



Investigating the Relation between Incremental Profitability Trend and P/E Ratio in the Listed Firms in Tehran Stock Exchange and Identifying Financial Features of These Firms

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ABSTRACT

Since investors are looking for the desired revenue from their investments and risk reduction in their activities, they need tools to help them to achieve this. Information about profitability of firms and its trend and details of their financial context are among these tools. Study of the relation between incremental profitability trend and price ratio to profit in the firms that are listed in Tehran Stock Exchange and identifying features of these firms have been considered in this study and the goal of this study is to help active investors in this market to identify the firms with better stock performance potential. For this purpose 160 firms were studied for a 5- year period that these firms were from the listed firms in Tehran Stock Exchange (2007-2011). The used methodologies for the first hypothesis and to test the sub-hypotheses of the second hypothesis are Regression and ANOVA respectively. The results of this study show that there isn't a significant relation between incremental profitability trends and P/E ratio. This result is different from the obtained results from the other conducted studies about similar firms in the US and Taiwan capital markets. Also there was a significant difference between incremental profitability trends and some financial ratios in contrast to other firms.

Key words: Incremental Profitability Trend, Price-Earnings Ratio (P/E), Financial Features of Firms, Intact Financial Context, Sustainable Potential in Stock Performance

INTRODUCTION

Development of capital market requires promoting investment culture and having suitable environment for investors is one of the requirements to promote investing culture. Stock Exchange can be the best investment environment in order to promote investment culture [1]. In the current economic conditions of our country that the need for the development of capital markets is more evident than any time and evidences shows that private sector (real persons and juridical persons) is willing to take part and invest in capital markets, appropriating investment context should be among the priorities [2].

Providing appropriate investment context must be considered in two dimensions that one of them is development of the capital markets that is quantitative development of the securities markets and the other dimension is providing solutions for investment attractiveness of these markets, that the assistance and guidance of investors to invest in securities with higher yields can be one of them. Any investor who purchases stocks or securities in the capital market expects a favorable return. To achieve this favorable return he cannot perform blindly and accept investment in any securities. Tips that are considered by him in choosing securities have degree of significance that significance degrees of these parameters are different for various investors. Profit is considered as among the most important parameters that can be considered as a suitable guide for investors.

Past trend of profitability, future predictions and policies of dividing profit can have messages for investors and all these cases are indicating to informational role of profit. One of the profit aspects that have been considered as a determining factor in choosing securities in the recent years is continuous and incremental profitability trend. The present study investigates the role of incremental profitability trend and P/E ratio and also identifies and compares the features of firms with / or without incremental profitability trend.

In 2010 Bao et al. [3] conducted a study that was entitled “firms with incremental profitability trends and their features, with evidences from the Taiwan Stock Exchange”. The used statistical sample was 158 firms from Taiwan markets in 2006 to 2010 period, that among them only 5 firms had incremental profitability pattern and the used model was Indres model and regression formation was the least of ordinary squares. By classifying firms to 18 industries they concluded that special industry has no effect on their study. The overall result of their study showed that the firms with incremental profitability pattern have higher Price to Earnings Ratio and these firms are financially intact, in other words, they have more sale and higher current assets and lower debt and higher sales ratio to total assets.

Haidari et al. [4] in his study that had been entitled “relation between profitability ratios and stock return in Tehran Exchange” has tried to test the relation between some of financial ratios and stock returns. This study has been conducted in a two-year period (2009-2010). The firms were classified to 701 types according to their activities. In the next step, 19 activities that had high turnover in the stock exchange were chosen as sample. The tested financial ratios were profit margin, equity returns, and profit before tax, assets returns, profit growth, sale growth and turnover. Bivariate and multivariate regression techniques and OLS technique were used to test the assumptions. Mean of dependent and independent variables including profitability ratios and stock return in the mentioned period is calculated and the relation between them has been considered. The results of simple regressions showed that some ratios such as the assets returns, return on equities profit margin and Profit margin before tax had significant relation with stock return.

The results showed that assets return was more effective than other variables in predicting stock return. In contrast, criteria such as earnings growth, sales growth and asset turnover were not a suitable criterion for predicting the stock returns. Also analyzing multivariate regression showed that variables such as the return on equity and the return on assets together predict about 63% of return changes. The net profit margin and return on equity together predicted about 59% of changes in the stock return.

MATERIALS AND METHODS

The methodology of this study is operational in terms of the goal and the manner of data gathering is a description of correlation type. This method is profitable in studies that their goal is to identify the relation between variables and this study tries to test the correlation between the study variables. The present study is based on the pattern from Barth et al. [5] and also Bao et al. [3] study pattern. So in the first step all of the firms in statistical sample (160 firms) are divided to the firms with /or without incremental profitability trend that this division is based on estimated linear time trend equation that is explained by Indres.

The statistical society of this study is the all the listed firms in Tehran Exchange except than financial intermediary firms since 2006 to the end of 2010. The main reason of choosing this statistical society is that the firms of this statistical society have standard, reliable and understandable information. Since the financial data of the listed firms were needed in the period of the study (2006-2010), given to the conducted study, totally 160 firms have existed in this time period and these firms has formed the statistical society.

Totally in this study two categories of statistical methods have been used to analyze data that include Descriptive statistics and inferential statistics. Descriptive statistics are methods that are used in gathering, organizing, and displaying the distribution of the variables. Descriptive statistics includes mean, median, mode and standard deviation of the data. Inferential statistics is used to infer the characteristics of a statistical society of observations of one or many samples of that society. We use two methods in inferential statistics. First, Pearson correlation method is used to measure the degree of relation between various variables in this study, in the next step the regression analyze is used to estimate the relation between variables. Variance analyze can be used to test the significance of regression model of this hypothesis.

This test is conducted by F. Analyzing and also providing Graphic regression under the title of ANOVA that is the same variance analysis of regression model is done by SPSS software. SPSS and eviews software also have been used in this study.

RESULTS

As can be seen in figure 1, significance level for Kolmogorov-Smirnov test, for Pit and EARNit variables and totally majority of the study variable is more than 5%, so these variables have normal distribution. So, it has been tried to normalize those variables distribution that are not distributed normally by using software and statistical techniques, and given that the dependent variable of the study namely price ratio of per stock at the end of year to per stock price at the beginning of year (Pit) has normal distribution, parametric tests are used to analyze data and to test the assumptions of the study.

The test results of identifying money or panel data indicates that F-statistics value is 15.65 that p-value is equal to zero. So, the assumption of integrated model is not confirmed. In other words, there are individual or group works and panel data method should be used to estimate the model. LM and White Arch variance heterogeneity test results are described in figures 2 and 3.

Table 1. Anisotropy of variance test - LM Arch Test

Variable	Base	P
F-statistic	205.67	0.000
Obs*R-squared	178.38	0.000

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Sample (adjusted): 2 615

Included observations: 614 after adjustments

Table 2.

Variable	Coefficient	Standard error	t	P
C	0.03146	0.0052	5.964	0.000
RESID^2(-1)	0.539	0.034	15.8305	0.000
R-squared	0.2905	Mean dependent var		0.0682
Adjusted R-squared	0.2893	S.D. dependent var		0.1392
S.E. of regression	0.1173	Akaike info criterion		-1.4439
Sum squared resid	8.4289	Schwarz criterion		-1.4297
Log likelihood	445.288	Hannan-Quinn criter.		-1.4383
F-statistic	250.6076	Durbin-Watson stat		2.1024
Prob(F-statistic)	0.000			

Table 3. Anisotropy of variance test - Test White

Variable	Base	P
F-statistic	5.7472	0.000
Obs*R-squared	33.0083	0.000
Scaled explained SS	67.1017	0.000

Dependent Variable: Pi

Method: Panel EGLS (Cross-section weights)

Sample: 1984 1988

Periods included: 5

Cross-sections included: 123

Total panel (balanced) observations: 615

Table 4.

Variable	Coefficient	Standard error	t	p
EARN	0.0032	0.0045	0.7086	0.4789
DEARN	0.0311	0.0369	0.8449	0.3986
C	1.0138	0.1463	6.9261	0.000
Cross-section fixed				
Weighted figures				
	4.3113	Mean dependent var	0.9476	R-squared
	3.6343	S.D. dependent var	0.9338	Adjusted R-squared
	12.9093	Sum squared resid	0.1629	S.E. of regression
	1.9081	Durbin-Watson stat	68.7037	F-statistic
			0.000	Prob(F-statistic)
Figures without weight				
	2.4658	Mean dependent var	0.7689	R-squared
	1.8828	Durbin-Watson stat	13.5754	Sum squared resid

Probability of the model test is equal to zero. Considering that this test statistic is not significant at the level of 5%, homogeneity assumption is denied and heterogeneity of disturbing variance statements is accepted. Since in both conducted tests for regression model the probability is less than 5%, so fixed effects method should be used in this model.

It can be seen in figure 5 that the estimated coefficient for profit ratio variable after-tax profit at the end of year and profit after-tax at the beginning of the tax year (EARN) is 0/003222 and this coefficient is not significant

at the 95% confidence interval. The estimated coefficient for the variable of interest ratio, after end year after-tax to profit after-tax at the beginning of year multiplied by the dummy variable incremental profit firms (DEARN) is equal to 0.031189/0 that with regard to the significance column, it is observed that the estimated coefficient is not significant at 95% confidence level, because its significance is more than 5%(0.3986). Thus, significant linear relationship in 95% confidence level between incremental profitability trend and price earnings ratio (P/E) is rejected.

Table 5. Regression test combination

Dependent Variable: P _i			
Method: Panel EGLS (Cross-section weights)			
variables	Coefficient	Statistics	p
EARN	0.0032	0.0708	0.4789
DEARN	0.0311	0.8449	0.3986
C	1.0138	6.9261	0.000
R2	0.1476		
R.adj	0.1338		
F	68.7037		
p	0.000		
Durbin-	1.9081		

DISCUSSION

This study was conducted to examine the relation between the incremental profitability trend and P/E ratio in the listed firms in Tehran Stock Exchange and to identify financial features of these firms. The accepted hypotheses suggest that there is a significant relation between firms with or/ without incremental profitability trend and the firms with incremental profitability trend have higher ratio of operating income to total assets, net profits to total assets and higher firm market value to total debt and also they have lower long-term debt ratio to total assets. And these are as the same ratios that were confirmed for the previous studies about firms with incremental profitability trend in Taiwan and the US markets. Obtained results are consistent with previous researches [6, 7, 8 & 9].

Rejecting two other hypotheses, namely high sale ratios to total assets and working capital to total assets in the firms with incremental profitability trend to other firms, unlike those cases that were confirmed in previous studies in the United States and Taiwan markets states that though according to the second hypothesis, the firms with incremental profitability trend to other firms have better situations in Tehran Exchange, but since investment value of firms in their long-term assets section in this market is not updated and since ratio of their current assets to long-term assets is high, the two recent ratios in this market in comparison to Taiwan and US markets are not part of characteristics of firms with incremental profitability trend and these two hypotheses are rejected and there is no significant difference with acceptable confidence level between firms with incremental profitability trend and other firms in Tehran Stock Exchange about these two ratios [10, 11, 12 & 13]. Thus, the second hypothesis is accepted since most of its sub-hypotheses are not rejected.

To test the first hypothesis of listed firms in Tehran Stock Exchange a previously proposed regression model was used. The results also show that the estimated coefficient for the variable of price ratio to per stock profit multiplied by dummy variable of incremental profitability firms (DEARN) is 0.031189, given that the significance column it is observed that the estimated coefficient is not significant at 95% confidence level because its significant is more than 5%(0.3986). Thus, a significant linear relationship in 95% confidence level between incremental profitability trend and price earnings (P/E) ratio is rejected. This result is contrary to the results of the research about the U.S. and Taiwan markets. In other words, in Tehran Stock Exchange, the firms with incremental profitability trend have less interest rate price.

REFERENCES

1. Ahmadi, B. & Bahramfar, N. 2003. The relationship between the dividend yield on a stock exchange company in Tehran, Thesis Master of Accounting, Tehran University, Faculty of Management and Accounting.
2. Bagherzadeh, S. 2003. The Cross-Section of Expected Stock returns in Iranian Stock Market: Some Empirical Evidence", Journal of Financial Research, Faculty of Management of Tehran University, Vol 5, No 15, Spring & Summer 2003.
3. Bao, B.H. & Bao, D.H. 2010. Increasing Earning Firm and their Characteristics: Evidence From the Taiwan Stock Market" Advance in International Accounting, 15, 45-46.
4. Haidari, I. Alidadi, A. & Shamsabadi, D. 2012. Relation between profitability ratios and stock return in Tehran Exchange. Regional Conference on Modern Topics in Accounting, Ahvaz, Sama Technical and Vocational College, Ahvaz Branch.

5. Barth, M.E., Elliott, J.A. & Finn, M.W. 2009. Market Rewards Associated with Patterns of Increasing Earnings” *Journal of Accounting Research*, 37, 378-413.
6. Bae, K.H. & Kim, J.B. 1998. The usefulness of earnings versus book value for predicting stock returns and cross corporate ownership in Japan. *Japan and the World Economy*, 10, 467-468.
7. Ball, R. 1978. Anomalies in Relationships between Security's Yields and Yield-Surrogates. *Journal of Financial Economics*, Vol. 6, 103-126.
8. Chan, K.C. 1991. Economics and stock returns in Japan, *Journal of Finance*, 46, 1739–1764.
9. Choi, F.D.S. 1983. Analyzing Foreign Financial Statements: The Use and Misuse of International Ratio Analysis. *Journal of International Business Studies*, 12, 212-237.
10. Fama, E.F. & French, K.R. 1998. Dividend yields and expected stock returns. *Journal of Financial Economics*, 3–27.
11. Fama, E.F. & Schwert, G.W. 1977. Asset returns and inflation. *Journal of Financial Economics*, 5, 115-146.
12. Gordon, A. 1964. An empirical note on the independence of technology and financial structure. *Canadian Journal of Economic*, 23, 693-699.
13. Mukherji, S. 1997. A fundamental analysis of Korean stock returns. *Financial Analysts Journal*, 53(3), 75-80.