

The Accuracy of Relative Valuation: Focus on the Banking Industry

Introduction

Relative valuation is a widely spread approach among practitioners and is, broadly speaking, a double-check methodology, to back-test more sophisticated valuation techniques. Relative valuation relies on the main assumption that stock markets are on average efficient and fundamentals are correctly priced in.

The aim of this article is to examine the effectiveness and the accuracy of relative valuation through an empirical analysis.

The first paragraph highlights some of the main features about the most relevant multiples. It will explain briefly some empirical results about multiple valuation, pointing out the main stylized facts, in order to summarize decades of researches and empirical tests.

The second part of the article will instead address the core of the research, which is the analysis of the accuracy of relative valuation in the banking sector. In fact, a broad academic literature agrees on multiples' accuracy, with notions and ideas which are widely shared among practitioners; however, as far as banking valuation is concerned, there are fewer clear ideas and an ad-hoc analysis is therefore required; moreover, among students and sometimes also among practitioners, there are some beliefs which appear to be wrong or at least questionable, when considering the empirical evidence. The main reference point for this analysis, especially for the section regarding valuation in the banking sector, is "Bank Valuation Using Multiples in US and Europe: An Historical Perspective" (2018, by M. Massari, C. Difonzo, G. Gianfrate and L. Zanetti).

Essentials on relative valuations

Among the several alternative multiples that practitioners use, the most relevant and best performers overall seem to be following: P/E, P/BV, EV/EBITDA, which will be addressed here below.

Considered "the king" of relative valuation, the P/E is computed as the ratio between the share price and earnings per share (alternatively, it can be computed as the ratio of the market capitalization over total earnings).

Because both the numerator and the denominator of the P/E ratio can take different forms, depending on the assumptions and elements included in the calculations, this ratio can be found in several different variants.

For instance, analysts can choose between current (i.e. considering EPS in the most recent financial year), trailing (LTM) and forward earnings; empirical evidence and studies from Yee (2004) demonstrated that, ideally, analysts should opt for this latter category of earnings, even trying to move forward in time, thus getting more and more accurate estimates; the reason behind this statement might be that prices are assumed to reflect future expectations rather than past evidence. In order to catch the main factors behind this multiple, please consider the expression here below:

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$$\frac{P}{E} = \text{current} \frac{P}{E} = \frac{\text{Payout ratio} * (1 + g)}{k_e - g}$$

$$\frac{P}{E} = \text{forward} \frac{P}{E} = \frac{1 - g * ROE}{k_e - g}$$

Whereby g denotes the growth rate in earnings. The presence of the cost of equity suggests that the P/E ratio is in fact a function of the perceived risk of a firm. Specifically, it turns out that, at very high- risk levels, a firm's P/E is likely to increase more as risk decreases, than as growth increases.

Another element at the basis of the different versions for the multiple at issue is the earning dilution; this element gives rise to Basic P/E (if EPS are computed with common shares only), Partially Diluted and Diluted P/E (when diluted common shares are considered), which seem to do a better job than the Basic category.

The last element to consider, when working with P/E, is the presence of non-recurring items, which should be ideally excluded from computations, since extraordinary gains and losses are in principles not expected to systematically take place in the future.

As also the next paragraphs will point out, the P/E turns out to be among the favorite alternatives, when carrying out the valuation of a firm operating in the financial sector.

The second most efficient multiple turns out to be the P/BV of equity, which is represented by the ratio between market capitalization of the firm and the book value of equity; this multiple turns out to be particularly effective in the valuation of capital-intensive businesses and financial institutions, since it truly catches the regulatory requirements on solvency, capital requirements and equity maintenance.

The determinants of this ratio are outlined below:

$$\frac{P}{BV} = \frac{ROE * \text{Payout ratio}}{k_e - g}$$

Or, alternatively:

$$\frac{P}{BV} = \frac{ROE - g}{k_e - g}$$

This last formulation of the ratio at issue suggests that the P/BV measure is mainly driven by the differential between the ROE and the cost of equity.

A third relevant alternative is the EV/EBITDA measure, which turns out to be particularly useful, in case the firm under valuation is recording negative earnings. The EV/EBITDA is a firm value multiple, calculated as follows:

$$\frac{EV}{EBITDA} = \frac{\text{Mkt value of equity} + \text{Mkt value of debt} - \text{cash}}{EBITDA}$$

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Or, alternatively:

$$\frac{EV}{EBITDA} = \frac{(1 - t) - \frac{DA}{EBITDA}(1 - t) - \frac{Reinvestments}{EBITDA}}{WACC - g}$$

Beyond these 3, there are several other valuation metrics among which analysts are allowed to choose, when carrying out the valuation of the company under scrutiny. Among the many, for instance, it is worth mentioning those linked to sales, which unfortunately seem not to be efficient, despite their diffusion. For banks, as hinted at before, someone has even called for the Price/Dividends ratio, on the grounds of the importance of dividends for financial institutions.

The next session constitutes the core of the article and will address the valuation of the firms operating in the banking sector, pointing out the efficacy of common multiples in performing this task.

How to value banks

As already hinted at before, M. Massari, C. Difonzo, G. Gianfrate and L. Zanetti have carried out an analysis, thus empirically testing the accuracy of multiples in the valuations of firms operating in the banking sector. The analysis relies upon a dataset of 1118 banks (937 being American and 181 European), also distinguishing between commercial and investment banks (with the former category being more focused on loans and the latter on advisory services). For the sake of completeness, it is worth stressing that one essential assumption behind our results is that the historical performance of the different multiples is likely to repeat in the future (otherwise the entire analysis will be, in a certain sense, pointless).

The methodology used to assess, in general, the performance of a multiple in a specific sample of firms is rather straightforward: the true market price and the price obtained applying the multiple are computed and compared, and their difference is then seen as the error, as per below:

$$Error(x; t) = \frac{Multiple(all\ banks\ except\ x; t) * Value\ Driver(x; t) - Market\ Price(x; t)}{Market\ Price(x; t)}$$

Then, in order to better capture the volatility of this deviation, practitioners usually compute some other relevant measures, such as the bias, the mean absolute deviation or the mean squared error.

What empirical evidence has also shown is that, when multiples were computed by taking their harmonic mean, the valuation performance increased. This approach, indeed, reduced the impact of right asymmetry and outliers.

Let us now focus on the most interesting empirical results and contributions, which come from an in-depth analysis of the percentage errors, within and across the different multiples considered.

First, confirming also the conclusions drawn above in a more general setting, even in banking valuation the forward P/E multiples perform better than all the others, while trailing P/E are the second-best option. To be more specific, it appears optimal to consider two-year forecasted earnings, rather than one-year, to avoid the

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inclusion of non-recurring items and to consider, in particular, diluted earnings. This, once again, may be due to the fact that prices reflect future expectations, and not past expectations.

The second and maybe even more relevant consideration concerns price-to-book value. Price-to-book value is widely used (only) in banking valuation, mainly due to the fact that items, for these firms, are marked-to-market on the balance sheet and, hence, the book value still provides a transparent and meaningful representation. However, among the practitioners, especially in the most sophisticated analysis, there is the fervid conviction that price-to-tangible book value works better, because it is more liquid (due to the elimination of intangible items from the computation) and, hence, offers a more accurate representation of the book value. However, the empirical analysis shows that this is not the case, and that P/BV has, on average, lower percentage error than P/TBV. In general, as probably expected, P/BV and P/TBV have quite good performances in the valuation of banks, at least for American banks.

On the contrary, multiples based on sales and deposits (which were sometimes used in the past for valuing banks) show on average poor performances and should be avoided in the banking sector. Broadly speaking, revenue-based multiples are more adequate to value young and growing companies, for which earnings and even EBIT may be negative.

Third, as in part already stated, multiples show in general better performances (i.e. lower percentage errors against the actual market prices) for valuing American banks rather than European banks; this again may be due to the higher development of the capital markets in the US or, simply, to the relatively small presence of European banks in the sample. Another possible reason for this result comes from the heterogeneity of European markets, which are so different across themselves, also in terms of regulation authorities.

A fourth interesting result from the analysis, even if easily predictable, is that multiples performance drastically improves in periods of stability than in times of uncertainty. For example, the financial crisis of 2008, included in the sample, heavily reduced multiples' accuracy, in particular for forward multiples, while the introduction of the Euro currency in 2002 increased the accuracy of relative valuation (for the valuation of European banks).

Lastly, as far as the difference between the types of banks is concerned, multiples do much better for valuing large banks rather than small ones; likewise, multiples turn out to be more accurate measures of value for commercial banks rather than investment banks (see evidence in table here below). The table also highlights that dividend multiples are not among the best performers, and that it is preferable to consider only common dividends in calculations, since they are more dependent on the actual level of profitability than the preferred.

The table here below summarizes the ranking of the multiples which emerges from the analysis.

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	EU Investment Banks	EU Large Commercial Banks	EU Small Commercial Banks	US Investment Banks	US Large Commercial Banks	US Small Commercial Banks
Best choice	1	P/E (FY2)	P/E (FY2)	P/E (FY1)	P/E (FY2)	P/E (FY2)
	2	P/E (FY1)	P/E (FY1)	P/E (FY2)	P/E (FY1)	P/E (FY1)
	3	P/E (LTM Basic no Extra)	P/E (LTM Basic no Extra)	P/E (LTM Basic no Extra)	P/Common Dividends	P/E (LTM Diluted no Extra)
	4	P/BV	P/Common Dividends	P/Common Dividends	P/E (LTM Diluted no Extra)	P/BV
	5	P/TBV	P/Deposits	P/Revenues	P/Deposits	P/TBV
	6	P/Common Dividends	P/Revenues	P/Deposits	P/Revenues	P/Revenues
	7	P/Deposits	P/BV	P/BV	P/BV	P/Revenues
Worst choice	8	P/Revenues	P/TBV	P/TBV	P/TBV	P/Common Dividends

Source: Bank Valuation Using Multiples in US and Europe: An Historical Perspective” (2018, by M. Massari, C. Difonzo, G. Gianfrate and L. Zanetti).

Conclusions

There are two key takeaway messages from the discussion.

First, when applying the P/E multiple, analysts should consider forward earnings. To be more specific, they should refer to the two-year forward diluted earnings, excluding non-recurring items.

Second, as already well know from the theory, the P/BV multiple is quite relevant in valuing banks, even if its performances turn out to be worse than the P/E's. Moreover, differently from what practitioners tend to do, the theory and empirical evidence suggests that analysts should use P/BV rather than P/TBV (which removes from the computation the tangible items).

This article has gone through some of the very-well known multiples, then focusing on those which over time have turned out to be the most efficient in the valuation of firms operating in the financial sector.

The bottom line is that there are several different approaches to the use of multiples and, ideally, each analyst should be encouraged to come up with its own.

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References

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