

Computation of Price Earnings Ratio (P/E) using twelve months trailing and Leading EPS

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The three stocks selected for the computation of the price-to-earnings ratios are Microsoft Corporation, Facebook Inc., and Apple Inc. The benchmark was the equity index S&P 500. The P/E ratio helps investors to assess the value of a firm. It is one of the most widely used multiples. There is a direct relationship between market expectation and the price multiple; hence, the company's future performance can be determined. The price multiple is an important tool for investors since it determines the company's future earnings. For instance, a promising future earning of a company is indicated by a higher current earnings multiple (Bajkowski, 2000).

The formula for assessing the P/E is: $\text{Price/Earnings} = \text{Stock Price} / \text{Earnings per share}$

For Microsoft, the 2017 fiscal year gives the following P/E computation:

Trailing P/E = $87.18/3.46 = 25.20$

Leading P/E = $87.18/3.67 = 23.75$

For Facebook Inc., the 2017 fiscal year gives the following P/E computation:

Trailing P/E = $159.39/6.16 = 25.88$

Leading P/E = $159.39/8.43 = 18.91$

For Apple, the 2017 fiscal year gives the following P/E computation:

Trailing P/E = $164.94/9.62 = 17.15$

Leading P/E = $164.94/11.39 = 14.48$

Using the trailing P/E, Facebook is seen to be overly valued due to the high P/E ratio; Microsoft is overvalued, while Apple is the undervalued stock. Using the Leading P/E, Microsoft is the overly valued stock; Facebook and Apple have P/E ratios less than the benchmark P/E and are thus undervalued.

Company	Trailing P/E	Leading P/E	Compare
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Microsoft Corp	25.20	23.75	-17%
Apple Inc.	17.15	14.48	+22%
Facebook Inc.	25.88	18.91	-19%
Benchmark P/E	20.88		

Computation Of Price Earnings Ratio Using Forecasted Fundamentals

Usually, the Trailing EPS and Leading EPS are based on previous records, contrary to forward EPS, which is based on the forecasted fundamentals (Lebdaoui & Wild, 2016).

The formula used is: $\text{payout ratio} (1 + \text{growth rate}) / (\text{return} - \text{growth})$

For Microsoft: $1.29(1.14) / (0.11 - 0.14) = -6.33$

For Apple: $0.25(1.17) / (0.09 - 0.17) = -0.54$

For Facebook: $0(0) / (0.07 - 0) = 0$

The forecasted fundamentals are not a good measure to determine the stock valuation because the companies have high growth rates.

Recommendation To Investors

Analysis of the three companies shows that investors should invest in Microsoft due to its high P/E ratio in both leading and trailing, which indicates future profitability.

Computation For The Price To Book Ratio (P/B)

This ratio is used to assess how well management can create more value from a given set of assets. The ratios are computed as follows:

P/B = Stock Price/ The Value Of Book Per Share

The value of book per share = (Assets-Liabilities)/ outstanding shares

For Microsoft, the 2017 fiscal year gives the following P/B computation:

$$P/B = 87.18/11.39 = 7.65$$

For Facebook, the 2017 fiscal year gives the following P/B computation:

$$P/B = 159.39/31.03 = 5.14$$

For Apple, the 2017 fiscal year gives the following P/B computation:

$$P/B = 164.94/26.42 = 6.24$$

All the ratios are high and thus indicate that all three stocks are overvalued. However, computing the P/B using the forecasted fundamentals shows a different picture:

$$P/B \text{ Forecasted} = (\text{return on equity-growth rate}) / (\text{rate of return-growth rate})$$

For Microsoft, the 2017 fiscal year gives the following forecasted P/B computation:

$$P/B = (29\%-14\%) / (11\%-14\%) = -5.66$$

For Facebook, the 2017 fiscal year gives the following forecasted P/B computation:

$$P/B = (21\%-0\%) / (7\%-0\%) = 3.24$$

For Apple, the 2017 fiscal year gives the following forecasted P/B computation:

$$P/B = (36\%-17\%) / (9\%-17\%) = -2.36$$

In light of the second computation, only Facebook shows a high P/B in both cases, while Apple and Microsoft are undervalued with negative P/B ratios.

Recommendation To Investors

Investors should consider the company as having a promising future return on their investments and thus should give priority to Facebook.

Recommendation When Comparing P/E TO P/B

The P/E ratio is more popular as the P/B can be manipulated due to different accounting standards. Thus, if the investor compares the companies using both ratios, then Microsoft would be the best choice to invest in.

Absolute Valuation Models

These are valuation models used to compare the worth of the different competitors.

Dividend Discount Model

This model is based on the fact that the future cash flows an investor expects to receive from his stocks are future cash dividends (Chaplinsky, 2008)

The DDM formula is given as:

The stock value = $\text{Dividend per share} \div (\text{discount rate} - \text{dividend growth rate})$

For Microsoft, the DDM is:

$$\text{DDM} = 1.62 / (11\% - 14\%)$$

$$= -58.91$$

For Apple, the DDM is:

$$\text{DDM} = 2.42 / (9\% - 17\%)$$

$$= -30.36$$

For Facebook, the DDM is:

$$\text{DDM} = 0 / (7\% - 0)$$

$$= 0$$

Free Cash Flow To Firm Model

The FCFF is the cash that is available to the investors after the company pays out its expenses. The formula used is:

$FCFF = \text{Cash Flow Operations} + \text{Interest Expenses} * (1 - \text{Tax Rate}) - \text{Capital Expenditure}$

For Microsoft, the FCFF is:

$$39,507 + 2,637 * (1 - 0.3) - 8,696 = 32,654.8$$

For Apple, the FCFF is:

$$63,598 + 2,532 * (1 - 0.3) - 12,339 = 53,031.40$$

For Facebook, the FCFF is:

$$24,216 + 0 + 6,733 = 30,949$$

Free cash flow to equity

The model evaluates the amount of cash available to the shareholders after accounting for all liabilities.

The formula is given by:

$FCFE = (\text{Net Income} + \text{New Debt}) - (\text{Net Capital Expenditure} + \text{Change in Net Working Capital} + \text{Debt Repayment})$

For Microsoft, the 2017 fiscal year gives the following FCFE:

$$FCFE = 25,489 - 8,696 - 14,404 + 3,637$$

$$= 6,026$$

For Apple, the 2017 fiscal year gives the following:

$$FCFE = 48,351 - 12,339 - 28,463 + 3,360$$

$$= 41,149$$

For Facebook, the 2017 fiscal year gives the following

$$FCFE = 15,934 - (-6,733) - 1,887 + 0$$

$$= 20,780$$

Analysis Of The Results For The Models

The models give different values depending on the financial indicators used. Concerning the DDM,

Microsoft and Apple are seen to have negative DDMs, while Facebook has zero as it does not pay out dividends. This observation shows that DDM may not be a reliable measure for valuing fast-growing companies.

Considering FCFE and FCFF, Apple has the highest FCFF and FCFE; hence, the company has a high inflow of cash.

Reasons For Different Intrinsic Values

The intrinsic values for the FCFF and FCFE are different because the free cash flow to the firm values the equity stake and other claimholders in the business (bondholders, preferred stockholders, etc.). The FCFE takes into account only the equity stake in the firm.

References

Bajkowski, J. (2000). Evaluating using Price to Earnings Relatives. *American Association of Individual Investors*.

Chaplinsky, S. (2008). The Dividend Discount Model. *Darden Business Publishing*.

Lebdaoui, H., & Wild, J. (2016). Islamic Banking and Financial Development. *Review of Middle*