

DYNAMIC TRADE-OFFS IN FINANCIAL PERFORMANCES OF ROMANIAN COMPANIES

Alexandra HOROBET

Academy of Economic Studies
Bucharest, Romania
alexandra.horobet@rei.ase.ro

Radu LUPU

Academy of Economic Studies
Bucharest, Romania
radu.a.lupu@gmail.com

Sorin DUMITRESCU

Academy of Economic Studies
Bucharest, Romania
sorin.dumitrescu@rei.ase.ro

Dan Gabriel DUMITRESCU

Academy of Economic Studies
Bucharest, Romania
dandumiase@gmail.com

Iulia TINTEA

Academy of Economic Studies
Bucharest, Romania
iulia.tintea@gmail.com

Abstract

Our research objectives are twofold: (1) we use the Du Pont model and market ratios such as PER (price-earnings-ratio) and EPS (earnings-per-share) to explain the causes of financial performances of Romanian companies listed on the Bucharest Stock Exchange for 2002-2009 and to identify the dynamic trade-off among efficiency, profitability and leverage across companies; (2) we develop a cross-sectional analysis of the links between financial statements based and market based indicators, aiming at determining whether fundamental analysis is a significant source of information for equity market investors. We find that over the period Romanian companies' performances fluctuated significantly, maybe with the exception of financial leverage and to some extent TAT, regardless of how one measures performance, and that companies were not capable of using the trade-off between profitability and efficiency to boost their ROA and ROE. Companies' performance in the stock market is not explained by their operational and financial performance, with the exception of PER and EPS. These results indicate a decoupling between companies' performance reflected in their financial reports and

the performance investors obtain from trading them in the stock market. They also point towards the little importance awarded by for companies' performance shown in their financial reports.

Keywords: Financial performance, Romania, fundamental analysis, market analysis, Du Pont system

JEL classification: G14; G32; L11

1. INTRODUCTION

The use of financial ratios for analyzing a firm's performance became a standard practice and is one of the centerpieces of finance courses for undergraduate and graduate classes. These ratios typically use the company's financial statements –Statement of comprehensive income (formerly Profit and loss account, according to IAS 1 “Presentation of financial statements”) and Statement of financial position (formerly Balance sheet, according to IAS 1 “Presentation of financial statements”) – and information collected from financial markets in order to identify the strengths and the weaknesses associated to various areas of firm's performance: liquidity, efficiency, profitability, solvability and performance on the market. At the same time, the analysis based on accounting information has limitations, generated mainly by the differences across companies and countries in terms of accounting procedures and the distorting effect of inflation on these records. Although the analysis of a specific area is of obvious importance and it interests a particular stakeholder – typically, shareholders are more interested in leverage and profitability ratios, creditors show more interest towards liquidity and leverage ratios – the company's management should show interest towards all areas of the business, in an integrated view. This means the analysis of one particular business area is not sufficient for properly and fully understand the business in a static and dynamic approach. One of the best known integrated frameworks of the business's performance analysis is the Du Pont model, characterized by simplicity and an ability to precisely point out the weak and strong points of a business, both dynamically and across industries. The Du Pont model explains first the return on assets (ROA), by linking it to the company's efficiency and profitability, as follows:

$$ROA = \frac{Net\ profit}{Total\ assets} = \frac{Net\ profit}{Sales} \times \frac{Sales}{Total\ assets} = Net\ profit\ margin \times Total\ asset\ turnover \quad (1)$$

The first component of ROA, net profit margin (PM), offers insight into company's profitability and ability to control costs, while the second component, total asset turnover (TAT), assesses the firm's efficiency in using its assets in order to generate sales. This decomposition of ROA shows that as PM increases – profitability increases – and TAT increases – efficiency of using assets increases - the return generated by the use of company's assets increases. Besides this basic interpretation of ROA, there is much more insight one can gain by analyzing the root causes of the ROA level and changes in time. The two components of ROA – TAT and PM – are in a trade-off type of relation, depending on the industry, as a specific ROA level may be achieved with various combinations of profit margin and asset turnover, with firms ranging along so-called “ROA lines”: each line shows the combinations of the two, with high turnover accompanies by low profit margin and inversely. In an economy, one can find companies aligned along a different ROA level, with different efficiency and profitability levels. Also, a company may remain on the same ROA

line, but with changing components – the firm might have been forced to undergo through such changes due to the business environment characteristics -, or move on another ROA line, by changing one and/or another of ROA components.

The second equation of the Du Pont model links return on assets (ROA) to return on equity (ROE), to explain the causes of the firm's residual profitability, as follows:

$$ROE = \frac{Net\ profit}{Equity} = \frac{Net\ profit}{Total\ assets} \times \frac{Total\ assets}{Equity} = ROA \times Financial\ leverage\ multiplier \quad (2)$$

This decomposition of ROE shows that the residual profitability of the firm, given by the returns available to common shareholders, after paying for all company's obligations, as compared to the amount they invested in the company, depends both on the return the company generates from using its assets and the degree of leverage used. Basically, a higher leverage – more debt in the company's capital structure – will magnify the profitability for shareholders, both in a positive or negative manner. The decomposition of ROE may be linked to the business environment and constraints firms face but it also includes the impact of financial leverage on a company's overall performance.

Besides the information on company's performance based on accounting data, market based measures are critical for understanding the relationship between decisions at company level and investors' assessment of these decisions. A company's performance on the market may be observed with the aid of various measures, starting with stock return, risk indicators (such as standard deviation of returns or beta) and moving towards more sophisticated measures that link returns to risks. In the end, a company's performance on the market is of most interest for investors and, from this perspective, one can reasonably wonder whether the information provided by companies' financial statements are acknowledged by market investors and reflected in market performance.

Our paper aims at investigating the dynamic trade-offs in Romanian companies' performances from both a financial and market perspective over a time span ranging between 2002 and 2009. The paper is structured as follows: Section 2 offers a brief literature review, Section 3 describes our data and research methodology, Section 4 presents the main results and Section 5 concludes.

2. LITERATURE REVIEW

The differences in the profit margin – asset turnover mix are not accidental, but the results of specific conditions that firms face in their business environments. Selling and Stickney (1989) discuss this mix in terms of two constraints depending on the industry that operate in: capacity constraints and competitive constraints. On one hand, we have firms operating under heavy fixed capacity costs, which cannot use their asset turnover for boosting ROA. Consequently, these firms are forced to attract enough capital to finance their large production capacities or, in order to draw investors towards them, must achieve higher profit margins, typically through high entry barriers and/or economies of scale. On the other hand, there are firms that operate in intensely competitive industries, whose businesses are subjective to a competitive constraint. These firms are faced with an upper limit on the profit margin they can obtain, so the only variable they can work on is the asset turnover. At the same time, there are firms that do not face either competitive or capacity constraints that enjoy far more flexibility as compared to the others for what concerns changes among the ROA components, on one hand, but also changes in ROA through time. The flexibility that

a firm has in trading-off asset turnover for profit margin can be also thought in terms of a marginal rate of substitution between efficiency and profitability. For the firms operating in the tails of the ROA curves, the marginal rates of substitution are poor, while for the firms operating in the area denoted by the centre of the ROA curve the ability to design business strategies that emphasize both efficiency and profitability or one of them, according to market conditions, is higher.

For what concerns ROA's behavior in time Selling and Stickney (1989) advance two explanations for it: one is given by the operating leverage of the firm and the second by the phase of the product-life cycle of the company's products. Operating leverage is typically defined as the change in earnings before interest and taxes determined by changes in sales, which depends on the proportion between fixed costs and variable costs. A higher fixed costs proportion causes a higher variability of ROA, which can have as effect movements of the firm from one ROA line to another. On the other hand, ROA fluctuates in time, depending on the product life cycle: during the introduction and early growth phases, ROA tends to be negative, as low sales levels accompanied by high costs – linked to product development and marketing efforts – lead to negative profit margins. As sales increase in the growth phase, ROA becomes positive and it increases significantly during the maturity phase, only to deteriorate during the decline phase and even become negative. This ROA dependency on the product-life cycle is supported empirically by other studies, such as Hambrick et al. (1982) or Zeithaml and Fry (1984).

In a more recent paper, Tezel and McManus (2003), following the work of Firer (1999), disaggregate the Du Pont ROE equation as to better distinguish the impact of both operating and financial leverage on it. For a sample of 1,052 US-based non-financial publicly traded firms analyzed for three consecutive years – 1997, 1998 and 1999 -, the results indicate that smaller firms, typically riskier, have higher return on assets as compared to large firms – average return on non-operating assets for 1999 was 13.16% for small firms and 10.01% for large firms -, but small firms have only slightly higher returns on equity compared to large firms – for the same year, the average ROE of small firms was 15.24% as compared to 14.01% for large firms. Disaggregating ROE and ROA, Tezel and McManus find that small firms have a differential return of 4.30%, lower than the differential return for large firms (5.73%). The reason of this smaller differential return resides, according to the authors, in a higher financial leverage and operating leverage of large firms compared to small firms.

One important issue tackled by research in the field refers to the forecasting ability of historical values of these ratios. In this respect, it is noteworthy the study of Penman (1991) that reaches the conclusion that in the short-term, given by an approximation of five years, the current levels of ROE tend to persist in the future, but over the long run, ROE displays a mean reverting behavior towards an average "economy-wide" ROE. Similar results were offered by Nissim and Penman (1999) for return on net operating assets (RNOA), asset turnover and profit margins. On the other hand, Fairfield and Yohn (2001), using data for a sample of 14,527 US firms for the 1977-1996 period, provide evidence that disaggregating return on assets into asset turnover and profit margin does not provide incremental information for forecasting the change in return on assets one year ahead, but that disaggregating the *change* in return on assets into the *change* in asset turnover and the *change* in profit margin might be useful for forecasting the *change* in return on assets one year ahead.

The link between financial indicators and market performance has been extensively studied, particularly since the advent of CAPM, which asserts that investors price only sys-

tematic risk, measured by beta, and predicts a positive relationship between beta and stock returns (Sharpe, 1964). Empirical studies conducted on US companies or elsewhere failed to provide a strong link between beta and stock returns and identified fundamental analysis information as offering relevant explanatory factors for stock returns. Basu (1977) finds that stocks with low PERs have higher returns than stocks with high PERs, even after taking into account the impact of beta, while Bandari (1988) identified a positive link between debt-to-equity ratios and stock returns, in tests that also included beta and firm size. Maybe one of the best known tests of the relationship between stock returns and company fundamentals is found in Fama and French (1992) that investigated the relation between beta, book-to-market, earnings-to-price ratio, financial leverage and company size (measured as market value of equity). Their results show that book-to-market and size capture the explanatory power of the other factors except for beta. Later, Fama and French (1993, 1995) showed that book-to-market and market value of equity are good proxies for stock returns' sensitivity to risk factors and that these measures are related to company's earnings. Moreover, Barbee et al. (1996) identify sales-to-price ratio as a reliable indicator of firms' relative market valuation compared to the traditional price-earnings or book-to-market indicators used in previous studies, due to the fact that the use of different accounting methods for depreciation and inventory affect companies' earnings and book values, but do not influence sales value. They also find that sales-to-price ratio are able to absorb the role of book-to-market, market value and debt ratio in explaining U.S. stock returns during the 1979-1991 period. Outside US, Chan et al. (1991) showed that stock returns in Japan are positively linked to book-to-market and cash flow yield, while Capaul et al. (1993) evidence that value stocks (with high book-to-market values), earn higher returns than growth stocks (with low book-to-market values) in France, Japan, Switzerland, Japan, United Kingdom and United States. In their investigation of the Korean market, Mukherji et al. (1997) show that annual stock returns during 1982-1993 were positively related to firm size, but not significantly related to the earnings-to-price ratio or beta. Also, they find that book-to-market and sales-price ratios are more efficient indicators of value than the earnings-to-price ratio, while beta is a less reliable proxy for risk than the debt-equity ratio.

More recently, Figelman (2007) examines the interaction between stock return momentum and various earnings measures and finds that large-capitalization companies with poor past returns and high ROE significantly underperform the market compared to companies with poor past returns and low ROE. Also, companies with poor past returns and poor earnings quality significantly underperform the market. Based on these results, the author concludes that the market may not fully recognize companies' manipulation of earnings. Overall, empirical evidences support to some extent the link between market performance and company fundamentals, but the conclusions are by no means definite and depend on the manner market performance is defined. Traditionally, studies have focused on stock returns and have largely ignored other measures of performance such as Sharpe ratio, Treynor ratio or Jensen's alpha in terms of their link to companies' financial performance. Our research attempts to complement the existing research on the Romanian market with an analysis that includes such performance measures: the next parts describe the data and methodology, our results and the main conclusions.

3. DATA AND RESEARCH METHODOLOGY

Our research uses companies listed on the first and second tier of the Bucharest Stock Exchange that have been continuously traded on the market between 2002 and 2009. We included in the sample only the non-financial firms listed on the BSE for these consecutive eight years. The reason for the exclusion of financial firms resided on their much higher financial leverage as compared to the other firms, which might have led to misleading results. At the same time, we excluded from our analysis the financial investments companies (SIFs), which are a particular category of assets listed and traded on BSE, as they actually represent investment funds stocks, with portfolios formed of a wide range of Romanian companies. Comparing them with a typical non-financial firm would have severely biased the results of the research. From the total number of 35 companies the met our selection criteria The total number of firms included in the analysis is 34, with an approximate total market value of equity of EURO 18.1 billion at the end of 2009 and a share in the BSE's total market capitalization ranging from 22.58% in 2009 and 66.02% in 2004.

For each of these firms and the eight years mentioned above, we used two sets of data in order to investigate evolution of their financial performance and the link between financial and market performance. The first set involves information provided in their income statements and balance sheets that we used in order to compute the following ratios (where t designates the year for which the computation was performed):

$$(1) \text{ Total asset turnover}_t (TAT_t) = \frac{\text{Total turnover}_t}{\text{Total assets}_t}$$

where total turnover includes operating, financial and extraordinary revenues of the firm, while total assets include current and net fixed assets, at their book values.

$$(2) \text{ Profit margin}_t (PM_t) = \frac{\text{Net profit after tax}_t}{\text{Total turnover}_t}$$

where net profit after tax is the profit before paying dividends to common shareholders.

$$(3) \text{ Return on assets}_t (ROA_t) = \frac{\text{Net profit after tax}_t}{\text{Total assets}_t}$$

ROA was also decomposed into TAT and PM: $ROA_t = TAT_t \times PM_t$.

$$(4) \text{ Financial leverage multiplier}_t (FLM_t) = \frac{\text{Total assets}_t}{\text{Shareholders' equity}_t}$$

where shareholders' equity is computed as the sum of capital provided by shareholders and the accumulated retained earnings.

$$(5) \text{ Return on equity}_t (ROE_t) = \frac{\text{Net profit after tax}_t}{\text{Shareholders' equity}_t}$$

ROE was also decomposed into ROA and FLM: $ROE_t = ROA_t \times FLM_t$.

Besides these ratios we have also used in our analysis two performance indicators that are a mixture between accounting and market information, as follows:

$$(6) \text{ Earnings per share}_t (EPS_t) = \frac{\text{Earnings after tax}_t}{\text{Shareholders' equity}_t}$$

$$(7) \text{ Price - earnings - ratio}_t (PER_t) = \frac{\text{Market price of equity}_t}{EPS_t}$$

PER is one of the most widely used market performance indicators, but its value should be interpreted with precaution. One approach is to consider high values of PER as

indicating good expected performance from the company, but one should pay attention to the fact that PER is a ration and a high value might not be necessarily the effect of good expected performance, but of a too small value of EPS. Also, high values of PER are rather common in emerging markets but in this case we may be faced with increased values as a result of a small number of companies available on the market, and not as an effect on good expected performance. The other approach related to PER considers its small values as indication of good performance, in this case PER being interpreted as a payback ratio – i.e. the number of years that would take to recover the price paid for company stock from the earnings per share.

The second set of data we used refers to the market performance of our sample of companies between 2002 and 2009, based on their stock market returns. We used annualized weekly logarithmic returns derived from the stock market prices for the 35 companies, as well as the Bucharest Stock Exchange BET Composite Index (BETC), for the period January 2002 – December 2009. We used weekly returns in order to diminish the impact of infrequent trading. Data regarding the daily closing price was collected from KTD invest, while data for the BETC index was obtained from the Bucharest Stock Exchange database. The returns were computed using the closing price for the day with the minimum average missing observations, namely the third day of the week. All prices were denominated in Romanian currency, RON. Based on weekly returns we computed standard deviation, skewness and kurtosis for the eight years.

Also, for all the sample of companies and for each year we computed the following risk-adjusted measures of performance:

$$\text{I. } \text{Sharpe ratio}_i(SR_i) = \frac{R_i - R_f}{\sigma_i}$$

where R denotes the average annual return, R_f is the risk free rate and σ is the average annual standard deviation of the weekly returns. The risk free rate used for computing the ratio is the average interest rate for deposits with a one week maturity, namely the Romanian Interbank Bid Rate (ROBID), collected from the National Bank's database.

$$\text{II. } \text{Treynor ratio}_i(\text{Trey}R_i) = \frac{R_i - R_f}{\beta_i}$$

where β is the coefficient of systematic risk, beta, of each asset. The beta for each year and each company was estimated by a linear regression of the excess return of each company on the excess return of the market index, as follows

$$(3) R_t - R_{ft} = \alpha_t + \beta_t(R_{mt} - R_{ft}) + \varepsilon_t$$

where R denotes the weekly return for each of the 35 companies, R_f is the risk free rate, as a weekly interest rate, while R_m is the weekly return of the BETC index. The ε term denotes the residual value of the regression.

III. *Jensen's index* or *alpha* (*Jensen's α*), which is another risk-adjusted performance measure based on the CAPM, being the intercept of the regression estimated as in (3). This measure offers insight into the performance of the company's stock on an yearly basis – if positive, it indicates a better performance than the one expected by the market and, if negative, it indicates a worse performance than the expected one.

Using these sets of data we conducted our research in two main directions, as follows:

1. We used the Du Pont model and market ratios (PER and EPS) to investigate the causes of financial performances of Romanian companies listed on the Bucharest

Stock Exchange for 2002-2009 and to identify the dynamic trade-off among efficiency, profitability and leverage across companies;

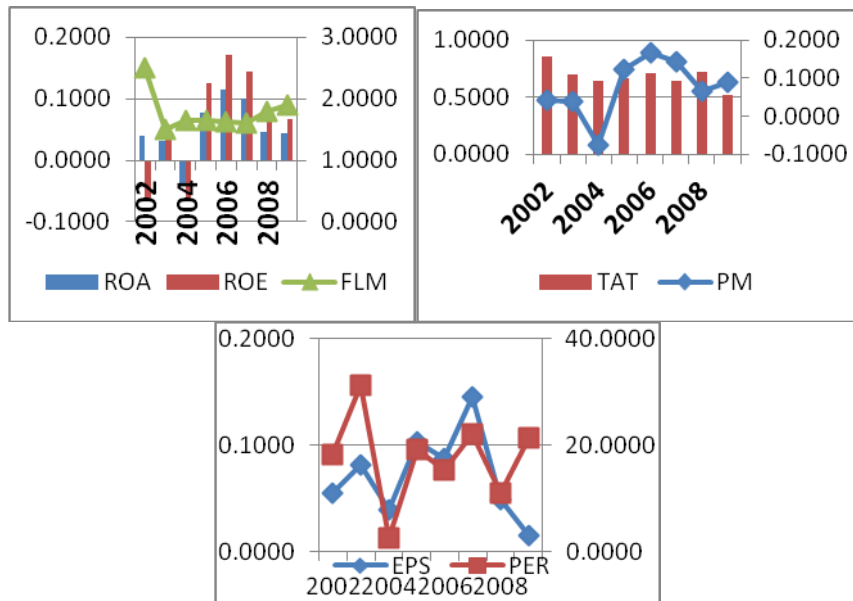
2. We developed a cross-sectional analysis of the links between financial statements based and market based indicators, aiming at determining whether fundamental analysis is a significant source of information for equity market investors. The cross-sectional analysis was conducted on an yearly basis, based on regressions of the form

$$(4) Y_t = \alpha_{nt} + \gamma_{nt} X_{nt} + \varepsilon_{nt}, n=1,2,3$$

where Y is successively represented by EPS, PER, SR, TreynR and Jensen's α , and Xs are, successively: ROA; ROE; PM and TAT; PM, TAT and FLM. In (4) n designates the number of independent variables (1 to 3). We ran 20 cross-sectional regressions for each year and 160 for the whole period. Each year we excluded from the regressions the companies where PER was not available, due to the negative EPS, therefore the sample of companies was homogeneous in the case of each regression at the level of a single year.

4. RESULTS

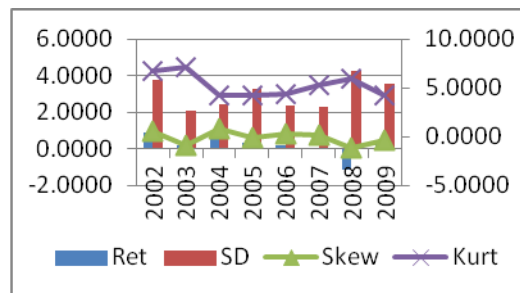
Figure 1 shows the evolution of the weighted average values of financial reports based indicators for the entire sample of companies, where the weight is given by each company's market capitalization as a proportion of the total market capitalization of the sample. We observe the decline in ROA until 2004 followed by an accentuated increase in 2005 and another increase in 2006 (this is the highest value for all years (11.52%), then the progressive decline until 2009, with a sharp decrease in 2008. The main cause of ROA's evolution was companies' profitability, with the smallest value in 2004 (-7.77%), the peak reached in 2006 (16.58%) and another drop until a value of 6.50% in 2008. Interestingly, profitability went slightly up in 2009 to 8.89%, which compensated the effect of TAT drop that year and overall led to an increase in ROA compared to 2008. Romanian companies' efficiency was less fluctuating over the years than profitability, with the highest value recorded in 2002 (0.8572) and the lowest in 2009 (0.5145). In terms of ROE, the evolution mimics ROA, maybe with the exception of 2002-2004 when ROE was more oscillating than ROA, even negative in 2002. Over the years, ROE values ranged between -6.50% in 2004 and 17.02% in 2006, with ROA as the main driver (since financial leverage was rather stable, particularly after 2003). The evolution of operational and financial features of Romanian companies was reflected in high volatility of EPS and PER over the years. It is interesting to note that the indicators moved closely together between 2002 and 2008, but this trend changes in 2009, when EPS declined to its lowest value (1.5%) while PER increased to 21.33 compared to 2008. Other two interesting aspects to note are the positive values of EPS over the years and the rather high values of PER (maybe with the exception of 2004, with an average PER of only 2.71). One should be cautious, though, to interpret the high values of PER as indicated good future expected performance, as it might be, at least to some extent, the effect of the small number of companies available for trading in the Bucharest Stock Exchange.



Note: lhs – ROA, ROE, TAT, EPS; rhs – FLM, PM, PER

Figure no. 1 Financial indicators for Romanian companies, 2002-2009

Figure 2 presents the weighted average values for companies’ stock returns, standard deviations, skewness and kurtosis, based on series of weekly returns. It is easily observable the fluctuating evolution of returns and standard deviations with a close link between the two – the increased risk associated with negative returns in 2008 is also evident. Skewness is fluctuating in a small range: we may observe years of average positive values (2002, 2004, 2006, 2007) and years of average negative values (2003, 2005, 2008 and 2009 – with the lowest value recorded in 2008, of -1.2089). Kurtosis is highly positive for all years, indicating the presence of fat tails in returns’ distributions, but the peak is recorded in 2003 (7.0988).

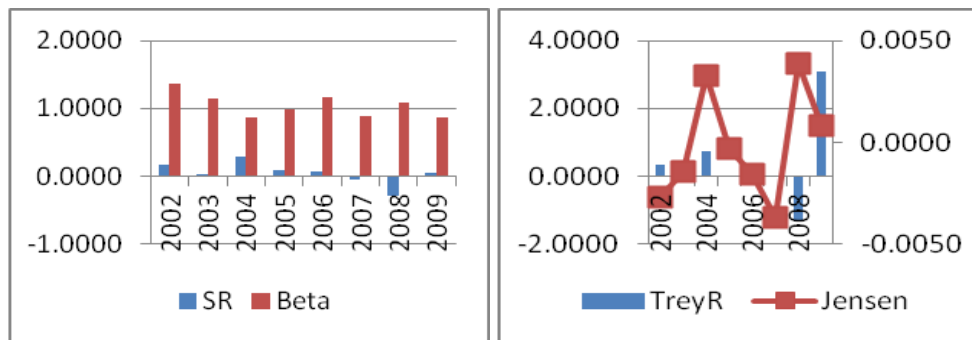


Note: lhs - Ret, SD; rhs - Skew, Kurt

Figure no. 2 Weighted average values of returns, standard deviations, skewness and kurtosis for Romanian companies, 2002-2009

The risk-adjusted performance measures for Romanian companies, presented in Figure 3, drives our attention towards some noteworthy observations: first, the average beta of the sample ranges between 0.8628 in 2004 and 1.3712 in 2002 – overall, beta is close to the

market value of one, which indicates that the sample does not have on an aggregated basis a significantly different level of risk than the market; second, the Sharpe ratio (SR) is fluctuating over the years, ranging between -0.2933 in 2008 (no surprise here!) and 0.2875 in 2004, with another negative value in 2007 (-0.0424). This shows that overall Romanian companies were not able to offer investors significantly better risk-adjusted returns as compared to the risk-free rate and that in some years an investment in risk-free assets would have provided investors with superior performance. When we analyze the Treynor ratio, which shows the beta risk-adjusted return, the values are highly fluctuating from one year to the other, with no two consecutive years recording positive values, which may be interpreted as an impossibility of Romanian companies to constantly offer good risk-adjusted performance for investors. Jensen's alpha is also fluctuating: we observe five years with negative alphas, indicating a worse performance of companies against the market expectations, and three years with positive values, indicating better than expected performances.



Note: lhs - SR, Beta, TreyR; rhs - Jensen's alpha

Figure no. 3. Risk-adjusted performance measures, 2002-2009

Profitability represents the main driver for company returns on assets over 2002-2009, while efficiency plays a smaller role, and financial leverage does not add much to the company performance as measured by return on equity. Table 1 shows basic descriptive statistics of PM, TAT and FLM and Figure 4 plots the sample means (simple arithmetic means) against standard deviations across companies over the years. We observe a more homogeneous distribution of profitability during 2003-2005, followed by wider distributions, particularly during 2002-2009. In the case of efficiency the distribution is wider in 2002 and 2003 then again in 2008 and 2009. Overall, the standard deviations for TAT are higher than the ones for PM, which is not uncommon for our sample that includes companies from diverse industries, each with different efficiency levels.

Table no. 1 Descriptive statistics for PM, TAT and FLM, 2002-2009

	Profit margin (PM)				Assets turnover (TAT)				Financial leverage (FLM)			
	Mean	Minimum	Maximum	Std.Dev.	Mean	Minimum	Maximum	Std.Dev.	Mean	Minimum	Maximum	Std.Dev.
2002	0.0626	-0.2801	0.3617	0.1219	1.1002	0.2857	2.2680	0.4821	7.4626	1.0618	195.5551	33.2402
2003	0.0554	-0.1801	0.2672	0.0823	1.1526	0.3304	3.4600	0.6432	1.7151	1.0249	4.7793	0.7562
2004	0.0420	-0.1121	0.1749	0.0661	1.1366	0.2939	3.6357	0.6217	1.7285	1.0292	4.3375	0.6556
2005	0.0309	-0.2004	0.1689	0.0830	1.0342	0.1702	2.3934	0.4313	1.7874	1.0066	5.5556	0.8987
2006	0.0448	-0.3241	0.1926	0.1118	0.9065	0.1733	1.8210	0.3568	2.7390	1.0272	35.2009	5.7732
2007	0.0389	-0.3848	0.3939	0.1225	0.7823	0.0791	1.9371	0.3884	1.7551	1.0128	3.5710	0.6832
2008	0.0001	-0.5334	0.3011	0.1570	0.8551	0.0681	2.2516	0.4864	1.9274	0.9959	5.1040	0.9605
2009	-0.0203	-0.4257	0.1988	0.1365	0.7298	0.0714	2.5829	0.5128	2.5966	1.0357	24.3285	3.9735

Financial leverage displays a more heterogeneous pattern over the years: 2002 is a different year compared to the rest of the period, with an average leverage of 7.46, while afterwards leverage fluctuates between 1.71 in 2003 and 2.73 in 2006. The high value of leverage in 2002 is due to one company only, Mechel Targoviste, that recorded a financial leverage of 195.55, corrected afterwards.

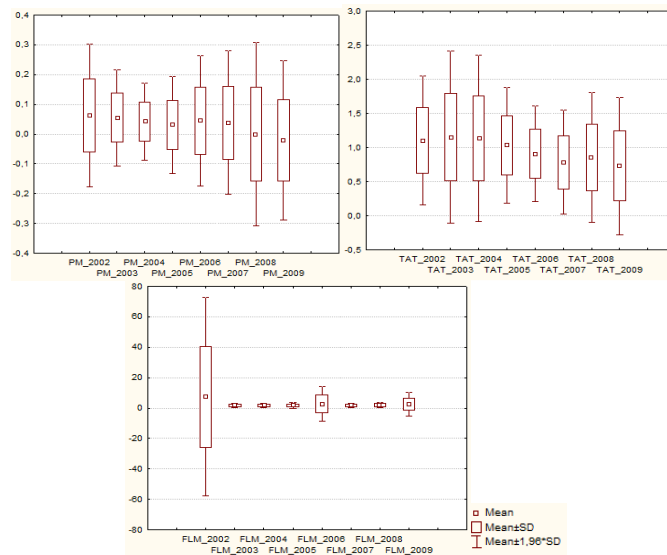


Figure no. 4 Box & whisker plots for PM, TAT and FLM, 2002-2009

In terms of the flexibility that Romanian companies may have regarding their trade-off between profitability and efficiency to boost ROA, Figure 5 shows the combinations between PM and TAT and the correlations between the two indicators across companies.

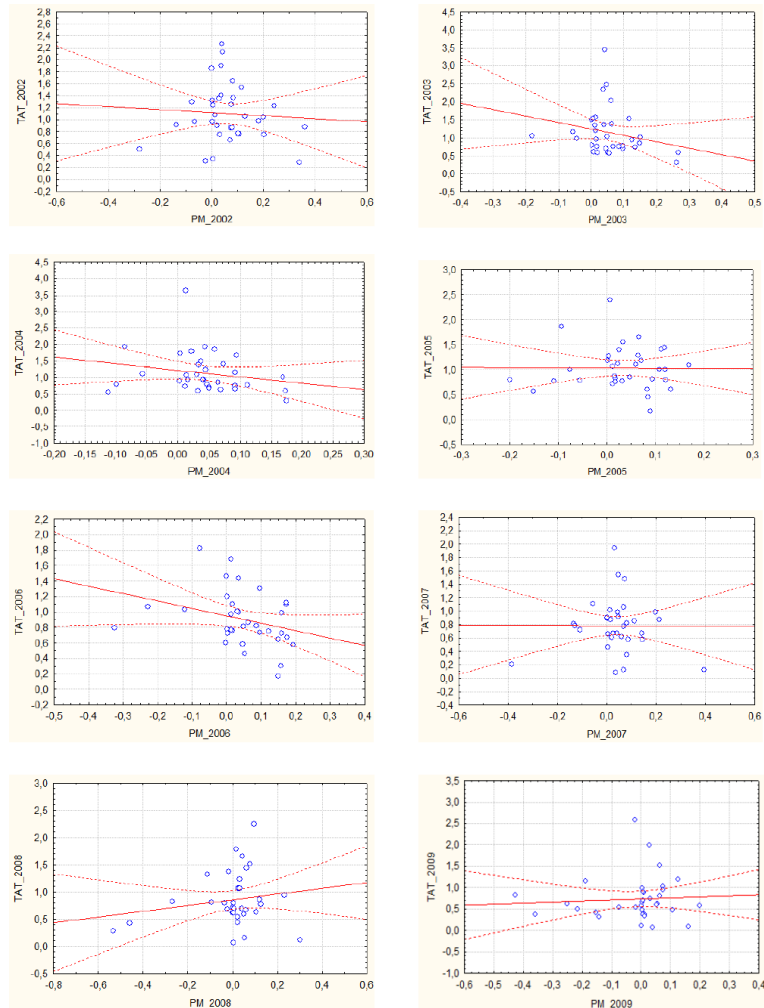


Figure no. 5 PM-TAT correlations, 2002-2009

Typically, the correlation level indicates the degree of flexibility available for companies regarding the use of one of the two with the aim of increasing ROA: a negative correlation suggests that companies in the sample operate at the ends of ROA curves, which indicates less flexibility in boosting ROA (or, differently put, they may use only one of the two drivers of performance, profitability or efficiency, in order to increase ROA level); a close to zero correlation may signify that companies dispose of enough flexibility to improve ROA by simultaneously adjusting their profitability and efficiency levels; a positive correlation indicates that the presupposed link between efficiency and profitability is not present across the sample used in the analysis. For our sample of companies we observe negative correlations in four of the eight years we investigate (2002 to 2004 and 2006), slightly positive correlations in 2005 and 2007 and positive correlations in 2008 and 2009, although none of correlations values are significant at the 95% level. Overall, Romanian

companies have somehow increased their flexibility regarding the use of profitability and efficiency between 2002 and 2007, but the last two years have probably led to divergent behavior of companies in their attempt to deal with the crisis effects. It remains to be seen whether the relationship between PM and TAT will return to a negative one after the crisis will be over.

The last part of our research aims at identifying significant relations between Romanian companies' performance measured with the help of financial reports' data and the one measured in the capital market. The results of the cross-sectional regressions conducted on an annual basis of the form specified in (4) above are presented in Table 2. At first glance we observe that financial reports based performance has explanatory power for EPS and PER, but the link between them varies from one year to the other. Interestingly, the direction of the link, given by the sign of the statistically significant coefficients, does not change over the years. EPS is positively linked to all financial ratios, with the exception of 2007, a year when none of the independent variables explains EPS distribution across companies in the sample. For the remaining years, ROA is a significant explanatory variable in 2005, 2008 and 2009; ROE explains EPS in 2003, 2005, 2006 and 2007; PM results in being significant for EPS only in 2005 and 2006; TAT is a powerful explanation for EPS in 2002, 2003, 2004 and 2008, and FLM explains EPS in 2005 and 2006. Looking over the sample and the years, we may interpret these results as normal: companies with higher profitability and higher efficiency in using assets have higher earnings-per-share than the others, and companies have also used the financial leverage as a tool for increasing EPS. In the case of PER, the influence of these variable is also present over the years, with the exception of 2003, and the signs of the regression coefficient do not change from one year to the other. PER is negatively linked to ROA (in 2002, 2004, 2005 and 2008), ROE (in 2002, 2004, 2005, 2007 and 2008), PM (in 2004, 2005, 2006, 2007 and 2008), TAT (in 2007 and 2008) and FLM (in 2007 only). Again, these results are not surprising, as PER is inversely related to EPS, therefore the higher the values of these ratios the higher the EPS and the lower the PER and the other way around.

The link between market-based performance and financial reports' information is, as one may observe from Table 2, weaker than for EPS and PER. ROA does not seem to represent a driver for companies' market performance, as it has no significant explanatory power in any of the eight years. ROE, PM and TAT are positively linked to Sharpe ratio or Jensen's alpha but only in 2006 and 2007, which were economic growth years, while financial leverage negatively influenced market performance measured through Jensen's alpha in 2002. Also, companies with higher efficiency in using their assets had lower Treynor ratios. We may interpret these results as indicating a clear decoupling between companies' performance reflected in their financial reports and the performance investors obtain from trading them in the stock market. They may also point towards the little importance awarded by investors in the Romanian stock exchange for companies' performance shown in their financial reports and, consequently, may make us conclude that fundamental analysis does not seem to be used as a tool for making decisions in the capital market.

Table no. 2 Cross-sectional regressions results, 2002-2009

Y_t	Intercept	ROA	ROE	PM	TAT	FLM	Adj. R ²
2002							
EPS	-1.060			1.178	1.248**		0.157
EPS	-1.949			2.324	1.365*	0.378	0.153
PER	36.484*	-195.280**					0.123

Y_t	Intercept	ROA	ROE	PM	TAT	FLM	Adj. R ²
PER	34.906*		-117.333**				0.109
2003							
EPS	-0.690		14.569*				0.187
EPS	-3.052*			6.374	2.877*		0.511
EPS	-4.597*			8.432	2.908*	0.888	0.516
SR	0.175***			-0.034	0.050	-0.130**	0.189
Jensen's	0.009			-0.004	0.002	-0.007**	0.128
2004							
EPS	-1.440*			3.965	1.502*		0.617
EPS	-2.093*			4.626	1.395*	0.457	0.637
PER	31.128*	-209.927**					0.180
PER	32.849*		-153.424*				0.219
PER	34.330*			-174.166**	-4.242		0.102
PER	38.593**			-178.486**	-3.539	-2.984	0.072
2005							
EPS	-1.670	48.704**					0.152
EPS	-3.313*		48.678*				0.576
EPS	-14.757*			49.340**	2.286	6.683*	0.294
PER	40.916*	-260.872*					0.346
PER	37.288*		-129.134*				0.266
PER	51.586*			-291.625*	-8.022		0.300
PER	58.872*			-299.296*	-7.157	-4.874	0.282
2006							
EPS	0.272		2.286***				0.086
EPS	-2.066*			6.444*	-0.190	1.241*	0.493
PER	146.474***			-	-59.052		0.060
PER	211.304**			-649.906**	-45.176	-39.255	0.065
SR	-0.039			0.668***	0.048		0.050
SR	-0.050			0.684***	0.046	0.007	0.013
Treynor	5.277**			-5.261	-6.474*		0.202
Treynor	4.267			-3.744	-6.690*	0.612	0.181
2007							
PER	97.586*		-472.048*				0.261
PER	160.906*			-466.381*	-81.263**		0.281
PER	221.881*			-543.151*	-70.960**	-	0.369
SR	-0.064		1.486*				0.321
SR	-0.094			1.239**	0.065		0.154
SR	0.001			1.119**	0.081	-0.058	0.155
Jensen's	-0.007***			0.053*	0.008		0.211
Jensen's	-0.009			0.056*	0.008***	0.001	0.190
2008							
EPS	-0.028	4.057*					0.380
EPS	-0.069		3.316*				0.476
EPS	-0.225			1.539	0.353**		0.232
EPS	-0.044			1.232	0.382**	-0.119	0.215
PER	63.434*	-461.163**					0.117

Y_t	Intercept	ROA	ROE	PM	TAT	FLM	Adj. R ²
PER	67.230*		-364.892**				0.141
PER	110.783*			-396.000**	-53.578**		0.231
PER	149.560**			-461.498**	-	-25.518	0.220
Treynor	-0.571			3.690	-2.882*		0.239
Treynor	0.488			1.902	-2.712**	-0.697	0.215
2009							
EPS	0.021	1.364**					0.140

Note: *, ** and *** denote significance at 1%, 5% and 10% level, respectively.

5. CONCLUSIONS

Our paper investigated the dynamic trade-offs in Romanian companies' performances from both a financial and market perspective over a time span ranging between 2002 and 2009. We used a sample of 34 non-financial companies traded on the Bucharest Stock Exchange and developed the analysis in two main directions: the use of Du Pont model and market ratios (PER and EPS) to observe the causes of financial performances in the sample, and the development of a cross-sectional analysis on the links between financial statements based and market performance indicators. We find that over the period Romanian companies' performances fluctuated significantly, maybe with the exception of financial leverage and to some extent TAT, regardless of how one measures performance. Companies were not capable of using the trade-off between profitability and efficiency to boost their ROA and ROE, with profitability displaying high volatility during 2002-2009. We also find that companies' performance in the stock market is not explained by their operational and financial performance, with the exception of PER and EPS. We may interpret these results as indicating a clear decoupling between companies' performance reflected in their financial reports and the performance investors obtain from trading them in the stock market. They may also point towards the little importance awarded by investors in the Romanian stock exchange for companies' performance shown in their financial reports and, consequently, may make us conclude that fundamental analysis does not seem to be used as a tool for making decisions in the capital market.

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