# Political Connections, Rent-Seeking, and Firm Performance

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## Abstract

This study investigates the effect of political connections on firms' business structures and performance. An empirical analysis of Japanese construction industry during the period of 1991-2004 reveals that companies with strong political connection enjoys the privilege of receiving more public works contracts than companies without connections. The empirical results also suggest that politically connected companies are more likely to diversify their activities in unrelated industries, while unconnected companies tend to concentrate on their core business only. However, such political connections do not to have positive effect on firm performance during the so-called Japanese lost decade.

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## 1. Introduction

In the political connections literature, numberous studies provide evidence that private companies face various incentives to become politically-connected because politically-connected firms enjoy a variety of privileges, including financial bailouts, lower tax rates, and larger market share than non-connected firms (Johnson and Mitton, 2003; Faccio, 2004; Faccio et al, 2004 and Joseph Fan et al; 2005). [2] On the other hand, other studies suggest that the benefits of being politically connected often come at a cost (Robert, 1990; Ramalho, 2003). [3] Political connection does not necessarily increase a company's value due to the fact that politicians themselves may extract some of rents generated (Shleifer and Vishny, 1994). Therefore, connected firms' value will be enhanced only when the marginal benefits of the connection outweigh its marginal costs.

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2 Faccio et al. (2004) examines the role of political connections in the government's decision to rescue financially troubled companies. Faccio (2004) conducting cross-country study, found that firms with political connections have easier access to debt financing and enjoy lower taxation. Johnson and Mitton (2003) show that capital controls in Malaysia provided rents to politically connected firms. Fisman (2001) measures the value of political connection by looking at politically connected firm in Indonesia. He concentrated on the value of rents for a relatively small sample of Indonesian firms. Surprisingly, the 25 groups associated with these firms account for a very large percentage of economic activity in Indonesia, with revenues of more than one-third of GNP in 1995. Thus, for a very large part of the Indonesian economy, political connections apparently matter a lot. Finally, the study by Fan et al. (2005) finds that financial leverage both of the briber and connected firms is significantly reduced relative to unconnected firms subsequent to the arrest of the corrupted bureaucrats.

[3] The work of Robert (1990) provides an implicit illustration of the costs of political connections. It examines the effect of Senator Henry Jackson's (unexpected) death on various constituent interests and on the constituent interests of his successor on the senate Armed Services Committee. Robert's event study showed that share prices of companies with ties to Senator Jackson declined in reaction to news of his death whereas the prices of companies affiliated with his successor increased. Fisman (2001) shows how the news about Suharto's deteriorating health adversely affected the value of firms with strong connections to him. Ramalho (2003) shows that politically connected firms in Brazil lost value during the impeachment of then-president Collor in 1992.

Despite the accumulation of empirical evidence on the effect of political connections on firm performance, there has been no direct evidence of politicians' influence on firms' operations and business policies, so that little is known whether political connections affect firms' business structures, and eventually their performance. Moreover, it is difficult to say whether it is the political connection that affects firm performance or whether instead firm performance determines the existence of political connections. To address these issues, this chapter explores the effect of political connections on firms' core business and diversification policy in the Japanese construction industry. More specifically, this chapter examines whether politically-connected firms are awarded a large share of public works projects and whether political connections are a means for acquiring new businesses.

In order to address the issues to be discussed in this chapter, a dataset was assembled that includes the revenues from public work projects and segment revenue in construction firms, covering the 14-year period from 1991 to 2004. Japan's construction industry provides a good case study to investigate the effect of political connections on firms' business structures for the following reasons. (1) Among all industries in Japan, the construction industry is the industry, which hires the largest number of former bureaucrats; around 55 percent of construction companies are politically connected in this way. The existence of both politically-connected and unconnected firms makes it possible to conduct an intra-industrial comparison of business structures of two groups of firms. (2) By focusing on the case of the Japanese construction industry, it is possible to overcome any potential problem of endogeneity. The construction industry enjoyed high level of profits during bubble period in Japan, and subsequently experienced large of investment losses following the collapse of the bubble in 1991. This sudden change in the macroeconomic environment affected firms' competitive position in construction sector, and compelled them to revise their strategy in response to this change. This "natural experiment" helps to address the endogenity problem between political connections and corporate performance. (3)

The Japanese case proposes an explanation for why a private firm tends to establish political connection in developed economy.

Overall, the findings imply that politically-connected firms defined as firms who have former bureaucrats on the boards are likely to obtain the majority of all public works projects. Moreover, politically connected firms tend to diversify their business into non-construction industries. These results suggest that political connection Japanese former bureaucrats bring not only their government connection but also their industrial expertise to private sectors. However, consistent with several previous studies, it is found that political connections do not necessarily lead to better performance.

This analysis here contributes to the literature in this field in two respects. First, the results show that bureaucrat directors can benefit their companies by acquiring public works projects and entering into unrelated industries. This result shows that one channel through which political connections can influence firm value is diversification. Second, taking advantage of a panel dataset, this study finds that there is no substantial change in firms' performance preceding and following the severance of bureaucrat director, which suggests political connections do not ensure that companies perform better.

The remainder of this chapter is structured as follows. Section 3.2 provides some background on the construction industry in Japan and explains why construction companies seek political connections. Section 3.3 presents three hypotheses about political connections. Section 3.4 describes the data and sample used in this chapter, while section 3.5 reports the empirical results on how politically connected directors affect their firms' business structures and performance. Lastly, Section 3.6 concludes.

## 2. The Construction Industry

In the early 1980s, construction investment accounted for 17% of GDP in Japan. This high investment rate encouraged a large number of new entries into the industry and Japanese government set out a vision for the restructuring of the industry in this period. However, the emergence of the bubble economy during the mid- and late 1980s changed the situation completely. The stock prices of real estate-related companies soared sharply, with many construction companies taking advantage of their real estates holdings to increase their financial leverage, pouring large amounts of investment into land-related projects, and diversifying their businesses into unrelated industries. In this period, construction companies prospered and the total factors productivity (TFP) of the construction industry increased. When the Japanese bubble economy burst in 1991, the construction industry at first remained largely unaffected as a result of the government's economic stimulus packages focusing on public works projects, leading to a wave of new entries into the industry (Figure 1). What is more, as shown in the Figure 2, TPF in the construction sector continued to increase in the initial phase following the collapse of the bubble from 1991 to 1995, while that in the manufacturing sector exhibited a slight decrease in the same period. These trends suggest that the construction sector was not much affected by the burst of the bubble economy.

(Insert Figures 1 and 2)

However, from the mid-1990s, the financial sector was facing a growing crisis, resulting in a deteriorating environment for the construction sector. Numerous credit cooperatives and regional banks became insolvent and were liquidated, and it became increasingly difficult to persuade banks to participate in bailouts for troubled construction companies, which had become excessively leveraged during the bubble period and were increasingly unable to cover interest payments. During 1996-1999 period, nonperforming loans to construction companies soared to 23,688 billion yen

resulting in the bankruptcy of 5,440 construction firms in 1997, compared only 2845 in 1992. The number of bankruptcies in the construction sector reached at a peak in the early 2000s (Figure 3).

(Insert Figure 3)

The decrease in government investment and shortage of loan supply from banking industry change the competitive environment of the construction industry. Annual reports of firms from the construction show that these developments forced firms to adopt a variety of strategies to respond to increased competition. For instance, some companies report that they are restructuring their business to focus on their core construction business by increasing efforts to reduce costs and reducing the number of employees and directors, while others report that they are expanding their business either overseas or into other industries in order to reduce risks.[4] As a result, the construction industry is now in a transition from being a special case to a standard industry through deregulation and open competition in tendering and subcontracting.

Before exploring the role of retired bureaucrats in construction companies, it is useful to outline the main activities of the construction industry in order to understand the incentives for firms to hire former bureaucrats as directors. By definition, the construction industry includes any operation that produces a more or less fixed structure or alters the natural topography of ground. According to the Japanese Standard Industry Code (SIC), three broad types of construction activities are covered: (1) general civil engineering work and building work; (2) construction work by specialist contractor, except equipment installation work and (3) equipment

[4] This is consistent with Yafeh's (2003) view that risk reduce purpose may be the empirically substantiated reason for diversified corporations in Japan.

installation work. All three types of construction activity are represented in the sample of construction firms used for the analysis here. With regard to the first category, most civil engineering work is undertaken by the government, while a high proportion of building work is undertaken by the private sector. Government investment throughout the 1990s has on average accounted for more than 40 percent of all construction investment in Japan (See Figure 1). Given the dire straits of the economic situation, it can be easily seen that winning a slice of those public works contracts, with the stable amount of business they promise, can save a construction company from going bankrupt. Some firms were more successful at this than others, and annual reports indicate that some companies relied on public works contracts for more than 90 percent of their business.

The practice of Japanese bid-rigging system is a government-led designated competitive bidding scheme. Bureaucrats decide the upper limit of the bid price before the bidding and stipulate what companies participate in the bidding rather than general competitive tenders, which anyone can freely join the process. But even worse, bureaucrats can decide in advance what company will be awarded public works. The opaque bidding system has been criticized for creating a bureaucrat-business collusion hotbed. When all is said and done, in return for arranging the orders, bureaucrats receive kickbacks from the companies awarded the contracts. Alternatively, they can be hired as directors in those companies after retired as bureaucrats. And then those former bureaucrats involve in acquiring prior information on planned public projects and government price ceilings on these projects for their construction companies. As a result, the common phenomenon in the industry is that business men who have dealings with the government are themselves ex-government bureaucrats. This also encourages the construction companies to compete on hiring former bureaucrats for rent seeking.

There is another argument with regard to the practice of hiring former bureaucrats. Japanese firms continued to hire former bureaucrats, not only for their political

connections, but also for their special expertise or professional knowledge, particularly in the areas of international trade, finance, and technology (Johnson, 1974). Former bureaucrats not only are professional and have private connection in his department but also familiar to and have connection in other government departments. This argument is based on the fact that the Japanese bureaucrats are "professional," long-term civil servants who follow a standard career path. In general, bureaucrats in Japan are hired after graduation at around age 22. In the first two years, they go through a common training program. Their careers begin to take different paths as they work their way up the ministerial hierarchy by rotating through several departments in two-year terms (Harold, 1997). Former bureaucrats' training experience and extensive knowledge of the ministry endow them with industrial expertise and extraordinary influence. This can explain why construction companies hire bureaucrats with a variety of backgrounds. [5] Therefore, unlike various studies have looked at companies' temporary contributions to political parties,[6] this analysis focuses on firms' relationships with bureaucrats, and examine how political connections affect firms' business structures, and thus firms' performance.

## 3 Hypothese

The construction companies with bureaucrat directors are more likely to gain the advantage in bidding for public works projects. The first hypothesis is to be tested whether companies with bureaucrat directors can obtain more public works contracts

[5] Data used in this analysis shows that 30 percent of bureaucrat directors employed by the construction industry came from the Ministry of Construction, while the rest 70 percent came from the Ministry of Agriculture, Forestry, Fisheries, the National Land Agency, and other national ministries and agencies.

[6] Ang and Boyer (2000), Roberts (1990), Kroszner and Stratmann (1988) focus on the political connection that is created through company's campaign contributions. Agrawal and Knoeber (2001) look at the political experience of outside directors. Fishman (2001) examines established friendship with Indonesia's former President Suharto, and his children. Faccio's works (2005, 2006) defines a firm as connected firm if its large shareholder or top director is a friend of minister or MP; a former minister; a foreign politician; or is a person known to be associated with political party.

than companies without bureaucrat directors. In other words, this hypothesis looks to confirm that former bureaucrats engage in rent-seeking behavior in private sectors.[7]

The relationship between political connections and firms' performance has been examined in the corporate finance literature, whereas how political connections affect firms' diversification policies is little aware. With regard to this, Fan et al (2007) used Chinese public listed companies to explore the relationship between political connection with bureaucrats and firms' diversifications policies. Their results show that China's state-controlled firms led by a CEO with local connections tend to diversify more than otherwise unconnected state-owned enterprises. However, they find no evidence that firms' political connections with former central government bureaucrats influence firms' diversification policies. Nevertheless, their study provides crucial evidence suggesting that political connections shape companies diversification decisions. The second hypothesis proposed here is that political connections may represent a valuable resource for industrial diversification.

Lastly, this chapter examines the effect of political connection on firm performances. Since political connections may affect firms' performance through rent-seeking behavior and diversification policy,[8] this hypothesis is to be examined by ex-ante and ex-post approach.

## 4 Sample and Data

The datasets used in this chapter are constructed from three main sources. The first source is Toyo Keizai database which is used for data on firms' board structures. The second is Development Bank of Japan (DBJ) database which is used for data on

[7] Johnson and Mitton (2003) have different focus on the political connection generated by the company's officers' or major shareholders' friendships to government officials. Their results show that capital controls in Malaysia provided rents to those politically connected firms.

[8] With regard to the second and third hypotheses, a number of early studies have investiaged the effect of diversification on firm value (See, e.g., Graham, Lemmon and Wold; 2002; Lang and Stulz, 1994; Berger and Ofek, 1995).

firms' financial reports. The third source, finally, are the annual *Yuka Shoken Hokokusho* (Company Securities Reports) for the period 1991-2004, which are used for data on firms' revenue from government contracts and industry segments. By examining the correlation between the latter data with information on firms' board structures, it is then possible to examine the role of political connections.

The data on board structures contain detailed information on firms' board compositions, including board members' age, their academic background, previous career, position titles, and so forth. Based on the comprehensive data on the background of each director, it is possible to clearly identify a director with a political background as well as the ministry where the bureaucrat director had worked.

In the *Yuka Shoken Hokokusho*, construction companies have to disclose not only financial variables, including details on each business segment, but also have to report construction revenue from government contracts and from private contracts, separately. However, they are not required to provide the name of the construction-project client and only a few companies reveal this information. This means that it is impossible in this study to identify specific relationships between bureaucrat directors and construction-project clients.

## 4.1 Definition of Variables

### A. Definition and Measurement of Political Connections

A company is defined as politically connected if it has at least one former bureaucrat on the board. [9] Specifically, *Connected* (an indicator variable) takes a value of one if a firm has at least one former bureaucrat on the board, and zero

[9] Following Shleifer and Vishny (1994), the term "politically connected" rather than "bureaucratically connected" is used here since the latter typically refers to government officials in charge of enterprises in a socialist or transition economy.

otherwise while *Bureaucrats* (a continuous variable) is the number of bureaucrat directors on the board.

A further variable used refers to the cost-efficiency of firms. Firms are identified as a cost-efficient if their cost-efficiency lies in the upper quartile among all construction companies in the current year. The variable *Cost-efficiency* is measured as one minus the ratio of construction costs to total sales in the previous year. Because it is possible for a firm to be both politically connected and cost-efficient, dummy variables are used to distinguish four different groups of construction firms. Dummy variable *Group 1* takes a value of one if the company has a bureaucrat director and is efficient in construction cost, and zero otherwise. *Group 2* takes a value of one if the company has no bureaucrat director but is cost-efficient, and zero otherwise. *Group 3* takes a value of one if the company has a bureaucrat director but is not cost-efficient, and zero otherwise. Finally, *Group 4* takes a value of one if the company neither has a bureaucrat director nor is cost-efficient, and zero otherwise.

B. Measure of Rent-seeking

The amount of a firms' business from public works contracts in a given year is as a proxy variable for rent-seeking. The amount of public works business is expressed in logarithmic form, but because some construction firms were not involved in public works projects, this is expressed as follows: log (1+ value of public works).

C. Definition and Measure of Diversification.

Other variables used in the analysis concern firms' degree and concentration of industrial diversification are introduced in this subsection. All Japanese listed-firms are required to report the revenue of each business segment they are involved in. Based on this information for every year since 1991, the degree and concentration of construction firms' industry diversification were calculated. One problem is that the

detail of information provided differs across companies, with some reporting business segments at the SIC four-digit level and others only at the two-digit level. For a consistent classification of the degree of diversification, industries here are therefore classified at the two-digit level. The degree of classification is then determined on the basis of the number of two-digit industries in which a firm is engaged. For example, a company is defined as a three-segment diversified firm if it reports revenues from construction, real estate dealings, and real estate leasing and management. It should be noted that "other industry" was not counted as one business segment, and a construction firm who declares it also engages in a non-construction industry, but does not report revenue from that industry was not regarded as an industrially diversified company as well.

In the empirical analysis, *Total segments* (a firm's total number of industry segments) and *Firm-HHI* (a firm's Herfind-Hirschman Index) are used as proxy variables for firm's degree of diversification and concentration of business segments, respectively. Moreover, two additional variables measuring firms' diversification are used: the number of constructions segments (*cons-seg*) and the number of non-construction segments (*noncons-seg*). The *Firm-HHI* is given by the sum of squares of each segment's sales as a fraction of a firm's total sales. A low *Firm-HHI* value implies a high level of diversification. Similarly, *Cons-HHI* is calculated as the sum of squares of construction segment sales as a fraction of total firm sales and *Noncons-HHI* is calculated as the sum of squares of non-construction segment sales as a fraction of total firm sales. *Firm-HHI* and *total segments* provide different information about firms' diversification policies. For example, both of two construction firms, A and B, diversify into real-estate-lessors-and-managers industry. A firm has 90 percent of total revenues from construction segment and 10 percent of total revenues from real-estate-lessors-and-managers segment while B firm has 60 percent of revenues from construction segment and 40 percent of revenues from real-estate-lessors-and-managers segment. In this case, both firms have 2 business

segments, however, A firm has higher Firm-HHI value (0.82) than B firm (0.52) which indicates A firm has higher level of business concentration than B firm.

D. Performance indicators and other firm variables

Following previous studies, the following indicators are used as general performance measure: assets growth, sales growth, growth of turnover from public work projects, cash flow over assets (cash flow is calculated as income gross of depreciation and interest but net of taxes and divide this by the book value of total assets), liquidity (cash flow over interest payment if cash flow is positive, zero otherwise), return over assets and return over sales. In addition, as used in Randall and Nakamura's study (1999),[10] entertainment expense costs are considered to capture the costs of political connections in this analysis, and are calculated as the entertainment expenses over sales and the entertainment expenses over interest payment. Finally, this study interprets industry-adjusted variables as the indicators of the financial health of firms in the construction industry. The industry-adjusted variables are constructed and equal to unadjusted variables minus industry average calculated excluding the firm in question.

4.2 Summary Statistics

A. Basic Statistics on Construction Companies

Table 1 shows several basic statistics for the construction companies in the sample for each of the observed years. The sample comprises about 75 percent of listed construction companies in the sample.[11] Of the observed companies, two

[10] In the paper, entertainment expenses are used as a proxy for corporate waste, but authors also mentioned that some studies of Japanese businees view entertainment costs as a network investment.

[11] It should be noted that firms disappear from the sample if they are liquidated (either voluntarily or through bankruptcy) or if they were acquired and merged with the acquiring firms.

companies disappeared from the dataset during the period 1991-1995, and both of them were non-politically connected firms. In contrast, and somewhat surprisingly, all of the eight firms that disappeared during the period 1996-1999 were politically connected firms. This table also shows that during the period 2000-2004, the construction industry experienced a wave of shutdowns, 31 construction firms disappear from the sample, and they include both connected and non-connected firms.

A further result that is apparent in the table is that overall, political connections were pervasive in the Japanese construction industry throughout the 14 years covered by the data, although the extent declined markedly. On average, construction firms had 2.8 bureaucrats on their boards in 1991, but by 2004, this number had dropped to 1.1. Turning, finally, to the issue of diversification, table also shows that the great majority of construction firms were also active in other industries. The diversification ratio-defined as the number of diversified firms relative to the total number of firms in the sample- decreased from 78 percent in 1991 to 67 percent 2004.

The trend in the share of firms with and without bureaucrat directors, i.e., politically connected and unconnected firms, is depicted in Figure 4, which shows that the share of connected firms gradually decreased. Yet, some kept their connections, while other severed them.

(Insert Table 1 and Figure 4)

B. Bureaucrat Directors' Former Employment and Diversification Policy

The distribution of bureaucrat directors' employment is presented in Table 2. No surprisingly, the greatest number of bureaucrat directors hail from Construction

Ministry. On an average, about 83 Construction-Ministry[12] directors per year were on the boards of listed construction companies. Following the Construction Ministry, the Japan Highway Public Corporation and Japanese National Railways provided the largest numbers of bureaucrat directors.

The distribution of non-construction industries that construction firms have diversified into is shown in Table 3. The most common segment is real estate, including real estate agencies (SIC68) and real estate leasing and management (SIC69). Both in 1997 and 1998, there were 19 construction firms in the sample that were engaged in the manufacture of lumber and wood products (SIC13). Overall, the table shows that construction firms tend to diversify into construction-related industries. In addition, about 20 construction firms have overseas construction business operations (not shown in the table).

(Insert Tables 2, 3)

C. Descriptive Statistics on Variables Used in the Analysis

Table 5a presents summary statistics for the variables used in the empirical analysis. Sample is divided into two groups with and without political connections. Overall, we find that firms with political connections on average are larger in firm size as measured by total assets, have larger boards, higher value of public works contracts, lower total number of business segments, score less well in terms of the various performance indicators, and are less cost-efficiency than firms without political connection. The results in Table 5a, however, need to be interpreted with caution. The increasing number of firms in the 1990s shown in Table 1 indicates a net

[12] Construction Ministry, Ministry of Transport, Hokkaido Development Agency and the National Land Agency were merged as the Ministry of Land, Infrastructure and Transport in January 6, 2001.

addition of firms over time. If new firms are less likely to be as industrially diversified as those firms already in the sample, there will be a bias toward a reduction in the average of the diversification indicator over time even if the degree of diversification of individual firms remains unchanged. To examine whether such a bias exists, similar statistics are calculated only for firms that are in the sample in 1991. That is, firms that exit between 1991 and 2004 are included, but no new firms are entered into this subsample. The sample in Table 5b consists of 45 *completely connected firms*, defined as a firm who had employed bureaucrat director throughout the period 1991-2004, and 32 *completely non-connected firms*, defined as a firm who had never employed bureaucrat director throughout the same period. The results are shown in Table 5b and are similar to those in Table 5a.

(Insert Tables 5a and 5b)

## 5 Empirical Results

### 5.1 Political Connections and Turnover from Public Works Contracts

To examine the first hypothesis that Japanese bureaucrats are employed by construction companies for rent-seeking. *PW* is regressed on *Connection* using the following general least squares (GLS) specification to examine the relationship between the value of public works contracts and political connections.

$$PW_{it} = \alpha_1 Connection_{it} + \alpha_2 Efficiency_{it} + \alpha_3 Size_{it} + t + \delta_j + \varepsilon_{it}$$

The regression controls for other possible determinants of firm's value of public works projects (*PW*), including firm size (*Size*) , measured as the logarithm of total assets, and efficiency (*Efficiency*), measured as one minus the ratio of construction

cost to total revenues. In stead of year dummies, the annual total amount of construction investment (*Coninv*) is used in the regressions to capture the economic impact on firm's public works contracts. The results are shown in Table 7. As expected, the coefficient on *Connected* is positive and significant. Various alternative specifications are estimated. In specification (3) the *Connected* dummy variable is replaced with *Bureaucrats*, the number of bureaucrat directors. The estimated coefficient is smaller and insignificant. Next, specification (4) uses *construction-bureaucrats*, i.e., the number of firm's board members with a background in the construction ministry. The coefficient is significantly positive, indicating that the number of bureaucrat directors from construction ministry is associated with an increase in turnover from public works contracts. These results are consistent with the first hypothesis of bureaucrats' rent-seeking behavior, and further suggest that more bureaucrat directors from construction ministry a firm has, the more likely to be awarded public works projects. In all specifications, the coefficients on the efficiency variable are positive and significant, indicating that more efficiency firms are more likely to be awarded public works projects. However, the results of specification (5) indicate that Group 2 firms, i.e., firms that are among the most efficient in the industry and that have no bureaucrat directors, rely the least on public works projects. This suggests that the cost-efficiency is not a necessary requirement in bidding for public work projects, but political connection may be the determinant in the bidding deal. In specification (6), *Connected* is replaced with *Completely connected* to compare the turnover from public work projects between pure connected firms and pure unconnected firms. But notable here is that unconnected firms are not necessary efficient firms. Results show that pure connected firms outperformed pure unconnected firms in public works orders.

(Insert Table 6)

5.2 Political Connections and Diversification

The following model is estimated to analyze the effect of political connection on diversification:

$$Diversification_{it} = \beta_1 Connection_{it} + \beta_2 Efficiency_{it} + \beta_3 Size_{it} + t + \delta_j + \varepsilon_{it}$$

The results are shown in Tables 3-7a and 3-7b. Table 7a shows those obtained when an indicator variable, the number of industries a firm is engaged in, is used, while Table 7b shows the results when the continuous variable, *Firm-HHI* is used as the dependent variable. In Table 7a, three specifications of *Total segments* category present that the coefficients on variable *Connected* have no relationship with dependent variable *Total segments*. These results imply that political connections do not have effect on the total number of industry segments. Besides, three specifications in *construction segments* show that political connections are negatively and significantly related to the number of construction segments, indicating that politically connected firms have lower number of segments in construction industries than unconnected firms. These are unexpected results. Nevertheless, results in *non-construction segment* category show the higher number of non-construction segments are associated with political connections, which suggests that political connections encourage construction companies to enter in unrelated industries.

Results shown in Table 7b present that political connections are positively and significantly related to sales concentration of business segments, which indicat politically connected construction companies have specific segments account for the majority of total revenues. Meanwhile, the signs of coefficients on *connected* to *cons-HHI* in three specifications are negative which are consistent with the results in Table 7a as well. The t-statistics, however, are not significant. The results in the three specifications of *noncons-HHI* category confirm that politically-connected firms are

likely to be more concentrated on non-construction segments. As can been seen in the third specification of *noncons-HHI*, the coefficient on Group 3 is -0.46 higher than the coefficients -0.058 on Group 2, implying that the politically connected companies have high revenue concentration on non-construction industries than cost-efficient companies. The results suggest that efficient construction companies tend to diversify into related industries, while connected companies are likely to enter in unrelated industries.

(Insert Tables 7a and 7b)

5.2.1 Political Connection and Diversification in the Real Estate Industry

Last section shows that firm's diversification policy appears to be associated with political connections. In order to further check the robustness of the findings, it is worth trying to narrow down firms' diversified business segments and their authorities concerned. As mentioned earlier (and shown in Table 2), the industry that construction firms most common diversify into is the real estate industry, consisting of real estate agencies (SIC68), and real estate lesser and managers (SIC69). And then taking advantage of comprehensive data on the background of individual bureaucrat director, authorities concerned with real estate industry are identifies. Five government bodies are grouped as the real estate relevant authorities, including Ministry of Agriculture, Forestry and Fisheries, Hokkaido Development Agency, National Land Agency, Housing Loan Corporation, and the Ministry of Land Infrastructure and Transportation. If political connections are a means to diversify business, we expect to see that firms have directors bureaucrats who were employed by above five real estate government bodies are more likely to possess real estate segments.

The results of the analysis are shown in Table 8. Two models are employed: a random-effects probit model (Model I), which dependent variable *realestate* takes a value of one if a firm has real-estate segment, and zero otherwise, and a GLS model (Mode II), which dependent variable *estaterevenue* is the turnover from real-estate segments. For ease of interpretation, the table reports the coefficients as the derivative of the probability of possession of real estate segment with respect to the corresponding right-hand-side variable computed at the mean of the dependent variables in Model I. This represents the marginal impact of a change in the explanatory variable. The results shown in Model I imply that the dummy variable *Realestate Connected*, defined as the connections with real estate relevant authorities, increase the probability of possessing real-estate segments, and furthermore, the number of bureaucrat directors (*realestate bureaucrats*) who were employed in five real estate related government bodies facilitates the probability of acquiring real estate segments. Similarly, results shown in Model II indicate that connections with real estate authorities have positive and significant effect on the value of turnover from real estate industries. As a result, results in Table 8 support the hypothesis that construction companies hire former bureaucrats for entering in non-construction businesses.

(Insert Table 8)

5.3 Political Connections and Firm Performance

The preceding results have shown that politically connected companies enjoy an advantage in winning public works contracts and tend to be more industrially diversified. Yet, if political connections are good for firms' business, why do some politically connected firms sever such connections after having had bureaucrat directors for several years and why have some companies never established political

connections? Some previous studies provide evidence suggesting that non-connected companies outperform connected companies. [13] While the hypotheses predict that political connections lead to bad performance, it is also possible that bad performance leads to the establishment of political connection.[14] To address causality concern, this section employs two approaches to explore the relationship between political connections and firm performance. First, this section examines whether business and financial distress raises the probability of hiring a bureaucrat director. Second, an ex-ante and ex-post event study is performed to investigate whether there is a significant change in firms' performance to the severance of political connections.

In the first analysis, a newly-hired bureaucrat director is used as the proxy for a construction firm's incentive to seek for rent-seeking. The growth in revenue from public works projects, sales, assets, ROA, and cash flow over interest are used to capture firm's business and financial situation. According to literature, firms' industry-adjusted business and financial condition matters more than firms' business and financial condition itself. Table 9 therefore only contains industry-adjusted variables to explain the determinants of hiring bureaucrat directors. However, none of the specifications in Table 9 supports the hypothesis that business and financial distress explain the need for political connection. The results suggest that the financial and business distress does not increase the possibility of hiring former bureaucrats.

The second question is examined by focusing on firms who no longer have political connections, defined as firms that had employed directors with a bureaucrat director for at least three years but no longer do so. An event window is from year t-3

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[13] According to Fisman's (2001) pioneering study, politician extracts the profits generated by their connection, therefore, politically connected firm can only be benefited from this connection, only when the profit of connection higher than its cost.

[14] For example, the studies on the role of banker director in Japanese of Kaplan and Minton (1994) and Randall and Nakamura (1999) find that poor performance raises the probability of a banker being appointed to the board. When client firms become financially distressed, main banks promote bailouts and assume a disproportionate responsibility for bad debts.

to year t+3. Year "0" is identified as the year of severance of political connections. As a result of this selection process, around 30 firms remain in this even study.

The results of this analysis are shown in Table 10. They show that firms which lost their political connections had experienced a dramatic decrease in turnover from public works projects three years later. Moreover, firms that lost their political connections also saw a significant drop in their non-construction segments from an average of 1.28 in year t-3 to 0.45 in year t+3. A slight increase in firm performance measured by ROA and ROS shows in year t+3, but overall we do not observe a significant change in performance following the severance of political connections. On the other hand, some studies of Japanese business emphasize that importance of networking in Japan and therefore view entertainment costs as a networking investment, but this analysis does not find that entertainment costs fall subsequent to the severance of political connections. These results do not provide support for the hypotheses that bureaucrat directors have positive effect on firm performance.

(Insert Tables 9 and 10)

## 6. Conclusions

The purpose of this chapter was to investigate the effect of political connections on firms' business structures and performance. To this end, a number of panel regressions spanning the period from 1991 to 2004 were conducted. First, political connections provide firms with a comparative advantage in terms of securing public works orders. Furthermore, the value of turnover from public works is positively associated with the number of bureaucrat directors from the construction ministry a firm has. Thus, the results obtained confirm the findings of previous studies and provide support for the hypothesis that bureaucrat director in Japan engage in rent-seeking behavior.

Second, the link between political connections and firms' industry diversification was examined. The results show that politically connected firms show a greater extent of diversification into non-construction industries than unconnected firms. However, in the determinant of establishment of political connection analysis, results show that business and financial distress does not increase the probability of hiring bureaucrat directors. Furthermore, the ex-ante and ex-post analysis on firms that had severed their political connections showed that the effect of doing so on firm performance was ambiguous, but the effects on turnover from public works projects and venturing into unrelated industries are positive.

Overall, the results suggest that political connections do appear to have helped firms to land public works projects and that firms with bureaucrat directors where more likely to venture into unrelated industries, but, at least during the period examined, i.e., Japan's so-called "lost decade", this did not have any significant effect on firms' long-term performance. A potential explanation for this result is, as previous studies have shown that overinvestment in real estate-related industries in the late of 1990s destroyed construction companies in Japan.

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**Table 1. Basic statistics for construction companies**

| Year | total value of construction investment (trillion) | total value of government investment (trillion) | No. of firms | No. of disappeared firms | Diversified ratio | No. of bureaucrat directors (Bureaucrat-director ratio) |
|---|---|---|---|---|---|---|
| 1991 | 82.4 | 28.7 | 138 | 0 | 0.78 | 2.8 (0.12) |
| 1992 | 84.0 | 32.3 | 141 | 0 | 0.77 | 2.8 (0.11) |
| 1993 | 81.7 | 34.2 | 141 | 0 | 0.77 | 2.8 (0.11) |
| 1994 | 78.8 | 33.3 | 147 | 2 | 0.78 | 2.7 (0.10) |
| 1995 | 79.0 | 35.2 | 146 | 0 | 0.76 | 2.7 (0.10) |
| 1996 | 82.8 | 34.6 | 154 | 4 | 0.78 | 2.4 (0.09) |
| 1997 | 75.2 | 33.0 | 158 | 1 | 0.75 | 2.3 (0.09) |
| 1998 | 71.4 | 34.0 | 163 | 0 | 0.74 | 2.2 (0.09) |
| 1999 | 68.5 | 31.9 | 169 | 3 | 0.70 | 2.1 (0.09) |
| 2000 | 66.5 | 30.4 | 170 | 7 | 0.71 | 2.0 (0.09) |
| 2001 | 60.8 | 27.8 | 164 | 9 | 0.71 | 1.8 (0.09) |
| 2002 | 56.3 | 25.4 | 161 | 11 | 0.70 | 1.6 (0.08) |
| 2003 | 53.9 | 23.0 | 152 | 4 | 0.69 | 1.4 (0.08) |
| 2004 | 51.9 | 20.4 | 149 | NA | 0.67 | 1.1 (0.07) |

Note: 1. diversified ratio is the ratio of diversified construction company divided by total number of construction companies in the sample.

2. the ratio in the parenthesis is the number of bureaucrat directors divided by total number of directors in the sample.

## Table 2. Bureaucrat directors' former employment, by government body

| Name of Government body | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | Ave. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ministry of Construction | 84 | 83 | 89 | 92 | 94 | 96 | 96 | 92 | 91 | 94 | 81 | 66 | 54 | 44 | 82.6 |
| Japan Highway Public Corporation | 51 | 52 | 53 | 56 | 57 | 52 | 52 | 50 | 52 | 54 | 49 | 43 | 36 | 26 | 48.8 |
| Japanese National Railways | 66 | 64 | 63 | 62 | 63 | 57 | 49 | 40 | 33 | 25 | 20 | 16 | 11 | 6 | 41.1 |
| Urban Foundation Corpora | 36 | 40 | 46 | 42 | 43 | 40 | 33 | 33 | 35 | 32 | 26 | 30 | 20 | 13 | 33.5 |
| Ministry of Agriculture, Forestry and Fisheries | 42 | 38 | 37 | 35 | 31 | 26 | 27 | 27 | 31 | 29 | 24 | 21 | 15 | 12 | 28.2 |
| Ministry of Transport | 30 | 29 | 27 | 30 | 28 | 24 | 27 | 27 | 28 | 31 | 33 | 26 | 25 | 19 | 27.4 |
| Japan Railway Construction | 16 | 19 | 22 | 19 | 19 | 20 | 21 | 19 | 19 | 22 | 18 | 19 | 14 | 14 | 18.6 |
| Metropolitan Expressway | 10 | 11 | 11 | 11 | 11 | 9 | 7 | 7 | 6 | 4 | 3 | 3 | 4 | 4 | 7.21 |
| Ministry of Posts and Tele | 6 | 6 | 4 | 6 | 6 | 6 | 8 | 7 | 6 | 5 | 5 | 2 | 4 | 3 | 5.29 |
| Hokkaido Development A | 10 | 8 | 8 | 7 | 5 | 5 | 6 | 5 | 4 | 4 | 4 | 2 | 3 | 1 | 5.14 |
| Ministry of International T | 4 | 6 | 6 | 5 | 8 | 7 | 7 | 6 | 6 | 6 | 4 | 2 | 2 | 0 | 4.93 |
| Defense Facilities Administ | 7 | 4 | 4 | 4 | 5 | 6 | 4 | 7 | 8 | 6 | 4 | 5 | 3 | 1 | 4.86 |
| National Tax Administrati | 6 | 4 | 4 | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.57 |
| Board of Audit | 3 | 3 | 1 | 1 | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3.07 |
| Finance Ministry | 3 | 2 | 2 | 2 | 4 | 4 | 5 | 4 | 4 | 3 | 3 | 3 | 2 | 1 | 3 |
| National Police Agency | 5 | 5 | 4 | 4 | 2 | 2 | 2 | 3 | 1 | 2 | 2 | 3 | 3 | 2 | 2.86 |
| National Land Agency | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 2 | 2 | 3 | 2 | 1 | 1 | 2.79 |
| Defense Agency | 4 | 4 | 3 | 3 | 3 | 4 | 5 | 4 | 3 | 2 | 0 | 0 | 0 | 0 | 2.5 |
| Housing Loan Corporation | 1 | 1 | 1 | 2 | 2 | 1 | 0 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 1.07 |
| Japan Coast Guard | 0 | 1 | 1 | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 1 |
| Fair Trade Commission | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0.64 |
| Hanshin Expressway Public | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0.64 |
| Prosecutor's Office | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0.57 |
| Ministry of Justice | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0.57 |
| Foreign Ministry | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0.5 |
| Ministry of Land, Infrastructure and | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0.21 |
| Economic Planning Agenc | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.07 |

Note: 1. Construction Ministry, Ministry of Transport, Hokkaido Development Agency and the National Land Agency were merged as the Ministry of Land, Infrastructure and Transport in January 6, 2001.

2. One company may have more than one bureaucrat directors on the board so that the number of bureaucrat directors is not equal to the number of companies.

**Table 3. Distribution of industries construction companies are engaged in**

| Industry | Total no. of firms | Lumber and wood products, except fourniture | Chemical and allied products | Ceramic,stone and clay p | Iron and steel | Non-ferrous metals and | Fabricated metal products | General machinery | Electrical machinery, equipment and supplies | Information and communication electronics equipment | Trasportation | Information services | Road freight transport | Water transport | Wholesale trade(building materials, minerals | Wholesale trade(machinery and equipment) | Miscellaneous wholesale trade |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yr \ SIC | | 13 | 17 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 30 | 39 | 44 | 45 | 52 | 53 | 54 |
| 1991 | 138 | 15 | 0 | 9 | 2 | 1 | 2 | 2 | 3 | 3 | 1 | 5 | 1 | 1 | 2 | 8 | 0 |
| 1992 | 141 | 16 | 0 | 10 | 3 | 1 | 2 | 2 | 3 | 3 | 1 | 5 | 1 | 1 | 2 | 8 | 0 |
| 1993 | 141 | 16 | 0 | 9 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 5 | 1 | 1 | 2 | 8 | 0 |
| 1994 | 147 | 16 | 0 | 11 | 2 | 1 | 2 | 2 | 3 | 3 | 1 | 5 | 1 | 1 | 3 | 7 | 0 |
| 1995 | 146 | 16 | 0 | 11 | 1 | 1 | 2 | 2 | 3 | 3 | 1 | 4 | 1 | 1 | 3 | 9 | 0 |
| 1996 | 154 | 18 | 0 | 11 | 1 | 1 | 2 | 3 | 3 | 3 | 1 | 7 | 1 | 1 | 3 | 10 | 0 |
| 1997 | 158 | 19 | 0 | 11 | 1 | 1 | 2 | 3 | 3 | 3 | 1 | 8 | 1 | 1 | 3 | 9 | 0 |
| 1998 | 163 | 19 | 1 | 11 | 1 | 1 | 2 | 3 | 5 | 2 | 1 | 9 | 1 | 1 | 3 | 9 | 0 |
| 1999 | 169 | 13 | 1 | 12 | 1 | 1 | 1 | 2 | 5 | 2 | 1 | 11 | 1 | 1 | 2 | 6 | 0 |
| 2000 | 170 | 13 | 1 | 12 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 12 | 1 | 1 | 3 | 6 | 0 |
| 2001 | 164 | 13 | 1 | 12 | 1 | 1 | 1 | 0 | 6 | 1 | 1 | 11 | 1 | 1 | 2 | 6 | 1 |
| 2002 | 161 | 13 | 1 | 12 | 1 | 1 | 0 | 0 | 6 | 1 | 0 | 9 | 0 | 1 | 2 | 6 | 1 |
| 2003 | 152 | 13 | 1 | 10 | 1 | 1 | 0 | 0 | 6 | 1 | 0 | 9 | 0 | 0 | 1 | 5 | 1 |
| 2004 | 149 | 12 | 0 | 9 | 1 | 1 | 0 | 0 | 6 | 1 | 0 | 9 | 0 | 0 | 1 | 5 | 1 |

Note:One company may own more than 1 segment so that the number of segments is not equal to the number of companies.

**Table 3 (Continued)**

| Industry | Retail trade(motor vehicles and bicycles) including insurance institutions, | Insurance | Real estate agencies | Real estate lessors and managers | Accommodations | Social insurance and social welfare | Professional services | Services for amusement and hobbies | Waste disposal business | Goods rental and leasing | Miscellaneous business services | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yr \ SIC | 58 | 67 | 68 | 69 | 72 | 75 | 80 | 84 | 85 | 88 | 90 | 68&69 | 6&84 | 13&22 | 22&52 | 13&25 | 64&68 |
| 1991 | 0 | 0 | 38 | 25 | 1 | 0 | 7 | 6 | 1 | 3 | 0 | 25 | 1 | 1 | 1 | 0 | 0 |
| 1992 | 0 | 0 | 36 | 26 | 1 | 0 | 7 | 6 | 1 | 4 | 1 | 25 | 1 | 1 | 1 | 0 | 0 |
| 1993 | 0 | 0 | 37 | 23 | 1 | 0 | 6 | 6 | 1 | 5 | 1 | 28 | 1 | 1 | 1 | 0 | 0 |
| 1994 | 0 | 0 | 41 | 26 | 1 | 0 | 6 | 5 | 1 | 5 | 1 | 29 | 1 | 1 | 1 | 0 | 0 |
| 1995 | 0 | 0 | 40 | 26 | 1 | 0 | 6 | 6 | 1 | 5 | 1 | 27 | 1 | 1 | 1 | 0 | 0 |
| 1996 | 0 | 0 | 44 | 31 | 1 | 0 | 6 | 6 | 1 | 7 | 1 | 30 | 1 | 1 | 1 | 1 | 0 |
| 1997 | 0 | 0 | 43 | 32 | 1 | 0 | 6 | 7 | 1 | 7 | 1 | 28 | 1 | 1 | 1 | 1 | 0 |
| 1998 | 1 | 0 | 45 | 34 | 1 | 0 | 7 | 6 | 1 | 6 | 1 | 27 | 1 | 1 | 1 | 1 | 0 |
| 1999 | 1 | 1 | 32 | 21 | 2 | 0 | 9 | 6 | 1 | 8 | 0 | 37 | 1 | 1 | 1 | 1 | 1 |
| 2000 | 1 | 1 | 31 | 21 | 2 | 0 | 10 | 7 | 0 | 8 | 1 | 38 | 1 | 1 | 1 | 1 | 1 |
| 2001 | 1 | 1 | 30 | 22 | 2 | 0 | 10 | 7 | 0 | 7 | 2 | 36 | 1 | 1 | 1 | 1 | 1 |
| 2002 | 1 | 1 | 31 | 22 | 2 | 0 | 10 | 7 | 0 | 8 | 3 | 33 | 1 | 1 | 1 | 1 | 0 |
| 2003 | 0 | 1 | 26 | 20 | 2 | 1 | 11 | 6 | 0 | 8 | 3 | 31 | 1 | 1 | 1 | 1 | 0 |
| 2004 | 0 | 0 | 22 | 18 | 2 | 1 | 12 | 6 | 0 | 8 | 3 | 31 | 1 | 1 | 1 | 1 | 0 |

**Table 4. Pearson correlation coefficients**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 0.76 | 1 | | | | | | | | | | | | | | | | | | | | | |
| 3 | 0.79 | 0.97 | 1 | | | | | | | | | | | | | | | | | | | | |
| 4 | -0.17 | 0.02 | 0.01 | 1 | | | | | | | | | | | | | | | | | | | |
| 5 | -0.02 | 0.00 | -0.02 | 0.21 | 1 | | | | | | | | | | | | | | | | | | |
| 6 | -0.04 | -0.01 | -0.02 | 0.19 | 0.88 | 1 | | | | | | | | | | | | | | | | | |
| 7 | -0.04 | -0.04 | -0.05 | 0.23 | 0.92 | 0.98 | 1 | | | | | | | | | | | | | | | | |
| 8 | -0.03 | -0.02 | -0.02 | 0.09 | 0.04 | 0.04 | 0.03 | 1 | | | | | | | | | | | | | | | |
| 9 | -0.04 | -0.17 | -0.16 | 0.03 | 0.09 | -0.01 | 0.06 | -0.03 | 1 | | | | | | | | | | | | | | |
| 10 | 0.01 | -0.01 | -0.02 | -0.05 | 0.04 | 0.03 | 0.04 | -0.01 | 0.16 | 1 | | | | | | | | | | | | | |
| 11 | 0.74 | 0.67 | 0.67 | -0.16 | 0.03 | -0.01 | 0.00 | -0.05 | 0.12 | 0.05 | 1 | | | | | | | | | | | | |
| 12 | 0.47 | 0.19 | 0.21 | -0.24 | 0.00 | -0.03 | 0.01 | -0.03 | 0.21 | 0.05 | 0.57 | 1 | | | | | | | | | | | |
| 13 | 0.40 | 0.16 | 0.19 | -0.32 | -0.01 | -0.05 | -0.01 | -0.04 | 0.28 | 0.07 | 0.50 | 0.72 | 1 | | | | | | | | | | |
| 14 | -0.19 | -0.13 | -0.13 | -0.01 | 0.03 | 0.05 | 0.07 | -0.01 | -0.12 | -0.02 | -0.14 | -0.07 | -0.06 | 1 | | | | | | | | | |
| 15 | -0.31 | -0.21 | -0.25 | 0.02 | 0.15 | 0.16 | 0.14 | -0.01 | 0.00 | -0.01 | -0.26 | -0.32 | -0.30 | 0.33 | 1 | | | | | | | | |
| 16 | -0.01 | 0.00 | 0.02 | -0.02 | -0.06 | -0.05 | -0.01 | -0.01 | -0.13 | -0.02 | 0.02 | 0.12 | 0.12 | 0.82 | -0.27 | 1 | | | | | | | |
| 17 | 0.27 | 0.10 | 0.11 | -0.19 | 0.01 | -0.03 | -0.05 | 0.00 | 0.15 | 0.03 | 0.27 | 0.22 | 0.20 | -0.51 | -0.29 | -0.33 | 1 | | | | | | |
| 18 | 0.27 | 0.10 | 0.11 | -0.25 | 0.03 | -0.02 | -0.06 | 0.01 | 0.19 | 0.04 | 0.28 | 0.23 | 0.22 | -0.46 | -0.17 | -0.35 | 0.92 | 1 | | | | | |
| 19 | -0.14 | -0.06 | -0.06 | 0.26 | -0.04 | -0.01 | 0.03 | -0.01 | -0.16 | -0.03 | -0.16 | -0.13 | -0.15 | 0.13 | -0.16 | 0.22 | -0.29 | -0.65 | 1 | | | | |
| 20 | -0.02 | -0.07 | -0.05 | 0.26 | 0.08 | 0.08 | 0.12 | 0.01 | 0.21 | 0.00 | -0.03 | 0.09 | 0.26 | 0.01 | -0.04 | 0.04 | -0.02 | -0.05 | 0.09 | 1 | | | |
| 21 | -0.25 | -0.05 | -0.06 | 0.63 | 0.05 | 0.09 | 0.06 | 0.08 | -0.14 | -0.05 | -0.28 | -0.40 | -0.55 | 0.03 | 0.05 | 0.01 | -0.20 | -0.26 | 0.24 | -0.14 | 1 | | |
| 22 | 0.41 | 0.20 | 0.22 | -0.46 | -0.06 | -0.09 | -0.07 | -0.05 | 0.16 | 0.07 | 0.51 | 0.67 | 0.85 | -0.07 | -0.27 | 0.10 | 0.21 | 0.25 | -0.20 | -0.28 | -0.47 | 1 | |
| 23 | -0.23 | -0.15 | -0.16 | -0.21 | -0.03 | -0.03 | -0.04 | -0.02 | -0.20 | -0.04 | -0.32 | -0.47 | -0.65 | 0.04 | 0.30 | -0.14 | -0.05 | -0.02 | -0.04 | -0.17 | -0.28 | -0.55 | 1 |

| | | | |
|---|---|---|---|
| 1 Public work | 7 Cashflowassets | 13 Connected | 19 Noncons-HHI |
| 2 Sales | 8 Cashflowinterest | 14 Totalsegments | 20 group1 |
| 3 Assets | 9 Entertainmentinterest | 15 Constructionsegments | 21 group2 |
| 4 Efficiency | 10 Entertainmentcashflow | 16 Non-constructionsegm | 22 group3 |
| 5 ROS | 11 Boardsize | 17 Firm-HHI | 23 group4 |
| 6 ROA | 12 Bureaucrats | 18 Cons-HHI | |

## Table 5a. Summary statistics split accroding to the presence of bureaucrat direcotrs

| Variable | Obs. | Mean | Median | Min. | Max. |
|---|---|---|---|---|---|
| Non-connected firms | | | | | |
| PW (million) | 935 | 10400 | 1131 | 0 | 276000 |
| Sales (million) | 930 | 127977 | 49014 | 2711 | 1470922 |
| Assets (million) | 930 | 125716 | 44149 | 1833 | 1954177 |
| Efficiency | 930 | 0.129 | 0.116 | -0.049 | 0.382 |
| ROS | 930 | 0.002 | 0.013 | -0.850 | 0.098 |
| ROA | 930 | 0.008 | 0.015 | -0.575 | 0.126 |
| Cashflowassets | 871 | 18.700 | 25.800 | -543 | 127 |
| Cashflowinterest | 870 | 186.000 | 6.550 | -745 | 72293 |
| Entertainmentinterest | 936 | 0.001 | 0.001 | 0 | 0.006 |
| Entertainmentcashflow | 934 | 0.041 | 0.033 | -4.810 | 1.750 |
| Boardsize | 936 | 17.9 | 17 | 5 | 54 |
| Totalsegments | 901 | 2.68 | 3 | 0 | 7 |
| Constructionsegments | 901 | 1.65 | 2 | 0 | 3 |
| Non-constructionsegments | 901 | 1.03 | 1 | 0 | 5 |
| Firm-HHI | 920 | 0.792 | 0.843 | 0.259 | 1 |
| Cons-HHI | 920 | 0.747 | 0.834 | 0 | 1 |
| Noncons-HHI | 920 | 0.046 | 0.001 | 0 | 0.985 |
| group1 | 936 | 0 | 0 | 0 | 0 |
| group2 | 936 | 0.439 | 0 | 0 | 1 |
| group3 | 936 | 0 | 0 | 0 | 0 |
| group4 | 936 | 0.561 | 1 | 0 | 1 |
| Connected firms | | | | | |
| PW (million) | 1200 | 65200 | 32800 | 0 | 450000 |
| Sales (million) | 1216 | 222468 | 114556 | 1289 | 2168285 |
| Assets (million) | 1216 | 275104 | 110898 | 2813 | 3045487 |
| Efficiency | 1214 | 0.097 | 0.091 | -0.141 | 0.285 |
| ROS | 1216 | 0.001 | 0.006 | -0.723 | 1.030 |
| ROA | 1216 | 0.003 | 0.006 | -0.696 | 1.090 |
| Cashflowassets | 1187 | 17.400 | 19.800 | -673 | 1111 |
| Cashflowinterest | 1187 | 33.600 | 2.370 | -574 | 8195 |
| Entertainmentinterest | 1217 | 0.002 | 0.002 | 0 | 0.007 |
| Entertainmentcashflow | 1216 | 0.081 | 0.071 | -4.280 | 4.380 |
| Boardsize | 1217 | 27.200 | 26 | 8 | 60 |
| Bureaucrats | 1217 | 3.830 | 3 | 1 | 13 |
| Totalsegments | 1201 | 2.560 | 2 | 0 | 6 |
| Constructionsegments | 1201 | 1.310 | 1 | 0 | 3 |
| Non-constructionsegments | 1201 | 1.250 | 1 | 0 | 4 |
| Firm-HHI | 1215 | 0.868 | 0.952 | 0.328 | 1 |
| Cons-HHI | 1215 | 0.853 | 0.948 | 0 | 1 |
| Noncons-HHI | 1215 | 0.015 | 0.0005 | 0 | 1 |
| group1 | 1217 | 0.140 | 0 | 0 | 1 |
| group2 | 1217 | 0 | 0 | 0 | 0 |
| group3 | 1217 | 0.860 | 1 | 0 | 1 |
| group4 | 1217 | 0 | 0 | 0 | 0 |

Note: A firm is connected firm if it has at least one bureaucrat director on the board. *Public work* is the revenue from government contract. *Total segments* is the number of industry segments in a firm. *Cons-seg* is the number of construction segments in a firm. *Noncons-seg* is the number of nonconstruction segments in a firm. *Firm-HHI* computed as the sum of industry segment's sales as a fraction of total firm sales in a firm. *Cons-HHI* computed as the sum of construction segment's sales as a fraction of total firm sales in a firm. *Noncons-HHI* computed as the sum of nonconstruciton segment's sales as a fraction of total firm sales in a firm. *ROA* is measured as the net return divided by total assets. *ROS* is the net profit over total sales. *Efficiency* is measured as one minus the ratio of construction cost to total sales. A company is identified as a cost-efficient company if its efficiency lies above the upper quartile among all construction companies in the current year. *Group1* takes value of one if the company has bureaucrat director and is efficient in construction cost, and zero otherwise. *Group2* takes value of one if the company has no bureaucrat directors but is efficient in construction cost, and zero otherwise. *Group3* takes value of one if the company has bureaucrat directors but is not a cost-efficient company, and zero otherwise. *Group4* takes value of one if the company neither a connected nor a cost-efficient company, and zero otherwise. *Bureaucrat* is the number of bureaucrat directors. *Boardsize* is the number of directors in a firm.

**Table 5b. Summary statistics split to completely connected firms and completely nonconnected firms**

| Variable | Obs. | Mean | Median | Min. | Max. |
|---|---|---|---|---|---|
| Completely-nonconnected Firms | | | | | |
| PW (million) | 446 | 6787 | 4 | 0 | 117000 |
| Sales (million) | 444 | 116918 | 46124 | 9477 | 1169077 |
| Assets (million) | 444 | 117469 | 42274 | 9599 | 1225667 |
| Efficiency | 444 | 0.135 | 0.121 | -0.040 | 0.332 |
| ROS | 444 | 0.005 | 0.016 | -0.850 | 0.091 |
| ROA | 444 | 0.014 | 0.021 | -0.459 | 0.104 |
| Cashflowassets | 422 | 26.2 | 32.8 | -442 | 113 |
| Cashflowinterest | 421 | 161 | 8.69 | -638 | 30027 |
| Entertainmentinterest | 446 | 0.001 | 0.001 | 0.000 | 0.006 |
| Entertainmentcashflow | 446 | 0.032 | 0.024 | -3.720 | 1.700 |
| Boardsize | 446 | 17.70 | 17 | 7 | 38 |
| Totalsegments | 444 | 2.82 | 3 | 0 | 5 |
| Constructionsegments | 444 | 1.78 | 2 | 0 | 3 |
| Non-constructionsegments | 444 | 1.05 | 1 | 0 | 4 |
| Firm-HHI | 439 | 0.779 | 0.826 | 0.259 | 1 |
| Cons-HHI | 439 | 0.744 | 0.824 | 0.000 | 1 |
| Noncons-HHI | 439 | 0.036 | 0.003 | 0.000 | 0.715 |
| group1 | 446 | 0 | 0 | 0 | 0 |
| group2 | 446 | 0.455 | 0 | 0 | 1 |
| group3 | 446 | 0 | 0 | 0 | 0 |
| group4 | 446 | 0.545 | 1 | 0 | 1 |
| Completely-Connected Firms | | | | | |
| PW (million) | 628 | 75700 | 33700 | 0 | 450000 |
| Sales (million) | 628 | 262209 | 115583 | 7995 | 1980309 |
| Assets (million) | 628 | 333895 | 110708 | 8178 | 3045487 |
| Efficiency | 628 | 0.098 | 0.093 | -0.141 | 0.216 |
| ROS | 628 | 0.002 | 0.007 | -0.723 | 1.030 |
| ROA | 628 | 0.005 | 0.008 | -0.696 | 1.090 |
| Cashflowassets | 614 | 20.2 | 20.9 | -673 | 1111 |
| Cashflowinterest | 614 | 42.9 | 3.2 | -574 | 3092 |
| Entertainmentinterest | 629 | 0.002 | 0.002 | 0.000 | 0.006 |
| Entertainmentcashflow | 629 | 0.072 | 0.068 | -4.280 | 4.110 |
| Boardsize | 629 | 27.8 | 26 | 10 | 60 |
| Bureaucrats | 629 | 4.48 | 4 | 1 | 13 |
| Totalsegments | 628 | 2.69 | 2 | 1 | 6 |
| Constructionsegments | 628 | 1.33 | 1 | 1 | 3 |
| Non-constructionsegments | 628 | 1.36 | 1 | 0 | 4 |
| Firm-HHI | 628 | 0.836 | 0.94 | 0.328 | 1 |
| Cons-HHI | 628 | 0.818 | 0.937 | 0.112 | 1 |
| Noncons-HHI | 628 | 0.018 | 0.001 | 0 | 0.418 |
| group1 | 629 | 0.114 | 0 | 0 | 1 |
| group2 | 629 | 0 | 0 | 0 | 0 |
| group3 | 629 | 0.886 | 1 | 0 | 1 |
| group4 | 629 | 0 | 0 | 0 | 0 |

Note: A firm is completely connected firm if a firm has at least one bureaucrat director on the board throughout 1991 to 2004, and zero otherwise. *Public work* is the revenue from government contract. *Total segments* is the number of segments in a firm. *Cons-seg* is the number of construction segments in a firm. *Noncons-seg* is the number of nonconstruction segments in a firm. *Firm-HHI* computed as the sum of segment's sales as a fraction of total firm sales in a firm. *Cons-HHI* computed as the sum of construction segment's sales as a fraction of total firm sales in a firm. *Noncons-HHI* computed as the sum of nonconstruciton segment's sales as a fraction of total firm sales in a firm. *ROA* is measured as the income divided by total assets. *ROS* is the income over total sales. *Efficiency* is measured as one minus the ratio of construction cost to total sales. A company is identified as a cost-efficient company if its efficiency lies above the upper quartile among all construction companies in the current year. *Group1* takes value of one if the company has bureaucrat director and is efficient in construction cost, and zero otherwise. *Group2* takes value of one if the company has no bureaucrat directors but is efficient in construction cost, and zero otherwise. *Group3* takes value of one if the company has bureaucrat directors but is not a cost-efficient company, and zero otherwise. *Group4* takes value of one if the company neither a connected nor a cost-efficient company, and zero otherwise. *Bureaucrat* is the number of bureaucrat directors. *Boardsize* is the number of directors in a firm.

**Table 6. Political connections and turnover from public works projects**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Connected | 0.279*** | 0.323*** | | | | |
| | [10.05] | [8.35] | | | | |
| Bureaucrats | | | 0.018 | | | |
| | | | [0.90] | | | |
| Construction Bureaucrats | | | | 0.160*** | | |
| | | | | [9.49] | | |
| Completely Connected | | | | | | 8.375*** |
| | | | | | | [3.60] |
| Efficiency | | 1.530** | 1.608*** | 1.862*** | | |
| | | [2.26] | [2.60] | [3.28] | | |
| Group2 | | | | | -0.707*** | |
| | | | | | [3.19] | |
| Group3 | | | | | -0.072 | |
| | | | | | [0.30] | |
| Group4 | | | | | -0.29 | |
| | | | | | [1.35] | |
| Lnasset | 1.186*** | 1.231*** | 1.245*** | 1.198*** | 1.227*** | 1.198** |
| | [3.08] | [2.97] | [2.98] | [3.01] | [3.18] | [2.45] |
| LnConinv | 1.987*** | 1.889*** | 1.896*** | 1.850*** | 2.077*** | 2.441*** |
| | [7.99] | [9.09] | [7.65] | [8.45] | [6.17] | [7.94] |
| Constant | -27.449*** | -26.826*** | -26.956*** | -25.879*** | -28.707*** | -38.371*** |
| | [3.15] | [3.14] | [2.94] | [3.02] | [2.84] | [4.84] |
| Observations | 2085 | 2084 | 2084 | 2084 | 2085 | 1071 |
| Number of firms | 189 | 189 | 189 | 189 | 189 | 77 |
| Wald chi2 | 632.1 | 1050.5 | 2950.74 | 1474.73 | 369.89 | 2667.04 |
| Prob>chi2 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Note: the estimates of GLS of the value of public work on connection variables denoting *Connected, Bureaucrats*, *Construction Bureaucrat*s, and C*ompletely Connected*, and a set of control variables. The value of public work, dependent variable, is taken by logarithmic form of log (1+ value of public works). A firm is connected firm if it has at least one bureaucrat director. *Bureaucrats* is the number of bureaucrat directors. *Construction Bureaucrats* is the number of bureaucrat directors from Construction Ministries. *Completely Connected* is the binary variable taking value of one if the company has had bureaucrat directors throughout the period of 1991 to 2004, and zero if the company has never had bureaucrat directors. *Efficiency* is measured as one minus the ratio of construction cost to total sales in previous year. *Group1* is the benchmark, taking value of one if the company has bureaucrat director and is efficient in construction cost, and zero otherwise. *Group2* takes value of one if the company has no bureaucrat directors but is efficient in construction cost, and zero otherwise. *Group3* takes value of one if the company has bureaucrat directors but is not a cost-efficient company, and zero otherwise. *Group4* takes value of one if the company neither a connected nor a cost-efficient company, and zero otherwise. A company is identified as a cost-efficient company if its efficiency lies above the upper quartile among all construction companies in the current year. *Lnasse*t is the logarithm of total asset in previous year. *Lnasset* is the logarithm of total asset in previous year. In stead of year dummy, yearly total value of national construction investment (*Lnconinv)* are used in the regressions. Coefficient estimates are reported with robust t-statistics in brackets below. * significant at 10%; ** significant at 5%; *** significant at 1%.

**Table 7a. Political connections and industry diversification**

| | Total Segments | | | Construction Segments | | | Non-Construction Segments | | |
|---|---|---|---|---|---|---|---|---|---|
| Specification | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| Connected | -0.016 | | -0.03 | -0.784*** | | -0.356 | 0.198** | | 0.24*** |
| | [0.25] | | [0.43] | [2.59] | | [1.57] | [2.37] | | [2.59] |
| Bureaucrats | | 0 | | | -0.246*** | | | 0.038** | |
| | | [0.00] | | | [3.52] | | | [2.55] | |
| Efficiency | | | -0.428 | | | 14.018*** | | | 0.787 |
| | | | [0.63] | | | [5.66] | | | [0.95] |
| Lnasset | -0.088*** | -0.090*** | -0.086*** | -0.49*** | -1.302*** | -0.529*** | -0.018 | -0.017 | -0.016 |
| | [2.92] | [3.01] | [2.81] | [4.26] | [5.30] | [4.50] | [0.57] | [0.55] | [0.49] |
| Constant | -6.058*** | 0.917* | -4.631*** | -1.396 | 0.947*** | 1.012 | 4.020*** | -3.064*** | 4.172*** |
| | [10.84] | [2.69] | [10.64] | [0.64] | [7.31] | [7.68] | [0.08] | [5.11] | [117.84] |
| Observations | 2102 | 2102 | 2102 | 2102 | 2102 | 2102 | 2102 | 2102 | 2102 |
| Number of firms | 189 | 189 | 189 | 189 | 189 | 189 | 189 | 189 | 189 |
| LR chi2 | 118.37 | 118.31 | 118.77 | 33.34 | 58.97 | 62.16 | 54.35 | 55.24 | 55.27 |
| Prob>chi2 | 0.000 | 0.000 | 0.000 | 0.004 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: The dependent variable is the diversification policy measured as the number of segments (*Totalseg*), the number of construction segments (*Cons-seg*) and the number of nonconstruction segments (*Noncons-seg*). Random-effects Order Probit model is performed in all specifications. A firm is connected firm if it has at least one bureaucrat director on the board. *Bureaucrats* is the number of bureaucrat diretors in a firm. *Efficiency* is measured as one minus the ratio of construction cost to total sales in previous year. *Lnasset* is the logarithm of total asset in previous year. Coefficient estimates are reported with robust t-statistics in brackets below. Year dummy is in all specifications. * significant at 10%; ** significant at 5%; *** significant at 1%.

**Table 7b. Political connections and industry diversification**

| | Firm-HHI | | | Cons-HHI | | | Noncons-HHI | | |
|---|---|---|---|---|---|---|---|---|---|
| Specification | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| Connected | 0.009*** | 0.009*** | | -0.006 | -0.006 | | 0.012** | 0.012** | |
| | [9.89] | [8.90] | | [0.73] | [0.68] | | [2.19] | [2.18] | |
| Efficiency | | 0.146 | | | 0.191 | | | 0.021 | |
| | | [0.60] | | | [0.71] | | | [0.39] | |
| Lnasset | -0.001 | -0.002 | -0.001 | 0.002 | 0.002 | 0.003*** | -0.008*** | -0.008*** | -0.008*** |
| | [1.51] | [1.57] | [0.92] | [1.39] | [1.40] | [4.04] | [4.40] | [4.11] | [7.29] |
| Group2 | | | -0.016 | | | 0.048*** | | | -0.059*** |
| | | | [1.44] | | | [3.08] | | | [2.77] |
| Group3 | | | -0.011** | | | 0.034* | | | -0.047*** |
| | | | [2.28] | | | [1.79] | | | [3.20] |
| Group4 | | | -0.019** | | | 0.032 | | | -0.051*** |
| | | | [2.29] | | | [1.28] | | | [3.17] |
| Constant | 0.846*** | 0.833*** | 0.861*** | 0.754*** | 0.732*** | 0.704*** | 0.173*** | 0.172*** | 0.219*** |
| | [47.17] | [16.85] | [32.01] | [30.33] | [48.57] | [36.29] | [4.29] | [4.70] | [5.03] |
| Observations | 2085 | 2084 | 2085 | 2085 | 2084 | 2085 | 2085 | 2084 | 2085 |
| Number of firms | 189 | 189 | 189 | 189 | 189 | 189 | 189 | 189 | 189 |
| LR chi2 | 2.86 | 4.69 | 755.79 | 276.93 | 391.07 | 203.74 | 558.64 | 499.38 | 183.1 |
| Prob>chi2 | 0.091 | 0.030 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Note: The dependent variable in this table is the diversification policy measured by Firm-HHI, construction-HHI, nonconstruction-HHI. GLS is employed in all specifications. A firm is connected firm if it has at least one bureaucrat director on the board. *Cons-HHI* computed as the sum of construction segment's sales as a fraction of total firm sales in a firm. *Noncons-HHI* computed as the sum of nonconstruciton segment's sales as a fraction of total firm sales in a firm. *Group1* is the benchmark, taking value of one if the company has bureaucrat director and is efficient in construction cost, and zero otherwise. *Group2* takes value of one if the company has no bureaucrat directors but is efficient in construction cost, and zero otherwise. *Group3* takes value of one if the company has bureaucrat directors but is not a cost-efficient company, and zero otherwise. *Group4* takes value of one if the company neither a connected nor a cost-efficient company, and zero otherwise. *Efficiency* is measured as one minus the ratio of construction cost to total sales in previous year. A company is identified as a cost-efficient company if its efficiency lies above the upper quartile among all construction companies in the current year. *Lnasset* is the logarithm of total asset in previous year. Coefficient estimates are reported with robust t-statistics in brackets below. Year dummy is in all specifications. * significant at 10%; ** significant at 5%; *** significant at 1%.

**Table 8. The relationship between real estate segments and bureaucrats from real estate ministries and agencies**

| | realestate (1) | realestate (2) | estaterevenue (3) | estaterevenue (4) |
|---|---|---|---|---|
| Realestate Connected | 0.484* | | 0.306** | |
| | [1.79] | | [2.29] | |
| Realestate Bureaucrates | | 0.867** | | 0.152** |
| | | [2.06] | | [2.19] |
| Efficiency | -6.996** | -8.08* | -6.498* | -6.524** |
| | [2.15] | [1.80] | [1.86] | [2.58] |
| Lnasset | 0.846*** | 1.085*** | 1.892*** | 1.911*** |
| | [4.75] | [4.67] | [4.46] | [22.04] |
| Constant | -14.668*** | -18.962*** | -25.992*** | -26.299*** |
| | [4.50] | [4.44] | [3.43] | [10.77] |
| Year Dummy | Yes | Yes | Yes | Yes |
| Observations | 2102 | 2102 | 2102 | 2102 |
| Number of firms | 189 | 189 | 189 | 189 |
| Wald Chi2 | 53.56 | 47.51 | 7.37 | 10.21 |
| Prob> Chi2 | 0.0000 | 0.0000 | 0.0066 | 0.0014 |

Note: The dependent variable in Model I is *realestate* taking value of one if a company has real estate segments, and zero otherwise. Model II uses the logarithm of revenue from real estate segment (*estaterevenue*), *Lnestaterevenue* as dependent variable. Random-effects Probit model is performed in model I and GLS is employed in model II. A firm is *Realestate Connected* firm if it has bureaucrat director from real estate relevant administration the board. *Realestate Bureaucrat* is the number of bureaucrat directors from five real estate relevant administrators. *Efficiency* is measured as one minus the ratio of construction cost to total sales in previous year. A company is identified as a cost-efficient company if its efficiency lies above the upper quartile among all construction companies in the current year. *Lnasset* is the logarithm of total asset in previous year. Coefficient estimates are reported with robust t-statistics in parentheses below. Year dummy are in all specifications. * significant at 10%; ** significant at 5%; *** significant at 1%.

## Table 9 Probit Regression of Political connections on firm performance

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Industry-adjusted PW growth rate | -0.001 | -0.001 | -0.001 | -0.001 | -0.001 |
| | [0.56] | [1.46] | [0.94] | [0.95] | [0.95] |
| TPW growth rate | -0.004 | 0.019 | 0.029 | 0.029 | 0.029 |
| | [0.08] | [0.43] | [0.68] | [0.68] | [0.68] |
| Industry-adjusted sales growth rate | | -0.011 | -0.012 | | |
| | | [0.34] | [0.35] | | |
| Industry-adjusted cashflowinterest growth rate | | | 0.000 | 0.000 | 0.000 |
| | | | [0.98] | [0.95] | [0.98] |
| Industry-adjusted assetsgrowth | | | | -0.035 | |
| | | | | [1.27] | |
| Industry-adjusted ROA | | | | | 0.012 |
| | | | | | [0.18] |
| Observations | 1411 | 1401 | 1368 | 1368 | 1373 |
| LR Chi2 | 0.4 | 2.14 | 1.88 | 3.973 | 1.97 |
| Prob>Chi2 | 0.8167 | 0.5442 | 0.7571 | 0.444 | 0.7413 |

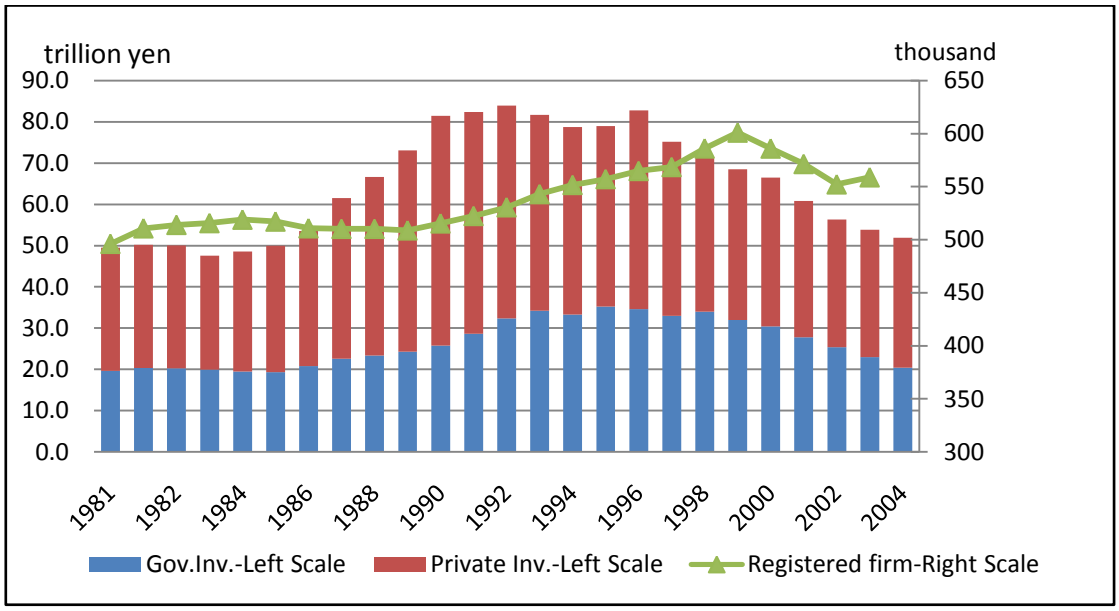
Note: This table presents the likelihood of receiving bureaucrat director in a firm's board as a function of political connection, and firm performance. The dependent variable is one if a former bureaucrat is hired as a director and zero otherwise. PW is year-to-year growth rate in value of public works. PW is year-to-year growth rate in value of public works. Sales growth is year-to-year growth rate in value of sales. Cash flow over interest is income gross of depreciation and interest but not of taxes divided by interest payments. Assets growth is year-to-year growth rate in value of assets. ROA is the income over assets. Industry-adjusted values are calculated by subtracting the industry average, which is calculated for each firm separately, and does not incorporate data for that firm. All performance measures are the previous values before the hiring of bureaucrat director. * significant at 10%; ** significant at 5%; *** significant at 1%.

**Table 10. Long-term performance preceeding and following severance of political connections**

| | Growth Rate in | | | No of Segments | | | HHI in | | | Return on | | Cash Flow over | | Entertainment Cost ove | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Yr | PW | Sales | Assets | Total | Cons | NonCons | Total | Cons | NonCons | Assets | Sales | Assets | Interest | Sales | Cash Flow |
| -3 | -8.8930 | 0.0082 | 0.0111 | 2.5000 | 1.2220 | 1.2780 | 0.8549 | 0.8243 | 0.0306 | -0.0002 | -0.0026 | 0.0111 | 1.6240 | 0.0015 | 0.0744 |
| -2 | -2.7140 | -0.0145 | 0.0169 | 2.2860 | 1.2860 | 1.0000 | 0.8705 | 0.8419 | 0.0286 | 0.0015 | -0.0002 | 0.0114 | 2.2390 | 0.0016 | 0.1158 |
| -1 | 13.8400 | -0.0135 | 0.0020 | 2.2800 | 1.3600 | 0.9200 | 0.8703 | 0.8477 | 0.0226 | -0.0015 | -0.0044 | 0.0091 | 3.6770 | 0.0015 | -0.0367 |
| 0 | -4.6670 | 0.0005 | -0.0285 | 2.2500 | 1.3750 | 0.8750 | 0.8814 | 0.8651 | 0.0164 | -0.0025 | -0.0044 | 0.0077 | 2.4110 | 0.0015 | 0.0599 |
| 1 | -13.8400 | -0.0605 | -0.1001 | 2.2500 | 1.3750 | 0.8750 | 0.8938 | 0.8583 | 0.0355 | -0.0152 | -0.0140 | -0.0042 | 5.7830 | 0.0015 | 0.0829 |
| 2 | -9.6090 | -0.0434 | 0.0165 | 2.0500 | 1.3500 | 0.7000 | 0.8872 | 0.8592 | 0.0280 | -0.0149 | -0.0213 | -0.0057 | 5.4250 | 0.0014 | 0.0867 |
| 3 | -17.2400 | -0.0147 | 0.0409 | 1.8180 | 1.3640 | 0.4545 | 0.9155 | 0.9134 | 0.0021 | 0.0024 | 0.0007 | 0.0110 | 3.9400 | 0.0015 | 0.0651 |

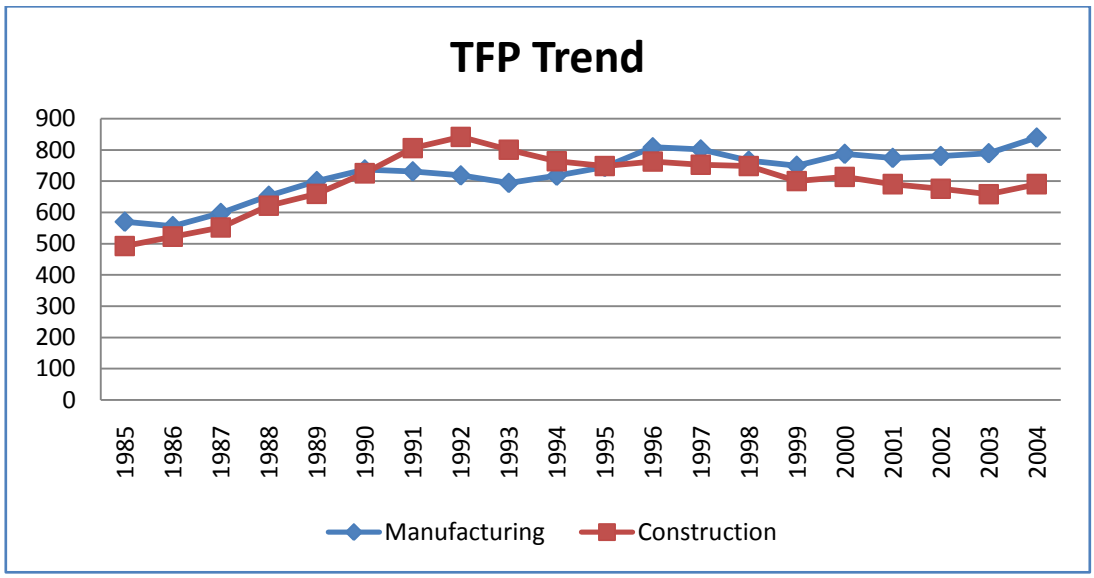
Note: The event study of connected firms cutting off political connection. Yr 0 represents the year when connected firm cuts its political connection. A firm is identified as a politically connected firm if it has at least one bureaucrat director on the board, and zero otherwise. *PW* is the revenue from public works contracts. PW growth is year-to-year growth rate in the value of public works contracts. Sales growth is year-to-year growth rate in sales. Assets growth rate is year-to-year growth rates in assets. *Total segments* is the number of segments in a firm. *Cons-seg* is the number of construction segments in a firm. *Noncons-seg* is the number of nonconstruction segments in a firm. *Firm-HHI* computed as the sum of segment's sales as a fraction of total firm sales in a firm. *Cons-HHI* computed as the sum of construction segment's sales as a fraction of total firm sales in a firm. *Noncons-HHI* computed as the sum of nonconstruciton segment's sales as a fraction of total firm sales in a firm. *ROA i*s measured as the income divided by total assets, and *ROS* is measured as the income divided by total sales. Cash flow over assets is income gross of depreciation and interest but not of taxed divided by total assets. Entertainment costs are divided first by total sales and second by cash flow.

**Figure 1. Construction investment and number of construction companies**



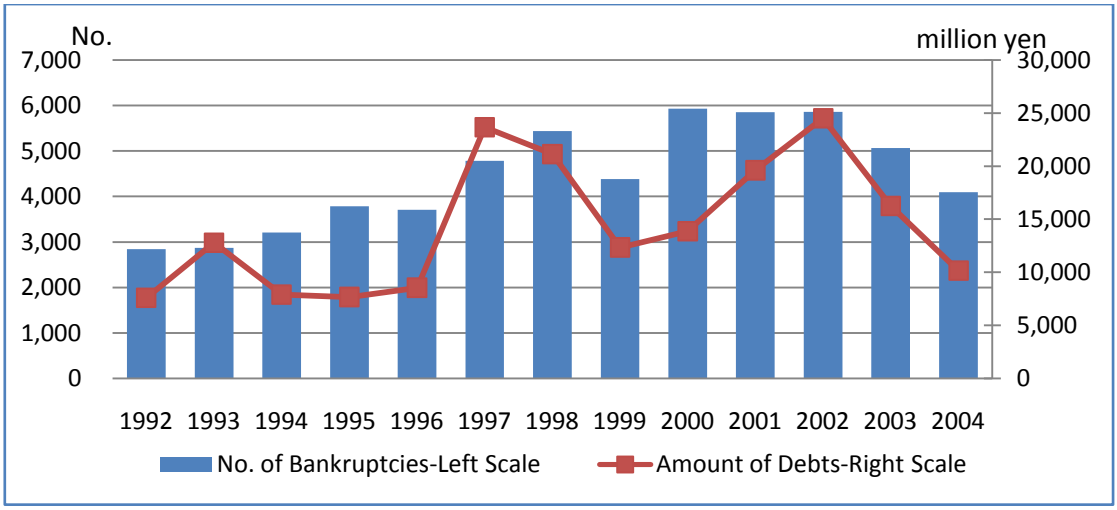

Source: For Private Inv. And Gov. Inv: Ministry of Land, Infrastructure, Transport and Tourism, "Construction Investment Forecast", online http://www.mlit.go.jp/toukeijouhou/chojou/kakodata.html ; for Registered firm: Ministry of Land, Infrastructure, Transport and Tourism, "Registered Firm Survey" online: http://www.mlit.go.jp/kisha/kisha04/01/010517/04.pdf

**Figure 2. Total factor productivity in the construction and manufacturing industries**




Source: JIP database 2006 online:http://www.rieti.go.jp/jp/database/d05.html

**Figure 3. Amount of debts and number of bankruptcies in the construction industry**




Source: "Bankruptcy Information", Teikoku databank, online:

http://www.tdb.co.jp/report/tosan/index.html

**Figure 4. Share of construction firms with and without bureaucrat directors**