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Investigating Content of Statements' Information Applies to Financial Performance Evaluation of companies (Evidence from Tehran Stock Exchange)

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Abstract

Purpose- This research aims to study the relationship and effect of economic value added (EVA), return on equity (ROE), retained earnings, return on assets (ROA), cash value added (CVA) and free cash flow (FCF) with stock returns. The population of the research consists of 94 companies accepted in Tehran stock exchange (TSE).

Design/methodology/approach- The data were analyzed using Eviews software and at two levels of descriptive and inferential of Pearson correlation coefficient tests and multi-variable regression analysis through step by step method. All hypotheses were confirmed except the relationship between ROA and stock return at 95 percent of confidence level..

Findings- The results of regression analysis indicated that the variable of EVA with -0.231 standard coefficient have the most reverse effect on stock return, the residual profit with the coefficient of 0.172 stood at second rank and free cash flows and EVA respectively with standard beta coefficient of 0.129 and 0.114 were graded third and fourth with positive effect on stock return.

Originality/value- The variable of ROA through step by step regression didn't show meaningful effects on stock return. Then we conclude that the content of statements information significantly explain financial companies performance.

Keywords: Information content, Tehran Stock Exchange, Financial Performance.

1. Introduction

Since the discussion about separating possession from management was formed and a paradox was created between owners and managers, evaluation of performance of companies and managers and their leaders has been rising in importance among different groups such as credit givers, owners, governments and even managers. From the viewpoint of shareholders, increasing wealth through raising share price and firm value or other monetary interests is of immense importance. This evaluation is important to managers since they will have evaluation of their own performance and the market standing of other sectors. They care a lot about the pay rise given them which is due to their opinion. These evaluations are important to governments, banks, financial institutions. What matters is how important these are to investors since they are reluctant to invest in companies with high risks. Therefore if they do invest their money in such companies, they will demand higher interests owing over the great risks that they take (Taghavi, 2002). The return on investment demanded by investors is merely focus on single index. However we can conclude that prediction of capital returns plays major role in investment. In order to predict capital returns, investors take account of various factors. In other words there are a lot of factors that affect on prediction of capital returns. Thus identifying factors that have impact on stock returns plays a key role. Therefore in this research with fundamental approach we tries to present the most important factors that affects stock return and finally put forth a model to predict them.

2. Literature review

There are so many researches in the area of identifying effective factors that affect on stocks return but we focus here on those researches which that are the most pertinent to the current study. Uyemura et al (1996) have studied the relationship between economic value added (EVA) and market value added (MVA) and the four criteria of net income, interest on each share, return on assets (ROA) and return on equity (ROE). The number of samples in their research includes 100 holding companies, banks member of Strong Stewart institution in a period of ten years since 1986 to 1995. The results of their study indicate that EVA has more correlation with MVA and leads to more gains for shareholders.

Pixoto (1999) has conducted an study, analysis of the information content regarding Operating Income, Net Income and EVA, based on a sample of 39 Portuguese public companies during the period from 1995 to 1999. He found out that EVA had the highest correlation with stock exchange market value.

Clinton and Chen (1995) proposed EVA and other traditional criteria as the most effective decision making factor, from investor point of view, after comparing the price and stock return with CVA criteria. The results showed that the companies using EVA criteria in order to evaluate their performance should consider CVA as a substitution to stock return. Kelyman (1999) studied whether the companies choosing EVA as performance criterion have had any changes in the values of shareholders in relation to other companies. The number of companies chosen in this analysis using EVA criterion reached 71 companies and the time period was limited to 1987 - 1996. The results indicate that the companies using EVA criterion gained a total added return of 28.8 percent for the period of 4 years in relation to average of industry. In other word, they conclude that the companies using EVA criterion could enhance their operating profit margin of interests in relation to other companies.

Tracey and Worthington (2000) in a research studied information content of EVA in comparison with operating income and operating cash flow (OCF). They concluded that operating profit by 23.67 percent of determination coefficient comparing to OCF (18.10 percent) and EVA (14.29 percent) could be more explanative to total stock return. Tracey and Worthington (2000) introduced the most logical combination of performance criteria towards efficacy of combining operating income with EVA.

Len and Makhija (1997) in a research studied the relationship of the five performance criteria (ROA, return on sales (ROS), EVA, MVA, ROE) with stock returns. In their research they mentioned that EVA and MVA were effective criteria for performance like traditional criteria. Anvarirostami et al (2004) studied the relationship between EVA and earnings before interest & Tax (EBIT) and cash flows from operating activities with stock exchange market value of companies accepted in Tehran stock exchange (TSE). The results indicated that EBIT had more correlation in relation to EVA with market. Zahiri (2007) studied the relationship between EVA and earnings per share (EPS) with the value of stock exchange market of companies accepted in TSE market during 2004-1379. The results showed that the EVA had more correlation in relation to EPS with market value. Noravesh and Heidari (2010) conducted a research in order to study the relationship between the stock return of companies accepted in (TSE) and CVA and traditional criteria of operating profit and CVA during 2003-2008. They found out that CVA was a correct criterion to determine price changes of stocks. Noravesh et al (2004) studied the relationship between gained wealth for shareholders and operating cash flows (OCF), operating profit and operating value added. According to the research results, EVA was an appropriate index to foresee the wealth created to stockholders and that it was capable of assisting stockholders to evaluate management performance. Based on the accounting indices that have so far been utilized are not sufficient and will not explain the ever- increasing challenges of capital market. Therefore some measures need to be thought up so that criterion of EVA replaces some accounting indices or at least be produced along with them. Dastghir (2011) studied the relationship between cash flows and stock return of companies. The results obtained from testing the hypotheses in all the companies using tentative and integrative data showed that only the independent variable of free cash flows (FCF) have meaningful relationship with stock return and although the data had been obtained with respect to predetermined coefficients, at both tentative and integrative level, the relationship was weak and in some years there was a little or even no relationship at all. Thus the results indicated little capacity of OCF in order to evaluate performance of the companies. However a weak degree of relationship was observed between OCF and FCF with stock returns. Izadinia (2003) conducted a research under the title of "evaluating trade centers using patterns of EVA and FCF and determining price gap and stock value"; The results showed that in Iran's capital market there was a meaningful relationship between stock prices, market value of companies, MVA and factors such as EVA and FCF. Mashayekhi (2004) studied information content of EVA and CVA in contrast to accounting profit interest and the cash obtained from operations. The results showed that CVA and EVA had a meaningful relationship with stock returns. However in this research based on all important previous

finding we draw out all variables had showed significant effect on stock return to design a comprehensive pattern for its prediction.

Research hypotheses

According to literature review and TSE situation seven hypothesis were developed in this study at the following**:**

1. There is a meaningful relationship between EVA and stock returns.
2. There is a meaningful relationship between ROE and stock returns.
3. There is a meaningful relationship between ROA and stocks returns.
4. There is a meaningful relationship between residual income and stock returns.
5. There is a meaningful relationship between CVA and stock returns.
6. There is a meaningful relationship between FCF and stock returns.
7. Among performance evaluation criteria, EVA enjoys more of information content.

3. Research Methodology

The current research is descriptive-correlative in terms of applicability and survey-tentative in terms of time. Regarding the subject of the study, the population includes all companies accepted in TSE. The reason for this choice is accessibility to data. The population of the research whose duration was 1385-1390 of 461 companies operate in 36 industries.

Therefore the population of the research includes companies which had the following conditions:

1. Fiscal year of the firm should have led to the end of 20 March[18] in every year.
2. During the research period that, from 2006 to 2011, there must not to change fiscal year.
3. They should take active part in TSE since the beginning of 2006 to 2011.
4. The financial data that they needed must have been accessible in order to be extracted.
5. They should not have taken part in investment group (owing to difference of their activity with other companies).

Research sample has been chosen in a systematic sampling way and through random sampling the main sample has been extracted. Among the population of the research, the companies that had the above-mentioned conditions constitute 180 companies and out of them 94 companies extracted as research sample. In order to calculate sample size the following formula was used:

$$n = \frac{N\,Z^2\,P.Q}{(N-1).\varepsilon^2 + Z^2\,P.Q}$$

N: Number statistical population of the research which constitute 180 companies

Z: Standard variable of normal distribution at the rate of 95 percent significant level.

ε: Error in calculation of the sample at the rate of 5 percent.

In order to maximize sample size the P and Q- success and failure ration respectively - set to 0.5

And using this formula population sample calculated

$$n = \frac{180.(1.96)^2.\left(\frac{1}{2}\right).\left(\frac{1}{2}\right)}{180.(5)^2+(1.96)^2.\left(\frac{1}{2}\right).\left(\frac{1}{2}\right)} \cong 94$$

1.4 Statistical techniques

As mentioned before in order to determine content of statement information we tried to establish and find relationship among statement critical elements and stock return as financial performance for this purpose using correlation and regression analysis is necessary. Because of regression ability in anticipating our primary concentration focused on this powerful technique. Effective usage of this technique require to follow some key

[18] Fiscal period in Iran: 21 March to 20 March.

steps including Durbin-Watson measure, Godfery test and stability of variance. Thus to control these major factors two phases considered including:

1.1.4 indices of sufficiency of fitting regression

2.1.4 Stability of Variances

Now will mention these two phases in detail here

1.1.4 Indices of sufficiency of fitting regression

An important measure which play considerable role at regression model fitting and tells whether or not regression model can explain the relationship between dependent and independent variables proves Durbin Watson measure; the analysis result summarized at the following table.

Table No.1, Durbin Watson test

Criterion	Criterion in Digit1s	Criterion	Criterion in Digits
R-squared	-0.1507	Mean dependent var	0.4979
Adjusted R-squared	-0.1610	S.D. dependent var	0.3797
S.E. of regression	0.4091	Akaike info criterion	1.0608
Sum squared residual	93.2088	Schwarz criterion	1.1069
Log likelihood	--292.6021	Hannan-Quinn criter.	1.0788
Durbin-Watson stat	2.1531		

Test results: The value obtained for Watson camera test as shown in the table is 2.15. Since the value is limited to interval of 1.5 to 2.5 then errors of the model are not self correlated. Then it will be possible to claim that regression model can be fitted as anticipatory model. The results of Godfrey test mentioned bellow with meaningful level of 0.006 which is smaller than 0.05 indicates that errors of the model aren't auto correlated. Another measure that cab be applied to show the fitted regression model goodness. The result demonstrated at the following table.

Table No.2 Godfrey test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	3.051943	Prob. F(6.556)	0.006
Obs*R-squared	17.95099	Prob. Chi-Square(6)	0.0064
Scaled explained SS	38.94568	Prob. Chi-Square(6)	0.000

2.1.4 Stability of Error Variance

Stability of error variance is another key determinant to regression analysis. If the variance of errors do not have stable elements it is called heterogeneous variance. One of the tests to diagnose homogeneity of variance is White and Glejser test. The following table demonstrates test of Variance stability**.**

Table 3. Variance stability test			
Heteroskedasticity Test: Glejser			
F-statistic	4.87807	Prob. F(6.556)	0.0001
Obs*R-squared	28.15481	Prob. Chi-Square(6)	0.0001
Scaled explained SS	35.12932	Prob. Chi-Square(6)	0.000

Regarding the table above we conclude that the value of white measure equals 4.87. The meaningful level obtained from this test equals 0.0001. Since this value is smaller than meaningful level of the test (0.05) then variance of errors is not unstable at 95 percent of confidence level. .

4. Data analysis

After controlling preliminary analysis which explain the capability of regression model in current study and confirmation of all necessary elements to application of regression model we utilized regression model for testing hypothesis. Thus in this section hypotheses are tested using multiple regression model and correlation coefficient. Test results based on correlation coefficient and regression analysis are depicted bellow:

Table 4. Results of hypotheses from 1st research to the 6th

Hypothesis	Independent Variable	Correlation Coefficient	β	Standard Error	T	P-Value	R^2	F	Durbin Waston	Result
H1	EVA	0.202	0.246	0.000	5.757	0.000	0.039	33.146	2.149	Accept
H2	ROE	0.202	-0.980	0.201	-4.881	0.000	0.039	23.824	2.149	Accept
H3	ROA	0.032				0.449			2.071	Reject
H4	Residual Income	0.174	0.103	0.001	4.195	0.000	0.029	17.602	2.071	Accept
H5	CVA	0.096	0.073	0.032	2.292	0.022	0.007	5.254	2.085	Accept
H6	FCF	0.154	0.120	0.032	3.699	0.000	0.022	13.682	2.147	Accept

As it seen the whole theory was confirmed but ROA. This fact indicates that it is not possible to discuss the relationship between ROA and stock return at least about the companies under study. In other words, no relationship was observed between these two variables.

Besides, correlation and beta coefficient test applied to test intensity of effects among variables to stock return was employed. The premises focused EVA criteria, according to previous finding and researcher experience but the result slightly differed. The results of analysis are shown at table 4.

Table 4: results of hypotheses from 7st

Independent Variable	B	Standard Error	T	P-Value	F	R^2	Durbin Waston
Constant	0.567	0.051	11.083	0.000	–	–	2.236
EVA	0.247	0.000	5.603	0.000	33.146	0.054	
ROE	-1.124	0.194	-5.796	0.000	28.326	0.088	
Residual Income	0.003	0.001	4.409	0.000	27.077	0.122	
FCF	0.100	0.031	3.244	0.001	24.066	0.141	
CVA	0.087	0.031	2.842	0.005	21.112	0.154	

As shown at table above the residual income and EVA had the greatest effect on stock return and the residual income has the least effect.

5. Discussion

We will focus here to compare the result of these study with other relevant researches around world for this purpose we preferred to discuss about any hypothesis independently.

First hypothesis: There is a meaningful relationship between EVA and stock return.

The significant level observed for the two variables above was less than 0.05 and correlation coefficient was 0.236. Thus it is said that there is a positive and direct relationship between EVA and stock return and the relationship is quite strong. The effect of EVA regarding Regression beta coefficient equals 0.236. The results of the hypothesis are compatible with the research conducted by Mashayekhi (2004) and Tracey & Worthington (2000) since their research results showed that there was a meaningful relationship between EVA and stock return.

Second hypothesis: There is a meaningful relationship between ROE and stock return.

The correlation between ROE and stock return and correlation became meaningful and coefficient equals -0.202. Thus it can be conclude that there is a negative relationship between ROE and stock return and relationship is quite strong. In order to determine the effect of ROE on stock return, uni-regression test was employed and the result showed a meaningful regression with respect to the significant level observed for F (Sig=0.000< α =0.05). Also the significant level observed for T test for this variable was smaller than $\alpha = 0.05$. Thus as mentioned in (table No.4) the ROE was meaningful in terms of having effect on stock return and it had negative effect on it. The effect rate of ROE with respect to beta regression coefficient equals -0.980. Consequently the hypothesis was compatible with the research of Len and Makhija (1997), because their research results also had indicated meaningful relationship between ROE and stock return.

Third hypothesis: There is a meaningful relationship between ROA and stock return.

The results showed that there is a meaningful relationship between ROA and stock return and the significant level observed for the two variables above is bigger than 0.05 and the correlation coefficient equals 0.032. Thus there isn't meaningful relationship between ROA and stock return. The result isn't compatible with the research conducted by Len & Makhija (1997) since their research results showed that there was a meaningful relationship between ROA and stock return.

Fourth hypothesis: There is meaningful relationship between the residual income and stock return

Meaningful relationship between the residual income and stock return were observed and the correlation coefficient was equal to 0.174. Thus we can conclude that there is direct and positive relationship between the residual income and stock return. The effect rate of the residual income with respect to beta regression coefficient was 0.103. Research results indicated that as the residual income and factors affecting it increase, stock return has also increase as mush. The results are compatible with Pixoto (1999), Clinton and Chen (1995), Tracey and Worthington (2000), because their research results showed that the residual income have meaningful relationship with stock return.

Fifth hypothesis: there is a meaningful relationship between CVA and stock return

The significant level observed for the two variables above is smaller than 0.05 and the correlation coefficient equals 0.096. The effect rate of CVA with respect to regression beta coefficient equals 0.073. The research results are compatible with the study conducted by Mashayekhi (2004), since his results showed that EVA had a meaningful relationship with stock return.

Sixth hypothesis: There is a meaningful relationship between FCF and stock return

The correlation coefficient equals 0.154 and there was a direct and positive relationship between FCF and stock return. The effect rate of FCF with respect to regression beta coefficient equals 0.120. The results were compatible with the studies conducted by Dastghir (2011) and Tracey and Worthington (2000), since their research results also indicated that FCF has meaningful relationship with stock return.

The seventh hypothesis: EVA out of performance evaluation criteria enjoys more content information

Standard beta coefficient in the final model (6) through step by step regression analysis in previous section indicated that the effect of the 5 variables on dependent model variable were meaningful. Among which the variable of EVA with standard coefficient of 0.219 had the greatest positive effect and consequently was rated first. The residual income with coefficient of 0.172 was rated second and consequently FCF and CVA respectively with standard beta of 0.129 and 0.114 were rated third and fourth regarding positive effect on stock return. However the variable of ROA whose meaningful level exceeds 0.05 is put out of the model. Test results of the seventh variable are compatible with the studies conducted by Noravesh et al (2004). According to the results of the current research EVA is a more appropriate index for the wealth created for shareholders and it is capable of assisting shareholders in evaluation of management performance.

The results obtained from the tests conducted in this study indicate that EVA and residual income have the greatest relationship with stock return. Despite the fact that EVA criterion is an appropriate criterion in measuring wealth of shareholders and achieving objectives laid down by companies, it can be said that existence of the above mentioned relationship originates from market efficiency and political and economic factors dominating the country. Generally stock exchange market price is a little far from the real value and therefore facilitates financial and economic analysis. If efficiency of market capital is produced and prices undergo their real trend, it is expected that EVA representing a firm's wealth can foresee the status of market capital.

6. Conclusion

Regarding the fact that in this research it was determined that the effect of the variable of EVA is more prominent, investors are recommended to use this pattern as a basis to achieve higher financial information about companies. Also other users of financial data of analysts are recommended to use the results of this research in their decision making.

Other researchers are recommended to carry out this research separately under the subject of companies with positive and negative free cash cycles. With respect to differences of different industries in terms of characteristics and nature, it is recommended to them to conduct separate researches and compare the results. Finally according to all research finding it possible to claim that content of statements information and financial performance are significantly correlated in Tehran Stock Exchange market and these information can utilized by all investor and other stakeholder for efficient decision making.

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