RELATIVE AND DIFFERENTIAL INFORMATION CONTENT OF ECONOMIC VALUE ADDED, EARNINGS, OPERATING CASH FLOW AND STOCK RETURN

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ABSTRACT

The lack of satisfaction about using the traditional performance assessment has resulted in presenting several suggestions about new performance assessment criteria. Economic value added is one of the most important items among these criteria. In this research the superiority of economic value added as an economic criterion of performance assessment, was tested in comparison with other accounting performance assessment criteria. Our sample involves 120 companies accepted in Tehran Stock Exchange during the time period between the years 2003 and 2010. We have used panel regression to test the relative data content of economic value added and other accounting criteria and also to test differential (growing) data content of economic value added elements. The results of testing the research hypotheses showed that accounting profit (net profit and net operational profit after taxation) has more data content to describe the traits of stock return compared to economic value added and operational cash flows. The promissory goods and operational cash flows also have differential (growing) data content compared to other economic value added elements in describing the traits of stock return.

Keywords: Economic value added, Differential (increasing) data content, Relative information content, Stock return, Earnings, Cash flow operating.

JEL CODE: M41, G10

INTRODUCTION

Stern Stewart Company, the presenter and the main supporter of economic value added- the business symbol for residual profit- believes that instead of using the profit or operational cash flows, economic value added is used as a criterion for measuring the internal and external performance.

As Stern Stewart Company states the profit, the profit for each stock, and profit growth are deviating criteria regarding the companies' performances, while economic value added is the best criterion to assess the firm's performance and measures the real economic profit of a company unlike other criteria in performance assessment and is directly related to the changes on the wealth of the stockholders (Stewart, 1991). Stewart (1994) showed in one of the researches that economic value added has been the best criterion to create wealth for stockholders that could describe the changes in stockholders' wealth almost %50 more than accounting criteria (earning per share, return of investment, and owners' equity). Also Stern Stewart Company announced in 1995 that issues such as earning per share, return of investment, and owners' equity should be forgotten. Economic value added is something which can determine stock price (Stewart, 1994). Economic value added has been praised in business and financial magazines and it has been noticed by accounting scholars. Titles such as: the hottest financial idea of the day, the real resolution for creating value, and a new way to absorb customers have been used in "Fortune Magazine" about economic value added. Peter Darker (1991) believes that economic value added is one of the most comprehensive criteria whose growing popularity is refluxing the demand of the new information era (Biddle et al., 1998). In theoretical literature, the usefulness of economic value added has been discussed broadly. Different researches have been carried out about the relationship between economic value added and return of stocks compared to other accounting performance assessment criteria in which the results were different. The results of some of these studies have reported a weak relationship between economic values added and stock return. Also some studies have shown that economic value added (as an economic criterion of performance assessment) has been more successful in describing the behavior of return of stock than other accounting performance assessment criteria (Fergusen et al., 2005). In the present research we have tried to test the data content of economic value added compared to accounting performance assessment criteria in Iranian capital market to pose the needed guidelines based on the research results to compare and select the stocks of different companies for the investors and help them to choose investment portfolios with appropriate returns.

Describing and Explaining the Research

Accounting return rates have always been criticized for their inability in measuring economic profitability. The important deviations were among the main disadvantages which could be brought about by choosing accounting methods in measuring profitability. This fact has led to carry out studies which foster the creation of other performance assessment criteria such as operational cash

flows and economic profit criteria (Kashanipour Mohammad. and Rasaeeyan Amir., 2007). Economic value added is a concept of economic profit which was posed and supported by Stern Stewart Company following some adjustments on the accepted accounting principles in order to create a meaningful interpretation of the residual profit. Stern Stewart Company believed that economic value added is the value stimulator of stockholders and the changes in values for stockholders can be better monitored by it compared to the traditional accounting criteria of performance assessment (Ismail, 2006). Since the accepted goal of economic value added is the increase in stockholders' wealth, determining its relationship amount with return of stocks is the absolute demand of the investors (Garvey and Milbourn, 2000) because the stockholders' main goal of investing in the firms' stock is to increase their wealth and this is realized through return of stocks. Thus, assessing the return of stocks of different companies is the most important issue for the investors (Chen and Dodd, 1997). In this research, the usefulness of performance measurement criteria will be assessed based on their capabilities in describing the behavior of return of stocks. To do so, we suggested testing the data content in the two formats of relative data content and differential (increasing) data content. The test of relative data content of economic value added and other measurement criteria express and determine which of these criteria has a more descriptive power compared to others. The test of differential (increasing) data content of economic value added also determines whether the unique elements of economic value added (accounting adjustments, capital cost, utilized capital) prepare the differential (increasing) data content compared to its residual elements (operational cash flows and promissory goods) to identify the behavior of stock return or not (Ansari Abdomahdi. and Karimi Mohsen., 2009).

Background Research

A lot of researches have been carried out about stock return and its descriptive variables. The emergence of big corporations in 18th century and the isolation of ownership from management, has led to pose different models of performance assessment. But choosing an appropriate criterion is a subject with the most common occurrence of research papers in financial literature. Dechow (1994) showed that the correlation between the profit and return is considerably more than the correlation between the return and the cash resulted from the operations and the net cash flows . Stone & Heirs (1991) studied the data content of the promissory earnings through testing its relations with bonds' return and found a direct relationship between these two variables. Patel & Kaplan (1977) found out that cash flows do not present any surplus data content compared to annual net earnings. Ball & Brown (1996) concluded that profit can describe return of stocks' behavior better than operational cashes . Tehrani Reza. and Fanni e-Asl Mohsen. (2007) found out in a research entitled: "the relationship between cash resulted from operations and promissory profit with stock return of firms accepted in Tehran Stock Exchange" that there is a meaningful relationship between cash resulted from operations and promissory profit with stock return. But the promissory profit has more data content compared with cash resulted from operations in predicting stock return (Asadi gholamhossein. and Nazari Marand Hassan., 2009).

HYPOTHESIS

First Hypothesis: The relationship between economic value added and stock return is meaningful.

Second Hypothesis: The relationship between accounting profit and stock return is meaningful.

Third Hypothesis: The relationship between operational cash flows and stock return is meaningful.

Fort Hypothesis: The data content of economic value added is more than data content of accounting profit regarding the description of stock return behavior.

Fifth Hypothesis: The data content of operational cash flows is more than data content of accounting profit regarding the description of stock return behavior.

Sixth Hypothesis: The unique elements of economic value added have more differential (increasing) data content than the residual elements regarding the description of stock return behavior.

Sample Selection

Our statistic society was firms listed in Tehran Stock Exchange. First archiving method was utilized to collect data about theoretical literature and then data collection was done through financial statements of firms and other authentic sources in Tehran Stock Exchange (CDs and rdis.ir & irbourse.com sites).

Our sampling method was systematic deletion (filtering). Thus، selection requirements included:

1-Firms have the same financial periods and ended to esfand.

2-The firm's financial information for research period was gettable.

3-There is not any dealing stoppage more than 3 months.

4- Firms before year 2002 matriculate in Tehran stock exchange.

5-The sample is not among investing industry or brokerage or monetary and banking institutions.

6- The research period includes the years between 2003 and 2010.

Research Method

This research is descriptive-correlation type research. We have used the past data in the present research. Thus, the research method used is post-incidental. In this research, we have used descriptive statistics methods to analyze the data. Then the normality of the dependent variable has been investigated by using Kolomogorov-Smirnov test. The meaningfulness amounts for return and Ln (return) were calculated for the years between 2003 and 2010. Since only we needed a meaningfulness level of more than 0.05 for the logarithm of this variable for different years, we have used the variable's logarithm to estimate the models. In this research, we have used panel analysis instead of the least square regression to analyze the models as integrated data. The least square regression result in an inappropriate estimation of parameters' coefficients besides creating pessimistic results. The regression models used to test research hypotheses are as follows:

$$1)\ LnReturnit = \beta_0 + \beta_1 EVA/M_iV_{t-1}$$

$$2)\ LnReturnit = \beta_0 + \beta_1 NI/\ M_iV_{t-1}$$

$$3)\ LnReturnit = \beta_0 + \beta_1 NOPAT/M_iV_{t-1}$$
$$4)\ LnReturnit = \beta_0 + \beta_1 OCF/M_iV_{t-1}$$

β =Fixed coefficient

NOPAT =net operational profit after taxation

$M_iV_{t-1=}$ market value of the beginning of owners' equity period

EVA=economic value added

NI=net income

OCF=operating cash flow

It should be noted that models 1, 2 and 3 are used to test the relative data content of economic value added and accounting profit and models 2, 3 and 4 to test the relative data content of accounting profit and operational cash flows.

Definition of Terms

The relative data content ranks the performance assessment criteria based on their information content. Also this test is used when we choose a unique criterion from among several performance assessment criteria (Abzari Mahdi. *et al.*, 2008). The differential (increasing) data content assesses whether the criterion creates results other than what has been produced by another criterion or not. This test is used when the surplus data content or data content of a part of a criterion is needed (Yaghoubnejhad Ahmad. and Akkaf Alireza., 2007).

RESEARCH FINDINGS AND CONCLUSIONS

First Hypothesis Test

The first hypothesis states that the relationship between economic value added and stock returns is significant.

$H_0: \beta_1 = 0$

$H_1: \beta_1 \neq 0$

If H_0 is rejected, H_1 will be approved and it shows that there is a meaningful relationship between economic values added and stock return. The results of the test above show that there is a meaningful relationship with %95 assurance level between economic values added and stock return. This result led us to approve the first research hypothesis. The correlation coefficient between economic values added and stock return is 0.444. The results of R^2 also show that %5 of the changes in stock return is related to economic values added and the rest is due to other factors.

Second Hypothesis Test

The second hypothesis states that the relationship between earnings and stock returns is significant.

$H_0: \beta_1 = 0$

$H_1: \beta_1 \neq 0$

If H_0 is rejected, H_1 will be approved and it shows that there is a meaningful relationship between earnings and stock return. The results of the test above show that there is a meaningful relationship with %95 assurance level between Earnings (net income and net operating profit)and stock return. This result led us to approve the second Research hypothesis. The correlation coefficient between net profit and stock return is 0.925 and correlation coefficient between Net operating profit after taxes and stock return is 0.749. The results of R^2 also show that %11 of the changes in stock return is related to net profit and %9 of the changes in stock return is related to Net operating profit after taxes and the rest is due to other factors.

Third Hypothesis Test

The third hypothesis states that the relationship between operating cash flows and stock returns is significant.

$H_0: \beta_1 = 0$

$H_1: \beta_1 \neq 0$

If H_0 is rejected, H_1 will be approved and it shows that there is a meaningful relationship between operating cash flows and stock return. The results of the test above show that there is a meaningful relationship with %95 assurance level between operating cash flows and stock return. This result led us to approve the third research hypothesis. The correlation coefficient between operating cash flows and stock return is 0.128. The results of R^2 also show that %4 of the changes in stock return is related to operating cash flows and the rest is due to other factors.

Forth Hypothesis Test

In this hypothesis the data content of economic values added is assessed in relation with describing the behavior of stock return compared to accounting profit data content. Among these variables, the one which has a higher correlation coefficient R^2 has more data content and can describe the business entity's performance better. Regarding figure 1, the correlation coefficient R^2 of economic values added is less than the identification coefficient of net profit and net operational profit after taxation. This means that accounting profit has more data content than economic values added in describing the stock return behavior. This results in the rejection of the 4th hypothesis.

Table-1. R Square (EVA, NI, NOPAT)

Explain	EVA	NOPAT	NI
R Square	0.05	0.09	0.11

Fifth Hypothesis Test

In this hypothesis the data content of economic values added is assessed regarding the description of stock return behavior compared to data content of accounting profit. Among these variables, the one which has a higher correlation coefficient R^2 has more data content and can describe the business entity's performance better. Regarding figure 2, the correlation coefficient R^2 of operational cash flows is less than the identification coefficient of net profit and net operational

profit after taxation. This means that accounting profit has more data content than operational cash flows in describing the stock return behavior. This results in the rejection of the 5th hypothesis.

Table-2. R Square (OCF, NI, NOPAT)

Explain	OCF	NOPAT	NI
R Square	0.04	0.09	0.11

Sixth Hypothesis Test

The 6th hypothesis states that the unique elements of economic values added have differential (increasing) data content compared to the residual elements regarding the description of stock return behavior.

$H_0: \beta_1 = \beta_2 = \ldots = \beta_5 = 0$

$H_1: \beta_i \neq 0 \quad i = 1, 2, \ldots, 5$

If H_0 is rejected, H_1 will be approved and it shows that there is a meaningful model. The results of the test above show that there is a meaningful relationship with %95 error level between the variables. But since the amounts of t is located in the lack of rejecting H_0, only for the variables of capital cost and accounting adjustments, they are not meaningful and other variables in the model will be meaningful. To find the most appropriate model, we have used step by step method in which the correlation coefficient of the accrual goods is 0.857 and for operational cash flows is 0.743 and Ln Capital is -0.075. Thus, operational cash flows and accrual goods have differential (increasing) data content compared to unique economic values added elements (accounting adjustments, capital cost, capital) in describing stock return behavior. The results led to reject 6th hypothesis.

RESEARCH RESULT

Economic values added index was created by Stern Stewart in order to express the challenges the companies encounter in measuring the financial performance. Whether economic values added describes stock return behavior better than accounting criteria or not, has led to start several researches about this field. In this research, the relative data content of economic values added and other accounting criteria and also differential (increasing) data content of the elements of economic values added were tested by using Panel regression. The research results showed that net profit, operational net profit after taxation, economic values added and operational cash flows have meaningful relationships with stock return. On the other hand, the accounting profit (net profit and operational net profit after taxation) has a more data content in describing stock return behavior than economic values added and operational cash flows. Thus, still the accounting profit has a more data content than economic values added and operational cash flows in predicting stock return for investors and it is taken into consideration by the decision makers in Stock Exchange market as the most important accounting variable in financial and investment decisions. Also the accrual goods and operational cash flows have a more important differential (increasing) data content than the

unique economic values added elements. On the whole, our findings do not support tern Stewart in which economic values added is introduced as a superior performance assessment criterion compared with other criteria in describing stock return behavior.

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