

The Fundamental Analysis: An Overview

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Abstract - In this paper we discuss the fundamental analysis by covering a number of studies in this field of research. This constitutes a useful tool to evaluate the companies' financial performance. Particularly, the discussion in this paper illustrates how this kind of approach can help in analyzing a companies' stock price. Additionally, a debate on its potentialities is also provided.

Keywords – Fundamental Analysis, Return on Equity, Return on Investment, Price Earnings Ratio, Price to Book Value

1. Introduction

This paper focuses on the important issue of fundamental analysis, where a selection of ratios is discussed on a long-term basis. Our study aims to provide a critical analysis of the state of the art of the relevant literature.

Generally speaking, the fundamental analysis examines the companies' economic and financial reports, including all qualitative and quantitative information, in order to determine its value. While typically this method is used to evaluate the real value of traded stocks, it can also be applied to any other kind of assets. More specifically, it comprises an examination of the company's financial reports (such as profit and loss accounts and balance sheets) in order to analyze several financial indicators (such as, revenues, earnings, liabilities, expenses and assets). Such analysis is usually carried out by analysts, brokers and savvy investors.

While carrying out a fundamental analysis, investors usually use either or both of the following approaches:

- i) Top-down approach: in this case, the analyst investigates both international and national economic indicators, such as, GDP growth rates, energy prices, inflation and interest rates. The search for the best asset then trickles down to the analysis of the total sales, price levels and

foreign competition in a particular sector in order to identify the best company of the sector.

- ii) Bottom-up approach: in this method, the analyst starts the searching analysis within a specific sector irrespective of its industry/region.

The fundamental analysis is carried out with the aim of predicting company's future performance. It is based on the belief that the market price of an asset tends to move towards its "real value" or its "intrinsic value". Thus, if the intrinsic value of an asset is higher than its market value, there may be a situation where it is time to buy. Otherwise, investors should sell.

In the next section, the theoretical framework of the fundamental analysis is reviewed. The paper ends with a section where the main conclusions are drawn.

2. Theoretical Framework

With the aim of determining which stock an investor should buy/sell and at which price, two basic approaches can be conducted:

- i) Fundamental analysis, which postulates that stock markets may misprice an asset in the short-run but not in the long-run, where the "correct" price will be attained. Therefore, there is a long-term equilibrium to which every stock price will tend. Profits can be made by trading the mispriced asset and then waiting for the market to recognize its "mistake" and re-price it.
- ii) Technical analysis, which considers that all information is already reflected in the stock price. In this situation, the investor believes that (i) "the trend is his friend" and that (ii) sentiment changes predict trend changes. More specifically, investors' emotional responses to price movements lead to recognizable price chart patterns. The price predictions based on the technical analysis are just extrapolations from historical price patterns.

Investors may use one of the above-mentioned approaches or combine both of them. For example, as many fundamental investors use technical analysis to decide entry and exit points, some technical investors use fundamentals to restrict their portfolios, only to “good and financially healthy companies” (Menezes, 2010).

The choice of which approach (fundamental or technical) should be applied is determined by the investor's belief in different paradigms for “how the stock market actually works”. As noted above, the fundamental analysis bases itself on financial reports, which provide fundamental data for calculating financial ratios. In this context, each ratio allows for evaluating different aspects of the enterprises financial performance (Silva, 2009).

The fundamental analysis is mainly used by shareholders, who have largely surpassed the average annual return of the stock market. For example, the billionaire Warren Buffett, perhaps the most famous investor in the World, has repeatedly carried out this strategy, in opposition to the most commonly used investment strategies in Wall Street. He exploited bear markets and down stocks, a strategy that has made him the second richest person in the World. The reasons for the success of this strategy are five-fold:

- i) It allows the investor to identify companies with durable or long-term competitive advantages;
- ii) It is easy to implement;
- iii) It is a structured and consistent process performed on the basis of the available financial reports;¹
- iv) It is useful to select potential stocks to acquire, thus, facilitating the make-up of an investment portfolio;
- v) It allows the estimation of the intrinsic value or “real” value of the stocks. In fact, as stock markets are not perfectly efficient, there is always an opportunity to find undervalued stocks (Matos, 2009a, b).

Investors may use the fundamental analysis within different portfolio management styles:

- i) Buy and hold investors believe that latching onto good businesses allows the investor's asset to grow with the company. The fundamental analysis allows them to find “good” companies, so that they can lower their risk and the probability of wipe-out.
- ii) Managers may use the fundamental analysis to correctly evaluate “good” and “bad” companies. Eventually “bad” companies' stock prices may

move up and down more often than the “good” ones, thus increasing the volatility of stock prices and, therefore, creating opportunities to profit.

- iii) The economic cycle may also be useful to managers in order to determine the “right” time to buy or to sell.
- iv) Contrarian investors acknowledge that “in the short-run the market is a voting machine, not a weighing machine”. The fundamental analysis allows the investors to make their own decisions on the company's value, and to ignore the market.
- v) Value investors restrict their attention to undervalued companies, believing that “it is hard to fall out of a ditch”.
- vi) Managers may use the fundamental analysis to identify companies with future high growth rates.
- vii) The fundamental and technical analysis may also be combined together in order to get a broader picture of the company's performance.

Despite the above-mentioned advantages of the fundamental analysis, it is worthy to note that even in ideal conditions the fundamental analysis does not suggest a specific price but a range of prices.

Table 1 provides a brief overview of the most commonly used ratios in fundamental analysis while Table 2 reports the preferred methods used in USA.

Table 1. Most commonly used ratios in fundamental analysis

Prices	Shares	Profitability	Solvability	Efficiency	Market
PER-Price Earnings Ratio	EPS – Earnings Per Share	ROA – Return on Asset	CR – Current ratio	ART – Accounts Receivable Turnover	Free Float
DY – Dividend Yield	PBV – Price Book Value	ROE – Return on Equity	LR – Leverage Ratio	-	Index trading
PCF – Price Cash Flow	-	ROI – Return on Investment	LTD – Long Term Debt	-	Frequency Index
-	-	CT- Capital Turnover	IT – Inventory Turnover	-	-
-	-	EM – Earnings Margin	-	-	-

Source: Matos (2009a)

¹Benjamin Graham and David Dodd are considered the “parents” of the fundamental analysis. For an overview, the interested reader is referred to Graham (2003).

Table 2. Preferred methods of analysis in USA

Prices	Shares	Profitability	Solvability
Preferred method	EPS – Earnings Per Share	ROA – Return on Asset	CR – Current ratio
Alternative method	PBV – Price Book Value	ROE – Return on Equity	LR – Leverage Ratio

Source: Matos (2009b)

A method used by many analysts focuses in companies with significant profits. For investors, the *EPS* – Earnings per Share – is one of the most commonly used ratios in the fundamental analysis. It is calculated by dividing the Net Income of the period under consideration *NI*, by the Average of Outstanding Shares in the stock market *AOS* that is:

$$EPS = \frac{NI}{AOS} \quad (1)$$

An important aspect of the *EPS*, which is often ignored, is the level of equity which is necessary to generate the corresponding earnings (net income). For example, if two different companies have the same amount of *EPS* the most efficient one is the one which requires less capital to attain the same *EPS*. Additionally, investors need also to be aware of the accounting manipulation effects, which affect the earnings value. It is, therefore, important to rely not only on one specific ratio but also to combine all of them together.

Buffett and Clark (2008) argue that competitive advantages are crucial because companies with strong competitive advantages are more likely to generate higher earnings; hence, higher *EPS*.

Table 3 illustrates the historical evolution of the *EPS* for two different companies over ten years – Wal-Mart Stores Inc. (WMT) and Alcoa Inc. (AA).

Table 3. Evolution of *EPS* over 2000-2009 for Wal-Mart and Alcoa

Wal-Mart Stores, Inc	<i>EPS</i>	Alcoa, Inc.	<i>EPS</i>
Year		Year	
2000	1.4	2000	1.79
2001	1.44	2001	1.04
2002	1.76	2002	0.61

2003	2.03	2003	1.2
2004	2.46	2004	1.56
2005	2.72	2005	1.43
2006	2.92	2006	2.54
2007	2.16	2007	3.24
2008	3.35	2008	0.28
2009	3.72	2009	1.06

Source: <http://moneycentral.msn.com/home.asp>.

As Table 3 shows, the evolution of the *EPS* of the Wal-Mart is more consistent than the Alcoa one. In fact, while Wal-Mart earnings have grown consistently every year, the same has not occurred to Alcoa, which has evidenced several oscillations in the *EPS* over the period under consideration. Volatility is, thus, higher in Alcoa than in Wal-Mart.

On the other hand, a competitive and long-lasting company usually presents a high *ROE* – Return on Equity – which is calculated dividing the Net Income – *NI* – of the company by the Shareholders Equity – *SE*, as given by:

$$ROE = \frac{NI}{SE} \quad (2)$$

This ratio can be interpreted as a measure of the company's efficiency. However, it has also some drawbacks. For instance, when a company pays dividends, there is a decrease of its equity and a sharp increase in this ratio, which does not reflect the real value of the firm. In this case, it might be more appropriate to calculate the *ROI* – Return on Investment – in order to evaluate the efficiency of an investment or to compare the efficiency of a set of different investments. This ratio is expressed as:

$$ROI = \frac{GI - CI}{CI} \quad (3)$$

where *GI* denotes the Gain from Investment and *CI* the Cost of Investment.

If an investment does not have a positive *ROI*, or if there are any other alternatives with potentially higher *ROI*, then the investment should not be undertaken. Given its versatility and its simplicity *ROI* became a very popular metric.

According to Buffett and Clark (2001, 2002, 2008), persistent and competitive companies show in general low debts in the long-run. They argue that

these companies would never contract debts five times more than their profits.

It is worthy to note that a company with long-lasting competitive advantages can increase prices as a result of the increase in the production costs. This means that the company's value and its stock prices keep pace with inflation.

Additionally, companies that do not pay dividends are more likely to keep their returns in the company and free to use them in order to increase future net earnings. This may yield to an increase in stock prices, leading to greater profits.

The best opportunity to buy a stock occurs when there is a negative reaction to bad news in the market. According to the literature and to practitioners, after purchasing investors should keep their positions, allowing the increase in profits accrue till stock prices rise. This is the method used by Buffett to create his fortune.

Another metric, the P/E – Price Earnings Ratio of a stock – is a measure of the price per share weighted by the annual net income per share. The P/E ratio can be, therefore, calculated by dividing the company's market value by its total annual earnings:

$$\frac{P}{E} = \frac{PS}{EPS}, \quad (4)$$

where PS denotes the price per share and EPS is defined in expression (1). Basically, it reflects the capital structure (equity *versus* liabilities) of a company and is mainly used for valuation. In this sense, a higher P/E means that investors are paying more per each unit of net income; thus, the stock is more expensive when compared with one with lower P/E . It can also express how many years will be required to pay back the discounted purchase price. Another interpretation of this ratio is as the demand for a company share.

The inverse of the P/E ratio is known as the earnings yield, which is an estimate of the expected return from holding the stock if certain restrictive assumptions hold. The earnings yield is quoted as a percentage, allowing easy comparisons with bond interest rates. Generally, earning yields are higher than the yield of risk-free treasury bonds, reflecting the additional risk associated with equity investments.

Finally, the price-to-book ratio, or P/B , is a metric used to compare a company's book value to its current market price. Book value is an accounting term, which refers to the portion of the company held by the shareholders; in other words, it corresponds to the company's total tangible assets less its total liabilities. It can be calculated according to two different methodologies. In the first one, it is estimated by dividing the company's Market

Capitalization – MC , by the company's Total Book Value TBV :

$$\frac{P}{B} = \frac{MC}{TBV}. \quad (5)$$

The second method consists in dividing the Stock Price per Share – SPS by the Shareholders Equity per Share – SES (*i.e.* the book value is divided by the number of shares).

$$\frac{P}{B} = \frac{SPS}{SES}. \quad (6)$$

Like most ratios, P/B substantially varies across different sectors. Thus, a company which requires more infrastructure capital (for each dollar of profit) will usually trade at a much lower P/B ratio than, for example, a consulting firm. A sector where P/B is commonly used is in banking. The reason for this lies in the fact that most assets and bank liabilities are constantly traded in stock markets.

It is worthy to note that the P/B ratio do not, however, directly provide any information about the ability of the firm to generate profits or cash to shareholders.

For companies in distress, the book-value is usually calculated without the intangible assets, which would have no resale value.

This ratio is also known as the market-to-book ratio or the price-to-equity ratio (which should not be mistaken by the price-to-earnings ratio). Its reverse is called the book-to-market ratio.

3. Conclusions

This paper provides an overview of the fundamental analysis, stressing out the importance of long-term investing. As mentioned above, the fundamental analysis requires that the investor uses qualitative and quantitative information in order to identify companies which have good financial performance and, hence, strength to face the future. This is considered a cornerstone of investing.

Though technical and fundamental analysis bases on past events, they cannot however guarantee future results. Both appear to be important tools for investment decisions. However, since the fundamental analysis bases on a plethora of company's accounting reports, covering the most important financial aspects of a firm, we believe it is more suitable for long-term investing strategies.

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