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Political Determinants of Government Loans in Japan

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Abstract

This paper examines the political influence on government bank lending decisions using the prefecture level panel data on Japan's government loans from 1975 to 1992. I find that prefectures that were represented by more influential members of the ruling party, the Liberal Democratic Party (LDP), tended to receive more government loans. I also find that the amount of government loans tended to increase in the prefectures where the LDP incumbents became electorally vulnerable. These relationships between government loans and political factors are robust even after controlling for extensive socio-economic factors, fixed prefecture effects, and fixed year effects. Moreover, differences-in-differences estimation reveals that the statistical association between loans and political factors exists only in government loans, not private loans, indicating that the results are not the artifacts of fluctuation in local loan demand. These results provide empirical support for the political view of government banks and for the popular claim that government loans have served the private interests of LDP members and their supporters in Japan.

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1. Introduction

Over the last decade, numerous studies document the dismal performance of state-owned banks in two different economic dimensions. First, many cross-country studies show that the prevalence of state-owned banks has negative effects on economic and financial development and banking stability (e.g. La Porta, Lopez-de-Silanes, and Shleifer, 2002, Barth, Caprio, and Levine, 2004**,** Beck, Demirguc-Kunt, and Levine, 2005). Second, the bank-level data from various developing countries reveals substantial improvement in the financial and economic performance of state-owned banks upon privatization (e.g. Bonin, Hasan, and Wachtel, 2005, for transition countries, Beck, Cull, and Jerome, 2005, for Nigeria, Berger, Clarke, Cull, Klapper, and Udell, 2005, for Argentina).[1] One explanation that accounts for these results is that state-owned banks do not necessarily fund socially optimal projects: rather, the politicians and bureaucrats who control state-owned banks exploit the lack of taxpayers' monitoring and pursue their own private interests (e.g. Shleifer and Vishny, 1997, Shliefer, 1998, Boycko, Shleifer, Vishny, 1996, Shleifer and Vishny, 1994, Clarke and Cull, 2002, Clarke and Cull 2005).

Although this so-called "political view" explains the observed poor performance of state-owned banks, only three systematic empirical studies exist to date that specifically investigate the political motivations behind the lending behavior of state-owned banks to date (Sapienza, 2004, Dinc, 2005, and Khwaja and Mian, 2005). Sapienza (2004) finds that state-owned banks in Italy provide preferential loans to borrowers located in the areas in which the political parties affiliated with the state-

[1] It must be pointed out that the success of bank privatization tend to depend critically on four factors: (1) whether governments remain the controlling shareholders, (2) whether governments restrict competition, (3) whether strategic investors buy the banks, and (4) whether foreign banks are allowed to participate in the privatization process. Clarke, Cull, and Shirley (2005) provides an excellent overview of this literature.

owned banks receive popular supports. Dinc (2005) uses large bank-level data from 36 countries and finds that state-owned banks in developing countries tend to increase their lending more than private banks during election years. Khwaja and Mian (2005) shows that state-owned banks in Pakistan provide preferential loans to politically connected borrowers.

The goal of this paper is to complement these recent studies by analyzing the pattern of loan allocations by Japan's government banks in 47 prefectures from 1975 to 1992. In particular, this paper makes three contributions to the literature. First, I use the data on government loan allocations in Japan to re-examine the empirical relationship between government loans and political factors uncovered by Sapienza (2004) and Khwaja and Mian (2005) who use the data from Italy and Pakistan, respectively. In particular, I examine whether government loans tend to go to borrowers who are geographically tied to strong and influential politicians and the ruling party. Examining this "political effects" in the Japanese data is a valuable exercise since similar studies are relatively scarce and the few extant are new. It is of interest to see whether government banks are indeed highly political institutions even in a country like Japan that has relatively well-developed institutions.[2]

Secondly, I test an additional hypothesis: I explore whether the electoral vulnerability of politicians matters. Some theoretical and empirical studies in public choice literature find that in a centralized fiscal system, political competition and electoral vulnerability tend to cause pork-barrel spending to rise, suggesting that

[2] Japan is consistently ranked higher than Italy or Pakistan in the available measures of institutional quality. In the corruption perception index constructed by Transparency International, Japan is similar to US, France, Belgium, and Chile. Italy is similar to Malaysia, Hungary, and South Korea. Tunisia. Pakistan receives the same scores as Sudan and Somalia (http://www.transparency.org/policy_and_research/surveys_indices/cpi/2005).

electorally vulnerable incumbents tend to exert great efforts to bring more money into their districts to ensure their political survival.[3] If the same political incentive guides the behavior of government banks, then government loans should also respond positively when the chance of an incumbent being re-elected declines. This particular question about the relationship between government loans and electoral vulnerability is also important to international organizations such as the International Monetary Fund and the World Bank that are frequently called upon to give policy advice to countries during periods of political instability when politicians are scrambling to stay in power.[4]

Third, this paper also contributes to a widely debated issue on the role of directed loans in the post-war Japanese economy. An influential book, *MITI and the Japanese Miracle: The Growth of Industrial Policy 1925-1975*, by Chalmers Johnson (1983) argues that directed lending in Japan was a success since the targeting decision was made by capable and independent bureaucrats, not politicians.[5] Some political scientists and economists (e.g. Patterson, 1994, Cargill and Yoshino, 2003, Amyx, Takenaka, and Toyoda, 2005, and Beason and Patterson, 2004), however, offer a negative view, claiming that it is politicians, not independent bureaucrats, that influenced the size and allocation of government-directed financial intermediations in line with their private electoral concerns. Although there are numerous studies investigating the effects of

[3] See Dixit and Londregan (1995) and Lindbeck and Weilbull (1993) for theoretical models. The empirical evidence is found by Dahlberg and Johansson (2002) for Sweden, Dasgupta, Dhillion, and Dutta (2002) for India, Costa-I-Font, Rodriguez-Oreggia, Lunapla (2003) for Mexico, Wallis (1998) for US during Great Depression, Milligan and Smart (2005) and Crampton (2004) for Canada, and Cadot, Roller, and Stephan (2002) for France.

[4] A good example is a well-known political battle between Mahathir Mohamad, the Prime Minister of Malaysia, and Anwar Ibrahim, the Deputy Prime Minister, during the economic and political crisis in 1997-1998. Mahatir eventually jailed Anwar and imposed capital control that benefited the firms which were well-connected to Mahathir (see Johnson and Mitton, 2003).

[5] Another influential book, *East Asian Miracle*, by World Bank (1995) agrees with Johnson's assessment to some extent although it put more emphasis on fundamental economic factors and liberal economic policy than industrial policy as major contribution factors of Japan's economic growth.

government loan program on economic outcome,[6] there is no informative and yet systematic empirical test for whether or not government banks are politicized in Japan, a surprising omission in this debate. This paper fills this important gap.

I find three robust empirical results. First, government loans tend to go to areas that are represented by senior and influential member of the ruling party, the LDP. Second, the amount of government loans is positively related to the electoral vulnerability of the incumbent LDP members representing the area. These results hold true even after controlling for unobserved time-invariant prefecture characteristics, economy-wide shocks, and various socio-economic factors that potentially influence the allocation of policy loans. Third, these "political effects" are observed only in government loans, not private loans, suggesting that the statistical correlation between political factors and policy loans is not driven by unobserved prefecture-specific economic shock. Hence, the overall statistical evidence from the Japanese data broadly supports the political view of government banks.

The rest of this paper is organized as follows. Section 2 describes the institutional background of government banks in Japan. Section 3 discusses the data source, the construction of my political variables, and the empirical methodology. Section 4 shows and interprets the empirical results. Section 5 provides my conclusion.

[6] There are some evidence that government loans resulted in economic distortion. Seko (2002) finds that government housing loans, which preferentially treat the financing of small houses, distort housing consumption decisions over floor space and quality. Moriizumi (1996), also focusing on government loans to housing sector, finds that government housing loans crowd out private mortgage lending. As for the government loans targeted for industrial development, the studies that use firm-level data tend to find that government loans positively affect firm performance by relaxing liquidity constraints (e.g. Calomiris and Himmelberg, 1995 and Horiuchi and Sui, 1993). One drawback of these studies, however, is that they provide little insight into the opportunity costs of these loans (i.e. the foregone return that could have been attained if the funds were directed to different set of borrowers). Beason and Weinstein (1996) address this issue by using industry-level data and show that government loans have no relation to output and technical growth.

2. Government Banks in Japan

Although the well-cited cross-country data on state-owned banks (e.g. La Porta, Lopez-de-Silanes, Shleifer, 2002 and Barth**,** Caprio, and Levine, 2004) classify Japan as a country in which state-owned banks plays a minor role in capital allocation, the Japanese government in fact played a non-negligible role in allocating capital through the government financial institutions that are funded by postal saving and insurance system.[7]

One of the striking characteristics of government loans in Japan is that the amount of government loans was persistently large -- even during the period when Japan's financial market experienced drastic deregulations that substantially improved borrowers' access to private capital.[8] In fact, as shown in Figure 1, government loans constituted about 10-14 percent of total bank loans during my sample period (1975-1992), and there is no sign of any downward trend.[9] Another noteworthy observation is that government banks' interest subsidy declined during the same period. Given that government loans share remain flat, Cargill and Yoshino (2003) conjecture that government banks may have lowered their credit standard and served lower quality borrowers.

Japan has various types of government banks established to provide subsidized loans to a different set of borrowers, and the descriptions of these banks are provided in Appendix A.[10] As shown in Figure 2, the Government Housing Finance Corporation is by far the largest of these government banks (32 percent of total government loans), followed by the Japan Development Bank, the Export-Import Bank, the People's Finance

[7] Japan's postal saving and insurance system is the world largest financial institution and is to be privatized by 2017.
[8] See Hoshi and Kashyap (2001).
[9] In recent years, the share of government loans increased even more as the government attempted to counter the adverse credit condition created by banking sector instability in the 1990s.
[10] These descriptions are taken from Cargill and Yoshino (2003).

Corporation, the Agriculture, Forestry, and Fisheries Finance Corporation, the Small Business Finance Corporation, and the Local Public Enterprise Finance Corporation (all holding approximately 10 percent of total government loans).[11] Thus, the main targeted borrowers of government banks are middle income families who finance their housing consumption, small businesses. These two are followed by farmers, government enterprises, and the industrial and export sectors.

These government banks derive their funds from the Fiscal Investment and Loan Program (FILP) which is mainly funded by the postal saving and insurance system. Just like the general accounting budgets, FILP budgets are proposed by the Ministry of Finance and approved by the Diet. Nonetheless, FILP budgets are less transparent than the general budget since the former does not make explicit the hidden costs of government loans (e.g. contingent liability to taxpayers as a result of default).[12] Hence, the FILP budget process can be as politicized as general budget process, if not more so.[13]

With the opaque nature of the FILP, these government banks are likely to suffer from weak taxpayer monitoring and soft budgets constraints.[14] Examining the financial performance of these banks would be a useful exercise to assess the softness of budget constraints, but as far as I know, only one study, Doi and Hoshi (2002), undertakes this exercise. Doi and Hoshi (2002) analyze the financial performance of these government banks and the other public and semi-public corporations that rely on FILP funds. Their results reveal an enormous amount of nonperforming loans (75 percent of all FILP loans).

[11] The figure is based on the 1981 Statistical Yearbook of Japan. The distribution of these loan shares across government banks remains approximately the same over the sample period.
[12] The FILP budgets are also commonly referred to as "shadow budgets" because of its opacity.
[13] Meyer and Naka (1998) find that the LDP manipulated transfers from the central government to local governments presumably to maintain its electoral positions.
[14] This system has been in the process of reform over the last 10 years to increase transparency and introduce market discipline. See Doi and Hoshi (2002) for the detail of reform on FILP and government banks.

Because of the insufficient capitalization and loan loss reserve, these bad loans are estimated to result in the financial losses of 75 trillion yen to taxpayers. They also find that all government banks have a substantial amount of nonperforming loans and insufficient capital and loan loss reserve, and that all of the banks are practically insolvent with the exception of the Japan Development Bank and the Japan Bank for International Cooperation.[15]

3. Data and Empirical Strategy

3.1 Data

My data on political variables come from the *Lijphart Elections Archive* available from the Social Science and Humanities Library of the University of California, San Diego.[16] This large archive provides detailed data on the characteristics of each candidate in election for Japan's House of Representatives (Lower House) from 1958 to 1990.[17] From these data, I extract information about (1) the extent and intensity of popular support for the LDP, (2) the electoral vulnerability of LDP incumbents, and (3) the political tenure of LDP incumbents for each prefectures. First, to measure the support for the LDP, I add up all the votes that the LDP received and divide it by the total number of votes for each prefecture in the most recent election as follows:

$$LDPSupport_{it} = \frac{\sum_j Vote_{jit}}{TotalVote_{it}}$$

[15] Japan Bank for International Cooperation was established in 1999 through the merger of the Export-Import Bank of Japan and the Overseas Economic Cooperation Fund.
[16] Arend Lijphart is Research Professor Emeritus of Political Science at the University of California, San Diego. The data can be downloaded from http://dodgson.ucsd.edu/lij.
[17] Twelve House of Representative elections were held during this time period: May 1958, November 1960, November 1963, January 1967, December 1969, December 1972, December 1976, October 1979, June 1980, December 1983, July 1986, and February 1990.

where *i*, *t*, and *j* represent prefecture, year, and LDP candidate, respectively. Thus, this measure of the share of LDP votes out of all votes captures variation in the size and intensity of LDP support across prefectures and over time; i.e. the more LDP supporters there are, the more votes the LDP receive in each election, on average.[18]

Second, to capture the political strength of incumbent LDP members, I make the assumption that on average, the longer a politician has held office, the more influential she is. Hence, for each incumbent LDP politician, I compute the length of her tenure (i.e. how many years she has held her position in the House of Representatives) and use it as a proxy for her political influence. Based on these data on individual politicians' tenure, I compute the average tenure of LDP incumbents for every prefecture and every year as follows:

$$LDPTenure_{it} = \frac{1}{n}\sum_{k} Tenure_{kit}$$

where *i*, *t*, and *k* represent prefecture, year, and LDP incumbent, respectively, and *Tenure* is the number of years that LDP incumbent *k* spent in the House of Representatives.

Third and last, I calculate the margin of election victory for each LDP incumbent as a proxy for a measure of electoral vulnerability for each LDP incumbent. More specifically, I take the difference in the number of votes between each wining LDP incumbent and the losing candidate who received the highest number of votes withour being elected in her district, and then divide it by the total votes cast in the districts. Then, I compute the *negative* average victory margin over all LDP incumbents for every prefecture and every election to capture the average electoral vulnerability of LDP incumbents as follows:

[18] In the aggregate data, the LDP vote share tends to decline over my sample period although the LDP continued to hold a majority in the Diet (see Ramseyer and Rosenbluth, 1993)

$$LDPVulnerability_{it} = -\frac{1}{n}\sum_{k} \; Margin_{kit}$$

where *Margin* is the margin of victory for the LDP incumbent *k*.

Unsurprisingly, these three political variables, electoral support for the LDP, the average political tenure of the LDP incumbents, and the average electoral vulnerability of the LDP incumbents, turn out to be closely correlated: the prefectures with more supports for the LDP candidates tended to have more senior LDP incumbents who were less electorally vulnerable. These correlations, however, are imperfect particularly because Japan used a multimember district system with single-non-transferable voting during the sample period. Under this system, although each district elects 2-6 members depending on its size, each voter has just one vote that cannot be transferred to another candidate even if a voter's first choice has already made it to past the post. As a result, LDP candidates faced a unique problem, as they often competed for votes against members of their own party, and the competition among the LDP candidates in each district in part increased the level of electoral competition in many districts.[19]

I do not look at the results of the House of Conciliator (Upper House) or local assembly elections since the House of Representatives exerts a dominant influence in the policy making of Japan.[20] In particular, the House of Representatives has a constitutional right to override vetoes on bills imposed by the House of Conciliator. In addition, the House of Representatives has the power to elect the Prime Minster, pass the budget, and ratify treaties. Prominent political figures in post-war Japan typically rose to their position of power from their repeated victories in Lower House elections.

[19] This multimember district system is considered to necessitate that each LDP candidate depend on "the provision of private and particularistic favors" rather than a party platform (Ramseyer and Rosenbluth, 1993).
[20] See Ramseyer and Rosenbluth (1993)

The data on bank loans and other socio-economic variables used come directly from *Basic Data of Prefectures in Japan* (*Todoufuken Kiso Deta*) on CD-ROM.[21] These data consist of simple annual prefecture-level panel data from 1975 to 2002. The definitions of the variables extracted and computed from the CD-ROM along with the definitions of political variables are given in Table A.2. After merging the data on bank loans and socioeconomic variables with the data on political variables, the final data set covers 47 prefectures over 18 years from 1975 to 1992. Table 1 shows the summary statistics of all the variables used in my regression analysis.

3.2 Empirical Strategy

My basic empirical strategy is to relate the amount of government loans to the aforementioned political factors, while controlling for various socio-economic factors to obtain unbiased estimates of "political effects" on government loans. Thus, the basic empirical equation looks like:

$$\ln(Govloan)_{it} = \beta_i + \beta_t + \beta_1 Support_{it} + \beta_2 Tenure_{it} + \beta_3 Vulnerability_{it} + \beta_4 X_{it} + \varepsilon_{it}. \quad (1)$$

Subscript i and t represent prefecture and year, respectively. *Govloan* is the amount of government loans per capita. *Support*, *Tenure*, and *Vulnerability* are my political variables that represent the LDP vote share, the average political tenure of LDP incumbents, the negative of average margin of victory by LDP incumbents. X is a set of socio-economic control variables that I will describe shortly. Parameters β_i and β_t are

[21] The CD-ROM is available at Statistical Information and Institute for Consulting and Analysis (SINFONICA).

prefecture fixed effects and year fixed effects, capturing the unobserved time invariant characteristics of each prefecture and the unobserved economy wide disturbances. The fixed prefecture effects are included, as a Hausman test rejects the consistency of parameter estimates based on random effects estimations. The inclusion of year fixed effects can be particularly important if business cycles are partly correlated with the general electoral performance of the LDP through political business cycle effects.[22] I adjust the standard errors for heteroskedasticity by using the Huber/White/sandwich standard error formula.

Sapienza (2004) and Khwaja and Mian (2005) find that state-owned banks tend to favor the supporters of politicians in power in Italy and Pakistan, respectively. If the same political incentives are operative in Japan, then I expect that the coefficient on *Support* to be positive; i.e. the more LDP supporters there are, the more government loans there will be. In addition, since each politician varies in terms of his/her power in influencing the lending decisions of government banks, I expect that the coefficient on *Tenure* to be positive; i.e. the longer a politician has held a position in the House of Representatives, the more loans get allocated to his/her prefecture. Finally, if electorally vulnerable politicians exert greater efforts to bring in more loans to their prefecture (or the LDP strategically directs government loans to swing voters), then the coefficient on *Vulnerability* will be positive.

Of course, in order for these coefficients to truly reflect the independent effects of political factor on government loans, I need to control for the socio-economic characteristics of each prefecture that would potentially affect the volume of government

[22] See Cargill and Hutchison (1993), Ito and Park (1988), and Ito (1990) for empirical evidence for the political business cycle in Japan.

loans. For example, the government might believe that private lenders tend to under-serve rural areas where the problem of imperfect information is perceived to be more severe than in cities.[23] In this situation, government banks might allocate more loans to more sparsely populated prefectures where fewer banks exist to serve local businesses. Hence, I include population density and the number of private banks per capita in the equation. The expected sign of the coefficients on these two control variables are both negative: (1) the more densely populated areas will receive less government loans, and (2) the areas with more private banks will receive less government loans.

The government may also be concerned about small businesses that have yet to establish the reputation that is necessary to raise enough external capital from private lenders. Thus, the bulk of government loans may flow into prefectures where small enterprises are ubiquitous. To control for this, I include the ratio of small businesses to total businesses. I expect the coefficient on this variable to be positive. I also include the share of government enterprises, since government enterprises tend to rely on government banks; the expected sign of the coefficient on this variable is positive.

To capture the effects of local business cycles, I include unemployment rate, real GDP per capita, and consumer price index in my regression equation. If government loans follow local business cycles, both consumer price index and real GDP per capita should have positive effects on government loans, whereas unemployment rate should have negative effects.[24] Demographical factors might also matter since demand for loans in the prefectures with many retired workers are likely to be small. I include the share of

[23] Alternatively, the government may be concerned about equity, which motivates the flow of government loans into rural and less financially developed prefectures.

[24] The government may make use of policy loans as a counter-cyclical tool. In this case, government loans should be less sensitive to business cycles than private banks. The relative insensitivity of government loans to various macroeconomic shocks is documented by Mian (Forthcoming).

old population (65 years old or older) and the share of young population (15 years old or younger) to control for this demographic effect. Finally, government loans may target specific sectors, and thus I need to account for variation in government loans driven by the sectoral composition of prefectural economies. I include 9 control variables in the equation for this purpose: the shares of workers in (1) agriculture, (2) mining, (3) manufacturing, (4) electricity, gas, water, steam and hot water supply, (5) transportation and communication, (6) wholesale, retail, and restaurant, (7) finance and insurance, (8) real estate, and (9) services.[25]

Another concern might be that although fixed prefecture effects are included to control for unobserved time-invariant characteristics of each prefecture, they do not account for the unobserved year-to-year change in local loan demand. The failure to account for fluctuation in loan demand at the prefecture level might lead to positive bias in, say, the coefficient on *Support* if the ruling party tends to do better in the election when the local economy and loan demand are growing faster. I address this issue by using data on private loans as well as government loans. With the data on both private and government loans, I examine whether political variables affect private loans in the same fashion as government loans. More specifically, if year-to-year fluctuations in local loan demand are indeed responsible for driving the statistical association between government loans and political variables, then there should be no discernible difference in the effects of political factors on loan amounts between government banks and private banks; i.e. *both* private loans and government loans will be positively related to my political variables. On the other hand, if political variables are unrelated to the unobserved local loan demand condition *and* government banks indeed respond to

[25] The omitted sector is "government and others".

political incentives, then I should observe that private loans do not respond to political variables while government loans do.

To investigate these possibilities, I estimate equation (1) for both private loans and government loans as follows:

$$\ln(Govloan)_{it} = \beta_i + \beta_t + \beta_1 Support_{it} + \beta_2 Tenure_{it} + \beta_3 Vulnerability_{it} + \beta_4 X_{it} + \varepsilon_{it} \quad (2)$$

$$\ln(PrivLoan)_{it} = \gamma_i + \gamma_t + \gamma_1 Support_{it} + \gamma_2 Tenure_{it} + \gamma_3 Vulnerability_{it} + \gamma_4 X_{it} + \upsilon_{it} \quad (3)$$

I estimate these two equations using Seemingly Unrelated Regression (SUR) that gives efficient estimates by taking into account the contemporaneous correlation between private and government loans within each prefecture. If government loans respond to political factors while private loans do not, then the coefficients on *Support*, *Tenure*, and *Margin* are all equal to zero in equation (3) while they are all positive in equation (2). It is also interesting to examine how government banks respond to economic variable differently from private banks, as Mian (forthcoming) finds that the lending behavior of government banks is insensitive to economic shocks in emerging market. I expect to find a similar pattern in my data.

Additionally, an alternative way to control for fluctuation in loan demand is to use the proportion of government loans in total loans instead of government loans as follows:

$$Govloan/(Total\ Loan)_{it} = \theta_i + \theta_t + \theta_1 Support_{it} + \theta_2 Tenure_{it} + \theta_3 Vulnerability_{it} + \theta_4 X_{it} + \varepsilon_{it}. \quad (4)$$

To the extent that government and private loans are likely to move in tandem in response to local demand shocks, the coefficient on political factors should have less bias in this specification.

Finally, I use differences-in-differences estimation in order to find whether political factors have larger effects on government loans than private loans do while controlling for prefecture specific time-variant factors. More specifically, I estimate the following equation:

$$\ln(Loan)_{jit} = \beta_{ij} + \beta_{tj} + \beta_{it} + \beta_5 Support_{it} \times Gov_j + \beta_6 Tenure_{it} \times Gov_j + \beta_7 Vulnerability_{it} \times Gov_j + \beta_8 X_{it} \times Gov_j + \varepsilon_{it}. \quad (5)$$

Subscript j represents either private or government banks. *Gov* is a dummy variable for government loans. Note that β_{ij}, β_{tj}, and β_{it} capture three different sources of variation: β_{ij} and β_{tj} capture the difference between private and government loans within each prefecture and within each year, respectively, while β_{it} captures unobserved shock hitting each prefecture over time. The advantage of this specification is that it allows me to directly control for year-to-year fluctuations in economic conditions with β_{it} and test whether the difference in sensitivity of loan amount to political factors is indeed statistically discernible from zero between government loans and private loans If the political view of government banks is correct, then government loans should respond to political conditions more strongly than private loans, and thus the coefficients on *Support* $\times$*Gov*, and *Tenure*$\times$*Gov* , and *Margin*$\times$*Gov* should be all positive.

4. Empirical Results

4.1. Political Determinants of Government Loans

The regression results of equation (1) are reported in Table 1. Prefecture fixed effects and year fixed effects are included as discussed, but they are not reported to keep the table uncluttered.[26] Column 1 shows the results of my simple specification in which I include only political variables to explain the variation in government loans. Note that all the political variables are positively associated with the amount of government loans. In particular, the coefficient on the electoral vulnerability of LDP members is positive and statistically significant. This result is consistent with the hypothesis that LDP members exert more effort to bring more government loans into their prefectures as they see a declining likelihood of being re-elected. The coefficient on *LDP Tenure* is also statistically significant, indicating that a prefecture receives more government loans when their representatives are senior and more influential. This result suggests that the senior LDP members have more influence in the allocation of government loans than junior members. These positive relationships between government loans and political factors are robust to the inclusion of socio-economic controls as shown in columns 2, 3, and 4. The coefficients on *LDP Support*, *LDP Vulnerability* and *LDP Tenure* all remain positive, and the level of statistical significance remains virtually the same. Therefore, the overall evidence presented in Table 1 supports the political view of government banks.

Some of the coefficients on socio-economic variables are statistically significant. The coefficient on *Bank per capita* is negative. Although this particular result is suggestive of the social view that government banks allocate loans to areas that are

[26] The inclusion of prefecture fixed effects and year fixed effects drastically reduce the coefficient estimates of political effects relative to the specifications in which these fixed effects are omitted, suggesting that unobserved prefecture characteristics and economy-wide shocks are correlated with the political factors.

underserved by private banks, it is impossible to rule out the alternative explanation that the dominance of government loans discourages private banks from establishing branches in the relevant prefecture. *GDP per capita* and *Consumer Price Index* both have positive coefficients, confirming that government loans respond to local economic conditions; i.e. government loans tend to expand during economic booms while they shrink during downturns. Demographic factors matter as well: *Old Population Share* has a negative coefficient, suggesting that prefectures with more old people tend to receive less government loans, which is a sensible result given that the bulk of economic activities are undertaken by the working population (15-65 years olds). *Population Density* also has a negative coefficient, which is consistent with the fact that some of the government banks target rural and economically backward areas such as Hokkaido, Tohoku, and Okinawa.

4.2. Differences-in-Differences Estimations

Table 2 reports the results of equation 2 (column 1), 3 (column 2), 4 (column 3), and 5 (column 4). Just as in Table 1, fixed prefecture effects and year effects are not reported to keep the table uncluttered. Recall that that the only difference between equation 1 and equation 2 is that equation 1 is estimated with simple ordinary least squares (OLS), whereas equation 2 is estimated with SUR that takes into account potential contemporaneous correlations between government loans and private loans within each prefecture. It turns out that the coefficient estimates reported in column 1 of Table 2 are virtually identical to those in column 4 of Table 1, although the estimates of standard errors and statistical significance of some independent variables differ slightly between these two results. For instance, the coefficient on electoral vulnerability is

significant at 95 percent confidence level in SUR estimation (column 1, Table 2) as opposed to 90 percent (column 4, Table 1).

There are several noteworthy results in Table 2. First of all, the effects of political factors on private loans are virtually nil, and not significant (column 2) unlike those on government loans (column 1).[27] Secondly, the share of government loans responds positively to the electoral vulnerability and seniority of LDP incumbents (column 3). Third, the difference in the sensitivity of loans to these political factors between private banks and government banks is statistically significant (column 4). These three pieces of evidence suggest that the statistical association between government loans and political factors is not spuriously driven by unobserved fluctuation in local loan demand that are correlated with the electoral performance of the LDP.

An additional noteworthy result is that the responsiveness of government loans to some socio-economic factors is quite different from that of private loans. For instance, the coefficients on the share of public enterprises and on the share of small businesses are negative and significant only for private loans; i.e. as the number of small businesses and public enterprises increases relative to the number of large private businesses, private loans tend to decline. Similarly, the coefficient on unemployment rate is negative only for private loans (column 2). Hence, private loans follow local business cycles more closely than government loans. This is also confirmed by the result that the share of government loans tend to increase in response to a rising unemployment rate (column 3). Also note that population density has positive effects on private loans while it has negative effects on government loans.

[27] These results hold true when I use simple OLS to individually estimate equation 2 and 3 instead of SUR.

These above results suggest that government banks are indeed providing funds to the borrowers that private banks are either unwilling and/or unable to serve. However, the precise economic interpretations of these results are far from clear. Government banks might indeed be providing funds to deserving borrowers who are not able to raise enough external funds from private lenders due to imperfect information problem. Alternatively, it might simply be the case that government banks tend to provide soft loans to borrowers since they have little incentive to carefully screen and monitor these borrowers, even though these borrowers are bad (and private banks have good information about how bad these borrowers are).

In order to perform a systematic evaluation of these competing interpretations, I would need the detailed data on the terms of loans, default risks, and the repayment performance, which is outside the scope of this paper. Even so, two pieces of existing evidence are more supportive of the second explanation. First, it is difficult to imagine that government banks perform better risk analysis on their borrowers than private counterparts, given Doi and Hoshi (2002)'s finding that government banks accumulated a massive amount of nonperforming loans that are yet to be resolved. Second, the main finding of this paper that government banks are poorly monitored political institutions suggests that government banks have weak economic incentives to screen and monitor borrowers. It should be noted, though, that future studies that collect and analyze individual loan data will be of extreme interest in order to pin down precise explanations for the differential response of private and government banks to various economic shocks.

4.3. Robustness Check

I report the results of two robustness checks in this subsection. The first potential criticism of the main results is that the dependent variable, log of ratio of government loans to population, changes with urbanization. Since the LDP incumbents often thrive in rural prefectures while they struggle in cities[28], the results may partly be driven by rapid urbanization. To check the robustness of these results, I use log of government loans and log of ratio of government loans to total prefecture products instead, and investigate if the main results survive. The results based on these specifications (Table 3) are broadly similar to the main results (Table 2).[29] In particular, the estimated coefficients on electoral vulnerability and political tenure remain approximately the same, and they remain statistically significant.

Second, I only use the characteristics of the LDP incumbents to capture political motivation behind government loans since the LDP was the dominant ruling party that was in a position to potentially influence the allocation of government loans during the period of my study. In a robustness check, I add the political tenure and electoral vulnerability of non-LDP incumbents in the right hand side of the regression equations. If these characteristics of non-LDP incumbents positively affect government loans just like those of LDP incumbents do, then such results would undermine the validity of the hypothesized mechanism under which political factors influence the allocation of government loans. But as reported in Table 4, both the political tenure of non-LDP incumbents and their electoral vulnerability are found to *negatively* affect government loans. Note also that the coefficients on LDP vulnerability and tenure remain robust to the inclusion of these additional political variables. These additional results suggest that

[28] See Ramseyer and Rosenbluth (1993).
[29] The results of differences-in-differences estimations are identical to those reported in column 4, and thus they are not reported.

government loans tend to favor the LDP while at the same time disfavoring the LDP's opponents and thus strengthen the evidence for the political view of government banks.

6. Concluding Remarks

Government banks are prevalent in developing countries to this day as they promise to fund socially desirable projects. The existing empirical supports for this "social view", however, are weak at best in the literature. Rather, the existing empirical studies are more consistent with the "political view" that government banks direct scarce capital to the projects that are politically desirable to the politicians and bureaucrats who control them.

This paper analyzes prefecture level panel data on government loans in Japan from 1975 to 1992 to investigate whether the allocation of government loans are in part politically motivated. The paper's main finding is that government loans tend to go to prefectures that are represented by senior and influential members of the ruling party, the LDP, and these loans tend to rise as those LDP incumbents become electorally vulnerable. These empirical findings are largely supportive of the "political view" of government banks, and they confirm the popular notion that government banks in Japan served the political interests of the LDP, the LDP politicians, and their supporters. More importantly, this paper's findings suggest that government banks can be highly political institutions even in a country like Japan that enjoys well-developed economic, political, and legal institutions relative to many emerging economies.

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Appendix A: Description of Government Financial Institutions (Taken from Cargill and Yoshino, 2003, pp 46-47)

Government Housing Loan Corporation (Est. 1950)
There was a significant shortage of housing after the Second World War, and demand for housing was further increased as former members of the military services returned to Japan. The private sector constructed 1.6 million houses between 1945 and 1948, while only 40,000 to 50,000 houses were constructed by the public sector. The combined supply of housing was insufficient to satisfy the demand for housing and in addition, low-income households were largely excluded from obtaining housing funds. The Dodge Plan further reduced the availability of funds to support housing because money supply and bank credit were sharply reduced after 1948. The Government Housing Loan Corporation was established in 1950 to address the shortage.

People's Finance Corporation (Est. 1949)
Private banks at the end of the war continued their focus on lending primarily to large businesses and corporations. Small business firms were unable to raise funds from the market and were forced to resort to unofficial or black markets for needed funds. Small firms found credit even more restricted in 1948 as the Dodge Plan austerity programs were initiated to deal with triple-digit inflation and large government deficits. The lack of credit for small business firms combined with the high inflation rate imposed extreme hardship on small and medium-sized businesses. In an effort to offset the effects on small business firms, the People's Finance Corporation was established in 1949. Despite the name of the corporation, it did not make consumer loans but rather made loans to small business firms. However, in 1978, the People's Finance Corporation initiated education loans to support the parents of high-school and university students.

Environmental Sanitation Business Finance Corporation (Est. 1967)
Sanitation deficiencies were a serious problem for many years after the war in the areas of public baths, laundries, small restaurants, butcher shops, etc. Families and small firms operated these facilities, and their small scale of operation made it difficult to modernize equipment. The Environmental Sanitation Business Finance Corporation was established in 1967 to maintain and improve public sanitation by providing funds to these facilities to upgrade their sanitation equipment.

Japan Finance Corporation for Small Business (Est. 1953)
Sogo banks (now referred to as regional banks 11) and shinkin banks were established in 1951 to assist small businesses because the large private city hanks focused primarily on large businesses and corporations. Despite these new institutions, many small business firms had difficulty obtaining credit, especially long-term credit. The Finance Corporation for Small Business was established in 1953 to provide long-term loans to small businesses whose assets were less than 100 million yen or who employed fewer than 300 workers.

Agriculture, Forestry, and Fishery Finance Corporation (Est. 1953)

Immediately following the end of the war, inflation and the subsequent Dodge Plan made it difficult for farmers to obtain private-bank financing. In addition, the land reform implemented by the Allied Occupation resulted in a large number of small farms, which further increased agricultural demand for private-bank loans. This corporation was established in 1953 to provide long-term loans to borrowers engaged in farming, forestry, and fishery activities.

Japan Finance Corporation for Municipal Enterprises (Est. 1957)
Municipal government had great difficulty raising funds by selling local government bonds because of a general shortage of funds and the lack of developed open money and capital markets. The Corporation was established in 1957 to supply credit to municipal enterprises in order to promote improvements in the water supply, sewage system, hospitals, etc. The Corporation also purchased local government bonds in order to construct local roads, develop land for the promotion of regional industry, etc. The Corporation issued government-guaranteed bonds purchased by regional banks and other institutions, in addition to receiving funds from FILP

Hokkaido-Tohoku Development Finance Public Corporation (Est. 1956)
Hokkaido and Tohoku are northern regions of Japan whose development lagged behind other regions in the 1950s. The Corporation was established in 1956 to provide long-term loans to support industrial development in northern Japan and to promote the region.

Japan Development Bank (Est. 1951)
The Japan Development Bank was established in 1951 to provide long-term investment funds to industry. The Bank concentrated lending in the electric-power and sea-transport industry, followed by coal mining, iron and steel, fertilizers, and machinery, in that order. In 1988, the Bank started to provide lending for local public infrastructure needs and loans to venture firms judged to be essential for Japan's future.

Okinawa Development Finance Corporation (Est. 1972)
Okinawa was under the occupation of the United States until 1972, when it was returned to Japan. The Okinawa Development Finance Corporation was established in 1972 to provide loans to support industry, small business, housing, agriculture and fishery, environmental sanitation, medical sector, etc., in Okinawa.

Export-Import Bank (Est. 1950)
The Export-Import Bank was established in 1950 to promote exports. The Bank provided long-term funds to finance exports that could not be fully accommodated within the system of preferential treatment being given to short-term export financing by the Bank of Japan. The shipbuilding industry was also supported by loans from the Bank. In 1972, the Bank started to finance projects designed to promote imports and foreign direct investment in Japan in an effort to mitigate increasing international pressure over trade imbalances.

Table A1: Definitions of Variables

Variable	*Definition*
LDP Support	Ratio of LDP votes to total votes in the most recent election
LDP Vulnerability	Negative of average victory margin of LDP incumbent divided by total votes
LDP Tenure	Average political tenure of LDP incumbents
Population Density	Ratio of Population to area (hectare)
Old Population	Ratio of over 65 year old population to total population
Young Population	Ratio of under 15 year old population to total population
Income	Ratio of gross prefecture product (in 1 millions of yen) to total population
Unemployment Rate	Ratio of unemployed to labor force
Banks	Ratio of private banks to population
Government Loan	Log of ratio of government loans to population
Private Loan	Log of ratio of private loans to population
Agriculture	Ratio of workers in agriculture to total workers
Mining	Ratio of workers in mining to total workers
Construction	Ratio of workers in construction to total workers
Manufacturing	Ratio of workers in manufacturing to total workers
Electricity, Gas, Water, Steam and Hot Water Supply	Ratio of workers in electricity, gas, water, steam and hot warter supply to total workers
Transportation and Communication	Ratio of workers in transportation and communication to total workers
Wholesale, Retail, and Restaurant	Ratio of workers in wholesale, retail, and restaurant to total workers
Finance and Insurance	Ratio of workers in finance and insurance to total workers
Real Estate	Ratio of workers in real estate to total workers
Services	Ratio of workers in services to total workers
Government and Others	Ratio of workers in government and others to total workers
Small Enterprises	Ratio of enterprises with less than 9 workers to total number of enterprises
Government Enterprises	Ratio of government enterprises to total number of enterprises

Table A2: Summary Statistics

Variable	*Mean*	*Std. Dev.*	*Min*	*Max*
Government Loans	-5.70790	0.53237	-7.34522	-4.41158
Private Loans	-4.14791	0.53225	-5.33264	-1.63342
LDP Supports	0.56124	0.12324	0.15431	0.82042
LDP Vulnerability	-0.06518	0.04108	-0.29772	-0.00910
LDP Tenure	13.25279	4.42712	1.00000	31.33333
Banks per capita	0.00043	0.00013	0.00014	0.00076
Share of Pub. Enterprises	0.03686	0.01041	0.01339	0.06101
Share of Small Enterprises	0.86438	0.01718	0.80064	0.91419
GDP per capita	2.39102	0.83563	0.93457	7.12976
Unemployment Rate	0.02741	0.01148	0.01234	0.08093
Consumer Price Index	80.21832	11.79374	52.40000	98.90000
Young Pop. Share	0.21669	0.02515	0.14149	0.31320
Old Pop. Share	0.11394	0.02597	0.05272	0.19742
Population Density	6.01765	10.53769	0.67988	56.23470
Agriculture	0.00764	0.00633	0.00018	0.02535
Mining	0.00292	0.00246	0.00010	0.01538
Construction	0.10312	0.02010	0.05735	0.14626
Manufacturing	0.24929	0.06970	0.06795	0.39451
Gas & Electronics	0.00640	0.00135	0.00373	0.01246
Transportation & Communication	0.06217	0.01023	0.04164	0.09012
Retail & Wholesale	0.27491	0.02687	0.20594	0.35725
Financial Services	0.03024	0.00457	0.02327	0.05832
Services	0.21578	0.02707	0.14943	0.30987

Table 1: Political Determinants of Government Loans

The dependent variable is the natural log of government loans per capita. The regression equation is estimated with fixed prefecture effects and fixed year effects, which are not reported to keep the table uncluttered. The data cover Japan's 47 prefectures from 1972 to 1992.

	(1)	*(2)*	*(3)*	*(4)*
LDP Supports	0.087	0.076	0.111	0.125
	(0.097)	(0.095)	(0.094)	(0.093)
LDP Vulnerability	0.177*	0.180*	0.154	0.193*
	(0.107)	(0.104)	(0.103)	(0.102)
LDP Tenure	0.006***	0.004***	0.005***	0.005***
	(0.001)	(0.001)	(0.001)	(0.001)
Banks per capita		-421.415*	-361.367	-606.686**
		(242.610)	(241.106)	(248.467)
Share of Pub. Enterprises		-3.773	-2.366	0.360
		(3.305)	(3.308)	(3.358)
Share of Small Enterprises		0.575	-0.049	0.950
		(0.893)	(1.072)	(1.182)
GDP per capita		0.133***	0.123***	0.129***
		(0.018)	(0.019)	(0.019)
Unemployment Rate		-0.146	-0.191	0.052
		(1.569)	(1.565)	(1.637)
Consumer Price Index		0.019***	0.019***	0.019***
		(0.005)	(0.005)	(0.005)
Young Pop. Share			-0.650	-0.709
			(0.644)	(0.712)
Old Pop. Share			-2.425**	-5.611***
			(1.167)	(1.387)
Population Density			-0.050***	-0.039***
			(0.010)	(0.010)
Agriculture				-2.555
				(2.555)
Mining				-4.759
				(5.122)
Construction				2.313
				(2.482)
Manufacturing				1.658
				(2.160)
Gas & Electronics				21.982***
				(7.587)
Transportation & Communication				1.453
				(2.599)
Retail & Wholesale				-0.756
				(2.385)
Financial Services				-2.743
				(3.119)
Services				0.525
				(2.469)
Constant	-6.799***	-8.159***	-7.061***	-8.459***
	(0.060)	(0.922)	(1.035)	(2.702)
Observations	846	846	846	846
Number of PrefID	47	47	47	47
R-squared	0.97	0.97	0.97	0.97

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2: Differential Effects of Political Factors on Private and Government Loans

The regression equation is estimated with fixed prefecture effects and fixed year effects, which are not reported to keep the table uncluttered. For column 4, in addition to fixed prefecture and year effects, dummy variables associated with all prefecture-year combinations are included. The data cover Japan's 47 prefectures from 1972 to 1992.

	Seemingly Unrelated Regression		*Ordinary Least Squares*	
Dependent Variable	Government Loans	Private Loans	Government Loan Share	Differences-in-Differences
	(1)	(2)	(3)	(4)
LDP Supports	0.125	0.075	0.009	0.050
	(0.088)	(0.048)	(0.015)	(0.107)
LDP Vulnerability	0.193**	-0.008	0.032*	0.201*
	(0.097)	(0.053)	(0.017)	(0.118)
LDP Tenure	0.005***	-0.000	0.001***	0.005***
	(0.001)	(0.001)	(0.000)	(0.001)
Banks per capita	-606.686**	114.205	-137.189***	-720.891**
	(235.655)	(129.403)	(40.925)	(285.740)
Share of Pub. Enterprises	0.360	-13.014***	0.565	13.373***
	(3.184)	(1.749)	(0.553)	(3.861)
Share of Small Enterprises	0.950	-3.000***	0.240	3.951***
	(1.121)	(0.616)	(0.195)	(1.359)
GDP per capita	0.129***	0.105***	0.003	0.023
	(0.018)	(0.010)	(0.003)	(0.022)
Unemployment Rate	0.052	-2.500***	0.829***	2.552
	(1.553)	(0.853)	(0.270)	(1.883)
Consumer Price Index	0.019***	0.020***	0.002*	-0.000
	(0.005)	(0.003)	(0.001)	(0.006)
Young Pop. Share	-0.709	-1.351***	0.151	0.642
	(0.676)	(0.371)	(0.117)	(0.819)
Old Pop. Share	-5.611***	-5.407***	0.415*	-0.204
	(1.315)	(0.722)	(0.228)	(1.595)
Population Density	-0.039***	0.030***	-0.006***	-0.069***
	(0.010)	(0.005)	(0.002)	(0.012)
Agriculture	-2.555	-1.932	-0.507	-0.623
	(2.424)	(1.331)	(0.421)	(2.939)
Mining	-4.759	-5.298**	-0.884	0.539
	(4.858)	(2.668)	(0.844)	(5.891)
Construction	2.313	2.899**	-0.445	-0.586
	(2.354)	(1.293)	(0.409)	(2.855)
Manufacturing	1.658	-1.274	-0.064	2.932
	(2.049)	(1.125)	(0.356)	(2.484)
Gas & Electronics	21.982***	-7.895**	3.354***	29.877***
	(7.196)	(3.951)	(1.250)	(8.725)
Transportation & Communication	1.453	-2.889**	0.021	4.342
	(2.465)	(1.353)	(0.428)	(2.988)
Retail & Wholesale	-0.756	-1.925	-0.372	1.169
	(2.262)	(1.242)	(0.393)	(2.742)
Financial Services	-2.743	-0.114	0.220	-2.628
	(2.958)	(1.624)	(0.514)	(3.587)
Services	0.525	0.614	-0.690*	-0.089
	(2.342)	(1.286)	(0.407)	(2.839)
Constant	-8.113***	-1.426	0.077	-4.752***
	(2.503)	(1.374)	(0.445)	(0.051)
Observations	846	846	846	1692
R-squared			0.64	1.00

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 3: Robustness Check (Use log of loans/GDP and log of loans for dependent variable)
The regression equation is estimated with fixed prefecture effects and fixed year effects, which are not reported to keep the table uncluttered.

	(1)	*(2)*	*(3)*	*(4)*
	ln(Gov't Loans/GDP)	ln(Private Loans/GDP)	ln(Gov't Loans)	ln(Private Loans)
LDP Supports	0.164*	0.113**	0.099	0.049
	(0.089)	(0.052)	(0.089)	(0.050)
LDP Vulnerability	0.216**	0.015	0.219**	0.018
	(0.098)	(0.058)	(0.098)	(0.055)
LDP Tenure	0.005***	-0.000	0.005***	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)
Banks per capita	-500.131**	220.759	-701.800***	19.090
	(239.302)	(139.953)	(237.674)	(132.990)
Share of Pub. Enterprises	0.325	-13.049***	-0.718	-14.092***
	(3.234)	(1.891)	(3.212)	(1.797)
Share of Small Enterprises	0.804	-3.147***	0.349	-3.602***
	(1.138)	(0.666)	(1.130)	(0.633)
GDP per capita	0.007	-0.016	0.121***	0.098***
	(0.019)	(0.011)	(0.019)	(0.010)
Unemployment Rate	2.360	-0.192	-0.812	-3.364***
	(1.577)	(0.922)	(1.566)	(0.876)
Consumer Price Index	0.022***	0.022***	0.018***	0.019***
	(0.005)	(0.003)	(0.005)	(0.003)
Young Pop. Share	-0.325	-0.967**	-0.530	-1.172***
	(0.686)	(0.401)	(0.681)	(0.381)
Old Pop. Share	-5.607***	-5.404***	-9.520***	-9.316***
	(1.336)	(0.781)	(1.327)	(0.742)
Population Density	-0.042***	0.027***	-0.015	0.054***
	(0.010)	(0.006)	(0.010)	(0.006)
Agriculture	-2.862	-2.239	-1.715	-1.091
	(2.461)	(1.439)	(2.444)	(1.368)
Mining	-7.510	-8.049***	-5.014	-5.553**
	(4.933)	(2.885)	(4.900)	(2.742)
Construction	0.918	1.504	3.553	4.138***
	(2.391)	(1.398)	(2.374)	(1.329)
Manufacturing	-0.297	-3.229***	3.478*	0.546
	(2.081)	(1.217)	(2.067)	(1.156)
Gas & Electronics	25.729***	-4.149	21.177***	-8.700**
	(7.307)	(4.274)	(7.258)	(4.061)
Transportation & Communication	-1.261	-5.603***	4.782*	0.440
	(2.503)	(1.464)	(2.486)	(1.391)
Retail & Wholesale	-1.790	-2.958**	1.133	-0.036
	(2.297)	(1.343)	(2.281)	(1.276)
Financial Services	-3.430	-0.802	-2.363	0.265
	(3.004)	(1.757)	(2.984)	(1.669)
Services	-0.035	0.053	1.957	2.045
	(2.378)	(1.391)	(2.362)	(1.322)
Constant	-7.316***	-0.628	6.728***	13.415***
	(2.542)	(1.487)	(2.524)	(1.413)
Observations	846	846	846	846

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Robustness Check (Add Electoral Vulnerability and Political Tenure of NonLDP incumbents)

The regression equation is estimated with fixed prefecture effects and fixed year effects, which are not reported to keep the table uncluttered. For column 4, in addition to fixed prefecture and year effects, dummy variables associated with all prefecture-year combinations are included. The data cover Japan's 47 prefectures from 1972 to 1992.

	Seemingly Unrelated Regression		*Ordinary Least Squares*	
Dependent Variable	Government Loans	Private Loans	Government Loan Share	Differences-in-Differences
	(1)	(2)	(3)	(4)
LDP Supports	0.170*	0.058	0.019	0.113
	(0.091)	(0.050)	(0.016)	(0.110)
LDP Vulnerability	0.336***	-0.063	0.065***	0.399***
	(0.125)	(0.068)	(0.022)	(0.151)
LDP Tenure	0.004***	-0.000	0.001***	0.004***
	(0.001)	(0.001)	(0.000)	(0.001)
NonLDP Vulnerability	-0.364**	0.126	-0.080***	-0.490***
	(0.156)	(0.085)	(0.027)	(0.189)
NonLDP Tenure	-0.002*	0.001	-0.000**	-0.002*
	(0.001)	(0.001)	(0.000)	(0.001)
Banks per capita	-671.209***	162.105	-157.403***	-833.315***
	(236.759)	(129.284)	(40.648)	(285.781)
Share of Pub. Enterprises	1.694	-13.543***	0.860	15.237***
	(3.233)	(1.765)	(0.555)	(3.902)
Share of Small Enterprises	1.232	-3.292***	0.340*	4.524***
	(1.137)	(0.621)	(0.195)	(1.372)
GDP per capita	0.132***	0.102***	0.004	0.030
	(0.019)	(0.010)	(0.003)	(0.022)
Unemployment Rate	-0.795	-2.341***	0.653**	1.545
	(1.593)	(0.870)	(0.273)	(1.922)
Consumer Price Index	0.018***	0.021***	0.001	-0.002
	(0.005)	(0.003)	(0.001)	(0.006)
Young Pop. Share	-0.740	-1.235***	0.126	0.495
	(0.677)	(0.370)	(0.116)	(0.818)
Old Pop. Share	-5.773***	-5.455***	0.402*	-0.318
	(1.328)	(0.725)	(0.228)	(1.603)
Population Density	-0.036***	0.029***	-0.006***	-0.065***
	(0.010)	(0.005)	(0.002)	(0.012)
Agriculture	-2.365	-2.089	-0.455	-0.276
	(2.428)	(1.326)	(0.417)	(2.931)
Mining	-5.151	-5.029*	-1.032	-0.121
	(4.904)	(2.678)	(0.842)	(5.919)
Construction	2.128	2.735**	-0.444	-0.608
	(2.378)	(1.299)	(0.408)	(2.871)
Manufacturing	1.707	-1.463	-0.029	3.169
	(2.083)	(1.138)	(0.358)	(2.515)
Gas & Electronics	21.005***	-7.337*	3.080**	28.343***
	(7.273)	(3.971)	(1.249)	(8.779)
Transportation & Communication	1.302	-3.115**	0.035	4.417
	(2.471)	(1.349)	(0.424)	(2.983)
Retail & Wholesale	-0.816	-2.015	-0.373	1.199
	(2.279)	(1.245)	(0.391)	(2.751)
Financial Services	-3.421	0.255	0.041	-3.676
	(2.983)	(1.629)	(0.512)	(3.601)
Services	0.521	0.447	-0.666	0.074
	(2.371)	(1.295)	(0.407)	(2.862)
Constant	-8.240***	-1.130	0.002	-4.756***
	(2.534)	(1.384)	(0.446)	(0.050)
Observations	839	839	839	1678
R-squared			0.65	1.00

Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Figure 1: Share of Government Loans in Japan (1975-1992)

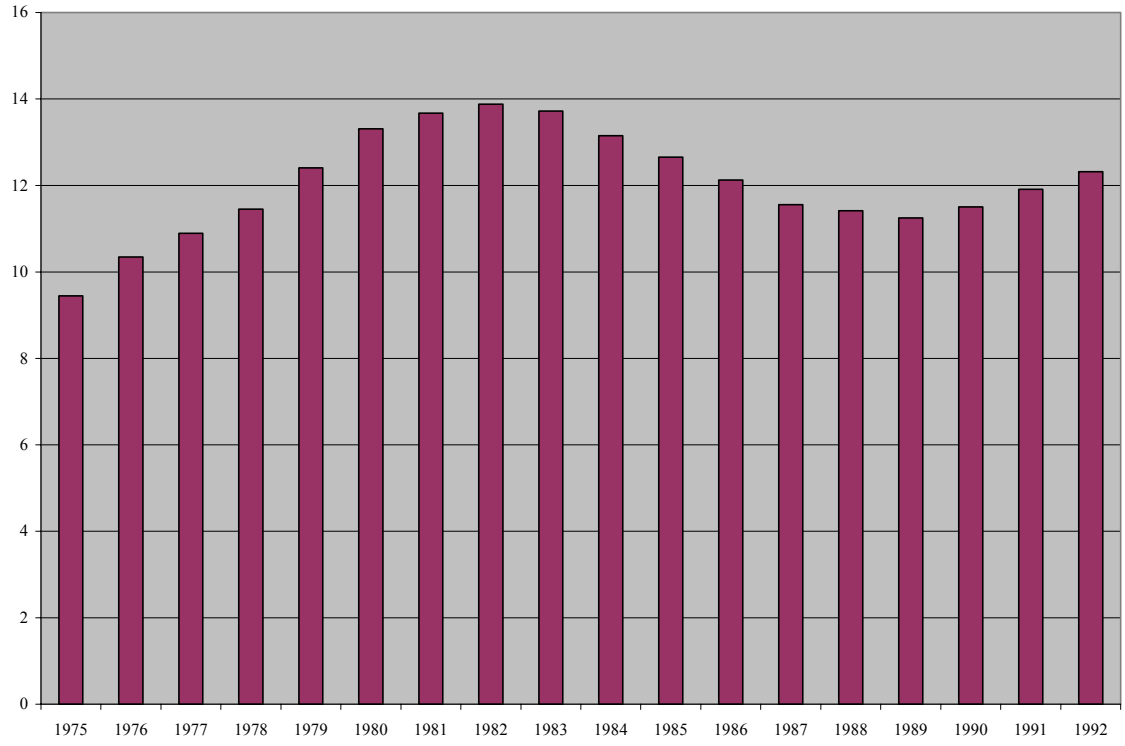

Figure 2: Composition of Government Loans