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RELATIONSHIP BETWEEN CORPORATE GOVERNANCE AND LABOR PRODUCTIVITY INDEXES

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ABSTRACT

Realization and continuation of economic growth depends on improvement and increase of productivity of production factors. The higher is institution's production factors productivity; the institution would be more successful in absorbing more capital. Productivity improvement is the main task of managers. Establishment and promotion of corporate governance influences productivity growth, because corporate governance leads to improvement of performance of companies and increase of efficiency and productivity of the companies through strengthening property rights, reduced transaction costs and capital cost and ultimately capital market development. In other words, productivity improvement requires realization of the potential power of the company thus, the movement and mobility needs a stimulus and corporate governance is a suitable engine in this regards. In the current research, some corporate governance indexes with labor productivity were used. Variables of duality role of CEO, board size, concentrated ownership and managerial ownership were used as the independent variable and a representative of corporate governance. On the other hand, labor productivity index was used as dependent variable. The sample was selected based on elimination method from companies listed in Tehran Stock Exchange including 180 companies between 2009 – 2013. Results of Pearson correlation coefficient test specified that corporate governance variables including board size, concentrated ownership and managerial ownership do not have significant correlation with labor productivity index. Pearson correlation coefficient

suggests significant correlation in this index in two variables of firm size control and financial leverage.

Keywords: Duality role of CEO, board size, concentrated ownership, managerial ownership, labor productivity index

INTRODUCTION

Since early 1970s, productivity has been one of the issues which attracted attention at organizational and national levels. Amount and rate of productivity growth at any country considerably affects people living level, inflation, unemployment, economic status of society and competitiveness at global level. In the polls by the managers of American industries, more than 90 percent of the managers believed that productivity promotion is one of two or three serious and important issues which are faced by USA. According to the existing views, various factors affect productivity of economic institutions, including training labor force, motivated work force, wages, the environment, organization of production and capital available to firms. Productivity creates competitive advantage in the organizations. Productivity means utilization of effective work of resources available in the organization [1]. Paying attention to productivity has been almost emphasized in all national development documents. For example, in 20-year development outlook document it has been stated. Improvement of productivity is the main task of managers [2], and they should play highest role in this regards, as Drucker emphasized role of managers in productivity improvement and believed that productivity of resources available to the organization is a task of managers. It is distinctive from other tasks of managers including entrepreneurship and administrative affairs of the institution [3].Sink maintains that though productivity has taken highest discussion of managerial circles in the current era, unfortunately its real meaning is less perceived [4]. Current study aims at investigating relationship between corporate governance and labor productivity indexes. Corporate governance is one of the modern discussions in Iran's economy which its history is about one decade. However, investigations suggest negligence of authorities of the national capital market to this issue. Considering effect and importance of this issue, experimental evidence suggests that many of developing countries take essential considerations concerning this issue and

they have attempted to develop corporate governance in their financial markets (including money and capital markets) [5]. Since measurement of productivity at institution level guides top managements in provision and allocation of resources of growth including human resource and capital, managers can understand their institution in terms of capital or efficiency and adoptcorrectdecisions regarding injection of new resources using results obtained from productivity index analysis [6]. Hence, considering significance of the study, research in this regards seems useful. In fact, current research aims at investigating effects of board and CEO features on productivity. Duality role of CEO, board size, concentrated ownership and managerial ownership are among these features.

Theoretical Foundation

Corporate governance had considerable effect on control method of companies through corporate governance. Thus, the owners delegated administration of the company to the managers and stock markets were formed. One of the tools for optimal resource allocation is stock exchange markets. Thus, any problem in these markets is not only an economic problem, but also a social problem, in which public interest would be compromised. In order to solve these problems, one of the important concepts raised in two recent decades is concept of corporate governance [7]. According to Agency theory, presence of non-executive directors and their supervision performance as independent people causes reduction of conflicts of interest between shareholders and corporate managers [8]. According to Chau and Leung (2006), the board of directions which include mostly non-executive and independent members is regarded as suitable control for opportunistic behavior of the manager. Advocates of Agency theory support this fact that the board should be in control of non-executive members for increasing independence of board from management, and they believe that manager's opportunistic behaviors should be supervised and controlled by non-executive managers. Presence of non-executive managers in the board can influence quality of decisions made by executive managers, provide strategic path, improve the performance, direct managers toward accountability, and supervise and control opportunistic behavior of the executive managers. One of the main effective factors on control and administration of companies is ownership combination and especially concentrated ownership of company's

stocks in the hand of main shareholders. These shareholders own considerable percentage of the company's stocks which can control the company's administration. In turn, minor shareholders do not much tend to control and supervise the managers, because in this case they would be forced to pay control costs themselves, while they have low contribution in the company's interest. When there is high concentrated ownership, better supervision and control over management performance is provided. On the other hand, main shareholders may move in favor of their own interests and against minority shareholders and other shareholders. In other words, high concentrated ownership provides control and administration of the company by a few numbers of main shareholders [9]. Haniffa and Cooke (2002), Eng and Mak (2003), and Htay (2012) showed that managerial ownership leads to limited disclosure of optional items. Their findings showed that these companies do not need more disclosure, because they can easily access their needed information. Productivity is the concept which is used for showing ratio of output to input of the person, unit or organization and it investigates relationship between input and output [10]. Productivity measurement is inseparable part and start point of productivity management process. Productivity measurement provides information which allows evaluation and judgment about movement from current status toward the goal. Productivity measurement is actually preparation and development of information and ensuring that trend of resource utilization and thus goods and services production growth trend is improving in the organization. In other words, aim of productivity measurement is improvement of information capacity for optimal utilization of production facilities at different economic aspects. It measures value added of the wealth developed by the business institutions. Value added does not include wealth created by the suppliers, and thus it is different from sales revenue, because it covers sales of the wealth transferred to the institutions in the outside purchases. In other words, value added is the difference between revenue obtained from goods or services sales and costs paid for purchase of raw materials and services received. Labor force of every organization is regarded as one of the main and essential resources. Thus, productivity of this important factor should be measured. For calculation of labor force productivity,

amount of output that is the added value should bedivided by the number of employees, or the Rial equivalent of labor force, which is costs associated with the personnel, so that productivity of this factor is obtained [11].

REVIEW OF LITERATURE

Domestic and foreign research works related to the current work include as follows: Mahmoodzade (2009) in his work studied effect of information technology o labor force productivity in Iranian manufacturing industries. Faizpoor and Dehghanpoor (2010) studied structure of industry and labor force productivity in Iranian manufacturing industries. TalebBidokhti and Ghiasi (2012) studiedrelationship between Profit and Loss Statement items and indexes of productivity in oil companies. HozarMoghadam and Abdoli (2013) studied effects of trade liberalization on the productivity of the industrial sector. This research was conducted during 1974 – 2006. Jens KoKe (2002) used data of German industrial institutions during 1970 – 1995 and studiedeffect of corporate governance and market discipline on productivity growth. Lopez (2004) in his work entitled Wages and productivity in factories in Mexico using panel data and ordinary least squares method studied variables of degree of openness, foreign research and development and human capital on labor productivity and wages during 1993-1999. Tian and Garry Twite (2009) used a sample of Australian companies during 2000 – 2005 and studied effect of internal corporate governance on total productivity of production factors. Su and He (2012) investigated relationship between Ownership structure and corporate governance efficiency and productivity in China.

METHODOLOGY

This is an applied research work. Research method is field study. Necessary data were collected from financial statements of the sample companies and analysis was done. Necessary information was collected through analysis of financial statements of the sample companies regarding research variables. Following collection of necessary data, suitable statistical methods including regression and correlation coefficient was used for testing research hypotheses.

Research Scope

Subject scope is relationship between corporate governance and indexes of labor and capital productivity in Tehran Stock Exchange. Local scope of research includes companies listed on Tehran

Stock Exchange, and temporal scope includes spring 2009 to winter 2013.

Research Model and Hypotheses

The model for testing hypotheses include as follows:

Regression Model

$$E.P=\alpha_0+\beta_1 Duality_{i,t}+\beta_2 Board_{i,t}+\beta_3 Cons_{i,t}+\beta_4 Mnage_{i,t}+\beta_5 Size+\beta_6 Lev+\varepsilon$$

Research hypotheses include as follows:

H1: There is significant relationship between duality role of CEO and labor productivity index.

H2: There is significant relationship between board size (number of members) and labor productivity index.

H3: There is significant relationship between concentrated ownership and labor productivity index.

H4: There is significant relationship between managerial ownership and labor productivity index.

H5: There is significant relationship between elements of corporate governance at once and labor productivity index.

Table 1 gives variables and their calculation.

Table 1: Variables and their calculation

Variable	Type	Calculation	Data	Source
Labor productivity (E P)	**dependent variable**	**Ratio of value added to the number to labor force**	**Value added, Total Labor force**	**Balance Sheet, Profit and loss**
Duality role of CEO (Duality)	**Independent variable**	**Dummy variable equals to zero if CEO is the Chairman or Vice Chairman of Managing Board, Otherwise it is 1**	**-**	**Minutes of annual general meetings**
Board size (Board)		**natural logarithm of board members**	**number of members Board of Directors**	**Minutes of annual general meetings**
Concentrated ownership (Cons)		**Shareholders with an equity of proportion of 10% to total shares in the company**	**Percent shareholder, with Ownership of ten percent, Number of shares**	**Minutes of annual general meetings**
Managerial Ownership (Manage)		**Percentage of shares held by the Board of Directors**	**The total number of company shares, Shares of the Board of Directors**	**Minutes of annual general meetings**
Financial Leverage (Lev)	**Control variable**	**Total debt to assets ratio**	**Total debts and assets**	**Balance Sheet**
Firm size (Size)		**natural logarithm of total assets**	**Total assets**	**Balance Sheet**

Population and Statistical Sample

In this research, elimination method was used for sampling. That is, companies with following conditions were selected and others were eliminated.

1. Their fiscal year ends to March.

2. They do not have changed their fiscal year during period of research.
3. They have active presence in stock exchange during research period.
4. Information should be available for data extraction.

Statistical population of this research includes 336 companies considering above sampling conditions. For sample selection, 180 companies were selected as sample using following formula:

$$n = \frac{NZ^2 \text{pq}}{Nd^2 + z^2 pq} = \frac{336 \times (1.96)^2 \times 0.5 \times 0.5}{336 \times (0.05)^2 + (1.96)^2 \times 0.5 \times 0.5} \cong 180$$

Normality Test of Variables

Jarque Bera test was used for examining normality of data. This test is done with coefficients of skewness and Kurtosis and sample sizeş this statistics may have goof effectivenees epscially üiyh stastistics üith high volume compared to other methods due to simplicity and it can provide sutiable results [12]. table 2 gives Jarque Bera test for research variables.

Descriptive Statistics of Variables

For performing research operation, firstly main variables are calculated during research period. Results of descriptive statistics of variables are given in Table 3.

Table 2: Jarque Bera test for research variables

Variable	Board size	Duality role of CEO	Labor productivity
Jarque Bera statistics	272.470	490.70	78.7640
Sig level	0.93	0.82	0.98
Sample size	900	900	900
Sig level compared to 0.05	Larger	Larger	Larger
Test result	Normal	Normal	Normal

Variable	Financial leverage	Firm size	Managerial ownership	Concentrated ownership
Jarque Bera statistics	124.04	68.706	126.062	161.642
Sig level	0.38	0.37	0.44	0.76
Sample size	900	900	900	900
Sig level compared to 0.05	Larger	Larger	Larger	Larger
Test result	Normal	Normal	Normal	Normal

Table 3: Descriptive statistics

Variable	Financial leverage	Firm size	Managerial	Concentrated ownership	Board size	Duality role of	Labor productivity

			ownership			CEO	
Average	**0.69**	**13.66**	**0.68**	**0.65**	**1.63**	**0.83**	**992.28**
Median	**0.66**	**13.5**	**0.7**	**0.68**	**1.61**	**1**	**138.5**
Maximum	**3.28**	**18.87**	**1**	**1**	**4.01**	**1**	**72567**
Minimum	**0.1**	**10.18**	**0**	**0**	**1.39**	**0**	**-4586**
Standard deviation	**0.32**	**1.54**	**0.20**	**0.22**	**0.11**	**0.38**	**4005.98**
Observations	**900**	**900**	**900**	**900**	**900**	**900**	**900**

Investigation of descriptive statistics suggests that average and SD in labor productivity variable in the companies under study is 992.28 and 4005.98, respectively, which denotes relatively high dispersion. One of its reasons is labor force adjustment in recent years in the sample companies. Average of Duality role of CEO variable suggests that 83 percent of companies have had duality role of CEO over years of research period. Considering natural logarithm is used as the basis for calculations of board size, average with 1.63 suggests it has members between 4 and 5 in the companies under study. Average of Concentrated ownership variable in the companies under study suggests that 65 percent of stocks of the company are held by real and legal entities which are owner of 10 percent of the company's stocks. On the other hand, average of Managerial ownership suggests that 68 percent of stocks in the companies under study are held by the managers of the companies.

Testing Hypotheses Using Pearson Correlation Coefficient

Correlation coefficient indicates strength and type (direct or reverse) of relationship. This coefficient is between 1 and -1 and it is 0 if there is no relationship between two variables. This test investigates relationship between two variables considering following hypotheses.

Null Hypothesis (H_0):there is no correlation between two variables.

$$H_0: \rho = 0$$

Alternative Hypothesis (H_1): there is no correlation between two variables.

$$H_1: \rho \neq 0$$

Judgment about presence or absence of relationship is done based on significance level. That is, if sig level of the test is smaller than 0.05, H_0 is rejected, and there is significant relationship between two variables. Table 4 gives results of Pearson correlation coefficient for five hypotheses.

Table 4: Results of Pearson correlation coefficient for research hypotheses

Variables	Significance	Correlation Coefficient	Observations
Duality role of CEO & Labor productivity	**0.078**	**0.059**	**900**
Board size & Labor	**0.129**	**-0.051**	**900**

productivity			
Concentrated ownership& Labor productivity	**0.247**	**0.039**	**900**
Managerial ownership & Labor productivity	**0.645**	**0.015**	**900**
Firm size & labor productivity	**0.000**	**0.316**	**900**
Financial leverage & labor productivity	**0.000**	**-0.215**	**900**

Considering Table 4, according to Pearson correlation coefficient test, corporate governance variables including board size, concentrated ownership, and managerial ownership are not significant in labor productivity index and control variables of firm size and financial leverage have significant correlation with labor productivity index according to Pearson correlation coefficient.

Testing Hypotheses Using Regression Model Fit

For fit of regression models there are two types of fit considering data type. If data is panel data, panel regression is used and if data is combined data, OLS regression is used. F Limer test is the criterion for fit, which is described in the following.

Testing H1

$$E.P = \alpha_0 + \beta_1 Duality_{i,t} + \beta_3 Size + \beta_4 Lev + \varepsilon$$

Considering data under analysis is combined data, firstly type of model should be estimated using Chow test and Hausman test. Considering statistics obtained from Chow test is 639.767 and its sig level is below 5 percent, panel data method is accepted, and since statistics obtained from Hausman test is 5.853, and its sig level is larger than 5 percent, random effect method is accepted. Results of model estimation for research sample are given in Table 5. Results of hypothesis testing are given in Table 6.

Table 5: Results of Chow test and Hausman test

	Sig	**Test statistics**
Chow test	**0.000**	**639.767**
Hausman test	**0.119**	**5.853**

Table 6: Results of estimation for H1

Variable	**P-value**	**t-statistic**	**coefficient**
DUALITY	**0.4407**	**0.771393**	**290.9358**
SIZE	**0.0000**	**6.775725**	**838.1770**
lev	**0.0004**	**-3.568701**	**-1699.614**
	0.0000	**-5.271204**	**-9536.214**
Weighted Statistics			
R^2	**DW**	**P-value (f)**	**f**
0.065	**1.375**	**0.000000**	**21.91429**

Considering f statistics and P-Value, H0 is rejected and it can be concluded the whole model is significant. Sig levels at variable level suggest there is no significant relationship between duality role of CEO and labor productivityindex,

but this relationship is present between control variables of firm size and financial leverage with labor productivity index. In this model, coefficient of determination (R^2) is 0.065, that is, 6.5 percent of changes in dependentvariableare described by the independent variable and it denotes weak relationship between independent and dependent variable. In addition, statistics related to Durbin – Watson statistics is 1.375 which suggests lack of autocorrelation error in the model.

Testing H2

$$E.P = \alpha_0 + \beta_1 Board_{i,t} + \beta_3 Size + \beta_4 Lev + \varepsilon$$

Considering data under analysis is combined data, firstly type of model should be estimated using Chow test and Hausman test. Considering statistics obtained from Chow test is 642.116 and its sig level is below 5 percent, panel data method is accepted, and since statistics obtained from Hausman test is 5.464 and its sig level is larger than 5 percent, random effect method is accepted. Results of model estimation for research sample are given in Table 7. Results of hypothesis testing are given in Table 8.

Table 7: Results of Chow test and Hausman test

	Sig	Test statistics
Chow test	**0.000**	**642.116**
Hausman test	**0.140**	**5.464**

Table 8: Results of estimation for H2

Variable	P-value	t-statistic	coefficient
BOARD	**0.9141**	**-0.107903**	**-115.1846**
SIZE	**0.0000**	**6.731822**	**835.2289**
LEV	**0.0003**	**-3.591868**	**-1711.838**
C	**0.0004**	**-3.578556**	**-9059.349**
	Weighted Statistics		
R^2	**DW**	**P-value (f)**	**f**
0.067	1.375	**0.000000**	**21.646**

Like testing H1, results at model level with coefficient of determination (R^2) as 0.065 are significant, that is, 6.7 percent of changes in dependent variable are described by the independent variable and it denotes weak relationship between independent and dependent variable. At variables level, lack of significant relationship between board size and labor productivity index is confirmed. In this hypothesis, significant relationship between variables of financial leverage ad firm size with labor productivity index is supported.

Testing H3

$$E.P = \alpha_0 + \beta_1 Cons_{i,t} + \beta_3 Size + \beta_4 Lev + \varepsilon$$

Considering data under analysis is combined data, firstly type of model should be estimated using Chow test and Hausman test. Considering statistics

obtained from Chow test is 646.678 and its sig level is below 5 percent, panel data method is accepted, and since statistics obtained from Hausman test is 7.590 and its sig level is larger than 5 percent, random effect method is accepted. Results of model estimation for research sample are given in Table 9. Results of hypothesis testing are given in Table 10.

Table 9: Results of Chow test and Hausman test

	Sig	Test statistics
Chow test	**0.000**	**646.678**
Hausman test	**0.055**	**7.590**

Table 10: Results of estimation for H3

Variable	P-value	t-statistic	coefficient
Cons	**0.2977**	**1.041970**	**852.0111**
SIZE	**0.0000**	**6.664861**	**828.2946**
LEV	**0.0004**	**-3.583562**	**-1705.820**
C	**0.0000**	**-5.318908**	**-9713.894**
	Weighted Statistics		
R^2	**DW**	**P-value (f)**	**f**
0.065	**1.378**	**0.000000**	**21.944**

Results at model level with coefficient of determination (R^2) as 0.065 are significant, that is, 6.5 percent of changes in dependent variable are described by the independent variable and it denotes weak relationship between independent and dependent variable. At variables level, lack of significant relationship between concentrated ownership and labor productivity index is confirmed. In this hypothesis, significant relationship between variables of financial leverage ad firm size with labor productivity index is supported.

Testing H4

$$E.P = \alpha_0 + \beta_1 Manage_{i,t} + \beta_3 Size + \beta_4 Lev + \varepsilon$$

Considering data under analysis is combined data, firstly type of model should be estimated using Chow test and Hausman test. Considering statistics obtained from Chow test is 644.383 and its sig level is below 5 percent, panel data method is accepted, and since statistics obtained from Hausman test is 6.07 and its sig level is larger than 5 percent, random effect method is accepted. Results of model estimation for research sample are given in Table 11. Results of hypothesis testing are given in Table 12.

Table 11: Results of Chow test and Hausman test

	Sig	Test statistics
Chow test	**0.000**	**644.383**
Hausman test	**0.1082**	**6.07**

Table 12: Results of estimation for H4

Variable	P-value	t-statistic	coefficient
manage	**0.4420**	**0.769181**	**664.7691**
SIZE	**0.0000**	**6.727252**	**834.6763**

LEV	**0.0003**	**-3.599041**	**-1714.520**
C	**0.0000**	**-5.207708**	**-9689.910**
	Weighted Statistics		
R^2	**DW**	**P-value (f)**	**f**
0.064	**1.376**	**0.000000**	**21.798**

Results at model level with coefficient of determination (R^2) as 0.064 are significant, that is, 6.4 percent of changes in dependent variable are described by the independent variable and it denotes weak relationship between independent and dependent variable. At variables level, lack of significant relationship between managerial ownership and labor productivity index is confirmed. In this hypothesis, significant relationship between variables of financial leverage ad firm size with labor productivity index is supported.

Testing H5

$$E.P = \alpha_0 + \beta_1 Duality_{i,t} + \beta_2 Board_{i,t} + \beta_3 Cons_{i,t} + \beta_4 Manage_{i,t} + \beta_5 Size + \beta_6 Lev + \varepsilon$$

Considering data under analysis is combined data, firstly type of model should be estimated using Chow test and Hausman test. Considering statistics obtained from Chow test is 643.841 and its sig level is below 5 percent, panel data method is accepted, and since statistics obtained from Hausman test is 8.924 and its sig level is larger than 5 percent, random effect method is accepted. Results of model estimation for research sample are given in Table 13. Results of hypothesis testing are given in Table 14.

Table 13: Results of Chow test and Hausman test

	Sig	**Test statistics**
Chow test	**0.000**	**643.841**
Hausman test	**0.177**	**8.924**

Table 14: Results of estimation for H5

Variable	**P-value**	**t-statistic**	**coefficient**
DUALITY	**0.4198**	**0.807140**	**305.7934**
BOARD	**0.9582**	**-0.052457**	**-56.40801**
CONS	**0.4854**	**0.697983**	**848.3420**
MANAGE	**0.9753**	**0.031020**	**39.69000**
SIZE	**0.0000**	**6.653938**	**831.1207**
LEV	**0.0004**	**-3.533323**	**-1688.618**
C	**0.0002**	**-3.775904**	**-9950.285**
	Weighted Statistics		
R^2	**DW**	**P-value (f)**	**f**
0.062	**1.381**	**0.000000**	**11.039**

Test results are given considering all corporate governance variables including duality role of CEO, board size, concentrated ownership, managerial ownership. Results obtained from test for each of variables separately suggest coefficient of determination in total test with 6.2 0ercent, which denotes poor

coverage of changes in dependent variable (labor force productivity index) by independent variables. This weak relationship may be due to inappropriate labor force adjustment which considerably influencedinappropriateness of Labor Productivity Index. Like previous hypothesis, significant relationship between variables of financial leverage ad firm size with labor productivity index is supported in this hypothesis.

CONCLUSION

In this research, five hypotheses were used for answering research questions. Corporate governance elements studied in this research included duality role of CEO, board size, concentrated ownership, and managerial ownership. Results for investigation of effect of duality role of CEO as a virtual variable in two firsthypotheses suggest lack of significant relationship between this variable and two indexes. It can be due to the type of the variable. Since duality role of CEO variable is a virtual variable which assigns values 0 and 1 (it equals to zero if CEO is the Chairman or Vice Chairman of Managing Board, Otherwise it is 1), and it is 1 in most of the companies under study due to lack of such condition and it has a fixed trend, thus no relationship between this variable and labor productivity index was not observed. Results obtained from investigation of H2 suggested lack of significant relation between board size variable and labor productivity index. Board size variable, like duality role of CEO variable, influenced research result due to stability and lack of change over the time (5 members) in most of the companies, and lack of significant relationship between these variables was observed. Investigation of concentrated ownership and managerial ownership specified that concentrated ownership and managerial ownership have no significant relationship with labor productivity index which can be due to high changes and inappropriateness in labor force during research period. It considerably influenced Labor Productivity Index which can lead to lack of uniformity of this index during research period. In investigation of effect of corporate governance variables overall on labor productivityindex, results of independent regressions were observed. It should be noted significant relationship between financial leverage and firm size in some companies with labor productivity index was observed.

REFERENCES

1. Salimifar, H., Salimifar, M., Shoorvarzi, MR., Maleksadati, S.

(2011). Effect of capital increase on increasing efficiency of industrial units in KhorasanRazavi (2003 - 2007), Economic and Regional Development Journal, 1: 96-126

2. Drucker, P. (1980), "The Practice of Management", Harper & Row, NewyorK, PP. 14. EerningsManegment .Internal Journal of Academic Research, 2(3): 1230-1238.
3. Bloom, N. (2010), "Work Wife Balance, Management and Productivity", The Economic and Social Research Council and the Advanced Institute of Management Research, 48-6.
4. Sink, S. (1985), "Productivity Management", John Willy & Sons, 54.
5. Moghimi, F., Jalali, G. (2007). Measurement of total productivity indexes at enterprise level (case study), Quarterly of Business Survey, 27: 39-50
6. Mehrabani, F.,Dadgar, Y. (2011). Effect of corporate governance on total productivity of production factors in listed companies on the Stock Exchange of Tehran (Case Study: Food industry), Quarterly of Quantitative Studies in Management, 3.
7. HasasYeganeh, Y. (2005). Philosophy of audit, Scientific and Cultural Publications, Tehran
8. Jensen, M.C., Meckling, W.H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. Journal of Financial Economics. 3 (3): 305–360.
9. Ahmandpoor, A., Kashanipoor, M. (2010). Effect of corporate governance and audit quality on cost of financing the debt, Journal of Accounting and Auditing Review, 62: 17-32
10. Ghaemi, M.H., Hamidi, S., ZavariRezaee, A. (2011). Relationship between financial indicators and indicators of productivity in manufacturing companies, Auditor, 52: 1-5
11. Sinaee, H., Ahmadi, F. (2001). Relationship between labor productivity and capital and profitability indicators in public companies, Accounting Studies Quarterly, 3: 125-95
12. Seyedkhani, H. (2010). Testing normality using Jarque Bera test and its comparison with some other methods,Student Magazine of Statistics (Neda), 1: 14-20