THE CONTRIBUTION OF FINANCIAL INFORMATION FOR STOCK PRICE VALUE

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ABSTRACT

Economic globalization and the increasing competitiveness that organizations are subject, produced in general, profound changes in the design of information systems and in particular in the accounting systems. Seeking to reduce uncertainties about economies changes, there was an increase investigation on the critical factors for decision making, where accounting information is a key element. The constant changes of the environment generate higher levels of uncertainty and increase the complexity of managing organizations. Therefore, managers and investors need to measure the performance of organizations based on the adopted strategy and by using different perspectives of analysis.

This paper aims to highlight the importance of accounting and financial information on stock prices value, through a literature review based on the identification of: (*i*) the main studies on the impact of accounting and financial information in the formation of stock prices; (*ii*) the developed evaluation methodologies and variables used, based on accounting and financial reporting; and (*iii*) the problem of "earnings management" and financial analyst opinion, and their impact on stock prices.

The performed literature review allowed a contribution to a better understanding of the theoretical knowledge and commonly adopted practices that could work as a basis to future researches.

1. FINANCIAL INFORMATION AND STOCK PRICES

Over the years, several studies have been developed on the subject of “market based accounting research”. The objectives of those works can be grouped according to their nature in (Pirie and Smith, 2008):

- Explanatory studies: focus on the relevance of accounting information to explain the variation in share prices over time and in different markets;
- Predictive studies: focus on the ability of accounting information to predict prices and future profitability of shares.

1.1. Explanatory Studies

These studies, investigate the relevance of financial information to explain the change in share prices. To this end, this stream of investigation identifies the financial variables with greater explanatory power and accounting policies with an effect on the variation of stock prices (Pirie and Smith, 2008). Next, we present the main results obtained on those studies:

- Clubb (1995) found that capital markets react more to information on earnings than to cash flows. The information on dividends influences the market reaction and is related to the cash flows generated in order to guarantee the desired level of dividends. Another result, was the evidence that continued payment of dividends over time influences market behaviour;

- Donnelly and Walker (1995) showed that share prices were related to the expected business income in the following year, and also that U.S. market anticipate much earlier that effect than the United Kingdom market;
- Green et al (1996) found that current residual income (treasury method) strongly explain the market-to-book premium (shares prices less equity book value);
- Ariff et al (1997) showed that changes in unexpected earnings have a strong effect on share prices. For each increase unit in earnings, there is in the same direction, a change of about 75% in the share price;
- Collins et al (1997) made a longitudinal study with a period of 40 years, where they investigate the importance of earnings and equity book value in the formation of share prices. The authors created a regression model that aimed to explain stock prices with companies' level of earnings and equity. The evidence showed that the explanatory power of equity book value has increased over the years when compared to earnings;
- Rees (1997), with a sample of industrial and commercial firms in the UK, linked the price to book value and residual income (treasury method) with stock rates and found that, those variables explained more than 50% of the variations. Looking beyond, they also explore the effect of indicators, such as dividends, debt and investment expenditure. The evidence showed that earnings distributed as dividends had a greater impact on share values than the level of retained earnings and, finally, that the level of investment was positively related to securities market value;
- Barth et al (1998) verified the importance of equity book value to explain stock prices in contrast to earnings, particularly in firms that filed bankruptcy. Using a sample with more firms, regardless of their financial situation, they also verified that, as firms' financial health is getting worse, book value explanatory power increases, and earnings decreases. Finally, they found that in industries where intangible assets are important, earnings have a better explanatory power, while in other industries was equity book value that better explained share prices;
- Hand and Landsman (1998) related stock prices not only with book value and earnings, but also with dividends and net capital contributions. They concluded that these variables explained more than 80% of prices variation and that the distribution of high dividends related to good prospects of future residual income, especially in companies with a weaker financial position in the present;
- Langli and King (1998) related equity book value and earnings with share prices in United Kingdom, Germany and Norway markets. In their model, the two accounting variables explained more than 70% of prices variation in the United Kingdom, 60% in Norway and 40% in Germany, what reflects the differences in their accounting systems. At the same time, they observed that equity book value was more significant in explaining share prices in Germany and Norway than in the United Kingdom;
- Frankel and Lee (1999) made their investigation on the explanatory power of the two main accounting variables using data from 20 countries, including three regions, North America, Europe and Asia – Pacific, and through a regression model based on general residual income

model, reported book values and earnings forecasts, in order to estimate share prices. This estimative was included as an explanatory variable in another model, relating share prices with book value and earnings. They concluded that the model explained 88% of the variations in the U.S. and 72% in other countries;

- Bao and Chow (1999) analysed China listed companies, which had an obligation to prepare financial statements based on International Financial Reporting Standards (IFRS). They concluded that earnings and equity book value based on IFRS, explained better the behaviour of the stock market, and that the explanatory power of share prices by these accounting variables, increases over time;
- Graham and King (2000) related share prices with current book value and current residual income using data from various Southeast Asian countries: Indonesia, Korea, Malaysia, Philippines, Taiwan and Thailand. The coefficients of both variables were relevant in all countries. The explanatory power of the model varied significantly from 24% in Taiwan, to 55% in Thailand and 90% in the Philippines. They also demonstrated that more conservative accounting system were less value relevant;
- Pirie and Smith (2008) studied Malaysia companies using a set of empirical models based on Ohlson model. They found that equity book value and earnings explained more than 70% of prices variation. Also that, by introducing the dividends and next year expected earnings, the explanatory power of the model would increase. In other way, the introduction of capital contributions as a variable had no influence.

In summary, on these investigations there was a great concern on the identification of which variables have greater significance to explain the behaviour of capital market and the formation of share prices. In addition, another common concern on these studies was to evidence the importance of variables analysis over time and based on firms' financial health evolution. The effect of different accounting systems cultures was also explored.

1.2. Predictive Studies

In this stream of investigation, the main objective is to assess whether accounting information helps to forecast future value of a share or the probably return on investment. To this end, the predictive studies seek to identify models based on accounting/financial variables which had greatest predictive power and, in parallel, if the analyst information have a predominant role, or not, in the formation of future share prices (Pirie and Smith, 2008).

We can summarize the main results obtained in this stream of investigation, as followed:

- Frankel and Lee (1998) found that there was a strong correlation between analyst earnings forecasts, estimated through the residual income, and the verified share prices. These predictions explain more than 70% of the variation verified in market value of U.S. nonfinancial firms. They also showed that in a long-term the creation of portfolios based on value-to-price

could generate more than twice of the return of portfolios based on the book-to-value. In addition, the creation of portfolios that combine the value-to-price with analyst expectations would increase further stocks return;

- Dechow et al (1999) investigated a set of empirical models based on Ohlson model to estimate the future stock prices value, and found that the developed models could explain 40% to 60% of price variations. Also found that the explanatory power of these models was slightly higher than the model based on next year expected earnings. By the constitution of portfolios, they found that the models where analyst expectations were not included, had a better predictive power;
- McCrae and Nilsson (2001) analysed the Swedish capital market and the ability of residual income forecasting models and Ohlson forecast model, with and without analysts' forecasts effect. They found that the Ohlson model had a higher predictive power and that analyst opinion increases the prediction ability of stock prices in both models;
- Ferreira et al (2008) analysed the predictive power of three models, residual income, abnormal earnings growth and free cash flow, in firms listed on the Sao Paulo Stock Exchange (BOVESPA) during the period 1995 to 2002. They concluded that between 1995 and 1999 the residual income model had a greater ability to forecast stock prices, but from 2000 the abnormal earnings growth model gained supremacy over the residual income model. It should also be noted that in all the years the free cash flow model showed a lower ability to predict prices compared to other two models.

Thus, these studies showed the variables and models with higher relevance on predicting future stock prices. The studies used mainly the Ohlson and residual income models. However, contradictory findings were observed regarding the impact of analyst opinions on securities markets prices.

2. MAIN MODELS AND VARIABLES USED:

The explanatory studies primary objective is to segregate the accounting/financial variables that better explain the value of stock prices, including earnings, equity book value, dividends, annual cash flow, assets value and debt value.

The predictive studies intended to assess the predictive power for future stock prices, and normally, they use business valuation methods to estimate the future price of shares. According to several authors in particular, Damodaran (2005), Brealey and Meyers (1998), Ross et al (2002) and Neves (2002) these methods, considering the used variables and calculation formulas of the different models, can be organized into the following approaches:

- Dividends (Gordon, 1956; Malkiel, 1963, Fuller and Hsia, 1984): Models of Gordon, Half, Malkiel and Dividend Discount Model;
- Present Value of Growth Opportunities (Modigliani and Miller, 1961);
- Abnormal Earnings (Stewart III, 1991): Residual Income Model - Market Value Added and Treasury Method*;*

- Discounted Cash Flows (Meyers, 1974; Rappaport, 1986 and 1998, Jensen, 1986; Damodaran, 1996): Free Cash Flow to Firm, Free Cash Flow to Equity, Adjusted Net Value.

More recently, Ohlson (2005) developed the so-called Abnormal Earnings Growth model, which brought a new approach to forecast future stock prices through the intersection between financial information, based on quantitative and qualitative variables.

2.1. Dividends approach:

Over the years, several models have been developed for evaluating securities based on the principle that dividends are the main income for investors. However, the general model of evaluation, takes also into account that small investors can benefit from two types of income: capital gains and dividends.

General model:

$$P0 = \frac{D1}{(1+Ke)} + \frac{P1}{(1+Ke)}$$

where: P0 = securities present value considering getting dividends and a capital gain at the end of the period, in order to guarantee a certain return, D1 = dividends at the end of the period; P1 = stock price at the end of the period, and Ke = expected return.

However, since is expected that companies operate under the assumption of continuity, the more distant is the period of securities disposal, the more capital gain will tend to zero and lower will be the influence of its current value (Gordon and Shapiro, 1961):

Gordon Model:

$$P0 = \frac{D0 \times (1+g)}{(Ke - g)}$$

where: P0 = securities present value considering getting perpetuity dividends and a constant growth rate, in order to guarantee a certain return, D0 = dividends for the period 0; Ke expected return and g = constant growth rate.

However, there are several cases where companies, as a result of implemented business strategies, present in the early years a return with an abnormal growth rate, and when reaching their normal activity level, a growth rate basis.

For these cases Malkiel (1963) created a model with two activity periods: a first abnormal growth and a second with a constant growth rate:

Malkiel Model:

$$P0 = \frac{D0 \times (1+g1)}{(Ke - g1)} \times \left[1 - \frac{(g1 - gn)}{(Ke - g1)} \times \left(\frac{1 + g1}{1 + ke}\right)^{T - 1}\right]$$

where: P0 = present value of the title considering getting dividends over a period of abnormal growth and a constant growth rate from one point to guarantee a certain return, D0 = get dividends at time 0; Ke = Expected return; g1 = abnormal growth rate; gn = growth rate constant and T = Number of years of abnormal growth.

Finally, Fuller and Hsia (1984), created another model that predicts the possibility of stock prices valuation considering three stages of growth and in order to take into account the progressive evolution of activity over the years until it reaches cruising speed. This method was called Half Model:

H (Half) Model:

$$P0 = \frac{D0}{(Ke - gn)} \times [(1 + gn) + T1 \times (g1 - gn) + (T2 - T1) \times (g2 - gn)]$$

where: P0 = present value of securities considering getting dividends in 3 growing seasons, in order to guarantee a certain return, D0 = dividends get at time 0, Ke = expected return; g1 = abnormal growth rate; g2 = growth rate through; gn = Growth rate constant T1 = number of years of abnormal growth and T2 early years of steady growth.

Also, from dividends point of view it could be used the dividend discount model, which consists in the actualization of cash flow from the annual dividends, and establishing a constant growth rate from a certain period, for earnings distribution (which origins the so-called residual value). This method is normally used when different dividends values are estimated in each financial year during the first estimated years.

Dividend Discount Model:

$$Equity\ Value = \sum_{i=1}^{n} \frac{DPS}{(1 + Ke)^i} + \frac{RV}{(1 + Ke)^n}$$

$$With\ Residual\ Value = \frac{DPSn+1}{Ke - ge}$$

Present Value of Cash-Flows

Where: ge = Growth rate of equity forever after year n.

We can conclude that in this approach, it is the income distribution to investors that will determine the future value of securities.

2.2. Present Value of Growth Opportunities approach:

This approach is based on the valuation model developed by Modigliani and Miller (1961), in which investors may prefer to receive dividends, if they can improve the capital return by that way, rather than investing them consecutively in the company. To help this decision making, was developed a model for the companies' evaluation based on their growth opportunities (PVGO):

PVGO:

$$P0 = \frac{EPS}{Ke} + \underbrace{\frac{ROE - Ke}{Ke} \times \frac{EPS \times (1 - d)}{Ke - g}}_{PVGO}$$

In this model, the value of the security depends on:

- Generate income for share, without the effect of growth in activity (EPS);
- Abnormal profitability of the company (ROE) as a result of return demanded by investors (Ke);
- Where ROE> Ke, investors should not require dividends because the company will b able to invest in projects with higher returns, what will result in a higher future income through gains;
- Where ROE < Ke, investors should require dividends because the company can not invest in projects with higher returns, what results in a more attractive income through dividends.

We can conclude that in this approach, the future price of securities is clearly dependent on companies' ability to generate a higher return than normal value, and also of the income distribution policy related to greater or lower future ability to generate abnormal earnings.

2.3. Abnormal Earnings approach:

Estimated securities value will depend on the ability of business to generate results that can bear the cost of invested capital. Therefore, these models take into account not only the level of profitability for shareholders, but as well, the amount of investment needed for normal activity. There are two models that differ by created value analysis:

- Business ability to create value for investors, both owners and financial institutions (Market Value Added model);
- Business ability to create value for owners (Treasury Method).

These models take into account companies' ability to generate results higher than the cost of capital used to finance the assets necessary for supporting normal activity. To assess this ability Stewart III (1991) introduced the concept of Economic Value Added, which although very similar to the indicator Residual Income, previously introduced by Anthony (Anthony and Govindarajan, 2001), quickly became an international benchmark in measuring the creation of value:

Economic Value Added:

$$\mathbf{EVA = Operational\ Income \times (1 - t) - Net\ Assets * WACC}$$

where: t = income tax rate and WACC = weight average cost of capital.

WACC shows the cost of capital used by a company for financing its activities, considering the cost and the relative weight of each financing form. WACC can be obtained from the following formula:

$$\mathbf{WACC = (E / A) \times Ke + (D / A) \times Kd \times (1 - t)}$$

where: CP = Equity, A = Net Assets (Total Investment), Ke = Cost of Equity (the listed company is usually calculated using the Capital Asset Pricing Model (CAPM), P = Paid Debts; Kd = Cost of Financing (rates negotiated with creditors) and t = rate of taxes.

Thus, the estimated value of securities will result, in large extent, on the ability of companies to generate over time, income higher than the cost of activities' funding, which creates value for the owners. The methods on this approach include the Value Added Market and the Treasury Method, which are based on the premise that in determining the future prices should be taking into account assets current value and abnormal earnings, for facing the expected costs of funding sources.

Market Value Added (MVA):

$$MVA = A \text{ (year 0)} + \Sigma \frac{OI \times (1 - t) - A * WACC}{(1 + WACC)} - \text{Debts (year 0)}$$

Treasury Method:

$$\text{Value of Equity} = E \text{ (year 0)} + \Sigma \frac{NI - Ke * E}{(1 + Ke)}$$

In MVA it will be measured the ability of net operating income to generate the sufficient results to support the return demanded by investors, owners and financial institutions, and taking total investment into account.

In the Treasury Method it will be measured the ability of net income from all activities of the company (including operational activities, financial and extraordinary) to overcome the return expected by the owners, and considering only their investment part.
Comparing to the perspective in present value of growth opportunities, which compares the profitability to generate with profitability demanded by shareholders, the perspective of abnormal earnings determine the value of securities based on companies' ability to create value that exceed the cost of capital of the investment required by companies' activity.

2.4. Free Cash Flow approach:

This approach is based on the study of future cash flows, to determine companies and securities current value, through the following methods: Free Cash Flow to Firm, Free Cash Flow to Equity and Adjusted Net Present Value.
The difference between the methods is basically on the constitution of the cash flow, on the discount rate used during the period of analysis and in more specific situations.

The method of Free Cash Flow to Firm (FCFF) is the estimation of companies' ability to generate future cash flows. These cash flows should pay all stakeholders of the company (equity and external capital). The FCFF is appropriate to evaluate companies whose predictions are supported by debt ratio stability and, consequently, on the average cost of capital.
The total company value is estimated by discounting the cash flows generated by operating activities that should be able to pay the equity and external capital demanded returns. To this value, it should be added the value of assets not allocated to operating activity, such as property for lease, treasury and

investment, which allow investors to benefit from an extra income. The calculation process of the cash flows is as follows:

+ / - Operational Income * (1 - t)

+ Non-Cash Expenses

- Variation of Investment in Working Capital

- Variation of Investment in Fixed Capital

= Operating Cash Flow

+ / - Variation on Non-Operating Assets

= Activity Free Cash Flow

Free Cash Flow to Firm:

$$Equity\ Value = \sum_{i=1}^{n} \frac{OFC}{(1+W)^i} + \sum_{i=1}^{n} \frac{NO\ FC}{(1+W)^l} + \frac{RV}{(1+W)^n} - Debt\ (year\ 0)$$

$$With\ Residual\ Value = \frac{FCn+1}{W-gu}$$

Present Value of Cash-Flows

In practice, projections are made for n periods where is expected that the company will have a strong growth, and assuming from the last estimated year a constant growth rate. This is, because it is considered that activity reaches its cruising speed, from that period. Finally, equity value is obtained by the difference between the company value and the debt value:

Equity Value = Company Value – Debt Value

It should be mentioned that because cash flows are being calculated by considering the total capital invested, in order to verify existing funds to reward shareholders and creditors, the discount rate used is the weighted average cost of capital (W) and the used residual value growth rate (gu) is the one from a company with no debt (Neves, 2002).

The method of Free Cash Flow to Equity (FCFE) consist in the residual cash flow after all financial obligations are fulfilled, including variation of investment in working capital, variation of investment in fixed assets and interest debt. This method is recommended for estimating the value of companies with higher growth rates in a short term, as it takes changes on paid liability into account.

The FCFE represent the net financial surplus generated by operating, investment and external financing activities, which come available to the capital holders according to the following formula:

+ / - Net Income

+ Non-Cash Expenses

- Variation of Investment in Working Capital

- Variation of Investment in Fixed Capital

– Principal Repayments

+ Net Debt Issues

= Free Cash Flow to Equity holders

Free Cash Flow to Equity:

$$Equity\ Value = \sum_{i=1}^{n} \frac{NCF}{(1+Ke)^i} + \frac{RV}{(1+Ke)^n}$$

$$With\ Residual\ Value = \frac{NCFn+1}{Ke - ge}$$

Present Value of Cash-Flows

The projections are made with the same principles of the previous method, calculating the free cash flows during periods of higher growth. When activity is stable, it is accepted from the last estimated year a constant growth rate.

In this model, free cash flows represent the available funds to capital holders, so equity cost (Ke) is used as the discount rate and the residual value growth rate (g) is the sustainable growth rate based on equity profitability.

The last method is the Adjusted Net Present Value (ANPV) and represents cash flow generated, by one side from business economic viability without the effect of financial structure, and on the other hand by tax savings according to the selected funding sources.

It is the ideal method to evaluate companies with high business diversification, since it will permit to evaluate independently each business without considering the associated debt.

Financing is analyzed in a global way in the company and it is advisable to evaluate companies with higher liabilities. So companies' total value comes from the following cash flows:

+ / - Operational income x (1 - t)

+ Non-Cash Expenses

- Variation of Investment in Working Capital

- Variation of Investment in Fixed Capital

= Operating Cash Flow

+ / - Variation on Non-Operating Assets

= Activity Free Cash Flow

+ Value of tax savings

= Total value of the company

Adjust Net Present Value

$$Firm\ Value = \sum_{i=1}^{n} \frac{OCF}{(1+Ku)^i} + \sum_{i=1}^{n} \frac{NOCF}{(1+Ku)^i} + \frac{RV}{(1+Ku)^n}$$

$$With\ Residual\ Value = \frac{CFn+1}{Ku - gu}$$

Present Value of Cash-Flows

$$Debt\ Value = \sum_{i=1}^{n} \frac{t\ x\ FC}{(1+Kd)^i} + \frac{RV}{(1+Kd)^n}$$

$$With\ Residual\ Value = \frac{t\ x\ FCn+1}{Kd - gu}$$

Equity Value = Firm Value + Taxes Savings Value – Debt (year 0)

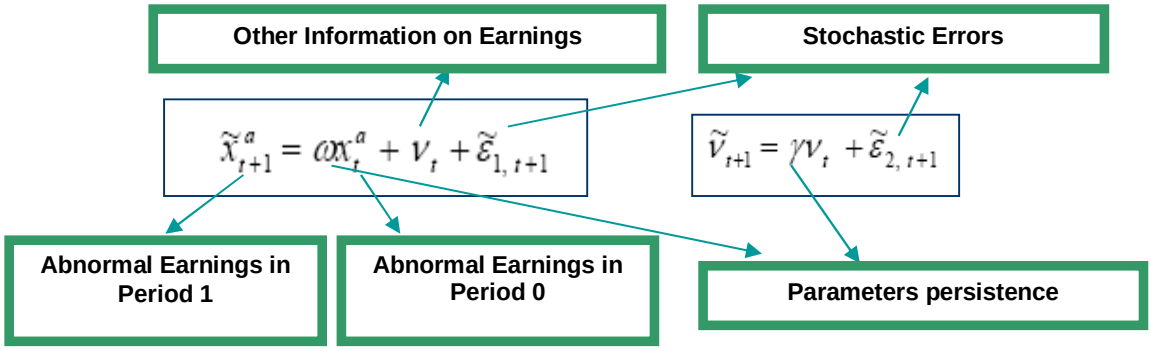
The discounted cash flows result from the combination of the following three effects:

- The value of operating assets without considering debt, is determined by net operating cash flows generated by those assets (OCF), and assuming a residual value (RV) when it reaches business cruising speed;
- The value of non-operating assets without considering debt, is determined by net non-operating cash flows generated by it (NOCF);
- Debt created value is determined by the present value of tax savings obtained plus the residual value that should represent the debt evolution on a constant rate that is equivalent to the growth on operating cash flow.

In this model, the discount rates used are: (i) to determine assets value, should be use the economic cost (K u - profitability that the business should be able to generate), as it is intended to verify its capacity to generate surpluses without considering the financial structure; (ii) to determine the value of tax savings should be used the cost of external capital (K d) that represents the market value of debt.

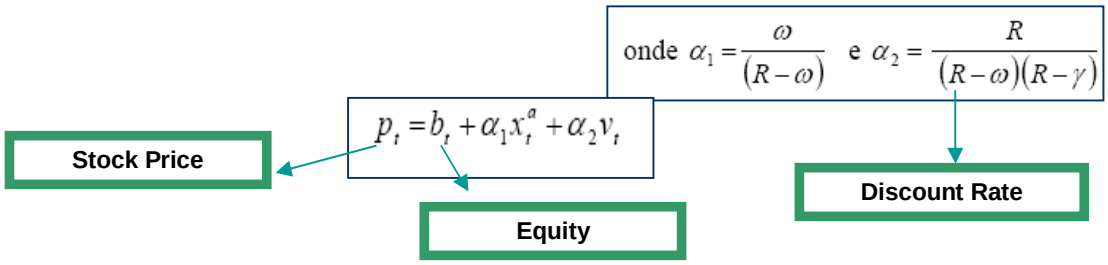
2.5. Ohlson Abnormal Earnings Growth Model:

The model is based on the assumption that abnormal earnings of a period are linked to the growth of abnormal earnings in the previous period, and also to the information on companies expectations observed at the end of the previous period.



Thus, the researcher created a relationship between the evolution of abnormal earnings for different periods **(Linear Information Dynamics)**, for what is not necessary to consider a constant growth rate over time - a major problem of most valuation models. Additionally, introduced the variable “other information” (typically the analyst expectations) that helps to optimize the predictive power of the model. Therefore, the evaluation function is as follows:

Evaluation Function



The Ohlson model is yet based in the following additional assumptions:

- The calculation of abnormal earnings is performed using the Residual Income method (based on the Treasury Method): Residual Income = Net Income (NI) - Ke x (Equity n-1);
- It is assumed that the equity of a period is a result of equity from previous period plus the net income adjusted for dividends paid: Equity (n +1) = Equity (n) + NI (n +1) - DIV (n +1).

Ohlson intended with his model, to explain estimated share prices, based on companies' ability to generate abnormal earnings and analyst opinions regarding the evolution of securities.
Additionally, he tried to establish relationships between the results of each exercise in order to avoid establishing perpetual growth rates, which represent one of the major problems on the other methods. Therefore, the abnormal earnings growth model is one of the most used models in recent studies on the formation of stock prices.

3. ANALYST OPINIONS AND THE FORMATION OF STOCK PRICES

In continental Europe, reports on listed companies are rarely made by "independent" analysts. In almost cases, those who produce the report (not always an analyst) works for an intermediary. Thus, the question that arises is whether the views of analysts should be considered as a reliable indicator of expectations about quoted companies.
Fabrizio (2002) refers to the existence of conflicts of interest, because often, the analyst works in intermediaries with a direct interest in market dynamics: investment banking activities; traditionally commercial banking services; brokerage and in entities issuers of financial instruments.
To prove the above, we show the example of Italian analysts' reports, between 1998 and 2001, where the vast majority recommended the purchase as a way to improve market dynamic.

Table 1 – Analysts' reports from 1998 to 2001 in Italy

Recommendation	1998	1999	2000	2001
Buy	59.1	57.5	58.2	48.3
Hold	25.5	26.7	26.1	33.6
Important News	9.9	9.1	9.6	9.0
Sell	5.5	6.6	6.1	9.1
Total	2,288 (100.0)	2,260 (100.0)	2,368 (100.0)	5,912 (100.0)

Source: Fabrizio (2002).

For example, the definition of price targets in Portugal is performed as follows:

- The Portuguese Securities Markets Commission (CMVM) in its Book No.14 on Securities Markets, issued in August 2002, specifically in the article "Methods of calculating price targets and recommendations for investments", suggests the use of free cash flows and abnormal earnings methods;
- The research reports of brokerage firm Fincor contain estimations of price targets, considering the free cash flow to firm method. Predictions are performed with different rates for the weighted average cost of capital and with different growth rates;
- The price targets set by some banks, such as the Portuguese Commercial Bank and Portuguese Investment Bank do not mention the methodology used and the assumptions upon which the forecasts were made.

If we add the fact, that price targets periodically determined by several entities are reviewed without major changes to contextual assumptions, is undeniable that many questions arise about the seriousness of the information provided to the market.

Thus, it is urgent to understand to what extent the views of specialized financial institutions in the national capital markets, may be an indicator of reference on issuers entities and evolution of their securities.

4. THE EFFECT OF "EARNINGS MANAGEMENT"

In recent years, the financial scandals with large firms in the U.S. that were considered models of business success, such as Enron, Tyco and Worldcom have reinforced the need for the existence of accounting and financial information accurate for the investor.

In addition, several studies investigate the preparation of financial information and the origins of less reliable data. Viana (2005) and Mendes and Rodrigues (2007) refers to a set of causes for the existence of earnings management, which derivate from the capital market, contracts, regulation, commercial aspects, accounting standards and from the relationship between capital property and management control.

The causes resulting from the capital market are:

- Providing a positive outlook about the short-term returns of the securities and achieve a lower cost of capital;
- Meet analyst forecasts in order to not negatively influence future expectations of stock prices;
- Avoid large increases of earnings, making it difficult to maintain the same level of success in future years;
- Provide overvalued earnings expectations when issuing new shares and as a result getting greater cash inflows to the company;
- Provide less positive results in situations of management by out, generating purchase prices of the securities for managers below the real value.

For the contracts we find the following facts:

- Often, the managers' remuneration is linked to supplements based on earnings and future share prices, leading to the provision of overvalued information;
- The negotiation of financing contracts may also lead to overvalue of financial information in order to reduce the company's financial risk and increase their bargaining power with the banks.

Concerning the level of regulation:

- In sectors with higher level of regulation, such as financial institutions, there may be a more tendency to issue financial information with greater degrees of solvency and liquidity;
- In larger companies there may be a negative disposition to earnings manipulation, trying to hide profitability and avoid the intervention of political authorities (for example, the oil sector) or the unions.

The commercial aspects that should be noted are:

- If the existence of financial information to demonstrate that economic and financial success will facilitate the achievement of larger businesses, as customers have increased guarantees, on the other hand, it can also help to a better negotiation power with suppliers and financers, since it demonstrates the company ability to fulfil the obligations on time.

In relation to accounting standards we verified that:

- The flexibility of rules may allow managers to select alternative methods or criteria for accounting recognition and measurement that will reflect the desirable company's image and not the true picture of business reality. It is the case of materiality and prudence principles or the estimated useful lives of tangible assets;
- The lack of regulations that follow the introduction of new contracts and financial instruments.

Finally, as for the relationship between capital ownership and management, we found that in companies where managers are different from shareholders (owners), likely it may exist a dissemination of higher earnings, because managers with variable remuneration think first on increasing their wealth and only next to create value for shareholders.

Some studies show, that companies with managers differing from owners are more likely to smooth results in order to keep their jobs and stable growth expectations for the business.

Thus, it is not surprising that over the years have been carried out several studies related to the importance of financial information on stock prices and based on “Earnings Management”. Some of those studies and their results are:

- Chow and Rice (1982) found that the negative opinion of auditors had a negative impact on stock prices;
- Ransom (1985) found that inventory and depreciation policies, constantly influenced firms’ earnings increasing the expectation with the content of information. They also found, that the lack of consistence on the used policies led to an increased volatility in stock prices and it had a higher effect on firms with more issued stock options;

- Opong (1995) proved that information on interim reports had a positive correlation with the formation of stock prices;
- Schleicher and Walker (1999) found that there was a positive correlation between the information and expectations highlighted in annual reports regarding firms' operations and finances, and the formation of stock prices;
- Schadewitz et al (2002) found that, when disclosed information was in accordance with the expectations, investors reacted on the day of publication of the report. When the information released was lower than expected, the market took another day to respond. Finally, when disclosed information was higher than expected, the market would take another three days to respond;
- Tonge et al (2003) studied the Enron case and concluded that the performance evaluation system was considering income as an indicator and not the value created. In addition, there was a great lobby capacity with the government and auditors which led to successive disclosure of false information;
- Kirschenheiter and Jorgensen (2003) found that managers of firms with less variance in cash flows published more information. Thus, firms with greater disclosure of information had also lower "betas";
- Chang et al (2006) found that, when firms managers certified their financial statements under oath, investors looked with greater certainty for businesses and it was reflected in better stock prices;
- Johnson and Schwartz (2005) evidence that firms, which advertised information through press releases prior to the issuance of management and financial reports, were getting higher stock prices;
- Davis-Friday et al (2005) observed that, in the Mexican firms which have decided to enter the U.S. market, their stock prices were explained essentially by the equity book value and earnings. Such evidence was related to the fact that Mexican investors are less concerned about the financial information due to less regulation in the Mexican law;
- Soonawalla (2006) found that in the case of joint ventures the aggregation of information had a negative impact on forecasting and on the value relevance of information available to investors. This evidence was more pronounced in the U.S. in a comparative analysis to the Canadian and UK reality;
- Malacrida and Yamamoto (2006) found that firms with higher levels of financial disclosures had less volatility on share prices. In the other hand, firms with lower level of disclosure were more volatility on stock values;
- Dedman et al (2008) carried out an analysis to the biotechnology/pharmaceutical sector where intangible assets have a key role and found that, the market reacted more to the disclosures about the amounts spent on research and development than to the disclosures on earnings.

CONCLUSION

This study proved the role of financial reporting in the formation of stock prices through a deep literature review on several investigations of international nature, and where were identified the most relevant financial variables, the models to estimate the future value of shares, the problem of price targets (calculation and analysts' opinions) and the impact of so-called earnings management.

We conclude that financial information is of great importance to explain the volatility of prices and in the preparation of future share prices. At the same time, it became clear that the analyst opinions and earnings management can contribute to the development of less reliable financial information, which could substantially harm the investors who use the capital market to implement their savings.

We also find that there is a lack of empirical studies on the Portuguese stock market, where financial variables, models, price targets and analysts' opinions are taking into account, in an equivalent way as developed in this work. Therefore, our commitment to the future is to develop that investigation and contribute to a better knowledge on the formation of stock prices on Portuguese market.

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