

Effect of political ownership on the relationship between productivity and the cost of equity

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Abstract

This study is in the framework of theory of political economic and aims to analyze the effect of political ownership on the relationship between productivity and the cost of equity for company owners in Tehran's stock exchange center. Companies in this study are divided into two groups: Companies with political ownership sovereignty and other companies. In this study, it is believed that political ownership becomes the ruler institution whenever the company's main stock holders who own at least ten percent of the whole stock. The research method is relational with multi-variables regression, and panel analysis is used in order to analyze the models. In a seven year period from 2006-2012, the studies have shown that political ownership is highly effective to the relationship between productivity and the cost of equity, and if the political ownership increases in a company, the relationship between productivity and the cost of equity increases too. Therefore it proves the effects of the study of using theory of political economy on the behavior of financial variables.

Keywords: Political ownership, Productivity, The cost of equity, Political economy

Introduction

Political economy is an important domain in the scientific study of social phenomena. In this method, the formation of social phenomena is believed to be resulted by political and economic reasons. According to the theory of political economy, it is of vital need to understand the relationship between economic, social and political groups in order to identify the changing features of business enterprises and to interpret their economic and financial variables (Abeysekera, 2003). In developing countries with their economic system being dependent to relations, one of the main reasons affecting the motivation and behavior of investors and managers, is the feature of political managers and owners of the companies. The purpose of this study is the comparative investigation of effect of political ownership on the relationship between productivity and the cost of equity.

Our paper contributes to the literature on several grounds: First, we contribute to the recent literature on the role of political ownership in determining the firm's cost of equity, by introducing the Effect of political ownership on the relationship between productivity and the cost of equity. Second, we contribute to the debate on the link between government ownership/control and the firm productivity by examining its impact on the cost of equity.

In Iran's economic environment, it is unacceptable to have lots of beneficiaries with antithetical interests. In other words, government is the main actor in Iran's economy. The existence of this powerful actor makes it hard to identify management from ownership. Although there are differences in their appearances, but differentiating management from ownership is not possible in Iran and the relations of managers and owners are not dependent to it. Therefore using theory of

political economy to describe the behavior of economic and financial variables is an accepted method.

Theoretical foundations and research background

Theory of political economy

Since the second half of the 20th century with the expansion and influence of Liberalism, the theory of political economy entered economic texts all around the world. Not only has this theory gathered the attention of economists and politicians, but also sociologists have offered explanations for this theory (Moosavi et al. 2004). According to this theory, economy and politics interact with each other which means political activity and decision making has direct and indirect effect on economic activities and vice versa. According to this theory, politicians and bureaucrats are motivated to transport wealth via political process. They are not just functionaries for beneficiary groups, but they are beneficiaries too. In addition their easy access to resources puts them in a better position in comparison to other actors in economic field. An actual example for this condition is direct existence of government or institutional investors and individuals being close to power entities in the structure of companies' ownership.

Political economy focuses on the fact that power relations as fundamental and determinant forces and processes in the market, should be a part of analysis. Excluding power relations in social or political or any other's analyses would be unexplainable (Mosco, 2009). In the countries in which the legal system lacks the power to support the safety of private sector investors and there is corruption in an expanded scale, having political relations and being closer to government are considered high value elements for companies in order to bridge the market in this condition and avoid Ideological discrimination (Boubakri, 2012). Companies' owners subdivided according to their political position and economic abilities. Analyzing the effects of owners' investment on companies is a subject which could be analyzed in the framework of theory of political economic.

Research background

Boubakri et al. 2012 research includes the cost of equity in companies which are closer to political powers. The results showed low cost of equity in the companies which are related to political entities. According to their research, there are powerful proofs that in companies related to political entities, investors expect low efficiency for cost of equity. Their reason is that these companies totally face little risks. Ben Nasr and Boubakri (2012) surveyed political factors determining the cost of equity by using a special database including the information about 126 institutions transferred to private sector in 25 countries. The results show a high dependence of the cost of equity on political system and government stability.

Aninat et al., (2010) analyzed the relationship between policy and productivity in the framework of the theory of political economy by using a model for the cost of political transformations. This survey tries to identify and describe those factors of political economy which are reducing productivity rate. According to analysis, political economy mechanism is the reason reducing productivity rate. Banimahd and Mohammadrezaee (2012) showed in their research that productivity directly affects the performance of non-profit companies and also productivity has an opposite relationship with overall losses.

There are researches about the effect of ownership and political relations on economic variables. Ang et al., (2013) in their research in Singapore showed that political relations of companies have made little profit for them. Faccio (2006) surveyed companies in different countries and the results showed that the owners entrance to political relations increases companies

productivity. Wu et al., (2012) in their research for private companies in China showed that political management increases their productivity. These companies gain more value in comparison to others.

Research hypothesis

According to researches done in this area (for example, the researches of Boubakri et al.,(2012), Ben Nasr and Boubakri,(2012), Aninat et al., (2010)), the research hypothesis is presented as follows:

H1: Political ownership affects the relationship between productivity and the cost of equity

Population of the study

The population in this research is the accepted companies in Tehran stock exchange in a period of 2006 to 2012 including 95 companies and related 602 observations which are chosen randomly in the following conditions:

- A) The companies in which March is their period end and they have no financial changes during that period.
- B) Companies which do not have long term lack of transaction during that period.
- C) Investment companies shall not be included in groups related to investment and Banking industry.

After checking financial forms and related texts using database of Tehran stock exchange, the inputs were collected and calculated using excel software and were analyzed using SPSS18 and Eviews6. The inputs related to described statistics were analyzed through calculating central indexes such as average, mean and indexes of distribution SD. These indexes were calculated in a general way. Latter we examined the normality test for dependent variable. This exam was carried out using Kolmogorov–Smirnov test. Panel analysis was used to analyze models. The existence of effects (random or stable), in these models were examined and at the end the suitable ones were chosen. A meaningful level of deduction base was used in a way that whenever the examination`s possibility or level of meaningfulness is less than 0/05, the hypothesis will be 95 percent rejected.

Research conceptual model and variables

The research conceptual model is as follows:

$$COE_{it} = \beta_0 + \beta_1 PR_{it} + \beta_2 PO_{it} + \beta_3 PR_{it} \times PO + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 GS + \beta_7 ROA + \varepsilon_i$$

COE is the cost of equity, PR is productivity, PO is political ownership, Size is the size of company, LEV is liability ratio, GS is sales growing and ROA is the return on assets.

Dependent variable for the shares (the cost of equity) (Easton, 2014) was calculated as follows:

$$COE_t = \sqrt{\frac{EPS_t - EPS_{t-1}}{P_{t-1}}}$$

In described formula, the cost of equity (COE) is calculated in the year (t) from square of ratio of deference earning per share (EPS) of the year (t) and the previous year (t-1) on stock price (P) of the precious year.

Productivity: Includes the productivity of human resources and capital. Riahi Belkaoui (1993), Total productivity is described as follows:

Total productivity including human resource productivity and capital productivity with the following formula:

$$TP = HRP + CP$$

In above formula, TP is total productivity, HRP is the human resource productivity and CP is physical capital productivity.

- A) Human resource productivity: The calculation formula is $HRP = \frac{TSV}{VA}$

HRP is human resource productivity, TSV is total salary and wage and VA is value added.

The formula for calculating value added is as follows:

$$VA = W + I + T + DP + DIV + R$$

In this formula W is wage, I is interest, T is tax, DP is depreciation, DIV is divided interest and R is residual income(non-allocated profit).

B) Physical capital productivity: The formula is $CP = \frac{TFA}{VA}$, in which CP is capital productivity, TFA is total fixed assets and VA is value added.

Political ownership: According to this research, political ownership rules a company, whenever the company`s main investors are as political groups dependent to government. The signs of company`s political ownership include: The existence of members of board of directors related to government, parliament and this type of political institutions or main governmental or semi-governmental share-holders (with at least 10 percent of total vote shares). This variable is analyzed via investigating financial statements and board of directors` reports on general assembly through identifying director, board of directors, main owners and individuals dependent to described companies. This variable was used with a little difference in the researches of Jonson and Mitton (2003), Facio (2006), Aning Sejati (2009) and Cheni et al.(2012). We used two variables to calculate political ownership. In this method if the main shareholder of a company has political entity, the rate would be 1 and if it is not a political entity, the rate would be zero.

Control variables of the research and their calculation method are as follows:

- 1) Size which is identified base on total logarithm of each company`s assets in each year.
- 2) Debt ratio is calculated via fraction of long term debts on assets.
- 3) Sales Growing which means sales differences ratio in this year compared to previous year.
- 4) Return on asset: means the ratio of net profit to total assets.

Results

H₀: Inputs use normal distribution for dependent variable

H₁: Inputs do not use normal distribution for dependent variable

Table 1: Kolmogorov–Smirnov test for testing normality of dependent variable of the research

Year	Quantity	Normality		Maximum difference			Kolmogorov –Smirnov Z ratio	Possibility value
		Average	Standard deviation	Absolute value	Positive	Negative		
2006	87	0/40	0/24	0/14	0/14	-0/08	1/26	0/08
2007	87	0/30	0/22	0/17	0/17	-0/10	0/77	0/59
2008	85	0/29	0/23	0/14	0/14	-0/11	1/30	0/07
2009	86	0/31	0/23	0/12	0/12	-0/12	1/14	0/15
2010	87	0/34	0/24	0/16	0/16	-0/09	0/67	0/77
2011	86	0/31	0/27	0/16	0/16	-0/14	0/61	0/85
2012	84	0/30	0/22	0/20	0/20	-0/12	0/68	0/75

Possibility value for dependent variable in the period of 2006-2012 is more than 0/05. Therefore the zero value (normality of variable) for this variable would be rejected and it means, the distribution of these variables is normal, as predicted by (indexes close to zero).

We used panel analysis without fixed effects, with fixed effects and with random effects for integrated data. Limer (Chao) test and Hasman test were used for identifying suitability of the model with fixed or random effects. Therefore we calculate the following hypothesis:

H_0 : The integrated model is suitable

H_1 : The model with effects is suitable

Then, in the case of using effective model, the Hasman test is used to identify if the fixed effective model is suitable or randomly effective model.

Zero and opposite hypothesis is Hasman test are as follows:

H_0 : The randomly effective model is suitable

H_1 : The model with fixed effects is suitable

The results for Chao test are written in the following table:

For Hasman test, the value for possibility is 0/000. Therefore the zero hypothesis is rejected and the model with fixed effects is suitable one.

Table 2: Chao test and Hasman test to choose the best model

Models	Chao or Limer test				Hasman test			Result
	Effects` test	Value	Freedom ratio	Possibility value	K2 value	Freedom ratio	Possibility value	
Model	F value	2/63	(91/503)	0/00	15/38	7	0/031	Model with fixed effects
	K2 value	233/95	91	0/00				

The possibility values in Chao test are less than 0/05. Therefore this model has different effects on different companies. Now Hasman test is used in order to identify if these effects are fixed or random. The possibility values in Hasman test are also less than 0/05. Therefore the model has fixed effects on different companies. So the best model to use is the one with fixed effects. We have used this model to examine our next hypotheses.

Table 3: Fitting this model on the first model

Parameters	Ratio values	(t) value	Result
Fixed value	0/615	1/711	Meaningless
ROA	0/201	1/509	Meaningless
PR	-0/020	-5/080	Negative and meaningful
PO	-0/074	-0/839	Meaningless
PR*PO	0/018	2/331	Positive and meaningful
SIZE	-0/026	-0/965	Meaningless
lev	0/235	3/034	Positive and meaningful
GS	0/019	0/761	Meaningless
ROA	0/201	1/509	Meaningless
F value	3/76	F possibility value	0/000
The coefficient of determination	0/42	Watson`s statistics	2/03

In above table, the model with fixed effects is examined. The F meaningfulness value is 0/000. This value is less than 0/05. Therefore the zero hypotheses will be rejected with 95 percent of confidence. It means there are no trustworthy models on 95 percent of confidence level. The coefficient of determination is 0/42. Therefore 42 percent of dependent variable`s changes are due to independent variable and control variable. The value for Watson`s statistics is 2/03. The values which are close to 2, show a lack of autocorrelation for the remaining which is one of the regression hypothesizes. (Therefore the remaining lacks autocorrelations.)

Hypothesis testing

The value for (t) statistics for productivity (PR) is -5/08 (meaningful and negative), for political ownership (PO) variable, it is -0/84 (meaningless), for PR*PO variable, it is 2/33 (positive and meaningful), for size variable (Size), it is -0/96 (meaningless), for liability ratio variable (LEV), it is 3/03 (positive and meaningful), for sales growing variable (SG), it is 0/76 (meaningless), and for return on assets (ROA), it is 1/50 (meaningless), the value of (t) statistics for intercept is 1/71 which in the level of 95 percent confidence does not reject zero hypothesis and it means that intercept is meaningless.

Conclusion and Recommendations

According to the fact that PR*PO variable is meaningful; therefore political ownership affects the relationship between productivity and the cost of equity.

For accurate analysis of the hypothesis, first we should pay attention to the effect of productivity on the cost of equity. The results of table.3 show us that productivity (PR) is meaningful and negative. It means, the more productivity, the less the cost of equity. A key feature is that we should answer this question: In which ownership system, the inverse relationship between productivity and the cost of equity has maximum level? Second hypothesis shows that the effect of productivity on the cost of equity in companies with political ownership is higher than the ones with no political ownership. In other words political ownership meaningfully affects the relationship between productivity and the cost of equity, and the more the political ownership of companies, the more the relationship between productivity and the cost of equity. The results of this research are the same as the ones of Bani Mahd and Mohammad Rezaee research (2012).

According to the results, it is suggested to build a suitable base for separation of the management from ownership, substantially. The privatization process is a good start to achieve this purpose. Therefore it is better that governments through changing their income-based strategy to privatization (delegation of companies in order to reduce debts and gaining capital for government), and with paying attention to customers` technical abilities, delegate companies to private sector, put limits on the semi-governmental institutions` investment in fields which the private sector has the ability to invest in.

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