AN EMPIRICAL STUDY OF VALUE CREATION CRITERIA: CASE OF IRAN

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Today's investors, creditors, and managers look for an on-time and reliable index, with the goal of evaluating value creation amount. The aim of this study is inducing voluble measures to users and increasing their understanding yielded these measures by comprising informative contexts accounting and economic measures. For this purpose, the present study tested hypotheses and selected 92 companies listed in Tehran's Stock Exchange, from 2004 to 2008. The results of the study reveal that there is meaningful relation between accounting measures, just ROI and EPS with value creation.

1. Introduction

The industrial revolution changed the economical environment, as trade and business entered a new stage and the number of shareholders increased, as well as the impossibility to direst supervising all of them. In the use of resources and lock of reburied skills in investment, managers governed companies instead of gentling profits. On the long term, economics believed that all groups related to a stake company (such as managers and shareholders) try to reach a common goal. But since 1961, many cases of profit paradox were observed between these groups; therefore companies looked for a solution to this problem. The profit paradox indicates that mangers don't always try to maximize profits of shareholders. The shareholders can adjust existing profit paid by payment salaries and reward according to managers' performance used for analyzing these systems. Because shareholders, as owners of business unions, tried to increase their wealth, and by increasing it they caused a favored action of business union assessment, this issue became important for owners. On the other hand, today's highest challenge for management is proper integration value given for different profit owners in organizations. Investors always need to be informed by the utility of their strategic decisions; in particular, these decisions should build value for company, biannually. The existence of such conditions forces managers to install new economic frames in their companies so that value and profitability be better reflected. In order to do that, finding an index is necessary as the company's performance is logically explored by assessment managers. Several indexes from the Tehran Stock Exchange (TSE) defined and investigated the earning per share clips, return on investment (ROI), and economic value added (EVA), as well as the relationship between the well known index and the value creation for shareholders.

2. Value Creation

For understanding value creation, it is important to define the means of value. In literature, value is meaningful loading which human relate to phenomena; in such cases actions value in business, by creating working tools (hardware) and ways (software) business based on value represent value creation and economic activity firms without thinking and acting where there is no value creation.

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There are two cases for value in organizational levels: using the value and exchanging the value. First type, using the value, is related to special quality, as well as to a job, duty, or product to which users pay attention in finding it, as they depend on it, that is why performances specify the new duty or product. Second type changes the value because money from work, product, job or rate of money which is paid by customer to render for using the value of that duty, work for that product or job. At all, value creation depends on the value obtained by the customer, resulting an exchange of money for the obtained value. Two requirements that led to value creation are introduced: firstly, rebate of money exchanged should be more than costs (money, time). Secondly, the rate of money that customer buys, is one of the determinants of performance that led to difference between the goals of buyers and the new created value. But in accounting, according to Copeland et al., (2000), value is created in the real market by earning a return on the investment greater than the opportunity cost of capital. Thus, the more you invest at a return above the cost of capital the more value you create. That means that growth creates more value as long as the return on the capital exceeds the cost of capital. In nutshell, one should select the strategies that maximize the present value of expected cash flows or economic profits. The returns that shareholders earn depend primarily on changes in the expectations more than actual performance of the company.

Dalborg (1999) pointed out that value is created when the returns to shareholder, in dividend and share-price increases, exceed the risk adjusted rate of return required in the stock market (the cost of equity). He stated that the total shareholder return must be higher than the cost of equity to truly create value.

3. Shareholder Value Definition

One of the most frequently used terms in business today is Shareholder value.

The "equity culture" wildfire is spreading rapidly from the US to the rest of the world. It is seen as crucial all over the world; shareholder value was accredited considerable appraisal following a publication of creating shareholder value (Rappaport, 1998). In the value creation process, creating shareholder value is very important (Fernandez, 2001). "The total economic value of an entity such as a company or a business unit is the sum of the value of its debt and its equity. This value of the business is named the corporate value while the value of the equity portion is named "shareholder value" (Rappaport 1998) in the form of equation:

"Corporate value = Debt + Shareholder value".

This formula rearranged in order to compute shareholder value gives:

"Shareholder value = corporate value – debt".

In this formula the debt portion stands for the market value of debt, unfounded pension liabilities, and also the market value of other claims such as the preferred stock.

The corporate value is the value of the total firm or business unit; it includes the three following components:

- The present value of cash flow from operations during the forecast period.
- The "Residual value" which represents the value of the business attributable to the period beyond the forecast period.
- The current value of marketable securities and other investments that can be converted to cash and are not essential to operating business (Rappaport, 1998).

Serven (1999) commented that what matters most to shareholders is what happens to the price of their stock and then he defines shareholder value as being the market value of a common stock.

4. Shareholder versus Other Stakeholders

Normally in the management model of the shareholder value, the primary goal of the company is to maximize value for the shareholder. The opponents of this model argue that this model does not take into account other stakeholders of the companies. Therefore, they argue that the stakeholder model in which the ultimate goal of the company is to satisfy all stakeholders would be best. Many researchers who studied the shareholder value model have confirmed that other stakeholders are also included in the shareholder value model.

Rappaport (1998) indicated that a growing number of domestic and global companies demonstrated that shareholder value orientation builds more attractive companies not only for investors, but for employees, customers, and also other stakeholders. He mentioned that there are powerful market incentives that lead value-maximizing managers to make consistent decisions with social desirable outcomes, namely work place safety. He argued that the managements governed by shareholder interests would invest in technology, training, or reengineered workplaces that reduce the safety cost. Next, he explains a view that could be an alternative to stakeholder model at the same time as being consistent with shareholder interests. This view recognizes that to continue to serve all stakeholder companies one must be competitive if they are to survive. Furthermore the company's long-term destiny depends on the financial relation with each stakeholder who has an interest in the company. To satisfy the financial claims of those stakeholders, the management must generate cash flow by operating its business efficiently. This is why his emphasis on long-term cash flow is actually the essence of the shareholder value approach. In fact, of a value creating company benefits not only its shareholders but

also the value of other stakeholders' claims; all stakeholders are vulnerable when the management fails to create shareholder value. According to the same author, self-interest dictates that shareholder and other stakeholders engage actively in a partnership of value creation. Dalborg (1999) further discussed this issue and made it clear that the shareholders are the residual claimers on a company's cash flow since they do not have claim to the company's cash flow until the other direct stakeholders have been compensated. He goes on saying that in the company's income statement, other stakeholders are paid before dividends to shareholders are considered. He added that in the long run, of the shareholder oriented management should benefit all stakeholders. Value cannot be created for shareholders unless the interests of employees are met, such as an attractive working environment. Therefore, fulfilling the goal of value creation is the ultimate test of how a company meets the interests of employees, customers and shareholders. Dalborg stated that while a company managed by shareholder concentrates on its objective, it cannot afford to ignore other stakeholders. That is because the employees would leave if they are under rewarded or mistreated, customers will leave if they are not satisfied. Furthermore, suppliers have to be kept happy.

5. Value Creation Methods

There have been identified different ways in which companies create shareholder value. In a research by Nyiramahoro, Shooshina (2001), they concluded that companies, by means of the following methods, can create value for their shareholders:

1) The companies which act in main background, create more value in comprise to companies by different background.

2) The companies which are excellent in operations led to better being between other companies and have the first level in market.

3) The companies which focus on organizational growth and small companies' education by special ability create more value for their shareholders, because they develop business actions by this.

4) Having a right capital structure in every company is necessary, in order to create value for shareholders. The capital structure must be right and the objective is to have a capital structure that enables financial flexibility and long-term stability and at the same time conduct operations using capital in an efficient way.

5) Some of the companies have a clear-cut strategy for creating shareholder value, which is to create shareholder value through eliminating some businesses with poor profitability. They do it because they have a policy, which states that every activity in the company should create value.

6) Stock repurchase for this reason that increases the stock turnover and adjusts debt/equity ratio and also the company's shares were undervalued, and it was good then to use the buy back share system.

7) Some of companies do create shareholder value through focusing on the new areas that will increase the profit and volume in the long run.

8) Giving out enough information to the market will influence the market to believe the good story and to believe in the future of the company as well and this will certainly create value.

9) Having the policy of creating customer value, these companies believed that giving better service to customers, satisfying their needs and developing the consumer market, will create value, especially for shareholders.

10) Having innovation, technical innovation is given much attention in many companies and more is being invested in it.

11) The company constantly challenged itself to do what is better, smarter, faster, and cheaper. Mangers should also provide an exciting, competitive, fast – paced environment for their employees, where there is a great opportunity and rewards for innovation and success.

12) By leading competence, long-term relation and good objectives can create value.

13) Reducing the costs is vital in creating shareholder value in the company and can create more value.

6. Value Drivers

Value drivers are the operating factors with the greatest influence on the operating and financial results and they also incorporate the entire decision- making dynamic. Value drivers help making the strategy real at all levels of specificity that is meaningful and actionable. Value drivers include aspects of the operating decisions and are used to understand non-financial operating measures. Value drivers occur in all parts of the company. In fact value drivers are in root of value creation. Rappaport (1998) explained that value audit permits the managers to monitor the overall value creation and value drivers' analysis is a very critical step in searching for strategic initiatives with highest value creation leverage. He made it clear that the shareholder value analysis helps management to determine the areas of business which need to be managed most; otherwise it is not easy to set priority since many factors can influence the value of a business.

Petty and Martin (2001) recognized that if somebody wants to manage for shareholder value, the first and

foremost are to identify just what drives shareholder value in the capital market.

Dalborg (1999) identified three fundamental drivers of value creation. These are: profitability, growth, and free cash flow. According to him, normally the value of a company is determined by its current profitability, expectation for profit growth, adding that free cash flow could be considered to be a determinant of value in certain situations.

7. Review of Literature

Bacidore et al., (1997) investigated American companies since 1982 until 1992. They concluded that a framework for performance analyzing the created shareholder value calculation, by using return on the investment obtained that resulted from dividend and change in share price for a certain period. They also concluded that economic value added is a suitable measure for performance analyzing and calculating the created shareholder value.

In a sense, there is no miracle formula which indicates long term business strategy effect on wealth of shareholder. Cash flow return on investment of Boston Consulting Group and economic value added, are current tools which applied, financial managers answer to: weather measures of economic value added is better or cash flow return on investment, is difficult. Cash flow return on investment is an accurate measure but very complicate, whereas economic value added is easy but less popular.

After studying a case of innovation and tested new forms that conduct organizational work toward shareholder value creation, Clarke (2000) announced it as a suitable change in center /of frequent announcing of stakes. He concluded that there is value created for shareholder, only when management report strategies in financial statements, which are conducted toward value creation and thus facilitates the stock Exchange in allocating scarce capital resources.

Dockery, Herbert, and Taylor (2000) presented the results of a survey on European and UK CFOs drawn from 175 large companies to 21 contextual value maximizing strategies clustered around three key categories: operating, investment and capital strategies. The results showed that by enhancing operating margins, having the ability to generate new/enhanced products internally, and instituting a leveraged buyout, is respectively excellent operating, investment and capital strategies to create shareholder value. The results support the general proposition that shareholder value is created through a mix of strategies.

Nyiramahoro and Shooshina (2001) presented in a general way how shareholder value is created, as a background to the valuation methods being used for shareholder value creation measurement. The empirical part of the study showed that although the companies in this study have implemented many ways to create shareholder value, little effort is being made to measure it since the majority of them are still using the traditional accounting measures. The reasons for this may be conservatism and lack of pressure from both the stock market and shareholders. They recommended companies to use "value based methods" when measuring shareholder value creation, since they are more reliable.

Bartram (2001) presented a comprehensive review of positive theories and their empirical evidence regarding the contribution of corporate risk management to shareholder value. It is argued that because of realistic capital market imperfections, such as agency costs, transaction costs, taxes, and increasing costs of external financing, risk management at the firm level (as opposed to risk management by stock owners) represents a means to increase firm value to the benefit of the shareholders.

Fernandez (2001) analyzed 582 American companies and used data from economic value added, market value added, net operating profit after taxes, and weighted ave-rage cost of capital obtained from Stern Stewart and searched to this, if economic value added and cash value added measure value creation for shareholder. It was cal-culated for each of the 582 companies, the correlation be-tween increasing market value added for each year and economic value added, net operating profit after taxes and weighted average cost of capital for each year in the last 10 years. He concluded that among 582 companies, for 296 companies the correlation between increasing market value added yearly and net operating profit after taxes is more than the correlation between increasing market value added and economic value added. There were 210 companies which hold negative correlation by economic value added and then the correlation between the shareholder return during 1994-98 and arising of cash value added from 100 profitable companies was 1.1%.

Fernandez (2001) defined and analyzed shareholder value creation. To help us better understand this concept, he used the example of a listed company, General Elec-tric, between 1991 and 1999. He concluded that in order to obtain the created shareholder value, first it must be defined the increase of equity market value, the share-holder value added, the shareholder return, and the re-quired return to equity. He also calculated the created shareholder value of 142 American companies during the three- year period 1997-1999 and during the eight- year period 1992- 1999.

Harmsen and Jensen (2004) conducted a study at the end of which they found a relationship between market demand and company competencies. The method is based on the concept of managerial cognition. By use of two methods, 27 characters of the market and 28 com-panies' competencies were determined and then, by a cognitive re-exhibit manner, by main industrial informers,

related to company competencies, which affected value creation in the market.

Madden, Fehle, and Fournier (2004) analyzed an empirical demonstration of the creation of shareholder value through brands. Using time-honored models from the discipline of finance, this paper specifies, and subsequently tests, the necessary and sufficient conditions to determine whether brand strength leads to the creation of shareholder value. They analyzed 111 companies' performance during 1994-2000 and 13409 shares of companies with or without brands and the results presented strong brands not only deliver greater returns to stockholders versus a relevant market benchmark, they do so with less risk. A reframing of brand research within the framework of risk management is recommended, toward a goal of greater organizational interdependence and accountability for the marketing function as a whole.

Lichtenstein and Dade (2007) sought to redress the current situation by proposing that the needs and values of leaders and executives drive the vision, goals and strategies to create shareholder value. The aim of this paper was to build on previous executive values research, by examining the impact of how the values of one executive value group, translate into methods of creating shareholder value and proposing the linkage between leaders values and shareholder value. First, a theoretical background is provided. Next, the results of empirical research into executive values are briefly reviewed and combined with data and insights from proprietary market research to discuss how the needs and values of one executive value group impact on strategic leadership factors driving shareholder value creation methods. This is followed by proposing a conceptual framework illustrating the linkages between leaders' values and shareholder value creation with propositions.

Husted and Allen (2007) searched if corporate social responsibility (CSR) led to competence and value creation .Although government leaders insist publicly that CSR projects create value for the firm, privately they admit that they do not know if CSR pays off. They examined the impact of three strategic CSR variables–visibility, appropriability and voluntarism- on value creation among large Spanish corporations. The conclusion from these findings suggests that managers need to understand how CSR is similar to and different from other traditional corporate market activities if they are to pursue value creation through CSR.

Yen and Andre (2007) provided empirical evidence on the relation between concentrated ownership and the long term operating performance of acquiring firms. They investigated the performance around 287 takeovers in English-origin countries other than the US by following the classification of La Porta et al. Their principal finding was that the relationship between concentrated ownership and the level and change in operating cash flow returns

after takeovers is non-linear. Value creating deals are associated with higher levels of concentration consistent with decreasing agency costs as the dominant shareholder's wealth invested in the acquiring firm increases. They also found, although all acquiring firms are from English-origin countries, that there is greater investor protection, as measured by the updated anti-director rights index.

Izadiniya (2005) in a study, analyzed traditional accounting norms for investigating financial reports of business units and found that by respect to changed conditions due to global economy, the main challenge of managers of business corporations is value creation for shareholders, specially wealth creation for them, which in the main index for value creation and performance appraisal is economic value added and free cash flow norms.

Hejazi and Maleki (2007) focused measures on which there could be valued shareholders' wealth. They analyzed the relation between cash value added and price to earnings ratio to future return on stock of 85 companies in Tehran Stock Exchange during 2005-2007. The results of the study indicated that informative context price to earnings ratio is higher than cash value added related to future return.

8. Research Problem

The main goal of business organizations is to maximize shareholder value by profit of share or increasing market price as its axes are the managers (Copeland et al., 2000). In respect to that, shareholders and creditors locate their financial resources to individual institutes; still, they cannot observe all actions of manager use of manager. Does manager use of companies' resource for shareholders profit and make suitable decide for investment?

For this shareholders search a norm which indicates companies' value and rate of created value for them. In the past, this concept was performed by analyzing similar to profit measures, profit of each share, return on investment, return on equity, and residual profit, which were accounted based on information of accounting union for in raring measures and surviving it and offer output information of accounting union till his performance results would be fulfillment. In other side, measures based on accounting information cannot meet shareholders, creditors need for measuring shareholders wealth and created value in company, therefore some measures were needed. Based on economic information and value creation some of those measures are: economic value added, market value added, cash value added. They are called metric index based on value, because value and value creation are considered base and target. These new economic measures cover main parts of failures in accounting measures; but they have some problems such as disability TV install in new

companies. In respect to the concepts discussed above, this article tries to analyze which measure for value creation is suitable in respect to cost profit, what principal could offer more real information for shareholders about correct management.

8.1. Research Hypotheses

The following main hypothesis is postulated in this study which followed by sub-hypotheses as below:

1-There is a meaningful relation between accounting measures and value creation.

According to the main hypothesis the sub-hypotheses are as follows:

1-1) There is a meaningful relation between earning per share and value creation.

2-1) There is a meaningful relation between earnings before interest and taxes, and value creation.

3-1) There is a meaningful relation between return on equity and value creation.

4-1) There is a meaningful relation between return on investment and value creation.

8.2. Variables of the Study

The first step for testing the main hypothesis is careful and suitable variables for measurement. Variables for this are divided into two groups: dependant and independent variables.

8.3. Independent Variable

In this research, earning per share, earnings before interest and taxes, return on investment, and return on equity is considered independent variable which in calculation is used:

EPS = Net income / number of shares outstanding

EBIT = Income before Taxes + Interest expense

ROI = Net income / book value of assets

ROE= Net income / Book value of shareholders' equity

8.4. Dependant Variable

In this research, value creation is considered dependent variable, which in calculation is used:

Operating income = Net sales
- Cost of goods sold
-Marketing and administrative costs

Value creation = Operating income – (WACC x Net assets).

8.5. Population of the study

The statistical population of this study- without sampling- of all companies quoted by Tehran Stock Exchange during 2004-2008 is formed and has the following conditions:

1) By the end of 2004 has been listed in TSE.

2) For adequate date of report and removing seasonal effects of the financial period which ended in fiscal year.

3) For special type of action, the company is not of considerable investment corporation.

4) During the study, these companies have been active & their shares have been in trade.

5) Required financial information for research during 2004-2008 should be offered completely.

6) Because earning per share is one variable in calculation, the companies with negative profit during these 4 years, will not be taken into consideration.

By this, the numbers of statistical population members in research is of 92 companies.

9. Data Collection and Research Methodology

In order to test hypotheses, there have been used and collected conceptual basics from Persian journals and books and Internet articles of burse organization in Tehran; there have been used financial statements, weekly reports, daily transactions, monthly papers issued in TSE and other resources to analyze data and test hypotheses.

9.1. Analyzing Data and Testing Hypotheses

In order to analyze data and test hypothesis of average and variance, measures such as Pearson correlation coefficient, determination coefficient, linear regression model and variance analyze are used.

To identify the Pearson correlation the following coefficient equation is used:

$$r_{xy} = \frac{\Sigma xy}{\Sigma x \Sigma y}$$

The obtained correlation coefficient indicates a relation between variables, and an existing correlation relatively low or high between them. For testing hypotheses it is used the research regression multi variables model by stepwise.

Multi-variables Regression: this model assumed that dependant variable is functioning on several independent variables and an error this:

$$Y_i = \alpha + \beta_1 x_{1i} + \beta_2 x_{2i} + \ldots\ldots + \beta_k x_{ki} + \varepsilon_i$$

Where Y_i is the dependant variable of y, $x_{1i}, x_{2i}, \ldots, x_{ki}$ independent variables, $\beta_1, \beta_2, \ldots, \beta_k$ are regression coefficients for independent variables, α is constant amount and ε_i is random error. In the model, earning per share, earnings before interest and taxes, return on investment, return on equity, economic value added,

market value added and cash value added which explore more percent of variance of independent variable has more relation to value creation.

In such model the main assumptions are considered:

1) Variables are accidental and there is no complete linear relation among two or more independent variables.

2) For all observations, error is zero and variance is constant.

3) Errors of different observations have correlation with together.

4) Error has normal disturbance.

9.2. Determination Coefficient and Adjusted Determination Coefficient

Determining the coefficient is a measure which explores power of relation between independent and dependant variable and indicates what percent of charges for dependant variable is of independent variable R^2 is:

$$R^2 = 1 - \frac{\Sigma(y_i - \hat{y}_i)^2}{\Sigma(y_i - \bar{y}_i)^2} = 1 - \frac{1 - SSE}{1 - SST}$$

That:
SSE: A change in error by regression, SST is total changes in dependant variable. We prefer the use of another measure entitled adjusted determination coefficient for multi – variables regression.

R^2 Model becomes: $\qquad R^2 = 1 - \frac{(n-1)}{(n-k)}\left(1 - R^2\right)$

Where *n* is the number of observations and *k* the number of independent variables R^2 facilitates comparing several regression models by different number of independent variables.

10. Test of Meaningful Being of Regression Equation

In multi–variables regression, if there is no relation between dependant and independent variables, all independent variables should be zero. By *F* distribution we would have:

$H_0 : \beta_1 = \beta_2 = ... = \beta_K = 0$ Regression is not meaningful

$H_1 : \beta_i \neq 0 : i = 1,2,...,k$ Regression is meaningful

If in the level of significance, *F* calculated is less than *F* of table, H_0 will be accepted, otherwise will be rejected. If failed, regression equation will be meaningful.

Testing Meaningful Being the Coefficients

After that test, meaningful being the coefficients should be determined.

The goal of this is analyzing zero or opposite zero being on coefficients in level of significance. We assume:

$H_0 : \beta_I = 0$ Total coefficient is zero

$H_1 : \beta_I \neq 0$ Total coefficient is not zero

For this test, we use *t* statistic. If in the level of significance, *t* obtained is less than *t*; H_0 will be accepted, otherwise will be rejected. In this test, accepting H_0 means there is no meaningful being the coefficients and failing H_0 means meaningful being the coefficients.

Testing of Hypotheses

In this study it is analyzed the relationship between accounting measures and value creation. This analysis is explored by one main hypothesis and four sub-hypotheses. Before testing hypotheses, statistics for each variable is calculated, based on years and columnar diagrams of each year that exist in index 2. Then, discussed hypotheses are researched by information of four years, that they are tended.

For this, first correlation among variables is tested and for surety of regression model, variance analyzing is presented. Finally pre – assumptions are analyzed.

First, hypothesis in statistical form is explored:

There is no meaningful relation between accounting measures and value creation. H_0 : P (x, y) = 0

There is meaningful relation between accounting measures and value creation. H_1 : P (x, y)$\neq$ 0

Testing of first sub-hypothesis

There is no meaningful relation between earning per share (EPS) and value creation. H_0 : P (x, y) = 0

There is no meaningful relation between earning per share (EPS) and value creation. H_1 : P (x, y)$\neq$ 0

For this, Pearson correlation coefficient is estimated then H_0 hypothesis is tested.

The results are presented in *Table 1*.

Table 1 Results of correlation first sub- hypothesis	
Statistical population	368
Pearson Correlation	0.451
P – value	0.000
Result	*H0* rejected

Correlation coefficient between variables indicates that these two variables have correlation with together. In error level of 5%, P–value indicates that correlation between

earning per share and value creation is meaningful thus P–value = 0.000< α = 5% and H_0 is rejected and there is meaningful relation between earning per share and value creation.

Testing of second sub-hypothesis

There is no meaningful relation between earnings before interest and taxes (EBIT) and value creation.

$$H_0 : P(x, y) = 0$$

There is meaningful relation between earnings before interest and taxes (EBIT) and value creation.

$$H_1 : P(x, y) \neq 0$$

For testing first Pearson correlation coefficient between earnings before interest and taxes and value creation is estimated then H_0 hypothesis is tested.

The results are presented in *Table 2*.

Table 2 Results of correlation second sub- hypothesis	
Statistical population	368
Pearson Correlation	0.007
P – value	0.897
Result	*H0* accepted

The obtained correlation coefficient indicates that these two variables have little correlation because *P – value* = 0.897 > α = 5%, and H_0 can't be rejected; this means there isn't meaningful relation between earnings before interest and taxes, and value creation.

Testing of third sub-hypothesis

There is no meaningful relation between return on equity (ROE) and value creation.

$$H_0 : P(x, y) = 0$$

There is meaningful relation between return on equity (ROE) and value creation.

$$H_1 : P(x, y) \neq 0$$

For testing Pearson correlation coefficient between return on equity and value creation is firstly estimated then H_0 hypothesis is tested.

The results are presented in *Table 3*.

Table 3 Results of correlation third sub- hypothesis	
Statistical population	368
Pearson Correlation	0.033
P – value	0.721
Result	*H0* accepted

The obtained correlation coefficient indicates that these two variables have little correlation because *P – value* = 0.721 > α = 5%, and H_0 cannot be rejected; this means there is no meaningful relationship between return on equity and value creation.

Testing of fourth sub-hypothesis

There is no meaningful relation between return on investment (ROI) and value creation.

$$H_0 : P(x, y) = 0 \qquad \text{and}$$

There is meaningful relation between return on investment (ROI) and value creation.

$$H_1 : P(x, y) \neq 0$$

For testing Pearson correlation coefficient between return on investment and value creation is firstly estimated then H_0 hypothesis is tested.

The results are presented in *Table 4*.

Table 4 Results of correlation fourth sub- hypothesis	
Statistical population	368
Pearson Correlation	0.033
P – value	0.721
Result	*H0* accepted

Correlation coefficient between variables indicates that these two variables have correlation with together because *P – Value* = 0.000< α = 5% and H_0 is rejected and there is meaningful relationship between return on investment and value creation.

By these results we conclude that between accounting measures, just ROI and EPS have meaningful relation with value creation. With that, more reliable and correlation between two variables, the regression model and variance analyze are used.

Regression model is linear equation that accounting measures of independent variable, value creation of dependant variable, β_0: constant of model, β_1, β_2, ...coefficients of independent variable and ε : error of model that is explored :

$$R = \beta_0 + \beta_1 (ROI) + \beta_2 (EPS) + \varepsilon$$

Pre- assumption in this model is independence of error and will be proved.

This hypothesis is present:

$$\text{i.i.d.} \quad \varepsilon \sim N(0, \sigma^2)$$

By stepwise model, just variables of EPS and ROI are used.

Model Summary and *R* (Pearson correlation coefficient) and standard error of the estimate are present in *Table 5*.

In the first model just ROI and the constant amount are used, but in the second model EPS is used; in the second step by 2 variables, R square has the most quantity because the second model is accepted.

Regression model include 3 variables: β_0, β_1, β_2 that indicate respectively, constant amount, ROI, EPS coefficients. In this section zero being of each coefficient tested. *Table 6* presents the regression model coefficients and the required information to test hypothesis.

First sub-hypothesis proved that EPS coefficient in regression model

R = $\beta_0 + \beta_1$ (ROI) $+ \beta_2$ (EPS) $+ \varepsilon$ is equal to zero. This hypothesis becomes:

$$\begin{cases} H_0 : \beta_2 = 0 \\ H_1 : \beta_2 \neq 0 \end{cases}$$

If β_2 is equal to zero H_0 is accepted and there is no relationship between dependent and independent variables and test by *P – value* is performed. If P–value is less than α = 5%, β_2 is not zero (H_0 is rejected) and if is higher than α =5%, β_2 is zero (H_0 is accepted). In model, *P – value* is less than α = 5% because H_1 is accepted.

Thus, EPS coefficient is 0.000132, this indicates that EPS has meaningful relation with value creation.

Second margin hypothesis proved that ROI coefficient in regression model

R = $\beta_0 + \beta_1$ (ROI)+ β_2 (EPS)+ ε is equal zero. This hypothesis becomes:

$$\begin{cases} H_0 : \beta_1 = 0 \\ H_1 : \beta_1 \neq 0 \end{cases}$$

In this, P–value of ROI coefficient, β_1, is less than α =5%. Thus, the test is meaningful and H_0 is rejected and H_1 is accepted. On the other hand, β_1 in this model is 0.675. This indicates that ROI has meaningful relation with value creation.

Third sub-hypothesis proved that the constant amount is zero. This hypothesis becomes:

$$\begin{cases} H_0 : \beta_0 = 0 \\ H_1 : \beta_0 \neq 0 \end{cases}$$

For testing P–value considered this P–value is 0.365 that is higher than α = 5%.Thus, the test is not meaningful and H_0 is not rejected. On the other hand, β_0 in this model is zero.

$$VC = .675\ ROI + 0.000132\ EPS$$

Table 5

Model summary ᶜ

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.724ᵃ	.525	.523	.096737397	
2	.729ᵇ	.531	.529	.096175978	2.087

a. Predictors: (Constant), ROI

b. Predictors: (Constant), ROI, EPS

c. Dependent Variable: VC

Table 6

Coefficients of regression model in first main hypothesis

Model	Un standardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	*t*	*p-value*
1 (Constant) ROI	.009	.009		.984	.326
	.726	.036	.724	20.096	.000
2 (Constant)	.008	.009		.908	.365
ROI EPS	.675	.042	.673	15.985	.000
	1.322E-05	.000	.097	2.299	.022

The result of variants analyzed is similar to the regression model. These results are present in *Table 7*.

P–value above indicates that accounting measures in this model for error are meaningful and H_0 is rejected and the linear relation between variables is proved.

Pre-assumptions of the main hypothesis

In this stage, to assure the accuracy of the test Pre-assumptions, regression model includes independence of errors, constant of error variance, constant of error variance by independent variables.

Independence of error testing

This test is performed by diagrams. In *Figure 1* it is tested the error by a series of numbers, and independency in errors.

By diagram, errors (ε) are independent because standard errors by increasing number do not have increased or decreased in anyway or sinuses or coinsure shape.

Durbin-Watson also confirms this case.

1.5 < Durbin-Watson=2.087 < 2.5

Table 7

Variance analyze of the first main hypothesis
ANOVA c

Model		Sum of Squares	df	Mean Square	F	p-value
1	Regression	3.779	1	3.779	403.853	.000 a
	Residual	3.425	366	.009		
	Total	7.204	367			
2	Regression	3.828	2	1.914	206.934	.000 b
	Residual	3.376	365	.009		
	Total	7.204	367			

a. Predictors: (Constant), ROI

b. Predictors: (Constant), ROI, EPS

c. Dependent Variable: VC
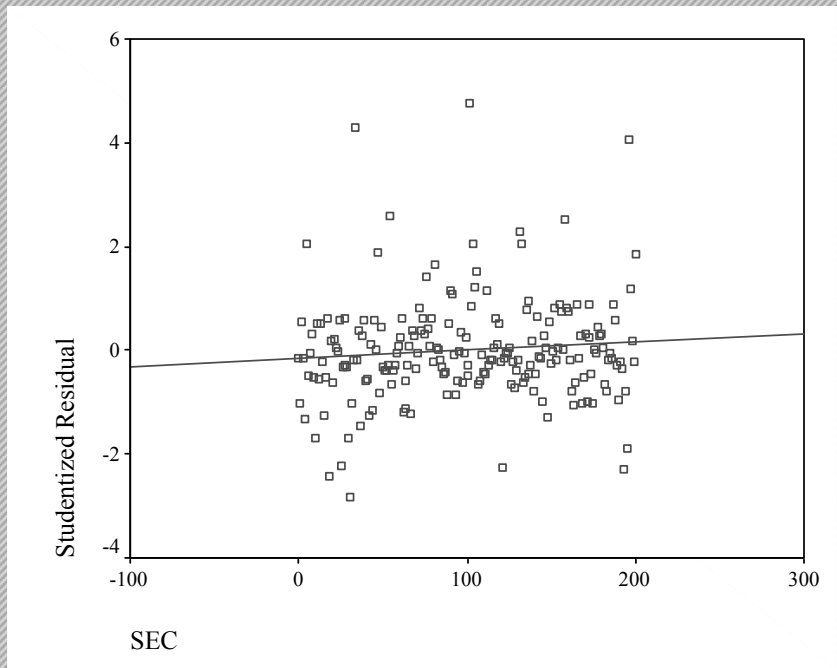
Figure 1. Independence of errors test for the main hypothesis test

Constant of error variance testing

In the second hypothesis σ^2 (error variance) is assumed constant. Now this is drawn by diagram of error against predicted values.

In this diagram standard errors are drawn against P–value. Because the total diagram is not cylindered or Funnel shape, error variance is constant.

11. Conclusion

As declared former, this research aimed at exploring the most appropriate criterion among accounting measures for value creation, reached to valid and valuable information suggested to investors. Based upon the present research the following results were found: The main hypothesis: based on conducted tests, among accounting measures, there is just meaningful relation between ROI, EPS and value creation, and so there is meaningful relation between accounting measures and value creation.

Briefly, according to findings, although there is meaningful relationship between accounting measures and value creation, the amount of correlation coefficient related to each of them is different. In respect to correlation and determination coefficient calculated, it was concluded that, because there is meaningful relationship between dependent and independent variable, these variables are enough appropriate to predict independent variables. It is calculated that accounting measures, because of having powerful correlation and determination coefficient, have appropriate predictability for value creation as independent variable, and the decision making base on each of them will lead to different results. In addition, the findings gained in this research are coincident with research findings conducted by researchers such as Fernandez (2001), Hejazi & Maleki (2007) who concluded that accounting measures can predict value creation. On the other hand, these results are not consistent with researchers, such as Nyiramahoro and Shooshina (2001) because they concluded that economic measures have high association with value creation, and they have enough power to predict value creation. As the results revealed, there is relation between accounting measures and value creation rather than economic measures have, that these results are firmed by some past research and not firmed by some research findings. It is explained that: 1) - lack of capital market efficiency lead to the actual market shares price is not to be revealed and consequently, not to be revealed to the actual market shares value, and 2) - the considerations to inflation circumstances are also important, because these circumstances will lead to increased input and output monetary inflation in these firms, explain the different behavior of present research's variables.
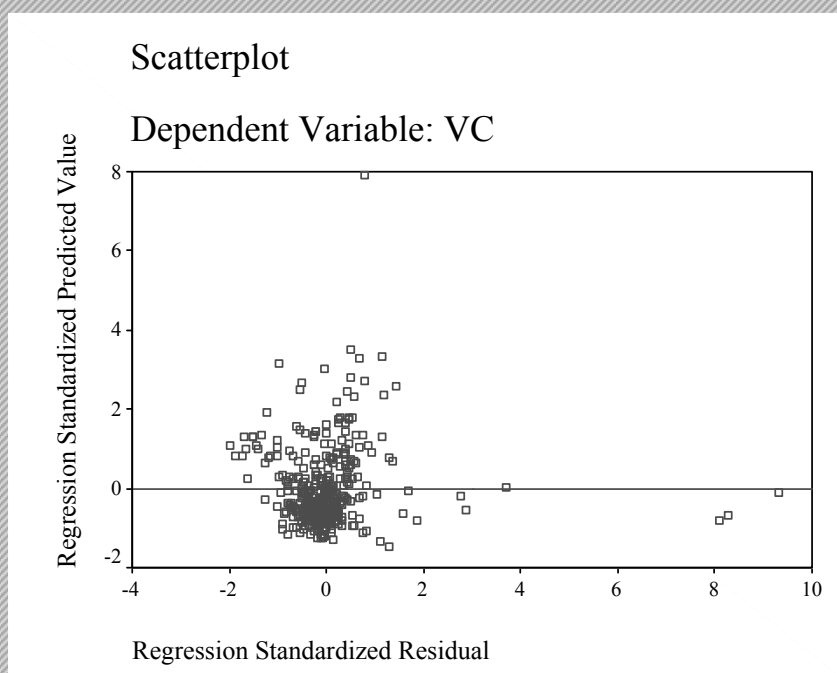
Figure 2. Constant of error variance test for the first main hypothesis

Bibliography

1. Bacidore, J.m.; Boquist, J.A.; Milbourn, T.T.; and A.V. Thakor (1997)." The Search for the Best Financial Performance Measure", *Financial Analysts Journal,* May./June., pp. 10-20.

2. Bartram, Söhnke M. (2001). "Corporate Risk Management as a Lever for Shareholder Value Creation", *IESE Business School,* Master thesis.

3. Clarke, Peter (2000). "Shareholder value", *Accountancy Ireland*, Vol. 32, No. 5, pp. 10-18.

4. Copeland, Tom; Koller, Tim; and Jack, Murrin (2000). *Valuation: Measuring and Managing the Value of Companies, Third Edition*, New York: Mc Kinsey & Company, Inc.

5. Dalborg, Hans (1999) *Shareholder Value in Banking*, session of institute International Detrudes Bancaires.

6. Dockery, E.; Herbert, W.E.; and K. Taylor (2000). "Corporate Governance, Managerial Strategies and Shareholder Wealth Maximization: A Study of Large European Companies", *Managerial Finance*, Vol. 26. No. 9, pp. 21-34.

7. Fernandez, P. (2001). "EVA, Economic Profit and Cash Value Added Do Not Measure Shareholder Value Creation", SSRN Working Paper, available on-line at http://papers.ssrn.com/sol3/papers.cfm?abstract id=270799, accessed: 10 May, 2009

8. Harmsen, Hanne; and Bjarne Jensen (2004). "Identifying the Determinants of Value Creation in the Market a Competence-Based Approach", *Journal of Business Research*, Vol. 57, pp. 533-547.

9. Hejazi, R, and M. Maleki (2007)." Studding of Relation Cash Value Added , P/E Ratio to Future Stock Returns in The listed Production Companies in Tehran Stock Exchange (TSE) ", *Iranian Accounting Reviews*, Vol. 14, No. 47, pp.21-36.

10. Husted, Bryan W.; and David B. Allen (2007). "Strategic Corporate Social Responsibility and Value Creation among Large Firms Lessons from the Spanish Experience", *Long Range Planning*, Vol. 40, Issue. 6, pp. 594-610.

11. Izadiniya, N (2005). "Review Performance Assessment Accounting Measures and Suggestion of Economic Value Added and Cash Free Flows Measures for Enterprise Values Reporting", *Iranian Administrative Sciences and Economic Review*, Vol. 17, No.1, pp.15-23.

12. Lichtenstein, Scott, and Pat Dade (2007). **"**The shareholder value chain: values, vision and shareholder value creation**"**, *Journal of General management*, Vol. 33, No. 1; pp. 15-23.

13. Madden, Thomas J.; Fehle, Frank; and Susan M. Fournier (2004). *Brands Matter: an Empirical Demonstration of the Creation of Shareholder Value through Brands*, IESE Business school, available online at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=346953, accessed: 10 May, 2009.

14. Nyiramahoro, Beatrice; and Natalia Shooshina (2001). Creating and Measuring Shareholder Value, *International Accounting and Finance*, Master Thesis, No. 8.

15. Petty, J.W. and Martin, J.D. (2000) *Value-based management: the corporate response to the shareholder revolution*, Boston, Massachusetts: Harvard Business School Press.

16. Rappaport, Alferd (1998). *Creating Shareholder Value: The New Standard for Business Performance*, New York, USA: The Free Press A Division of Simon and Schuster INC.

17. Serven Lawrence (1999) *Shareholder value*, Provo,Utah: Executive Excellence Provo

18. Yen, Tze-Ye; and Paul, Andre (2007). "Ownership Structure and Operating Performance of Acquiring Firms: The case of English-Origin Countries", *Journal of Economics and Business*, Vol. 59, pp. 380-405.