

**The role of Government and Politics in fostering  
financial systems**

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By

**Shahinoor Begum**

**Department of Economics, University of Leicester, Leicester,  
United Kingdom**

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## Abstract

State ownership in banking has received considerable coverage in the academic literature. However, there are a very few recognised case studies of state ownership of banks in developed countries. This thesis explores how bank ownership structure affects capital allocation efficiency within developed countries. This paper uses a new dataset comprises of 306 large private and public banks in 35 major developed and emerging markets in the 1990's to provide a bank-level empirical analysis on government ownership of banks. This study focuses on bank lending pattern during election years to determine political influence on government owned banks amongst both developed economies and emerging markets. By utilizing annual data on both fixed effect and dynamic panel estimation techniques, evidence suggests that during election years government owned banks increase their lending compared to private banks in developed economies which contradicts findings from previous study. Key macroeconomic variables have been used to check for robustness of the results.

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# Chapter 1

## Introduction

Across the globe, government ownership of banks is very common and government as regular intervention in their operations. In a much greater scale, government not only have control through regulation and enforcement but also gave direct ownership and control over finance. Therefore government ownership of banks and its significance is unavoidable when there is a discussion of financial systems. There are two broad views about government's participation in financial markets. Firstly the 'development' view which states that countries with underdeveloped economies where private firms do not have a major role, government's involvement is necessary. The lack of capital in Russia was such that no banking systems could conceivably succeed in gathering sufficient funds to finance large scale industrialization mainly due to the low standards of honesty in business and the general distrust of public was so great, that made it even harder for bank to lend even small capital funds. It was the government that generally fulfilled the function of industrial banks<sup>1</sup>. In such countries, the government could step in and, through its financial institutions, initiate both financial and economic development.

The other view is 'political' view of government participation in finance which challenges the development view. It emphasises not only the desire of

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<sup>1</sup> La Porta Et al (2002)

politicians is to control investment by firms, but also emphasizes political rather than social objectives. In this view, government take control of enterprises and banks in order to provide employment, subsidies, and other benefits to supporters, who return the favour in the form of votes, political contributions, and bribes. The kind of political control of banks is much greater in countries with underdeveloped financial systems because the government does not need to compete with the private sector as a source of funds.

On average, greater state ownership of banks tend to be associated with more poorly operating financial systems. In terms of state ownership, the empirical evidence suggests a negative relationship between the degree of state ownership of banks and financial development. Countries with greater state ownership of banks tend to have less developed banks and nonbanks<sup>2</sup>. There are a large number of empirical evidence on the magnitude of the government banks ownership and its negative effects but to date, there has been no direct, cross country empirical evidence of politically motivated actions by these banks. Nor is there any literature that directly links inefficiency of government owned enterprises compared to private firms in this regard, although political influences on government owned enterprises have been long considered as a major source of inefficiency<sup>3</sup>.

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<sup>2</sup> Shleifer, A. (1998)

<sup>3</sup> Dinc (2005)

A careful analysis of government owned banks need to explain why state banks exist in the first place. Is it purely driven by political motives, as proposed by the 'political view' of state banking? Empirical studies have provided credence to this possibility. To determine specific banking actions require two steps. First, one must obtain cross-country data on bank ownership and its actions. This enables one to establish the extent to which banks operate in different ownership and supervisory environments. Only by knowing the regulatory environment can one really know what a 'bank' is or what 'bank' does in different countries. This type of data could be used to assess the relationships between different environments and bank performance, actions or more generally financial performance. The problem of political influence will be greater at banks than at other government owned enterprises for various reasons such as the presence of asymmetric information between the lending banks and borrowers, cost of loan can be hidden until the maturity period, banking systems makes it easier to transfer resources across the economy.

Although many researchers have studied the effect of government ownership and banks, but to date, only one researcher, Dinc ( 2005 ) has attempted to establish whether banks are motivated by political concerns, during election in particular, which might tempt the politicians in power to use the government owned banks for political purpose. This study was conducted over 36 countries and on 360 banks, over 1994 – 2000. Results suggested that emerging markets government owned banks behave differently around election. Since this was the only cross country study on politics and banks, this paper has made an attempt to establish whether similar case exists in countries from

such as, developed economies. This study further contributes to the literature by examining how the presence of government in the banking sector affects or improves the capital allocation.

This paper has attempted to establish the action of government banks as opposed to privately owned banks in a country in a panel regression framework using fixed effect estimation. To carry out further analysis, and to allow for dynamic effects, a lagged dependent variable is included on the right hand side; which in turn has implications for the choice of estimator. The preferred estimator in these circumstances is dynamic Generalised Method of Moments (GMM) developed by Arellano and Bond (1991), which first difference the model to get rid of any country specific time-invariant variable<sup>4</sup>.

The paper is organised as follows. Chapter 2 expands on the discussion on the existing literature on bank ownership. Chapter 3 describes the various datasets that are used in the analysis; and describes the methodology adopted in the paper. Chapter 4 explores the link between bank ownership and the allocation of bank credit during election period, with particular attention paid to the government owned banks. Two types of regression analysis are presented in Chapter 4 together with discussion on robustness checks. Finally section 6 summarises and concludes.

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<sup>4</sup> Baltagi et al (2008)

## Chapter 2

### Literature Review

Government ownership of banks is still very common around the world as La Porta et al (2002) show. According to their findings on average over 40% of the equity of the 10 largest banks in a country is owned by the government. It is of great interest to understand how state-owned banks act differently from private banks. However La Porta et al (2002), Shleifer and Vishny (1994) and Caprio & Peria (2000) documented that government ownership of banks is associated with lower subsequent economic growth and politicians use government owned banks to further their own political goals. Furthermore, government ownership of banks is associated with a higher likelihood of banking crises and political influences on government-owned enterprises have long been considered as a major source of inefficiency. Below there are a presentation of both empirical and theoretical evidence documented by various researcher over the recent years on this specific topic, arguing both for and against state ownership of banks.

#### *2.2.1 State ownership of enterprises and bureaucratic corruption – how detrimental it is for economic and financial growth?*

There is little evidence supporting the more optimistic development view of government ownership of financial institutions, which argues that governments can play a major role in the financial and economic development

of countries in which economic institutions are not sufficiently developed - this view of government owned banks, which dates back to Gerschenkron (1962), emphasize the importance of governments in kick-starting financial and economic development. To this end, government ownership of banks can help address co-ordination problems that could prevent socially beneficial investments from being funded. Although the 'developmental' view may, at first sight, appear to apply to the early stages of economic development, but recent events make it relevant much more widely today. The failures in corporate governance and regulation, which became apparent after the global financial crisis of 2007–08, were present well before the crisis.

Moreover, Igan et al (2009) and Kane (2009) have stated that they are not too dissimilar to the institutional weaknesses found in the early stages of development, which provide scope for government banks to play a meaningful role in many analyses of the crisis. But the effects of bureaucratic corruption on economic and financial growth and development have been a topic of debate over the last forty years. On the one side, there are views by La Porta et al (2002), Barth et al (2002), Shleifer and Vishny (1994), that corruption is detrimental for investment and economic growth. Leff (1964) and Lui (1985) have found it plausible for corruption to be beneficial for economic growth at some levels. Up to this point, however, Mauro (1995), Hall and Jones (1999) have supported the existence of a linear and negative correlation between the level of corruption and the average rate of per-capita income growth. Within this debate, a number of theoretical papers have shifted attention towards specific elements that call into question the results of the typical empirical study. Ehrlich

and Lui (1999), for example, present a theoretical model in which the effects of corruption on growth and development depend upon the political regime that oversees the economy. They consider two types of political regimes: a "democratic" one where bureaucrats compete over central power and an "autocratic" one in which a powerful and rational leadership is capable of imposing its will on others. In their model, a relationship between corruption and growth is found in democratic regimes only.

Acemoglu and Verdier (2000) show a trade-off between government intervention and market failures. As corruption undermines purpose of intervention, governments will act to prevent it. Often this entails creating rents for bureaucrats, inducing the misallocation of resources, and increasing the size of bureaucracy. Acemoglu and Verdier (2000) admit that this model has a certain lack of relevance to developing countries because it suggests that corruption should be rare, they present a very interesting model that explains why bureaucracies may be large and why bureaucrats may earn rents in OECD countries.

Their model predicts that government intervention with partial corruption is likely to be optimal only when corruption is relatively rare and market failure it is trying to correct is relatively important. They have developed a framework to analyze the links between the two and found that when bureaucrats are corruptible, the optimal size of the government is greater than in the case where corruption is not possible. Yet they admit that these government failures are not proof that government intervention is socially harmful, instead it may be the

unavoidable price of dealing with market failures. Because government intervention designed to correct market failures requires bureaucrats to make decisions, there will be opportunities for these officials to be corrupt and engage in certain activities such as collect bribes, misdirect subsidies or reduce tax revenues. Hence government are require to develop a mechanism to prevent this corruption, either by incentive payments which will take the form of "efficiency wages" when bureaucrats are credit constrained. However they find that when monitoring bureaucrats becomes more difficult, they should receive higher wages, and government intervention should become relatively rare.

Acemoglu and Verdier (2000)'s general-equilibrium approach highlights key results that if government intervention continues to be required despite the increased difficulty of monitoring, the number of bureaucrats and their wages should increase very much as if the bureaucracy were expanding to seek additional rents. Furthermore they argue that in many instances, markets malfunction and government intervention is necessary. Corruption associated with such interventions may therefore be the lesser of two evils. Their examination on this assumption that there will be some heterogeneity among bureaucrats shows that for certain parameter values, it is optimal to have government intervention to deal with the market failure, but at the same time allow some of the government employees to be corrupt. Clearly, heterogeneity among bureaucrats is crucial for equilibrium corruption. Preventing all corruption is excessively costly, so intervention with some corruption is the best option. Therefore, when countries differ with respect to the fraction of "dishonest" bureaucrats, expect a positive relation between wages and corruption.

Corruption is often unavoidable because government distorts the allocation of resources, and corruption is the way that the market bypasses the regulations. Overall, in their story, they try to portray that the market, not the government, is the culprit. The government intervenes to redress market failures, and corruption emerges as an unpleasant side effect of necessary intervention and the costs and benefits of government intervention are not analysed together. Furthermore, if the possibility of bureaucrats getting caught is large enough or the bribe amount is sufficiently small, then corruption is easy to prevent, and the corruptibility of the bureaucrats is not important. This is because the wage used to attract agents to bureaucracy can also be used to discipline them.

In contrast, if the chance of getting caught is small or bribe amount is large, then corruption is tempting for government employees. To prevent corruption, bureaucrats have to be paid a rent. As long as the market failure in question is serious enough, it is worthwhile for the society to withdraw a large number of agents from the productive sector and pay them the required rent in order to correct the market failure. An immediate implication is therefore that the potential for dishonesty among bureaucrats does not necessarily make government intervention counterproductive. Instead, it introduces equilibrium rents for these employees as part of the constrained optimal allocation it is also exactly the pattern that emerges when bureaucrats become harder to control and government intervention continues to be socially beneficial. Indeed, it may even be that both theories are right: government ownership leads to corruption and inefficiency, but government also cures market failures.

Governments can collect information about individuals' types and enforce transfers across individuals. Markets (without significant government intervention) have to rely on transactions that are ex post beneficial for individuals. Consequently, governments achieve better risk sharing and consumption smoothing than markets. However, politicians in charge of collective decisions can use the centralized information and the enforcement power of government for their own benefits. This leads to political economy distortions and rents for politicians, making government-operated allocation mechanisms potentially worse than markets.

More broadly, Acemoglu et al (2008) show that government allocations can be more attractive than market allocations when there are effective controls on politicians or when self-enforcing risk-sharing arrangements in markets are not possible. Acemoglu et al (2008) provides a framework for comparing market allocations with government-regulated allocations. They have provided conditions under which it is ex ante beneficial for the society to tolerate the political economy distortions in exchange for the improvement in risk sharing. For example, more effective controls on politicians or higher discount factors of politicians make governments more attractive relative to markets. Moreover, when markets cannot engage in self-enforcing risk-sharing arrangements and income effects are limited, greater risk aversion and greater uncertainty make governments more attractive relative to markets. Nevertheless, they also show theoretically and numerically that the effect of risk aversion on the desirability of markets may be non-monotonic. In particular, when markets can support self-

enforcing risk-sharing arrangements, a high degree of risk aversion improves the extent of risk sharing in markets and makes governments less necessary. The same pattern may also arise because of “income effects” on labour supply. Consequently, the welfare gains of governments relative to markets may have an inverse U-shape as a function of the degree of risk aversion of individuals.

The theoretical results on the comparison of markets versus governments, firstly, show that irrespective of which model of the market they use, governments become more attractive relative to markets when there are more strict institutional controls on government behavior and the discount factor of the politician in power increases, because this makes the control of politicians more effective and thus reduces the costs of centralized mechanisms in terms of rents paid to politicians. Furthermore, when markets do not allow for self-enforcing risk-sharing arrangements and preferences are “quasi-linear” so that the extent of income effects are limited, greater risk aversion makes governments more attractive relative to markets. Greater risk aversion makes anonymous market allocations more costly and increases the value of government-provided insurance, so that the society is willing to pay the additional (political economy) costs involved in government intervention in order to receive consumption insurance. In contrast, when individuals are not very risk averse, market allocations are preferred to government intervention.

Using numerical examples, they show that with significant income effects the comparison of governments to markets leads to a non-monotonic

relationship, whereby markets are preferred at low and high levels of risk aversion, but not at intermediate levels. Intuitively, at low levels of risk aversion there is no need for government intervention, while at very high levels of risk aversion, self-insurance by varying the amount of labour supply becomes preferable to paying significant rents to politicians. Interestingly, they show that a similar result, with a non-monotonic pattern, also applies when we compare centralized mechanisms to markets with self-enforcing risk-sharing arrangements. They show that when the degree of risk aversion is low, there is limited need for insurance and thus markets are preferred to governments. When individuals are highly risk-averse, then self-enforcing risk sharing arrangements in markets become easier to sustain because exclusion from future risk sharing becomes very costly. Therefore, markets are also preferred to governments for sufficiently high levels of risk aversion. Only for intermediate levels of risk aversion government-operated mechanisms are preferred to self-enforcing markets.

These results also showed how the degree of the progressivity of taxes depends on the risk aversion of individuals, the extent of risk (inequality) faced by individuals, the intertemporal elasticity of substitution and discount factor of politicians, and the extent of institutional controls on politicians. Their analysis is a first step in the comparison of markets and governments but it remains limited in many aspects. First, their modeling of political economy is quite stylized and they used a classic Barro–Ferejohn model of electoral accountability as workhorse model of political economy. Second, paper has not addressed another classical side of the markets versus government’s debate of von

Hayek–Lange, which concerns the efficiency of different resource allocation mechanisms in terms of their communication requirements.

On a separate note, Altunbas (2001) uses a variety of approaches to model cost and profit inefficiencies as well as technical change for different ownership types in the German banking market. They find little evidence to suggest that privately owned banks are more efficient than their mutual and public-sector counterparts. They estimate separate cost and alternative profit frontiers for the three different ownership types: private commercial banks, public savings banks, and mutual cooperative banks. While all three bank ownership types benefit from widespread economies of scale, inefficiency measures indicate that public and mutual banks have slight cost and profit advantages over their private sector competitors. Inefficiency measures are estimated using the stochastic-frontier and distribution free approaches. The stochastic-frontier approach labels a bank as inefficient if its costs are higher or profits lower as those predicted for an efficient bank producing the same input/output combination and the difference cannot be explained by statistical noise. The cost or alternative profit frontiers obtained by estimating a cost or alternative profit function with a composite error term, the sum of a two-sided error representing random fluctuations in cost or profit and a one-sided positive error term representing inefficiency. The results indicate widespread economies across different size groups averaging around 9% using the stochastic frontier method and around 6% using the distribution-free approach. It was also noticed that the larger commercial banks had greater economies than their smaller counterparts suggesting a steepening cost frontier. This is particularly the case

for the stochastic cost frontier estimations where off-balance-sheet items are included as outputs.

The analysis indicates that all sectors appear to exhibit substantial economies of scale, there is a greater level of cost and profit inefficiency within the private sector, compared with the public and mutual sectors, and technical progress has contributed to cost reduction in each ownership type. There also appears to be less ambiguity in the various scale economy estimates for larger private commercial banks in that all four model specifications suggest increasing scale economies with size. The results also illustrate how different methodological approaches can yield conflicting results, and this is particularly noticeable when one compares the results for different size categories of banks. The scale economy results are found to be widespread across different ownership types and size categories. At the very least these findings indicate that the government-owned banks do not appear to have a major size related cost disadvantage compared to their private sector counterparts. The inefficiency measures also reveal that public savings banks and mutual cooperative banks are relatively more cost and profit efficient than their private sector competitors.

In summary, the bulk of the evidence supports the view that government bank owned bank do not necessarily the source of inefficiency and exert a negative influence on the banks. There is mixed evidence as to whether state owned banks improves or reduces access to credit in the banking system.

### *2.2.2 Government ownership of Banks: inefficiency in performance*

La Porta et al (2002) document that not only is government ownership of banks pervasive around the globe, they also distinguish two main views of government ownership, the "developmental" and the "political" view. Whereas the "developmental" view states that state-owned banks help to foster the local economy and stabilize the financial system, the "political" view sees state-owned banks rather as an instrument for politicians to fulfill their own political agenda. Several recent empirical papers study the role of political connections in finance and their evidence support the La Porta et al (2002) "political" view. In the study on the lending practices of Italian banks, Sapienza (2004) offers an intuitive explanation for the "political" view evidence given by La Porta et al. (2002), Italian state owned banks charge substantially lower interest rates than privately-run banks and lend substantially more in areas where the government has a large clientele. By introducing local electoral results into her analysis, she finds evidence in favour of the "political" view – which indicates that the stronger the political party in a particular area, the lower the average interest rate. The bulk of the evidence supports the political view of government ownership of banks.

One of the major papers in this area is Dinc (2005) and he analyses the impact of the electoral cycle on the lending behaviour of state-owned versus privately owned banks in a cross-country study, controlling for macroeconomic and bank specific effects he finds strong support for the hypothesis that state-owned banks grant additional loans before upcoming elections. A closer look at this effect, however, reveals that the finding holds only for emerging market

countries in the sample and remains insignificant for developed economies. Other recent studies provide more evidence for political influence on banks in developing countries. For example, Micco et al (2007) assess the relationship between bank ownership and bank performance and test whether politics play a role in this relationship. They find that state-owned banks operating in developing countries tend to have lower profitability than comparable private banks and that this lower profitability is due to lower net interest margins and higher overhead costs. They have focused on prices and quantity to separate supply shocks from demand shocks, to see if the increase in the quantity of loans observed during election years is accompanied by an increase in the price of loans. They concluded that the election year effect is accompanied by a decrease in prices, thus the increase in lending is driven by a supply shock. A main contribution of their research is evidence that this performance gap widens considerably during election years.

In a similar fashion Khwaja and Mian (2005) show that politically connected firms obtain more and riskier financing from state-owned banks in Pakistan, whereas they do not receive any such benefits from private banks. Using firm fixed effects and hence exploiting only variation within the same firm borrowing from both government and private banks, they find that government banks differentially favour politically connected firms by providing them greater access to credit. This access is even higher for politically connected firms that are bigger and have a higher inclination to default. They also find that the local political environment matters i.e., firms with stronger politicians on their boards, politician or political party obtain even greater preferential access to credit from

government banks. Also firms whose politicians run from constituencies with greater voter turnout receive lower preferential treatment, hinting at checks imposed by electoral participation and political accountability. The same politically connected firm also receives greater preferential treatment from government banks when either its politician or his political party wins. Either winning or being in the winning party increase preferential treatment, which suggest that their findings indeed reflect the exercise of political power. These results offer a particular mechanism of political rent seeking consistent with the institutional environment of Pakistan's banking and political system. Politically powerful firms obtain rents from government banks by exercising their political influence on bank employees. The more powerful and successful a politician is, the greater is his ability to influence government banks.

Similarly Faccio et al (2006) undertake a systematic examination of the link between political connections and corporate bailouts. They address questions such as - Do political connections lead to preferential corporate bailouts? Are bailouts of state owned banks more likely in countries that receive International Monetary Fund (IMF) or World Bank (WB) rescue packages? Is the financial performance of politically connected bailed-out firms different from that of non-connected bailed out firms? They have found evidence which established political connections to corporate bailouts, after controlling for other factors, politically connected (but publicly traded) firms are more likely to be bailed out than are their non-connected peers. Both connected and non-connected firms are more likely to be bailed out when their home government receives an IMF or WB assistance package than when it does not. Over the

period 1997 through 2002, 11.3% of these firms receive an aid package from their home government. In contrast, only 4.4% of their non-connected peers receive such support.

Additionally, when the IMF or WB provides aid, politically connected firms are disproportionately more likely to be bailed out by their home countries in comparison to their non-connected peers. They found over a 6-year period (1997-2002) that in the 35 countries they study, politically connected firms are substantially more likely to be bailed out when the IMF or the WB intervenes. This preferential access to government bailouts is consistent with allegations by IMF and WB critics, who complain that IMF and WB funds are frequently used to support companies belonging to the families and cronies of incumbent political leaders. Finally, among bailed-out firms, those that are politically connected exhibit significantly poorer operating performance than their non-connected peers at the time of the bailout and over the following 2 years. Furthermore, connected firms make greater use of debt financing than do their non-connected peers. The leverage ratios of bailed out non-connected firms contrast with those of non-bailed-out connected firms. Bailed out non-connected firms have higher leverage ratios than their non-bailed-out connected peers. Their results also suggest that lenders impose relatively weaker credit standards on loans to companies that are directly or indirectly connected to politicians. One possible explanation for different loan standards is that lenders are relatively confident that the government will intervene to rescue connected companies when financial difficulties arise. Lenders to connected firms appear to grant such firms greater leeway in that these firms have poorer operating

performance just prior to the bailout than non-connected firms that are bailed out. They also have significantly greater leverage after their bailouts than non-connected firms. While the evidence indicates that lenders are willing to lend more to connected borrowers because they can reasonably anticipate a future bailout of troubled loans to these borrowers, their data do not rule out the possibilities that lenders may also sometimes be pressured into making weak loans and/or that lenders may receive benefits for extending such loans.

Cornett et al (2009) also examines how government ownership and government involvement in a country's banking system affect bank performance. They have used cash flow and accounting based measures to examine performance differences between privately-owned and state-owned banks in 16 Far East countries from 1989 through 2004. They found that state-owned banks generally operated less profitably, held lower core capital, and had greater credit risk than privately-owned banks prior to 2001, and the performance differences are more significant in those countries with greater government involvement and political corruption in the banking system. They also found that from 1997 to 2000, the period after the Asian financial crisis, the deterioration in the cash flow returns, core capital, and credit quality of state-owned banks was significantly greater than that of privately-owned banks. Furthermore state-owned banks closed the gap with privately owned banks on cash flow returns, core capital, and nonperforming loans in the post-crisis period of 2001–2004. Moreover, they find that state-owned banks held significantly higher levels of government securities to total assets than privately-owned banks in countries where the government was heavily involved in the banking

system. Their result indicates that state-owned banks take a more active role in financing the government relative to privately-owned banks.

### *2.2.3 My contribution*

As described in this section, the literature on bank ownership focuses primarily on either state or private ownership of banks. Only handful of papers discussed above look at political influence on banks. However the papers are limited in scope. This essay expands on Dinc's study by using a more comprehensive dataset covering longer period and more banks to the analysis.

It is the purpose of my paper to contribute to this literature by providing further indications of concrete political influence. This paper focuses on the political view and tries to answer the question, whether government owned banks are prone to being influenced from the representatives of their government owner - the politicians - with regard to their political agenda.

This paper seeks to address the following questions that arise naturally from the government ownership of banks, given that politicians control the government:

1. Does government owned banks behave differently around elections in developed economies? Do they increase their lending in election years, in developed economies? Compare the actions of government owned banks with the actions of private banks around general elections;
2. Do macroeconomic shocks have a smaller effect on the lending behaviour of state owned banks compared with their effect on the lending behaviour of

private banks? Identify lobbying of private banks of Government to obtain government funding or viable investment projects or to shift certain regulations

The objectives of this paper are as follows:

- 1 To highlight the consequences of government intermediation in the economy as a whole
- 2 To emphasize the need for the development of regulation and policies in place to prevent corrupted bureaucrats to misallocate governmental resources in exchange of bribe

The above questions relate to the literature study of the political influences on government owned enterprises. By demonstrating a channel through which the negative or positive effects of government ownership take place, one would complement the findings in literature about the association between government ownership of banks and economic growth in that country. The focus of the research is banks, as they are mandated to foster the economy and support the government in fulfilling their political, social, cultural and economic agenda, which is in line with the "development" view. However, certain politically motivated actions have to be scrutinized carefully to fully understand whether these actions are benefiting the public or rather the respective politicians in their ambition to be re-elected "political" view.

To derive policy implications it is of great importance to understand whether all banks are influenced by politics alike or whether some are more prone to being influenced than others. To shed light on this question I conduct

further analyses to understand more of the circumstances facilitating political influence. Research question one relates to the papers stated in the empirical section, mainly Dinc (2005) that shows an increase in lending activities associated with elections. However, Dinc (2005) finds such evidence only for state-owned banks in transition economies. I argue that elections are major political events that could lead local politicians to implicitly or explicitly exert influence on state-owned banks to act in a certain way that is assumed to increase the probability of their re-election.

The main contribution of this paper to the literature of politically motivated influence on banks is twofold: firstly, research contributes to document political influence on banks for developed countries with a strong legal system. Secondly, my detailed proprietary data set allows me not only to show the impact on lending activities (as in Dinc (2005)) more carefully. Furthermore, a relatively large sample size over a longer time period of 12 years – provides more observations than other papers in this area and, thus, a more reliable base for such an analysis. "Political" view of state-ownership is mainly indirect and based on lower efficiencies of state-owned enterprises or a less favourable economic and financial development in countries with a higher share of state-owned enterprises. There is only a small and relatively recent strand of literature providing direct evidence for the link between political motivation and business behaviour of state-owned enterprises, specifically in banks.

With state ownership of banks, entrepreneurs may form coalitions to bribe politicians to obtain scarce loans. With private ownership of banks, interest groups may lobby to influence creditor rights to limit access to less established firms. Bribing implies a legal risk, while lobbying is legal, which implies that political and legal institutions have differential effects. This has been the drive behind shaping research question two. When public accountability and judicial independence are low, politicians prefer state ownership of banks. This is because direct control grants more bargaining power to politicians to extract rents from competing coalitions relative to lobbying of established firms. Beyond a certain threshold, it becomes politically optimal to privatize banks as bribing penalties become too high, and to shift to lobbying on regulation. Access to finance and entry increase with public accountability and private ownership of banks. Politicians affect capital allocation by choosing for state bank ownership, bank regulation and the degree of protection of creditor rights. Politicians trade off bribes and contributions against their political cost, measured by the loss in social welfare due to market capture. The higher is public accountability, the closer are politicians preferences aligned with social welfare, which increases with entry and competition. Politicians may either be bribed to allocate finance directly through state banks, or lobbied to shape bank regulation and investor protection. Politicians can extract greater bribes under direct control, as it induces more competition among lobbying groups and thus allows the political capture of more surpluses. The paper offers clear implications for state versus private ownership of banks in terms of legal and political institutions. State banks allow for greater extraction of rents by the politician and result in more constrained access to finance than private banks.

In an environment, government-operated mechanisms can provide better insurance, but only at the cost of introducing political economy distortions and rents for politicians. Acemoglu et al (2008) showed theoretically that in such an environment either markets or governments can lead to higher ex ante welfare. Also proved a number of results on various factors affecting the comparison of markets to governments, for example, higher discount factors for politicians and better institutional controls on politician behaviour tend to make governments better relative to markets. This raises the question - which institutions are more likely to be chosen given a certain distribution of political power? Government intervention and corruption generates the need for institutions and choice of electorate make. In contrast, I argue that with government frictions the policy implications are to be found in the political domain and are relatively easy to characterize which is not to say they are easy to implement but improve political institutions to improve the quality of candidates, improve incentives for incumbents so that inefficient rent-extracting policies are removed. The argument that I make in this paper is that when an imperfect market creates interest groups, then the political choices made by the electorate are affected. Therefore it is important to impose tighter control on politicians to achieve a greater credibility for government's intervention and state ownership of firm.

## Chapter 3

### Data and Methodology

#### *3.1 Data*

This paper is based on database of ownership structure of banks of 35 countries during 1992-2000. Initial attempt was to obtain data from Bankscope as the same data source was used by previous study. Since BankScope reports on-line only has current ownership information, historical shareholder information has been obtained from the DataStream for the period between 1992-2000. Bank scope is used in the ownership identification process of some banks; by selecting the banks those are owned at least 20%, directly or indirectly, by government. The bank ownership information is obtained from the section “Shareholder Information” in the DataStream database. When DataStream’s shareholder database does not have enough information to determine whether a bank is government-owned, privately owned or a mutual, I gather bank ownership information using additional sources such as the individual bank’s financial statements. Appendix A describes how the data is constructed.

Banks that experienced mergers or acquisitions are treated as follows. If DataStream continues to use the accounts of the surviving bank for the new entity after a merger or acquisition, the surviving bank remains in the sample. If DataStream starts a new account for the new entity, banks involved in that

merger exit the sample. As a result, I have ended up with an unbalanced data set consisting of 306 banks from 35 countries for a total of 2,752 bank year observations for which I have ratings, ownership and accounting data.

Countries included in the sample are augmented by members of the OECD and covered weekly by The Economist. Only countries that have free or partially free elections in the 1992-2000 sample periods are entered in the sample<sup>5</sup>. The dates of all the General, Parliamentary or Legislative elections during the sample period are recorded using the CIA World fact book. Macroeconomic variables are obtained from IMF.

The ten largest banks in each country are identified based on their book value of assets as of 1992. Central banks (which generally do not lend money to firms and are described as nonbanking institutions), investment banks, other specialized financial intermediaries (trust companies, home loan banks) or worldwide development banks such as the World Bank are excluded. In these sample ownership structures of banks was identified by using company reports as well as national and international sources<sup>6</sup>.

Table 1 report the government ownership of banks as of 1992 and confirms that government ownership of banks is very common. From table 1, it can be seen that 52% of all banks in the world (162 out of 306) are at least 80%

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<sup>5</sup> Dinc ( 2005 )

<sup>6</sup> La Porta et al (1999)

owned privately. However the proportion of government owned banks is higher in emerging markets, 53% ( 85 out of 159 ) and only 40% ( 59 out of 147 ) of banks are government owned at a 20% level or higher in developed economies. Government owned banks include banks owned by local governments as well as by the central government.

Countries such as Canada, Denmark, Japan, U.K. and the U.S. not been included in the regression as per Dinc (2005) paper as they have no government owned banks among the ten largest banks<sup>7</sup>. As this paper's methodology essentially compares the behaviour of government owned banks to private banks in the same country, hence those countries were excluded from the regression. Only countries with at least one bank of each ownership type are included in the main regression analysis. The resulting sample contains 35 countries with 18 emerging markets and 17 developed economies; and a total of 306 banks. Although the sample does not have the same number of banks as previous research, but it does have greater number of observations due to the additional two years in the sample. The biggest reduction in number of banks is simply due to missing data for the years before a bank joins the sample. The lag structure used in the regression analysis needs balance sheet data for two previous years. To prevent any possible selection bias, banks were included based on the magnitude of their assets in 1992, whether or not DataStream has balance sheet data for their fiscal year 1990 and 1991.

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<sup>7</sup> Dinc (2005)

### *3.2 Methodology*

In order to assess the political influence on government owned banks, events such as elections in a country, is used. Election is an event that induces politicians to use government owned bank to achieve their goals. In countries where head of government is elected by elections, could motivate politicians to take advantage of government owned bank to borrow money to finance commercially unviable government projects or state owned enterprises and for re-election. Experience across developing countries has pointed increased lending in election years. Although it does not rule out the fact that politicians will not use government owned banks at any other times but the intensity of politicians using government owned banks during election time is much higher as elections genuinely determines the head of government. Institutional differences across countries have been controlled for so that politically motivated actions of government owned banks can be easily identified relative to the private banks. These institutional differences mainly controlled for at the firm level rather than country level analysis as it is virtually impossible to control for many institutional differences across countries.<sup>8</sup>

This paper uses the ‘difference in difference’ methodology to compare the change in the actions of government owned banks with those private banks over time in a panel regression framework. Given a model and data in which fixed effects estimation would be appropriate; a Hausman test is conducted to see whether a random effects estimation would be almost as good, since the

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<sup>8</sup> Dinc (2005)

paper lacked in details of estimation used. Based on the test which showed a significant p-value and given  $H=32$  and  $\text{prob}>\chi^2$  was not greater than 0.05, hence opted for fixed effect estimation.

For the first econometric analysis, fixed effect IV estimator is used, using instrumental variables. Second analysis conducted using dynamic panel estimation conducted following Arellano and Bond (Panel GMM estimator) which captured some interesting results.

## Chapter 4

### Empirical findings

#### *4.1 Summary statistics*

Table 2 presents sample statistics for selected balance sheet items and reveals some interesting differences between private banks and government owned banks, although differences are not necessarily uniform between emerging markets and developed economies.

In terms of the book value of assets, private banks are about twice as large as government owned banks in emerging markets, but they are not very large in developed economies and for the whole sample. The ratio of loans to assets results shows positive and statistically significant coefficient across the whole sample, as well as, for both emerging markets and development economies. It is statistically significant for developed economies and emerging markets, at 5% level. Although the annual increase in loans relative to bank size is slightly higher in private banks in emerging banks and under the whole sample. Similar pattern is observed for ratio of deposits to assets, which is lower in government owned banks, with the difference being statistically significant at the 1% level. Annual net operating income to assets ratio is higher in government owned banks in both emerging and developed economies; it is about 27%-30%, while it is between 17%-20% in private banks. Capital ratio is positive and significant across the whole sample.

## 4.2 Estimation results

The regression analysis compares changes in the actions of government owned banks around election with changes in the actions of private banks during the same period, controlling for country level macroeconomic factors as well as bank specific factors. Towards this aim, the analyses use panel regressions on unbalanced sample, covering the years 1994-2000.

For estimation I used Stata software. The dependent variable is *change in Loans* from year on year. However, before estimation we should decide what estimation technique to employ. One must be sure that there exists fixed effect or random or pooled OLS. In order to choose between random or fixed effect estimator. Hausman test has been employed. The essential hypothesis here is that the coefficients estimated by the efficient random effects estimator are the same as the ones estimated by the consistent fixed effects estimator. If the  $p$  value is greater than 0.05 then it is better to use random effects. The null hypothesis is that fixed and random effect estimation gives the same coefficients. In my case Prob>chi2 is less than .05 then it is better to use fixed effects.

The regression structure is given below:

$$y_{it} = \beta x_{it} + \gamma w_{it-1} + election_{it} + election_{it} * govtbank_{it} + \theta_t + \alpha_i + \mu_{it}$$

The error structure is given below:

$$E[u_{it} | x_{i1}, \dots, x_{iT}] = 0$$

And

$$E[u_{it} | w_{i1}, \dots, w_{iT-1}] = 0$$

Dependent variable:  $y_{it}$

Dataset of government owned and private banks have been utilized to show the change in loans normalized by the previous year's assets. It has been normalized as  $(\text{Loans}(t) - \text{Loans}(t-1)) / \text{Total Assets}(t-1)$ . One of the factors that may complicate the analysis is that loans in a given year will affect the bank specific factors of future years; therefore it is taken into account. The dependent variable, *change in loans*, which takes into account of loan given in previous year but had a maturity longer than a year.

Explanatory variable:  $\beta' x_{it}$

It is the vectors of strictly exogenous variables such as macroeconomic variables and they are:

- GDP per capita
- GDP growth
- Inflation rate
- Budget surplus
- Exchange rate change

$W_{it-1}$

It is the vector of sequentially exogenous variables such as bank size and bank capital ratio. Bank size is measured by total assets of a bank divided by the country's GDP. Capital ratio is defined as the equity divided by total assets of a bank in that particular year.

Dummy variables created for the following variables:

- Govt Bank – dummy variables that is equal to one if a bank is owned by the government, directly or indirectly, at least at 20% level.
- Election – dummy variables that is equal to one if an election that determines the head of government takes place in that country that year.
- Pre-election – dummy variables that is equal to one if, elections that determines the head of government, which take place in that country immediately following year
- Post-election – dummy variable that is equal to one if, elections that determines the head of government, which take place in that country immediately previous year

Time dummies:  $\theta_t$

Time invariance has been controlled for by creating time dummies for each time period. In order to include the dummies in fixed effects regression, test for time dummies has been conducted, which assumes the null hypothesis that the time dummies are not jointly significant. Null hypothesis that the time dummies are not jointly significant (p-value smaller than 10%) is rejected, and as a consequence regression includes time effects.

The error structure makes explicit the correlation between the sequential exogenous variables with future error terms, as required. All the regressions include bank fixed effects, which help control for time-independent difference between government owned banks and private banks as well as country specific time-independent factors. Furthermore, it control for institutional differences across countries as well. Due to sequentially exogenous variables, the usual within estimator, which relies on subtracting the means of variables to eliminate fixed effect, it gives inconsistent estimates. The fixed effects are eliminated by first differencing but then instrumental variables used by using the past values of sequentially exogenous variables and the model is estimated by Two stage least square method. Rather than using changes in lagged  $w_{it}$  as instruments, lagged levels of  $w_{it}$  is used as it is no less efficient.<sup>9</sup> Standard errors are corrected for clustering at both country and bank level to prevent possible bias in the standard errors.<sup>10</sup>

Main regression analysis conducted on the unbalanced sample, firstly on whole sample, followed by emerging markets and developed economies. The results are reported in table 3 which also include the results from Dinc (2005) s paper for comparison purpose. *Capital ratio* and *Totalassets/GDP* both are, as of  $t-1$  and instrumented with their lagged values as of  $t-2$ . All regression includes the explanatory variable *Totalassets/GDP*, *Capital ratio* and *Ln (GDP*

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<sup>9</sup> See Wooldridge ( 2002, pp 299-307) for mathematical expressions and textbook treatment

<sup>10</sup> Dinc (2005) followed the procedure used in Bertrand

*per capita*). *Total assets/GDP* has negative but statistically significant coefficient for the whole sample, as well as both emerging markets and developed economies. *Capital ratio* has a positive coefficient and statistically significant for the whole sample. This suggests that well capitalized banks increase their lending more. The second regression includes *Election*, a dummy variable that equals to one in election years in the country where the bank is located. It is negative for developed economies and statistically insignificant in the second regression, which implies that there seem to be no economy-wide shocks related to elections with a common effect to all banks. In contrast, the coefficient is positive for emerging markets and significant at 1% level. This finding will strengthen the interpretation of any election effect due to the government ownership of banks.

The third regression adds an interaction term *Election\*GovtBank* and although this interaction term is positive and statistically insignificant for the whole sample, but when it is split amongst emerging markets and developed economies, the result shows that this finding is significant for developed economies. It suggests that in developed economies, government owned banks increase their lending during election years. This term *Election* is positive for both emerging markets and developed economies, but when interacted with key variable *GovtBank* to capture the lending pattern, it became insignificant coefficient for emerging markets.

Since this regression analysis indicates a different result compared to what the previous researcher has found, therefore in the next section, attempt

has been made to undertake further analysis to check for validity and consistency of the results established in this section. The rest of the paper focuses on the GMM dynamic panel estimation, using Arellano and Bond (1991) estimator, in addition of two extra years in the dataset. Test carried out for robustness of the finding that government owned banks in these countries increase their lending in election years relative to private banks.

### 4.3 Dynamic model

This section provides a general presentation of dynamic model which consider the individual-specific effects, with the complication that the regressor include the dependent variable lagged once. It reports the results of regression structure below, on the data sets described above.

$$y_{it} = \lambda y_{it-1} + \beta x_{it} + \gamma w_{it-1} + election_{it} + election_{it} * govtbank_{it} + \theta_t + \alpha_i + \mu_{it}$$

$\mu$  is an error term that contains country and time specific fixed effects:

$$u_t = \mu_i + \varepsilon_t + v_{it}$$

Where the  $v_{it}$  are assumed to be independent and identically distributed with mean zero and variance  $\sigma^2_v$ .

The inclusion of the lagged dependent variable in the empirical model implies that there is correlation between the regressor and the error term since

lagged variable change in loans depends on  $u_{it-1}$  which is a function of the  $u_i$ .

A Sargan Test is performed to test the over-identification restrictions.

Again the regressions are first performed on the whole sample, followed by developed economies and emerging markets. The results are reported in table 4. The lagged dependent variable, *change in loans*, for both whole sample and developed economies are positive and statistically significant, respectively at 10% and 5% level. Although coefficients are positive for emerging markets but it is statistically insignificant. *Totalassets/GDP* is positive and statistically significant, suggesting that the bank size is positively correlated with the economic development. The term *Election* is negative in the second regression but when the third regression adds an interaction term *GovtBank* dummy, and the term has a positive and statistically significant coefficient for whole sample and developed economies. The results coincide with the results established using fixed effect estimator.

The main purpose of dynamic panel estimation was to capture any dynamic effects by adding the lagged dependent variable in the right hand side. It can be said that the findings from both fixed effect estimation and dynamic panel estimation, analyses suggest that government owned banks in developed economies increase their lending during election years. Adding extra two years in the dynamic panel estimation, validated that previous results are robust. Robustness of these results is carried out in the next section using Arellano and Bond estimation.

#### 4.4 Robustness checks

This section reports the results of a variety of robustness checks of the finding of increased lending in election year by government owned banks in developed economies. As no such effects are detected in emerging markets, the test in this section focuses only on developed economies. Key macroeconomic variables have been used to control for robustness, given this paper is on political macroeconomics<sup>11</sup>. Hence it is important to study the robustness of the results of potential macroeconomic changes during election years. These variables are interacted with both *GovtBank* and *Election* dummy variable.

Table 5, Panel A, reports the results of regressions when macroeconomic variables are included. Lagged dependent variable shows positive coefficient at 10% or better. Although the term *election* shows negative coefficient, but remain statistically significant. On interaction with *GovtBank*, it became positive and significant at 5% or better. It indicates that the increased lending by the government owned banks in election years are robust to control macroeconomic factors. *Ln (GDP per capita)* and *GDP growth* both have positive and statistically significant coefficients, which is consistent with banks increasing their lending with economic development and growth.

As macroeconomic variables may have a different effect in election years, hence the regressions are repeated with the macroeconomic variables,

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<sup>11</sup> I have used the same macroeconomics variables were used by Dinc ( 2005 )

interacted with the *election* dummy variable. The results are reported in Panel B. Again, the lagged dependent variable remains positive and statistically significant at 10% or better. Although the term *Election* shows a negative coefficient but on interaction with *GovtBank* dummy becomes positive and statistically significant at 5 % level, which indicates that increased lending by government owned banks is not just a reflection of macroeconomic variables having different effects in election years. Variable *GDP growth* and *GDP growth\*Election* suggests positive economic growth in the economy during election years. *Exchange rate change\*Election* has a positive and statistically significant coefficient, which suggests that government owned banks increase their lending as the local currency appreciates. However inflation and budget surplus does not have a statistically significant coefficient, in fact, *Budget surplus\*Election* remain insignificant. It suggests that during election years, banks do not increase their lending, while government has a deficit to finance.

Macroeconomic variables interacted with *GovtBank* dummy variables, results are reported in Panel C. This is to see if election year lending increases are just a reflection of different response by government banks to common macroeconomic shocks that are correlated with the electoral cycle, therefore the macroeconomic variables are regressed with the *GovtBank* dummy variable. The lagged dependent variable, *change in loans* has a positive coefficient and it is statistically significant at 5% level. The term *Election\*GovtBank* is still positive and statistically significant at the 10% level, while the interactions of macroeconomic variables with the *GovtBank* dummy variable have insignificant coefficient. Therefore it can be said that election year lending increases are not

just a reflection of a different response by government banks of macroeconomic factors but instead it represents a substantial increase in bank lending.

#### *4.5 Non-Election Years*

Main regressions are repeated for the year immediately before and after the elections on 147 banks of developed economies. The results are reported in table 6. The main variables in the regressions are *Pre-Election* and *Post-Election*, which are dummy variables that equal to one in the year preceding and following the elections, respectively. Both Pre-Election and Post-Election variable, alone, show positive coefficient and statistically significant; but on interaction with *GovtBank* dummy, both variables are insignificant. This clearly implies that the election year increase in lending in government owned banks is not a reflection of a change that takes place in non-election years. If banks were to defer lending until following election, in that case, results would indicate significant increase in lending pre or post election but there is no evidence of increase in lending.

## **Chapter 5**

### **Conclusion**

This paper provides empirical evidence that political influence exists in government-owned banks in developed economies. A political event such as election is used to observe the effects on bank lending across both government owned and private banks. By comparing both types of banks, previous study has found that government owned banks increase their lending in election years more than private banks in major emerging markets.

Results achieved in the paper are robust to controlling for macroeconomic and bank specific factors. It implied that political motivations influence the actions of government owned banks and it simply cannot be attributed to any other objectives both types of banks may have.

In this paper, best effort has been made to present a comprehensive and detailed analysis on bank lending during election year, specifically focusing on government owned banks in developing economies and emerging markets. Previous research has found that government ownership of banks is very common and this proportion is even higher in emerging markets. However this paper provides empirical evidence which indicates substantial variation among the results. It suggests that government owned banks increase their lending during election years, in developed economies as opposed to emerging market;

as established by previous study. This finding is strong and statistically significant, and robust to various specifications. To check the validity and consistency of the result, two estimation methods have been used, however, results inclined towards developed economies. Furthermore, GMM dynamic panel estimation technique seem to be the best estimator as it includes the lagged dependent variable. In contrast, in the previous study, the lagged dependent variable was omitted, therefore Dinc (2005)'s results may be biased.

This analysis failed to detect election year increase in lending in emerging markets, as found by Dinc (2005), although the Election variable appeared significant; but on interaction with key variable *GovtBank* dummy, it became insignificant. Due to the differences in sample used, some caution is required<sup>12</sup>. The findings in this paper are robust to a range of alternative measures and estimation methods, and suggest that government owned banks in emerging markets also increase their lending cannot be ruled out. The findings in this paper are robust to a range of alternative measures and estimation methods, and suggest that government owned banks and elections are statistically significant. This paper have implications for further studies on financial system, specifically political influence on banking system, taken into account of political environment those banks operate in. However the evidence about the political influences on banks indicates that monetary and fiscal restrictions placed on the local politicians are unlikely to be sufficient.

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<sup>12</sup> Had no access to Dinc (2005)s dataset

In addition, in line with prior findings, government banks continue to perform poorly relative to their peers. These results apply to both emerging and developed markets. Finally, increases in government ownership of banks do appear to improve the asset quality, profitability, and competitiveness of the banking sector. These results could be driven by the fact that governments usually take over problem banks, and by doing so, they may artificially improve the asset quality of the banking sector (e.g. by removing a large percentage of problem loans from the banking sector).

This paper does not intend to identify the reasons for existence of government owned banks or to assess the benefits and costs of state owned banks. Although it has been documented, there is a large number of government ownership banks around the globe, despite the pervasiveness of government owned banks, there is a little evidence of effects of government ownership on bank lending and economic growth. In fact political influence on government owned enterprises have been perceived as a negative effect on the economy.<sup>13</sup>

In banking, there is a relatively high degree of government interference and ownership around the world. We have seen that the quality of legal systems and institutions are inversely related to government ownership in banking, but at the same time, these factors appear to be positively related to the efficiency of government ownership in banking. The main motivation for government

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<sup>13</sup> La Porta et al (2002)

intervention in the banking market is the considerable effect of this sector on the rest of the economy. However, government owned banks seem to underperform relative to private banks, although this is not true if we look exclusively at observations from developed countries, which are characterised by a better organised government, stronger institutions, and more elaborate legislation. The effect of government ownership can be tied to its rationale. The objectives of government intervention depend on the benevolence of the state, and its ability to recognise, and control for, certain pitfalls. We have seen that the internal organisation of government has some implications regarding the incentives of government officials and entities, and that the division of labour within government and the application of rules may alleviate some of the problems which are predicted to arise in situations with low-powered incentives and multiple tasks. Moreover, in exercising ownership, the government need to recognise the importance of good corporate governance, and apply such standards to its own administration of ownership.

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## Appendix A

### Construction of ownership variables

Ownership Variables	Description	Source
Govt Bank	Dummy variable that is equal to one if a bank is owned by the government, directly or indirectly, at least at the 20% level. Data are collected for each bank and for year between 1992 and 2000.	Bankscope Online Datastream
Pvt Bank	Dummy variable that is equal to one if a bank is owned by the government, directly or indirectly, at a level less than 20% that year. Data are collected for each bank and for each year between 1994 and 2000.	Bankscope Online Datastream

## Appendix B

### Bank balance sheet variables

Balance sheet variables	Data Description	Source
Total Assets	Total assets of a bank in that particular year	Bankscope online, DataStream
Total Loans	Total loans of a bank in that particular year	Bankscope online, DataStream
Change in Loans	Change in the total loans normalised by total assets from the previous year, i.e. $(\text{Loans (t)} - \text{Loans (t-1)}) / \text{Total assets (t-1)}$	Bankscope online, DataStream
Total deposits	Total deposits of a bank in that particular year	Bankscope online, DataStream
Operating income	Net operating income of a bank in that particular year	Bankscope online, DataStream
Capital ratio	Equity divided by total assets of a bank in that particular year	Bankscope online, Datastream

## Appendix C

### Election variables

Election variables	Data Description	Source
Election	Dummy variables that is equal to one if elections that determine the head of government take place in that country that year	CIA World Fact book
Pre-Election	Dummy variable that is equal to one if, elections that determine the head of government, which take place in that country in the immediately following year	CIA World Fact book
Post-Election	Dummy variable that is equal to one if, elections that determine the head of government, which take place in that country in the immediately previous year	CIA World Fact book

## Appendix D

### Macroeconomic Variable

Macroeconomic variable	Data Description	
GDP per capita	Gross Domestic Product (GDP) per capita in U.S. dollars	IMF International financial statistics, World Bank
GDP Growth	Gross Domestic Product (GDP) change (in percentage points). Inflation Rate = $\ln(1 + \text{Rate of Wholesale price increase})$	IMF International financial statistics, World Bank
Budget Surplus	Central government receipts minus government outlays as a percentage of GDP (in percentage points). It is negative when the government runs a deficit	IMF International financial statistics, World Bank
Exchange rate change	Change in the exchange rate of the domestic currency against the U.S. dollar from the previous	IMF International financial statistics, World Bank

	year. It is negative if the currency depreciates against the dollar that year	
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**Table 1****Bank ownership around the world in 1992**

The table gives the ownership structure of the largest banks by assets as of 1992. Private denote banks with government ownership of less than 20%. GovtBank denotes the banks that are owned, directly or indirectly, by the government at least at a 20% level.

	Private	GovtBank	Total
<b>Emerging Markets</b>			
Argentina	4	4	8
Brazil	5	4	9
Chile	7	1	8
Colombia	5	5	10
Czech Republic	5	5	10
Hungary	2	8	10
Israel	1	6	7
South Korea	6	4	10
Malaysia	5	3	8
Mexico	1	4	5
Peru	3	2	5
Philippines	8	2	10
Poland	1	8	9
Singapore	8	2	10
South Africa	7	3	10
Thailand	5	5	10
Turkey	5	5	10
Venezuela	7	3	10
Total	74	85	159
<b>Developed Economies</b>			
Australia	7	3	10
Austria	4	6	10
Belgium	8	2	10
Finland	5	3	8
France	6	4	10
Germany	6	4	10
Greece	5	5	10
Iceland	1	0	1
Ireland	8	1	9
Italy	3	5	8
Luxembourg	4	0	4
Netherlands	7	1	8
Norway	5	5	10
Portugal	3	7	10
Spain	5	5	10
Sweden	6	3	9
Switzerland	5	5	10
Total	88	59	147
Total ( whole sample )	162	144	306

**Table 2****Sample Statistics**

*Private denotes the banks with government ownership less than 20%. Government denotes the banks that are owned, directly or indirectly, by the government t least at the 20% level. Change in Loans (t) is Loans (t-1) and normalised by Assets (t-1). Capital ratio is equity divided by total assets. All variables are book values. \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% levels, respectively, in a two-sided test of the mean with the government-owned banks and private banks.*

		Emerging Markets			Developed Economies			World		
		Pvt	Gvt	All	Pvt	Gvt	All	Pvt	Gvt	All
Assets (in \$bn)	Mean	4.23***	2.37***	3.36***	1.42***	1.11***	1.30***	9.37***	6.26***	8.02
	SD	8.52	3.85	6.82	3.28	1.28	2.67	2.47	9.99	1.97
	N	765	666	1431	792	531	1323	1557	1197	2754
Loans/Assets	Mean	0.41	0.33	0.37	0.53	0.53	0.53	0.47	0.42	0.45
	SD	0.28	0.29	0.29	0.27	0.26	0.26	0.28	0.29	0.29
	N	765	666	1431	792	531	531	1557	1197	2754
Change in Loans	Mean	0.06	0.04	0.05	0.08	0.08	0.08	0.07	0.06	0.07
	SD	0.18	0.17	0.18	0.22	0.14	0.19	0.20	0.16	0.19
	N	765	666	1431	792	531	1323	1557	1197	2754
Deposits/Assets	Mean	0.37	0.36	0.36	0.37	0.34	0.36	0.37	0.35	0.36
	SD	0.290	0.30	0.29	0.26	0.25	0.26	0.27	0.28	0.28
	N	765	666	1431	792	531	1323	1557	1197	2754
Operating I/Assets	Mean	0.20	0.27	0.36	0.17	0.30	0.22	0.18	0.28	0.22
	SD	0.27	0.29	0.29	0.26	0.31	0.29	0.27	0.30	0.29
	N	765	666	1431	792	531	1323	1557	1197	2754
Capital ratio	Mean	0.21	0.26	0.23	0.16	0.25	0.19	0.19	0.25	0.21
	SD	0.21	0.23	0.22	0.19	0.23	0.21	0.20	0.23	0.22
	N	765	666	1431	792	531	1323	1557	1197	2754

**Table 3: A**

**Elections and Bank lending**

The dependent variable is the increase in the total loans that year normalized by total assets from the previous year, i.e.,  $(\text{Loans}(t) - \text{Loans}(t-1)) / \text{Total Assets}(t-1)$ . Total Assets/GDP is the bank's total assets normalized by that country's GDP. Capital ratio is total equity divided by total assets; both variables are as of year  $t-1$  and instrumented with their lagged values ( $t-2$ ). Election is a dummy variable that equals one in the year elections. GovtBank is a dummy variable that equals one if the bank is owned, directly or indirectly, by the government at least at the 20% level that year. Heteroskedasticity-robust standard errors, corrected for clustering at the bank levels, are in parentheses \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% level. Results from Dinc (2005) are in italic, presented here for comparison purpose.

	Emerging markets						Developed Economies					
TA/GDP	-2.402** (0.256)	<b>0.001*</b> <b>(0.001)</b>	-2.39** (0.261)	<b>0.001</b> <b>(0.001)</b>	-2.394 (0.259)	<b>0.001*</b> <b>(0.001)</b>	-1.327** (0.209)	<b>-0.081</b> <b>(1.259)</b>	-1.36** (0.177)	<b>-0.037</b> <b>(1.153)</b>	-1.35** (0.183)	<b>-0.036</b> <b>(1.148)</b>
Capital ratio	0.091* (0.022)	<b>0.100</b> <b>(0.399)</b>	0.092** (0.020)	<b>0.089</b> <b>(0.399)</b>	0.093* (0.020)	<b>0.112</b> <b>(0.387)</b>	0.116** (0.045)	<b>6.385***</b> <b>(0.527)</b>	0.114* (0.044)	<b>6.416***</b> <b>(0.490)</b>	0.114* (0.044)	<b>6.417***</b> <b>(0.491)</b>
Election			0.009* (0.002)	<b>-0.009</b> <b>(0.014)</b>	0.007** (0.000)	<b>-0.031</b> <b>(0.015)</b>			-0.039 (0.009)	<b>-0.015</b> <b>(0.011)</b>	-0.05*** (0.001)	<b>-0.013</b> <b>(0.015)</b>
Election*GovtBank					0.005 (0.003)	<b>0.055</b> <b>(0.023)</b>					0.027** (0.000)	<b>-0.005</b> <b>(0.023)</b>
Ln(GDP/capita)	-0.009 (0.035)	<b>0.337***</b> <b>(0.106)</b>	-0.009 (0.035)	<b>0.346***</b> <b>(0.100)</b>	-0.010 (0.035)	<b>0.342***</b> <b>(0.100)</b>	0.073*** (0.007)	<b>0.303</b> <b>(0.191)</b>	0.08** (0.008)	<b>0.332*</b> <b>(0.180)</b>	0.08** (0.008)	<b>0.333*</b> <b>(0.182)</b>
Bank Fx effects	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>
Year dummies	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>
Number of Banks	159	<b>189</b>	159	<b>189</b>	159	<b>189</b>	147	<b>160</b>	147	<b>160</b>	147	<b>160</b>
No. of bank yrs	1431	<b>1067</b>	1431	<b>1067</b>	1431	<b>1067</b>	1321	<b>991</b>	1321	<b>991</b>	1321	<b>991</b>
p-value of F-test	0.00	<b>0.00</b>	0.00	<b>0.00</b>	0.00	<b>0.00</b>	0.00	<b>0.00</b>	0.00	<b>0.00</b>	0.00	<b>0.00</b>

**Table 3: B**

**Elections and Bank lending**

The dependent variable is the increase in the total loans that year normalized by total assets from the previous year, i.e.,  $(\text{Loans}(t) - \text{Loans}(t-1))/\text{Total Assets}(t-1)$ . Total Assets/GDP is the bank's total assets normalized by that country's GDP. Capital ratio is total equity divided by total assets; both variables are as of year  $t-1$  and instrumented with their lagged values ( $t-2$ ). Election is a dummy variable that equals one in the year elections. GovtBank is a dummy variable that equals one if the bank is owned, directly or indirectly, by the government at least at the 20% level that year. Heteroskedasticity-robust standard errors, corrected for clustering at the bank levels, are in parentheses \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% level. Results from Dinc (2005) are in italic, presented here for comparison purpose.

	<u>World</u>					
		Dinc '05		Dinc '05		Dinc '05
TA/GDP	-2.041** (0.009)	<b>0.000</b> <b>(0.001)</b>	-2.048** (0.314)	<b>-0.001</b> <b>(0.001)</b>	-2.049** (0.316)	<b>0.000</b> <b>(0.001)</b>
Capital ratio	0.102*** (0.009)	<b>2.696*</b> <b>(1.524)</b>	0.101*** (0.007)	<b>2.688*</b> <b>(1.528)</b>	0.102*** (0.007)	<b>2.693*</b> <b>(1.525)</b>
Election			-0.007 (0.015)	<b>-0.009</b> <b>(0.008)</b>	-0.009 (0.017)	<b>-0.020</b> <b>(0.010)</b>
Election*GovtBank					0.006 (0.004)	<b>0.027*</b> <b>(0.015)</b>
Ln(GDP/capita)	0.004 (0.016)	<b>0.244**</b> <b>(0.094)</b>	0.005 (0.017)	<b>0.254***</b> <b>(0.092)</b>	0.005 (0.017)	<b>0.251***</b> <b>(0.092)</b>
Bank Fx effectes	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>
Year dummies	Yes	<b>Yes</b>	Yes	<b>Yes</b>	Yes	<b>Yes</b>
Number of Banks	306	<b>349</b>	306	<b>349</b>	306	<b>349</b>
No. of bank yrs	2752	<b>2058</b>	2752	<b>2058</b>	2752	<b>2058</b>
p-value of F-test	0.00	<b>0.00</b>	0.00	<b>0.00</b>	0.00	<b>0.00</b>

**Table 4**

**Elections and Bank lending**

*The dependent variable is the increase in the total loans that year normalized by total assets from the previous year, i.e., (Lons (t) – Loans (t-1))/Total assets (t-1). Total assets/GDP is the bank's total assets normalized by the country's GDP. Election is a dummy variable that equals one in the year of elections. GovtBank is a dummy variable that equals one if the bank is owned, directly or indirectly, by the government at least at the 20% level that year. Robust standard errors are in parentheses \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% level.*

	Emerging markets			Developed Economies			World		
<b>Change in Loans</b>	0.011 (0.033)	0.005 (0.033)	0.006 (0.033)	0.110** (0.028)	0.115** (0.028)	0.120** (0.028)	0.055 (0.027)	0.054* (0.027)	0.055* (0.027)
Total assets/GDP	10.526** (1.357)	10.622** (1.366)	10.536** (1.367)	12.357** (3.346)	12.257** (3.327)	12.280* (3.331)	8.765* (2.684)	8.825* (2.680)	8.831* (2.683)
Capital ratio	0.026 (0.090)	0.028 (0.091)	0.019 (0.090)	-0.117 (0.146)	-0.147 (0.149)	-0.164 (0.149)	0.057 (0.097)	0.060 (0.097)	0.045 (0.098)
Election		-0.021 (0.015)	-0.042* (0.020)		-0.077*** (0.018)	-0.125** (0.029)		-0.031* (0.015)	-0.060* (0.020)
Election*GovtBank			0.055 (0.029)			0.084* (0.040)			0.067* (0.029)
Ln (GDP per capita )	0.054* (0.017)	0.055* (0.017)	0.052* (0.017)	0.229** (0.057)	0.234*** (0.057)	0.222*** (0.057)	0.065* (0.020)	0.065* (0.021)	0.063* (0.020)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Banks	159	159	159	147	147	147	306	306	306
Number of bank yrs.	1272	1272	1272	1176	1176	1176	2448	2448	2448

**Table 5: Panel A**

**Elections and bank lending in Developed Economies: controlling for macroeconomic factors**

The dependent variable is the increase in the total loans that year normalized by total assets from the previous year, i.e.,  $(\text{Loans}(t) - \text{Loans}(t-1))/\text{Total assets}(t-1)$ . Total assets/GDP is the bank's total assets normalized by the country's GDP. Capital ratio is total equity divided by total assets; both variables are as of year t-1 and instrumented with their lagged values (t-2). Election is a dummy variable that equals one in the year of elections. GovtBank is a dummy variable that equals one if the bank is owned, directly or indirectly, by the government at least at the 20% level that year. Budget surplus is the government budget surplus as a percentage of GDP and takes a negative value when the government runs a deficit. Exchange rate change is the change in the exchange rate of the domestic currency against the U.S. dollar from the previous year; it is negative if the currency depreciates against the dollar that year. Robust standard errors are in parentheses \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% level.

<b>Panel A: Macroeconomic variables</b>					
Change in Loans ( t-1 )	0.12*** (0.03)	0.10** (0.03)	0.10* (0.03)	0.10** (0.03)	0.10** (0.03)
Total assets/GDP	12.28** (3.33)	13.11* (3.44)	11.23* (3.21)	11.64** (3.24)	13.10** (3.41)
Capital ratio	-0.16 (0.15)	-0.25 (0.14)	-0.18 (0.14)	-0.19 (0.13)	-0.24 (0.14)
Election	-0.13*** (0.03)	-0.12** (0.03)	-0.11** (0.03)	-0.11** (0.03)	-0.12** (0.03)
Election*GovtBank	0.08** (0.04)	0.10* (0.04)	0.09* (0.04)	0.09* (0.04)	0.10* (0.04)
Ln ( GDP per capita )	0.22*** (0.06)				
GDP growth		0.00* (0.00)			
Budget Surplus			0.00 (0.00)		
Inflation rate				0.01 (0.01)	
Exchange rate change					-0.03 (0.14)
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of Banks	147	147	147	147	147
Number of Bank years	1176	1176	1176	1176	1176

**Table 5 Panel B: Macroeconomic variables interacted with the Election dummy**

Change in Loans ( t-1 )	0.125** (0.027)	0.098* (0.026)	0.101* (0.029)	0.098* (0.030)	0.099** (0.029)
Total assets/GDP	12.308* (3.318)	14.597* (3.506)	11.734* (3.206)	11.894* (3.266)	12.926** (3.299)
Capital ratio	-0.156 (0.147)	-0.284 (0.146)	-0.203 (0.146)	-0.190 (0.133)	-0.207 (0.141)
Election	-0.965* (0.468)	-0.152** (0.035)	-0.148* (0.054)	-0.108** (0.030)	-0.107** (0.030)
Election*GovtBank	0.100** (0.041)	0.100** (0.039)	0.090** (0.039)	0.093** (0.039)	0.095* (0.039)
Ln ( GDP per capita )	0.198** (0.053)				
Ln ( GDP per capita ) * Election	0.086 (0.048)				
GDP growth		0.001* (0.000)			
GDP growth* Election		0.004* (0.001)			
Budget Surplus			0.000 (0.001)		
Budget surplus * Election			-0.002 (0.003)		
Inflation rate				0.004 (0.008)	
Inflation rate * Election				0.012 (0.016)	
Exchange rate change					0.046 (0.150)
Exchange rate change * Election					0.609** (0.188)
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of Banks	147	147	147	147	147
Number of Bank years	1176	1176	1176	1176	1176

**Table 5 Panel C: Macroeconomic variables interacted with government ownership**

Change in Loans ( t-1 )	0.114**	0.100**	0.105**	0.096*	0.096*
	(0.028)	(0.026)	(0.029)	(0.029)	(0.029)
Total assets/GDP	11.996*	13.279**	10.786*	11.683**	12.240*
	(3.257)	(3.474)	(3.136)	(3.225)	(3.284)
Capital ratio	-0.063	-0.246	-0.227	-0.182	-0.202
	(0.161)	(0.141)	(0.146)	(0.133)	(0.141)
Election	-	-0.118**	-0.105**	-0.107**	-0.109**
	0.107**	(0.03)	(0.03)	(0.03)	(0.03)
Election*GovtBank	0.058	0.098*	0.088*	0.091*	0.096*
	(0.043)	(0.04)	(0.04)	(0.038)	(0.039)
Ln ( GDP per capita )	0.221**				
	(0.058)				
Ln ( GDP per capita ) * GvtBank	-0.014*				
	(0.006)				
GDP growth		0.001*			
		(0.00)			
GDP growth* GvtBank		0.00			
		(0.002)			
Budget Surplus			-0.001		
			(0.001)		
Budget surplus * GvtBank			0.004		
			(0.002)		
Inflation rate				0.003	
				(0.01)	
Inflation rate * GvtBank				0.008	
				(0.015)	
Exchange rate change					0.247
					(0.151)
Exchange rate change * GvtBank					0.096
					(0.039)
Year dummies	Yes	Yes	Yes	Yes	Yes
Number of Banks	147	147	147	147	147
<b>Number of Bank years</b>	1176	1176	1176	1176	1176

**Table 6****Bank lending in Developed economies: before and after election**

The dependent variable is the increase in the total loans that year normalized by total assets from the previous year, i.e.,  $(\text{Loans } (t) - \text{Loans } (t-1))/\text{Total assets } (t-1)$ . Total assets/GDP is the bank's total assets normalized by the country's GDP. Capital ratio is total equity divided by total assets. Election is a dummy variable that equals one in the year of elections. GovtBank is a dummy variable that equals one if the bank is owned, directly or indirectly, by the government at least at the 20% level that year. Robust standard errors are in parentheses \*, \*\*, and \*\*\* denote statistical significance at the 10%, 5% and 1% level.

	Pre-Election		Post-Election	
Change in Loans (t-1)	0.117** (0.029)	0.116** (0.028)	0.124** (0.028)	0.122** (0.028)
Total Assets/GDP	12.434* (3.152)	12.582** (3.072)	10.793** (3.456)	11.123** (3.498)
Capital ratio	-0.150 (0.150)	-0.145 (0.152)	-0.124 (0.145)	-0.114 (0.148)
Pre-Election	0.071 (0.021)	0.09 (0.039)		
Pre-Election*GovtBank		-0.038** (0.041)		
Post-election			0.056* (0.022)	0.062 (0.025)
Post-election*GovtBank				0.005 (0.041)
Ln ( GDP per capita )	0.231*** (0.057)	0.232*** (0.057)	0.198*** (0.056)	0.201** (0.056)
Year dummies	Yes	Yes	Yes	Yes
Number of Banks	147	147	147	147
Number of bank years	1176	1176	1176	1176