



## **Corporate governance and internal capital markets (Case study: Tehran stock exchange)**

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### **Abstract**

Application of internal capital markets mechanism in holding companies has great contribution in increase of markets value and profitability of these companies. During recent years, holding companies listed in Tehran stock exchange have encountered many financing limitations. Functions and dominant approaches of the board of these companies have great influence on the application way of the markets. This paper wants to answer two questions: 1) Do Iranian holding companies use internal capital markets? and if the answer is yes, are internal capital markets efficient? 2) Do corporate governance mechanisms affect size and efficiency of internal capital markets? To assess corporate governance, criteria of ownership concentration, board independency, task duality of CEO, board size and institutional ownership were used. Population includes all holding corporations listed in Tehran stock exchange during 2009-2013 among which 45 companies were selected using systematic elimination method. Kruskal-wallis non-parametric test was used in hypothesis testing and results showed that there is significant difference between corporations with internal capital markets and those without internal capital markets only in the course of financial leverage and task duality of CEO. In other words, financial leverage and task duality of CEO in corporations possessing internal capital markets is higher than those lacking capital markets. Furthermore, results show that there is no significant difference between efficient and inefficient corporation regarding investigation variables.

**Keywords:** Corporate Governance, Internal Capital Markets, Size, Efficiency.

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## **1. Introduction**

Corporate governance and internal capital markets are two issues that have attracted much attention in the field of corporate finance in recent years. The relation between the two issues, however, has not been extensively investigated (Sautner, and Villalonga, 2010). Management ability in transferring the resources among the units is a critical characteristic of multipart corporations. This type of resource allocation is much important when some units are in shortage of financial resources (McMahon, 2011). Decision making about the way of allocating internal resource is the core of conflicts between stakeholders and managers, which can be minimized by means of a good mechanism of corporate governance (Harford et al, 2008).

A major advantage of multipart corporations is creation of internal capital markets. Internal capital markets plays a critical role in cash flow among various sections (Lee et al, 2008). Creation of internal capital markets has at least two advantages. First, allocation of internal resources is more efficient than that achieved by external markets; second, application of internal capital markets promotes the interaction with external capital markets. Moreover, more efficient application of internal capital markets results in enhancement of corporate value (Peyer et al, 2002).

Internal capital markets is a mechanism by which head quarter (holding) allocates the capital in to various units. If the head quarter allocates the capital to units possessing the highest (final) net profit, the internal capital markets will have the necessary efficiency (Peyer, 2002). In internal capital markets, transfer of the cash among the units is also possible. The most important decisions made by top management may be those related to the way of resource allocation among different business opportunities. In holding corporations, management is able to transfer the cash among subsidiary for investing in the best opportunities and so is able to create internal capital markets. In this regard, top management acts as an investor and evaluates business opportunities within the firm. However, some special orientations toward capital allocation in subsidiary are seen (Bardolet et al, 2011).

Budgeting capital resource in holding corporations is a complicated process, which requires a long negotiation between head quarter and subsidiary. In this process, chief executive officer (CEO) acts as a referee and determines general policy. It can be, therefore, said that investment partly depends on negotiation power of managers of subsidiary and their relationship with CEO (head quarter) and managers of other units (Gaspar & Massa).

During recent years phenomena such as changes in currency exchange rate, inflation and presence of limiting regulations in the field of bank financial supports of holding corporations in Iran has weakened the financial resource of the corporations. Stakeholders and management teams governing these corporations have been searching for resolving the problems of financing especially in the field of investment schemas and working capital. Concerning important role of internal capital markets in multipart companies and critical role of managers in controlling the firm and allocating liquidity to other units, it is expected that corporate governance affects internal capital markets. The questions presented in this paper are: do holding corporations in Iran exploit internal capital markets? Is application of internal capital markets efficient? Is size and efficiency of internal capital markets influenced by corporate governance properties? The aim of the present investigation is to identify influence of corporate governance on the size and efficiency of internal capital markets of holding corporations accepted in

Tehran stock exchange. In following sections, literature review is presented, methodology is described, and finally data analysis and conclusion is presented.

## **2. Literature Review**

Corporate governance and internal capital markets are two important issues in the field of financial management on which many investigations have been separately conducted during recent decades. However, there have not been many studies on the relation between the two issues. In this section, literature on the relationship between corporate governance and internal capital markets is reviewed.

In a study entitled “financial markets and capital allocation”, Wurgler (1999) investigated the relationship between state ownership extension in economics and efficiency of capital allocation. The author found out that capital allocation efficiency is negatively correlated with state ownership extension in economics. Moreover, he figured out that capital allocation is more efficient when the firm specific knowledge is present and small investors are legally supported.

In an investigation entitled “corporate governance, profit payment policy, and relation between dividend, research and development and investment”, Gugler (2002) studied the relationship between dividend and control structure and firm ownership. He studied a group of Australian corporations during 1991-1999. He showed that corporations with state control are more flexible in profit payment than those with family control.

In an investigation entitled “corporate governance and company profitability: evidences from Korea before economic crisis” Wook Joh (2003) studied how ownership structure and profits conflicts under a poor corporate governance influences corporation performance before the crisis. The author used data from 5829 Korean firms during 1993 -1997. He found out that corporations with lower ownership concentration have lower profitability as well. Furthermore, multipart companies transferring the resources from a unit to another or have internal capital markets suffer from low ownership concentration and have inefficient internal capital markets.

In a study entitled “corporate governance and firm value: evidences from Korea financial crisis” Baek et al (2004) found that during financial crisis of Korea in 1997, single-part firms possessing higher ownership concentration experienced less reduction in their stock value. The authors showed that Korean holding firms with concentrated ownership and family control, experienced considerable reduction in their stock value. In general, the results of this investigation indicated that variation in companies’ value during crisis period depends on different measures of corporate governance.

Kim (2006) investigated the relation between corporate governance and performance productivity with focus on family ownership and capital structure in a paper entitled "influence of family ownership and capital structure on performance productivity of Korean production firms". The results showed that there is a direct relationship between family ownership and performance productivity in Korean holding firms.

In an investigation entitled” corporate governance and retaining liquidity in US companies”, Harford et al (2008) found that corporations with lower corporate governance structure retain lower level of currency. They found that in the time of distributing the money among stakeholders, companies with poor corporate governance structure prefer redeemed shares to cash dividend. Finally, capital expense of the firm is increased and corporate profitability and value is reduced.

Sautner and Villalonga (2010) , in a study entitled corporate governance and internal capital markets, investigated the relationship between corporate governance and internal capital markets in German firms. They showed that companies with higher ownership concentration have more efficient internal capital markets but the activity of this capital markets is slight. The authors concluded that incorrect allocation of the resources is due to poor corporate governance.

In an investigation entitled " efficiency of resource allocation in companies", McMahon (2011) searched for two questions: 1) is resource allocation performed efficiently in multipart companies? 2- is there any relationship between resource allocation efficiency and their corporate governance? The results showed that resources are allocated efficiently in the investigate companies. The author found that board independency has positive effect on faster and more efficient allocation.

As can be inferred from above sentences, there have been many investigation on this topic but there is still more area for investigation. The present study has been conducted for this purpose. One unique feature of this investigation is that we used five criteria for measuring corporate governance; a task had not been performed in previous studies.

So Research hypotheses are as follow:

Hypothesis 1: there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average ownership concentration, liquidity, and leverage.

Hypothesis 2: there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average of institutional shareholders, liquidity, and leverage.

Hypothesis 3: there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average board size, liquidity, and leverage.

Hypothesis 4: there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average board independency, liquidity and leverage.

Hypothesis 5: there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average task duality of CEO, liquidity and leverage.

Hypothesis 6: there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average ownership concentration, liquidity and leverage.

Hypothesis 7: there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average institutional shareholders, liquidity and leverage.

Hypothesis 8: there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average board size, liquidity and leverage.

Hypothesis 9: there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average board independency, liquidity and leverage.

Hypothesis 10: there is a significant difference between with efficient internal capital markets and those with inefficient internal capital markets concerning average task duality of CEO, liquidity and leverage.

### **3. Methodology**

### 3.1. Definition of variables

**Dependent variables:** dependent variables of the investigation are size and efficiency of internal capital markets. These variables have been calculated by different methods in different investigations. In the present study, size and efficiency of internal capital markets have been calculated using the method applied by Sautner and Villalonga (2010).

Size of internal capital markets: consider the multipart company  $i$  which has  $j$  parts. In each year, the part  $j$  can be cash recipient or donor. To determine if  $j$  is recipient or donor, difference between liquidity after tax (ATCF <sub>$j$</sub> ) and investment of that part is calculated as:

$$ATCF_j - I_j$$

If the product is positive, the part  $j$  is donor of capital and if it is negative,  $j$  is capital recipient. Therefore, cash received by any part is equal to:

$$\text{Max} (I_j - ATCF_j, 0)$$

ATCF of each part is calculated by this equation:

$$ATCF_j = (EBIT_j - R_j) (1 - T_j) + D_j$$

Where  $R_j$  is interest expense of  $j$ ,  $T$  denotes tax rate and  $D_j$  stands for depreciation of  $j$ . In other words, if  $ATCF_j > I_j$ , then part  $j$  will be capital donor and the transfer can be done by one of two methods as:

1- Potential transfer, which is equal to  $\text{Max} (ATCF_j - w_j \text{Div}_j - I_j, 0)$ ; where  $w_j$  is weight of assets of transferring part  $j$  and  $\text{Div}_j$  is cash dividend paid.

2. for ensuring that payment doesn't exceed receipt and at the same time possibility that receipt exceeds payment, for calculating transfer rate the second step is performed:

$$\text{Transfer} = \min [\text{potential transfer of } j \text{ and potential transfer of } j / \sum \text{potential transfer of parts } (\sum \text{receipts of } j)]$$

The two steps are performed because some parts may perform external financing. Internal capital markets size of company  $i$  in year  $t$  is equal to sum of transfer and receipt values, by dividing this sum by total firm assets is standardized:

$$\text{Size of internal capital markets} = \sum \text{receipt} + \sum \text{transfer} / \text{total asset of company } j$$

Efficiency of internal capital markets: efficiency of asset of part  $j$  in year  $t$  is calculated:

$$ROA_j = \text{profit of } j \text{ before interest and tax and depreciation} / \text{total asset of } j$$

Weighted mean of asset efficiency of other parts except for part  $j$  is then calculated ( $\overline{ROA}_{-j}$ )

For parts receiving currency:

\* if  $ROA_j > \overline{ROA}_{-j}$ , currency receiving by the part is efficient.

\* if  $ROA_j < \overline{ROA}_{-j}$ , currency receiving by the part is inefficient.

For parts transferring the currency:

\* if  $ROA_j < \overline{ROA}_{-j}$ , currency receiving by the part is efficient.

\* if  $ROA_j > \overline{ROA}_{-j}$ , currency receiving by the part is inefficient.

Finally, final standardized efficiency of internal capital markets of firm  $i$  is calculated.

In data analysis process, dummy variable was used for internal capital markets efficiency variable; meaning that it is considered 1 if internal capital markets is efficient and 0 otherwise.

Independent variable of the present study is corporate governance. Corporate governance is evaluated by different measures. In many investigations conducted on corporate governance, the variable is calculated by different measures such as ownership concentration, institutional ownership, task duality of CEO, board independency, board size and so on. But in investigations regarding the relation between corporate governance and internal capital markets, corporate governance has been exclusively measured using ownership concentration. In the present study- based on related literature review- measures such as ownership concentration, institutional ownership, board size, board independency and task duality of CEO have been adopted whose calculation procedures are described (Aghayi et al, 2009):

Ownership concentration: sum of ownership percentage of stakeholders possessing at least 5% of the firm stocks

Institutional ownership: sum of firm stock percentage belonging to legal entities (companies)

Board size: total number of board members

Board independency: the number of un-responsible (independent) members in board divided by total number of board members

Task duality of CEO: If CEO is board chief, it is assigned as 1 and otherwise 0.

Control variables

Different variables as control variables have been used in various investigations. In the present study, we used variables as applied by Sautner and Villalonga (2010):

Leverage: sum of debts divided by sum of firm assets.

Liquidity: sum of cash and exchangeable securities divided by firm assets

### **3.2. Population**

Statistical population in this study included all holding companies accepted in Tehran stock exchange. Systematic elimination sampling was performed according to these criteria:

- 1- The companies should be accepted in stock exchange before March 2008 and should be active until end of February 2012.
- 2- Their institutes were active during financial period (from March 2008 to February 2012, therefore companies whose institutes were eliminated or those added during the period were removed from the sample.
- 3- The companies whose information about stakeholders and board was incomplete were removed from the sample.

According to above criteria, 45 out of 80 holding companies were selected for this investigation.

### **4. Data gathering procedure**

Library method and document reviewing was used for data gathering. Theoretical principles were adopted based on Persian and Latin materials and internet based articles. For calculation of dependent and independent variables, financial reports of companies and stock exchange along with reports circulated in internet were applied.

### **5. Data Analysis Method**

SPSS software was used for data analysis. Normality of the variables was first evaluated Kolmogorov-Smirnov test. Since the variables were not normal, non-parametric statistics was used for hypothesis test. For evaluation of the hypotheses, Kruskal-Wallis non-parametric test was used.

## 6. Results

After evaluating the holding corporations, we found that 20 out of 45 companies don't use internal capital markets. Among 25 companies that used internal capital markets, some were efficient and the others were not. Therefore, the companies were first classified as: with (possessing) internal capital markets, without (lacking) internal capital markets. The firms with internal capital markets were further classified as efficient and inefficient. The comparison was then made among the firms. Normality of variables should be tested because an important precondition for application of mean comparison is normality of the variables. SPSS software and Kolmogorov-Smirnov test were used for this purpose.

H0: distribution of variable is normal

H1: distribution of variable is not normal

**Table 1: Results of Kolmogorov-Smirnov normal test**

leverage	Liquidity	Board independency	Board size	institutional stakeholders	Ownership concentration	
4.246	3.175	3.262	8.039	2.530	2.119	statistic
.000	.000	.000	.000	.000	.000	Significance level
223	225	225	225	225	225	number

According to the table above, null hypothesis is rejected because significance levels of all the variables were below 0.05. It can be, therefore, claimed that distribution of the variables is not normal and nonparametric tests should be used for mean comparisons. In this investigation, Kruskal-Wallis nonparametric test was performed. Evaluation of the hypotheses is described as follows.

The table below shows the rank of every variable for firms with/without internal capital markets.

**Table 2: average ranks of Kruskal-Wallis test**

Average rank	number	Internal capital markets	
113.23	99	Lacking internal capital markets	Ownership concentration
112.82	126	Possessing internal capital markets	
114.34	99	Lacking internal capital markets	institutional ownership
111.94	126	Possessing internal capital markets	
112.86	99	Lacking internal capital markets	Board size

Average rank	number	Internal capital markets	
113.11	126	Possessing internal capital markets	
118.58	99	Lacking internal capital markets	Board independency
108.62	126	Possessing internal capital markets	
105.55	99	Lacking internal capital markets	task duality of CEO
118.86	126	Possessing internal capital markets	
110.90	99	Lacking internal capital markets	Liquidity
114.65	126	Possessing internal capital markets	
93.87	98	Lacking internal capital markets	Leverage
126.22	125	Possessing internal capital markets	

Results of hypotheses (1-5) tests are presented in the table below.

**Table 3: results of hypotheses (1-5) tests**

leverage	liquidity	task duality of CEO	board independency	board size	institutional ownership	ownership concentration	
13.838	.185	4.409	1.387	.004	.075	.002	Statistics
1	1	1	1	1	1	1	Degree of freedom
.000	.668	.036	.239	.950	.784	.962	Significance level

**Hypothesis 1:** there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average ownership concentration, liquidity and leverage.

According to table3, null hypothesis claiming the equality of average ownership concentration and liquidity between companies with internal capital markets and those without internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with internal capital markets and those without internal capital markets concerning average ownership concentration and liquidity. Significance level for leverage variable is, however, smaller than 0.05 showing that there is significant difference between companies with internal capital markets and those without internal capital markets regarding leverage. According to table 2 it can be seen that average financial leverage in companies with internal capital markets is higher than that of companies without internal capital markets.



**Hypothesis 2:** there is a significant difference between companies with internal capital markets and those without internal capital markets regarding average of institutional shareholders, liquidity and leverage.

According to table3, null hypothesis claiming the equality of average institutional shareholders and liquidity between companies with internal capital markets and those without internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with internal capital markets and those without internal capital markets concerning average institutional shareholders and liquidity. Significance level for leverage variable is, however, smaller than 0.05 showing that there is significant difference between companies with internal capital markets and those without internal capital markets regarding leverage. According to table 2 it can be seen that average financial leverage in companies with internal capital markets is higher than that of companies without internal capital markets.

**Hypothesis 3:** there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average board size, liquidity and leverage.

According to table3, null hypothesis claiming the equality of average board size and liquidity between companies with internal capital markets and those without internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with internal capital markets and those without internal capital markets concerning average board size and liquidity. Significance level for leverage variable is, however, smaller than 0.05 showing that there is significant difference between companies with internal capital markets and those without internal capital markets regarding leverage. According to table of ranking means, it can be seen that average financial leverage in companies with internal capital markets is higher than that of companies without internal capital markets.

**Hypothesis 4:** there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average board independency, liquidity and leverage.

According to table3, null hypothesis claiming the equality of average board independency and liquidity between companies with internal capital markets and those without internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with internal capital markets and those without internal capital markets concerning average board independency and liquidity. Significance level for leverage variable is, however, smaller than 0.05 showing that there is significant difference between companies with internal capital markets and those without internal capital markets regarding leverage. According to table of ranking means, it can be seen that average financial leverage in companies with internal capital markets is higher than that of companies without internal capital markets.

**Hypothesis 5:** there is a significant difference between companies with internal capital markets and those without internal capital markets concerning average task duality of CEO, liquidity and leverage.

According to table3, null hypothesis claiming the equality of liquidity between companies with internal capital markets and those without internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with internal capital markets and those without internal capital markets concerning liquidity. Significance level for leverage and task duality of CEO variable is, however, smaller than 0.05 showing that there is significant difference between companies with internal capital markets and those without internal capital markets regarding leverage. According to table of ranking means, it can be seen that average financial leverage and task

duality of CEO in companies with internal capital markets is higher than that of companies without internal capital markets.

Table below shows ranks of variables for corporations with internal capital markets and those without internal capital markets.

**Table4: average ranks of Kruskal-Wallis**

Average rank	Number	Internal capital markets	
113.57	176	Inefficient	Ownership concentration
110.96	49	Efficient	
115.54	176	Inefficient	institutional ownership
103.87	49	Efficient	
112.00	176	Inefficient	board size
116.58	49	Efficient	
114.91	176	Inefficient	board independency
106.14	49	Efficient	
111.01	176	Inefficient	task duality of CEO
120.13	49	Efficient	
111.59	176	Inefficient	liquidity
118.05	49	Efficient	
108.75	175	Inefficient	leverage
123.85	48	Efficient	

Results of hypotheses (6-10) tests are presented in the table below.

**Table5. Results of hypotheses (6-10) tests**

Leverage	Liquidity	Task duality of CEO	Board independency	Board size	Institutional ownership	Ownership concentration	
2.069	.378	1.430	.743	.956	1.233	.062	statistic
1	1	1	1	1	1	1	Degree of freedom
.150	.539	.232	.389	.328	.267	.804	Significance level

**Hypothesis 6:** there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average ownership concentration, liquidity and leverage.

According to table 5, null hypothesis claiming the equality of ownership concentration, liquidity and leverage between companies with efficient internal capital markets and those with inefficient internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning ownership concentration, liquidity and leverage.

**Hypothesis 7:** there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average institutional shareholders, liquidity and leverage.

According to table 5, null hypothesis claiming the equality of institutional shareholders, liquidity and leverage between companies with efficient internal capital markets and those with inefficient internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning institutional shareholders, liquidity and leverage.

**Hypothesis 8:** there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average board size, liquidity and leverage.

According to table 5, null hypothesis claiming the equality of board size, liquidity and leverage between companies with efficient internal capital markets and those with inefficient internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning board size, liquidity and leverage.

**Hypothesis 9:** there is a significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average board independency, liquidity and leverage.

According to table 5, null hypothesis claiming the equality of independency, liquidity and leverage between companies with efficient internal capital markets and those with inefficient internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning independency, liquidity and leverage.

**Hypothesis 10:** there is a significant difference between with efficient internal capital markets and those with inefficient internal capital markets concerning average task duality of CEO, liquidity and leverage.

According to table 5, null hypothesis claiming the equality of average task duality of CEO, liquidity and leverage between companies with efficient internal capital markets and those with inefficient internal capital markets is accepted. In other words, it can be said with 95% confidence that there is no significant difference between companies with efficient internal capital markets and those with inefficient internal capital markets concerning average task duality of CEO, liquidity and leverage.

## **6. Discussion & Conclusion**

The main goal of this investigation was to determine if Iranian holding companies use internal capital markets and if so, is this use efficient or not. Finally, we tried to find out if the size and efficiency of internal capital markets is affected by corporate governance mechanisms.

After necessary evaluations, 20 out of 45 firms do not use internal capital markets. Among those firms applying internal capital markets, only a few are efficient. It can be concluded that Iranian holding firms use internal capital markets but this use is not efficient. Results obtained in this study indicated that there is significant difference between firms with internal capital markets and those without internal capital markets only in the case of financial leverage and task duality of CEO. In other word, financial leverage and task duality of CEO in firm with internal capital markets is stronger than those without internal capital markets. Moreover, there was no significant difference between efficient and inefficient firms regarding investigated variables. Our results are in contrast to those reported by Sautner and Villalonga (2010). These authors maintained that firms with more concentrated ownership have more efficient internal capital markets. However, in present study no significant difference was observed for ownership concentration between efficient and inefficient firms.

## 7. Suggestions

The present study is not free from shortage. For complementation of this study it is recommended to pave the way for creation of internal capital markets in holding corporations by support from managers. In theory, it is suggested that more variables be applied for evaluation of corporate governance and effect of factors other than corporate governance be assessed.

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