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## Article

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# STRATEGY OF STOCK VALUATION BY FUNDAMENTAL ANALYSIS

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## **Abstract:**

Common stock valuation presents one of the most complex tasks in financial analysis. When it attempts to answer on question: „what causes stock price movements? “Then the answer would not relate only on economic factors. There are numerous factors that affect the stock price and they are almost impossible to predict. As one of the best ways to fight against many factors that make the uncertainty, arises fundamental analysis. Fundamental analysis is one of the most widely used methods for estimating price movements of securities which essentially analyses the impact of micro and macro-economic factors on the business of the corporation in order to predict future economic and financial effects. Fundamental analysis also examine various financial statements with the aim to asses a real value of company's stock. This work has the task to systematize knowledge about fundamental analysis, so it can serve as a good base for future research.

*Key words:* fundamental analysis, financial indicators, intrinsic value, discount models, stocks.

*Jel Classification:* G10

## **INTRODUCTION**

Fundamental analysis is considered to be one of the easiest ways of companies valuation. The main aim of fundamental analysis is to reveal the actual current value of the company. One of the main aims of fundamental analysis is prediction of future profits, dividends and the risk in order to calculate the true value of the stocks. It is not enough just to find a successful business, it is necessary to find companies that worth more than other investors estimate.

Important role in fundamental financial analysis play financial ratios. Financial ratios are used for compare of companies that perform the same or similar activity and which are roughly the same size. According to Abardanell and Bushee (1997) for analysts there is economic justification to trust in many (not all) fundamental

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indicators. Ultimately, their work shows macroeconomic variables such as inflation, GDP, etc. condition the relationship between fundamentals and future earnings. The same authors (1998) proved that the fundamental analysis can be used to predict future abnormal returns. Reinganum (1988) examined 222 companies whose stock price has increased extremely and has proved that it is possible with the help of nine combinations of fundamental and technical variables to identify extreme winners. Reinganum investigated that the extreme winners have a low P/B ratio, the recent positive news in returns and increasing price momentum. Mukherji, Dhatt and Kim (1997) investigated that fundamental variables on stocks in Korea were positively related to book-market, sales-price, and debt-equity ratios, they were also negatively related to firm size, and not significantly related to earnings-price ratio or beta. According to Yu-Hon and Mole (1998) more than 85% foreign exchange dealers in Hong Kong rely on both fundamental and technical analysis for predicting future rate movements at different time horizons.

There are two approaches to the security analysis: top down approach that represents an investment strategy that is based on the analysis of the economy in general, and then analyzes the sectors and companies inside. Another approach is called bottom up approach and presents a strategy where investor first focuses on a particular company, exploring the business model and growth prospects. Security analyst deals with the past, present and future of the company. The fundamental feature of fundamental analysis is that the actual value of company meets their financial characteristics, then the possibilities of growth, the amount of risk and cash flows. Fundamental analysis can be defined as an attempt to calculate the discounted present value of all payments that the investor will receive from some stocks. Each movement from that level indicates that the stock is overvalued or undervalued. Therefore, each investor is interested in buying stocks with a market value less than the true value. The theory that all stocks reflect all available information is called the theory of market efficiency. The theory of market efficiency suggests that it is useless to seek the help of fundamental analysis because they do not exist. Strong form efficiency states that market prices reflect all information. If we restrict ourselves to the tests carried out in research carried out by Barbić (2010) Croatian capital market does not meet the weak form of efficient market hypothesis.

## **IMPORTANCE OF MACROECONOMIC AND SECTOR ANALYSIS**

As stated earlier in this paper the main focus of fundamental analysis is to predict future earnings that stock will achieve. Since the company's success largely depends on the global economic situation. Fundamental analysts must consider the business environment within which company operates. Hondroyiannis and Papapetrou (2001) conducted a study in which they found that domestic macroeconomic activity affects the performance of the domestic stock market. There are sectors that are more sensitive to the state of economy in general and the sectors that are less sensitive. Flannery and Protopapadakis (2002) used extensive dataset to study the impact of macro conditions on equity returns. They found that six of the 17 macro variables are strong risk factor candidates: CPI, PPI, Balance of trade, Unemployment, Housing starts and Monetary Aggregate M1. According to Shiblee (2009) key factors that affect stock price behavior are: GDP, unemployment rate, inflation and money supply.

The key macroeconomic variables are:

*Gross domestic product* — presents a measure of total final goods and services produced within a country in a given period. Real GDP takes nominal GDP and corrects it for inflation. GDP can also be taken as a measure of success and strength of a country.

*Unemployment rate* — can be defined as a social phenomenon in which a part of the working-age citizens cannot employ appropriate to their abilities and qualifications. According to Gonzalo and Taamouti (2011) increase in the anticipated unemployment rate is in general a good news for stock prices. When unemployment rate is high, the Fed decreases the interest rate which in turn increases the stock market prices.

*Interest rate* — High interest rates reduce the present value of future cash flows, and contribute to the reduction of investment activities. In general decrease in interest rates will cause the withdrawal of funds from the debt securities into equity securities.

*Budget deficit* — presents the difference between government spending and revenues. Increasing the budget deficit mainly affects the capital market.

*Inflation* — before we define the term we recall that the price index measures the average price level. Inflation means a rise of price level in the general. One of the most common measure of inflation is the consumer price index known as the CPI. CPI is a measure of the average price change of the consumer goods basket and service that people pay in a certain period of time. Research conducted by Lifang, Paresh and Zheng (2010) reveal that unexpected inflation announcements negatively affect stock returns while expected inflation has very little impact in the announcement study. The research was conducted in the medium-term study.

*Sentiment* — Positive or negative sentiment will greatly affect the amount of traded securities, and the direction in which prices will move. Baker and Wurgler (2003) said that their main empirical finding is that the cross-section of future stock returns is conditional upon beginning of period proxies for investor sentiment. Specifically, when sentiment appears to be high, stocks that are likely to be relatively attractive to optimists and speculators and at the same time unattractive to candidates for arbitrage.

*Sector analysis*— is important as well as macroeconomic analysis. Zagreb Stock Exchange under the National Classification of Activities which conducts the Central Bureau of Statistics, Croatia categorizes sectors in 38 categories. Each sector is variously sensitive to economic trends. Classifying companies by sectors will diversify specific risk. It would be ideal to buy companies that are negatively correlated with each other.

## **FINANCIAL STATEMENTS AND FINANCIAL INDICATORS**

The basic financial statements used in the analysis of securities are: balance sheet, income statement, cash-flow statement and notes to financial statements. These financial statements are the primary source of information for investors, creditors, suppliers, etc. It is important to always keep in mind that the people who write financial statements always want to achieve their attractive appearance to gain the confidence of creditors, investors, suppliers and all others who directly or indirectly doing business with the company. Extra precaution is always a good idea.

When it is talking about financial indicators, it is important to choose peer group. Peer group analysis means to establish a benchmark, but first it is important to choose

companies which perform the same activity (which compete in the same markets, have similar assets, and operate in similar ways).

Below are given financial ratios:

*Liquidity ratios* measure the ability of a company to meet its maturing short-term obligations. Liquidity indicators show ability of companies to avoid insolvency.

*Financial leverage ratios* measure how much is measured from foreign sources. *Financial leverage ratios* shows how many assets is financed by shareholders equity and how many from liabilities. *Profitability ratios* show the financial efficiency of the company's business or the ability or probability that some investment after the commissioning of a new capacity will achieve increased return on invested capital, or the investments will give a greater financial result with the least investment.

*Asset turnover ratios* measure how efficiently the company uses its resources. They point to the speed of circulation of assets in a business process. *Market value ratios* measure economic status of company on the marketplace. P/E ratio shows how many times the market price of the stocks is greater than the stock earnings. Many analysts believe that the stocks with low P/E ratio will find investor before than stocks with high P/E ratio. Stocks with high P/E ratio may be more favorable than stocks with low P/E if it is expecting growth of earnings and dividends. EPS calculates individual earnings per stock. P/B ratio (also known as Market to book ratio) calculates by dividing the market price of the stock with the stock book price. Some analysts believe that the book price can present limit below which the market price cannot fall.

**Liquidity ratios**

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$\text{Quick Ratio} = \frac{\text{Current assets} - \text{Inventory}}{\text{Current Liabilities}}$$

$$\text{Cash Ratio} = \frac{\text{Cash}}{\text{Current Liabilities}}$$

**Financial leverage ratios**

$$\text{Debt ratio} = \frac{\text{Total Liabilities}}{\text{Total assets}}$$

$$\text{Debt-equity ratio} = \frac{\text{Total Debt}}{\text{Total equity}}$$

$$\text{Long-term debt ratio} = \frac{\text{Long - term debt}}{\text{Long - term debt} + \text{Total equity}}$$

**Asset turnover ratios**

$$\text{Inventory turnover} = \frac{\text{Cost of goods sold}}{\text{Inventory}}$$

$$\text{Days' sales in inventory} = \frac{365 \text{ days}}{\text{Inventory turnover}}$$

$$\text{Receivables turnover} = \frac{\text{Sales}}{\text{Accounts receivable}}$$

$$\text{Days' sales in receivables} = \frac{365 \text{ days}}{\text{Receivables turnover}}$$

$$\text{Fixed asset turnover} = \frac{\text{Sales}}{\text{Net fixed asset}}$$

$$\text{Total asset turnover} = \frac{\text{Sales}}{\text{Total assets}}$$

**Profitability ratios**

$$\text{Profit margin} = \frac{\text{Net income}}{\text{Sales}}$$

Price-earning ratio

$$\frac{\text{Price per share}}{\text{Earnings per share}}$$

**Market value ratios**

<i>Return on assets (ROA)</i>	$\frac{\text{Net income}}{\text{Total assets}}$	<i>Earnings per share</i>	$\frac{\text{Net income} - \text{Divid. on Preferred Stocks}}{\text{Average Outstanding Shares}}$
<i>Return on equity (ROE)</i>	$\frac{\text{Net income}}{\text{Total equity}}$	<i>Market to book ratio</i>	$\frac{\text{Market value per share}}{\text{Book value per share}}$

## INTRINSIC VALUE AND DIVIDEND DISCOUNT MODELS

Intrinsic value is calculated on way to estimate the present value of expected cash flows of assets. Each asset has a value which is determinate by cash flows. In finding intrinsic value it is objective to find assets that is valued less what it should be according to the cash flow, growth and risk characteristics.

Intrinsic stock value  $V_0$  is defined as present value of all cash payments to investor, discounted according to risk adjusted interest rate  $k$ . If we estimate that intrinsic value exceeds the market value of the stocks, then the stocks are undervalued and good opportunity to buy if they are liquid.

$$k = r_f + \beta[E(r_M) - r_f]$$

$k$ = required rate of return on the stock

$\beta$ = systematic risk

$E(r_M) - r_f$ = risk premium on M

M= market portfolio

$$V_0 = \frac{E(D_1) + E(P_1)}{1 + k}$$

$V_0$ = intrinsic value

$E(D_1)$  = expected dividend yield

$P_1$ = stock price at the end of the year

$P_0$ = current stock price

From the formula above it can be set following formula which will represent dividend discount model (DDM) of stock prices:

$$V_0 = \frac{D_1}{1 + k} + \frac{D_2}{(1 + k)^2} + \frac{D_3}{(1 + k)^3} \dots + \frac{D_n}{(1 + k)^n}$$

The formula cited above excludes capital gains, but the reason is that capital gains will be determined by predicting dividend at the time when stock is sold. Simplified, we can assume that future dividend will pursue growth, which is labeled by  $g$ . Therefore, the equation is presented as follows:

$$V_0 = \frac{D_0(1 + g)}{k - g} = \frac{D_1}{k - g}$$

This equation is also called constant – growth DDM or Gordon’s model. This approach to valuation constraints to business subjects with stable growth rate, provided that there is important to understand two basic problems of the model.

- Growth rate of dividends last forever (assuming that earnings and revenues are growing at the same rate)
- What is a reasonable stable rate? The rate which is selected has to be less or equal to the rate of economic growth. Analysts do not agree about this rate due to uncertainties with estimates of expected inflation. The assumption that the growth rate of dividends has to be constant over time is difficult to achieve because of the earnings volatility.

Pages (1999) investigated whether the assumption of a permanent growth rate of dividends is consistent with a constant discount rate. He was not able to find a simple model with standard specification, that would be consistent with nonstationarity in dividends, so valuation in the present context stayed an open question.

Although DDM model can be commercially used in analysis, it is important not to forget the first point that was mentioned, and that is; *growth rate of dividends last forever*. In real life, the companies go through its life cycles in which dividends are paid different at different stages. In the mature profitability stage, company is slowing down since there are no profitable opportunities.

## CONCLUSION

Fundamental analysis uses future and present data in order to estimate the fair stock market value and to predict future value. It usually begins by analyzing the macroeconomic environment, analyzing sectors and then financial statements in order to determine the real value of the company. The aim of the analysis is not only to find a successful company; the aim is to find the companies that are worth more than other investors estimate. On the market, investors have equally available information, but only the most apprehensive are awarded for finding best opportunities. Many findings said that professional traders do not trade purely on the economic fundamentals, but they surely take them into account, when making decisions. Fundamental analysis is not a guarantee that the investor will realize high profits on stocks, but certainly has an important role in achieving this aim.

The purpose of this paper was to summarize a complete overview of fundamental analysis, and to serve as starting point of future research

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