by a non-financial variable. For instance, online newspapers predominantly derive value from the number of subscribers to their platform. Linking value to subscribers is more sensible in that case. Industry specific multiples automatically take industry specific risks into account, making them a better metric for comparative judgment. They are a means to standardize across companies in the industry. However, a drawback of these types of multiples is that they do not provide information about operating efficiency. If a company is unable to convert the number of users into profits and cash flow, ultimately it will go bankrupt and be worthless, making the multiple meaningless. Therefore, it is crucial to critically analyze how the industry specific metric translates to earnings and cash flow.

Examples:

1. Retail
    - **EV/EBITDAR** – as discussed above.
    - **EV/$\mathbf{m^2}$** – computed as enterprise value per squared meter. This multiple illuminates the differences in how efficient various retailers are at using their store space and generating value from it.
2. Technology
    - **EV/Subscribers** – computed as enterprise value divided by the total number of subscribers.
    - **EV/Unique Visitors** – computed as enterprise value divided by total number of unique page visitors.
    - **EV/Page Views** – computed as enterprise value divided by total number of page views.
3. Energy
    - **EV/EBITDAX** – computed as earnings before interest, taxes, depreciation, amortization and exploration expense. This multiple is often used for mining companies, since some of these companies capitalize their exploration expenses while others expense them. By adding back the exploration expense you can correct for these differences.
    - **EV/Daily Production** – computed as enterprise value divided by the total daily production output, typically measured in total barrels of oil equivalent per day (BOEPD) when valuing oil producers, or as total mcf equivalent (MCFE) when valuing dry gas producers. Oil and gas companies typically report one or the other when communicating their production levels.
    - **EV/Proven Reserve Quantities** – computed as enterprise value divided by the quantity of proven reserves, typically measured in total number of barrels.

Normalizations of Multiples

To further correct for differences in fundamentals among players in an industry you can apply various normalizations to multiples. A commonly applied normalization is the PEG ratio, which normalizes the P/E ratio for differences in growth rates. It is computed by dividing the P/E ratio by the growth rate of earnings. Another example of a frequently used normalization is the MTB/ROE ratio, which corrects the M/B ratio for differences in the return on equity that each company generates. Lastly, you can correct the sales multiple for differences in profitability using the EV-to-Sales/Operating Margin ratio.

Conclusion

This document highlights the most prevalent types of multiples in company valuation. Nonetheless, there several other types available for the assessment of a company's value. One important note on multiples is that they are a measure of relative valuation, i.e. they are meaningless when used in isolation. To make accurate comparisons you must always understand the components driving the multiple in question and critically analyze these. For example, a high EV/EBITDA multiple can be an indicator of a relatively high valuation, but it may also be driven by operating profits of that company being well below the average. Thus we need to be critical and try to understand where the differences come from. Multiples can also be influenced by market sentiment, which sometimes leads to deviations from fundamental value. This is not an issue when the sentiment influences all players in the market equally, because the multiples are used for relative comparison, but if market sentiment affects only some firms individually or disproportionately, then multiples may lead to distorted conclusions on valuation. Make sure to understand the reasons behind the height of a particular multiple, always critically analyze the relative comparability, and apply normalizations if deemed appropriate.

Bibliography

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