Evaluation using multiples

Europe evidences

Motivation

This paper presents a thorough analysis of corporate financial evaluation using multiple approach. We chose to analyze the evaluation method because of the advantages they present and because the supported by studies in this area. One of the most important aspects that are favorable compared to other methods is the simplicity by applying this method. The scope for evaluation is usually merges or aquisition, and here our method is great, because is very easy to explain in detail to the investors. Easily understand of this method makes it a solid base in their next decision. Many of the financial analysts use this method because it's very quick also.

Abstract

Market multiples represents the most used evaluation technique. They count on market prices and this makes form this approach very useful for comparatios between firms and their performances. In our study, we present Multiple Evaluation, it's accuracy, and some ways to improve the performances by giving the entity the correct value. We first begin with most efficient multiples on the market used in evalautions. Furthermore, we find different ways of choosing the peer group to improve our evaluation. We analized the impact of choosing firms from the peer group from the same industry and to see it's impact unlike randomly choosed firms. Our second analyses is based on choosing comparable firms with the same financial performances like the firm we are going to evaluate, and third, choosing comparable firms with both criterias : same industry and same financial performances like evaluated firm.

Literature review

Althoug they seem to have quite high level of accuracy and are used by most of the analysts, there are not so many articles in this area. Koller, Goedhart and Wessels , they concentrated on the development of criteria for identifying comparable companies. In an ideal world, comparable companies have equal operational and financial characteristics. However, even in the detailed industries, there are not perfectly comparable firms. They suggest to collect a list of companies based on an industry well-defined, followed to lower this list by eliminating firms with different characteristics in terms of profitability and growth with the evaluated subject.[1] However, Arzac[2] presents an alternative approach to obtain multiple for all companies in the same industry and similar size - by using valuation theory, he shows how to adjust multiple to differences of debt or growth of comparables.

Moreover, regarding the identification of comparable companies, Boatsom and Baskin[3] , shows that errors in evaluation are smaller for analyzed and selected firms than for firms taken at random. They find a connection between the size of the error, and the selection of comparable companies that match in terms of the history of income growth.

Similarly, in support of this theory, studying the P / E multiple, Alford [4]found that comparable companies in the same industry or similar risk and revenue growth lead to better performance than comparable firms chosen on a wider market or similar size or similar long-term growth forecast.

Rubak Kaplan[5] concluded that multiple EV / EBITDA has very good accuracy in the evaluation of the multiples. Percentage error that they have shown in their work of 15% is relatively acceptable results supported by Berkman, Bradbury and Ferguson[6].

Tasker[7] and Barker[8], they believe that analysts prefer using P / B and P / E multiples in the financial industry, price / operating cash flow (P / OCF) as a multiple for consumer services sector, and multiple P / D in utility industry. However these studies are not evidence that the multiples used in practice are also multiples with highest accuracy rating in certain industries.

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Theoretical Fundamentals

Evaluation generally means to assess, establish or determine a price value that can be used in a transaction and it is usually valid at the time of evaluation.

Value of a company is based on the fact that the whole is always more than the sum of its parts. Generally, the entity is different for different customers and different even from the buyer to seller respect, because of the interests and transparency in terms of the amount of information.

Like other methods of evaluation, the multiples valuation method has both advantages and disadvantages that we will present next:

Disadvantages of multiple valuation:

-It is simple: It is a lot of information into a single number. By combining multiple information into a number of factors may hinder the observation of the impact factors on the evaluation, such as the impact of economic growth on value;

- Is static: A multiple assessment framework is snapshot of the company and fails to capture the dynamic nature and evolution of business and competition;

- Difficult to compare: Multiples are mainly used for comparisons of relative value, but comparing multiples is challenging due to differences between them. An example regarding this disadvantage could be the different policies adopted by comparable companies.

- Are dependent on accurate assessment of comparables. If the peer group is evaluated incorrectly as possible when the market is in a bubble, then result multiples can also be misjudged.

- It is based on historical data and short-term forecasts.

Evaluation of the multiple has a huge number of advantages:

- Utility: The evaluation is about costs and multiples provides a framework for making assessments. When used properly, multiples are robust tools that can provide useful information about the relative value;

- Simplicity: They are very easy to calculate and a quick way to evaluate a company.

- Relevance: Multiple focuses on statistical keys that other investors use - the multiple most use will have the biggest impact.

- Actuality: It is based on actual values traded on the market, providing a favorable comparisons;

There are several ways that the multiples method is applicable. The common approach is to compare multiple date with a history of multiple measured at a comparable level in the

business cycle and macroeconomic environment. Another approach is to compare a current multiple with other multiples of other companies or sectors - this approach we use in the analysis of this paper.

Empirical evidence

Evaluation by multiples is very useful when we want to see the extent of the market valuation of an entity. We can provide the perfect support for considering a company under / overvalued and make a decision regarding the desire to trade shares valued.

The data underlying the study to develop following are selected from the capital market in Europe. It is a huge market with close ties to all other foreign markets, making this analysis a reliable analysis for all markets, and quite effective. Until now, most studies to test the accuracy of the method of multiple assessment data are made in the USA, but there are tests for Europe too. We have a good opportunity to compare the findings with those already in the chosen field.

To classify firms in different industries and subindustries we used a classification system on Bloomberg. This classification system divided the listed companies in database into different industries and sub-areas.

Indicators value is very important in analyzing the multiples, especially in the choice of comparables - it starts from the assumption that in the same market conditions, and with the same performance, two entities should be equal.

Table nr. 1 Descriptive statistics of companies multiple in Europe in 2013.

	Mean	Median	Standard Deviation	Range	Minim	Maximum	Count
PBV	3,8	2,6	4,6	46,8	0,2	47,0	665,0
P/E	26,3	20,6	25,0	304,5	2,1	306,6	665,0
PEG	3,0	1,9	5,8	80,1	0,2	80,3	665,0
PS	1,9	1,3	2,0	23,0	0,0	23,0	665,0
EV/Vânzari	2,3	1,5	2,3	21,9	0,0	21,9	665,0
EV/EBITDA	12,2	11,1	6,1	56,4	0,0	56,4	665,0
EV/EBIT	15,2	14,1	7,5	69,2	0,0	69,3	665,0
EV/Cap Inv.	4,6	2,7	6,2	54,8	0,0	54,8	665,0
EV/FCF	40,4	24,4	1,9	320,0	0,2	320,2	645,0
EV/ NOPAT	33,5	25,4	32,0	269,0	0,0	269,0	665,0

The table above shows the summary statistics of the investigation equity multiples and entity multiples. We took into account 10 valuation multiples (4 capital multiples and 6 entity multiples) and noticed large differences (range) between minimum and maximum indicators of them. These huge differences raise the question whether negative values influence the analysis we want to perform. It is possible that the accuracy of the evaluation depend heavily on these large fluctuations, and require their removal.

Regarding this aspect of differences among firms, we analyze how we can continue to improve and have a multiples valuation method with a high accuracy in terms of comparable set used for evaluation.

Performance indicators in evaluation multiples of capital and the value of the company chosen for analysis in the sample on firms in Europe are presented in the table below. There has been a difference between the companies and the resulting values by applying the multiples for each multiple.

Table nr. 2 Multiple performances – random comparable

	Mean	Median	Range	Minim	Maximum	Count
PBV	**-0,21**	0,10	14,40	-13,52	0,88	548
P/E	0,42	0,29	8,60	-0,91	7,69	548
PEG	**4,19**	1,38	37,52	-1,00	36,52	548
PS	1,26	0,56	17,32	-0,90	16,42	548
EV/ NOPAT	0,46	0,30	10,38	-0,91	9,47	548
EV/EBIT	**-0,10**	-0,20	6,49	-0,95	5,54	548
EV/Sales	**-0,14**	0,21	12,67	-11,74	0,93	548
EV/EBITDA	**0,20**	0,08	4,59	-0,85	3,74	548
EV/Invested Capital	1,08	0,78	7,78	-1,00	6,78	548
EV/FCFF	2,00	1,50	17,65	0,00	17,65	548

Through scores we wanted to present the absolute values of the indicators in the assessment of the accuracy of the multiples. If we look at the first column, there are exemplified, per average valuation errors. We see therefore that the best performance in this field of study European market indicators were: EV / EBIT, EV / Sales, EV / EBITDA and PBV. Through this analysis we demonstrated that six indicators with an error of up to 50% of the value of firms subject, of which 4 high performance, with a maximum error of 25% based on the analyzed data.

It may be observed the differences in terms of accuracyfor the two classes in the current study, company multiple have a better accuracy than those of capital. Andreas Schreiner combat

this result skills in his dissertation (2007), when his study resulted in a better performance of equity multiples than those of the entity's.

Comparable companies identification has a crucial effect on the accuracy of valuation multiples. To perform the analysis with comparable companies in the same industry, we considered an international industrial classification system GICS[9] with 171 Subindustries, 70 industries, 24 groups and 10 sectors. Each level has a different code formed by 2 to 8 figures, the 8 figures meaning the most detailed industry classification.

This paper further studies the effect of choosing comparables from the same industry, and how much influence this the method accuracy.

Table nr. 3 Multiple performances – industry comparable

	Machinery	Business & Consumer Services	Engineering	Apparel	Pharma & Drugs	Food Processing	Retail (Special Lines)	Average	Europe performances
PBV	-0,17	-0,37	0,24	-0,91	-0,49	0,04	-1,07	-0,39	**-0,21**
EV/Sales	0,18	0,3	0,62	-0,73	-0,76	0,36	-0,14	**-0,02**	-0,14
EV/EBITDA	0,2	0,09	0,43	-0,15	-0,06	0,06	-0,15	**0,06**	0,2
EV/Inv Cap	0,61	0,09	2,63	0,24	0,27	1,44	0,57	**0,84**	1,08
EV/FCFF	2,3	1,78	2,56	1,34	1,39	1,95	1,94	**1,89**	2
P/E	0,38	0,17	1	-0,08	0,07	0,33	0,14	**0,29**	0,42
PEG	1	3,14	6,01	2,93	2,26	5,27	5,42	**3,72**	4,19
PS	1,39	2,21	3,54	0,02	-0,13	1,53	0,56	1,30	**1,26**
EV/ NOPAT	0,73	0,27	0,49	0,07	0,28	0,31	0,1	**0,32**	0,46
EV/EBIT	-0,13	-0,1	-0,03	-0,13	-0,23	-0,15	-0,05	-0,12	**-0,1**
Average	0,649	0,758	1,749	0,26	0,26	1,114	0,732	*0,79*	*0,92*

Analyzing the average per industry of all indicators, it is noted that the cumulative performance of the seven industries are better than the performance in Europe, and in 5 of 7 industries analyzed, the performance is much better than random choice of comparables. The best performance is in the pharmaceuticals industry, followed by a performance almost as good Apparel industry.

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[9] Global Industry Classification Standard

Criteria approach increases the accuracy in multiples per average by about 13 percentage points, making six multiples of the 10 analyzed with an error below 39% rating, and 5 of below 32%.

Further, in the present study we analyze a possible impact in terms of accuracy indicators if choosing comparables analysis is based on both belonging to the same industry and based on the similar performance.

Table nr. 4 Multiples performance - comparable with similar performance, same industry, Europe 2013.

	Comparable – same performances	Europe performances	Comparable – same performances and industry	Comparable – same industry
PBV	-0,96	**-0,21**	-0,83	**-0,39**
EV/Vanzari	-0,35	**-0,14**	-0,25	**-0,02**
EV/EBITDA	**-0,07**	0,20	**-0,11**	**0,06**
EV/Cap inv	**0,17**	1,08	**0,17**	0,84
EV/FCF	**1,54**	2,00	**1,36**	1,89
P/E	**0,41**	0,42	**0,41**	**0,29**
PEG	**2,28**	4,19	**2,19**	3,72
PS	**0,51**	1,26	**0,47**	1,30
EV/ NOPAT	**0,46**	0,46	**0,41**	**0,32**
EV/EBIT	-0,14	**-0,10**	-0,18	**-0,12**
Media	0,69	1,01	0,64	0,90

I inserted in the above table multiple performance calculated in four ways by different influences, for better comparison and may result in the best way of choosing comparables. It can be seen that the average performance of Europe (comparables are chosen at random), the average error is up to 1,01 with 4 multiples under 25% error four multiple greater than 1.If there were comparable selected from the same industry average is somewhere in 0.9, with 6 multiples below 40% and only 3 over 1. Comparables choice with similar performance has the following result: an average of 69%, 6 multiples below 50%, and only two multiples than 1. The best performance is that the choice is made so as to identify comparables belonging to an industry and depending on their performance in terms of ROE and sales volume. In the last analysis we have an average performance of 64%, 37 percentage points less than the random choice of comparables with 6 multiples below 47%, and only 2 multiples than 1.

It can be said that choosing comparables from the same industry and similar performance brings the best accuracy in the evaluation of the multiples.

Conclusions

This paper evaluates the multiple evaluating method for businesses performances. Starting from on this subject, various analyzes have been made to improve the accuracy of the evaluation ,to observe, and to make the final result- which is the most efficient method of analysis?. The analysis was based primarily on performance when choosing comparables multiples, a factor which considered the most sensitive for the evaluation method. Choice of comparable companies was done by several methods: choosing comparables randomly, choosing comparable belonging to the same industry as evaluated entity, choosing comparables with similar performance and choosing comparables from the same industry and similar performance. In choosing similar performance I opted for the insertion of a filter in terms of choosing firms based on two indicators that we consider relevant: return on equity (ROE) and sales volume.

Descriptive statistics showed us that the performance multiples are different and sensitive to the choice of comparables. First analyze show the performance achievement by choosing comparables from the same industry. The following analysis was based on choosing comparables with similar financial performance. And in this case was an even greater improvement in terms of relevance to the choice of valuation multiples in the same industry comparables. The last analysis was conducted on the impact in accuracy due to the choice of comparable companies in the same industry and similar financial performance. In the last analysis yielded the highest performance in terms of evaluating the multiple, with filters on the choice of comparables.

All the above results that the basic descriptive analysis method were supported by applying the Wilcoxon test and the results generated by it (median, and below observations and probability).

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