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# THE IMPACT OF PERFORMANCE EVALUTION CRITERIA ON ANNUAL STOCK RETURN IN DIFFERENT STAGES ON FIRM'S LIFE CYCLE

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*Abstract*

***Accounting and economy and combining are the most important approaches of assessing performance of companies. As assessing performance of companies is very important in economic decision-makings, different criteria and methods were defined for them. But shares return is the most important criteria for economic decision-makings. This investigation is an attempt on The Impact of Performance Evalution Criteria on Annual Stock Return in Different Stages on Firm's Life Cycle. For this purpose, 122 companies accepted in Tehran Stock Exhchange wrer selected for 5 years during 2009 to 2014. According to the use of multivariate regression analysis by and panel data using fixed effects on data extracted from the financial statements of companies in the sample, showed that the adjusted economic value added, market value added, and queen ration in maturity and decline stages of the company life cycle, have the maximum and minimum impact on the annual stock return, respectively.***

***Keywords:*** *Performance evaluation, return on equity, economic performance measurement, enterprise life cycle.*

## I.INTRODUCTION

Accounting purposes and financial reporting arising mostly from the external information needs of users. Main aim of financial reporting includes expressing financial position and performance of commercial units for people out of unit is to help them in making financial decisions. Gaining profit and wealth is one of the main incentives for people to invest. Create value and increase shareholder wealth over the long term is one of the objectives of economic enterprises, and increasing wealth is obtained just due to desirable performance. The main goal of any business is to create value for its owner. Certainly, aim of investors in a company includes earn an appropriate return on capital investment. If a company or organization is successful in

creating value, not only investment and company insiders, but also society would be interested of this value. Given that shareholders and creditors, allocate their limited financial resources to firms, performance evaluation of enterprises, need to know the criteria and standards of performance (Zhou et al., 2008). Today companies key role of large enterprises and developing in the country's economic structure is obvious. The Company as the main pillars of the economy of countries consumes a large amount of economic resources such as capital, labor, raw materials and energy. On the contrary, given the volume of production and sales, it plays an important role in economic development. For this reason, discussion about Company and its related topics was considered by theorists and researchers in economics and to all applied branches of science and a lot of research has been done in this regard. Among the various topics relating to companies, managers performance and assessment of companies, have a special role. Performance evaluation of companies are the most important topics interest for investors, creditors, government and managers, and is the basis of many decisions inside and outside the organization. Paying enough consideration is essential when choosing the best method of different performance assessment methods. The performance evaluation shows the company's success in reaching the goals. As a result, salaries and bonuses of managers of these companies must be commensurate with their performance. Their goal is also closely related to the performance of companies. Basically, there is significant relationship between performance and aim. From the perspective of traditional theories, if the companies mangeres can maximize profits or the value of their company, by achieving the purpose of company, they have favorable function.

Basically,no goal is set for the company in modern theories, but aim of parties is to maximize their profits. Not using correct criteria for determining companies value and assess their performance results in make price and value of shares more or less than their real value. Consequences of the incorrect assessment may lead to losses of some companies and stakeholders, interested, and many others of their rightful and profit(Chang et al, 2009). This study aimed to investigate the effect of performance appraisal criteria on annual stock return in the life cycle of the company.

## II. RELEVANT LITERATURE AND REVIEW OF THE LITERATURE

One of the purposes of financial reporting includes providing the necessary information to interpret the situation and evaluation of profitability of firms. On the other hand, investors are also looking to maximize their wealth. The most important information includes status of the industry, shareholders, management, internal information, combining production, and product market and accountants information. Most investors are faced with the question of the use of which such information can help them in making optimized decision?

A decision that will lead to maximize investors' wealth. The accompanying financial statements and notes are the most important sources of information for investors to interpret the situation of an enterprise. Accounting process provides an information set about the activities, results of operations and the company's sources and uses of cash for the fiscal period of a year. Investors and financial analysts use this information can realize the economic entity (Ramvda et al., 2006). In the seventies and eighties AD was

done extensive research on the use of accounting information. In this study, both groups emphasized the capitalists and financial analysts.

Various researchers, conducted extensive research on the use of accounting information by financial analysts. Centuries ago, the economists found that the company should gain value worth more than cost of their capital. Various researchers conducted extensive research on the use of accounting information by financial analysts. Centuries ago, the economists found that the companies should gain the worth more than their cost of capital. This concept was applied under different names such as residual income. The remaining interest was converted to measure the performance of firms (Zhang Zhou, 2008). Today, key role of large and developing enterprises in the country's economic structure is obvious.

This company as main pillars of the economy, consume a large amount of economic resources such as capital, labor, raw materials and management work force. In contrast, due to the volume of production and sales, it plays an important role in economic development. For this reason, discussion about company and topics related to it was considered by economics theorists and researchers and all branches of Applied Sciences. Many researches have been done in this regard. Among the various topics relating to companies, performance assessment and evaluation of companies have a special role. Performance evaluation of companies is very important for investors, creditors, government and managers. It is the basis of many decisions inside and outside the organization. No aim is determined for company in modern theories, but maximizing interest of partis is aim of ninterests. Lack of application of the appropriate criteria for determining the value of the company and evaluation of their performance makes value and its stock price valuation is more or less than their true value. Incorrect assessment of the consequences may lead to losses of some companies and stakeholders, interested, and many others of their rightful and profit (Zayma and Turkish, 2004). Different approaches are used to evaluate the performance of companies that each has strengths and shortcomings. Also, different classifications have been made for this criteria, including criteria for determining corporate value and performance of managers have classified in two categories. The first was entitled as accounting models and the other one is categorized as economic models. The first factor is operating profit and second factor is profit conversion value. In economic models, the value of a company is a function of power gains on assets and investments and the potential difference between the rate of return and cost of capital. In the accounting model, the value of a company is subsidiary of the different measures of profit, earnings per share, profit growth rate, return on equity, book value, cash flow, dividends and stock supply and demand (Desai et al., 2007). Yang et al (2001) classified standards of performance assessment in five factors as indicators residual income, residual income component indices, market-based indicators, traditional indexes and indexes based on Cash. Residual income indices are indicators that their cost of capital is considered. Among these factors, Cash Value Added and Economic Value Added can be pointed. Indicators related to components of residual income, are the earnings components that are not included in the cost of capital. Among these are the earnings before interest and taxes, earnings before interest and taxes, depreciation and amortization, earnings before extraordinary items, operating profit after tax and return

on assets. Market-based indicators are metrics obtained from the capital market and among these indicators can be pointed to stock excess returns and annual returns.

Fans of traditional theories in accounting, believe in utility of historical information and believe these information can provide better the historical context of the economic entity. Some of these traditional indices may be noted as net profit, operating profit, earnings per share and profit before tax to sales. Cash-based indices are based on the cash. Some of these indicators include investments return cash and operating cash flow. By studying the issue idol studies have found that Emile DJ et al (2013) in his study examines the impact on intellectual capital on stock returns of companies in Indonesia's. The results showed no effect of intellectual capital on the stock returns.

Latif et al (2012) in research carried out intellectual capital efficiency and company performance in developing countries (compared Islamic banks and conventional banks) in Pakistan. The results of this study indicate a significant relationship between human capital efficiency and almost all variables of performance of Islamic banks and a significant relationship between capital productivity and performance variables in conventional banks.

Maditynus et al (2012) in their study examined the relationship between intellectual capital, the value of the stock market and financial performance. The results of this study indicate a significant positive relationship between intellectual capital, the value of the stock market and financial performance of the Company.

Maditynus et al (2012) investigated to modelize performance-based criteria based on value and accounting measures in Capital markets in Greece. in this study, selection-value based performance criteria include economic value added and market value added, performance measures based on accounting data, earnings per share, return on assets, and return on equity. Their results suggested that earnings per share , in explaining stock returns, is more than EVA and other traditional criteria examined. Lee et al (2009) in a study measured the value of investing in information technology used modern and traditional performance measures. The results showed that investments in information technology, has recorded a significant relationship with economic value, return on sales and return on equity.

Baker and Vargler (2006) studied on how emotional trends of investors impact on sectional stock returns. Based on their findings when the first indicator of trends is felt at a low level, small stock returns, the new, volatile, non-profit, no dividend, growth potential and financial crises, high maximum and vice versa. This indicates that these stocks in the downward trend felt investors, relatively less than the priced.

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**III. Hypotheisis of research**

- Hypothesis one : the impact of adjusted EVA on annual stock return in growth stage is more than emergence stage.
- Hypothesis two: the impact of adjusted EVA on annual stock return in maturity stage is more than growth stage.
- Hypothesis three: the impact of adjusted EVA on annual stock return in decline stage is less than growth stage.
- Hypothesis four: the impact of adjusted EVA on annual stock return in growth stage is more than emergence stage.
- Hypothesis five: the impact of adjusted EVA on annual stock return in maturity stage is more than growth stage.
- Hypothesis six: the impact of adjusted EVA on annual stock return in decline stage is less than growth stage.
- Hypothesis seven: Tobin's Q ratio of the company on annual stock return in growth stage is more than emergence stage.
- Hypothesis eight: Tobin's Q ratio of the company on annual stock return in maturity stage is more than growth stage.
- Hypothesis nine: Tobin's Q ratio of the company on annual stock return in decline stage is less than growth stage.

**IV. Methodology**

This is a descriptive – applied research. In the present study to gather the required information, the two sets of data are used: The first category of information that is relevant to research literature library and visit the website, texts and studies have been carried out. The second category of information are data of research due to the retrospective are the library mathod and visit the caudal site and other stock sites , the required information will be collected. Tehran Stock Exchange site is data collection tools in this study. After extracting the necessary data on the variables, the financial statements of companies, by performing various tests on the sample size, the results will be generalized to the entire community. This investigation was done during 2009 to 2014, because all data required for the investigation are accessible. To achieve reliable results, the companies after the 2009 entered stock market or have been out of stock in the population during the study were not. In addition, to achieve the desired sample, systematic elimination method is used. After the sampling, 122 companies were considered as samples.

**V. VARIABLES AND METHODS OF MEASUREMENT**

- Annual stock return

The total yield benefits packages that during the year the contribution is awarded. To calculate the return on equity of equation (1) is used:

$$R_{i,t} = \frac{(1+\alpha)P_{i,t} - P_{i,t-1} - \alpha(1000) + (1+\alpha)D_{i,t}}{P_{i,t-1} + \alpha(1000)}$$

Where:

$R_{i,t}$ : Rate of return of company i in period t .

$P_{i,t}$ : Company i share price in period t

$P_{i,t-1}$ : Company's share price I in period t-1

$D_{i,t}$ : Ownership Beneficial of shares of compny i in the period t (dividend per share)

α : *bonus shares is corporate Award.*

*- Economic Value Added*

*Standard economic value adjusted is obtained by the following formula.*

$$REVA = \frac{NOPAT - (C \times M\ Capital_{t-1})}{\text{Book value of equity beginning of period}}$$

Where:

NOPAT : Net operating profit after taxes

C: Cost of capital rate

Mcapital : The market value of company assets

- Market Value Added

Market added value calculated by the difference between book value and market value of equity shares. Equation 4 is used for calculating this variable(Hanifi et al, 2014).

$$MVA_{j,t} = MV_{j,t} - Invested\ Capital_{j,t}$$

Where :

$MVA_{j,t}$ : The company's market value j in year t

$MV_{j,t}$ : The company's stock market value j in year t

- Tobin's Q ratio

Tobin's Q is the ratio of a company's stock market value to book value of assets minus liabilities that can be expressed as follows:

$$Q - Tobin_t = \frac{MVA_t}{BV_t}$$

In this regard:

Q-TOBIN: Tobin's Q ratio,

MVA: the value of the stock market and

BV: Book value equity.

- Size of the company

Company size is the logarithm of total assets at the end of the year.

4.8. Leverage

In this investigation, Leverage is obtained as follows:

LEV = total debts / total assets

- Company life

The life of a company can be obtained from the logarithm of the number of months of its activities.

-Cash flow ratio
The amount related to flow ratio are gained by refere to cash amounts settlement. The ratio is calculated as follow:
CFO = cash flows of operational activities / total assets

**VI-MODEL OF RESEARCH**
The following regression model is used to test hypotheis of research :

$$R_{it} = b_0 + b_1 REVA_{it} + b_2 MVA_{it} + b_3 * Q\text{-}Tobin_{it} + b_7 * SIZE_{it} + b_8 * LEV_{it} + b_9 * AGE_{it} + b_{10} * ROA_{it} + b_{11} * CFO_{it} + e_{it}$$

Where:
R: return of company
REVA:adjested economic value added
MVA:market value added
Q-TOBIN: Queen ratio
Size: firm size
LEV : Leverage
AGE : Age of company

ROA : rate of rerurns on assets
CFO: cash flow ratio

**VII. RESULTS**
Normality test of error sentences of research hypotheses model Jarek-Bra tests was used for data normalization - in Eviews software environment. The test results are presented in Figure 1.

Figure 1: The results of tests for normality of the hypothesis model error terms

| Variables | Symbol | Jarek-Bra statistics | Jarek-Bra statistics probability | Skewness | Elongation |
|---|---|---|---|---|---|
| Model of hypothesis | Resid1 | 12.52 | 0.066 | -0.175 | 2.39 |

According to statistics, the probability of Jarek - Bra for more than the level of 5%, and the amount of skewness and kurtosis in the range of 3 and 3 is optimized, it can be concluded sentences of model error of hypotheses are normally distributed.

- Check the line between independent and control variables of research
The results of the research line between independent and control variables shown in Figure 2.

Figure 2: Check the line between independent and control variables of research

| Independent and control variables | Linearity statistics | |
|---|---|---|
| Symbol | tolerance | Variance inflation factor |
| REVA | 0.48 | 2.064 |
| MVA | 0.55 | 2.045 |
| Q-TOBIN | 0.49 | 2.037 |
| SIZE | 0.98 | 1.020 |
| LEV | 0.913 | 1.096 |
| AGE | 0.916 | 1.041 |
| ROA | 0.967 | 1.034 |
| CFO | 0.987 | 1.022 |

Since the tolerances in all the variables is more than 2.0 and the amount of variance inflation factor is less than five, therefore, concluded there is no co-linearity between independent and control variables of research .

- Heteroskedactisity Test

In the present study, the white test is used to detect heterogeneity of variance and the results are given in Figure 3.

Figure 3: Check Heteroskedactisity of variables

| Test name | White statistic | Freedom degree | White statistic probability |
|---|---|---|---|
| White | 3.98 | 3.203 | 0.068 |

The results indicate that the test probability value, is greater than the level of 5%, this suggests variance consistency and was observed that there is no heteroscedasticity problem.

- Chow and Hausman test

Before testing the research hypotheses, the appropriate regression model has been chosen. In the first stage, using the Chow test, consolidated data pattern has been selected than the panel data. Results are shown in figure 4.

Figure 4: selecting pattern of Panel Data than combined data in hypothesis of research

| Test name | White statistic | Freedom degree | White statistic probability |
|---|---|---|---|
| F Limer | 4.78 | 136.53 | 0.00 |

According to the above image data, statistical probability of Chow test is less than the level of 5%. The suitable model for the research hypothesis, is using panel data. Because of selecting panel data models than combined data , to select the fixed effects model against random pattern, for a combination regression, the Hausman test was used. Results are shown in figure 5.

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Figure 5: Choose a fixed effects model against the random effects in the research hypotheses

| Test name | Chi square | Freedom degree | Chi square |
|---|---|---|---|
| Hausman | 10.63 | 7 | 0.00 |

As is known, the probability Hausman test statistic is less than the level of 5%. The use of fixed pattern against random effects model in the research hypothesis is true.
Test research hypotheses
test of the hypotheses of the first group
The fixed effects regression model of the hypothesis are shown in Figure 6.

Figure 6: fixed effects regression model of hypotheses of research

| Appearance stage | | | | Growth stage | | | |
|---|---|---|---|---|---|---|---|
| t- Prob | t- Statistic | Coefficient | Variable | t- Prob | t- Statistic | Coefficient | Variable |
| 0.0000 | 5.357468 | 1.167673 | REVA | 0.0000 | 5.744015 | 3.202320 | REVA |
| 0.0006 | 3.133306 | 0.256111 | MVA | 0.0000 | 5.075279 | 2.216182 | MVA |
| 0.0009 | 2.285018 | 0.032503 | Q-TOBIN | 0.0003 | 2.171291 | 2.004373 | Q-TOBIN |
| 0.8414 | -0.200122 | 0.006535 | SIZE | 0.8986 | -0.127520 | -0.004102 | SIZE |
| 0.7661 | 0.297533 | 0.012975 | LEV | 0.8031 | -0.249458 | -0.010776 | LEV |
| 0.0251 | 2.243880 | 0.203438 | AGE | 0.0043 | 2.865813 | 3.257391 | AGE |
| 0.0815 | 1.743916 | 0.095344 | ROA | 0.0687 | 1.822526 | 0.098167 | ROA |
| 0.5990 | -0.525980 | -0.020780 | CFO | 0.0003 | -2.407185 | -3.015851 | CFO |
| D-W | F-Prob | Adjusted $R^2$ | $R^2$ | D-W | F-Prob | Adjusted $R^2$ | $R^2$ |
| 2.21 | 0.000 | 0.30 | 0.32 | 2.10 | 0.000 | 0.52 | 0.51 |
| **Maturity stage** | | | | **Decline stage** | | | |
| t- Prob | t- Statistic | Coefficient | Variable | t- Prob | t- Statistic | Coefficient | Variable |
| 0.0000 | 7.551715 | 11.175530 | REVA | 0.0580 | -1.898168 | -0.090221 | REVA |
| 0.0000 | 6.355640 | 9.019209 | MVA | 0.0020 | -3.100884 | -0.252377 | MVA |
| 0.0000 | 10.390603 | 12.035093 | Q-TOBIN | 0.1309 | -1.512153 | -0.071127 | Q-TOBIN |
| 0.8998 | -0.125890 | -0.004099 | SIZE | 0.0003 | 2.236074 | 2.013046 | SIZE |
| 0.6831 | 0.408310 | 0.017754 | LEV | 0.6840 | -0.407185 | -0.015851 | LEV |
| 0.0256 | 2.236913 | 0.201918 | AGE | 0.0576 | -1.901053 | -0.088270 | AGE |
| 0.0031 | 2.861070 | 2.101537 | ROA | 0.0016 | -3.172608 | -0.255129 | ROA |
| 0.5247 | -0.636353 | -0.025081 | CFO | 0.0000 | 3.951625 | 2.956352 | CFO |
| D-W | F-Prob | Adjusted $R^2$ | $R^2$ | D-W | F-Prob | Adjusted $R^2$ | $R^2$ |
| 1.99 | 0.000 | 0.62 | 0.72 | 1.95 | 0.000 | 0.25 | 0.26 |

Based on regression models adjusted coefficient of determination at different stages of the life cycle, it is achieved the highest and lowest values of the explanatory annual stock return by the independent variables, in maturity and decline is explained. So that at maturity 62%, and in decline stage 25% of annual return on stock changes are explained by changes in the independent variables. Then, to test the hypothesis of research, t-test was used to compare. The results are explained in Figure 7.

Figure 7: The results of the research hypotheses

| Hypothesis | Life-cycle stage | comparison T-Test | Sig |
|---|---|---|---|
| 1 | Growth to Rise | 5.925362 | 0.0000 |
| 2 | Maturity to growth | | |
| 3 | Decline to maturity | | |
| 4 | Growth to Rise | 10.654821 | 0.0000 |
| 5 | Maturity to growth | | |
| 6 | Decline to maturity | | |
| 7 | Growth to Rise | 9.806513 | 0.0000 |
| 8 | Maturity to growth | | |
| 9 | Decline to maturity | | |

Based on information contained in the above image, the result is that the effect of stock returns adjusted economic value added, market value added, and Tobin's Q ratio, at different stages of the life cycle significantly different from one another. On the other hand, by the regression models, according to Figure 6, the conclusion was that the effect of the adjusted economic value added, market value added, and Tobin's Q ratio on stock returns, in a growth phase, towards the appearance stage and in mature stage are more than growth stage. in the decline is less than maturity stage .according to above findings that are in line with the hypotheses is that they are approved.

## VIII. CONCLUSION AND SUGGESTION

During this investigation by a study on resources related to topic of research, and accorsing to results of this research, some suggestions are presented as follows:

According to the results, these variables include adjusted economic value added, market value added, and Tobin's Q ratios have a significant positive impact on annual stock returns.

In other words, by improving economic value added , In other words, by improvement of the adjusted economic value added, market value added, and Tobin's Q ratio of sample companies; also significantly annual stock return increases. According to the results, it is suggested to managers of commercial units to keep the ratio of adjusted EVA market value added and Tobin's Q ratio of the companies under control, and improve annual stock return Units. Investors are recommended to rank target companies based on adjusted economic value, market value added, and Queen ration. Invest in units the activities of the entity mentioned, in terms of this ratio, is at a high level. Finaly, it is suggested to researchers to study and test on other factors in effective study on Annual stock return.

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