Investigation reliability of Tobin's q theory, to measure the financial performance, based on experimental and theoretical approaches

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Abstract: Nowadays, the performance assessment of organizations and private institutions is considered as the most important factor which has great effect on capital markets in all countries. But this effect would be possible when the owners of these institutions have an appropriate tool for evaluating possible potential investments. The present study based on the concepts of profit optimality in economies with different structures of perfect competitive, Tobin's q theory, which is now considered to be one of the most important indicators for measuring the performance is theoretically and empirically validated and ratio of gross margin to total assets and the ratio of operating expenses to total assets that are extracted directly from the variables affecting the firm value as alternatives to the index q, is introduced. Furthermore, in order to evaluate the validity and reliability of the study, the mention parameters (ratios) with the variables of corporate governance mechanisms (board independence, institutional shareholders, major shareholders and earnings management) have been measured empirically and the results confirmed that the mention parameters (ratios) in current economic conditions of Iran are far more efficient than the Tobin's index to measure the performance of organizations.

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1. Introduction

Economist James Tobin in 1969 as a project to evaluate the ratio of market value to book value of invested capital used to be known as the Tobin Q ratio criteria. He stated that using this ratio, one can measure the performance of companies in a way more favorable. Tobin aims to establish a causal relationship between Q and measure the amount of investment made by the company. If a number is greater than calculated because of the excess return on the investment, the cost of capital employed firms' incentive to invest (Tobin, 1969). Obviously, if companies take advantage of all investment opportunities are good, the final value of Q will be the number one desire (Chairman M., et al, unpublished).

The theories of classical and neoclassical assumptions on the behavior of producers, assuming the firm is maximizing profits (Nasrollahi, 2013) and obviously the point of maximum profit in the manufacture and sale of products and services in different markets of perfect competition, where the ultimate benefit is equal to marginal cost. But such an approach creates the effect of misleading the Q index (Daiveig and Varachka, 2012), so that the optimum operating performance due to the distance of the markets are complete and competitive pricing products, cause instead of increasing the value of the company and followed by the increase of Q, the index has fallen and is now by shareholders also affect the value.

This study is a theoretical as well as the different behavior of Q, the logic of ideal investment as well as the behavior of firms, alternative indicators of economic conditions are far more efficient and better being represented.

2. Theoretical and Research Background

2.1. Theoretical Research

Nowadays, the issue of valuation of shares in one of the most important issues for investors and shareholders become to buy or sell securities based on their own decisions. In these respect essentially different views on stock valuation is a valuation on the company's assets and the basis for evaluating the performance or profitability (Talaneh and Pouria nasab, 1994). But among these views, models are a special place among fans, experts and investors is capable models are based on discounted cash flow models, such as Gordon, Miller and Modigliani,

Campbell- Shiller, Kernel, Glassman & Hassett and Walter model could be noted. Based on this model, shareholder value on any future benefits are determined by the performance of the company. In this method, the assets because they can not return to their own criteria, assessed the effectiveness of the company's earnings and cash flows provide. Accordingly, we can determine the intrinsic value of a company's stock based on the following function (Javaheri, 2011):

$$FIRM'S\ PRESENT\ VALUE = \frac{\mathrm{Div}_1}{(1+\mathrm{r})^1} + \frac{\mathrm{Div}_2}{(1+\mathrm{r})^2} + \frac{\mathrm{Div}_3}{(1+\mathrm{r})^3} + \cdots + \frac{\mathrm{Div}_i}{(1+\mathrm{r})^i}$$

Where: Div_i is Profit of the year i, r is discount rate, n is defined lifetime. And if the above function, n tends to infinity ($\mathrm{n} \to \infty$).These values can be rewritten as follows:

$$\sum_{i=1}^{\infty} \frac{\mathrm{Div}_i}{(1+\mathrm{r})^i} = \frac{\mathrm{Div}}{\mathrm{r}}$$

Accordingly, the company's market value, assuming that the gross profit per unit of product is equal to $G_0 - \frac{y}{2a}$, And operating costs for each unit is equal c can be rewritten as follows (Daybvieg and Varachika, 2012):

$$M(y,c) = \sum_{i=1}^{\infty} \frac{y\left(G_0 - \frac{y}{2a}\right) - cy}{(1+\mathrm{r})^i} = \frac{y(G_0 - c) - \frac{y^2}{2a}}{\mathrm{r}}$$

If you want to calculate the intrinsic value based on the above formula based on the amount of capital used in the business, standardization, we follow the q:

$$q(y,c) = \frac{G_0 - c - \frac{y}{2a}}{rk}$$

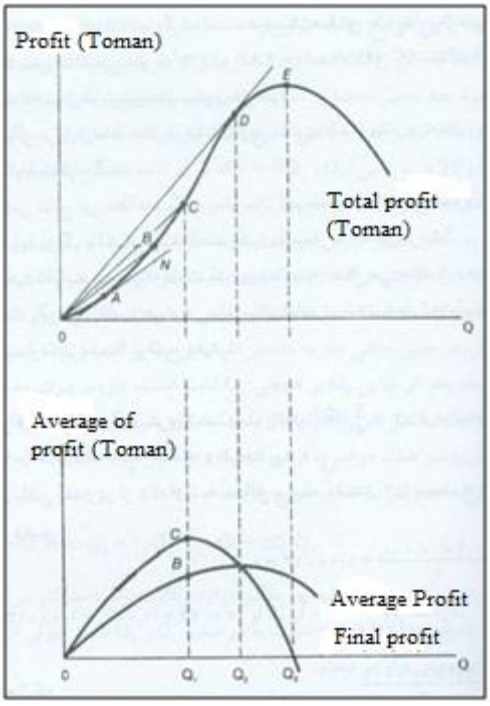

Figure 1: Economic management, Roozbahan and Hashemi (2012)

Here we see that the q index because the $\frac{\partial q}{\partial y} = -\frac{1}{2a}$ (The partial derivative of the function q based on the variable y). A decreasing function (concave) than the increase in the production and sale (y) is appropriate. Accordingly, improve operational efficiency to reduce costs and increase production efficiency in the level of production has led to increased and decreased, respectively, the index q. Effects of some management decisions based on these indicators in evaluating the numerator of q inefficient firms reveals. In the meantime, the research literature on corporate governance assumes that the high-q is an indication of their performance, while the production and activity on a scale less than optimal production ensures the company's performance look.

2.1.1. Alternative measures of operational performance indicators q

The ideal manager tries to market value after deducting the amount of capital used to maximize. In other words (Daybouyeg and Varacheka, 2012):

$$\max_{c,y} \; \mathrm{M} - \mathrm{ky} = \max_{c,\mathrm{y}} \frac{\mathrm{y}(G_0 - c - rk) - \frac{y^2}{2a}}{\mathrm{r}}$$

In fact, the goal is to maximize the net present value of the company. The above equation is a concave function with the partial derivative equal to zero and it can be a maximum production rate at which the value of the company is to be determined:

$$\mathrm{y}^* = \alpha(G_0 - c_0 - rk)$$

The maximum benefit amount is the point E on the curve in figure 1 is defined. Point E Unit F produced the maximum amount of interest in the show. The ultimate benefit curve (M) coincides with the axis of Q is, in other words the slope of the curve at this point, save the final product as well as the total income of N are equal to zero. This point in the economic optimum production scheduled. To occur if production exceeds the rate of Q3, the total cost curve will be higher than the total revenue curve, which means that the income received after this point will be the manufacturer, the losses will be important. If the manufacturer wants to produce less than Q_3, In fact, the maximum capacity of the market to make a profit is not used and this indeed is what investors and shareholders are completely opposed to it. In other words, since the investment objective is achieving maximum benefit from their investment; produce less than the optimal amount would be consistent with the purposes and other stakeholders.

Managers who do not use the available resources in an optimal production and sales are actually less than the y factored. But investors prefer managers to produce a level of y. Where the final selling point is equal to marginal cost or the marginal benefit is equal to zero and this will be possible when the value of y is the level of production and sales.

In this regard, managers often deal with the important decision. Decisions relating to the control of production and sales and operating expenses are significant. Therefore, to measure management performance in the angle function on the basis of profit maximization, we have two measures of operational efficiency, the company's performance in these two cases is established to define and measure. The second criterion is the first criterion of margins and operating expenses caused by the financial statements. The first measure of operational efficiency (R_{gm}) effects of some management decisions take into consideration the (Daybouig and Varachaka, 2012):

$$R_{gm} = \frac{y(G_0 - \frac{y}{2\alpha})}{ky} = \frac{\text{Sell - Cost of goods sold}}{\text{value of total assets}}$$

Above formula, in addition to the stress index q in terms of income and expenses, it is clearly indicating that R_{gm} a decreasing function of y is increasing. In other words:

$$\frac{(G_0 - \frac{1}{2\alpha})}{k} > \frac{2(G_0 - \frac{2}{2\alpha})}{2k} > \frac{3(G_0 - \frac{3}{2\alpha})}{3k} > \dots > \frac{(n-1)\left(G_0 - \frac{(n-1)}{2\alpha}\right)}{(n-1)k} > \frac{n(G_0 - \frac{n}{2\alpha})}{nk}$$

This means that increasing the amount of sales Gross profit to total assets ratio will be reduced. The mathematical concept is to rapidly increase the numerator and the denominator rather than the numerator of the ratio will reduce according to the theoretical foundations and basic economics, the ideal director to produce and sell until the final revenue equals marginal cost or the marginal benefit is equal to zero. The decrease in this ratio due to increased production and sales to generate optimal value, management does not necessarily mean a lack of effectiveness on the contrary, evidence of correct decisions and efficient use of resources by management.

Therefore, in this study decreasing the ratio of gross profit to total assets is up to concept of operational efficiency and increase gross profit to total assets contrary to the concept of operational efficiency is low.

The second measure of operating performance based on management policy focuses on controlling operating costs. Accordingly, R_C (ratio of operating expenses to total book value of assets) is defined as follows:

$$R_c = \frac{cy}{ky} = \frac{\text{Operational costs}}{\text{The total value of assets}}$$

Accordingly, the increase in R_C means poor operational efficiency and reduces the operational efficiency means intended to be desired.

2.2. Background Research

2.2.1. Foreign researches:

Mooraki, Shifler and Vishni (1988) focus on the relationship between ownership structure and performance of public companies have shifted. The population Thanked 371 company that provides performance measurement using Tobin's Q and the percentage of stock owned (at least 20% of the total) belonged to the board and senior management, have chosen, he established a linear regression relationship between performance and ownership.

Aggarwal and Nouyer (1996) the relationship between firm performance by Tobin's Q ratio and seven corporate governance mechanisms on the 383 companies surveyed. They found that the performance of an organization, both in the OLS and two-stage least squares method, there was no significant relationship.

Ledder and Martin (1997) studied a sample of 867 American corporations in the period 1987 to 1988 and found that the simultaneous equations model is a significant relationship between the amount of Institutional Ownership and the performance of there Q Tobin.

Peter Klein et al (2004) research on the topic of corporate governance, family ownership and firm value in Canadian companies did. According this issue, the Tobin's Q to measure firm value would using it. Results suggest that evidence of the effectiveness of independent board members and

functions not found.

Tesai and J. Yu (2007) using panel data and simultaneous equation system between institutional ownership and operation of casino America's industrial firms over the period 1999 to 2003 were reviewed. Their results indicate that institutional ownership is positive and significant relationship with firm performance by Tobin's Q ratio is the casino industry.

Gaaray and Gonzalez (2008) examined the relationship between corporate governance and corporate performance assessment criteria such as the percentage of Tobin's Q and stock dividend paid in Venezuela. Their results show that the percentage increases in corporate governance index increased 11.3 percent in the dividend percent, 9.9 percent and 2.7 percent rate in Q is Tobin.

Daybveig and Varachaka (2012) examined the Tobin's Q ratio is defined. The study will then analyze the theoretical reasons for non-performance Q index Tobin to measure performance indices of gross profit to total assets and Operational costs to total assets directly from the variables that influence the value of the company is derived have been introduced, and the relationship with Tobin's Q ratio measured in the field. Their results indicate that the index is far more efficient than the Tobin's Q ratio.

2.2.2. Internal investigation:

Yeganeh et al. (2009) examined the quality of corporate governance and the performance of listed companies in Tehran Stock Exchange pay. In this study, using a questionnaire containing 25 sample firms rated Criterion (from provisions of the Corporate Governance Code of listed companies in Tehran Stock Exchange) of sovereignty standards corporate this research is determined by of a measure of Q Tobin performance of the firm. The results indicate that the quality of corporate governance and firm performance, there is no significant relationship.

Namazi and Zeraatgari (2009) examined the use of Tobin's Q ratio and comparison with other measures of performance has paid managers in Tehran Stock Exchange. The aim of this study was to complete the Tobin Q ratio. The results show that the use of Tobin's Q ratio of listed companies in Tehran Stock Exchange has no place. Also, the Tobin Q ratio measures the stock price, return on assets and earnings per share is significantly associated with the current ratio, quick, inventory turnover, residual income, sales growth, profit growth, operating profit and sales relationship is not significant. The Tobin's Q ratio was determined that the automotive industry has the highest value of Q is the textile industry had the lowest.

Modarres and Farajollahzadeh (2009) examined the relationship between Tobin's Q ratio and benchmark earnings per share (EPS) in evaluating performance of listed companies in Tehran Stock Exchange pay. The results show that in general between Tobin's Q ratio and earnings per share criteria in evaluating performance of listed companies the Tehran Stock Exchange, but statistically significant positive correlation exists at a moderate intensity is (r_p = 0.484).The results of Tobin's Q measure for evaluating the performance of individual companies to decide not recommend.

Vakilifard and Bavandpour (2010) examined the relationship between corporate governance mechanisms and firm performance pay. Corporate governance standards in the study of institutional shareholders, major shareholders, board members, and the quality of non-financial information required to measure the value of Tobin's Q ratio. The results indicate that institutional shareholders have direct and positive relationship with firm performance and non-members are required to have a significant negative relationship with firm performance.

3. Research Methodology, population data and definition of variables

Present study, the positivistic research in the field of archives and are based on the actual data. The population of this study consists of all companies listed in Tehran Stock Exchange which before 2004 are accepted in Tehran Stock Exchange. 7-year period among 2005 to 2011 was the period of study. The sampling was done in this study, but the entire community was evaluated by considering the following:

1. Companies that end their fiscal period ending 29 March of each year.
2. Companies that are listed on the Stock Exchange by the end of 2004.
3. Companies that did not stop more than 3 months of its fiscal periods are not changed during the study period.
4. The required information about the company is available.
5. Companies other than insurance companies, banks, stock brokers and pension funds are not.

So, with all of the top 71 companies were selected and evaluated so as exemplary. 7-year study period among 2005 to 2011 is also included. Eviews 7 software for data analysis was used. Variables are defined and initialized in the following table:

Table 1: Definition of Research variables		
How to Measure	Tag	Variable NAME
$\frac{\text{Sale - Cost of goods sold - Operating costs}}{\text{The total value of assets}}$	Operating income to total assets	R_ROA
$\frac{\text{Sale - Cost of goods sold}}{\text{The total value of assets}}$	Ratio of gross profit to total assets	R_GM
$\frac{\text{Operating costs}}{\text{The total value of assets}}$	Ratio of operating expenses to total assets	R_C
$\frac{\text{Total value of assets+Value of Equity-value of capital}}{\text{The total value of assets}}$	Tobin Index	Q
Is equal to The ratio of non-duty members of the General Board Members	Independence of the Board	NON_EXECUTIVE
Natural logarithm of the market value of the Company's shares	Natural logarithm of market value	LN_MVE
Through the company's ownership structure and adding the percentage ownership of institutional shareholders	Proportion of institutional shareholders	INT_OWNER
Is equal to the absolute value of the modified Jones model residuals (e)	Quality of financial information	INFO_QUALITY
Sum of squared percentage ownership of shareholders of firm i in fiscal year t excluding other shareholders (the Herfindahl – Hirschman index)	degree of ownership concentration	CON_OWNER

4. Descriptive Statistics Data

Descriptive statistics, measures of dispersion and central figures show. Knowledge of descriptive statistics step toward understanding and communication between them and also check out the information about the distribution varies.

Table 2: Descriptive statistics of variables

Mox	**Min**	**S.D.**	**Ave.**	**symbol**	variable name
6.038499	-0.475647	0.416931	0.228812	R_ROA	Operating income to total assets
6.397175	-0.111063	0.516966	0.304593	R_GM	Ratio of gross profit to total assets
0.445611	0.001298	0.147387	0.075781	R_C	Ratio of operating expenses to total assets
129.5704	1.000521	9.715701	4.178255	Q	Tobin Index
1.000000	0.000000	0.224764	0.594329	NON_EXECUTIVE	Independence of the Board
17.51206	9.913440	1.512092	13.13071	LN_MVE	Natural logarithm of market value
0.937692	0.000000	0 .140104	0.57011	INT_OWNER	Proportion of institutional shareholders

2.540590	0.000110	0.156310	0.108286	INFO_QUALITY	Quality of financial information
0.85024	0.066700	0.17181	0.436519	CON_OWNER	Quality of financial information

5. Linear coefficient test between variables

To assess multicollinearity among the variables of the variance inflation factor (VIF) was used. Since the VIF value is given in Table (3) for all variables is less than 10, the absence of multicollinearity between the independent variables is confirmed. This test was performed on all study patterns of results showed the absence of multicollinearity between the explanatory variables.

Table 3: Test results of the variance inflation factor

Multicollinearity statistics		Significance level	t statistics	Standardized coefficients	Non-standardized coefficients		Description of Variables
The variance inflation factor	Fluctuations			Beta	S.D.	Beta	
		0.667	0.423		0.033	0.015	Constant factor
1.044	0.765	0.176	0.567	0.055	0.000	0.004	Operating income to total assets
1.002	0.982	0.444	0.087	0.041	0.001	0.001	Ratio of gross profit to total assets
1.166	0.906	0.234	1.56	0.017	0.001	0.013	Ratio of operating expenses to total assets
1.078	0.931	0.701	-0.471	-0.043	0.004	-0.005	Independence of the Board
1.107	0.855	0.379	0.880	0.007	0.005	0.003	Natural logarithm of market value
1.311	0.974	0.503	2.733	0.011	0.005	0.011	Proportion of institutional shareholders
1.003	0.745	0.649	0.455	0.022	0.001	0.000	Quality of financial information

Step 6: Test the normality of the dependent variables

Due to the absence of normal dependent variables in this study due to the sample size, and by virtue of the central limit rule, the dependent variables are assumed to be normal on the basis of the regression model are used.

7. Other test-related data and regression models

In order to choose the structure of the regression data F test is applied. After confirming the suitability of the panel data for all models, the Hausman test to choose between fixed effects and random effects methods were used, resulting in the selection of fixed. Also, to address the remaining autocorrelation in the first-order AR model and a test method for solving difference WHITE variance was used.

8. Test hypotheses

- Operational performance ratio to total assets ratio of Tobin's Q has a direct relationship.

$$q_{i,t} = \alpha_0 + \beta_y R_{ROA,i,t} + \beta_m Ln(MV_{i,t}) + \gamma X + \epsilon_{i,t}$$

The results in Table 4 are based on panel fixed effects estimates; suggest that the ratio of operating profit to total assets (R_ROA) and Tobin's q ratio and significant direct relationship exists. But due to the lack of a competitive market economy, as well as the governing law of diminishing returns, revenue curve is concave, which means that the increase in production and sales should expect to get the same benefit from these products have been sold. This causes the curve of operating income to total assets (R_ROA) is concave and has diminishing returns. Such a variable distribution of the concave curve concept provides as follows:

$$\frac{(G_0-\frac{1}{2\alpha})}{k} > \frac{2(G_0-\frac{2}{2\alpha})}{2k} > \frac{3(G_0-\frac{3}{2\alpha})}{3k} > \cdots > \frac{(n-1)\left(G_0-\frac{(n-1)}{2\alpha}\right)}{(n-1)k} > \frac{n(G_0-\frac{n}{2\alpha})}{nk}$$

G_0: Sales after deducting cost of goods sold.
K: Capital required per unit produced and sold
a: The parameter determines the degree of product market competition and the company's share of the total market

This means that increasing the amount of sales Gross profit to total assets ratio will be reduced. The mathematical concept is that most of the numerator and denominator of the rate trends towards reducing the fraction will be.

Correlation analysis 4.962519 positive beta coefficient indicates that the increase in operating profit to total assets ratio (R_ROA), indicating lack of efficiency in the management of resources, Tobin's q ratio increases and decreases, which is a sign of effective management is the efficient use of resources, and Tobin's q ratio is reduced.

Sub-hypothesis H1:
- The ratio of gross profit to total assets ratio is directly related to Tobin Q.
- Tobin Q ratio of operating expenses to total assets ratio has an inverse relationship.

$$q_{i,t} = \alpha_0 + \beta_y\, R_{gm,i,t} + \beta_c\, R_{c,i,t} + \beta_m Ln\left(MV_{i,t}\right) + \gamma X + \epsilon_{i,t}$$

Table 5 examines the relationship between operational performance components to total assets ratio of Tobin's Q				
first assumption of the model (1)			symbol	Variable name
P_value	t statistics	coefficient		
0.0000	18.15531	6.711297	R_GM	Ratio of gross profit to total assets
0.0000	-5.255859	-9.778781	R_C	Ratio of operating expenses to total assets
0.0000	19.82269	1.864957	LN_MVE	The natural logarithm of the market it
0.0000	-18.00347	-22.44593	C	Intercept
0.0000	15.43332	0.440784	AR(1)	Variable first-order autocorrelation
0.902556			**R-squared**	The coefficient of determination
0.881886			**Adjusted R-squared**	Adjusted coefficient of determination
2.107821			**Durbin-Watson stat**	(DW) Camera Watson
43.66532			**F-statistic**	F statistics
0.000000			**Prob(F-statistic)**	P_value
Q			**Dependent Variable**	dependent variable
Fixed effects				

The results in Table 5 also suggest that the ratio of gross profit to total assets (R_GM) as the ratio of operating profit to total assets (R_ROA) due to the concave function of these variables, which reduces the efficiency of its operations and increasing the operational efficiency is low.

And model results also suggest that the ratio of gross profit to total assets (R_GM) with a positive beta coefficient 6.711297 Tobin q ratios has a direct and positive relationship stated that according to the theoretical foundations of this relationship reflects inefficiency index is Tobin's q.

In other words, since the variable ratio of gross profit to total assets (R_GM) is concave with respect to the production and sale optimal operational efficiency and reduce the intended meaning, but the decreased ratio of q.

Ratio of operating expenses to total assets (R_C) with a negative beta coefficient indicates a significant relationship between the Tobin's 9.778781 which confirms the assumptions and theories they study. So:

Hypothesis 2:
- Operational efficiency to total assets ratio is the inverse relation of corporate governance.

$$R_{ROA,i,t} = \alpha_0 + \beta_1 Int\_Owner_{i,t} + \beta_2 Con\_Owner_{i,t} + \beta_3 \text{Non\_}Executive_{i,t} + \beta_4 Inf\_Quality_{i,t} + \beta_m Ln(MV_{i,t}) + \gamma X + \epsilon_{i,t}$$

Table 6: examines the relationship between the total assets of operational efficiency and corporate governance				
The first assumption of the model (1)			Symbol	Variable name
P_value	t statistics	coefficient		
0.0059	-4.422114	-0.330395	NON_EXECUTIVE	Independence of the Board
0.0460	-2.003264	-0.018237	LN_MVE	Natural logarithm of market value
0.0142	-5.366584	-0.401810	INT_OWNER	Institutional shareholders
0.0000	8.332704	0.619896	INFO_QUALITY	Earnings management (optional item)
0.3450	0.945685	0.000714	CON_OWNER	Ownership concentration
0.0007	3.429256	0.412607	C	Intercept
0.0000	5.970863	0.285732	AR(1)	Variable first-order autocorrelation
0.834649			**R-squared**	The coefficient of determination
0.798463			**Adjusted R-squared**	Adjusted coefficient of determination
2.146811			**Durbin-Watson stat**	Camera Watson(DW)
23.06544			**F-statistic**	F statistics
0.000000			**Prob(F-statistic)**	P_value
R_ROA			**Dependent Variable**	dependent variable
Fixed effects				

Table 6 shows the fitted coefficients of the fact that corporate governance (other than ownership concentration) increases the ratio of operating profit to total assets (R_ROA)**.** Ratio of non-mandated corporate governance measures, including the entire board of directors and institutional shareholders, alternatively, the negative coefficient -0.33 to -0.40 to have meaningful relationships with 95 percent of the operational efficiency of operating income to total assets (R_ROA) requirements. Negative relationship is because, as mentioned above, according to the theoretical foundations presented in this study, the proportion of operating profit to total assets (R_ROA) means optimum operating efficiency is defined as the increase in the negative. Thus, a negative correlation means that corporate governance mechanisms reduces the increase in operating income to total assets (R_ROA), or in other words would be optimal operational efficiency. Here the quality of financial information (income management) as well as variables in the model has been replaced by other mechanisms of corporate governance, with a positive coefficient 0.62 and approximately 95% of operating profit to total assets ratio (R_ROA) significant relationship statistically is considered.

The positive relationship means that the increase in earnings management measures that the concept of corporate governance is low, thereby increasing the ratio of operating profit to total assets (R_ROA), or in other words a reduction of operational efficiency.

Sub Hypothesis 1 Hypothesis 2:

- The ratio of gross profit to total assets has an inverse relationship with the corporate governance indices.

$$R_{gm,i,t} = \alpha_0 + \beta_1 Int\_Owner_{i,t} + \beta_2 Con\_Owner_{i,t} + \beta_3 \text{Non\_}Executive_{i,t} + \beta_4 Inf\_Quality_{i,t} + \beta_m Ln(MV_{i,t}) + \gamma X + \epsilon_{i,t}$$

Table 7 examines the relationship between the ratio of gross profit to total assets in corporate governance				
The first assumption of the model (1)			Discription	
P_value	t statistics	Coefficient		
0.0334	-2.135732	-0.245318	NON_EXECUTIVE	Independence of the Board
0.1231	-1.545916	-0.014955	LN_MVE	Natural logarithm of market value
0.0006	-7.247592	-0.501288	INT_OWNER	Institutional shareholders
0.0000	8.731756	0.670331	INFO_QUALITY	Earnings management (optional item)
0.3037	1.030124	0.000842	CON_OWNER	Ownership concentration
0.0005	3.496400	0.444902	C	Intercept
0.0000	6.521813	0.305040	AR(1)	Variable first-order autocorrelation
0.839307			**R-squared**	The coefficient of determination
0.804140			**Adjusted R-squared**	Adjusted coefficient of determination

2.184176	**Durbin-Watson stat**	Camera Watson (DW)
23.86642	**F-statistic**	**F statistics**
0.000000	**Prob(F-statistic)**	**P_value**
R_GM	**Dependent Variable**	dependent variable
Fixed effects		

Table 7 shows the fitted coefficients of the fact that corporate governance has increased the ratio of gross profit to total assets (R_GM) is used. Corporate governance indicators include the proportion of the total board members and institutional investors. Alternatively, the negative coefficient -0.25 to -0.50 to have meaningful relationships with 95 percent of the operational efficiency ratio of gross profit to total assets (R_GM) requirements was considered.

Here the quality of financial information (income management) with a positive coefficient 0.67 and almost 95% of gross profit to total assets ratio (R_GM) is a statistically significant relationship.

Second sub-hypothesis H2:

- The ratio of operating costs to corporate governance indicators inverse relationship.

$$R_{c,i,t} = \alpha_0 + \beta_1 Int\_Owner_{i,t} + \beta_2 Con\_Owner_{i,t} + \beta_3 \text{Non}\_Executive_{i,t} + \beta_4 Inf\_Quality_{i,t} + \beta_m Ln(MV_{i,t}) + \gamma X + \epsilon_{i,t}$$

Table 8. examines the relationship between the ratio of operating expenses to total assets in corporate governance				
The first assumption of the model (1)			Discription	
P_value	t statistics	Coefficient		
0.0213	-2.314396	-0.078279	NON_EXECUTIVE	Independence of the Board
0.8713	0.162134	0.000282	LN_MVE	Natural logarithm of market value
0.0000	-10.43741	-0.080335	INT_OWNER	Institutional shareholders
0.0098	-6.266762	-0.237283	INFO_QUALITY	Earnings management (optional item)
0.5154	0.651140	9.46E-05	CON_OWNER	Ownership concentration
0.0051	2.819051	0.065635	C	Intercept
0.0000	5.121031	0.255031	AR(1)	Variable first-order autocorrelation
0.885478			**R-squared**	The coefficient of determination
0.860416			**Adjusted R-squared**	Adjusted coefficient of determination
2.161742			**Durbin-Watson stat**	(DW) Camera Watson
35.33085			**F-statistic**	F statistics
0.000000			**Prob(F-statistic)**	P_value
R_C			**Dependent Variable**	The dependent variable
Fixed effects				

Table 8 shows the fitted coefficients of the fact that corporate governance reduces the ratio of operating expenses to total assets (R_C). Ratio of non-mandated corporate governance measures, including the entire board of directors and institutional shareholders in order negative coefficient -0.08 to -0.08 have a meaningful relationship with a 95 percent ratio of operating expenses to total assets (R_C) requirements. Quality of financial information (income management) as well as a range of other alternative corporate governance mechanisms, the negative coefficient of approximately 0.24 to 95% and the ratio of operating expenses to total assets (R_C) is a statistically significant relationship.

9. Results

The first hypothesis was that the study on the basis of operational efficiency to total assets ratio of Tobin's Q has a direct relationship. Theoretical concepts will also support the hypothesis that because of operational efficiency of a curve concave to the production and sale; thus, the concept of operational efficiency but also reverse its decline, management and utilization of available resources in order to maximize profits, the attention and admiration. Table 1 shows the concept of the company's total profit curve is concave. This curve indicates that the company would not be able to increase production and a sale for your products is expected to receive the same benefits. But the downside of earnings management should limit the increase in production and sales. Time management is a constraint for the ultimate benefit goes to zero (ie, point E in figure 1). Passing through the point of causing real harm to

shareholders and below this point will be an important opportunity cost for the company. The manager should seek to produce at the level of Q3 in Table 1. At the point of maximum profit and shareholder returns.

The results also suggest that despite the increase in operating income to total assets is defined as operating inefficiency, but the increasing decline of q and vice versa, which is defined as the optimum operational efficiency, reduces the q. The empirical evidence also suggest that components of operating profit, gross profit and operating expenses, respectively, positive and negative relations between them and the index q certify that the above statements and discuss theoretical foundations up. So it seems that Tobin performance indicators in measuring the financial performance due to the economic conditions that have no place in the country (Namazi, Zeratgari, 2009) And indicators presented in this study consisted of gross profit to total assets ratio of operating costs to total assets can be replaced by a more appropriate indicator for it. Modarres and Farajollah zadeh (2009) also conclude that q is evaluated as a measure of Tobin's q alone is not recommended for the assessment of corporate performance.

References:

1. Talanh, A.; Pourianasab, A. (1994), Dividend Policy and the valuation of shares, Journal of Financial Research, Fall 1994, Vol I, Issue IV.
2. Raeiszadeh, M.R., Mohseni, I., Abdullahi, O. (2011), The relationship between Tobin's Q ratio and benchmark dividend per share (DPS) in evaluating performance of listed companies in Tehran Stock Exchange and the possibility of replacing it, unpublished.
3. Vakilifard, H., and Bavandpour, L. (2010). "The impact of corporate governance on the performance of listed companies in Tehran Stock Exchange", Fiscal Studies, No. VIII, winter 2010.
4. Hasas Yeganeh, Y. and Raeisi, Z, and Hosseini, S.M (2009), the relationship between the quality of corporate governance and corporate performance, Journal of Management Science, Issue 13, Spring 2009.
5. Javaheri, M.; types of share pricing model, electronic paper, available: 2011
6. Namazi, M., Zeraatgar, R. (2009), examining the relationship between Tobin's q is used in comparison with Sayrmyarhay evaluate the performance of managers of listed companies in Tehran Stock Exchange, Journal of Accounting progress Shiraz University, No. 57.
7. Nasrollahi, Z., Danesh, H, Hamidi, M. (2013), the importance of social interest in the objectives of manufacturing firms (critical approach to the non profit), Journal of Islamic Banking and Economics, Spring 2013, No. II.
8. Hashemi, A., Roozbeh, M. (2012), Economics, Management, Tehran: Publication shine.
9. Modarresi, A., Faraj, M., (2009) "investigate the relationship between Tobin's q to measure the earnings per share", Journal of Accounting Research, No. 21.
10. Aggarwal, R., and A. Samwick, 1996, Empire-builders and shirkers: Investment, firm performance, and managerial incentives. Journal of Corporate Finance 12, 489-515..
11. Garay, U. and Maximiliano G. , (2008), " Corporate Governance and firm Value : The Case of Venezuela", Corporate Governance, An International Review, Vol. 16 , Issue 3 , pp. 194-209 .
12. J. Foss, Nicolai and G. Klein, Peter(2004), "Entrepreneurship and the Economic Theory of the Firm: Any Gains from Trade?, August 2004, Working Paper.
13. Morck, R., A. Shleifer, and R. Vishny, 1988, Management ownership and market valuation. Journal of Financial Economics 20, 293-315.
14. Philip H. and M. Warachka, 2012, Tobin's q Does Not Measure Firm Performance: Theory, Empirics, and Alternative Measures. Electronic copy available at: http://ssrn.com/abstract=1562444. Accessed September 2012.
15. Tobin, J., 1969, A general equilibrium approach to monetary theory. Journal of Money, Credit and Banking 1, 15-29..
16. Tsaia, H. and Z. Gu (2007). "The Relationship Between Institutional Ownership and Casino Firm Performance." International Journal of Hospitality Management, Vol. 26, pp. 517-530.

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