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Alejandro Micco, Ugo Panizza and Monica Yañez

UNIVERSITA' DEL PIEMONTE ORIENTALE "*Amedeo Avogadro*" ALESSANDRIA

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Alejandro Micco
Ugo Panizza
Monica Yañez*

Abstract

This paper uses a new dataset to reassess the relationship between bank ownership and bank performance, providing separate estimations for developing and industrial countries. It finds that state-owned banks located in developing countries tend to have lower profitability and higher costs than their private counterparts, and that the opposite is true for foreign-owned banks. The paper finds no strong correlation between ownership and performance for banks located in industrial countries. Next, in order to test whether the differential in performance between public and private banks is driven by political considerations, the paper checks whether this differential widens during election years; it finds strong support for this hypothesis.

JEL Codes: G21; D21
Keywords: Banking; Privatization; Ownership; Performance

* Alejandro Micco is with the Central Bank of Chile (amicco@bcentral.cl), Ugo Panizza (corresponding author) is with the Research Department of the Inter-American Development Bank (Ugop@iadb.org), and Monica Yañez is a graduate student in the Department of Agricultural and Consumer Economics at the University of Illinois, Urbana-Champaign (myanezp2@uiuc.edu). This paper is a greatly revised version of a paper that was previously circulated under the title "Bank Ownership and Performance." The project was initiated when all authors were at the Research Department of the Inter-American Development Bank. We would like to thank two anonymous referees for very detailed reports that greatly helped us in revising and refocusing the paper, Arturo Galindo and Eduardo Levy-Yeyati for useful comments and suggestions, Cecilia Calderón, Erwin Hansen, Hermes Martínez, Danielken Molina, and Cristóbal Ruiz-Tagle for help in coding the data, and John Smith for editing the paper. The views expressed in this paper are the authors' and do not necessarily reflect those of the Inter-American Development Bank or the Central Bank of Chile. The usual caveats apply.

1. Introduction

The purpose of this paper is to use a new dataset to reassess the relationship between bank ownership and bank performance and to test whether politics plays a role in this relationship. We find that state-owned banks operating in developing countries tend to have lower profitability, lower margins, and higher overhead costs than comparable private banks. When we focus on industrial countries, we find a much weaker relationship between performance and ownership. Three papers that are closely related to ours are Demirgüç-Kunt and Huizinga (2000), Mian (2003), and Caprio et al. (2004). There are, however, important differences between each of these papers and ours. Demirgüç-Kunt and Huizinga (2000) use data for an earlier period and focus on foreign ownership. Mian (2003) compares performance across ownership groups without controlling for bank characteristics. Caprio et al. (2004) look at the correlation between ownership structure and performance but, rather than focusing on profitability, interest margin and costs, focus on bank valuation.[1]

After establishing that state-owned banks located in developing countries are less profitable and have lower margins than their private counterparts, we test whether these differences are due to the fact that state-owned banks have a development mandate or whether politics plays a role. To do so, we check whether the differential between the performance of public and private banks tends to increase during election years and, as predicted by the political view of public banks, find strong evidence in this direction. This is the most interesting and novel result of our paper, and it is a useful addition to the literature on the relationship between politics and banking activities. In fact, while previous work focused on type and quantity of bank lending (Khwaja and Mian, 2005, Dinç, 2005, and Sapienza, 2004), this is the first paper that focuses on the relationship between politics and bank performance.

Dinç (2005), who finds that bank lending increases substantially during election years, is the paper most closely related to ours. A useful way to compare our paper with Dinç's (2005) is to consider that he focuses on quantities, while we examine both prices and quantities.[2] Focusing on prices allows us to separate supply shocks from demand shocks. This is important because, if the increase in the quantity of loans observed during election years is accompanied by an increase in the price of loans, then we

[1] See Berger et al. (2005) for a survey. There are several other papers that study the relationship between ownership and performance, but they tend to focus on a smaller subset of countries. Studies of the relative performance of foreign versus domestic banks in industrial countries include DeYoung and Nolle (1996), Berger et al. (2000), and Vander Vennet (1996). Studies focusing on developing countries include Bonin et al. (2005) and Clarke et al. (2000). There is also a large literature on the performance effects of bank privatization (Megginson, 2003, and Clarke, Cull, and Shirley, 2003, provide excellent surveys of this literature).

[2] Unfortunately, we do not have data on the interest rate charged on bank loans but, as return on assets and interest margins are good proxies of mark-up, if one assumes that the cost of funding does not increase during elections, our measures of bank performance are positively correlated with the interest rate (i.e., the price) charged by banks.

should conclude that Dinç's (2005) results are driven by demand shocks and not political lending. If we instead find that the election year effect is accompanied by a decrease in prices, we can conclude that the increase in lending is indeed driven by a supply shock, a fact consistent with political lending. Our results support the latter interpretation.

A third strand of literature related to our work focuses on insider/related lending (Laeven, 2001, and La Porta et al., 2003). While this literature has mostly focused on the behavior of private banks, it is possible that during election years state-owned banks increase their lending to state-owned enterprises that share directors or that have managers and directors belonging to the same political groups as the banks' managers and directors. Khwaja and Mian (2005), for instance, show that Pakistani state-owned banks lend more to firms with politically connected directors.

2. The Data

Our main source of data is the Fitch-IBCA Bankscope (BSC) dataset that provides bank-level annual financial information for 179 countries around the world (the version of the dataset used in this paper covers the period 1995-2002). While BSC includes a wealth of information on bank characteristics and bank performance, BSC's target audience consists of financial analysts interested in looking at a small sub-sample of banks and/or countries, not researchers interested in conducting statistical analyses covering all the countries and banks included in the dataset. Hence, we had to carefully edit the data before being able to use them for our statistical analysis, and we believe that this is an important contribution of our paper.

As our paper focuses on commercial banks, we start by dropping Central Banks, Investment Banks, Securities Houses, Multilateral Government Banks, Non-banking Credit Institutions, and Specialized Government Financial Institutions, which reduces our sample from 143,564 observations to 120,809 observations. Next, we eliminate duplicated information, mostly consolidated and aggregated statements (this is not an easy task; see the Appendix for details) and reduce our sample to 71,951 observations. Finally, we use different sources to code ownership and track ownership history for banks that changed ownership status (the Appendix provides a list of sources). As coding ownership was a particularly time-consuming and difficult endeavor that required looking at one bank at a time (in some cases it was necessary to consult several sources in order to code and track the ownership history of a single bank), the cost of coding all banks included in the dataset would have been extremely high. Hence, we decided to adopt some cut-off points (described in the Appendix) under which a bank would not be coded. After eliminating from the dataset all the banks that we were not able to code, as well as banks

with missing information for total assets, we are left with a total of 49,804 observations, corresponding to a number of banks that ranges between 5,464 (in 1995) and 6,677 (in 2002).

In the dataset, we classify as public those banks in which public sector ownership is above 50 percent and classify as foreign those banks in which foreigners own more than 50 percent of shares.[3] However, in computing country-level foreign and public ownership, we follow La Porta et al. (2002) and use the actual fraction of shares owned by each shareholder. While confidentiality agreements prevent us from making the bank-level dataset public, we are making public a dataset in which we report characteristics and performance of public, private, and foreign banks aggregated by country and year.[4]

It is important to recognize that there are at least two possible problems with our data. The first pertains to the nature of BSC. As BSC is maintained for commercial reasons, one of its main limitations is the almost total omission of rural and very small banks. Furthermore, Fitch-IBCA only collects data from banks that publish independent financial reports. Hence, it may omit some branches and subsidiaries of foreign banks (Bhattacharya, 2003). The second problem relates to the reliability of our coding strategy. Although we were extremely careful in coding ownership, we had to code several thousand banks and, therefore, we cannot be absolutely certain that there are no mistakes in the dataset. We address these issues by checking whether our data are consistent with other datasets that were assembled using different sources and methodologies. We find that the correlation between our measure of public ownership and those assembled by La Porta et al. (2002) and Barth et al. (2001) is large (the correlation coefficients range between 0.81 and 0.86) and statistically significant at the one percent confidence level. When we focus on foreign ownership and bank concentration (here we compare our data with those of Barth et al., 2001), we find that the correlation coefficients are 0.71 and 0.94, respectively (they are both statistically significant at the one percent confidence level). These results are reassuring and indicate that our data are highly correlated with the findings of previous studies.

Table 1 reports the number of observations and median values for our main variables of interest (the table includes all banks for which we have information on ownership and total assets) divided by country groups (we use the classification of the World Bank's World Development Indicators) and ownership type. The industrial countries have the largest number of banks in the sample (6,550 banks and 35,800 observations, corresponding to 72 percent of the total). In this group of countries, domestic private banks control 70 percent of bank assets, public banks control 10 percent of bank assets, and foreign banks

[3] Throughout the paper, we will refer to private banks as banks that are owned by the private sector (they can be either privately owned or publicly listed) and to public banks as banks that are owned by the public sector. Hence, the adjectives public and private do not refer to whether banks are publicly listed.
[4] The dataset is available at http://www.iadb.org/res/files/data_ mpy.xls

control the remaining 20 percent. Our data also indicate that in industrial countries domestic private banks have the highest level of profitability (measured as return on assets) and the highest interest margin. When we focus on developing countries, we find that domestic private banks control 48 percent of bank assets, and public and foreign banks 26 percent each. In this sub-sample of countries, we find that foreign banks have the highest level of profitability and interest margin. There are, however, important differences within the group of developing countries. Latin America is the developing region with the largest number of banks, followed by Eastern Europe, East Asia, Sub-Saharan Africa, the Middle East, South Asia, and the Caribbean. Public ownership of banks is prevalent in Asian countries and Eastern Europe and much lower in Sub-Saharan Africa and the Caribbean. Foreign ownership of banks is particularly important in Sub-Saharan Africa, but also prevalent in the Caribbean, Eastern Europe, Central Asia, and Latin America. Foreign banks are particularly profitable (compared to domestic banks in the same region) in the Caribbean and Sub-Saharan Africa, and public banks have very low profitability (compared to private banks in the same region) in South Asia, East Asia, and Latin America.

3. Regression Results

To describe the correlation between bank ownership and bank performance and test whether politics plays a role in driving this correlation, we proceed as follows: we start by estimating a simple model where we compare how ownership affects bank performance. Next, we test whether politics affects the relationship between ownership and performance by interacting an election dummy with the public ownership dummy. Finally, we check whether our results are robust to changes in the econometric specification, weighting strategy, and sample of banks included in the statistical analysis.

3.1 Ownership and Performance

To study the correlation between ownership and performance, we use bank-level data and standard indicators of bank profitability and efficiency such as return on assets (ROA), interest margins, overhead costs, and employment to estimate the following equation:

$$PERF_{i,j,t} = \eta_{j,t} + \alpha PUB_{i,j,t} + \beta FOR_{i,j,t} + X_{i,j,t}\gamma' + \varepsilon_{i,j,t} \qquad (1)$$

where $PERF_{i,j,t}$ is a measure of performance for bank i in country j at time t, $\eta_{j,t}$ is a country-year fixed effect that controls for all factors that are country-specific (level of development, geography, institutions, etc.) and country-year specific (macroeconomic shocks, political instability, changes in

regulations, etc.), $PUB_{i,j,t}$ is a dummy variable that takes value one if in year t bank i is state owned (we define ownership using the 50 percent threshold), $FOR_{i,j,t}$ is a dummy variable that takes value one if in year t bank i is foreign-owned (private domestically owned is the excluded dummy), and $X_{i,j,t}$ is a matrix of bank-specific controls which includes two variables aimed at capturing the effect of the main sector of activity of the bank and two variables aimed at capturing the effect of bank size.[5]

Although our specification is similar to the one adopted by Demirgüç-Kunt and Huizinga (2000), there is a fundamental difference between our empirical strategy and theirs. As we are not interested in how regulatory and macroeconomic shocks affect bank performance, we control for all these shocks by including country-year fixed effects. The main advantage of our strategy is that we fully control for aggregate shocks that affect all type of banks in the same way, thereby eliminating most problems related to omitted macroeconomic variables and errors in the measurement of these variables.

As some countries have more observations than others, if we do not use weights, our results would be driven by the countries for which we have a large number of observations. Claessens et al. (2001) address this issue by weighting each observation by $1/N_{j,t}$ (where $N_{j,t}$ is the number of observations in country j, year t). We follow a similar strategy but weight each observation by the bank's share of total assets in the country. This weighting scheme has the same properties as $1/N_{j,t}$ (it gives each country-year the same weight in the regression), but it better reflects the behavior of the banking industry and, if measurement errors decrease with bank size, produces more precise estimates (Levy-Yeyati and Micco, 2003).

While we started with approximately 50,000 observations (Table 1), our regressions include a smaller number of observations (about 19,000). There are several reasons for this difference. First, while Table 1 uses all observations for which we have information on ownership and total assets, the regressions also require information on four other controls (interest and non-interest income, demand and total deposits) and BSC has several missing observations for these controls. Furthermore, in order to work with similar samples, we drop all observations for which we do not have data for ROA, Interest Margins, and Overhead Costs (we do not restrict the sample to banks that have information on total employment

[5] To control for the sector of activity, we use non-interest income as a share of total assets (NONINT) and demand deposits as a share of total deposits (DDEP). The rationale for using these two variables is that NONINT tends to be higher for banks that derive most of their income from commissions, and DDEP tends to be higher in retail commercial banks. These variables are thus likely to differentiate retail commercial banks from institutions that operate in the wholesale market or derive most of their income from investment banking activities. To control for size, we follow Berger et al. (2005) and use both total size measured as the lag of total assets (measured in logs, LTA) and relative size measured as lag of the share of bank *i*'s total assets over total banking assets in country *j,* year *t* (SHTA). The first variable controls for economy of scale and the second controls for market power.

because we would lose too many observations.). Second, we eliminate countries with a small number of banks by dropping all country-years for which we do not have at least five banks and, to make sure that our results are not driven by the transition from one ownership structure to another, we drop all the bank-year observations in which there is a change in ownership. Third, we exclude outliers by dropping the top and bottom 2 percent of observations for each dependent variable. Finally, as we use lags, we lose one year of observations.

Table 2 reports our baseline results. As industrial and developing countries tend to have different coefficients (Micco et al., 2005, present a formal test), we split the sample and report separate results for these two groups of countries. The first two columns focus on profitability. We start by briefly describing the set of control variables. Non-interest income is not correlated with ROA in the sub-sample of developing countries but is positively correlated with this variable in the sub-sample of industrial countries; the opposite is true for the ratio of demand deposits to total deposits. These findings suggest that retail banks tend to be more profitable in developing countries and that banks that have high non-interest income (possibly wholesale/investment banks) tend to be more profitable in industrial countries. We find no correlation between absolute bank size (LTA) and ROA for banks located in developing countries, but a negative and statistically significant correlation for banks located in industrial countries; these results are robust to dropping the asset share variable. The coefficients of relative size (SHTA) are always positive but never statistically significant.

Focusing on the ownership variables, the first column shows that state-owned banks located in developing countries tend to have returns on assets that are much lower than comparable domestic privately owned banks. The effect is quantitatively important, indicating that the average state-owned bank has a return on assets that is 0.9 percentage points lower than that of the average private domestic bank. Considering that the average value of ROA in developing countries is 1.7 percent, this is a sizable difference. When we look at industrial countries, we find no statistically significant difference between the ROA of public banks and that of similar private banks (at -0.048 the coefficient is also extremely small). Hence, the difference between profitability of public and private banks, which seemed very large in Table 1, becomes much smaller when we recognize that public and private banks are of very different sizes and tend to operate in different segments of the banking market.

These results show that it is not necessarily true that state-owned banks are less profitable than private banks and are in line with Altunbas et al. (2001) who find that, in the case of Germany, there is no evidence that privately owned banks are more efficient than public and mutual banks. At the same time, our results do support the idea that in developing countries public banks are less profitable than private

banks. La Porta et al. (2002) find that in developing countries the presence of public banks has a detrimental effect on growth, but that in industrial countries there is no correlation between state ownership and growth. They argue that this result may be due to the fact that high-income countries are better equipped to deal with the distortions that arise from government ownership of banks. It would be possible to apply the same line of reasoning and claim that our results are driven by the fact that governance issues are less serious in industrial countries. An alternative interpretation is that in industrial countries public banks have ceased to play a development role and merely mimic the behavior of private banks, whereas in developing countries public banks still play a development role and their low profitability is due to the fact that, rather than maximizing profits, they respond to a social mandate.

Our second result is that foreign banks located in developing countries tend to be more profitable than private domestic banks. Again, the difference is both statistically and economically important. The average foreign bank located in a developing country has a ROA that is 0.37 percentage points higher than that of a comparable private domestic bank (about one quarter of the average ROA in developing countries). In industrial countries, we find no significant difference between domestic and foreign banks. These results confirm the previous findings that foreign banks tend to be more profitable than domestic banks in developing countries (Demirgüç-Kunt and Huizinga, 2000, and Bonin et al., 2005) but that this is not the case in industrial countries (Vander Vennet, 1996).[6]

Columns 3 and 4 of Table 2 focus on net interest margin (to increase the readability of the coefficients, we are expressing the dependent variable as a percent). In developing countries there is a negative and significant correlation between net interest margin and non-interest income, but in industrial countries the opposite is true; the correlation is positive and significant. The share of demand deposits is always positively correlated with net interest margin, absolute size is negatively correlated with net interest margin, and relative size is positively correlated with net interest margin. These results may reflect increasing returns and the presence of some market power. With respect to ownership, we find that public banks in developing countries have slightly lower margins (the coefficient is statistically significant but not very large) and that there is no significant difference between the margins of public and private banks located in industrial countries. When we focus on foreign banks located in developing countries, we find that their net margins are never significantly different from those of domestic private banks. In industrial countries, instead, we find that margins of foreign banks are lower than those of domestic private banks. However, while the coefficient is statistically significant, the difference is fairly small.

[6] Berger et al. (2000) and DeYoung and Nolle (1996) find evidence that foreign banks operating in industrial countries are less efficient than domestically owned banks.

In columns 5 and 6 we focus on bank efficiency, measured as overhead costs over total assets. Non-interest income and the share of demand deposits (a proxy for retail bank activity) are associated with higher overhead costs. Absolute size is negatively correlated with overhead costs in both developing and industrial countries. In developing countries relative size is negatively correlated with overhead costs but, in industrial countries, we find no significant correlation between these two variables. Focusing on ownership, we find that state-owned banks tend to have higher overhead costs than similar domestic private banks. The coefficients imply that public banks have overhead costs that are nearly 10 percent higher than the group average (which is about 2 percent in industrial countries and 4 percent in developing countries). The second row shows that foreign banks have much lower overhead costs than domestic private banks (about 15 percent less than the group average in developing countries and 10 percent less than the group average in industrial countries).

The last two columns focus on another measure of efficiency: total employment measured as a share of total assets (the dependent variable is the log of the ratio between employment and total assets, employment is measured in units and assets in million dollars). In developing countries public banks tend to have a higher employment ratio than domestic private banks (the difference is about 20 percent of the average employment ratio for developing countries) and foreign banks tend to have lower employment (the difference is about 35 percent of the group average).[7] In industrial countries, we find no significant correlation between bank ownership and employment.

3.2 The Role of Politics

The previous section showed that state-owned banks located in developing countries tend to be less profitable and have lower margins and higher overhead costs than domestic privately-owned banks with similar characteristics. There are two possible explanations for this finding. Those who claim that state-owned banks have a social or development role argue that these public banks are less profitable because they address market imperfections that would leave socially profitable but financially unprofitable investments underfinanced (Gerschenkron, 1962; Stiglitz, 1994). Those who are critical of the role of state-owned banks instead claim that state-owned banks are inefficient because they are captured by politicians who are only interested in maximizing their personal objectives (La Porta et al., 2002). Levy-Yeyati et al. (2004) survey the existing literature and point out that it is extremely hard to use cross-

[7] Higher employment seems to be the main explanation for the higher overhead costs of public banks located in developing countries. If we re-run the equation of column 5 and control for employment, we find that this latter variable is statistically significant and, once we control for employment, the dummies for public and foreign

country data to test whether the behavior of state-owned banks is better reflected by the political or by the social/development view (see also Rodrik, 2005). Studies that use bank-level data find that politics plays a role in the lending decisions of state-owned banks. Sapienza (2004) studies the lending behavior of Italian banks and finds that state-owned banks are affected by the electoral results of the party affiliated with the bank. Khwaja and Mian (2005) focus on Pakistan and find that state-owned banks tend to favor firms with politically connected directors by lending more and allowing for higher default rates. Dinç (2005) uses bank-level data for 36 countries (19 emerging markets and 17 industrial countries) and shows that elections affect the lending behavior of state-owned banks located in emerging market countries. In particular, he finds that during election years, state-owned banks located in emerging market countries significantly increase lending, but that this is not true for private banks. He also finds that elections do not affect lending of private and public banks located in industrial countries. Dinç's (2005) specification, however, does not make it possible to determine whether the increase in lending is due to a shock in the demand or supply of loans

In this section we check whether elections affect the relationship between bank ownership and performance by estimating the following equation:

$$PERF_{i,j,t} = \eta_{j,t} + PUB_{i,j,t}\left(\alpha_1 + \alpha_2 GROWTH_{j,t} + \alpha_3 ELECT_{j,t}\right) + \\ + FOR_{i,j,t}\left(\beta_1 + \beta_2 GROWTH_{j,t}\right) + X_{i,j,t}\gamma' + \varepsilon_{i,j,t} \quad (2)$$

In the set-up of Equation (2), $GROWTH_{j,t}$ is a variable that measures real GDP growth in country *j* and year *t*, and $ELECT_{j,t}$ is a dummy variable that takes value one when country *j* is in an election year and zero otherwise (we use presidential elections in countries with a presidential system and legislative elections in countries with parliamentary systems). All other variables are defined as in Equation (1), and we also impose the same sample restrictions and weighting scheme used in the estimation of Equation (1).

Our coefficient of interest is α_3. This coefficient measures whether the presence of elections affects the performance of state-owned banks (the main effect of elections is controlled by the country-year fixed effect) and can be used to test some predictions of the political view of public banks.[8] In particular, the political view would be consistent with a negative value of α_3 in the profitability and

ownership drop in both magnitude and level of statistical significance (PUB is no longer significant and FOR remains marginally significant at the 10 percent confidence level).

[8] Note that as we include country-year (as opposite as to country and year) fixed effects, the election dummy compares the effect of election with non-election years within the same country and not with non-election years in other countries.

margin regressions, and a positive value of α_3 in the overhead regression (if political pressures increase the number of employees during election years). We control for the interaction between ownership and GDP growth (again, the main effect of GDP growth is controlled for by the country-year fixed effect) because state-owned and foreign banks may have a differential reaction to the business cycle with respect to private domestic banks (Micco and Panizza, 2004). This would not be a problem if the business cycles were uncorrelated with the electoral cycles, but political business cycle theory suggests that such a correlation may exist (see Drazen, 2000, for a survey).[9]

Table 3 reports our baseline results. Column 1 shows that, compared with domestic private banks, state-owned banks located in developing countries tend to be more profitable during periods of economic expansion and, as predicted by the political view, less profitable in election years.[10] The effect of the election variable is extremely large. Take, for instance, the differential between the profitability of the average public bank and the average private domestic bank located in a developing country in a year in which real GDP grew by 3 percent, the average growth rate in our sample. If this is not an election year, the differential is approximately 0.9 percentage points (-1.7+0.03*26=-0.92). However, if this is an election year, the point estimates of column 1 yield a difference of approximately 1.5 percentage points (-1.7+0.03*26-0.59=-1.51), a 60-percent increase with respect to the non-election year benchmark. In contrast, Column 2 shows that elections make no difference for the profitability of state-owned banks located in industrial countries.

We find similar results when we focus on interest margins. Net interest margins of state-owned banks located in developing countries tend to be higher in periods of economic expansion and lower during elections (column 3). Again, the coefficient of the election dummy is very large and indicates that the differential between the interest margins of public and private banks more than triples during election years (assuming 3 percent GDP growth, the two values are –0.26 and –0.8, respectively). When we focus on industrial countries, we find that the main coefficient for the public sector dummy is positive (although not statistically significant) and the election dummy is negative, statistically significant and large (the differential goes from 0.02 in non-election years to –0.25 in election years). This provides some evidence that the political channel is also at work in industrial countries (a finding consistent with the results reported in Sapienza, 2004). Columns 5 and 6 focus on overhead costs and find that election years do not affect these costs (either in developing or in industrial countries) and that, if anything, the developing country coefficient is negative (although not statistically significant). This indicates that the effect of elections on profitability is driven by lower margins and not by higher overhead costs.

[9] The results are robust to dropping the interaction between ownership and growth (Micco et al., 2005).

As Dinç (2005) focuses on a relatively small number of countries, it is interesting to check whether his results extend to our larger sample of sample countries. The last two columns of the table show that this is the case.[11] In particular, we find that state-owned banks located in developing countries do increase loans in election years (the magnitude of the effect is also similar to the one found by Dinç, 2005), and we find no correlation between election and lending of state-owned banks located in industrial countries.

While our results are in line with those of Dinç (2005) regarding the correlation between bank ownership and lending behavior in election years, we think that focusing on both performance and quantities rather than only on quantities allows us to better identify the political channel. Suppose, for instance, that the demand for loans extended by public banks were to suddenly increase during an election year (perhaps because industries that benefit from increases in public expenditure during electoral years are more likely to use state-owned banks). Then, the increase of loans extended by state-owned banks would not be due to political control and mismanagement, but would instead represent the optimal reaction of a profit-maximizing monopolistic competitor facing an increase in the demand for its product (political inefficiency thus would be in the sector of the economy that increased the loan demand but not in the banking system). However, if this were the case, we should observe an increase in interest margins and profitability. As we observe the exact opposite (i.e., a drop in margin and profitability), we can exclude the demand shock story and conclude that the increase in lending documented by Dinç (2005) and in the last two columns of Table 3 is indeed due to the desire of state-owned banks to reduce margins and increase the supply of loans during election years.

3.3 Robustness

The purpose of this section is to test whether our results are robust to alternative specifications and sub-samples. Our first robustness test has to do with the fact that our benchmark specification may not capture important dynamic and selection effects. Berger et al. (2005) and Bonin et al. (2005) point out that in studying the correlation between bank ownership and performance, one should distinguish among static effects (i.e., the average difference between performance of, say, public and private banks), dynamic effects (i.e., the effects of change in ownership due to, say, privatization or foreign acquisition), and

[10] The positive correlation between GDP growth and profitability is consistent with a potential counter-cyclical role of public banks (Micco and Panizza, 2004).
[11] We use the same definition of loans growth used by Dinç (2005).

selection effects (i.e., effects that occur if there is a correlation between bank performance and the likelihood of an ownership change).[12] To address this issue, we estimate the following model:

$$\begin{aligned} PERF_{i,j,t} = {} & \eta_{j,t} + X_{i,j,t}\gamma' + \alpha_1 STAT\_PUB_{i,j,t} + \alpha_2 STAT\_FOR_{i,j,t} + \\ & \beta_1 SEL\_PUB_{i,j,t} + \beta_2 SEL\_PRIV_{i,j,t} + + \beta_3 SEL\_FOR_{i,j,t} + \\ & \phi_1 DYN\_PUB_{i,j,t} + \phi_2 DYN\_PRIV_{i,j,t} + \phi_3 DYN\_FOR_{i,j,t} + \\ & PUB_{i,j,t}\left(\lambda_1 GROWTH_{j,t} + \lambda_2 ELECT_{j,t}\right) + \theta FOR_{i,j,t} GROWTH_{j,t} + \varepsilon_{i,j,t} \end{aligned} \tag{3}$$

where $STAT\_PUB_{i,j,t}$ ($STAT\_FOR_{i,j,t}$) is a dummy variable that takes value one if bank i is public (foreign) and did not change ownership in the period under observation (the excluded dummy is $STAT\_PRIV_{i,j,t}$). Therefore, α_1 and α_2 measure the static effects of public and foreign ownership expressed as a difference from the performance of private domestically owned banks that never changed ownership. $SEL\_PUB_{i,j,t}$ is a dummy variable that takes value one for banks that used to have a different form of ownership but became public during the period under observation ($SEL\_PRIV_{i,j,t}$, and $SEL\_FOR_{i,j,t}$ are defined in similar ways).[13] Therefore, β_1, β_2, and β_3 measure the selection effects of public, private, and foreign ownership. Finally, $DYN\_PUB_{i,j,t}$ is a dummy variable that takes value one after a bank changes ownership and becomes public and zero before this change in ownership occurs ($DYN\_PRIV_{i,j,t}$ and $DYN\_FOR_{i,j,t}$ are defined similarly). Therefore, ϕ_1, ϕ_2, and ϕ_3 measure the dynamic effect of ownership change. $\eta_{j,t}$ and $X_{i,j,t}$ are defined as in Equation (1).

Table 4 reports the results for ROA, interest margins, and overhead costs. In most cases, the static coefficients for public and foreign ownership are similar (both in their magnitude and level of statistical significance) to the ownership coefficients described in Table 3. The only exception is the coefficient for public ownership in the ROA regression for industrial countries. In this case, Table 4 finds a statistically

[12] Our sample includes 9 banks that were made public (0.2 percent of the total number of banks, representing a rare event caused by bank restructuring in the wake of a crisis), 66 banks (1.2 percent of the total number of banks) that were privatized and acquired by domestic investors (60 percent of privatization took place in developing countries), and 137 banks that were acquired by foreign investors (2.4 percent of total number of banks, 65 percent of foreign acquisitions took place in developing countries).

[13] If a bank has more than one change in ownership, we use the last change (this is the strategy followed by Berger et al., 2005). If a bank was public, then sold to a domestic investor, and subsequently acquired by a foreign company, we assign value one to $SEL\_FOR_{i,j,t}$ and zero to $SEL\_PUB_{i,j,t}$ and $SEL\_PRIV_{i,j,t}$. Public banks that were acquired by foreign entities are classified as being selected to become foreign. In this sense, we are not differentiating foreign acquisitions of domestic private banks and foreign acquisition of domestic public banks. Including this differentiation does not affect our results.

significant coefficient (however, this effect is still rather small when compared with that of developing countries). When we look at selection effects, we find only two significant results. The first indicates that banks located in industrial countries that are selected for privatization and acquired by a domestic investor tend to have higher overhead costs than private banks that never changed ownership type. The second indicates that banks located in developing countries that were acquired by foreign entities have lower ROA than comparable private banks that never changed ownership. The dynamic effect of privatization by domestic banks is negative and statistically significant for overhead costs in the sample of industrial countries and not statistically significant in the other regressions. This indicates that acquisition of public banks by domestic investors has no significant effect on profitability and margins but a positive effect on the efficiency (measured by cost reduction) of banks located in industrial countries.[14] In developing countries the dynamic effect of foreign ownership on profitability is positive but not statistically significant, the effect on margin negative and not significant, and the effect on cost is negative and statistically significant. In industrial countries, on the other hand, we find a negative and statistically significant dynamic effect of foreign acquisition on profitability but no significant effect on margins and cost. More interesting for our purposes is that controlling for selection and dynamic effects does not affect our basic result that public banks profitability and interest margin tend to be particularly low during election years.

After having established that our results are robust to controlling for selection and dynamic effects, we briefly describe a further series of robustness tests. The first battery of robustness tests focuses on the econometric specification. The second focuses on alternative weighting schemes. The third focuses on the sample of banks included in the analysis.

One concern with our baseline specification is that two of the main control variables (*NONINT* and *DDEP*) could be endogenous with respect to the performance indicators. Although the ideal way to deal with such a problem is to use an instrumental variable approach, we cannot do this because we do not have good instruments. As an alternative, we re-estimate our baseline model without including these variables and find that the results are similar to those of our benchmark regression in Table 3. Next, we augment our model with a measure of liquidity and a measure of capitalization, our main result that profitability and margins of public banks drop during election years still holds.

As country-year fixed effects cannot control for shocks that affect the relationship between explanatory variables and dependent variables, we augment our baseline regressions with the interaction between the ownership dummies and a dummy variable that takes value one in years in which country *j* underwent a process of financial liberalization and the interaction between the ownership dummies and a

[14] At least this is the case for the post-privatization average. Berger et al. (2005) find some difference between short-

dummy that takes value one during banking crises.[15] Controlling for these interactions does not affect our basic results.

To check whether our coefficient of interest captures something that happens around election years, we add two extra interactions using a dummy that takes value one in the year before the election and a dummy that takes value one in the year after the election. We find that profitability starts decreasing in the year before the election (the coefficient of $PUB*ELECT_{t-1}$ is negative but not statistically significant), it reaches a minimum in the year of the election (the coefficient of $PUB*ELECT_t$ is negative, large and statistically significant), and then it recovers in the year after the election (the coefficient of $PUB*ELECT_{t+1}$ is positive but not statistically significant).

We also check if there is a difference between democracies and dictatorships. Here we have no clear predictions. On the one hand, one may expect that the political channel should be stronger in democracies because the importance of elections is positively correlated with the level of democracy. On the other hand, the opposite may be true if one thinks that even dictators need to maintain some consensus and that, when compared with democratically elected politicians, dictators are more likely to be able to impose their will on the activity of state-owned banks. We find that the effect of elections on ROA is stronger in democracies (in fact, it is not statistically significant in dictatorships), but for margins we find no differences between democracies and dictatorships.

In order to check whether the weighting scheme matters, we estimate our baseline specification weighting each observation by $1/N_{j,t}$ (the same weighting scheme used by Claessens et al., 2001). Our main results for developing countries are basically unchanged. One key difference is that we now find that the PUB*ELECT interaction is no longer significant in the interest margin regression for industrial countries (questioning the idea that the political view applies to this group of countries). Next, we estimate our baseline model without using any type of weighting and, again, find that our results are robust to this alternative estimation strategy.

As our sample includes several small banks and these small institutions could add noise to our estimations, we drop all banks that have total assets below 1 percent of the total assets of the domestic banking system. This drastically reduces our sample but does not affect our basic results. We also see what happens when we restrict the sample to 10 banks per country and, again, find that the results do not change. We also check what happens when we relax the restriction of only including country-years with at least five banks. The results are unchanged.

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run and long-run effects. Unfortunately, our panel is not long enough to distinguish between the two types of effects.

[15] We would like to thank an anonymous referee for suggesting this robustness test.

Finally, we run separate regressions for each group of developing countries and check whether the results are driven by any particular region. We find that in five out of seven regions the PUB coefficient is negative (statistically significant in four regions) and in one region (the Middle East) positive but close to zero and not statistically significant. The Caribbean is the only developing region in which public banks seem to be significantly more profitable than private domestic banks. When we focus on foreign banks, we find that the coefficient is positive in six regions and negative and statistically significant in Latin America (a result that is consistent with what was found by Levy-Yeyati and Micco, 2003). We also find that the PUB*ELECT interaction is negative in six regions and positive (but not significant and close to zero) in South Asia. While this experiment shows that there is some cross-regional heterogeneity and that the results are sometimes not significant when we focus on one region at a time, it also shows that the results are never driven by one particular region and that this is especially the case for our main variable of interest (i.e., the PUB*ELECT interaction).

4. Conclusions

This paper finds that state-owned banks located in developing countries are less profitable than their private counterparts and that the difference between the performance of public and private banks increases during elections years. The main advantage of our estimation strategy is that it allows us to separate price from quantity effects and allows us to show that the previously documented increase in bank lending during election years is indeed due to an increase in the supply of loans by state-owned banks. Hence, our findings provide further support for the political view of public banks and corroborate previous findings by Dinç (2005), Sapienza (2004), and Khwaja and Mian (2005).

As a note of caution, it is important to mention that our results do not necessarily imply that state-owned banks play no role in development. In fact, the development and political views should not be seen as corner solutions without any intermediate possibility; it is possible that a development mandate co-exists with some political lending. The key challenge for future research is to understand if, and under what conditions, the potential benefits of the development mandate can outweigh the inefficiencies and the potential for corruption generated by political lending.

Appendix A. The Construction of the Dataset

We obtained data for the 1995-1999 period from the June 2001 update of BSC and data for the 2000-2002 period from the February 2004 update of BSC. In order to use BSC data for our statistical analysis we had to avoid duplications and code bank ownership and track ownership changes.

Avoiding Duplications

Our starting dataset (after dropping Central Banks, Investment Banks, Securities Houses, Multilateral Government Banks, Non-banking Credit Institutions, and Specialized Government Financial Institutions) consisted of 120,809 observations. Our first problem relates to choosing whether to work with consolidated or unconsolidated statements. We decided to work with unconsolidated statements because consolidated statements might end up duplicating the data (if bank A owns bank B, using the consolidated statement of Bank A would lead us to double count the assets of Bank B). Therefore, in our empirical analysis we *mostly* use unconsolidated statements. If BSC reported both types of statements for all banks, we could simply drop all consolidated statements and end up with a sample that includes one observation for each bank-year. However, some banks only have a consolidated statement, while others only have an unconsolidated statement. Hence, dropping just one category would lead to loss of information. Therefore, whenever a bank does not have an unconsolidated statement (which occurs in about 10 percent of cases), we use the consolidated statement.

Dealing with different levels of consolidation is not straightforward. As BSC often uses a different identification number for each level of consolidation, it is impossible to use this identification number to keep the consolidated statements of banks that lack an unconsolidated statement. Fortunately, BSC has a variable called CTRYRANK (this is the ranking of the bank by total assets) that uniquely identifies a large number of banks and allows us to avoid duplication and retain one statement per bank. One problem with CTRYRANK is that this variable uses data for the last available balance sheet reported in each BSC disc. As we use discs that have data up to 1999 and 2002, we do not have this variable for banks that ceased to operate before 1999. This is a serious issue for banks that went through a merger or were closed because they had become insolvent. We address this problem by individually looking at all banks that have missing values for CTRYRANK and by assigning a code that uniquely identifies each bank in this subgroup.[16] This new code, together with CTRYRANK, uniquely identifies all the banks included in the sample.

[16] In recoding non-ranked banks we looked at all observations but paid particular attention to all the non-ranked banks with assets greater than the country average.

Another problem we faced in working with this large sample of bank-level data is that BSC reports balance sheet data at the aggregated levels. BSC builds aggregated statements by combining the statements of banks that have merged or are about to merge. Aggregated statements may then report the data of groups of affiliated banks that neither have financial links nor form a legal entity. Take for instance two banks (Bank A and Bank B) that merged in 1999. For the period 1995 to 1999, BSC would report balance sheets for three banks: one for Bank A, one for Bank B, and an aggregated statement that would add up the statements of Bank A and Bank B. Starting from 2000, BSC would no longer report data for Bank A and Bank B but only for the new unit that resulted from the mergers (sometimes this new unit will have the name of one of the two old banks and sometimes it will have a completely new name). This example shows that a given bank might be reported in BSC up to four times: as an independent unit by its consolidated and unconsolidated statements and as part of aggregated consolidated and unconsolidated statements. There are two possible ways to deal with banks that have aggregated statements. The first is to always work with the aggregated statement and drop the observations for the individual banks. The second is to drop the aggregated statement and work with the individual banks up to the time of the merger and then, starting from the year of the merger, with the new bank. We adopt the latter strategy.

An example may clarify our procedure. Consider the case of INTESA, the largest Italian banking group. INTESA was created in 1998 with the merger of CARIPLO and AMBROVENETO. In 1999, Banca Commerciale Italiana (COMIT) joined the INTESA group, and in 2001 COMIT completely merged with INTESA, which took the name of INTESABCI. As of 2000, BSC reports data for (i) COMIT; (ii) AMBROVENETO; (iii) CARIPLO; and (iv) INTESABCI. Clearly, considering all these four banks would lead to a large overestimation of Italian banking assets. In this case, CTRYRANK variable can help avoid duplications, but we also need to use additional information. In fact, CTRYRANK takes value one for INTESABCI (recognizing that this is the largest bank in the country), 5 for CARIPLO and 12 for AMBROVENETO. COMIT is not ranked (CTRYRANK takes the value NR). Clearly, dropping the banks that are coded as non-ranked (COMIT) can help in preventing duplication but this does not solve all of our problems. First, the dataset would still include INTESABCI and two of its components (AMBROVENETO and CARIPLO). Second, the ranking variable refers to the last year, and hence if we were to drop all the banks that are not ranked, we would also drop COMIT for the 1995-1999 period. To address this issue, we looked at one bank at a time, checked whether the bank was part of a merger event and, if this was the case, recoded the CTRYRANK variables in order to keep the individual banks up to the merger and then the new bank starting from the date of the merger. In the case of the example described above, we re-ranked (and hence included in the dataset) COMIT from 1995 to 1999 and de-ranked (and hence excluded from the dataset) Ambroveneto and CARIPLO for 2000-2002 and

Intesa BCI for 1995-1999. After dropping the non-ranked bank we end up with three banks (COMIT, Ambroveneto and CARIPLO) operating for the 1995-1999 period and one bank (IntesaBCI) operating for the 2000-2002 period. This strategy required a considerable amount of effort and led to a massive amount of recoding but made us confident that our dataset does a good job of tracking the main bank mergers.

Coding Ownership

Although BSC includes an ownership variable, this variable has limited coverage and does not track ownership history. To code ownership, we started with the BSC data and then used different sources to code banks and to track ownership history for banks that were coded by BSC. To track ownership changes, we started with the information available in BSC (there is a field with a brief history of each institution) and the privatization databases assembled by the World Bank, Privatization Barometer, Verbrugge (1999), Megginson (2003), Andrews (2005), Bonin et al. (2005), Beck et al. (2004), and Clarke and Cull (2002). Next, we gathered information on ownership status and ownership history from individual bank websites (several bank websites include a section that narrates the history of the bank). When the bank website did not provide enough information, we consulted various publications (including *Euromoney, Bankers Almanac, American Banker, Bank Director, Pensions & Investments, ABA Banking Journal*), performed several Internet searches, and consulted country experts.

Coding ownership was an extremely time-consuming but fairly straightforward exercise because we had to make only two decisions. The first concerned whether to establish a cut-off point under which banks would not be coded, and the second had to do with the fact that banks are sometimes owned by other companies.

Concerning the cut-off point, we started by coding the 10 largest banks in each country (the same strategy followed by La Porta, et al., 2002). Then, if these banks represented less than 75 percent of total assets of the banking system, we coded all banks up to 75 percent of total assets of the banking system.[17]

One thing that we did not do was to code private banks into family-owned (or privately held) and widely-held (Caprio et al., 2004, do this for a sample of 244 banks located in 44 countries). While having this additional breakdown of the ownership variable would allow us to conduct a series of additional

[17] Even with this cut-off, a lot of time was spent on constructing the dataset. Coding ownership required two months of work of a full-time research assistant, plus the help of several other research assistants for a shorter period of time. In Latin America, East Asia, Eastern Europe and industrial countries (these are the regions with the largest number of banks), we coded the largest 20 banks and, again, if these 20 banks represented less than 75 percent of total assets of the banking system, we coded up to 75 percent of assets of the banking system. We also coded all banks that were not among the top 20 or in the 75th percentile but had an obvious coding (for instance, a bank located in Lebanon called HSBC was automatically coded as foreign), were included in one of the privatization datasets mentioned above or were originally coded by BSC (therefore, we tracked ownership history for all banks coded by BSC, independently of their size)

interesting tests and focus on possible differences between the performance of family-owned and widely-held banks, obtaining this type of data for all banks in our sample would require an enormous amount of work and go well beyond the scope of this paper.

The second issue had to do with banks owned by other companies. There are two ways to deal with this problem. The first approach is to look at the nationality of the parent company and code the bank as domestically-owned if the parent company is headquartered in the same country as the bank, and foreign-owned if the parent company is headquartered in another country. The second approach is to look at who owns the parent company and then code bank ownership based on the ownership of the parent company. Following La Porta et al. (2002), we adopted the latter strategy. Whenever X percent of a given bank (Bank A) was owned by another company (Company B) and Y percent of Company B was owned by a foreign company (alternately state-owned), we coded Bank A as being X*Y percent foreign (state) owned (we always went back at least two steps in the ownership structure). When coding ownership of banks owned by foreign governments (for instance, an Argentinean bank owned by Banco do Brasil which, in turn, is owned by the Brazilian government), we also adopted the strategy used by La Porta et al. (2002), which classifies as state-owned only those banks that are owned by the domestic government and as foreign those banks owned by foreign governments.

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Table 1: Number of Observations and Median Values

Region	N. Obs.	N. Banks	Ownership	Share	ROA	Interest margin relative to total assets	Overhead relative to total assets	Employment Relative to total assets
			(1)	(2)	(3)	(4)	(5)	(6)
Industrial Countries	32,301	5,918	Dom.Priv.	70%	0.75%	1.79%	1.79%	1.01
	374	84	Public	10%	0.42%	1.47%	1.16%	0.82
	3,131	552	Foreign	20%	0.55%	1.62%	1.69%	0.92
Developing Countries	8,611	1,817	Dom.Priv.	48%	1.39%	4.13%	4.19%	1.00
	1,831	391	Public	26%	0.94%	3.68%	3.21%	1.01
	3,912	697	Foreign	26%	1.71%	4.17%	4.15%	0.91
Caribbean	293	76	Dom.Priv.	49%	1.56%	4.69%	5.51%	1.00
	67	9	Public	32%	1.88%	4.36%	3.51%	1.00
	134	26	Foreign	19%	2.78%	4.29%	3.48%	0.91
East Asia and Pacific	1,416	281	Dom.Priv.	55%	0.95%	2.63%	1.90%	1.00
	408	87	Public	25%	0.54%	2.14%	1.36%	1.00
	453	74	Foreign	20%	1.62%	2.98%	2.03%	0.86
East Europe and Central Asia	2,058	525	Dom.Priv.	44%	1.31%	4.65%	5.47%	1.00
	356	82	Public	33%	1.10%	3.94%	4.02%	1.08
	749	125	Foreign	23%	1.57%	3.83%	4.35%	0.78
Latin America	2,118	433	Dom.Priv.	52%	1.38%	5.11%	5.06%	1.00
	344	88	Public	19%	0.72%	4.84%	5.77%	1.05
	1,682	315	Foreign	30%	1.19%	4.90%	5.03%	1.00
Middle East and North Africa	1,049	178	Dom.Priv.	57%	1.40%	2.52%	1.84%	1.00
	245	45	Public	30%	0.93%	2.59%	1.76%	1.13
	259	41	Foreign	13%	1.15%	2.22%	1.72%	0.92
South Asia	648	104	Dom.Priv.	34%	1.04%	3.08%	2.44%	1.00
	272	46	Public	56%	0.54%	2.69%	2.64%	1.02
	59	8	Foreign	10%	1.68%	3.43%	2.07%	0.44
Sub Saharan Africa	1,029	220	Dom.Priv.	43%	1.85%	5.25%	4.92%	1.00
	139	34	Public	16%	1.77%	5.48%	4.47%	1.00
	576	108	Foreign	41%	2.51%	5.88%	5.05%	1.00

*All variables are weighted by bank size.

Table 2. Bank Ownership and Performance. Baseline Regressions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RETURN ON ASSETS (ROA)		INTEREST MARGIN OVER TOTAL ASSETS		OVEHEAD COST OVER TOTAL ASSETS		NUMBER OF EMPLOYEES OVER TOTAL ASSETS	
PUB	-0.910	-0.048	-0.323	-0.054	0.383	0.177	0.197	-0.034
	(0.114)***	(0.050)	(0.099)***	(0.053)	(0.090)***	(0.060)***	(0.052)***	(0.053)
FOR	0.365	0.016	0.010	-0.207	-0.686	-0.174	-0.365	-0.082
	(0.098)***	(0.035)	(0.085)	(0.049)***	(0.095)***	(0.059)***	(0.052)***	(0.052)
NONINT	-0.003	0.124	-0.041	0.053	0.478	0.738	0.018	0.089
	(0.034)	(0.010)***	(0.023)*	(0.018)***	(0.063)***	(0.047)***	(0.008)**	(0.014)***
DDEP	0.012	0.000	0.017	0.013	0.011	0.013	0.004	0.012
	(0.003)***	(0.001)	(0.003)***	(0.001)***	(0.003)***	(0.001)***	(0.002)**	(0.001)***
LTA	-0.038	-0.029	-0.236	-0.178	-0.150	-0.094	-0.001	-0.116
	(0.052)	(0.008)***	(0.043)***	(0.014)***	(0.044)***	(0.015)***	(0.023)	(0.012)***
SHTA	0.266	0.085	1.402	0.491	-1.022	0.067	-0.452	0.598
	(0.457)	(0.173)	(0.392)***	(0.189)***	(0.324)***	(0.201)	(0.261)*	(0.187)***
N. OBS	5489	13329	5489	13329	5489	13329	1893	9757
R2	0.5211	0.5222	0.7346	0.6253	0.7684	0.7896	0.8761	0.7196
SAMPLE	Developing	Industrial	Developing	Industrial	Developing	Industrial	Developing	Industrial

Robust standard errors in parentheses. All regressions are weighted by asset share and include country-year fixed effects. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 3. Bank Ownership, Profitability, and Overhead Costs. Do Elections Matter?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RETURN ON ASSETS (ROA)		INTEREST MARGIN OVER TOTAL ASSETS		OVERHEAD COST OVER TOTAL ASSETS		LOANS GROWTH	
PUB	-1.740	-0.117	-0.644	0.066	0.412	0.408	0.244	0.208
	(0.406)***	(0.087)	(0.238)***	(0.096)	(0.157)***	(0.135)***	(0.187)	(0.162)
FOR	0.165	0.023	0.060	-0.132	-0.859	-0.022	0.212	-0.388
	(0.171)	(0.072)	(0.127)	(0.080)*	(0.150)***	(0.087)	(0.201)	(0.252)
*PUB*ELECT*	-0.591	-0.043	-0.565	-0.270	-0.142	0.058	0.339	0.099
	(0.265)**	(0.101)	(0.189)***	(0.110)**	(0.251)	(0.147)	(0.129)***	(0.121)
*PUB*GROWTH*	26.185	2.631	12.696	-1.422	0.381	-7.762	-3.054	-6.051
	(9.486)***	(2.300)	(5.022)**	(2.858)	(2.891)	(3.814)**	(1.906)	(4.019)
*FOR*GROWTH*	5.256	-1.163	-2.244	-4.150	6.256	-5.863	-3.449	2.933
	(3.964)	(1.673)	(2.955)	(2.528)	(3.428)*	(3.262)*	(1.811)*	(3.400)
N. OBS	5256	13092	5244	13246	5269	13232	5196	13116
R2	0.5329	0.4759	0.7345	0.6172	0.7633	0.7918	0.7712	0.7911
SAMPLE	Developing	Industrial	Developing	Industrial	Developing	Industrial	Developing	Industrial

Robust standard errors in parentheses. All regressions are weighted by asset share, include country-year fixed effects and the controls of Table 2. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Selection and Dynamic Effects

	(1)	(2)	(3)	(4)	(5)	(6)
	RETURN ON ASSETS (ROA)		INTEREST MARGIN OVER TOTAL ASSETS		OVERHEAD COST OVER TOTAL ASSETS	
ST_PUB	-1.604	-0.263	-0.787	-0.106	0.361	0.266
	(0.377)***	(0.075)***	(0.227)***	(0.082)	(0.139)***	(0.118)**
ST_FOR	0.279	0.017	0.180	-0.157	-0.875	-0.041
	(0.181)	(0.073)	(0.132)	(0.079)**	(0.163)***	(0.086)
SE_PUB	-0.053	1.084	-0.475	-0.201	-0.186	-0.580
	(0.179)	(0.471)**	(0.162)***	(0.270)	(0.099)*	(0.247)**
SE_PRI	-0.161	-0.099	-0.069	0.149	0.270	0.391
	(0.489)	(0.074)	(0.376)	(0.094)	(0.535)	(0.104)***
SE_FOR	-0.494	0.098	-0.066	0.104	-0.111	0.100
	(0.190)***	(0.070)	(0.146)	(0.099)	(0.126)	(0.081)
DY_PUB	-3.593	0.000	-0.610	0.000	-0.211	0.000
	(1.833)*	(0.000)	(0.514)	(0.000)	(0.399)	(0.000)
DY_PRI	0.066	0.013	0.130	-0.191	-0.414	-0.393
	(0.528)	(0.107)	(0.450)	(0.149)	(0.584)	(0.126)***
DY_FOR	0.337	-0.314	-0.176	-0.128	-0.566	0.090
	(0.248)	(0.112)***	(0.229)	(0.125)	(0.207)***	(0.122)
*PUB*ELECT*	-0.743	-0.007	-0.546	-0.213	-0.103	0.117
	(0.261)***	(0.096)	(0.186)***	(0.104)**	(0.247)	(0.152)
*PUB*GROWTH*	21.785	4.829	12.952	1.364	1.615	-4.536
	(8.601)**	(1.889)**	(4.620)***	(2.322)	(2.672)	(3.028)
*FOR*GROWTH*	3.978	-0.413	-3.102	-3.882	5.613	-5.895
	(3.895)	(1.613)	(2.938)	(2.396)	(3.483)	(3.050)*
N. OBS	5256	13092	5244	13246	5269	13232
R2	0.5338	0.4858	0.7366	0.6194	0.7628	0.7923
SAMPLE	Developing	Industrial	Developing	Industrial	Developing	Industrial

Robust standard errors in parentheses. All regressions are weighted by asset share, include country-year fixed effects and the controls of Table 2. * significant at 10%; ** significant at 5%; *** significant at 1%

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