The pitfalls of the "Price to Sales" measure

By : Craig Butters, CA(SA), CFA, Fund Manager : Brait Capital Management

The "*Price to Sales*" ratio has become widely utilised by a number of investment firms over the years. Its ease of calculation – simply dividing the market capitalisation of a company by its latest reported revenues – is one of the major attractions in using the ratio. At various life cycle stages of certain industries, the ratio may also assist in assessing the (relative) value of a company, particularly where companies or sectors may be loss-making. The ratio was widely used by investors in valuing technology companies during the dotcom bubble for example, where little else could be used to justify the steamy ratings on a number of stocks.

Despite its ease of calculation, there are a number of factors to consider for this and other ratios. While "Price to Sales" (and other measures such as "Price to Book", PE ratio and "EV/EBITDA") may provide some *estimate* of the value of a company, the ratio should never be used as an absolute valuation technique. The theoretical (but necessarily still *subjective*) value of a company is the present value of the expected cash flows the company will generate in the future, notwithstanding that the input parameters may be difficult to estimate. In fact, this should hold true for any investment. Imagine for example, if bank lending was based on underlying cash flows rather than an assessment of value through comparison with previous sales transactions in a particular area.

Unlike the other ratios mentioned above however, the "Price to Sales" measure suffers from a further drawback. The ratio has no theoretical justification, and is therefore, quite simply, *fundamentally flawed*. Let's examine why this is the case :
The long-term operations of a firm are essentially funded through a mixture of equity and debt. Once the sales revenue generated by a company is utilised to pay for raw materials consumed, direct and indirect overheads, other expenses and taxation, the remaining funds are used to provide returns to the capital providers of the firm – to both equity holders in the form of dividends and debt holders through the payment of interest. The tax deductible nature of interest paid on borrowed funds is one of the key elements in many fascinating studies on determining the optimal capital structure of a firm.

Simply stated, the sales of a firm are therefore the property of both the *equity and debt* funders. Any ratio that utilises sales in the denominator should therefore incorporate a measure of the value of the *firm*, rather than the value of the equity only. For this reason, it is submitted that the *enterprise value* ("EV") of the firm (the value of both debt and equity instruments) be used in the numerator, rather than the market capitalisation (the value of the equity only). Therefore, in attempting to estimate how much an investor is theoretically paying relative to the sales a company generates, it is essential to ensure that *all* capital providers are taken into account. "Price to Sales", the market value of a firm's equity relative to its sales revenue, clearly does not achieve this, and is therefore a meaningless ratio without any theoretical basis. "*EV/Sales*", the market value of a firm's equity plus debt relative to its sales revenue, is a far more theoretically appropriate measure.

Consider the case of two identical firms, one funded entirely by means of equity capital, the other through a mixture of debt and equity. The second firm would incur interest payments on its

borrowed funds, thus leaving less after tax profit to fund dividend payments to equity holders relative to the first firm. As a result thereof, the aggregate market value of the equity in the second firm would, all else equal, be expected to be lower than the first firm funded entirely through equity. The utilisation of the "Price to Sales" ratio would materially distort any comparison between the firms, with the second firm appearing significantly cheaper relative to its sales revenue in comparison to the first firm, due to the exclusion of the value of its debt in the ratio. On an "EV/Sales" basis, the relative ratio of the firms would converge.

An analysis of the companies in the ALSI40 index reveals that there is only a marginal difference between the "Price to Sales" and "EV/Sales" ratios for the index as a whole :

	Unweighted	Weighted average
Price to Sales	1.7	2.1
EV/Sales	1.8	2.2

This is mainly due to compensating differences, where companies with net cash on their balance sheets offset those that are funded by significant amounts of debt currently. The difference between the ratios for individual companies is however material. The following stocks show the most meaningful differences, mainly as a result of significant debt on their balance sheet :

	Steinhoff	Telkom	Anglo American	Aspen	SABMiller	Anglogold
Price to Sales	0.3	0.6	1.0	2.5	1.7	3.6
EV/Sales	0.6	0.8	1.4	3.3	2.1	4.0

The difference in the ratios across companies is largely a function of the difference in operating margins between companies. For example, Shoprite, with an "EV/Sales" ratio of 0.5x, earns between R2 and R3 after tax for every R100 of sales generated. This compares to a 15 year average of R23 for every R100 of sales for Angloplats, which has a corresponding "EV/Sales" ratio of 3.1x.

A company that has made a material acquisition funded through debt, may suddenly appear cheap relative to its history on a "Price to Sales" basis. Assuming no change to the market value of the acquiror's equity, the inclusion of the acquired company's sales in the consolidated financial statements would significantly lower the "Price to Sales" ratio of the group compared to its history. The "EV/Sales" ratio would therefore provide a far more meaningful comparison over time. Investors wanting to compare the value of a firm relative to its sales over the long-term, particularly in highly cyclical industries, are therefore best advised to employ the "EV/Sales" ratio rather than assessing the "Price to Sales" history.

In calculating the "EV/Sales" ratio, there are a number of important considerations :

- companies may present the best possible net debt position at reporting dates through window dressing – investors are therefore advised to use realistic net debt figures in their EV calculation

- a material issue of shares may distort the ratio – it is therefore recommended that the ratio be calculated on a per share basis for more accurate results
- the treatment of "treasury" shares held by share trusts on an economic basis rather than an accounting basis is recommended, a worthwhile topic for further discussion
- investors need to understand the impact of the accounting treatment of subsidiaries, joint ventures and associates on both the reported revenue and EV calculation – it is submitted that proportional consolidation of all material entities not 100% owned provides the most meaningful results, irrespective of the accounting treatment thereof, although company disclosure is not always sufficient to perform the necessary adjustment
- the principles proposed in this article are equally applicable to the consideration of the value of mining companies relative to mineral resources or mineral reserves, for example

In these difficult times, investors need to ensure that the basis on which they make investment decisions is theoretically sound, and to avoid the pitfalls that may result in inappropriate investment decisions being made. It is submitted that "Price to Sales" has *no* place in the assessment of a firm's valuation, nor in any quantitative ranking system of companies.

END