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INTERACTIONS BETWEEN FUNDAMENTAL ANALYSIS AND MARKET PERFORMANCE FOR ROMANIAN COMPANIES: A PANEL DATA APPROACH

Abstract. *We investigate non-financial Romanian companies listed on the Bucharest Stock Exchange during 2002-2009 and conduct our research in two main directions: (1) an understanding of dynamic trade-offs among efficiency, profitability and leverage across companies using the Du Pont model, market ratios and market-based performance measures; (2) a balanced panel data analysis that considers the heterogeneity in companies' performance. We find the performance of Romanian companies was highly fluctuating from one year to the other, suggesting that firms do not employ over the years the same tools to boost or maintain their overall performance. The market performance of Romanian companies follows their financial performance and was also fluctuating, no company being able to offer investors constantly good risk-adjusted returns. Fundamental analysis influences companies' performance in the capital market, but such influence is observed only at the level of simpler indicators, which might indicate a rather low financial maturity of investors present on the Romanian market.*

Keywords*: financial performance, Du Pont system, stock market, panel data analysis.*

JEL Classification: G30, C23

1. Introduction

Our research investigates non-financial Romanian companies listed on the Bucharest Stock Exchange that have been continuously traded on the market between 2002 and 2009. For each of these firms, we use two sets of data to investigate the evolution of their financial performance and the link between financial and market performance. The first set includes information provided in companies' financial reports, while the second set of data refers to their market performance, based on stock market returns. Using these sets of data we conduct our research in two main directions, as follows: (1) We use the Du Pont model, market ratios and market-based performance measures to investigate the dynamic trade-off among efficiency, profitability and leverage across companies; (2) We conduct balanced panel data regressions aiming at considering the companies' performance heterogeneity over time and across industries. The panel analysis is performed based on various assumptions regarding its parameters, as to better take into account companies' specificities.

We continue our previous research on the performance of Romanian companies in a more comprehensive framework (see Horobet et al., 2007; Horobet et al., 2010). Our main contributions to the research in the field are threefold: first, we provide a thorough analysis of Romanian companies' performances in the past years, which combines information from their financial reports and the capital market, and that attempts at consistently explaining the dynamic trade-offs in their performances; second, we use a broader tool for analyzing the dynamic of Romanian companies' performance – the panel regressions -, which has not been previously used for such purposes; third, we examine the Romanian companies approaches of the financial crisis, as evidenced by the focus on the various areas of their performance, in the wider framework of changes in the business environment.
Our paper is structured as follows: Section 2 presents the main research directions that fundament our study; Section 3 outlines the data and the research methodology employed; Section 4 presents the results and Section 5 concludes.

2. Literature review

Research on the dynamics of companies' performance is structured on three main directions. First, we identify studies that focus on the mix between profit margin and asset turnover from the perspective of constraints imposed on companies by their industry or on the behavior of various financial performance measures such as ROA or ROE in time and across companies. One of the most common ways of analyzing companies' financial data is to calculate ratios with the main purpose to compare them against those of other companies or against the company's own historical performance. A simple but comprehensive tool of financial analysis is the Du Pont system, which helps at analyzing a company's financial performance in an integrated framework, by explaining return on assets by the company's efficiency of assets' use and profitability level, and return on equity by adjusting these two variables by a financial leverage measure. By using the DuPont equation, an analyst can easily determine which processes the company does well and which processes can be improved. One of the most influential papers on the use of the Du Pont model as a diagnostic tool for analyzing performance belongs to Selling and Stickney (1989). Their contribution to the research in the field is remarkable, firstly due to an in-depth analysis of the link between the business environment where the firm operates and its financial performance measured by ROA, and secondly due to their unique examination of 22 US industries over an 11 years time span with the aim of identifying the industries' particularities in terms of efficiency and profitability, but also in terms of suggesting the appropriate actions a firm can take in order to improve its performance, given benchmarks. 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 operating and financial leverage. 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 compared to large firms but small firms have only slightly higher ROE compared to large firms. Disaggregating ROE and ROA, Tezel and McManus find that small firms have a differential return (ROE – ROA) 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.

Empirical evidences on Romanian companies' performance using the Du Pont are rather scarce. On these lines, Horobeț et al. (2007) used the Du Pont model in order to explain the causes of financial performances of a sample of 39 Romanian companies listed on the Bucharest Stock Exchange for the 2002-2005 periods and to identify a possible trade-off between efficiency and profitability in time and across industries. The results do not confirm the presence of such a trade-off on the Romanian market, but profitability levels seem to have the highest impact on both ROA and ROE. In a more recent study, Horobeț et al. (2010) used the Du Pont model and market ratios such as PER and EPS to explain the determinants 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. The authors find that Romanian companies' performances fluctuated significantly, maybe with the exception of financial leverage and to some extent efficiency, regardless of how performance is measured, and that companies were not capable of using the trade-off between profitability and efficiency to boost their ROA and ROE.

The second direction of research relevant to our study investigates the link between financial indicators and market performance, particularly since the advent of CAPM, which asserts that investors price only systematic risk, measured by beta, and predicts a positive relationship between beta and stock returns (Sharpe, 1964). Empirical studies 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 PER have higher returns than stocks with high PER, even after taking into account the impact of beta, while Bhandari (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. Outside the United States, 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. 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. 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.

The third research direction involves the use of panel data sets in empirical finance. In corporate finance, we typically encounter panels with large cross sections, while in asset pricing panels with long time series are more common. Studies in the field of corporate finance focus on dividends and leverage policies. In this regard, in a recent paper, Fama and French

(2002) tested the dividend and leverage predictions of the tradeoff and pecking order models. In asset pricing papers we find cross section analysis of equity returns and their relation to firm characteristics. For example, Brennan et al. (1998) examined the relation between stock returns, measures of risk, and several non-risk security characteristics, including the book-to-market ratio, firm size, the stock price, the dividend yield, and lagged returns. Panel data models for individual stock returns are scarce. Cavaglia and Moroz (2002) apply a panel to study the stock allocation across countries and industries. They use panel data at the industry level and do not include individual company effects in their model specifications. Other examples are discussed in Haugen and Baker (1996) and Brennan et al (1998). All empirical studies with individual firms rely on the estimator of Fama and MacBeth (1973). Bauer et al. (2004) performed specification tests in unbalanced panel data models for forecasting of stock returns and find that the industry effects in the panel are significant and interact with firm characteristics. The industry specific intercepts and coefficients correct for the industry heterogeneity and enable within and between industry predictions. In their opinion, there are good reasons why the analysis of portfolio returns has been much more popular than working with panels of individual stock returns. First of all, panels of individual data are inherently unbalanced, as companies come, merge and go and well diversified portfolios are less noisy than individual firm data. The explanatory variables for individual firms are sometimes even noisier than the returns. Portfolio construction strategies are usually robust against outliers in the explanatory variables.

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, as including financial firm in our sample would have led to misleading results. We also excluded from our sample the financial investments companies (SIFs), which are a particular category of assets listed and traded on BSE, as they represent investment funds based on portfolios formed of a wide range of Romanian companies. As in the case of financial companies, comparing them with a typical non-financial firm would have severely biased the results of our research. As a result, the total number of firms included in our analysis is 34, with an approximate total market value of equity of 18.1 billion euro at the end of 2009 and a share in the BSE's total market capitalization ranging between 22.58% in 2009 and 66.02% in 2004[1]. The majority of our companies come from manufacturing industries – 27 out of 34 - but the companies in the Mining and quarrying sector dominate the sample in terms of market capitalization (79.25% at the sample's level). Four other industries outside mining and quarrying and manufacturing are also represented, but their importance in the sample and BSE's market capitalization is rather small.

For the companies included in the sample 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

[1] Although our intention was to extend the analysis over the highest number of consecutive years possible, going back in time before 2002 would have decreased significantly the number of companies in our sample. At the same time, increasing the number of companies in the sample would have led to an important diminishment of the length of the period used, which makes the analysis less consistent.

firms' financial reports that we used in order to compute the traditional accounting-based ratios (where *t* designates the year for which the computation was performed):

$(1) Total\ asset\ turnover_t (TAT_t) = Total\ turnover_t / Total\ assets_t$; total turnover includes operating, financial and extraordinary revenues of the firm, while total assets include current and net fixed assets, at their book values.

$(2) Profit\ margin_t (PM_t) = Net\ profit\ after\ tax_t / Total\ turnover_t$; net profit after tax is the profit before paying dividends to common shareholders.

$(3) Return\ on\ assets_t (ROA_t) = Net\ profit\ after\ tax_t / Total\ assets_t$; we also decompose ROA, using the Du Pont system, composed as follows: $ROA_t = TAT_t \times PM_t$.

$(4) Financial\ leverage\ multiplier_t (FLM_t) = Total\ assets_t / Shareholders'\ equity_t$; shareholders' equity is the sum of capital provided by shareholders and the accumulated retained earnings.

$(5) Return\ on\ equity_t (ROE)_t = Net\ profit\ after\ tax_t / Shareholders'\ equity_t$; we further decompose ROE as follows: $ROE_t = ROA_t \times FLM_t$.

We have also employed in our analysis two performance indicators that are a mix between accounting and market information and are highly used by market analysts and investors, as follows:

$(6) Earnings\ per\ share_t (EPS)_t = Earnings\ after\ tax_t / Shareholders'\ equity_t$

$(7) Price-earnings-ratio_t (PER)_t = Market\ price\ of\ equity_t / EPS_t$.

The second set of data refers to the companies' stock market performance based on their stock market returns. We used annualized weekly logarithmic returns[2] based on stock market prices, as well as the Bucharest Stock Exchange BET Composite Index (BETC), for the period January 2002 – December 2009. Closing prices were collected from KTD Invest website[3], while data for the BETC index was obtained from the BSE 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, we computed the following risk-adjusted measures of stock market performance:

$(I) Sharpe\ ratio_t (SR_t) = [R_t - R_{ft}] / \sigma_t$; R_t denotes the company's average annual return, R_f is the risk free rate and σ_t is the average annual standard deviation of the weekly returns. The risk free rate used is the average interest rate for deposits with one-week maturity, namely the Romanian Interbank Bid Rate (ROBID), collected from the Romanian National Bank's database.

$(II) Treynor\ ratio_t (TreyR_t) = [R_t - R_{ft}] / \beta_t$; β_t is the coefficient of systematic risk of each company, measured against BETC. 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

$$r_t - r_{ft} = \alpha_t + \beta_t (r_{mt} - r_{ft}) + \varepsilon_t \quad (1)$$

[2] The use of weekly returns is motivated by the diminishment of infrequent trading impact on our data and results.

[3] http://www.ktdinvest.ro/ro/bursa/bvb_soc_list.php

where r_t denotes the weekly return for each company, r_f is the risk free rate and r_m is the weekly return of the BETC index. The ε_t term denotes the residual term of the regression.

III. *Jensen's index* or *alpha (Jensen's α)*, as another risk-adjusted performance measure based on the Capital Asset Pricing Model. Alpha is the intercept of the regression estimated as in (1). This measure offers insight into the performance of the company's stock on a 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.

At the sample level we have calculated simple and weighted averages of these indicators; in the case of weighted averages, the weights were computed based on the market capitalization of companies for each of the eight years.

The most important contribution of out paper resides in the use of panel data methodology to identify significant links between financial reports based information and market performance for the companies in our sample. We undertake the analysis in two steps, as follows: first, we conduct panel unit root tests using the methodologies proposed by Levin, Lin and Chu (2002), Im, Pesaran and Shin (2003), as well as the ADF Fisher test and PP Fisher test proposed by Maddala and Wu (1999) and Choi (2001); second, we conduct panel data analysis by specifying a number of 24 panels where the independent variable is an indicator of market performance and the dependent variables are indicators built on information collected from companies' financial reports. It is worth mentioning that the Levin, Lin and Chu (2002) test assumes that there is a common unit process, while the other three tests we use allow the unit root process to vary across companies. All the tests we conducted include an intercept with the lag length chosen based on the Schwartz criterion.

The general form of the panels we conduct is

$$Y_{it} = \alpha + \beta_{it} X'_{it} + \delta_{it} + \gamma_{it} + \varepsilon_{it} \tag{2}$$

where Y_{it} is the dependent variable, X_{it}' is a k-vector of regressors, and ε_{it} are the error terms for i=1,2,…,M cross-sectional units observed for periods t=1,2,..,T. The error term follows the classical assumption $\varepsilon_{it} \sim N(0, \sigma_\varepsilon^2)$. The parameter α is the overall constant of the model, while and δ_{it} and γ_{it} represent cross-section or period specific fixed or random effects. In our case, we conduct the analysis for 34 companies (M=34) and eight years (t=8). Successively, the panels included as Y_{it} the following variables: Ret, SR, TreyR and Jensen, and as components of the X_{it}' vector the following combinations of variables: ROA; ROE; PM, TAT and FLM; EPS; PER. Thus, we have attempted to consistently test for the presence of influences from as many fundamental analysis indicators on companies' market performances.

The simplest specification we used was one that did not take into account differences across time and companies and assumed all coefficients constant: in such "no effects" specification, estimated using OLS, (NE as reported in our results), we ignore the possible presence of such differences across companies and time. As this is a highly restrictive assumption, we adjust it by letting the intercept vary across companies (in cross-section fixed- and random-effects specifications), across time (in period fixed- and random- effects specifications), and across both companies and time. Such approaches, which allow for variation in intercept but still assume that the slope coefficients are constant across time and/or companies, induce the possibility of heterogeneity at sample level. In our case, heterogeneity may be caused by special features of each company, such as managerial style or strategies, or by special attrib-

utes of years taken into account: years before the financial crisis emerged and financial crisis years. The general models used to make panel estimates with fixed- or random-effects specifications are

$$Y_{it} = \alpha_i + \beta_{it} X'_{it} + \delta_{it} + \varepsilon_{it}$$

for cross-section fixed- or random- effects (3)

$$Y_{it} = \alpha_t + \beta_{it} X'_{it} + \gamma_{it} + \varepsilon_{it}$$

for period fixed- or random-effects (4)

$$Y_{it} = \alpha + \beta_{it} X'_{it} + \delta_{it} + \gamma_{it} + \varepsilon_{it}$$

for cross-section and period fixed- or random-effects (5)

The main difference between fixed-effects and random-effects specifications resides in the assumption related to α: instead of treating it as fixed, we assume α to be a random variable with a mean value of α and a variance $u_{it} \sim N(0, \sigma_u^2)$. This assumption is based on the premises that the companies included in our sample are a drawing from a larger universe of more or less similar companies and that the individual differences in the intercept values of each company are reflected in the error term ε_{it}. Besides the assumptions on ε_{it} and u_{it}, the random-effects model also assumes that individual error components are not correlated with each other and are not correlated across both cross-section and period units:

$$E(\varepsilon_i u_{it}) = 0; E(\varepsilon_i \varepsilon_j) = 0 \text{ where } i \neq j$$
$$E(u_{it} u_{is}) = E(u_{it} u_{jt}) = E(u_{it} u_{js}) = 0 \text{ where} i \neq j \text{ and } t \neq t \quad (6)$$

When running the panel data regressions, we used standard OLS and AR estimations for both fixed-effects specifications and GLS for random-effects specifications.

4. Results

4.1. Analysis of Romanian companies performance

Annex 1 shows the evolution of the simple and weighted average values of indicators based on financial reports information and market data for the entire sample. ROA declined until 2004 and even became negative in 2004 when the weighted average is considered, but the trend was reversed in 2005 and 2006 (this year ROA recorded the highest value for all years – 11.52%). We also observe the progressive decline in ROA until 2009, with a sharp decrease in 2008. Weighted averages of ROA were smaller than simple averages between 2002 and 2004 but higher afterwards, which indicates that bigger companies in terms of market capitalization obtained a worse performance than smaller companies until 2004, but a better one between 2005 and 2009. The main cause of ROA's evolution resides in companies' profitability: over the years, the profit margin was rather fluctuating, with the smallest value for the weighted average PM being recorded in 2004 (-7.77%), a peak reached in 2006 (16.58%) followed by another drop up to a value of 6.50% in 2008. Interestingly, profitability went slightly up to 8.89% in 2009, thus compensating the decline in companies' efficiency and resulting in an increase of ROA that year. The weighted average PM was smaller than the simple average until 2004, suggesting that bigger companies had lower profitability

levels than smaller companies, while the weighted average PMs were higher than the simple averages after 2004 indicating better profitability for smaller companies.

The efficiency of Romanian companies was less fluctuating than their profitability, but we may observe the same declining trend until 2004, with the highest value in 2002 (0.857 for the weighted average PM), followed by a slight increase until 2006, another drop in 2007, an increase in 2008 and the lowest value over the years of 0.514 in 2009. Weighted average TATs were lower compared to simple average TATs in all years, which indicate that smaller Romanian companies were more efficient than bigger companies throughout the period. The solvency level of Romanian companies, indicated by FLM, remained at stable levels over the years, although a small increase after 2005 may be detected. The smallest level of FLM was recorded in 2003 and the highest level was recorded in 2002 but this level was made possible due to an exceptional FLM of one company only (195.55). Again, weighted averages of FLM were smaller in all years compared to simple averages, indicating smaller financial leverage for bigger companies than for smaller ones and, consequently, lower indebtedness and better solvency for bigger companies. ROE's evolution largely mimics ROA, with the exception of 2002-2004 period, which shows a more fluctuating ROE than ROA (ROE was even negative in 2002). The weighted average ROE ranged between -6.50% in 2004 and 17.02% in 2006, but they were higher than the simple averages in 2002 to 2004 and higher afterwards. This suggests that the return provided by bigger companies to their shareholders was in general smaller than the return offered by smaller companies until 2004, while the trend reversed after 2005.

When investigating the drivers of Romanian companies' performances over 2002-2009, we observe that profitability seems to be the main factor of performance, while efficiency and financial leverage play marginal roles – see Annex 2, which presents the descriptive statistics for all indicators in our study. We observe a more homogeneous distribution of profitability across companies from 2002 to 2005 followed by wider distributions, particularly after 2006. In the case of efficiency the distributions are wider in 2002 and 2003 then again in 2008 and 2009. Overall, the standard deviations for TAT are higher than the ones for PM, but this is not uncommon for our sample that includes companies from different industries, with different efficiency levels. Financial leverage displays a more heterogeneous pattern over the years, except for 2002: this 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 the FLM in 2002 is due to one company only that recorded a financial leverage of 195.55, corrected afterwards. For ROA, the distribution across companies is more homogeneous in 2003, 2004 and 2007, and less homogeneous in the remaining year. ROE displays in some years distributions that show a lower diversity across companies (2002, 2003, 2005, 2007 and 2008) and at the same time years with high ranges and the presence of distant extremes. These data imply that the performance of Romanian companies, maybe with the notable exception of efficiency, was highly fluctuating from one year to the other, suggesting that firms do not employ over the years the same tools to boost or even maintain their overall profitability and performance. Moreover, it seems that fluctuations in operational profitability are the main drivers of Romanian companies' overall performance.

The operational and financial performance of Romanian companies was directly reflected in the high volatility of EPS and PER over the years. Both EPS and PER moved closely together until 2008, but in 2009 EPS declines to its lowest weighted average value (1.5%)

while PER increases to 21.33. EPS has positive values over the years: the smallest in 2009 (0.015) and the highest in 2007 (0.145). Moreover, the weighted average EPS were smaller than the simple average EPS until 2006, indicating worse EPS offered by bigger companies than smaller ones. After 2006, the weighted average EPS were higher than the simple average EPS, showing that bigger companies paid on average higher earnings per share than smaller companies, almost certainly due to their higher profitability. PER had high values over the years with the exception of 2004 when the weighted average PER was only 2.71. We are cautious in interpreting the high values of PER as indications of future good expected performance of Romanian companies as they may be, at least partially, the effect of low number of companies available for trading and small liquidity in the Bucharest Stock Exchange. Except for 2005, EPS was rather homogeneous for our sample, while PER exhibited higher variation in 2006 and 2009. Moreover, both indicators' means did not fluctuate too much from one year to the other.

It is easily observable the fluctuating evolution of returns and standard deviations with a close link between the two – also, the increased risk associated with negative returns in 2008 is evident. Bigger companies provided investors with higher returns in all years except for 2003 and 2007, but overall their returns were less volatile – except for 2002 and 2009. Average skewness is fluctuating in a small range: we have years of average positive values (2002, 2004, 2006, and 2007) and years of average negative values (2003, 2005, 2008 and 2009 – with the lowest weighed average value recorded in 2008, of -1.2089). In terms of the differences between big and small companies, bigger companies displayed higher positive skewness only in 2002 and 2004, while in the remaining years smaller companies showed higher skewness. Kurtosis was highly positive for all years, indicating the presence of fat tails in returns' distributions, with the peak recorded in 2003, of 7.0988. Here, bigger companies' return distributions exhibited lower kurtosis compared to smaller companies, a finding that was not entirely unexpected. The highest variability of returns across companies occurred in 2005, 2006 and then 2008, while 2002 and 2003 were years when returns were distributed more homogeneously around the mean. By contrast, the standard deviations of returns display extreme values in all years, but the fluctuation in the means mimics the one observable for the returns. Skewness and kurtosis are less fluctuation over the years when their means are considered, but as in the case of the standard deviations, the variability across companies is rather high, with many outliers and extremes present in all years. These suggest, overall, that the market performance of Romanian companies, somehow following their financial performance, was fluctuating enough over the years, no company or even industry being able to offer investors constantly good returns accompanied by reasonable risk.

The risk-adjusted performance measures for Romanian companies lead us to some noteworthy observations: first, the weighted average beta of the sample ranges between 0.862 in 2004 and 1.371 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, except for 2007, the weighted average beta of the sample was higher than the simple average, which indicates higher betas for the bigger companies investigated; third, the Sharpe ratio (SR) is highly fluctuating over the years, ranging between -0.293 in 2008 (no surprise here!) and 0.2875 in 2004, with another negative value in 2007 (-0.042) - this shows that, overall, the companies were not able to offer investors significantly better risk-adjusted returns compared to the risk-free rate and that in some years an investment in risk-free assets would have provided investors with superior performance; fourth, bigger and

smaller companies changed places one year after the other from the perspective of the risk-adjusted excess return offered to investors, since in only four years out of eight the weighted average SRs were higher than the simple average SRs. When we analyze the Treynor ratio, which shows the beta risk-adjusted return, its weighted average values are highly fluctuating from one year to the other, with no two consecutive years recording positive values, which may be interpreted as an inability of Romanian companies to constantly offer good risk-adjusted performance for investors, this time in terms of market risk. An interesting observation here, though: until 2005, bigger companies had higher Treynor ratios than smaller companies, but this reversed starting in 2006. Jensen's alpha was also fluctuating: we observe five years with negative weighted average alphas, indicating a worse performance of companies against the market expectations, and three years with positive values, indicating better than expected performances. Still, the weighted average alphas were higher than the simple average values only in 2008 and 2009, indicating that smaller companies had better than expected performances compared to bigger companies until the years of the crisis, but this trend reversed in 2008.

Of all the risk-adjusted measures of performance, Sharpe ratios and Treynor ratios display the lowest variability across companies and across the years, maybe with the exception of 2006 and 2009 for Sharpe and 2005 for Treynor. Jensen's alphas were also homogeneously distributed, but 2009 changed dramatically this pattern.

5.2. Panel data analysis

The first step in conducting the panel data analysis consisted in performing stationarity tests. The tests performed on our panels indicated that panels are stationary in all specifications regarding the independent variable and dependent variables[4].

The results of our panel data tests, for combinations of independent and dependent variables and for various specifications, are presented in Annex 3. The tables present the results only for panels where the Adjusted R^2 was found positive. We provide interpretations for results starting with the panels where Ret is the independent variable, and then we continue with the panels where SR, then TreyR, then Jensen are such variables: we will refer to these panels as "Ret panels", "SR panels", "TreyR panels" and "Jensen panels", respectively.

The highest adjusted R^2 of all panels, regardless of their specification or combination of variables, were found in the case of Ret panels: the highest adjusted R^2 is 0.466, in the case of EPS as dependent variable, in a period fixed effects specification. Altogether, the adjusted R^2 were found to be higher when a fixed effects specification was used compared to a random effects specification – this is valid for all our panels. The highest adjusted R^2 for a random effects specification in the Ret panels (0.018) is obtained when PM and TAT are the dependent variables. Moreover, adjusted R^2 are higher when a period or cross-section and period fixed effects specification is used, compared to only a cross-section fixed effects specification, which indicates that when we attempt to take into account firms or period differences the period specificities are more pervasive than firms' specificities. At the same time, when we used Akaike criterion[5] and log likelihood, the same panels on fixed effects specifications provided to be better than the panels on random effects.

[4] Results are available from authors.

[5] The Akaike criterion value is calculated as $-2(l/T)+2(k/T)$ where l is the log likelihood function value with the k parameters estimated using T observation. We use the outputs of panel estimations as provided by E-views.

We find that some of the financial based indicators are statistically significant at various levels (up to 10%) when linked to Ret, and their signs are the correct ones: (1) EPS is statistically significant at least at 5% in all specifications, and the β sign is positive; (2) PM is statistically significant at least at 10% in some specifications – no effects in panel with TAT; cross-section fixed effects in panel with TAT, but in this case the adjusted R^2 is negative; cross-section random effects, period random effects and no effects in panel with TAT and FLM; in cross-section fixed effects in panel with TAT and FLM but again adjusted R^2 is negative; its β sign is positive; (3) ROA is statistically significant at least at 10% in all specifications, with positive adjusted R^2 except for the cross-section fixed effects specification – its β sign is positive; (4) FLM is statistically significant at 1% in all specifications – its β sign is negative, as expected.

Investigating the relative significance of cross-section and period effects in random effects specifications, we observe that total variance of the error components (indicated by Rho) comprises, typically, only period-related variance and idiosyncratic variance, thus confirming our observation that period effects and specificities are stronger than cross-sectional differences.

TreyR panels have the lowest adjusted R^2 of all panels we tested: the highest value of 0.010 in a period fixed effects panel where PER is the independent variable, but the PER coefficient is not statistically significant. Except for four panels with period fixed effects specifications, all panels have negative adjusted R^2. Also, log likelihood values are very small, and Akaike criterion values very high, suggested that such a panel is mis-specified. Moreover, none of the slope coefficients is statistically significant, which suggests that financial reports based indicators do not offer any explanation for market performance measured against systematic risk.

Better results in terms of adjusted R^2 are observed for SR panels, where the highest R^2, although very small, is higher than the same indicator for TreyR panels. The highest R^2 is obtained for fixed effects panels – the best in a PER panel with fixed effects specification (but PER coefficient is not statistically significant). Interestingly, we find that three of the accounting based indicators have a saying for what concerns SR: (1) EPS – its coefficients are statistically significant at 1% or 10% in panels specified with no effects, cross-section fixed effects and all types of random effects, and the sign is positive; (2) FLM – its coefficients are statistically significant at 10% in all panel specifications except for cross-section and period fixed effects; coefficients are negative, but it its worth mentioning that all R^2 are negative, except for cross-section and period fixed effects specifications; (3) ROA – we find positive and statistically significant coefficients in one panel specified with fixed effects, but the R^2 is negative.

Quite interesting is the result of Jensen panels' analysis: the adjusted R^2 are smaller than for Ret panels, but higher than for TreyR and SR panels. The highest R^2 is 0.091 for a panel including ROA as independent variable, with a coefficient that is statistically significant at 10%. Only a few panels have negative R^2, and R^2 values are higher for fixed effects specifications – a result we encountered for the other panels as well – in the form of period fixed effects or cross-section and period effects. Again, this result indicates that the years included in our analysis have specificities that are at least stronger than the companies included in our sample. The same accounting variables as for TreyR panels are found to be statistically significant for the link to Jensen's alpha, plus another one: (1) EPS – statistically significant coefficients at 5% or 10% in all specifications, with higher R^2 for fixed effects specifications

– it is interesting to note that the highest R^2 is found for period fixed effects specifications; (2) PM in only two panels, one with no effects and another one with cross-section random effects in the case of PM, TAT and FLM panels, with statistically significant coefficients at 10%; (3) FLM – in all specifications, statistically significant coefficients at 1% or 5%, with correct negative signs; (4) ROA – statistically significant coefficients at 1% in all specifications except cross-section and period fixed effects. One interesting result in the case of Jensen panels, not found for the other panels, is the statistical significance of intercepts for all types of specifications.

6. Conclusions

Our research adds up to the existing research on the Romanian market with an analysis that refers to the interactions between fundamental analysis and stock market performance for Romanian companies using a panel data approach. The main findings of our analysis concerning the attributes of Romanian companies' performance as indicated in their financial reports may be summarized as follows: (i) Companies' performance, measured either through accounting data or market data, has been rather fluctuating over the past years, comprising better years before the emergence of the crisis; (ii) Performance across companies was mostly heterogeneous over indicators and years; (iii) Operational profitability, measured using profit margin, was the most fluctuating indicator over the years, and its evolution had mainly influenced the other performance indicators such as ROA or ROE; (iv) The efficiency of Romanian companies was less fluctuating than their profitability, but smaller companies displayed better levels of efficiency than bigger ones over the period. These results imply that the performance of Romanian companies, maybe with the notable exception of efficiency, was highly fluctuating from one year to the other, thus suggesting that firms do not employ over the years the same tools to boost or even maintain their overall profitability and performance – either profitability or efficiency.

When we observe companies' performance on the capital market, a few conclusions emerge: (i) The operational and financial performance of Romanian companies was directly reflected in the high volatility of EPS and PER over the years, but bigger companies paid on average higher earnings per share than smaller companies, due to their higher profitability; (ii) Bigger companies provided investors with higher returns, with overall less volatile returns compared to smaller companies; still, when we observe the entire sample, companies were not able to offer investors significantly better risk-adjusted returns compared to the risk-free return; (iii) Smaller companies had better than expected performances compared to bigger companies until 2007, but this trend reversed in 2008, which is an expected result.

Panel data analysis offers interesting insights into the interactions between fundamental analysis indicators and market performance; a few conclusions are noteworthy: (1) Fundamental analysis indicators have a saying for capital market performance, but, apparently, the links that investors make are rather simplistic, as such fundamental analysis indicators seem to determine mostly returns and, to some extent, the actual versus expected performance of companies; nevertheless, it is also possible that we could not detect significant links between fundamental analysis indicators and market performance indicators when more sophisticated performance ratios were used (such as Treynor ratio) due to the very possible invalidation of the CAPM model on the Romanian market – this model is the basis for beta estimation used in the Treynor ratio; (2) The overall better performance of fixed-effects models suggests that the assumption of individual error components not correlated with each other and across

both cross-section and period unit may not hold, on one hand, and/or that our sample of companies is representative for the larger universe of Romanian companies in terms of their performance over these years; (3) Period-related effects are stronger than cross-section effects, which indicates that period specificities over the time span considered are factors that model the interactions between fundamental analysis and capital market performance.

To conclude, we may reasonably state that financial indicators based on financial reports information influence the companies' performance in the capital market, but such influence is observed only at the level of simpler indicators (returns). This suggests that the financial maturity of investors present on the Romanian market is rather low and that, overall, returns are not properly adjusted to risk, at least not to the risk that may be detected from companies' financial reports. We intend to carry on further research using panel data analysis also in a dynamic framework and investigating interactions between changes in fundamental variables and capital market performance indicators. At the same time, the panel data analysis needs to be supplemented by an estimation of slope coefficients allowed to vary across sections and periods.

Acknowledgement

This work was supported by the project "Post-Doctoral Studies in Economics: training program for elite researchers - SPODE" co-funded from the European Social Fund through the Development of Human Resources Operational Programme 2007-2013, contract no. POSDRU/89/1.5/S/61755.

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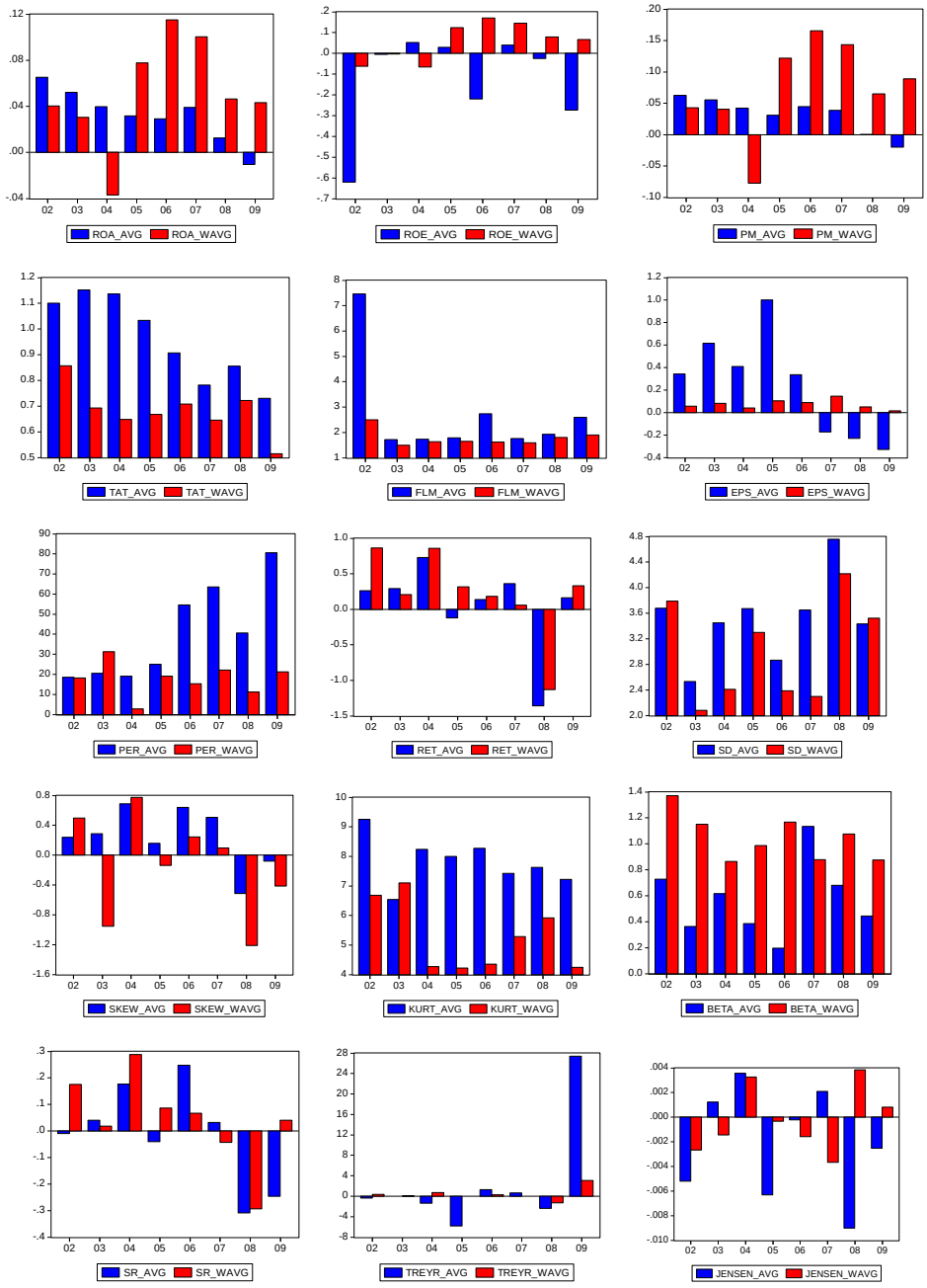
Annex 1. Financial reports and market based indicators: averages 2002-2009



Annex 2. Descriptive statistics of financial indicators, 2002-2009

Year	ROA				ROE				PM				TAT				FLM			
	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.
2002	0.065	-0.142	0.318	0.102	-0.621	-24.484	0.534	4.220	0.063	-0.280	0.362	0.122	1.100	0.286	2.268	0.482	7.463	1.062	195.555	33.240
2003	0.052	-0.190	0.180	0.073	0.053	-0.910	0.308	0.197	0.055	-0.180	0.267	0.082	1.153	0.330	3.460	0.643	1.715	1.025	4.779	0.756
2004	0.040	-0.164	0.171	0.064	0.052	-0.335	0.234	0.122	0.042	-0.112	0.175	0.066	1.137	0.294	3.636	0.622	1.729	1.029	4.338	0.656
2005	0.032	-0.174	0.184	0.082	0.029	-0.631	0.458	0.186	0.031	-0.200	0.169	0.083	1.034	0.170	2.393	0.431	1.787	1.007	5.556	0.899
2006	0.029	-0.259	0.195	0.100	-0.220	-9.110	0.328	1.580	0.045	-0.324	0.193	0.112	0.906	0.173	1.821	0.357	2.739	1.027	35.201	5.773
2007	0.039	-0.110	0.310	0.083	0.040	-0.246	0.270	0.121	0.039	-0.385	0.394	0.122	0.782	0.079	1.937	0.388	1.755	1.013	3.571	0.683
2008	0.013	-0.221	0.216	0.094	-0.024	-0.825	0.339	0.228	0.000	-0.533	0.301	0.157	0.855	0.068	2.252	0.486	1.927	0.996	5.104	0.961
2009	-0.010	-0.349	0.150	0.095	-0.273	-8.502	0.175	1.461	-0.020	-0.426	0.199	0.137	0.730	0.071	2.583	0.513	2.597	1.036	24.328	3.973

Year	EPS				PER				Ret				SD				Skew			
	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.
2002	0.342	-1.327	6.128	1.202	31.026	0.530	217.300	48.635	0.261	-0.815	1.164	0.540	3.679	0.652	8.531	1.607	0.239	-4.796	3.529	1.832
2003	0.616	-1.677	13.739	2.429	27.871	2.580	356.410	64.350	0.290	-0.368	1.248	0.363	2.534	1.026	5.619	0.965	0.286	-3.783	4.080	1.346
2004	0.409	-1.204	5.408	1.104	29.126	2.500	104.000	33.037	0.729	-0.881	1.863	0.563	3.449	0.769	6.885	1.363	0.686	-4.067	3.515	1.612
2005	1.000	-1.007	31.754	5.444	38.841	3.080	104.040	36.394	-0.121	-2.774	0.730	0.685	3.675	0.980	7.244	1.281	0.156	-6.460	3.523	1.677
2006	0.338	-0.757	5.278	1.073	63.315	3.070	693.340	118.142	0.140	-2.969	1.638	0.725	2.865	0.046	10.876	1.790	0.642	-4.481	4.788	1.847
2007	-0.171	-10.499	1.744	1.864	69.529	1.880	379.910	72.417	0.359	-0.621	1.563	0.561	3.652	0.281	8.102	1.477	0.506	-4.544	3.642	1.560
2008	-0.229	-5.256	1.544	1.322	55.546	0.760	327.580	67.989	-1.359	-3.572	-0.095	0.848	4.759	1.006	9.086	1.819	-0.513	-4.844	3.497	1.575
2009	-0.328	-9.712	0.658	1.692	86.847	2.700	996.180	168.273	0.161	-0.909	1.931	0.567	3.435	0.078	6.740	1.582	-0.080	-4.732	3.204	1.622

Year	Kurt				SR				Beta				TreyR				Jensen			
	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.	Mean	Min.	Max.	Std. dev.
2002	9.257	2.877	31.030	6.393	-0.009	-0.385	0.235	0.170	0.728	-0.589	7.814	1.360	-0.379	-10.228	2.823	2.253	-0.005	-0.041	0.019	0.012
2003	7.993	2.790	44.422	7.855	0.041	-0.213	0.301	0.127	0.364	-5.763	1.946	1.318	-0.025	-16.266	4.485	3.134	0.001	-0.011	0.018	0.007
2004	8.271	1.889	29.315	7.113	0.177	-0.155	0.771	0.179	0.616	-0.210	1.297	0.412	-1.354	-76.177	10.167	13.474	0.004	-0.035	0.027	0.012
2005	7.427	1.642	28.801	5.515	-0.041	-0.391	0.243	0.157	0.386	-5.050	1.338	1.016	-5.792	-196.861	8.926	33.843	-0.006	-0.055	0.011	0.013
2006	7.623	2.781	32.155	6.378	0.247	-0.279	7.280	1.252	0.196	-9.854	3.030	1.868	1.309	-15.915	70.053	12.668	0.000	-0.068	0.030	0.015
2007	7.216	1.956	25.273	5.873	0.032	-0.880	0.376	0.214	1.133	-0.118	8.587	1.419	0.648	-0.992	5.722	1.531	0.002	-0.017	0.025	0.010
2008	6.536	2.949	23.539	4.844	-0.309	-0.585	-0.032	0.120	0.680	-2.446	1.869	0.720	-2.344	-11.932	12.612	3.651	-0.009	-0.061	0.028	0.016
2009	8.234	2.853	30.413	6.242	-0.246	-8.012	0.328	1.385	0.443	-0.017	1.276	0.328	27.361	-8.739	892.140	152.988	-0.003	-0.070	0.032	0.016

Annex 3

I. Panel data analysis – results for Ret panels

X_{it}	Panel specifications	α_t	X_{1t}	X_{2t}	X_{3t}	Adj. R^2	Akaike criterion	Log likelihood	S.E. of regression	Cross-section random S.D./Rho	Period random S.D./Rho	Idiosyncratic random S.D./Rho
EPS	Period FE	0.049	0.034**			0.466	1.926	-250.945	0.621			
ROA	Period FE	0.035	0.068***			0.462	1.914	-251.289	0.698			
PM, TAT	Period FE	0.036	0.498	0.006		0.459	1.922	-251.406	0.621			
PM, TAT, FLM	Period FE	0.048	0.523	0.001	-0.003*	0.459	1.926	-250.945	0.621			
ROE	Period FE	0.056	-0.005			0.457	1.923	-252.510	0.623			
EPS	Cross-section and period FE	0.047	0.042**			0.439	2.086	-239.640	0.638			
PER	Period FE	0.079	0.001			0.436	1.947	-210.016	0.628			
ROA	Cross-section and period FE	0.020	1.149***			0.433	2.075	-240.198	0.636			
PM, TAT	Cross-section and period FE	-0.125	0.625	0.169		0.431	2.081	-239.965	0.637			
PM, TAT, FLM	Cross-section and period FE	-0.113	0.673	0.163	-0.003*	0.430	2.086	-239.640	0.638			
ROE	Cross-section and period FE	0.057	-0.002			0.424	2.090	-242.269	0.641			
PER	Cross-section and period FE	0.070	0.001			0.414	2.109	-196.272	0.640			
PM, TAT	Cross-section RE	-0.085	1.044	0.114		0.018			0.837	0.000/0.000		0.865/1.000
PM, TAT	NE	-0.085	1.044***	0.114		0.018	2.494	-336.161	0.837			
PM, TAT, FLM	Cross-section RE	-0.077	1.066***	0.111	-0.002*	0.016			0.838	0.000/0.000		0.867/1.000
ROA	NE	0.015	1.300**			0.015	2.493	-337.087	0.838			
ROA	Cross-section RE	0.016	1.300**			0.015			0.619	0.000 / 0.000		0.872/1/000
PM, TAT, FLM	NE	-0.077	1.066***	0.111	-0.002*	0.015	2.500	-336.013	0.838			
EPS	NE	0.046	0.045***			0.013	2.500	-336.013	0.838			
EPS	Cross-section RE	0.046	0.044***			0.013			0.840	0.000/0.000		0.876/1.000
ROA	Period RE	0.035	0.083***			0.006			0.619		0.601/0.485	0.619/0.515
ROA	Cross-section and period RE	0.035	0.701***			0.006			0.620	0.000/0.000	0.600/0.471	0.636/0.529
PER	Period RE	0.058	0.001			0.005			0.627		0.632/0.503	0.628/0.497
PM, TAT	Cross-section and period RE	0.032	0.516	0.010		0.001			0.621	0.000/0.000	0.623/0.4894	0.637/0.5106
PM, TAT	Period RE	0.032	0.515	0.009		0.001			0.621		0.624/0.5024	0.621/0.4976
EPS	Cross-section and period RE	0.049	0.034**			0.001			0.617	0.000/0.000	0.623/0.500	0.633/0.500
PM, TAT, FLM	Cross-section and period RE	0.044	0.537	0.004	-0.003*	0.001			0.620	0.000/0.000	0.697/0.545	0.637/0.455
PM, TAT, FLM	Period RE	0.044	0.536	0.004	-0.003*	0.001			0.619		0.698/0.5579	0.621/0.4421
EPS	Period RE	0.049	0.034**			0.001			0.616		0.633/0.512	0.617/0.488

II. Panel data analysis – results for SR panels

X_{it}	Panel specifications	α_t	X_{1t}	X_{2t}	X_{3t}	Adj. R^2	Akaike criterion	Log likelihood	S.E. of regression	Cross-section random S.D./Rho	Period random S.D./Rho	Idiosyncratic random S.D./Rho
PER	Period FE	-0.041	0.000			0.053	1.722	-180.395	0.561			
EPS	Cross-section and period FE	-0.030	0.145			0.048	2.216	-251.498	0.683			
PM, TAT	Period FE	0.110	-0.108	-0.128		0.040	2.119	-269.725	0.685			
EPS	Period FE	-0.016	0.031			0.038	2.118	-270.514	0.686			
PM, TAT, FLM	Period FE	0.117	-0.095	-0.131	-0.002***	0.037	2.126	-269.615	0.686			
ROA	Period FE	-0.010	-0.076			0.037	2.118	-270.631	0.686			
ROE	Period FE	-0.012	0.000			0.037	2.119	-270.644	0.686			
ROA	Cross-section and period FE	-0.021	0.250			0.031	2.234	-253.832	0.689			
ROE	Cross-section and period FE	-0.013	-0.002			0.030	2.234	-253.911	0.689			
PM, TAT	Cross-section and period FE	-0.081	-0.142	0.078		0.027	2.241	-253.755	0.690			
PM, TAT, FLM	Cross-section and period FE	-0.077	-0.129	0.076	-0.001	0.023	2.248	-253.735	0.691			
PER	Cross-section and period FE	-0.041	0.000			0.021	1.878	-166.565	0.570			
EPS	Cross-section FE	-0.037	0.196***			0.016	2.226	-259.863	0.694			
EPS	NE	-0.022	0.075*			0.002	2.129	-279.023	0.699			
EPS	Cross-section RE	-0.022	0.075*			0.002			0.699	0.000/0.000		0.694/1.000
EPS	Period RE	-0.022	0.075*			0.002			0.699		0.000/0.000	0.686/1.000
EPS	Cross-section and period RE	-0.022	0.075*			0.002			0.699	0.000/0.000	0.000/0.000	0.683/1.000

III. Panel data analysis – results for TreyR panels

X_{it}	Panel specifications	α_t	X_{1t}	X_{2t}	X_{3t}	Adj. R^2	Akaike criterion	Log likelihood	S.E. of regression
PER	Period FE	3.769	-0.029			0.010	11.099	-1239.686	61.019
ROA	Period FE	1.388	35.152			0.003	10.916	-1475.546	55.851
EPS	Period FE	2.331	0.392			0.001	10.918	-1475.851	55.914
ROE	Period FE	2.477	0.408			0.001	10.918	-1475.870	55.918

IV. Panel data analysis – results for Jensen panels

X_{1t}	Panel specifications	α_i	X_{1t}	X_{2t}	X_{3t}	Adj. R^2	Akaike criterion	Log likelihood	S.E. of regression	Cross-section random S.D./Rho	Period random S.D./Rho	Idiosyncratic random S.D./Rho
ROA	Period FE	-0.003*	0.023***			0.091	-5.842	803.528	0.013			
EPS	Period FE	-0.002**	0.001**			0.089	-5.840	803.260	0.013			
PM, TAT	Period FE	-0.003***	0.015	0.000		0.082	-5.828	802.643	0.013			
PM, TAT, FLM	Period FE	-0.002	0.015	0.000	-0.000*	0.080	-5.823	802.967	0.013			
ROE	Period FE	-0.002**	0.000			0.073	-5.822	800.803	0.073			
PER	Period FE	-0.002	0.000			0.062	-5.864	668.682	0.013			
EPS	Cross-section and period FE	-0.001*	0.001**			0.049	-5.689	815.637	0.013			
ROA	Cross-section and period FE	-0.003*	0.032			0.047	-5.686	815.246	0.013			
PM, TAT	Cross-section and period FE	-0.005**	0.018	0.003		0.037	-5.673	814.595	0.013			
PM, TAT, FLM	Cross-section and period FE	-0.005**	0.019	0.003	-0.000**	0.035	-5.668	814.871	0.013			
ROE	Cross-section and period FE	-0.002**	0.000			0.024	-5.662	812.086	0.013			
ROA	NE	-0.003*	0.024***			0.022	-5.794	0.048	0.013			
ROA	Cross-section RE	-0.003*	0.024***			0.022			0.013	0.000/0.000		0.014/1.000
ROA	Cross-section and period RE	-0.003	0.023*			0.020			0.013	0.000/0.000	0.004/0.089	0.013/0.911
ROA	Period RE	-0.003	0.023*			0.020			0.013		0.0041/0.094	0.013/0.906
EPS	Period RE	-0.002	0.001**			0.017			0.013		0.004/0.101	0.013/0.899
EPS	Cross-section and period RE	-0.002	0.001**			0.017			0.013	0.000/0.000	0.004/0.096	0.013/0.904
EPS	Cross-section RE	-0.002*	0.001***			0.016			0.013	0.000/0.000		0.014/1.000
PM, TAT, FLM	NE	-0.003	0.018***	0.000	-0.000*	0.015	-5.780	790.021	0.013			
PM, TAT	NE	-0.003***	0.017	0.000		0.015	-5.783	789.474	0.013			
EPS	NE	-0.002*	0.001***			0.015	-5.788	789.106	0.013			
PM, TAT, FLM	Cross-section RE	-0.003	0.0178***	0.000	-0.000*	0.015			0.013	0.000/0.000		0.014/1.000
PM, TAT	Cross-section RE	-0.003***	0.017	0.000		0.015			0.013	0.000/0.000		0.014/1.000
PM, TAT	Cross-section and period RE	-0.003	0.015	0.000		0.011			0.013	0.000/0.000	0.004/0.093	0.013/0.907
PM, TAT	Period RE	-0.003	0.015	0.000		0.010			0.013		0.004/0.098	0.013/0.902
PM, TAT, FLM	Cross-section and period RE	-0.003	0.016	0.000	-0.000*	0.010			0.013	0.000/0.000	0.004/0.082	0.013/0.918
PM, TAT, FLM	Period RE	-0.003	0.016	0.000	-0.000*	0.010			0.013		0.004/0.087	0.013/0.913
PER	NE	-0.001	0.000			0.002	-5.832	658.126	0.013			
PER	Cross-section RE	-0.002	0.000			0.002			0.013	0.000/0.000		0.014/1.000
ROE	NE	-0.001**	0.001			0.001	-5.773	787.093	0.013			
PER	Period RE	-0.002	0.000			0.001			0.013		0.004/0.080	0.013/0.920
ROE	Cross-section RE	-0.002**	0.001			0.001			0.013	0.000/0.000		0.013/1.000