Qualitative and quantitative factors that determine the financial performance of companies listed on BSE

Author: Badea Mihaela
Coordinator: Prof. Laura Obreja Brasoveanu PhD

The Bucharest University of Economic Studies, Bucharest, 010071, Romania

Abstract
Researchers have always tried to provide a clearer picture of the company's performance in the context of the volatility factors that makes it difficult to predict a possible trend. The study's objectives are subordinated to the investor's interests, in order to help them choose the best investment alternative, using performance criteria. The current paper examines the company's performance through panel data regression models, using a sample of 40 companies listed in categories I and II of the Bucharest Stock Exchange, during 2003-2013. The results will highlight financial factors (quantitative), and the corporate governance factors (qualitative) that influence the performance of listed companies.

The concept of company’s performance
Although numerous studies have been conducted on this subject, the concept of "performance" could not be fully defined, but the literature has shaped well enough the idea. Thus, many authors have established management models that try to explain the performance and its correlation with companies' internal processes and strategies. Cross and Lynch (19881) introduced the "Strategic Measurement Analysis and Reporting Technique" - SMART model, also known as the "Performance Pyramid". The top of the

---

pyramid contains corporate mission, while the targets are placed at the bottom, so that strategies can be linked to the operations. At the bottom are four key levers: quality, delivery, processing time and cost. This system helps in modeling the company as an integrated economic entity. Kaplan and Norton (1992) developed the Balanced Scorecard model, containing financial and non-financial elements that lead to performance measurement by integrating its four perspectives: financial, customer, internal business, and innovation and growth. Neely (2002) established a new model called the "Performance Prism", proposing five interrelated perspectives of performance: the satisfaction of stakeholders, the contribution of stakeholders, the mix of strategies, the processes and capabilities and the measures and communication. The model can be applied to enterprise integrating both horizontal and hierarchical functions.

Concluding the literature review regarding the concept of performance of the company, we see that in terms of management, it is defined by a mix of interrelated strategies and objectives, in order to improve the quality of the business.

**Macroeconomic factors and Corporate Governance**

A significant role in influencing performance of companies is given the economic environment in which they develop. In other words, it is important to know the circumstances and dynamics of macroeconomic indicators that have direct impact on the policies adopted by the company. Although the way that companies are affected by the volatility of these factors differ according to their degree of adaptability or market stability, macroeconomic elements are considered external forces that constrain or encourage the growth potential of companies.

Considering that the case study refers to a sample of companies from different sectors, management decisions regarding indebtedness, imports or exports, pricing fluctuations depend on the inflation rate, interest rate, exchange rate or unemployment.

---

In terms of the impact on companies, moderate inflation has a positive effect by creating jobs and encouraging exports. The investments are also favored and it liberates an additional self-financing margin by reducing the burden of repayment of loans. Also, inflation leads to an increase of wages, respectively their weight in the value added, which means lower economic return. In terms of corporate accounting, inflation gives the illusion of making profit, increases the tax base and the distribution of dividends. Another negative aspect is that the increase of profits is done actually by increasing sales prices, rather than by lowering production costs, thus maintaining inefficient companies on the market. In Romania there was a significant decrease of inflation, from 15.3% in 2003 to 4.84% in 2007, due to shocks that occurred in the economy, respectively food price volatility, exchange rate, fuel prices. During 2008-2013 the inflation was unstable, currently reaching a value of about 4%. The causes of inflation are generated directly by food prices and energy prices, coupled with the depreciation of the national currency exchange rate. Energy consumption in higher cost of resources terms leads to additional costs for companies, which affects their performance.

Interest rate expresses the cost of borrowed credit and is closely correlated with inflation. Thus, when inflation increases, the central bank tends to increase the interest rate, in order to control the supply and demand in the economy, on which depends the evolution of prices. If the inflation rate decreases, the interest rate will decrease also, obtaining cheaper loans. This aspect is favorable for the companies’ investment policies, that generates a significant potential for growth. In Romania, the interest rate showed a maximum point in 2008, correlated with the beginning of the economic crisis, which means that firms have been constrained in terms of borrowing, being too expensive.

The exchange rate is the price of a currency expressed in another currency, resulting from the confrontation of supply and demand, having the characteristics of a market price. In Romania the exchange rate tended to depreciate over the period, which means the exporting companies were more advantaged than the importing companies.

---

However, the current account deficit indicates the predominance of imports, which means that firms were affected by the exchange rate differences.

In what concerns the unemployment rate, for specialized industries (which need qualified stuff), high rates of unemployment have a negative impact, those type of companies are forced to restrict their activities, fact that in time can lead to true financial disasters. On the other hand, if unemployment increases, this can have a positive impact for some companies, because they will perceive that there are enough resources available on the market, so they can offer lower wages, increasing the their profits, while if the rate unemployment falls, firms will have higher costs of hiring and retaining the workforce. In Romania’s case, the spread of the global economic crisis lead to an unemployment rate of 7.8%, which was maintained for long enough, currently reaching 5.2%. Given that labor availability have reduced mobility (it is difficult for workers to migrate from one sector to another), the cumulative increase of unemployment in various sectors leads to a generally high unemployment rate.

The basic role of corporate governance is to ensure that the company’s control level is healthy, able to represent the interests of investors and stakeholders. Companies that are in compliance with corporate governance requirements ensure transparency, which it gives credibility, reputation, profits, employment, sustainability.

In Romania the concept of corporate governance is still in the embryonic stage, meaning that there is not yet well developed in terms of the principles set by the OECD. Following the recommendation of the World Bank, the Bucharest Stock Exchange published the "Corporate Governance Code", which should be considered by listed companies. Romanian companies are generally reserved regarding the implementation of corporate governance policies, citing excessive implementation costs or loss of competitive advantage through the disclosure of certain information. However, the fact that some companies refuse to provide public information means a loss of potential investors who might be interested.

---

According to specialists, the theme of financial performance presented interest from different perspectives, depending on the activities that describe the company (management, marketing, human resources), mainly from the point of view of corporate finance and corporate governance. The literature retains many theories that supported the empirical studies through the years.

Table 1. Main theories of company performance

<table>
<thead>
<tr>
<th>Authors</th>
<th>Theory</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berle and Means (19329), Eisenhardt (198910), Jensen &amp; Meckling (197611), Shleifer &amp; Vishny (199712), Agrawal and Knoeber’s (199613)</td>
<td>Agency theory</td>
<td>The contradiction between the interests of managers and shareholders.</td>
</tr>
<tr>
<td>Jensen (200114), Freeman (198415), Stiglitz (201016)</td>
<td>Stakeholders theory</td>
<td>Maximizing the value of the company taking into account the interests of stakeholders.</td>
</tr>
<tr>
<td>Modigliani &amp; Miller (196117), Easterbrook (198418)</td>
<td>Signaling theory</td>
<td>Dividend signaling acts on performance.</td>
</tr>
<tr>
<td>Gordon (195919), Bhattacharya (197920)</td>
<td>“Bird-in-Hand” theory</td>
<td>Shareholders prefer the certainty of dividend payment instead of...</td>
</tr>
</tbody>
</table>

Empirical studies focusing on many years of research to validate theories helped future researches, in order to provide new solutions and new tendencies in terms of correlations. Hereunder we can see a synthesized table in which there are presented the main correlations of independent variables that explain performance, as they were found in empirical studies.

**Table no. 2 Main correlations that explain performance**

<table>
<thead>
<tr>
<th>Author</th>
<th>Subject</th>
<th>Independent variables</th>
<th>Correlation</th>
<th>Validated theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capon, Farley and Hoenig (1990)</td>
<td>The factors that determine the performance (meta-analysis)</td>
<td>ROIC</td>
<td>+</td>
<td>Not specified</td>
</tr>
<tr>
<td>Grullon, Michaely, Bernartzi and Thaler (2003)</td>
<td>Dividend - a sign of company maturity</td>
<td>Dividend Payout ratio</td>
<td>-</td>
<td>Signaling Theory</td>
</tr>
<tr>
<td>Bharadwaj, Challagalla,</td>
<td>Innovation and performance (meta-analysis)</td>
<td>Company’s age; managers’ age</td>
<td>-</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

From the empirical studies we found that the literature has provided an impulse to early researchers, in order to test correlations and the results were spectacular. Years of rigorous analysis and research work "under the microscope" of each fraction of the financial structure of the company revealed a number of positive or negative correlations between factors, depending on the period, the macroeconomic context and the homogeneity of the database.

Case Study and Results

In order to realize the econometric models that will test and highlight statistically significant correlations between selected variables, the database selected consists of 40 companies listed in categories I and II of BSE, from different industries. The banking sector was avoided, in order to prevent the results distortion (banks have specific structural capital) and to obtain correlations as statistically significant. The period of analysis is of 11 years, from 2003 to 2013, for each of the 40 companies, the frequency of

| Source: own processing |

---

| and Vincent (2004\textsuperscript{25}) | Determinants of financial performance | Dividend yield | + | Not specified |
| Costea (2011\textsuperscript{26}) | Profitability, liquidity and risk | Current liquidity, debt ratio | (+) current liquidity, (-) debt ratio | Not specified |
| Bolek (2013\textsuperscript{27}) | Transparency and Performance | Transparency Index | + | Not specified |
| Müller (2014\textsuperscript{29}) | Remuneration of board managers | CEO remuneration | + | Not specified |


\textsuperscript{26} Costea, V. –“ Determinants of corporate financial performance”, articol publicat in revista “Applied Financial Research”, nr.6, 2011.


\textsuperscript{29} Müller, V.O.-“ Do corporate board compensation characteristics influence the financial performance of listed companies?”, publicat in jurnalul Procedia – Social and Behavioral Sciences, Vol.109, ian.2014, pp.983-988.

Using the specified database, I obtained two econometric models using as dependent variables the net profit margin (MPN) and the total shareholders return (TSR). The independent variables used to explain the dependent variables are: EPS (Earnings Per Share), current liquidity, CEO remuneration, CEO’s age, ROIC (Return on Invested Capital), company’s age, dividend yield, corruption perception index (CPI), ROA and debt ratio.

For each data series introduced in Eviews 7.2, the histogram of normality was performed, and the stationarity was tested using the Augmented Dickey-Fuller test. Test values are lower than any of the critical values, which means that the data series is stationary. Descriptive statistics table illustrate that the series are not always normally distributed, being often leptokurtic (there is a deviation range of the extreme values from their mean).

From the correlation matrix as is observed both stronger and weaker correlation of the indicators, the information being useful in the formation of regression models, to avoid the presence of two or more of the strongest correlation indicators in the same pattern, thereby eliminating redundant terms of regression and obtaining a robust model.

Key correlations identified in the correlation matrix as follows:
- Positive correlation between net profit margin and ROA (79.34%);
- Positive correlation between ROIC and ROA (31.50%);
- Positive correlation between EPS and gross dividend yield (23.68%).

The two regression models were estimated by OLS technique (Ordinary Least Squared), resulting the following equations:

a) \( MPN = C(1) \times ROIC + C(2) \times LC + C(3) \times VARSTA_CEO + C(4) \times CPI + C(5) \times EPS + C(6) \)

b) \( TSR = C(1) \times REM_CEO + C(2) \times RD + C(3) \times ROA + C(4) \times VARSTA_COMP + C(5) \times GI + C(6) \)

Both models are synthesized in the table below:
Table no. 3 Comparison of regression models

<table>
<thead>
<tr>
<th>y = MPN</th>
<th>Model 1</th>
<th>y = TSR</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>c</td>
<td>0.165501</td>
<td>0.1126</td>
<td>c</td>
</tr>
<tr>
<td>ROIC</td>
<td>0.453274</td>
<td>0.0000</td>
<td>Rem CEO</td>
</tr>
<tr>
<td>LC</td>
<td>0.019876</td>
<td>0.0002</td>
<td>RD</td>
</tr>
<tr>
<td>Vârsta CEO</td>
<td>-0.004103</td>
<td>0.0032</td>
<td>ROA</td>
</tr>
<tr>
<td>CPI</td>
<td>0.002287</td>
<td>0.0428</td>
<td>Vârsta.comp</td>
</tr>
<tr>
<td>EPS</td>
<td>0.012333</td>
<td>0.0000</td>
<td>GÎ</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R²</th>
<th>0.439483</th>
<th>R²</th>
<th>0.479379</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probab(F-stat)</td>
<td>0.000000</td>
<td>Probab(F-stat)</td>
<td>0.000000</td>
</tr>
<tr>
<td>DW</td>
<td>1.958255</td>
<td>DW</td>
<td>2.037951</td>
</tr>
</tbody>
</table>

Source: own processing

ROIC is an appropriate indicator for measuring the effectiveness of investments made by companies, being especially relevant for the sample, because the component companies belong to major investments industries (construction, oil and gas, metallurgy, chemistry). In order to be properly interpreted, ROIC must be compared to the company’s cost of capital (the minimum rate of return obtained by investors). Considering our sample, it was revealed that only the companies activating in constructions, oil and gas, were able to achieve a ROIC superior to the cost of capital, which means the sample’s level of ROIC as a whole was under the expectations.

The positive correlation between net profit margin and current liquidity demonstrates that an optimal level of liquidity provides short-term payment obligations and reducing the risk of default, ensuring the proper functioning of companies (on the short run). According to descriptive statistics, the current liquidity level of the sample recorded an average of 2.09, the generally accepted optimal value of companies. On the one hand, a high value of this indicator provides safety to creditors, but on the other hand, if the liquidity is excessive, this indicates poor management.

Net profit margin and managers’s age are negatively correlated, which means that if the manager is young, he tends to bring innovative ideas in the the company, compared with older managers who have extensive experience in the field and have clearly formed his own vision, implementing strategies often not correlated to current market trends, which in many cases hinders progress.
Correlation between net profit margin and the corruption perception index is relevant, which means that this factor influences the performance of the company. The sign of the correlation is positive, because this index takes values between 0 (maximum corruption) and 10 (minimum corruption), meaning that it will increase with decreasing level of corruption, improving corporate performance. In Romania, corruption is quite high, which is impacting the performance of firms.

Regarding the positive correlation between net profit margin and EPS growth, the investors understand the fact that the company's net profit reached higher values, so they’ll be tempted to invest in such firms. However, this indicator disregards the necessary capital to generate net income, so they cannot differentiate which companies are more productive with less effort. Investors should consider more aspects when making an investment decision based on EPS’s growth.

TSR indicator is widely used by companies to measure the performance of managers, and according to its evolution, executive pay is set. As the model shows, the CEO remuneration is negatively correlated to TSR, against other author’s studies, where remuneration should be positively linked to TSR. In this case, we are dealing with well-paid managers, which are not able to manage the company in order to maximize the shareholders return. In general the remuneration policy should be in line with the performance brought the company, and it should be noted that this study included only basic salary, the performance bonus level is not known. According to the results, the bonuses would certainly amplify adverse impact.

Investors are seeking to place their capital in companies with dividend yield as high as possible, but they ignore capital efficiency issues. The positive correlation between total shareholder return and dividend yield shows that both indicators had a similar trend during the analyzed period. Dividend yield fell sharply between 2008-2009, which means that the share price rose faster than the value of the dividend per share in the same period. Since dividends were insignificant during this period, the value of TSR has fluctuated depending mostly on the share price.

The results show a negative correlation between ROA and TSR, which can be explained by the fact that over the period of analysis, assets have increased because firms have invested, and they proved to be unprofitable, so that low profits lead to a decrease of
ROA. TSR indicator has fluctuated due to share price and the fact that companies have wasted the invested capital in inefficient projects hampered the maximize of investors expected value. On the other hand, the dividend yield increased spectacularly between 2009-2013, but the investment potential of companies decreased as dividends were not supported by a corresponding increase in profit.

The negative correlation between TSR and the company’s age is insignificant, which means it doesn’t affect the company performance.

Debt ratio adversely affect total shareholder return, as shown in the results. Normally when a company is in debt, the risk increases, but the expected return is higher (profitability and risk theory). For the sample under analysis, we previously demonstrated that the return on capital is below the cost of capital, which indicates that firms failed to obtain more value from investments. In this situation, managers have not taken full advantage of long-term loans, investing in the projects that have proven to be inefficient, thus obtaining lower returns for shareholders, with a high degree of indebtedness.

Conclusions and proposals

Investors are often concerned with the idea of a favorable investment because they assume the risk of placing their capital in some companies, with confidence that managers will know how to manage it effectively. In reality, unfortunately things are not always favorable to investors because managers fail to resist market pressures, and often work for their own interests.

In this paper we analyzed the correlations between the factors determining the performance of companies listed on BSE, on a sample of 40 companies from various sectors. Analysis was performed using two multiple regression models, taking into account as dependent variables the net profit margin (to measure the performance of their company) and total shareholder return (to quantify the performance achieved by the shareholders).

The results indicate poor performance of companies (total sample), difficulties in managing capital invested, while the shareholders and investors received dividends to mask inefficiency of investment projects. This validates the theory of "Bird-in-Hand" that
shareholders prefer dividends with consistently higher returns than wait for future capital gains, because they are unsafe. Another validated theory is the stakeholder’s one, because the results show that managers were negligent and failed to maximize shareholder wealth, acting for their own interests rather (high wages, low profits). Signal theory was not validated because it was shown that although companies distributed dividends, this does not meant that they were performant.

For a more explicit representation of the data, from the point of view of an investor, future papers may try to shoot a cluster analysis for firms, according to several criteria, such as indebtedness, return on capital, current liquidity, dividend yield, earnings per share. Thus, investors can better focus when deciding to invest, depending on risk tolerance and personal goals.

Due to lack of data, this study could not integrate several corporate governance variables, but it would be interesting to study in detail the structure of managers' salary, which includes the performance bonus, the percentage of shares held by managers in the firm, in order to propose an appropriate salary package, according to the firm’s performance. Also, as a proposal, wage benefits could be calculated using an index containing a percentage of average returns of three best competitors in the industry, and a percentage of the firm's contribution to the economic growth process from related industries. Thus, it encourages competition, improves performance and promotes growth.
Bibliography


*** http://pages.stern.nyu.edu/~adamodar/  
*** http://www.bvb.ro/  
*** http://www.dafi.ase.ro/cercetare.asp  
*** http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/  
*** http://www.firmepeinet.net/  
*** http://www.ktd.ro/ro/  
*** https://www.tradeville.eu/  
*** http://www.transparency.org/