

A study of the effect of change on ownership structure on enterprise value of privatized firms: Evidence from Tehran Stock Exchange

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ABSTRACT

In this paper, we present an empirical investigation to measure the effects of privatization on some selected firms listed on Tehran Stock Exchange. The proposed study of this paper selects eleven relatively big sized Iranian firms whose structures were privatized prior year 2011. The main hypothesis of this survey studies whether there is a meaningful relationship between ownership structure and enterprise value of privatized firms. We collect the necessary information before and after privatization process completed and using a regression model examined the main hypothesis as well as five sub-hypotheses. The results of the survey indicate that the number of major shareholders has been reduced after privatization process accomplished, the number of shares had no impact on firms' values. In addition, non-board members' duty had not impact on firms' value before and after privatization process, institutional investors did not play important role before and after privatization process, and separations played important role on firms' value before and after privatization occurred.

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1. Introduction

Increasing the relative efficiency of business units has been one of the most important issues in the world. Privatization has been considered as one of the immediate solution strategies to cope with performance improvement. During the past few years, there have been extensive studies on measuring the impact of privatization on Tehran Stock Exchange (TSE) (Haidari nejad et al., 2012). VakilAlroaia et al. (2012) investigated the relationship between forward-backward effects on stock return, which normally depends on Price-Earnings ratio (P/E) and stock fluctuation in TSE firms. The results of this research showed that the independent variables investigated in this research had meaningful impacts on the research's dependent variable, which means that the impacts of company's systematic risk and markets risk on companies' stock return were positive.

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Daryani and Ahadi Serkani (2012), for instance, performed an investigation on relationship between residual income and internal and external performance measures for some listed firms traded in TSE over the period 2007-2011. The study used two regressions analysis and examined five hypotheses including the relationship between residual income and other factors including dividend per share, value added operating cash flow, value added cash flow, market cap and market value added. They reported a meaningful relationship between residual income and dividend per share, value added operating cash flow, value added cash flow.

Aram Bonyar et al. (2012), for instance, performed a reverse investigation to design a compatible model of share issue privatization for TSE development. They investigated the impact of share issue privatization on stock market development and introduced an optimal model of share issue privatization for TSE development. To investigate the impact of share issue privatization on key market development variables panel data of privatization index(IPIX), transaction volume, turnover velocity ratio and closing price of each TSE listed company were entered in co integration and error correction models (ECM) over the period 2008-2011. The results indicated a significant relationship between privatization index (IPIX) growth and the growth of each of TSE development proxies.

Osta and Naderi (2012) investigated the separate and simultaneous impact of concentration and type of ownership on corporate value on TSE. In their study, the ownership structure was classified into four classes: the institutional ownership, the corporate ownership, the management ownership and the foreign ownership. In addition, various attitudes regarding the above ownership were also examined, that is, active monitoring hypothesis and interest convergence hypothesis. For the case of the ownerships, a separated hypothesis was developed based on different techniques and their impact on the corporate value was investigated. The results of their study showed that, while there was no relationship between the institutional ownership and management ownership and the corporate value, there was a significant relationship between the corporate ownership and the corporate value.

Akbari et al. (2012) determined whether there was any significant relationship between Company Size (Market value of stocks, Book value of stocks, level of company sale, trade volume of stocks, Price dividend ratio) as independent variables and Systematic risk (Beta) as dependent variables on TSE listed firms. The results of the study revealed that there was a significant relationship between the variables. Samadi (2012) performed an empirical investigation on some privatized banks listed on TSE and measured two well-known financial figures including return on assets and return on equity two years before and after privatization program. The results indicated that there was a meaningful difference between the performance of these banks before and after privatization.

Rezaei et al. (2012) studied the impact of the combination of board of directors on the corporate transparency in some companies among selected ones in TSE Market over the period 2007- 2010. In this research, the combination of board of directors was selected among some factors of corporate transparency such as structure of ownership and the rights of owners, financial information and statistics and structure and combination of board of directors and managers as a sub-indicator for corporate governance. The results indicated that the members of board of directors had no impact on partnership transparency.

Hassani and Taheri (2012) examined the relationship between earnings management and information asymmetry based on some companies listed in TSE listed firms over the period 2005-2010. They concluded that there was not any significant relationship between earning management and information asymmetry in TSE listed firms. There was also not a significant relationship between low or high earning management and information asymmetry. Estimated dividend announcement had information content and it could impact on information asymmetry. In addition, there was information asymmetry and after dividend announcement, its value was more than before.

Farzinfar (2012) investigated the relationship between intellectual capital, earning per share and income growth for a case study of TSE listed firms in Iran. The results of this survey indicated that

the components of intellectual capital including human capital, customer capital, and structural capital had positive relationship with the earning per share of the companies over the period 2005-2010. The results also stated that the components of intellectual capital including human capital, customer capital, and structural capital were positively associated with the income growth of the companies over the period 2005-2010.

Rouhi and Khalifehsultani (2012) investigated the impacts of some important factors on earning quality as well as forecasted earning TSE listed firms over the period 2005-2010. They concluded that moral hazard did not impact forecasted earning, significantly but there was a meaningful relationship between forecasted earning and quality of earning. In terms of members of editorial board, quality of earning had a reverse relationship with absolute deviation of forecasted earning.

In this paper, we perform an investigation on the effects of privatization of firm value by studying different firms' characteristics.

2. The proposed study

The proposed study of this paper considers the following main hypothesis,

Main hypothesis: There is a meaningful relationship between ownership structure and enterprise value of privatized firms.

The main hypothesis of this study consists of the following five sub-hypotheses,

1. There is a meaningful relationship between ownership concentration and enterprise value of privatized firms.
2. There is a meaningful relationship between institutional investors and enterprise value of privatized firms.
3. There is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.
4. There is a meaningful relationship between the ratios of non-board members' duty and enterprise value of privatized firms.
5. There is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.

The proposed study of this paper considers the information of 11 firms privatized prior to year 2011 through Tehran Stock Exchange (TSE). The proposed study of this paper uses the following regression function to perform the study,

$$VALUE_{it} = \alpha + \beta_1 OWNCON_{it} + \beta_2 BRDIND_{it} + \beta_3 CEO_{it} + \beta_4 INOWN_{it} + \beta_5 TOP_{it} + e_{it}, \quad (1)$$

where VALUE represents enterprise value as dependent variable, OWNCON is ownership concentration, BRDIND is the ratio of non-board members' duty, CEO is separation from board, INOWN is institutional ownership, TOP stands for separation of CEO from chairman, respectively. In addition, α , β_i , $i=1,2,3,4,5$ represent the coefficients to be estimated and e_{it} is residual, respectively. Table 1 demonstrates some basic statistics before and after privatization. As we can observe from the results of Table 1, QTOBIN has been increased after privatization happened from a mean of 2.18 to a mean of 3.39. In addition, the mean of institutional ownership has been increased from 0.22 to 0.38 before and after privatization was taken place.

Table 1

Basic statistics before and after privatization

Variable	Before privatization				After privatization			
	Mean	Max	Min	Std. Dev.	Mean	Max	Min	Std. Dev.
OWNCON	0.9882	1	0.90	0.0306	0.8428	0.96	0.66	0.1162
INOWN	0.2218	0.51	0	0.2424	0.3773	0.92	0	0.3202
BRDIND	0.5727	0.80	0	0.3165	0.6291	0.80	0	0.2617
TOP	0.8973	1	0	0.2991	0.6109	0.92	0	0.3138
CEO	0.187	1	0	0.0962	0.227	1	0	0.1262
QTOBIN	2.1811	4.1254	0.8715	1.2974	3.3835	9.1542	1.2491	4.9747

To test the hypotheses of this survey, we examine the relationship between independent and dependent variables before and after privatization and then compare the results.

3. The results

In this section, we present details of testing various hypotheses associated with the proposed study of this paper before and after privatization process.

3.1. Testing hypothesis before privatization

Table 2 demonstrates the results of regression analysis between dependent variable and independent variables.

Table 2

The results of regression analysis

Variable	β	t-value	P-value
Major shareholder (ownership concentration)	0.871	5.599	0.000
The number of shares owned by board of director	0.237	0.445	0.667
The ratios of non-board members' duty	0.131	0.380	0.713
Institutional ownership	-0.077	-0.342	0.740
Separation of CEO from chairman	0.0321	7.600	0.0320

Adjusted R²=0.734 F-value=346.31 P-value = 0.000

The results of adjusted R² is equal to 0.734, which means the independent variables could describe approximately 73 percent of the changes on dependent variable and F-value is equal 346.31 with P-value =0.000 and this means that there is a linear relationship between independent variables and dependent variable.

3.1.1 The first hypothesis

The first hypothesis of this survey investigates whether there is a meaningful relationship between ownership concentration and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : \text{There is no meaningful relationship between ownership concentration and enterprise value of privatized firms.} \\ H_1 : \text{There is a meaningful relationship between ownership concentration and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of major shareholder is statistically meaningful when the level of significance is five percent, which means we can reject the null hypothesis in favor of alternative hypothesis and conclude that there is a meaningful relationship between ownership concentration and enterprise value of privatized firms.

3.1.2. The second hypothesis

The second hypothesis of this survey investigates whether there is a meaningful relationship between institutional investors and enterprise value of privatized firms or not as follows,

- $$\begin{cases} H_0 : & \text{There is no meaningful relationship between institutional investors and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between institutional investors and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of institutional investors is not statistically meaningful when the level of significance is five percent (P-value=0.667), which means we can accept the null hypothesis and conclude that there is not meaningful relationship between institutional investors and enterprise value of privatized firms.

3.1.3. The third hypothesis

The third hypothesis of this survey investigates whether there is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms or not as follows,

- $$\begin{cases} H_0 : & \text{There is no meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of the ratios of shares hold by board of directors is not any statistically meaningful when the level of significance is five percent (P-value=0.713). This means we can accept the null hypothesis and conclude that there is not meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.

3.1.4. The fourth hypothesis

The fourth hypothesis of this survey investigates whether there is a meaningful relationship between institutional ownership and enterprise value of privatized firms or not as follows,

- $$\begin{cases} H_0 : & \text{There is no meaningful relationship between institutional ownership and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between institutional ownership and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of institutional ownership is not any statistically meaningful when the level of significance is five percent (P-value=0.740), which means we can accept the null hypothesis and conclude that there is not meaningful relationship between institutional ownership and enterprise value of privatized firms.

3.1.5. The fifth hypothesis

The fifth hypothesis of this survey investigates whether there is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms or not as follows,

- $$\begin{cases} H_0 : & \text{There is no meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of separation of CEO from chairman is not statistically meaningful when the level of significance is five percent (P-value=0.032), which means we can reject the null hypothesis and conclude that there is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.

3.2. Testing hypothesis after privatization

We now examine the same hypotheses after privatization process accomplished on eleven firms. Table 3 demonstrates the results of implementing ordinary least square test on Eq. (1).

Table 3

The results of regression analysis

Variable	β	t-value	P-value
Major shareholder (ownership concentration)	-0.037	-0.051	0.961
The number of shares owned by board of director	0.180	0.297	0.774
The ratios of non-board members' duty	0.608	2.421	0.036
Institutional ownership	-0.442	-0.945	0.369
Separation of CEO from chairman	0.229	7.600	0.000

Adjusted R²=0.307 F-value=5.862 P-value = 0.036

The results of adjusted R² is equal to 0.307, which means the independent variables could describe approximately 31 percent of the changes on dependent variable and F-value is equal 5.862 with P-value =0.036 and this means that there is a linear relationship between independent variables and dependent variable.

3.2.1 The first hypothesis

The first hypothesis of this survey investigates whether there is a meaningful relationship between ownership concentration and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : \text{There is no meaningful relationship between ownership concentration and enterprise value of privatized firms.} \\ H_1 : \text{There is a meaningful relationship between ownership concentration and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of major shareholder is not statistically meaningful when the level of significance is five percent, which means we cannot reject the null hypothesis and we accept alternative hypothesis and conclude that there is not a meaningful relationship between ownership concentration and enterprise value of privatized firms.

3.1.2. The second hypothesis

The second hypothesis of this survey investigates whether there is a meaningful relationship between institutional investors and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : \text{There is no meaningful relationship between institutional investors and enterprise value of privatized firms.} \\ H_1 : \text{There is a meaningful relationship between institutional investors and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 3, the coefficient of institutional investors is not statistically meaningful when the level of significance is five percent (P-value=0.774), which means we can accept the null hypothesis and conclude that there is not meaningful relationship between institutional investors and enterprise value of privatized firms.

3.2.3. The third hypothesis

The third hypothesis of this survey investigates whether there is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : \text{There is no meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.} \\ H_1 : \text{There is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 3, the coefficient of the ratios of shares hold by board of directors is statistically meaningful when the level of significance is five percent (P-value=0.036). This means we can reject the null hypothesis and conclude that there is a meaningful relationship between the ratios of shares hold by board of directors and enterprise value of privatized firms.

3.2.4. The fourth hypothesis

The fourth hypothesis of this survey investigates whether there is a meaningful relationship between institutional ownership and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : & \text{There is no meaningful relationship between institutional ownership and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between institutional ownership and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 3, the coefficient of institutional ownership is not statistically meaningful when the level of significance is five percent (P-value=0.369), which means we can accept the null hypothesis and conclude that there is not meaningful relationship between institutional ownership and enterprise value of privatized firms.

3.2.5. The fifth hypothesis

The fifth hypothesis of this survey investigates whether there is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms or not as follows,

$$\begin{cases} H_0 : & \text{There is no meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.} \\ H_1 : & \text{There is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.} \end{cases}$$

As we can observe from the results of Table 2, the coefficient of separation of CEO from chairman is statistically meaningful when the level of significance is five percent (P-value=0.000), which means we can reject the null hypothesis and conclude that there is a meaningful relationship between separation of CEO from chairman and enterprise value of privatized firms.

4. Discussion and conclusion

Based on the results of our survey, the first hypothesis of the survey has been confirmed and we can conclude that the number of major shareholders has been reduced after privatization occurred. The second hypothesis of this survey was associated with the number of shares controlled by board of directors before/after privatization process and our survey has concluded that the number of shares had no impact on firms' values. The third hypothesis of this survey investigated the effect of the ratios of non-board members' duty on firms' value before/after privatization process and our survey has concluded that non-board members' duty had not impact on firms' value before and after privatization process. The fourth hypothesis of the survey studied the role of institutional ownership on firms; value before and after privatization process and the results of our survey have indicated that institutional investors did not play important role before and after privatization process. Finally, the last hypothesis of the survey was associated with separation of CEO from chairman before and after privatization. Our survey has concluded that this issue was indeed important and separations played important role on firms' value before and after privatization occurred.

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