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# Executives Political Connection and Over-investment in New Energy Companies: Empirical Evidence from China's Capital Market

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**Abstract:** Establishing links between business and government is a common phenomenon in the world. Using data of new energy companies listed in Shenzhen and Shanghai Stock Exchange, the paper examines the relationship between political connection and firms' over-investment. We find that executives political connection is a significant promotion of firms' over-investment; the political connection is divided into the central- and local-level, and further tests find that political connections with different levels have no significant impact on firms' over-investment. Our findings provide an empirical evidence for strengthening the Governance Reform of the government.

**Keywords:** political connection, over-investment, new energy company

## 1. INTRODUCTION

Faced with the depletion of traditional energy, global warming and other issues, accelerating the development of new energy industry is a "industrial revolution" promoted by the word to seize the commanding heights of the future economic development. Over the past decade, large-scale grid wind power, efficient concentrator solar cells, the fourth-generation of nuclear power, "hydraulic fracturing" shale gas and other technologies in China are rapidly achieving a breakthrough, and the new energy industry is growing rapidly. But the undeniable reality is that the new energy industry, as the strategic emerging industry, doesn't play its leading role and has to face the problem of excess capacity first in the fluctuations of economic growth (Shi Dan, 2012)<sup>[1]</sup>, which makes the economic benefits of the new energy industry (still in the growth stage) fell sharply, showing a situation of "recession before mature"(Du Jifei, 2014)<sup>[2]</sup> and even faced with the threat of bankruptcy. The reasons are as follows: Shrinking international market, the incompatibility of industrial development and market development, the incompatibility of development of productive forces and institution building(Shi Dan,2012)<sup>[1]</sup>, companies blindly following the trend, and over-investment.

Investment activities are firms' strategic actions and investment decisions must be scientific rationality. However, under the background of economic transition, especially the fiscal decentralization and performance evaluation system for local officials in China, some firms, on the one hand, expand the scale of the investment at all costs in order to meet the local government officials' ambitious (Zhang Weiyong,2001)<sup>[3]</sup>,on the other hand, they try to establish links with the government to form a "political connection" and rely on such informal alternative mechanism to obtain sufficient external funding(Fan et al. 2006<sup>[4]</sup>, Khwaja and Mian,2005<sup>[5]</sup>, Leuz and Oberholzer-Gee,2005<sup>[6]</sup>,Boubakri,2009<sup>[7]</sup>,Hu Xuyang,2006<sup>[8]</sup>,Yu Minggui,2008<sup>[9]</sup>) to solve the problem of financing constraints in expanding investment. So is "political connection" an important factor to influence firms' over-investment? We need empirical tests.

## 2. LITERATURE REVIEW

Since Krueger(1974)<sup>[10]</sup> initially pointed out that the entrepreneurs spend time and money building relationships with government officials to bring benefits to firms, theoretical and empirical research of the

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economic consequences of political connection still has been growing, most of researchers focus on the studies of the links political connections with enterprise value or corporate behavior. In recent 20 years, with the scholars' continuous research of political behavior and its impacts in organizations, the connection between political behavior and investment efficiency has been concerned by more academics. Claessens et al. (2007)<sup>[11]</sup> estimated that the cost of investment distortion caused by politically connected firms' concessional credit is at least 0.2% of GDP in Brazil's economy; Fan et al.(2007)<sup>[12]</sup> found that politically connected firms affected by corruptions are some of the inefficient companies, so credit support to these firms results in the distortion of the capital allocation; Liang Laixin and Feng Yanchao(2010)<sup>[13]</sup> use data of private enterprises listed in Shenzhen and Shanghai Stock Exchange in 2006-2009,they examine the relationship between political connection and firms' over-investment. Empirical results indicate that the over-investment level of firms with political connection is significantly higher than no political connection firms, and the stronger of political connection, the higher level of over-investment; Zhang Gongfu(2011)<sup>[14]</sup> uses a sample of 701 listed firms from 2004 to 2009,they found that political connections are negatively related to both over-investment and under-investment; Huang Xinjian and Li Xiaohui(2012)<sup>[15]</sup> use the data of Chinese real estate industry listed companies, and found that firms with political connection are more likely to over-investment with respect to no political connection firms; Yin Feng(2012)<sup>[16]</sup> found that agency costs would be reduced and investment efficiency would be improved in private enterprises with political connections.

Through literature review, we find that although the literature on political connection and firms' investment is on the rise in recent years, empirical studies on new energy firms' political connections and over-investment are rare, and whether or not the political connection level significantly affects firms' over-investment hasn't been explored in depth.

Following the studies of many scholars at home and abroad, this paper uses data of new energy technology companies listed in Shenzhen and Shanghai. And in order to examine the relationship between executives political connection and over-investment, we together use the methods of theoretical derivation and empirical analysis. The possible marginal contributions are mainly in the following aspects: focusing on new energy companies and combined with the background of economic transition, we divide political connection into the central- and local-level, and analysis the effects that firms with different levels have on over-investment, and enrich related literature.

### 3. THEORETICAL ANALYSIS AND RESEARCH HYPOTHESES

Political connection refers to the links between the business and all levels of government departments and auxiliary support agencies. In the current context of economic transformation, although the autonomy of firms' decision-making and the autonomy in operation are improving, the government still has considerable power to influence firms' microscopic operations through policy support and intervention (Ma Depu,2005)<sup>[17]</sup>.In order to promote the development of new energy industry, Chinese government has issued a series of preferential policies to promote the priority development of new energy resources, such as the national renewable energy price allocation policy, solar PV building applications financial capital subsidy regulations, the policy of VAT exemption for renewable energy, Internet power full protection of the acquisition policy, wind and photovoltaic power generation, biomass energy and other feed-in tariff policies. In the context of transition economies, whether these preferential policies really can be put in place timely depends largely on "the efficiency of communication" between business and government sectors. Therefore, many enterprises hire ever government officials to work for them or enterprise executive act as deputies or CPPCC members to develop very close relationship with government and form a political connection. As an informal alternative mechanism, on one hand, political connection can help enterprises improve the "communication" efficiency with government

departments and get a variety of "scarce resources" that conducive to investment (McMillan and Woodruff, 2002<sup>[18]</sup>; Allen, Qian, 2005<sup>[19]</sup>; Allen et al. 2006<sup>[20]</sup>; Wu Wenfeng, Wu Chongfeng et al. 2008<sup>[21]</sup>), such as easier access to financing (Yu Minggui, 2008), preferential tax policies and subsidies (Faccio, 2006<sup>[22]</sup>; Pan Yue, Dai Yiyi, 2009<sup>[23]</sup>), lower barriers to entry (Luo Danglun, 2009)<sup>[24]</sup> and so on, so that enterprises have more investment opportunities and greater investment capacity, leading to management's overconfidence and then induce over-investment; On the other hand, for some purposes and interests, the government may exert influence on the executives with political connection to interfere firms' investment decisions. To cater to the local governments' political demands of increasing employment and GDP growth, and maintain the political connection, companies may invest a project in which the earnings outlook isn't optimistic or even the NPV is negative, which leads to a variety of inefficient redundant construction. Thus, the political connection has become an important factor of over-investment. Based on the above analysis, we make the following assumptions:

H1: When other conditions are the same, the new energy firms with political connection are more likely to over-investment, and the stronger the connection is, the higher the level of over-investment becomes.

Under the financial management system of "serving meals to different diners from different pots" and "the property rights handing over, the powers of office devolving", the lower the local government level is, the greater financial pressures they will face. If the government want to achieve the goal of administrative promotion and increase revenue, they will be more likely to have an incentive to achieve the goal of expanding performance (GDP), broadening the base of tax sharing and increasing employment by supporting companies that under their control to expand investment. Besides, in terms of external financing, tax incentives, financial assistance, industry access and so on, the local governments' influence on the operating activities should be greater than the central governments'. Therefore, the local and central government background of executives may differ in terms of exploiting the advantages of political resources. The political connection is divided into four categories by Ding Zhen (2010)<sup>[25]</sup>: central-, provincial-, municipal- and county-level. By examining the impact of executives political connection on listed companies' R & D, she found that the level of political connection is positively related to firms' R & D investment. Wu Wenfeng (2008)<sup>[21]</sup> discussed the relationship between executives' government background and the company value, after distinguishing different government backgrounds, they found that the positive impact of executives' local government background on the company value is significantly greater than the impact of their central government background. Thus, the political connections with different levels may have different effects on the performance and behavior of enterprises. Based on the above analysis, we make the following assumptions:

H2: When other conditions are the same, the local-level political connection's impact on the firms' over-investment is significantly greater than the central-level political connection's.

## **4. RESEARCH DESIGN**

### **4.1 Sample selection and data sources**

In this paper, we use data of new energy companies listed in Shenzhen and Shanghai as research subjects. And we perform the following screening program for sample firms: (1) To avoid the influence of abnormal value, excluding ST, PT; (2) Excluding the firms that issue B shares and H shares at the same time, because the data of new energy firms' B shares and H shares is difficult to obtain and there are significant differences in the accounting policies of revalue and fees recognition; (3) Excluding firms with incomplete research data in the test interval (2009-2011). Based on the above principals of screening, we finally get 309 observations. All data used in this article is from the GTA's CSMAR database, annual reports of listed companies in Juchao Website, Sina Finance and Fenghuang Finance Channel, and we get the final data by hand.

## 4.2 The selection and measurement of variables

### 4.2.1 Political connection

Political connection (PC) is explanatory variables. By determining whether or not the chairman, general manager or secretary of the chairman are NPC deputies, CPCC members, government officials now or ever, we judge whether or not a company has a political connection. It takes the value of one if the firms' chairman, general manager or secretary of the chairman is NPC deputies, CPCC members, government officials now or ever and zero otherwise. Due to the traditional concept of "official standard", executive level represents the size of political reputation and political influence. Therefore, based on the study of Hu Xuyang and so on, we assign the degree of political connection according to the highest administrative level of executives now or ever. It takes the value of two if the executives are NPC, CPPCC, former provincial officials and above, provincial NPC deputies, provincial CPPCC or former prefecture officials. It takes the value of one if the executives are municipal or county deputies, municipal or county CPPCC. It takes the value of zero if the executives have no political experience. Based on this, we structure the indexes of political connection degree.

### 4.2.2 Over-investment

Over-investment (*OverINV*) is explained variables. Following recent academic research on over-investment, over-investment is measured as the margin of the actual investment and the optimal investment. First, calculate the actual investment, we use the cash investment expenditure in the cash flow statement as firms' actual investment. Second, calculate the optimal investment, the idea is that reasonable investment can promote enterprises to develop faster. Based on this, we select some growth indexes as the influence factors of firms' investment to estimate the investment expenditure of firms, such as PB, PE, main business's increasing rate of income, ROE, the growth rate of EPS, total assets growth rate and so on. We use them to carry out the principal component factor analysis, and according to the scores and the accumulated variance contribution rate, we construct the firms' growth opportunities indexes, then we use them to construct the formula of the optimal investment as follows:

$$I=a+bV+ \varepsilon$$

Where "I" represents firms' optimal investment; "V" represents firms' growth opportunities; "a" and "b" are parameter estimates; "ε" represents the residuals of the model.

### 4.2.3 Control variables

To reveal the effects of political connection on firms' over-investment better, some control variables are added in this model, such as agency costs, large shareholders capital occupying, firm size, asset-liability ratio, firms' investment opportunities, firms' time to market, level of cash holdings and so on. The specific measurements are shown in table 1.

**Table 1. Definitions and symbols of the variables**

Variable	Symbol	Definition
Agency costs	<i>AC</i>	Sales divided by administrative expenses
Large shareholders capital occupying	<i>OR</i>	Total assets at the beginning of the year divided by net other receivables
Asset-liability ratio	<i>Debt</i>	Total assets divided by total liabilities
Firm size	<i>Size</i>	Logarithm of firms' total assets at the beginning of the year
Return on assets	<i>ROA</i>	Balance of total assets divided by net profit
Firms' investment opportunities	<i>Growth</i>	Last year's operating income divided by the margin of this year's operating income and last year's operating income
Firms' time to market	<i>Age</i>	Margin of the year to market and the corresponding year

#### 4.2.4 Research model

In this paper, we use multiple regression models to analysis the relationship between political connection and firms' over-investment. We build the model as follows:

$$\text{Model 1: } \text{OverINV} = \alpha + \beta_1 \text{Pc} + \theta_2 \sum \text{Control} + \varepsilon$$

$$\text{Model 2: } \text{OverINV} = \alpha + \beta_1 \text{Pc} + \beta_3 (\text{Loc-cen}) + \theta_2 \sum \text{Control} + \varepsilon$$

Model 1 doesn't distinguish the levels of political connection and describes the relationship between political connection and over-investment. Based on model 1, political connection is divided into two levels (central-level and local-level) for further testing in model 2. If the coefficient on *Loc-cen* is significantly positive, it indicates that the local-level political connection's impact on the firms' over-investment is significantly greater than the central-level political connection's; If the coefficient on *Loc-cen* is significantly negative, it indicates that the central-level political connection's impact on the firms' over-investment is significantly greater than the local-level political connection's. If the coefficient on *Loc-cen* isn't significant, it suggests that there is no difference between the two.

## 5. EMPIRICAL ANALYSIS

### 5.1 Descriptive statistics.

	N	Minimum	Maximum	Mean	Std. Deviation
<i>OverINV</i>	309	-9.6745	3.09	-2.5439	6.2774
<i>PC</i>	309	0	1	0.36	0.481
<i>Age</i>	309	1	19	9.47	4.363
<i>AC *100</i>	309	2.1965	5.774	7.7867	5.4496
<i>OR *100</i>	309	3.855	1.583	1.5547	2.0646
<i>Debt *10</i>	309	5.5685	1.8199	5.4589	1.8574
<i>Size</i>	309	1.977	2.6074	2.2094	1.2177
<i>ROA</i>	309	-9.5244	3.8086	4.0431	4.5745
<i>Growth</i>	309	-5.367	1.767	2.0617	3.2279
Valid N (listwise)	309				

Table 1 reports the descriptive statistics of the main variables. Because the values of *AC*, *OR* and *Debt* are small, they are enlarged by 100 times, 100 times and 10 times separately to facilitate the display of the results. According to Table 1, the difference of the minimum and the maximum isn't significant, and the standard deviations are small, it indicates the sample data is relatively concentrated.

### 5.2 Regression analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.622	8	2.028	6.508	.008 <sup>a</sup>
	Residual	1.197	300	3.992		
	Total	1.214	308			

a. Predictors: (Constant), *Growth*, *PC*, *Age*, *OR*, *Debt*, *AC*, *ROA*, *Size*.

b. Dependent Variable: *OverINV*

**Table 4. Coefficients**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.155	7.622		-.152	.0088
	<i>PC</i>	8.944	7.560	.068	1.183	.0238
	<i>Age</i>	1.116	8.504	.008	.131	.0896
	<i>AC</i>	1.609	7.188	.001	.022	.0982
	<i>OR</i>	-3.230	1.777	-.011	-.182	.0385
	<i>Debt</i>	-2.803	2.520	-.083	-1.112	.0167
	<i>Size</i>	1.113	3.724	.022	.299	.0765
	<i>ROA</i>	4.714	9.045	.003	.052	.0958
	<i>Growth</i>	1.188	1.212	.061	.981	.0328
	<i>Loc-cen</i>			0.113	.042	1.028

Table 3 reports the results of ANOVA, and the value of F-statistic is 6.508, Sig = 0.008 < 0.05, so we can say that the regression equation we have established is valid, it suggests that the linear relationship between political connection and firms' over-investment is significant.

Table 4 reports the results of Coefficients. The results show that there is significantly positive correlation at the 5% level between the political connection and the over-investment. It suggests that compared with firms of non-political connection, firms with political connection are more likely to over-investment, and the stronger the connection is, the higher the level of over-investment becomes, H1 has been verified. Because the coefficient of *Loc-cen* is 0.113 and Sig=1.028 > 0.10, it doesn't pass the significance tests, thus rejects H2, indicating that the political connections with different levels have no significant effects on firms' over-investment.

## 6. CONCLUSIONS AND RECOMMENDATIONS

In this paper, through empirical analysis of the relationship between executives political connection and firms' over-investment in new energy listed companies, we get the following conclusions: (1) Executives political connection has a significant promoting effect on firms' over-investment. (2) The political connection is divided into the central- and local-level, and further tests find that political connections with different levels have no significant impact on firms' over-investment. Based on the findings above, the following recommendations are given: (1) For new energy companies, political connections could help firms win the policy supports and the cheap resources, but political connection is a double-edged sword, it can also make the firms become political vassals and induce or exacerbate firms' over-investment. So the blind pursuit of political connection isn't necessarily beneficial for firms' investment efficiency and sustainable development. Therefore, enterprises should strengthen the construction of internal control and supervisory mechanism to ensure the reliability and effectiveness of their decisions. (2) For government, it should reduce the control and the ownership discrimination, and strengthen the role of market competition mechanism. Under the background of economic transition in China, for public interest, it is necessary for the government to implement some controls, but the consequences of controls may be the conspiracy of corporations and politicians, so it's convenient for them to obtain the personal gain which is harmful to public welfare. Therefore, we should strengthen the reform of government administration, standardize the government behavior, compress government officials' political

rent-seeking space, establish a supervisory mechanism in which societies can participate in, avoid the black case work of social resources and enable enterprises to become the competitive subject of the market truly.

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