Internal Capital Markets: The Bright Side of Corporate Politics

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Abstract

This study looks inside the internal capital market of a large retail-banking group to study how internal corporate politics affect internal capital allocation. Our data is from the firm's internal managerial accounting system and covers all internal capital transfers, investments and cash flows at the local member bank level. We find some evidence that member banks' investments (i.e., loans) are not fully insulated from their own cash flows (mainly generated by deposits). However, such inefficiencies are not apparent at more powerful member banks, for which the group headquarters fully compensates negative local deposit shocks. Therefore, internal politics and power inside an organization may have a 'bright side' in improving information flow and access at the headquarters. Several special institutional arrangements of the banking group contribute to our results. For example, the group headquarters is a member bank's only source of funding to bridge gap between internal cash flows and investment opportunities. Also, member banks operate under the same franchise with identical pricing policies. Comparing member banks within their narrowly-defined local markets allows us to control for investment opportunities.

1. Introduction

The efficiency of capital allocations within firms, while central to understanding corporate finance, has not been widely studied, as actual internal capital allocations are generally confidential and investment opportunities are hard to observe and control for. Two recent exceptions are Gopalan, Nanda and Seru (2007) considering intragroup loans in Indian business groups, and Glaser, Lopez-de-Silanes, and Sautner (2008) studying the distribution of cash windfalls inside an industrial conglomerate. In this paper, we use a unique proprietary dataset to study the efficiency of the internal capital market of a large retail-banking group in a highly developed market, and shed light on how the distribution of power within this conglomerate affects the efficient allocation of group resources. The banking group is a network of about 200 member banks and a centralized headquarters which is jointly-owned by the member banks. The banking group aims at profit-maximization, has no government ownership and operates in a highly developed country which is quite homogenous in terms of economic and geographical particulars with a competitive banking sector.

Our measure of capital allocation efficiency follows recent literature (e.g. Shin and Stulz (1998), Campello (2002)) and is defined as member banks' investments (i.e., loan growth) not being dependent on their local cash flows (i.e., deposit growth) after controlling for investment opportunities. Our data are from the firm's internal managerial accounting system and allow us to directly observe not only investments and cash flows of each member bank, but also all capital transfers between the group headquarters and the member banks.[1] The data also include a useful proxy of the role of internal politics, namely the (disproportionate) power of each member bank within the group.

Accounting for investment opportunities which may differ across different parts of the firm (in our case, across member banks) is a major challenge. Investments, cash flows and internal transfers are endogenously determined, and any apparent inefficiency could be due to unobserved differences in economic circumstances. However, several aspects of our empirical design allow us to mitigate endogeneity concerns.

[1] As a result, we avoid many difficulties associated with estimating cash flows, as in most of the related literature; see for example the criticism raised by Bushman, Smith and Zhang (2008). Further, capital allocations in the group take only the form of direct capital flows from and to the headquarters. Capital allocations do not take place through transfer pricing as is often the case in industrial firms (which complicates the studying of internal capital markets in industrial firms).

First, the homogeneity of the member banks within the group enables across-bank comparisons.[2] Each member bank only operates in its own local area, thereby largely avoiding competition with other member banks (with larger corporate customers operating throughout the group's market typically being directly served by the group headquarters). Given that all member banks offer the same rates for deposits and are not allowed to deviate from these rates to avoid cannibalization within the group, deposits can be considered largely exogenous to the member banks and driven mainly by the social and economic environment.

Second, while the group's overall market is already highly-homogenous in terms of social and economic development, we further control for variations in local market conditions by employing regional fixed effects that change each time period (i.e., each quarter). As a result, each time period we compare each member bank to the other (on average one dozen) member banks in its relatively small proximate region (with on average 1.4 million residents in an area of on average only 2,800 km², about one fifth the size of state of Connecticut but with 1.5 times the population density). As we allow this local economic environment to change each quarter, the influence of local market conditions on loan and deposit growth of banks in the region should be largely captured by these region-quarter fixed effects.

Third, our dataset includes the banking group's own internal measure of member bank performance which captures each bank's productivity and is defined as income over costs. This core variable from the internal management system of the group will further take account of differences in investment opportunities.

Our proxy of the role of internal politics is each member bank's power inside the organization. Each member bank holds both voting and ownership (i.e., cash flow) rights in the headquarters. We define a bank's (disproportionate) power as its share of voting rights divided by its share of ownership rights in the banking group.[3] We then link this measure of power, which differs substantially across member banks, with our data on intra-group capital allocations. Meyer, Milgrom

[2] Under the same franchise-name, all member banks operate with the same business model and use identical products and pricing policies (similar as in McDonald's). This setting also helps us avoid the problem documented in Villalonga (2004), i.e., business units are not consistently and objectively defined across firms.

[3] Using their voting rights, member banks exercise significant direct influence at the headquarters and decide, among other things, on the composition of the group's supervisory board, which elects the banking group's executive board. Ownership rights enable member banks to share profits and losses. Both voting and ownership rights of member banks are historically given and do not change over our time period. They can hence be treated as exogenous for our sample. Ownership rights are mainly determined by past bank size, where larger member banks subscribed to more shares. Voting rights are a non-linear and discrete function of ownership rights: small banks are guaranteed at least one vote, while large banks are capped by a maximum; further, voting rights cannot be increased by a fractional number. Our power results are robust to directly controlling for ownership and voting rights of a member bank itself.

and Roberts (1992), Scharfstein and Stein (2000) and Rajan, Servaes and Zingales (2000) introduce theories on how internal capital allocations are influenced by internal politics, and generally hypothesize that more powerful units will overinvest or cause inefficient cross-subsidization. Data limitations have generally complicated testing these theories, as typically only crude proxies (e.g., Rajan, Servaes and Zingales (2000) use segment diversity) rather than direct proxies as we have are available.

We document several interesting and new empirical results. First, there is an active internal capital market, marked by large and frequent internal loans to, and deposits from, member banks vis-à-vis the headquarters. Net funds from the headquarters partly compensate member banks for lower deposit (i.e., cash flow) growth and are larger if investment opportunities (i.e., bank productivity) are better.[4]

Second, while member banks' net loan growth (i.e., investments) is higher for more productive banks with better opportunities, it also depends significantly on their own deposit growth. Thus, the internal capital market does not fully insulate loan growth from the local deposit base. To the extent that differences in investment opportunities across member banks are captured, this presents some evidence of capital allocation inefficiencies. However, we cannot rule out that this association between loan growth and local deposit growth is partially driven by investment opportunities.

Furthermore, Fama (1980, 1985) argues that a correlation between loan and deposit growth can arise if banks require that borrowers maintain current (transaction) accounts for monitoring purposes. We find empirically that in our set-up, results don't seem to be driven by such a monitoring argument, as our results are mainly determined by savings accounts and not by current account deposits.[5] In addition, as shown in Figure 1, lending at the aggregate group level is not much influenced by fluctuations in deposits: the headquarters seems able to smooth out group-level

[4] Net funds from the headquarters are defined as the difference between loans from and deposits at the headquarters. Gopalan, Nanda and Seru (2007) also used net funds in their analysis. Moreover, our results do not change if we look at gross funds (loans) from the headquarters instead.

[5] Banks usually offer current (transaction) and savings accounts for depositors. By monitoring a borrower's current accounts through which borrowers manage their day-to-day business (e.g., inventory purchase, account receivable after sales), banks may be able to extract private information. Savings accounts, however, do not provide much useful information. Customers cannot write checks through their savings accounts and can only withdraw from the savings accounts for a limited number of times every month. Also, today's commercial banks focus much less on business lending, and more on loan products which are relatively arms' length and require less relationship-based monitoring. For residential mortgage lending (accounting for more than two third of the loan portfolio in the banking group we study), banks normally do not rely on monitoring the borrower's current account deposits to acquire private information. Even for small business lending which accounts for only about one fifth of the group's loan portfolio, credit scoring systems evaluate large volumes of information and current account activities are but one of the numerous factors contributing to the lending decisions.

funding shortages by tapping the outside capital markets. The correlation between lending and deposits at the member bank level thus suggests that any such frictions are more likely to come from the internal capital allocation process than from frictions between the headquarters and the external capital market.

Third, we consider the role of internal politics for internal capital allocation. As Meyer, Milgrom and Roberts (1992), Scharfstein and Stein (2000) and Rajan, Servaes and Zingales (2000) suggest, the documented inefficiencies could be due to power struggles within the firm, such that allocations are partly based on a bank's bargaining power rather than its investment opportunities (whereby power leads to overly large allocations and hence overinvestment). An alternative hypothesis could be that information asymmetry within the firm may cause such inefficiencies, whereas more powerful member banks may have better access to headquarters, consequently leading to less information asymmetry and more efficiency. Consistent with the latter hypothesis, we find strong evidence that more powerful member banks receive more funds from the headquarters and have *less* sensitivity of their investments to their cash flows.

The effect of power is found to be asymmetric as it especially reduces greater investments in case of *positive* cash flow shocks. This asymmetry suggests the opposite of power leading to overinvestment, and supports the idea of better information flow as well as more efficient allocations for more powerful banks.

Fourth, the more efficient capital allocation of more powerful member banks seems to translate into higher performance. We find that power (which is historically determined and does not change in our time period) is positively related to current bank productivity, return on equity, and return on assets. Our results are not driven by our measure of power proxying for ability, as the reduced sensitivity of investments to cash flows occurs for more powerful member banks even after accounting for differences in performance. Therefore, we conclude that internal politics and power inside an organization may have a 'bright side,' e.g. by improving information flow and access at the headquarters (see e.g. Harris, Kriebel and Raviv (1982)).

The remainder of the paper is structured as follows. The next section discusses the economic questions and describes the data on the internal capital market. Section 3 presents the empirical results, and section 4 concludes.

2. Research Questions and Data

2.1 Internal Capital Markets: Hypotheses on Efficiency and Firm Politics

The literature on allocating capital within firms has identified positive and negative aspects of internal capital markets. On the positive side, internal capital markets may help relieve funding constraints in units (i.e., member banks) where profitable investment opportunities exceed locally generated cash flows (more-money effect). In turn, this may lead to a more efficient allocation of resources (smarter-money effect, see Stein (1997)). In such an efficient internal capital market, investments (i.e., loans in our setting) by member banks should be less or not related to the local funding position (i.e., cash flows from deposits or bank capital). Instead, the amounts of loans made should be related mostly to investment opportunities (see Shin and Stulz (1998)). Irrespective of the local funding position, banks should lend out more if investment opportunities are better and less if investment opportunities are worse. In the latter case, efficient allocation would induce member banks to transfer excess deposits of their local customers to the headquarters to make them available to other member banks (with better investment opportunities) or the external capital markets, and have the headquarters compensate them for any idiosyncratic cash shortfalls.

However, internal capital markets may also have 'dark sides.' Agency problems and power struggles within an organization can generate inefficient allocations across banks, rewarding, for example, those that exert disproportionate influence over the allocation process and not necessarily those with the best investment prospects. Member banks with more power would then get more funding from the headquarters independent of their investment opportunities (see e.g. Meyer, Milgrom and Roberts (1992), Rajan, Servaes and Zingales (2000), and Scharfstein and Stein (2000)). This is usually considered inefficient as it leads to overinvestment by inefficient units.

The two main economic questions addressed by this paper are, first, whether the internal market in the group is efficient in allocating resources, and second, whether firm politics and power exacerbate or ameliorate any of such inefficiencies.

The measure of capital allocation efficiency used in this paper follows the recent literature (e.g. Shin and Stulz (1998), Campello (2002) and Houston, James and Marcus (1997)).[6] Efficiency is thus defined as member banks' investments (i.e., loan growth) not being dependent on their own cash

[6] Billet and Mauer (2003) use a slightly different measure of efficiency and study whether capital is allocated to segments with above firm-average investment opportunities (measured by return on assets and Tobin's Q). Capital allocations are measured indirectly by comparing the after-tax cash flows of a segment with its capital expenditures.

flows (i.e., deposit growth) after controlling for investment opportunities. Shin and Stulz (1998) consider whether capital allocations are efficient in US industrial firms by looking at how investments of a division are related to their own cash flows versus that of other divisions in the same firm (as well as to Tobin's Q as a proxy for investment opportunities). They show that division investments are less sensitive to the own cash flows than to the cash flows of the rest of the firm, which they interpret as efficient. Campello (2002) compares investment-to-cash-flow sensitivities of stand-alone banks with bank holding group subsidiaries to investigate the efficiency of investment (as measured by net loan growth). He finds that, compared with stand-alone banks, net loan growth of bank-holding companies subsidiaries are less dependent on their own cash flows when monetary policy is tightened. This suggests that internal capital markets in banking groups may insulate banks from the tightening in money supply. Another paper investigating capital allocations in bank holding companies is Houston, James and Marcus (1997) who find that the loan growth of a bank subsidiary is more sensitive to the cash flow of the bank holding company than to its own cash flow. Similarly, Holod and Peek (2006) document that internal capital markets are used to mitigate capital constraints of bank subsidiaries.

Our data are from the firm's own internal managerial accounting system and allow us to directly observe not only investments and cash flows of each member bank, but also all money transfers between the group headquarters and the member banks.[7] As a result, we completely avoid difficulties associated with estimating cash flows, as in most of the related literature.[8]

Allowing us to address the role of internal politics, our data includes a useful proxy of the power of each member bank within the group. Each member bank holds both voting and ownership (i.e., cash flow) rights in the headquarters. We define a bank's (disproportionate) power as its share of voting rights divided by its share of ownership rights in the banking group. The measure of power exhibits considerable cross-sectional variation across the member banks, and further detailed description of this variable is given in the next subsection. Meyer, Milgrom and Roberts (1992), Scharfstein and Stein (2000) and Rajan, Servaes and Zingales (2000) provide theories on how internal capital allocations are influenced by internal politics. These models document the 'dark side'

[7] The next subsection will describe in detail the proprietary data on the internal capital market of the major retail-banking group that we use to investigate these questions. As we will discuss, corporate restrictions limit the internal capital market to cash transfers between the headquarters and the member banks. In particular, capital allocations do not happen through transfer prices as is often the case in industrial firms and which complicates studying internal capital markets in industrial firms. Moreover, member banks can not access external capital markets themselves.

[8] For example, recently, Bushman, Smith and Zhang (2008) argue that the typical proxy or estimate for cash flows in fact serves as a proxy for investments in non-cash working capital, and that as a result, the associated empirical patterns reflect capital investment-working capital investment sensitivities, rather than investment-cash flow sensitivities.

of power inside organizations and suggest that member banks (or divisions/segments in industrial firms) prefer larger capital allocations from the headquarters, implying that banks with more power within the organization can get larger capital allocations. The general implication of these models is that this will lead more powerful divisions or segments to overinvest or cause inefficient cross-subsidization.[9]

An alternative hypothesis to this 'dark side' view is that information asymmetry *within* the firm may cause such inefficiencies, whereas greater power may indicate better access to headquarters and consequently less information asymmetry and more efficiency. For example, Harris, Kriebel and Raviv (1982) identify asymmetric information *within* the firm as an essential feature of intrafirm resource allocation (see also Rajan and Reichelstein (2004) for a review of the subsequent managerial accounting literature influenced by Harris, Kriebel and Raviv (1982)). More asymmetric information within the firm complicates decision making at the headquarters and may lead to inefficiencies in internal capital markets. Similarly, Bernardo, Cai and Luo (2001, 2004) theoretically examine capital budgeting in the presence of asymmetric information within the firm. We hypothesize that the internal politics may mitigate such asymmetric information problems for the best connected (i.e., most powerful) member banks.

2.2 Data Description and Methodology

Our proprietary dataset on the internal capital market of a large banking group is from the firm's own internal managerial accounting system. The banking group is a network of about 200 member banks and a centralized headquarters that is jointly-owned by the member banks. Banks cannot self-select into this group and the group has never acquired banks from the outside (see Campello (2002) for a discussion of possible endogeneity concerns if that would be the case). The primary objective of the group seems profit maximization and the government has no direct ownership or involvement in the group. We can observe all relevant internal capital market

[9] In Scharfstein and Stein (2000), for example, more powerful managers ask for too large capital allocation (given their investment prospects) which leads to inefficient overinvestment (inefficient cross-subsidization). In Meyer, Milgrom and Roberts (1992) managers of divisions with poor investment opportunities lobby the headquarters for more funding, and successfully so if they are more powerful. Data limitations have generally complicated testing these theories, as typically only crude proxies rather than a direct proxy as we have are available. Rajan, Servaes and Zingales (2000) use a diversity measure to proxy for the 'dark sides' of power and show that power struggles lead to transfer from units with good investment opportunities (proxied by Tobin's Q) to those with worse opportunities. Wulf (2008) provides a related model where influence activities lead to inefficient resource allocations.

allocations, plus each member bank's loans (investments) and deposits (cash flows), all on a quarterly basis measured over the period from January 2005 to September 2007.

An important advantage of studying the internal market of a banking group is that investments are relatively continuous.[10] Further, unlike industrial firms, a bank's cash flows are generated mainly from retail deposit-taking activities, which are largely independent from the performance of investment activities (i.e., loans). This addresses a problem documented in the literature that cash flows may proxy for future investment opportunities. In our case, higher deposit inflows are not correlated with better previous investment performance, while (again unlike industrial firms) profits make up only a very minor part of a bank's net cash flows. Therefore, the banking business is a convenient setting for the study of internal capital market allocation, being essentially a "money business" in which "real" business activities (e.g. lending and deposit taking) coincide with financial activities (e.g., cash flows, capital allocation).

The group's institutional arrangements are such that all member banks operate in their own local geographic area and cannot branch out into other areas.[11] The spread of banks over geographical areas is hence not endogenous but determined by exogenous geographical constraints. All member banks of the group have an identical business model and pricing schedule, except that local conditions can create cross-region variations in funding and investment opportunities (and thus funding gaps).[12]

A. The Internal Capital Market

The group operates an internal capital market, which allows member banks to manage funding deficits and surpluses among themselves. All banks have three sources of funding: local deposits, retained earnings and headquarters funding (capital allocations). The funding from the

[10] In industrial firms, capital expenditures are usually discrete because of the substantial minimum size of new investment projects (e.g. plants, equipments, products) and long planning cycles prior to actual capital disbursements. This is particularly problematic in high frequency data as there may be a significant time lag between the planning, financing and building of an industrial facility. For example, an oil refinery built today could be planned five years ago without considering the financing conditions today. For banks, however, investment levels can be easily adjusted (by extending new loans and recalling old loans) in relatively small increments.

[11] The overall market of the banking group is divided into a dozen regions, which are highly-homogenous in terms of social and economic development. The average region inhabits 1.4 million people (standard deviation of 0.9 million) in a relatively small area of about 2,800 km² (about 1,100 square miles).

[12] As a result, comparisons across member banks are less problematic than comparisons of different divisions in a typical non-financial conglomerate. Our empirical design is hence not exposed to many of the problems documented in the literature on non-financial conglomerates and capital allocations therein (e.g. the problems resulting from inconsistent and objective reporting of segment data, see Villalonga (2004)).

headquarters arrives in the form of internal loans on which all banks pay the same interest rates independent of their risk. Member banks cannot access the external capital market themselves, nor are they allowed to invest their cash surpluses outside the firm. Member banks can invest their funds either in loans to customers in their local market or deposit any surplus funds at the headquarters. The headquarters provides reference rates to the member banks indicating how the interest rates on loans to customers need to be set.

The headquarters of the group is relatively financial unconstrained and has excellent access to the external capital markets. As the member banks are offering the same rates for the same deposit products[13] and we do not find any evidence that total full-time working hours at a member bank is correlated with deposit growth[14], the supply of local deposits could be considered largely exogenous to the member banks' efforts and influenced mainly by local economic and demographic conditions, competition with banks outside the group, as well as macroeconomic factors. In the subsequent analysis, we control for these factors by using geographic region-time fixed effects that change each quarter.

The detailed data from the internal accounting system of the group includes all transactions between the headquarters and the member banks. Specifically, we directly observe the funds which are transferred either from the headquarters to member banks or vice versa. Such data are typically not available from public sources. The data further includes a wide range of internal variables on the normal business activities of the banks, such as data on loans, deposits and profitability of banks. The core productivity variable, "Bank Productivity," is also used by the group for internal

[13] All member banks offer the same rates for deposits and are not allowed to deviate from these rates to avoid a cannibalization within the group. The rates are calculated and suggested by the headquarters and published on the internet and in all branches (on identical forms). Therefore, member banks could be compared with a franchise, e.g. McDonalds where all restaurants in the same area sell the 'Big Mac' for the same price. All banks offer identical products, marketing, and product design. Also, a lion share of member bank savings comes through a standardized internet savings tool where depositors manage their savings through a centralized website. Here different customers of different member banks receive identical rates as well.

[14] Banks facing more lending opportunities may undertake more effort to collect deposits. However, this may not affect our results for both theoretical and empirical reasons. First, empirically the number of hours worked each period at each of the member banks is not positively related to loan or deposit growth. In fact, we find a (sometimes marginally significant) negative coefficient. Therefore, if the number of hours worked (either standardized by total assets or not) is a proxy for effort, we do not find that more effort leads to greater loan or deposit growth. Second, if a member bank experiences a strong loan demand, it has two ways to fund it: (1) exert more effort and work harder or (2) call the headquarters for money. If the bank works harder this presumably comes at extra costs (e.g. overtime pay for staff) and is inefficient when the headquarters has resources available to fund these opportunities. Moreover, the argument that banks can work harder if they face better opportunities implies that banks were exerting inefficiently low levels of effort under normal circumstances. In short, a correlation between deposit and loan growth may still be an indication of inefficiency even if the effort of collecting deposits is higher when investment opportunities are good. For example, a correlation between effort and opportunities would also imply that if there is less demand for lending opportunities, member banks would exert less effort to raise deposits. From the banking group's perspective, this would be inefficient as other member banks may very well be able to use those additional deposits for their own lending opportunities.

performance assessment and is defined as the ratio of income over costs. Additional measures of profitability are return on assets (ROA) and return on equity (ROE).

B. Power

To study the effects of corporate politics on the functioning of the internal capital market, we have information on the exact ownership (cash flow) and voting (control) rights of the member banks in the headquarters. We use this information to construct a measure of power within the organization. (Disproportionate) "power" is defined as a member bank's voting rights share in the group divided by its ownership rights share. Using this divergence from one-share-one-vote to measure disproportionate control power is standard practice in the corporate governance literature, which generally finds that voting rights in excess of ownership rights are associated with private benefits (see e.g. Claessens, Djankov and Lang (2000), Doidge et al. (2005), Faccio and Lang (2002), Harvey, Lins and Roper (2001), Kim (2004), La Porta et al. (1999, 2002), Lemmon and Lins (2003), Lins (2003), and Leuz, Lins and Warnock (2006)).

Through their voting rights, member banks can exercise significant direct control and influence at the headquarters and decide, among other things, on the composition of its supervisory board (which elects, for example, the banking group's executive board). The number of voting rights assigned to a bank is a non-linear function of the bank's past ownership rights and hence indirectly to its past size. Irrespective of the number of shares a bank owns, the smallest member banks are given at least 1 vote while the largest member banks are assigned at most 10 votes. As voting rights are discrete (i.e., fractional votes are not possible), a member bank whose size barely qualifies for 7 votes would have the same voting rights and influence as another bank, whose larger size would almost qualify for 8 votes.

Ownership rights allow member banks to share in the profits and losses of the headquarters activities. The ownership rights of a member bank were mainly determined by past bank size, where larger member banks traditionally have more shares.

A value of our power variable (i.e., the share of voting rights divided by the share of ownership right) that is larger (smaller) than 1 suggests that a bank has disproportionally more (less) power within the organization and may be able to bargain for more (less) headquarters support than its ownership rights would indicate. Both voting and ownership rights of member banks are

historically given and do not change over our time period. Hence, they are treated as exogenous for our sample.[15]

Figures 2-A and 2-B illustrate the non-linear relationship between member bank size and their voting and ownership rights as well as our power variable. Size is measured as the total assets of a bank, using data at the end of our sample (i.e., third quarter of 2007). The non-linear relationship between voting rights and size induces a negative association between power and size. Indeed, the correlation between power and total assets (across all member banks and all quarters) equals -55%. In the subsequent analysis, we show that our power results are not driven by this correlation. We will also show that our power results are robust to controlling for ownership and voting rights of a member bank itself.

C. Descriptive Statistics

Table 1 provides descriptive statistics of the member banks in our sample. Exact definitions of all variables can be found in Appendix A1 and a correlation table in Appendix A2. Our sample consists of almost 2,000 bank-quarter observations, measured over the period from January 2005 to September 2007.

Not surprisingly, the main source of member bank funding comes from deposits (57%) by customers in the local market. Deposits consist mainly of savings deposits (43%) but also of term (3%) and current account deposits (11%). The main form of investments of a member bank is loans (80%) to its customers. The banking group's internal performance assessment measure of the profitability of a bank is termed the "Bank Productivity," with an average value of 1.35 and a standard deviation of 0.17. Larger banks perform better as can be seen by the positive and significant correlation between Bank Productivity and the log of total assets. The power variable has an average of 1.24, and its standard deviation of 0.68 indicates significant cross-sectional variation. The average bank holds 6.4 voting rights (votes) in the headquarters and has an ownership stake of 0.54%.

Table 2 summarizes the importance and size of the internal capital market. There are significant fund transfers within the group. Funds from the headquarters constitute on average 30% of the total liabilities of a member bank (deposits constitute another 57%); the ratios also vary

[15] Note that our power variable does not simply pick up past or current bank performance. First, better performing banks (which arguably have more free funds available) can not simply increase their ownership rights in the headquarters as this ownership is determined long before the start of our sample period. Second, we show in Section 3.4 that the positive effects of power also hold if we explicitly account for bank performance (e.g. if we run a horse race between performance measures and power in the loan growth regressions).

significantly across the firms in our sample. The average bank deposits 11% of total assets at the headquarters. As a result, *net* funds from the headquarters are equal to 19% of total assets. On average, 94% of the banks are net receivers of funds from the headquarters while only 6% are net providers. The net funds from the headquarters grow by 2.84% on a quarterly basis. In our subsequent analysis, we will try to understand to what extent these internal capital allocations are efficient and how they are affected by firm politics (power).

D. Controlling for Investment Opportunities

Accounting for investment opportunities which may differ across member banks is a major challenge in investment-cash flow regressions. Changes in loan and deposit growth could be driven by unobserved differences in local economic circumstances faced by different member banks. However, two aspects of our empirical design allow us to mitigate these endogeneity concerns: the use of regional fixed effects that change each quarter, and controlling for bank productivity.

As previously discussed, the homogeneity of member banks within the group and their markets enables across-bank comparisons. As a result, regional fixed effects that change each quarter can arguably control well for local investment opportunities factors that influence deposit growth and loan growth. Effectively, we compare a member bank in any given quarter to other nearby member banks (on average over one dozen) in the same quarter, where those other member banks are exposed to a very similar local economic environment (which we also allow to change over time).

As a second means to mitigate endogeneity concerns, we always control for the banking group's own internal measure of efficiency, the member bank productivity. This core productivity variable from the internal management system of the group will further capture differences in investment opportunities.

Besides these two aspects, the identical deposit pricing policy for all member banks within the group allows us to consider changes in the deposit supply as largely exogenous to a member bank (see Section 2.2). To account for intra-bank autocorrelations in the panel, all tables use robust standard errors clustered at the bank level. As an alternative to the region-quarter fixed effects, we also present results using both member bank dummies and quarter dummies.

3. Empirical Results

3.1 Net Funds from the Headquarters to the Member Banks

Our empirical analysis starts by exploring the functioning of the internal capital market, and specifically, the capital allocations within the banking group. Table 3 first looks at what can explain transfers between the headquarters and member banks. We consider two alternative measures of intragroup capital allocations, (1) the ratio of net funds from the headquarters divided by member bank total assets (in Panel A); and (2) the growth rate in net funds from the headquarters (in Panel B). In the first three regressions, the explanatory variables are local deposit growth, bank size, solvency, and bank productivity. Bank Size is the log of total assets. Solvency is a measure of capital constraints and calculated as the ratio of the actual capital of a bank to the bank capital that is required for banking supervision purposes.

The results in Table 3 show that member banks with lower local deposit growth get more funding from the headquarters. Panel A looks at the net funds from the headquarters (HQ) divided by total assets while Panel B considers the growth rate in net funds from the headquarters. We find a significantly negative association for both measures of internal capital allocation across different specifications, suggesting that the headquarters (at least partly) compensates member banks when they face low deposit growth and hence low local funding. However, the economic effects of this relation are very modest.[16]

The significant bank productivity variable in Table 3 shows that the allocations in the internal capital market pay some attention to the investment opportunities of banks. Banks with higher investment opportunities generally get more funding from the headquarters.[17] Finally, bank size seems to be unrelated to how much a member bank gets from the headquarters.

[16] Column 1 of Panel A implies that a decrease in deposit growth by one standard deviation (3.78%) leads to an increase in Net HQ Funds/Total Assets by only 3.78*0.003=1.1%, a very modest change compared with the average (19%) and standard deviation (11%) of Net HQ Funds/Total Assets. Using the coefficient reported in column 1 of Panel B, a one standard deviation increase in deposit growth is associated with a decrease of net HQ funds growth by only 3.78*1.317= 5.0%, which again is a modest fraction of the standard deviation of net HQ funds growth of 29.8%.

[17] Using the results in column 1 of Panel A that employ region-time fixed effects, a one standard deviation difference in Bank Productivity is associated with a difference in Net HQ Funds / Total Assets of 0.17*0.197= 3.3%. Using column 1 of Panel B, a one standard deviation change in the productivity variable is associated with a modest difference in Net HQ Funds Growth of (0.17*7.037=) 1.2%. Also, In Appendix Table A3, we decompose net funds from headquarters into gross funds from headquarters and gross deposit at the headquarters. Those results suggest that changes in both components contribute to the above findings.

Next, we study whether more powerful banks receive more funds from the headquarters. This analysis, using power as a proxy, provides us with some first insights on whether capital allocations are related to corporate politics inside the organization as the models by Meyer, Milgrom and Roberts (1992), Rajan, Servaes and Zingales (2000), or Scharfstein and Stein (2000) would suggest. We therefore regress funds from the headquarters on power after controlling for bank size, investment opportunities, and deposit growth. The estimates are reported in column 4-9 of Table 3 (in Panel A for net funds from the headquarters and in Panel B for the growth rate in net funds from the headquarters).

The results in Panel A show that consistent with agency models of internal capital markets, more powerful banks receive significantly more funds from the headquarters. The effect of power on internal capital allocation is also economically large. An increase in our power variable by one standard deviation is associated with an increase in the ratio of net funds from the headquarters to total assets by 0.42*0.137=0.057. This is equal to an increase in Net Funds from the HQ/Total Assets by almost 20% relative to its mean (0.057/0.30=0.19). As none of the member banks of the group is allowed to access the external capital markets directly, the difference in reliance on internal funding cannot be explained by some member banks' superior access to non-retail-deposit funding from external sources.

To mitigate concerns that our results are driven by variation in ownership or voting rights rather than by variation in our measure of power itself, the regressions in columns 7-9 directly control for both ownership and voting rights. The estimates document that our power results do not change once we also include the ownership and voting rights measures. Panel B shows further that we cannot detect an effect of power on the quarterly growth rate of net funds from headquarters. The effect on levels rather than growth rates suggests power has a longer-term effect on a member bank's capital structure.

3.2 The Effects of the Internal Capital Market on Net Loan Growth

In Table 4 we study the implications of the internal capital market by examining the investments of the member banks, as measured by their net loan growth. In particular, we ask (i) whether the internal capital market can insulate the investment of banks from its local deposit supply and (ii) whether the higher allocations of capital from the headquarters to the more powerful banks are associated with more or less inefficiencies in the internal capital market.

Following the banking literature, we measure investment of banks by looking at their net loan growth (see e.g. Houston, James and Marcus (1997) or Campello (2002)). Each dollar of net loan growth needs to be financed by cash flows either from local sources (deposits or bank capital) or from the headquarters. From an efficiency perspective, a bank should invest regardless of its local funding position if it has valuable investment opportunities and the banking group has sufficient resources (see Shin and Stulz (1998)).

To test whether the internal capital market insulates loan growth from local deposit growth, we regress net loan growth on net deposit growth as well as a set of controls. We again aim to control for investment opportunities by including region-quarter fixed effects and Bank Productivity in our panel regressions. In addition, we follow the methodology in Campello (2002) and include the lagged value of loan growth to further control for bank-specific growth opportunities. Additional controls are the log of total assets, growth in bank capital and a measure of capital constrains (Solvency).

The results in columns 1-3 of Table 4 (Panel A) suggest that net loan growth is significantly related to locally generated funds (deposit growth). While the banking group operates an active internal capital market (see Table 3), member bank investment is not fully insulated from the local deposit base. This implies that banks that fall short of local deposits have to adjust their investments downwards as the headquarters is not fully supporting them to cover the deposit shortfall. Further, some member banks may keep too much of their local deposits and use them for their own investment without offering them through the headquarters to other banks with relatively more valuable investment opportunities. As we have only 11 quarterly observations per bank, there is limited time series variation within banks, with which may explain the lack of significance with bank fixed effects (column 3). However, the positive association between net loan growth and deposit growth is robust to adding the region-time-fixed effects (columns 1 and 2). However, to the extent that these fixed effects or the other controls do not perfectly control for differences in investment opportunities, we cannot rule out that this association between loan growth and local deposit growth is partially driven by investment opportunities.

In Panel B we decompose deposit growth according to different maturities into current account growth, term deposits growth, and savings growth, we find that investment is mainly sensitive to changes in savings deposits. Changes in current account deposits do not seem to have large impact on loan growth, which rules out the Fama (1980, 1985) suggestion that a correlation

between loans and deposits might arise as banks require borrowers to maintain a current account for monitoring purposes with them.

On the positive side, the results in Table 4 also show that loan growth is higher for more productive banks which can turn the same amount of inputs (costs) into more outputs (revenues). Taken together, our findings indicate some frictions in the internal capital market of the bank organization. To the extent that differences in local investment opportunities across member banks are captured, this presents some evidence for capital allocation inefficiencies.

To measure the effects of power further, we investigate in a next step whether the higher allocation of capital to more powerful banks documented in Table 3 is associated with more or less inefficiencies in the internal capital market. To test for the efficiency effects of power in the internal capital market, we modify the regression specifications in columns 1 – 3 of Tables 4 to allow for the loan-to-deposit sensitivity to depend on the power of a bank. The corresponding estimates are reported in columns 4 - 8 of Panel A of Table 4.[18]

The results provide strong evidence that more powerful member banks exhibit *lower* sensitivity of their investments to their own internal cash flows. First, adding the interaction of deposit growth and power greatly increases the coefficient on deposit growth by itself, from 0.056 (column 1) to 0.273 (column 4) using region-time fixed effects.

Second, the coefficient on the interaction of deposit growth and power is significantly negative (-0.146 in column 4). As a result, we find economically meaningful evidence of possible inefficient capital allocations for member banks with low power. For example using column 4, for a member bank with power equal to 1, a one standard deviation shock to deposit growth is associated with a 3.8% x (0.273 – 0.146 x 1) = 0.5% increase in loan growth, which is almost one third of its standard deviation. However, for a member bank with power equal to 2, such deposit shock is associated with a 3.8% x (0.273 – 0.146 x 2) = -0.1% decrease in loan growth, which is not statistically significant from zero.

Third, these results are robust to using bank fixed effects and time fixed effects instead (column 5). They are again also robust to including the ownership and voting rights measures directly in the regressions (column 6). Finally, the economically and statistically significantly negative coefficient on the interaction of deposit growth and power is robust to adding the interactions of deposit growth and ownership rights (column 7) or deposit growth and voting rights

[18] Column 5 of Panel A (column 10 of Panel B) does not include power as it is captured by the bank fixed-effects.

(column 8).[19] This underscores that the power results are not driven by variation in either ownership or voting rights themselves, but rather by variation in their ratio.

Panel B provides further support for our findings and shows that power reduces the investment sensitivity across all different deposit types (columns 6-8), but most strongly for saving deposits growth (columns 9-10). These results are again robust to adding either region-time fixed effects or both bank and time fixed effects. As the positive association between loan growth and deposit growth is also strongest for savings deposits, the monitoring argument of Fama (1980, 1985) does not seem to propel this positive association.[20]

More powerful banks are hence better insulated from their local deposit base then less powerful banks. Combined with the results from Table 3, our findings suggest that more powerful banks get more funding from the headquarters which they use to smooth out deficits in local deposit growth. Given the generally inefficient character of the capital allocations inside the organization, power therefore has a 'bright side' in that it reduces inefficiencies in the internal capital market for those banks who have enough power vis-à-vis other banks and the headquarters.[21]

3.3 Large Deposit Shocks and the Internal Capital Market

This section examines how the internal capital market of the group reacts to large positive and negative shocks to the deposits of member banks. We create two dummy variables: Positive (Negative) Shock is a dummy that indicates a positive (negative) shock to deposit growth of a bank in a given quarter. It is defined as an increase in deposit growth by one standard deviation above (below) the sample median. Figure 3 illustrates the time series of the deposit shocks. The shocks are generally spread across our sample period, with in total 184 positive and 102 negative deposit shocks.

[19] The results in column 6 and 8 do not change once we use bank and time fixed effects. In column 7, Deposit Growth * Power becomes marginally insignificant with bank and time fixed effects.

[20] The monitoring argument holds that a correlation between loan and deposit growth can arise if banks require that borrowers maintain current (transaction) accounts for monitoring purposes.

[21] Table A3 in the Appendix complements the analysis of Table 3 and decomposes net funds from the headquarters in its two components: (gross) funds from the headquarters and deposits at the headquarters. The table shows that more powerful member banks receive more funds from the headquarters not only in net terms (after subtracting their deposits) but also in gross terms. Moreover, that table illustrates that less powerful member banks deposit more money at the headquarters. This could suggest that less powerful member banks deposit funds at the headquarters in an attempt to (partially) hedge against future deposit shortfalls given that the headquarters does not give them sufficient support in such situations. Acharya, Almeida and Campello (2007) use similar arguments to explain why financially constrained firms hold cash instead of repaying their debt. However, as the previous results have shown, these precautionary actions do not seem to be sufficient to insulate investments sufficiently from fluctuations in local deposits growth.

Table 5 analyzes the effects of these deposit shocks on the internal capital allocation. We regress net funds from the headquarters standardized by total assets (in Panel A) as well as the growth in net funds from the headquarters (in Panel B) on the deposit shock variables and a set of controls. The results in Table 5 show that the internal capital market reacts symmetrically to positive and negative deposit shocks experienced by member banks. The positive coefficient on Negative Shock shows that funding from headquarters increases as a response to sharp shortfall in local deposits. Similarly, net funds from headquarters go down when member banks are experiencing positive deposit shocks. The latter finding suggests that the headquarters takes away some of the surplus funds that arise locally due to the positive shocks.

As discussed in the previous section, we are interested in knowing whether the increase in funding from the headquarters during a negative deposit shock is big enough to insulate local loan growth from the lower deposit base. To test whether the internal capital market sufficiently smoothes out negative deposit shocks, we follow the methodology from Table 4 and now regress net loan growth on the positive and negative deposit shock dummies and the previous controls. To study the effects of power, we also interact the deposit shock dummies with our power variable. Again, we use region-time fixed effects and our productivity variable to control for differences in investment opportunities.

The results in Table 6 column 1 to 4 show that, despite the fact that banks borrow more from the headquarters if they experience negative local deposit shocks, the assistance from the internal capital market is far from sufficient in insulating lending from these negative shocks. This implies that banks experiencing adverse cash flow shocks have to bear most of the burden, although the headquarters funding infusion can relieve some shortage.[22]

Interestingly, we find that the effect of power is also asymmetric. Column 5 shows that power matters only when a bank receives a large positive deposit shock: more powerful banks are more likely to restrain their loan growth while less powerful banks boost lending after a positive deposit shock. This asymmetry is not consistent with a traditional agency story which would suggest that power leads to overinvestment, or the opposite from the result we find.

Rather, it may support the idea of better information flow between headquarters and the more powerful member banks, resulting in more headquarters funding available and more efficient allocations at powerful member banks. The asymmetries suggests that local banks have more

[22] The regression estimates also suggest that the relation between net loan growth and deposit shocks is asymmetric, as loans do not grow significantly faster after a positive deposit shock. However, this asymmetry goes into the opposite direction once we control for and interact it with power (see column 5).

discretion about the extent to which they keep deposits if they experience a positive shock than about how much funding they receive from the headquarters if they face a negative shock. This may be driven by information asymmetry *within* the firm, which Harris, Kriebel and Raviv (1982) identify as critical to intrafirm resource allocation. It may be difficult for the headquarters to gauge to what extent a positive deposit shock is not driven by better investment opportunities, allowing the member bank to keep more of it to lend out, which it may have a natural incentive to do. We hypothesize that internal politics may mitigate such asymmetric information problems for the best connected (i.e., most powerful) member banks.

As a robustness check for the previous analysis, we decompose our power variable into two dummy variables, Power Q1 and Power Q4, which take the values one if a bank is in the bottom (Q1) or top (Q4) power quartile. The results are reported in Table 7 and confirm our previous findings and suggest that our results are driven by the most powerful banks in the organization. Banks whose power is in the 4^{th} quartile are able to get larger allocations from the headquarters, are better insulated from the local deposit base and hence show the lowest sensitivity of investments to their own cash flows.

3.4 The Internal Capital Market for Poorly and Well Performing Banks

Efficient allocation of resources within an internal capital market should move funding to member banks whose investment opportunities are brighter and should reward member banks who are more productive. Allocation of capital based on productivity would thus raise the overall efficiency and return on capital of the banking group. In this section, we examine whether the headquarters indeed allocates capital in such an efficient way and whether more productive banks are less constrained by their own cash flow. We also study whether our power results are robust to specifications where we allow the investment-cash flow sensitivities to vary with bank performance measures. The latter exercise is conducted to make sure that our results are not driven by power proxying for ability.

Our main measure of bank performance is obtained from the group's internal accounting system. Specifically, the Bank Productivity variable is an income-over-cost ratio, which measures how well a member bank is turning input (costs) into output (income) in its lending activities. This can also be interpreted as a measure of a bank's investment opportunities, as more productive banks

can produce higher returns for a given investment. As a robustness check, we also consider ROA and ROE as alternative measures of bank performance.

In Table 8, we first study how funding from the headquarters is allocated. We regress Net Funds from Headquarters (HQ) on both own deposit growth and Bank Productivity, and allow the sensitivity of Net Funds from HQ to Deposit Growth to vary across banks by including an interaction between deposit growth and bank performance. In Panel A, Net Funds from HQ is once again scaled by the member bank's total assets, while in Panel B the growth of Net Funds from HQ is used as the dependent variable.

First, we find that more productive banks indeed receive more funding from the headquarters, both in the level (Panel A) and in the growth rate (Panel B). A one standard deviation increase in productivity can raise the Net Funds from HQ to Total Asset ratio by 3.5% and the growth rate by 1.4 percentage point. A one standard deviation increase in ROA can raise the ratio by 2.4% and the growth rate by 2.1 percentage point. Evidently, performance is an important criteria based on which the headquarters allocates capital.

Second, performance seems to affect how the headquarters respond to the member banks' own cash flow fluctuations. In general, the headquarters provides more capital to member banks experiencing slow or negative deposit growth and less to those with higher deposit growth. But more productive banks may benefit more from such a funding smoothing. The results in Table 8 indicate that Net Funds from HQ to Total Asset ratio is more responsive to a member banks financing need when the bank is more productive as measured by Bank Productivity, but we cannot find such an effect for Return on Assets or Return on Equity. If we look at the growth rate in net funds from the headquarters, we find that this variable is more responsive to a member bank's needs when the bank has a higher Return on Equity or Return on Assets. In this case, we cannot find such an effect for our bank productivity variable. To sum up, these findings provide some evidence that group headquarters pays more attention to better-performing member banks. However, the effects are not uniform across our performance measures.

In Table 9, we examine whether the sensitivity of net loan growth to deposit growth varies across banks with good and poor performance. Theories suggest that member bank's investments should not be sensitive to their own cash flows if the internal capital market allocates funding based on investment opportunities and can relieve the financing constraints for member banks experiencing a cash flow shortage. We are interested in whether more productive banks benefit more from the internal capital market, as evidenced by a lower investment-to-cash-flow sensitivity for more

productive banks. In Columns 1, 2, and 3, we show that for banks that are relatively more productive (using Bank Productivity), net loan growth is not only significantly faster but also significantly less sensitive to their own deposit growth. However, we do not obtain the same results in Column 4 and 5 when ROA or ROE are used as performance measures. Overall, the results suggest some (limited) evidence that the headquarters is willing to support more productive banks, and in particular when their deposit growth slows down.

In Column 6-10, we simultaneously control for productivity and power to test whether our power results are merely driven by differences in ability. We find that the effect of bank power on capital allocation, as documented previously in Section 3.2, is present in these regressions too, independent from the effect of Bank Productivity. These results suggest that the internal capital market relates to both power and productivity, and banks are more insulated from own cash flows when they are either more powerful or more productive. The effect of performance is, however, more limited than the effect of power. Overall, the results further imply that our power results are not driven by our measure of power proxying for ability, as the reduced sensitivity of investments to cash flows occurs for more powerful member banks, even after accounting for differences in ability or performance.

3.5 Power of Banks and Bank Performance

In the previous sections, we document that member bank power plays an important role in determining resource allocation in the internal capital market of the group. For example, more powerful member banks receive more funding from the headquarters and their net loan growth is less affected by the own deposit growth. Such an advantage resulting from power may help them better respond to and more fully exploit investment opportunities. With more limited assistance from the headquarters, less powerful banks in contrast may need to forgo good investment opportunities when internal cash flows fall short, and may over-invest in lower-return projects when cash flows are relatively abundant. The cumulative effect may be that more powerful banks are more productive and produce higher return on capital.

To investigate these issues, we run regressions of different measures of bank performance on our measure of power and a set of controls. The results are reported in Table 10. As performance measures we use bank productivity (Banking Productivity), return on equity (ROE), and return on assets (ROA), respectively.

The regressions document that more powerful banks also exhibit a significantly higher performance, for all three alternative measure of bank performance. The regressions further show that larger, better capitalized, and faster-growing banks exhibit better performance. With regard to the economic effect, a one standard deviation increase in power is associated with a 0.068 increase in bank productivity, a 0.61% increase in Return on Equity (ROE), and a 0.025% increase in Return on Assets (ROA). The standard deviation of bank productivity, ROE, and ROA are 0.17, 2.55%, and 0.203%, respectively.

All regressions again include region-time fixed effects, and are thus effectively comparing banks operating within very narrowly-defined local markets facing similar market conditions (such as investment opportunities and retail deposit supply). Our evidence suggests that power is an important and independent determinant of bank performance. The causality is unlikely to go the other way around, as the institutional arrangements in the group are such that voting rights are assigned to member banks independent from previous or current bank performance such as productivity, return on assets, or return on equity, and have not changed for over 20 years. Overall, the performance results further support our view of a 'bright side' of internal politics and power inside a corporate organization.

4. Conclusion

In this paper, we look into the internal capital market of a large retail-banking group to study how internal corporate politics affect capital allocation. As a proxy of the role of internal politics we use a member bank's disproportionate power inside the organization. Follow the related literature, the measure of capital allocation efficiency is defined as member bank's investments (i.e., loan growth) not being dependent on their local cash flows (i.e., deposit growth). Our set-up allows us to carefully control for investment opportunities, for example through region-time-specific fixed effects and the group's internal performance measure.

We document an active internal capital market. Net funds from the headquarters partly compensate member banks for lower deposit growth and are larger if investment opportunities are better. While member banks' net loan growth is higher for more productive banks with better opportunities, it also depends significantly on their own deposit growth. Thus, the internal capital market does not fully insulate loan growth from the local deposit base. To the extent that differences

in investment opportunities across member banks are captured, this presents some evidence of capital allocation inefficiencies.

We then consider the role of internal politics and power in internal capital allocation. We find strong evidence that more powerful member banks receive more funds from the headquarters and have *less* sensitivity of their investments to their cash flows. The effect of power is asymmetric as it especially reduces greater investments in case of positive cash flow shocks. This asymmetry suggests the opposite of power leading to overinvestment, and supports the idea of better information flow or less asymmetric information between the headquarters and powerful member banks.

Finally, the more efficient capital allocations to the more powerful member banks is associated with higher performance; power is positively related to bank productivity, ROE and ROA. Our results are not driven by our measure of power proxying for ability, as the reduced sensitivity of investments to cash flows only occurs for more powerful rather than better performing banks. Therefore, we conclude that internal politics and power inside an organization may have a 'bright' side in improving information flow and access at the headquarters.

References

Acharya, V., H. Almeida, and M. Campello, 2007, Is cash negative debt? A hedging perspective on corporate financial policies, *Journal of Financial Intermediation* 16, 515-554.

Bernardo, A. E., H. Caib and J. Luo, 2001, Capital budgeting and compensation with asymmetric information and moral hazard, *Journal of Financial Economics* 61 (3), 311-344.

Bernardo, A. E., H. Caib and J. Luo, 2004, Capital budgeting in multidivision firms: Information, agency, and incentives, *Review of Financial Studies* 17, 739-767.

Billet, M. T. and D. C. Mauer, 2003, Cross-subsidies, external financing constraints, and the contribution of the internal capital market to firm value, *Review of Financial Studies* 16 (4), 1167-1201.

Bushman, R., A. Smith, and F. Zhang, 2008, Investment-cash flow sensitivities are really investment-investment sensitivities, Working Paper, University of North Carolina, University of Chicago and Yale University.

Campello, M., 2002, Internal capital markets in financial conglomerates: Evidence from small bank responses to monetary policy, *Journal of Finance*, 57 (6), 2773-2805.

Claessens, S., S. Djankov and L. Lang, 2000, The separation of ownership and control in East Asian corporations, *Journal of Financial Economics* 58 (1-2), 81-112.

Doidge, C., G. A. Karolyi, K. V. Lins, D. P. Miller, and R. M. Stulz, 2005. Private Benefits of Control, Ownership, and the Cross-Listing Decision, *Journal of Finance*, forthcoming.

Faccio, M. and L. Lang, 2002, The ultimate ownership of Western European corporations, *Journal of Financial Economics* 65, 365-395.

Faccio, M., L. Lang and L. Young, 2001, Dividends and expropriation, *American Economic Review* 91(1), 54-78.

Fama, E., 1980, Banking in the theory of finance, *Journal of Monetary Economics* 6, Jan., 39-57.

Fama, E., 1985, What's different about banks? *Journal of Monetary Economics* 15, 29-39.

Giannetti, M. and A. Simonov, 2006, Which investors fear expropriation? Evidence from investors' stock picking, *Journal of Finance* 61(3), 1507-1547.

Glaser, M., F. Lopez-de-Silanes, and Z. Sautner, 2008, Looking inside a conglomerate: Efficiency of internal capital allocation and managerial power within a firm, Working Paper, University of Amsterdam.

Gopalan, R., V. Nanda, and A. Seru, 2007, Affiliated firms and financial support: Evidence from Indian Business Groups, *Journal of Financial Economics* 86, 75-795.

Harris, M., C. H. Kriebel and A. Raviv, 1982, Asymmetric information, incentives and intrafirm resource allocation, *Management Science* 28 (6), 604-620.

Harvey, C. R., K. V. Lins and A. H. Roper, 2001, The effect of capital structure When expected agency costs are extreme, *Journal of Financial Economics* 74(1), 3-30.

Holod, D. and J. Peek, 2006, Capital constraints, asymmetric information, and internal capital markets in banking: New evidence, Working Paper, SUNY at Stony Brook University and University of Kentucky.

Houston, J., C. James, and D. Marcus, 1997, Capital market frictions and the role of internal capital markets in banking, *Journal of Financial Economic* 46, 135-164.

Kim, E. H., 2004, To steal or not to steal: Firm attributes, legal environment and valuation, *Journal of Finance* 60(3), 1461 – 1493.

La Porta, R., F. Lopez-de-Silanes, and A. Shleifer, 1999, Corporate ownership around the world, *Journal of Finance* 54, 471-518.

La Porta, R., F. Lopez-De-Silanes, A. Shleifer and R. Vishny, 2002, Investor protection and corporate valuation, *Journal of Finance* 57(3), 1147-1170.

Lemmon, M. L., and K. V. Lins, 2003, Ownership structure, and firm value: Evidence from the East Asian financial crisis, *Journal of Finance* 58, 1445-1468.

Leuz, C., K. V. Lins, and F. E. Warnock, 2006. Do foreigners invest less in poorly governed firms?, *Review of Financial Studies*, forthcoming.

Lins, Karl, 2003, Equity Ownership and Firm Value in Emerging Markets, *Journal of Financial and Quantitative Analysis* 38, 2003, 159-184.

Meyer, M., P. Milgrom, and J. Roberts, 1992, Organizational prospects, influence costs, and ownership changes, *Journal of Economics and Management Strategy* 1(1), 10-35.

Rajan, M. V., and S. Reichelstein, 2004, A perspective on "asymmetric information, incentives and intrafirm resource allocation", *Management Science* 50 (12), 1615-1623.

Rajan, R., H. Servaes, and L. Zingales, 2000, The cost of diversity: The diversification discount and inefficient investment, *Journal of Finance*, 55(1), 35-80.

Scharfstein, D. S., and J. Stein, 2000, The dark side of internal capital markets: Divisional rent-seeking and inefficient investment, *Journal of Finance*, 55(6), 2537-2564.

Shin, H.-H., and R. M. Stulz, 1998, Are internal capital markets efficient?, *Quarterly Journal of Economics*, 113(2), 531-552.

Stein, J., 1997, Internal capital markets and the competition for corporate resources, *Journal of Finance* 52, 111-133.

Stein, J. C., 2003, Agency, information and corporate investment, in Handbook of the Economics of Finance, ed. by G. Constantinides, M. Harris, and R. M. Stulz. Elsevier, 111-165.

Villalonga, B., 2004, Diversification discount or premium: New evidence from the business information tracking series, *Journal of Finance* 59, 479-506.

Wulf, J., 2008, Influence and inefficiency in the internal capital market, *Journal of Economic Behavior and Organization*, forthcoming.

Table 1
Summary Statistics of Member Bank Characteristics

This table provides summary statistics of the member banks in our sample. For definitions of the variables see Appendix A1. Correlations of the main variables are reported in Appendix A2. We use quarterly data for the period Q1 2005 to Q3 2007 for about 200 member banks of the group. The total number of observations is 1991. Term Deposits Growth is winsorized at 5%.

Variable	Mean	Median	STD	5%	95%
Deposits/Total Assets	0.57	0.57	0.08	0.44	0.70
Current Account Deposits/Total Assets	0.11	0.11	0.03	0.08	0.17
Term Deposits/Total Assets	0.03	0.01	0.04	0.00	0.10
Saving Deposits/Total Assets	0.43	0.43	0.08	0.30	0.55
Deposit Growth (in %)	1.87	1.63	3.78	-2.36	6.79
Current Account Deposit Growth (in %)	2.25	2.12	10.68	-11.85	16.23
Term Deposit Growth (in %)	35.93	19.63	61.75	-54.34	191.21
Savings Deposit Growth (in %)	-0.34	0.14	3.01	-5.58	3.47
Loans/Total Assets	0.80	0.81	0.04	0.73	0.85
Loan Growth (in %)	2.13	1.98	1.63	0.09	4.63
Bank Capital/Total Assets	0.05	0.05	0.02	0.03	0.08
Bank Capital Growth (in %)	1.40	0.00	3.87	-0.28	8.87
Bank Productivity	1.35	1.34	0.17	1.10	1.62
Solvency	1.40	1.43	0.25	1.01	1.77
Loan Loss Provisions/Total Assets (in %)	0.050	0.012	0.115	-0.080	0.259
ROE (in %)	8.65	8.78	2.55	4.45	12.25
ROA (in %)	0.406	0.386	0.203	0.126	0.773
Power	1.24	1.15	0.42	0.68	2.01
Ownership Rights (in %)	0.54	0.49	0.29	0.18	1.10
Voting Rights	6.44	7.00	1.72	4.00	9.00

Table 2
Summary of Internal Capital Market Characteristics

This table provides details on the funding from the headquarters (HQ) and on intragroup capital allocations for the member banks in our sample. Funds from HQ are the funds (loans) extended by the headquarters to the member banks in the group. Deposits at HQ are the funds deposited by member banks at the headquarters. Net HQ Funds is the difference between loans from the headquarters and deposits at the headquarters. For definitions of the variables see Appendix A1. Correlations of the main variables are reported in Table A2. We use quarterly data for the period Q1 2005 to Q3 2007 for about 200 member banks of the group. The number of observations is 1991. Net HQ Funds Growth is winsorized at 5%.

Variable	Mean	Median	STD	5%	95%
Funds from HQ (in 1000 EUR)	370,000	307,000	291,000	70,800	862,000
Funds from HQ/Total Assets	0.30	0.30	0.09	0.15	0.44
Deposits at HQ (in 1000 EUR)	126,000	107,000	87,300	32,600	283,000
Deposits at HQ/Total Assets	0.11	0.10	0.03	0.07	0.17
Net HQ Funds (in 1000 EUR)	245,000	188,000	245,000	-10,700	641,000
Net HQ Funds/Total Assets	0.19	0.20	0.11	-0.01	0.36
Net HQ Funds Growth (in %)	2.84	2.52	29.76	-20.97	22.86
Net Provider of Funds	0.06				
Net Receiver of Funds	0.94				

Table 3
The Internal Capital Market: Explaining Funding from the Headquarters

This table looks at the determinants of funding from the headquarters (intragroup capital allocations). In Panel A, the dependent variable is net funds from the headquarters (defined as the difference between loans from the headquarters and deposits at the headquarters) divided by total assets of a member bank. In Panel B, the dependent variable is growth in net funds from the headquarters. This variable is winsorized at 5%. For definitions of the variables see Appendix A1. Our measure of power is the disproportionate power of a member bank in the group. It is defined as the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the member bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A:

	Net Funds HQ Funds/Total Assets								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Deposit Growth	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(3.93)***	(4.92)***	(7.26)***	(4.86)***	(5.87)***	(4.09)***	(4.86)***	(5.03)***	(4.42)***
Power				0.137	0.113	0.054	0.134	0.146	0.116
				(4.71)***	(3.94)***	(3.40)***	(4.04)***	(4.27)***	(3.58)***
Voting Rights								-0.022	0.019
								(1.61)	(2.53)**
Ownership Rights							-0.009	0.021	0.005
							(0.25)	(0.52)	(0.13)
Log(Total Assets)	0.001	0.005	0.098	0.074	0.065		0.076	0.131	
	(0.13)	(0.44)	(1.92)*	(3.94)***	(3.34)***		(3.83)***	(3.34)***	
Solvency	-0.207	-0.230	-0.091	-0.150	-0.164	-0.207	-0.149	-0.149	-0.168
	(8.28)***	(7.63)***	(4.00)***	(6.47)***	(6.41)***	(8.10)***	(6.49)***	(6.45)***	(7.24)***
Bank Productivity	0.197	0.217	0.012	0.125	0.154	0.185	0.124	0.127	0.141
	(5.46)***	(6.56)***	(0.72)	(3.22)***	(4.02)***	(5.16)***	(3.21)***	(3.32)***	(3.54)***
Region-Time-Fixed Effects	YES	NO	NO	YES	NO	YES	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO	NO	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1810	1810	1810	1810	1810	1810	1810	1810	1810
R-squared	0.54	0.35	0.38	0.63	0.43	0.57	0.63	0.63	0.61

Panel B:

	Net HQ Funds Growth								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)		
Deposit Growth	-1.317	-1.649	-1.337	-1.315	-1.648	-1.316	-1.314	-1.319	-1.316
	(4.65)***	(5.13)***	(4.28)***	(4.65)***	(5.13)***	(4.65)***	(4.64)***	(4.64)***	(4.64)***
Power				-1.038	-0.620	-0.623	-0.452	-0.003	-0.241
				(1.13)	(0.73)	(1.01)	(0.37)	(0.00)	(0.20)
Voting Rights								-0.793	-0.468
								(1.52)	(2.11)**
Ownership Rights							1.919	3.051	3.005
							(1.08)	(1.57)	(1.55)
Log(Total Assets)	0.198	0.272	-0.897	-0.364	-0.059		-0.865	1.055	
	(0.53)	(0.68)	(0.10)	(0.70)	(0.11)		(1.38)	(0.72)	
Solvency	-5.046	-3.093	-24.047	-5.462	-3.431	-5.192	-5.612	-5.569	-5.738
	(4.44)***	(2.78)***	(4.59)***	(4.75)***	(2.97)***	(4.89)***	(4.90)***	(4.84)***	(5.15)***
Bank Productivity	7.037	4.207	4.576	7.537	4.499	7.255	7.619	7.675	7.793
	(5.02)***	(2.85)***	(1.27)	(4.95)***	(2.88)***	(5.20)***	(5.11)***	(5.22)***	(5.28)***
Region-Time-Fixed Effects	YES	NO	NO	YES	NO	YES	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO	NO	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1682	1682	1682	1682	1682	1682	1682	1682	1682
R-squared	0.49	0.33	0.46	0.49	0.33	0.49	0.49	0.49	0.49

Table 4
The Effects of the Internal Capital Market on Loan Growth

Panel A of this table presents regressions of loan growth (in %) of a bank on deposit growth and a set of control variables for the member banks in our sample. Our measure of power is the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. Panel B decomposes deposit growth into its components, i.e. current account deposits growth, term deposits growth and savings deposits growth. For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 banks. All standard errors are clustered at the bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A:

	Loan Growth							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Deposit Growth	0.056	0.059	0.033	0.273	0.198	0.270	0.189	0.227
	(1.88)*	(2.29)**	(1.26)	(3.76)***	(2.88)***	(3.70)***	(1.32)	(1.84)*
Power				0.084		0.116	-0.013	0.083
				(0.37)		(0.40)	(0.05)	(0.35)
Deposit Growth * Power				-0.146	-0.110	-0.145	-0.112	-0.139
				(3.79)***	(2.85)***	(3.75)***	(1.99)**	(3.76)***
Voting Rights						-0.132		-0.133
						(1.22)		(1.42)
Ownership Rights						0.060	-0.209	
						(0.13)	(0.52)	
Deposit Growth * Voting Rights								0.005
								(0.41)
Deposit Growth * Ownership Rights							0.071	
							(0.64)	
Bank Capital Growth	-0.017	0.003	-0.001	0.020	0.031	0.021	0.015	0.017
	(0.96)	(0.22)	(0.07)	(1.21)	(1.82)*	(1.24)	(0.89)	(0.98)
Log(Total Assets)	-0.066	-0.072	4.045	-0.145	3.788	0.209	-0.127	0.202
	(0.87)	(0.88)	(1.69)*	(1.12)	(1.59)	(0.65)	(0.73)	(0.63)
Solvency	-1.426	-1.104	-5.545	-1.441	-5.494	-1.432	-1.443	-1.436
	(4.14)***	(4.03)***	(3.78)***	(3.78)***	(3.96)***	(3.74)***	(3.71)***	(3.67)***
Bank Productivity	1.635	1.233	0.948	1.570	0.716	1.577	1.580	1.591
	(4.59)***	(3.52)***	(1.23)	(4.11)***	(0.96)	(4.14)***	(4.01)***	(3.95)***
Loan Loss Provisions/Total Assets	-45.180	20.362	-0.593	-36.034	-0.498	-0.359	-0.402	-0.382
	(0.89)	(0.50)	(1.04)	(0.72)	(0.89)	(0.73)	(0.81)	(0.76)
Lag Loan Growth	0.210	0.225	-0.029	0.203	-0.027	0.200	0.202	0.201
	(4.20)***	(4.40)***	(0.70)	(3.90)***	(0.65)	(3.88)***	(3.91)***	(3.94)***
Region-Time-Fixed Effects	YES	NO	NO	YES	NO	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	YES	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1629	1629	1629	1629	1629	1629	1629	1629
R-squared	0.21	0.14	0.09	0.23	0.11	0.23	0.23	0.23

Panel B:

	Loan Growth									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Power						-0.125	-0.104	-0.307	-0.239	
						(0.52)	(0.43)	(1.28)	(0.97)	
Current Account Deposits Growth	0.008			0.008	0.006	0.028			0.026	0.024
	(1.74)*			(1.90)*	(1.68)*	(2.15)**			(2.07)**	(2.32)**
Term Deposits Growth		-0.000		-0.000	-0.000		0.001		0.002	0.002
		(0.92)		(1.03)	(0.79)		(1.56)		(2.46)**	(2.17)**
Savings Deposits Growth			0.104	0.106	0.068			0.304	0.310	0.215
			(1.96)*	(2.00)**	(1.43)			(2.59)**	(2.66)***	(1.80)*
Current Account Deposits Growth * Power						-0.014			-0.012	-0.012
						(1.84)*			(1.61)	(1.84)*
Term Deposits Growth * Power							-0.001		-0.001	-0.001
							(1.95)*		(2.82)***	(2.36)**
Savings Deposits Growth * Power								-0.151	-0.153	-0.107
								(2.56)**	(2.60)**	(1.77)*
Bank Capital Growth	-0.000	0.006	0.003	-0.004	0.007	0.007	0.005	0.002	0.002	0.015
	(0.03)	(0.45)	(0.22)	(0.30)	(0.70)	(0.43)	(0.40)	(0.14)	(0.14)	(1.30)
Log(Total Assets)	-0.062	-0.067	-0.046	-0.049	4.605	-0.135	-0.136	-0.161	-0.153	4.364
	(0.80)	(0.85)	(0.59)	(0.62)	(1.98)**	(0.98)	(0.98)	(1.19)	(1.12)	(1.87)*
Solvency	-1.457	-1.468	-1.412	-1.398	-5.368	-1.505	-1.527	-1.491	-1.464	-5.161
	(4.17)***	(4.17)***	(4.14)***	(4.13)***	(3.89)***	(3.89)***	(3.93)***	(3.90)***	(3.85)***	(4.02)***
Bank Productivity	1.620	1.605	1.610	1.623	0.913	1.670	1.664	1.758	1.729	1.204
	(4.37)***	(4.32)***	(4.38)***	(4.42)***	(1.22)	(4.05)***	(4.02)***	(4.15)***	(4.10)***	(1.43)
Loan Loss Provisions/Total Assets	-0.536	-0.593	-0.565	-0.504	-0.570	-0.495	-0.572	-0.679	-0.598	-0.587
	(1.03)	(1.11)	(1.12)	(1.02)	(1.04)	(0.93)	(1.07)	(1.34)	(1.21)	(1.05)
Lag Loan Growth	0.211	0.212	0.209	0.209	-0.028	0.209	0.213	0.210	0.209	-0.022
	(4.15)***	(4.18)***	(4.12)***	(4.13)***	(0.69)	(4.05)***	(4.13)***	(4.21)***	(4.18)***	(0.56)
Region-Time-Fixed Effects	YES	YES	YES	YES	NO	YES	YES	YES	YES	NO
Bank and Time Fixed Effects	NO	NO	NO	NO	YES	NO	NO	NO	NO	YES
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1629	1629	1629	1629	1629	1629	1629	1629	1629	1629
R-squared	0.20	0.20	0.21	0.22	0.10	0.20	0.20	0.23	0.23	0.11

Table 5
The Internal Capital Market and Deposit Shocks

This table looks at the effects of deposit shocks on the funding from the headquarters (intragroup capital allocations). The dependent variable in Panel A is net funds from the headquarters divided by total assets of a member bank. In Panel B the dependent variable is growth in net funds from the headquarters (in %). This variable is winsorized at 5%. Deposit shocks are large positive or negative shocks to the deposits of a member bank. Positive Shock is a dummy that indicates a positive shock to deposit growth of a member bank in a given quarter. It is defined as an increase in deposit growth by one standard deviation above the median. Negative Shock is a dummy that indicates a negative shock to deposit growth of a bank in a given quarter. It is defined as a decrease in deposit growth by one standard deviation below the median. Our measure of power is the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. For definitions of the other variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the member bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A:

	Net Funds HQ Funds/Total Assets				
	(1)	(2)	(3)	(4)	(5)
Positive Shock	-0.019		-0.019	-0.023	-0.023
	(2.42)**		(2.27)**	(10.40)***	(3.16)***
Negative Shock		0.019	0.018	0.012	0.016
		(1.91)*	(1.75)*	(5.68)***	(1.82)*
Power					0.137
					(4.72)***
Log(Total Assets)	0.002	0.001	0.002	0.071	0.074
	(0.16)	(0.14)	(0.17)	(1.26)	(3.96)***
Solvency	-0.207	-0.203	-0.206	-0.094	-0.149
	(8.11)***	(8.02)***	(8.15)***	(4.08)***	(6.38)***
Bank Productivity	0.196	0.195	0.196	0.011	0.125
	(5.38)***	(5.38)***	(5.39)***	(0.64)	(3.19)***
Region-Time-Fixed Effects	YES	NO	NO	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES
Observations	1810	1810	1810	1810	1810
R-squared	0.53	0.53	0.53	0.33	0.62

Panel B:

	Net HQ Funds Growth				
	(1)	(2)	(3)	(4)	(5)
Positive Shock	-10.819		-10.400	-10.910	-10.350
	(12.13)***		(12.24)***	(11.94)***	(12.16)***
Negative Shock		10.446	9.742	10.043	9.790
		(10.36)***	(10.34)***	(8.75)***	(10.54)***
Power					-1.169
					(1.18)
Log(Total Assets)	0.398	0.249	0.461	-18.139	-0.172
	(0.92)	(0.67)	(1.16)	(1.91)*	(0.31)
Solvency	-5.398	-3.084	-4.594	-25.437	-5.053
	(4.44)***	(2.90)***	(4.02)***	(4.72)***	(4.32)***
Bank Productivity	6.693	6.045	6.603	3.923	7.164
	(4.46)***	(4.52)***	(4.47)***	(1.06)	(4.49)***
Region-Time-Fixed Effects	YES	NO	NO	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES
Observations	1682	1682	1682	1682	1682
R-squared	0.40	0.37	0.44	0.41	0.44

Table 6
The Effects of the Internal Capital Market on the Relation between Loan Growth and Deposit Shocks

This table looks at the effects of deposit shocks on loan growth. The dependent variable in the reported regressions is loan growth of a member bank (in %). Positive Shock is a dummy that indicates a positive shock to deposit growth of a member bank in a given quarter. It is defined as an increase in deposit growth by one standard deviation above the median. Negative Shock is a dummy that indicates a negative shock to deposit growth of a member bank in a given quarter. It is defined as a decrease in deposit growth by one standard deviation below the median. Our measure of power is the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. For definitions of the other variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the member bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

	Loan Growth				
	(1)	(2)	(3)	(4)	(5)
Positive Shock	0.114		0.090	-0.157	1.884
	(0.50)		(0.39)	(0.72)	(3.07)***
Negative Shock		-0.512	-0.507	-0.511	-0.857
		(2.02)**	(1.99)**	(2.20)**	(1.25)
Power					-0.031
					(0.13)
Positive Shock * Power					-1.397
					(3.47)***
Negative Shock * Power					0.269
					(0.53)
Bank Capital Growth	0.006	0.002	0.002	0.010	0.003
	(0.45)	(0.13)	(0.14)	(1.10)	(0.25)
Log(Total Assets)	-0.065	-0.069	-0.070	4.840	-0.141
	(0.84)	(0.86)	(0.89)	(2.04)**	(1.02)
Solvency	-1.454	-1.504	-1.491	-5.424	-1.521
	(4.09)***	(4.22)***	(4.14)***	(3.75)***	(3.79)***
Bank Productivity	1.602	1.618	1.614	0.860	1.623
	(4.30)***	(4.39)***	(4.37)***	(1.17)	(3.98)***
Loan Loss Provisions/Total Assets	-57.031	-50.812	-49.188	-0.627	-0.503
	(1.06)	(0.97)	(0.93)	(1.09)	(0.94)
Lag Loan Growth	0.211	0.212	0.211	-0.032	0.214
	(4.13)***	(4.19)***	(4.17)***	(0.78)	(4.19)***
Region-Time-Fixed Effects	YES	YES	YES	NO	YES
Bank and Time Fixed Effects	NO	NO	NO	YES	NO
Clustering by Bank	YES	YES	YES	YES	YES
Observations	1629	1629	1629	1629	1629
R-squared	0.20	0.20	0.20	0.10	0.21

Table 7
The Internal Capital Market and Power of Banks: Robustness Checks

This table looks at the effects of different power quartiles on funding from the headquarters (intragroup capital allocations) and loan growth. In column (1), the dependent variable is net funds from the headquarters (defined as the difference between loans from the headquarters and deposits at the headquarters) divided by total assets of a bank. In column (2), the dependent variable is growth in net funds from the headquarters. In column (3), the dependent variable is loan growth (in %). Our measure of power is the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. Power Q1 and Power Q4 are dummies for banks that are in the bottom or top power quartile. For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

	Net HQ Funds/Total Assets	**Net HQ Funds Growth**	**Loan Growth**
	(1)	(2)	(3)
Deposit Growth	-0.003	-1.315	0.096
	(4.29)***	(4.64)***	(3.26)***
Power Q1	-0.028	0.364	-0.168
	(1.76)*	(0.57)	(0.99)
Power Q4	0.088	-0.265	0.241
	(4.58)***	(0.39)	(1.56)
Deposit Growth*Power Q1			0.090
			(1.18)
Deposit Growth*Power Q4			-0.118
			(3.23)***
Bank Capital Growth			0.014
			(0.76)
Log(Total Assets)	0.050	-0.070	-0.036
	(3.22)***	(0.13)	(0.32)
Solvency	-0.181	-5.254	-1.407
	(7.30)***	(4.39)***	(3.84)***
Bank Productivity	0.132	7.333	1.537
	(3.40)***	(4.93)***	(4.05)***
Loan Loss Provisions/Total Assets			-0.453
			(0.90)
Lag Loan Growth			0.202
			(3.92)***
Region-Time-Fixed Effects	YES	YES	YES
Clustering by Bank	YES	YES	YES
Observations	1810	1682	1629
R-squared	0.60	0.49	0.23

Table 8
The Internal Capital Market for Well and Poorly Performing Member Banks

This table looks at funding from the headquarters (intragroup capital allocations) for well and poorly performing member banks. The dependent variable in the Panel A is net funds from the headquarters divided by total assets of a member bank and in Panel B net growth in net funds from the headquarters (in %). Bank performance is measured as Banking Productivity, return on equity (ROE) or return on asset (ROA). Relative Bank Productivity (Rel. Bank Prod.) is the deviation of Bank Productivity value from the variable's mean. For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the member bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A:	**Net Funds HQ Funds/Total Assets**								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Deposit Growth	0.005	-0.003	0.001	-0.003	-0.002	0.002	-0.003	-0.002	-0.002
	(1.45)	(6.07)***	(1.18)	(4.73)***	(1.69)*	(0.66)	(6.69)***	(4.03)***	(1.90)*
Deposit Growth * Bank Prod.	-0.005		-0.003			-0.004			
	(2.26)**		(3.91)***			(1.61)			
Deposit Growth * Rel. Bank Prod.		-0.005					-0.004		
		(2.26)**					(1.61)		
Deposit Growth * ROE				0.000				-0.000	
				(0.28)				(1.31)	
Deposit Growth * ROA					-0.001				-0.002
					(0.20)				(0.43)
Power						0.137	0.137	0.157	0.154
						(4.70)***	(4.70)***	(6.02)***	(5.95)***
Log(Total Assets)	0.001	0.001	0.103	0.006	0.006	0.074	0.074	0.088	0.086
	(0.12)	(0.12)	(2.06)**	(0.57)	(0.56)	(3.94)***	(3.94)***	(5.13)***	(5.05)***
Solvency	-0.208	-0.208	-0.091	-0.196	-0.212	-0.151	-0.151	-0.133	-0.148
	(8.31)***	(8.31)***	(4.02)***	(7.72)***	(8.62)***	(6.55)***	(6.55)***	(5.57)***	(6.16)***
Bank Productivity	0.208	0.208	0.019			0.133	0.133		0.082
	(6.09)***	(6.09)***	(1.21)			(3.60)***	(3.60)***		
ROE				0.004				0.001	
				(1.72)*				(0.68)	
ROA					0.117				(2.19)**
					(2.73)***				-1.453
Region-Time-Fixed Effects	YES	YES	NO	YES	YES	YES	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO	NO	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1810	1810	1810	1810	1810	1810	1810	1810	1810
R-squared	0.54	0.54	0.39	0.48	0.49	0.63	0.63	0.60	0.60

Panel B:	**Net Funds from HQ Growth**								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Deposit Growth	-0.639	-1.333	-0.612	-0.737	-0.775	-0.630	-1.332	-0.738	-0.775
	(0.41)	(5.39)***	(0.35)	(2.82)***	(2.51)**	(0.40)	(5.39)***	(2.81)***	(2.51)**
Deposit Growth * Bank Prod.	-0.514		-0.553			-0.520			
	(0.48)		(0.46)			(0.49)			
Deposit Growth * Rel. Bank Prod.		-0.514					-0.520		
		(0.48)					(0.49)		
Deposit Growth * ROE				-0.094				-0.094	
				(2.64)***				(2.62)***	
Deposit Growth * ROA					-1.803				-1.802
					(2.10)**				(2.10)**
Power						-1.065	-1.065	-0.307	-0.121
						(1.17)	(1.17)	(0.32)	(0.13)
Log(Total Assets)	0.186	0.186	0.038	0.175	0.216	-0.390	-0.390	0.011	0.152
	(0.50)	(0.50)	(0.00)	(0.47)	(0.58)	(0.76)	(0.76)	(0.02)	(0.32)
Solvency	-5.166	-5.166	-23.901	-5.900	-6.093	-5.593	-5.593	-6.017	-6.140
	(4.61)***	(4.61)***	(4.56)***	(5.08)***	(4.71)***	(4.95)***	(4.95)***	(5.16)***	(4.81)***
Bank Productivity	8.137	8.137	5.948			8.661	8.661		
	(3.30)***	(3.30)***	(1.34)			(3.51)***	(3.51)***		
ROE				0.690				0.696	
				(5.81)***				(5.81)***	
ROA					10.289				10.317
					(3.75)***				(3.79)***
Region-Time-Fixed Effects	YES	YES	NO	YES	YES	YES	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO	NO	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1682	1682	1682	1682	1682	1682	1682	1682	1682
R-squared	0.49	0.49	0.46	0.51	0.51	0.49	0.49	0.51	0.51

Table 9
The Effects of the Internal Capital Market on Loan Growth for Well and Poorly Performing Banks

This table looks at loan growth for well and poorly managed banks. The dependent variable in all regressions is net loan growth of a bank (in %). Bank performance is measured as Bank Productivity, return on equity (ROE) or return on assets (ROA). Relative Bank Productivity is the deviation of Banking Productivity from the variable's mean. For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

	Loan Growth									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Deposit Growth	0.332	0.053	0.381	0.099	0.020	0.341	0.645	0.293	0.454	0.278
	(1.91)*	(1.73)*	(2.44)**	(1.36)	(0.67)	(2.00)**	(4.79)***	(3.99)***	(3.76)***	(3.37)***
Deposit Growth *Bank Prod.	-0.207		-0.260			-0.213	-0.261			
	(1.80)*		(2.43)**			(1.89)*	(4.45)***			
Deposit Growth * Rel. Bank Prod.		-0.207						-0.261		
		(1.80)*						(4.45)***		
Deposit Growth * ROE				-0.006					-0.016	
				(0.71)					(2.49)**	
Deposit Growth * ROA					0.116					-0.009
					(1.44)					(0.12)
Power						-0.223	0.053	0.053	0.240	0.229
						(0.94)	(0.24)	(0.24)	(1.10)	(1.08)
Deposit Growth * Power							-0.161	-0.161	-0.187	-0.146
							(4.14)***	(4.14)***	(4.00)***	(3.63)***
Bank Capital Growth	-0.039	-0.039	-0.033	-0.049	-0.007	-0.042	-0.004	-0.004	-0.037	0.015
	(1.69)*	(1.69)*	(1.90)*	(1.33)	(0.39)	(1.85)*	(0.22)	(0.22)	(1.30)	(0.89)
Log(Total Assets)	-0.076	-0.076	4.125	-0.071	-0.040	-0.194	-0.186	-0.186	-0.102	-0.049
	(0.95)	(0.95)	(1.72)*	(0.87)	(0.51)	(1.37)	(1.37)	(1.37)	(0.82)	(0.41)
Solvency	-1.469	-1.469	-5.558	-1.585	-1.616	-1.564	-1.513	-1.513	-1.574	-1.564
	(4.04)***	(4.04)***	(3.84)***	(4.26)***	(4.45)***	(3.86)***	(3.74)***	(3.74)***	(3.93)***	(4.05)***
Bank Productivity	2.086	2.086	1.766			2.216	2.153	2.153		
	(4.12)***	(4.12)***	(2.28)**			(4.05)***	(4.29)***	(4.29)***		
ROE				0.131					0.140	
				(4.15)***					(4.58)***	
ROA					1.792					1.789
					(4.05)***					(3.96)***

Loan Loss Provisions/Total Assets	-0.497	-0.498	-0.610	-0.087	0.904	-0.465	-0.402	-0.402	-0.172	0.808
	(0.99)	(0.99)	(1.05)	(0.16)	(1.70)*	(0.92)	(0.83)	(0.83)	(0.33)	(1.59)
Lag Loan Growth	0.213	0.213	-0.029	0.187	0.217	0.213	0.206	0.206	0.188	0.214
	(4.30)***	(4.30)***	(0.70)	(3.41)***	(4.39)***	(4.23)***	(4.01)***	(4.01)***	(3.45)***	(4.29)***
Region-Time-Fixed Effects	YES	YES	NO	YES	YES	YES	YES	YES	YES	YES
Bank and Time Fixed Effects	NO	NO	YES	NO	NO	NO	NO	NO	NO	NO
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1629	1629	1629	1629	1629	1629	1629	1629	1629	1629
R-squared	0.22	0.22	0.11	0.21	0.21	0.22	0.24	0.24	0.24	0.23

Table 10
Power of Member Banks and Bank Performance

This table presents regressions of bank performance on our measure of member bank power and a set of controls. The performance measure and dependent variable in regression (1) - (3) is bank productivity (Bank Prod.), in regressions (4) - (6) return on equity (ROE), and in regressions (7) - (9) return on assets (ROA). For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 member banks. All standard errors are clustered at the member bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

	Bank Productivity		**ROE**		**ROA**	
	(1)	(2)	(3)	(4)	(5)	(6)
Log(Total Assets)	0.039	0.121	0.553	1.295	0.022	0.052
	(2.37)**	(4.15)***	(2.68)***	(3.45)***	(1.73)*	(2.48)**
Power		0.162		1.453		0.060
		(3.80)***		(2.61)***		(1.95)*
Solvency	0.137	0.194	3.047	3.558	0.221	0.242
	(2.48)**	(3.41)***	(4.90)***	(5.70)***	(5.95)***	(6.47)***
Loan Loss Provisions/Total Assets	0.112	0.081	-1.996	-2.276	-0.570	-0.582
	(1.35)	(1.19)	(0.93)	(1.04)	(4.92)***	(5.06)***
Lag Loan Growth	0.021	0.020	0.532	0.523	0.012	0.012
	(4.99)***	(5.05)***	(7.41)***	(7.22)***	(4.06)***	(4.07)***
Region-Time-Fixed Effects	YES	YES	YES	YES	YES	YES
Clustering by Bank	YES	YES	YES	YES	YES	YES
Observations	1629	1629	1629	1629	1629	1629
R-squared	0.25	0.31	0.32	0.34	0.69	0.70

Figure 1
Time Series Distribution of Loan and Deposit Growth at the Banking Group Level

This figure shows the time series of deposit and loan growth at the banking group level. Both variables are calculated after the aggregation of all loans and deposits over all member banks.

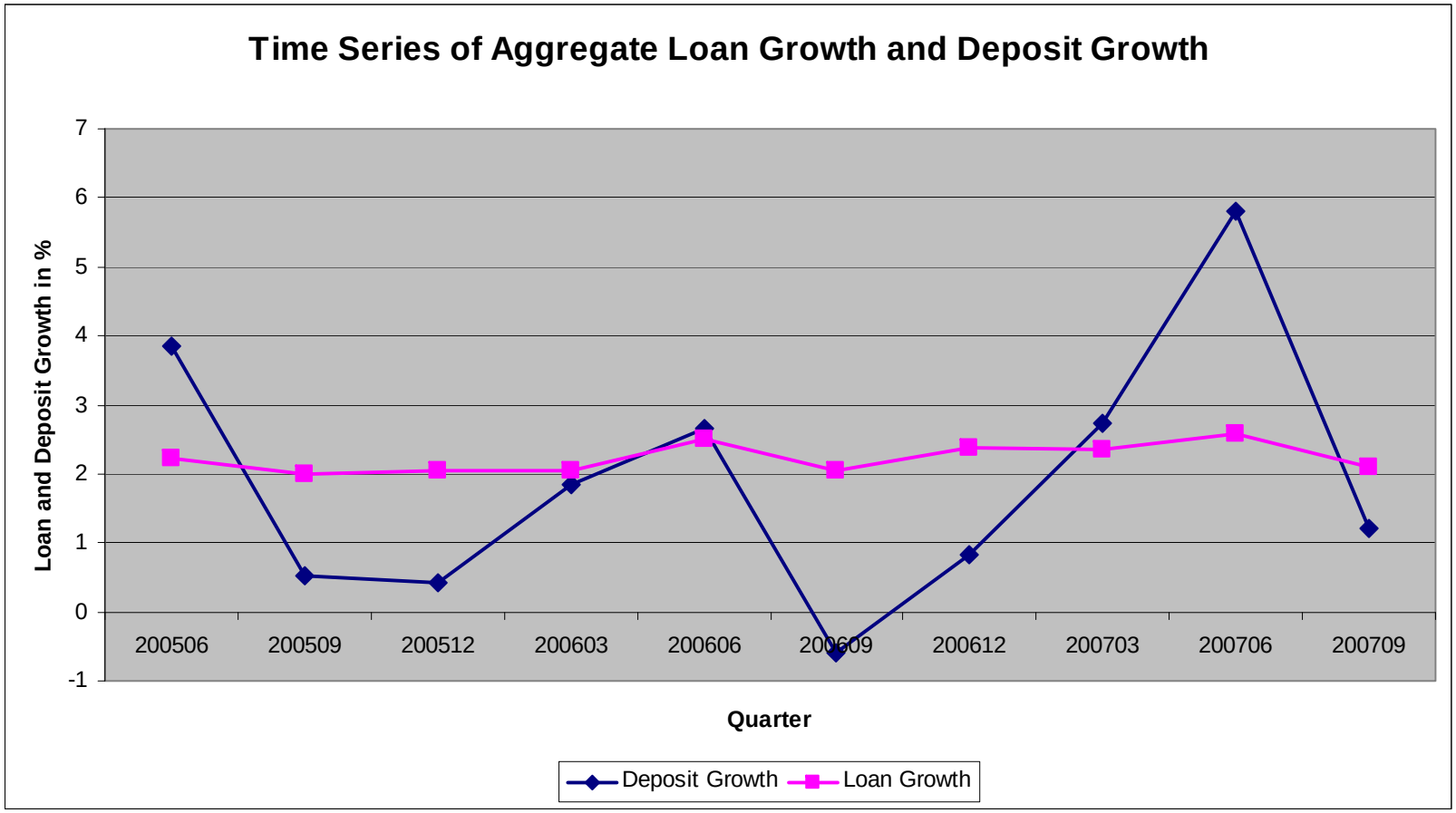


Figure 2
Power Distribution in the Banking Group

Figure 2-A shows the non-linear relation between member bank size (measured by total assets of a bank) and number of voting rights (left axis). It also shows the relation between member bank size and ownership rights (in %, right axis). Figure 2-B plots the relation between the power variable and bank size. Power is the share of voting rights of a bank divided by the share of ownership rights of a member bank in the headquarters. The observations in the figure are based on values at the third quarter of year 2007.

Figure 2-A:

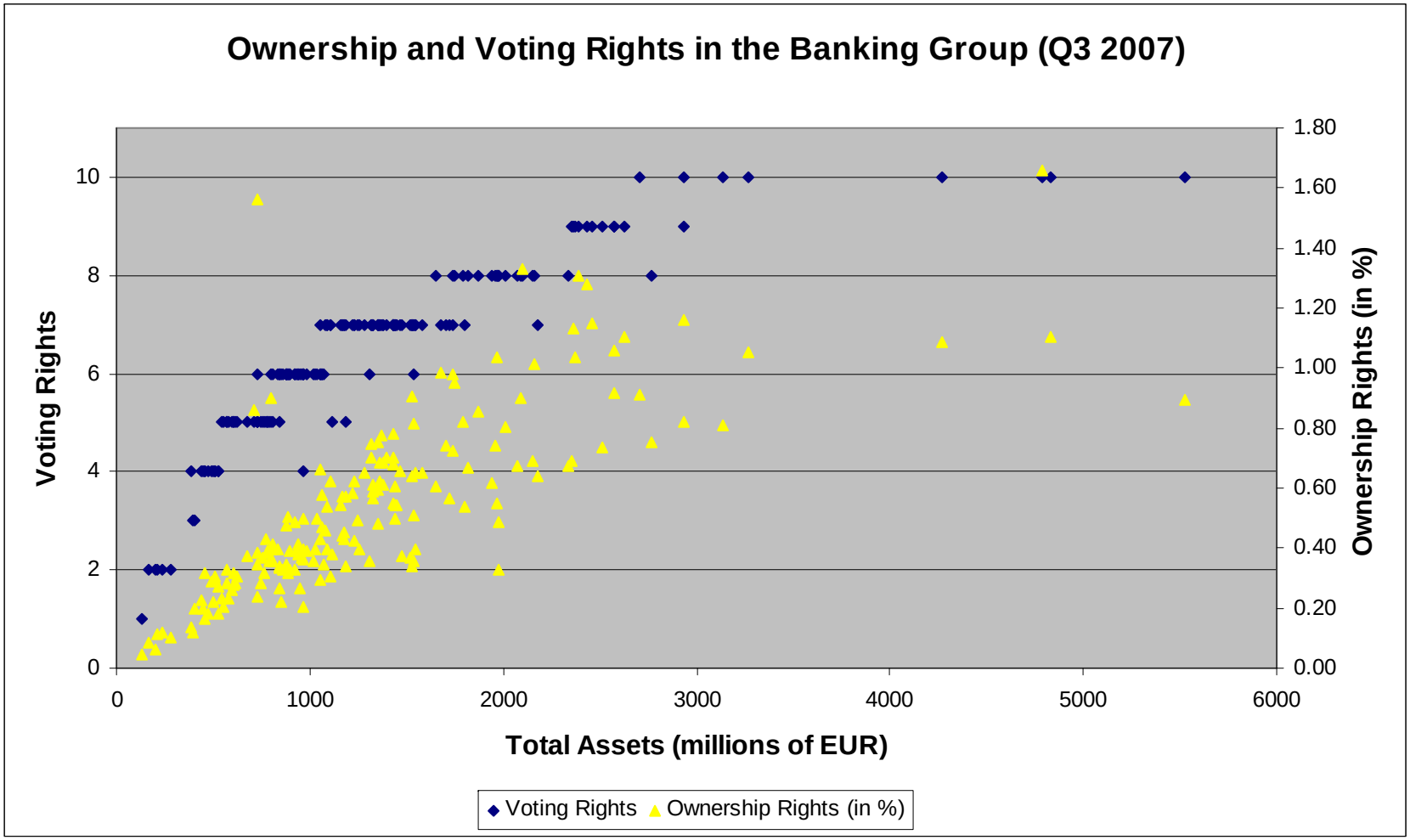


Figure 2-B:

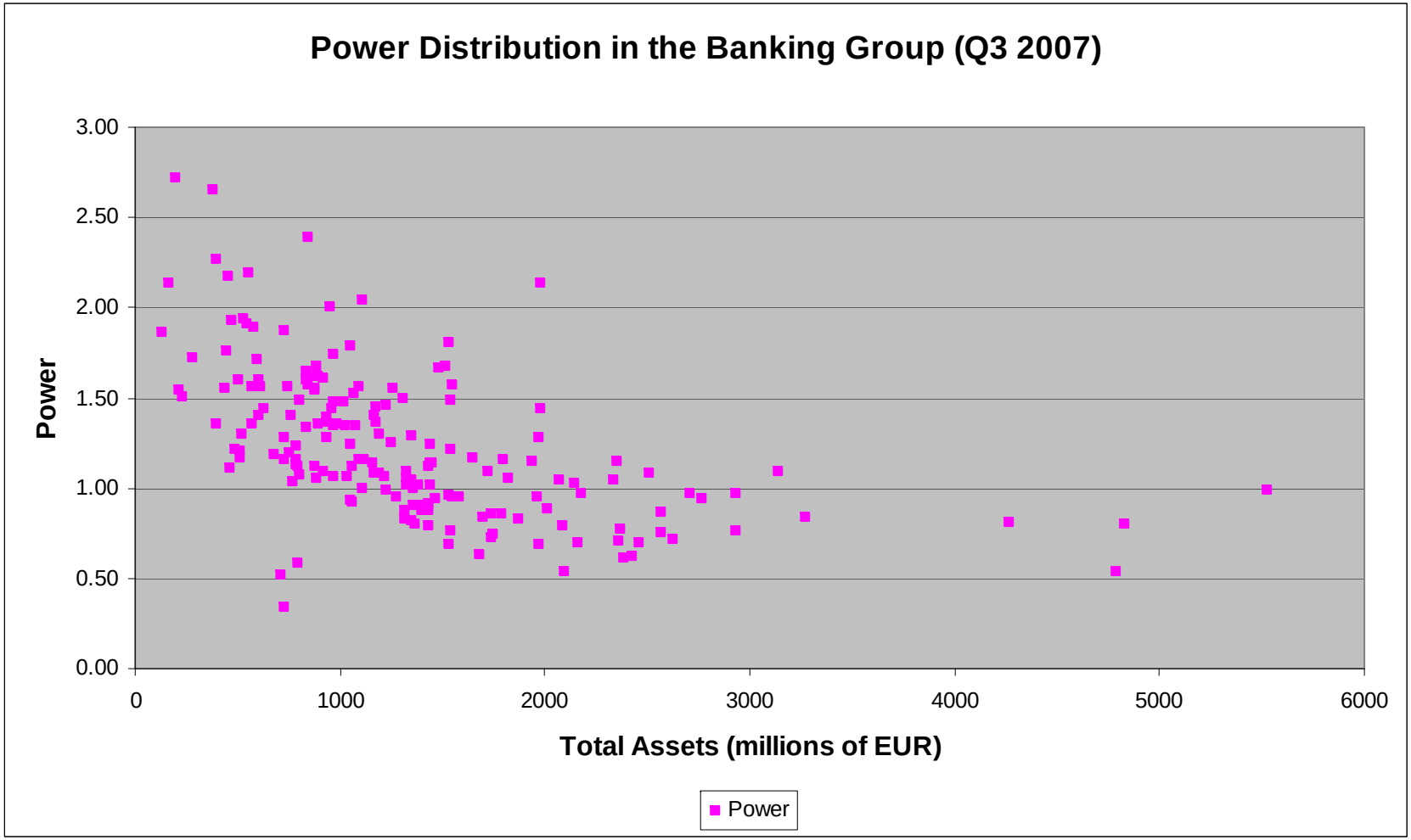
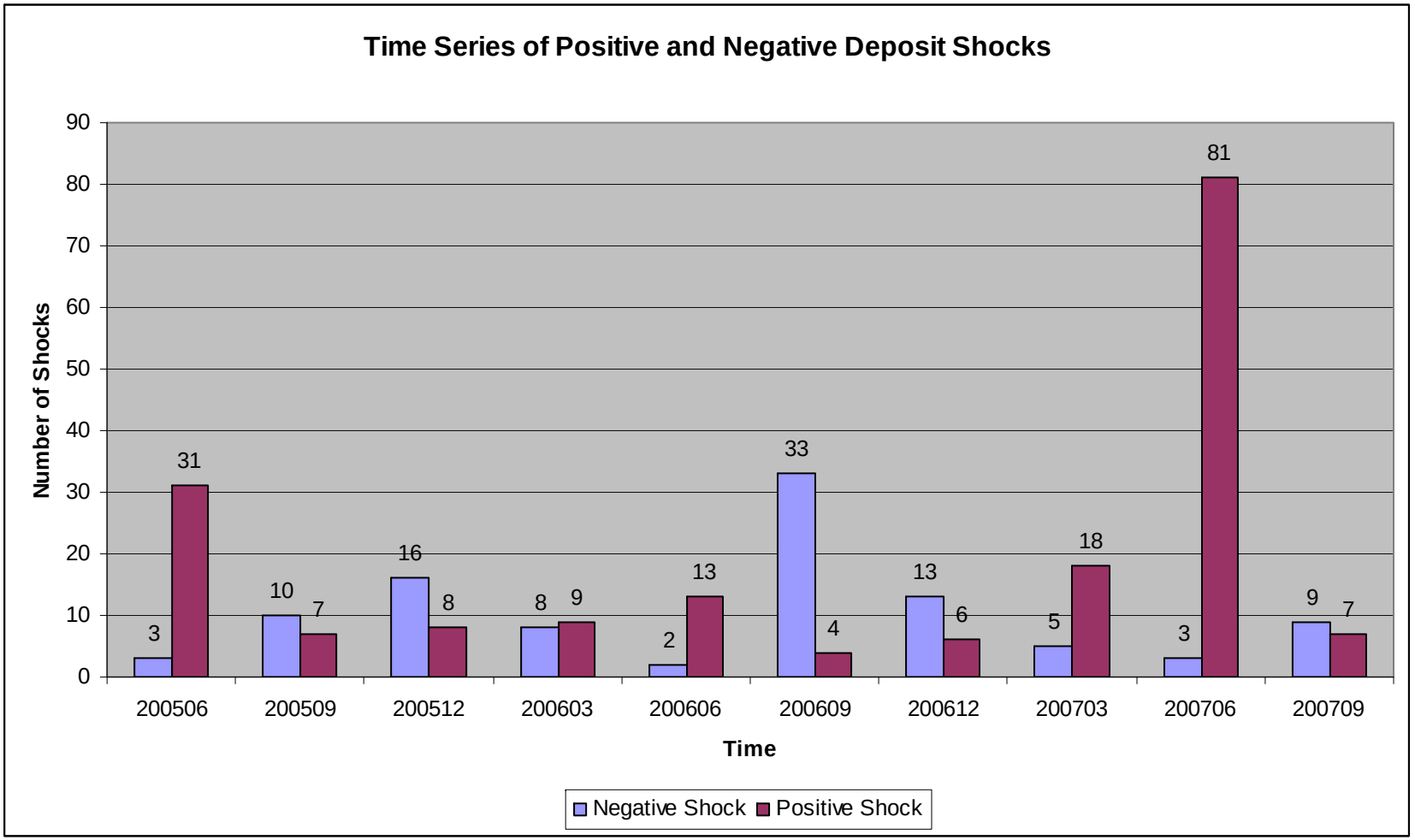

Power Distribution in the Banking Group (Q3 2007)
Power
3.00
2.50
2.00
1.50
1.00
0.50
0.00
0
1000
2000
3000
4000
5000
6000
Total Assets (millions of EUR)
Power

Figure 3
Time Series Distribution of Deposit Shocks

This figure shows the time series distribution of the positive and negative deposit shocks during the sample period. Positive Shock is a dummy that indicates a positive shock to deposit growth of a bank in a given quarter. It is defined as an increase in deposit growth by one standard deviation above the median. Negative Shock is a dummy that indicates a negative shock to deposit growth of a bank in a given quarter. It is defined as a decrease in deposit growth by one standard deviation below the median. In total there were 184 positive deposit shocks and 102 negative deposit shocks,



Appendix

Table A1
Definition of Variables

This table provides definitions of the variables in our data set.

Variable	Definition
Total Assets	Total assets of a member bank in t (in 1,000 Euro)
Deposits	Total deposits taken by a member bank in t from customers (in 1,000 EUR). It is the sum of current account deposits, term deposits and savings deposits
Current Account Deposits	Deposits taken by a member bank in t through current accounts of customers (in 1,000 EUR)
Term Deposits	Deposits taken by a member bank in t through term deposit accounts of customers (in 1,000 EUR)
Savings Deposits	Deposits taken by a member bank in t through savings accounts of customers (in 1,000 EUR)
Loans	Total outstanding loans provided by a member bank in t (in 1,000 EUR)
Loan Growth	Growth in loans in period t measured as log of loans in t minus log of loans in t-1, multiplied by 100
Funds from HQ	Funds/loans extended by the headquarters to a member bank in t (in 1,000 EUR)
Deposits at HQ	Money deposited at the headquarters by a member bank in t (in 1,000 EUR)
Net HQ Funds	Difference between Funds from HQ and Deposits at the HQ; a measure of the net amount of funds extended by the headquarters to a member bank in t (in 1000 EUR)
Net Provider of Funds	Dummy variable that takes the value 1 if a bank is net provider of funds (i.e. Net Funds from HQ<0) in t
Net Receiver of Funds	Dummy variable that takes the value 1 if a bank is net receiver of funds (i.e. Net Funds from HQ>=0) in t
Bank Capital	Equity of a bank in t (in 1,000 EUR)
Bank Productivity	Ratio of total income to total costs in t
Solvency	Actual capital of a member bank divided by the capital required for banking supervision purposes in t
Loan Loss Provisions	Loan loss provisions in t (in 1,000 EUR)
ROE	Return on equity in t and measured as net income over equity (in %)
ROA	Return on assets in t defined as net operating income over total assets (in %)
Power	Measures the disproportionate power of a member bank in the group and is defined as the member bank's share of voting rights in the group divided by its share of ownership rights. Value of 1 indicates fair power while values greater than 1 indicate disproportionate power
Voting Rights	Measures the number of votes in the headquarters held by a member bank. The variable ranges between 1 and 10.
Ownership Rights	Measures the number of shares held by a bank in the headquarters divided by the total number of shares outstanding (number reported in %).
Positive Shock	Dummy that indicates a positive shock to deposit growth of a bank in a given quarter. It is defined as an increase in deposit growth by one standard deviation above the median in t.
Negative Shock	Dummy that indicates a negative shock to deposit growth of a bank in a given quarter. It is defined as a decrease in deposit growth by one standard deviation below the median in t.

Table A2
Correlations of Variables

This table provides pairwise correlations between the main variables in our data set. For definitions of the variables see Appendix A. * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Total Assets (1)	1																
Deposit Growth (2)	0.05**	1															
Current Account Dep. Growth (3)	0.00	0.75***	1														
Term Deposit Growth (4)	-0.01	0.15***	-0.05**	1													
Savings Deposit Growth (5)	-0.08***	0.24***	0.11***	-0.31***	1												
Loan Growth (6)	0.11***	0.18***	0.09***	0.04*	0.13***	1											
Bank Capital Growth (7)	-0.01	0.08***	0.05**	0.04*	0.10***	0.08***	1										
Bank Productivity (8)	0.07***	0.08***	0.03	-0.04*	-0.05**	0.17***	0.06***	1									
Solvency (9)	-0.35***	-0.07***	-0.03	0.03	-0.03	-0.20***	0.00	0.05**	1								
Loan Loss Prov./Total Assets (10)	0.02	-0.14***	-0.11***	0.03	0.07***	0.02	0.56***	-0.03	-0.07***	1							
ROE (11)	0.02	0.11***	0.05**	-0.04*	-0.04	0.19***	0.09***	0.75***	0.18***	-0.16***	1						
ROA (12)	-0.04**	-0.11***	-0.17***	-0.15***	-0.02	0.04	0.05**	0.48***	0.25***	-0.17***	0.51***	1					
Power (13)	-0.55***	0.03	0.01	0.02	0.04*	0.05**	-0.01	0.12***	-0.09***	0.04**	-0.00	-0.02	1				
Voting Rights (14)	0.87***	0.02	-0.01	-0.05**	-0.03	0.05**	0.01	0.12***	-0.31***	0.01	0.08***	-0.01	-0.61***	1			
Ownership Rights (15)	0.77***	-0.03	-0.01	-0.04	-0.06***	-0.02	-0.00	-0.05**	-0.03	-0.03	0.01	0.02	-0.84***	0.80***	1		
Net HQ Funds/Total Assets (16)	0.20***	-0.05*	-0.04*	0.00	-0.02	0.11***	0.00	0.29***	-0.49***	0.07***	0.00	-0.05***	0.26***	0.20***	-0.11***	1	
Net HQ Funds Growth (17))	0.03	-0.57***	-0.45***	-0.05*	-0.17***	0.29***	0.14***	0.02	-0.03	0.17***	0.01	0.10***	-0.02	0.03	0.04	0.09***	1

Table A3
Decomposition of Net Funds from the Headquarters

This table decomposes net funds from the headquarters (which was defined as the difference between funds from the headquarters and deposits at the headquarters). In the columns (1) - (5) of Panel A, the dependent variable is gross funds from the headquarters divided by total assets of a bank. In columns (6) - (10) of panel A, the dependent variable is gross deposits at the headquarters divided by total assets of a bank. In the columns (1) - (5) of Panel B, the dependent variable is growth in gross funds from the headquarters, and in columns (6) - (10) growth in gross deposits at the headquarters. The growth variables are winsorized at 5% and 95%. Our measure of power is the disproportionate power of a member bank in the group. It is defined as the share of voting rights divided by the share of ownership rights of a member bank in the headquarters. For definitions of the variables see Appendix A1. The regressions use quarterly data from Q1 2005 to Q3 2007 for about 200 banks. All standard errors are clustered at the bank level. Constants were included in the regressions but are not reported. Absolute values of robust t statistics are reported in parentheses, * denotes significant at 10%; ** significant at 5%; *** significant at 1%.

Panel A:	**Funds from HQ/Total Assets**						**Deposits at HQ/Total Assets**				
	(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(9)	(10)
Deposit Growth	-0.002	-0.002	-0.002	-0.002	-0.004		0.001	0.001	0.001	0.001	0.002
	(3.40)***	(4.37)***	(5.35)***	(3.50)***	(3.58)***		(3.70)***	(4.04)***	(5.13)***	(3.82)***	(2.04)**
Power		0.117	0.097	0.044	0.114			-0.020	-0.016	-0.010	-0.019
		(4.83)***	(4.11)***	(3.31)***	(4.82)***			(2.40)**	(1.77)*	(2.34)**	(2.36)**
Deposit Growth * Power					0.002						-0.000
					(2.41)**						(0.83)
Log(Total Assets)	0.003	0.065	0.057		0.066		0.002	-0.009	-0.007		-0.009
	(0.41)	(4.25)***	(3.75)***		(4.27)***		(0.53)	(1.44)	(1.13)		(1.44)
Solvency	-0.165	-0.117	-0.133	-0.168	-0.117		0.041	0.033	0.031	0.040	0.033
	(8.03)***	(6.63)***	(6.82)***	(7.97)***	(6.66)***		(4.22)***	(2.87)***	(2.79)***	(4.03)***	(2.88)***
Bank Productivity	0.148	0.087	0.110	0.140	0.088		-0.049	-0.038	-0.044	-0.045	-0.038
	(5.26)***	(2.94)***	(3.38)***	(4.99)***	(2.99)***		(3.94)***	(2.77)***	(3.87)***	(3.67)***	(2.79)***
Region-Time-Fixed Effects	YES	YES	NO	YES	YES		YES	YES	NO	YES	YES
Clustering by Bank	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations	1810	1810	1810	1810	1810		1810	1810	1810	1810	1810
R-squared	0.55	0.65	0.44	0.58	0.65		0.27	0.30	0.18	0.29	0.30

Panel B:	**Funds from HQ Growth**					**Deposits at HQ Growth**				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Deposit Growth	-0.424	-0.423	-0.550	-0.424	-0.689	1.112	1.112	1.253	1.112	2.160
	(4.71)***	(4.70)***	(5.38)***	(4.70)***	(3.77)***	(5.81)***	(5.82)***	(6.25)***	(5.81)***	(5.94)***
Power		-0.393	0.100	-0.100	-0.683		0.002	0.331	0.138	1.146
		(0.60)	(0.17)	(0.25)	(1.02)		(0.00)	(0.63)	(0.42)	(1.57)
Deposit Growth * Power					0.175					-0.688
					(1.46)					(3.08)***
Log(Total Assets)	-0.054	-0.263	0.012		-0.240	-0.123	-0.123	-0.056		-0.211
	(0.19)	(0.59)	(0.03)		(0.53)	(0.41)	(0.22)	(0.12)		(0.39)
Solvency	-2.653	-2.816	-2.065	-2.612	-2.871	1.898	1.898	1.147	1.994	2.114
	(3.47)***	(3.47)***	(2.68)***	(3.73)***	(3.53)***	(2.55)**	(2.28)**	(1.42)	(2.91)***	(2.63)***
Bank Productivity	4.450	4.655	3.157	4.444	4.710	-0.593	-0.594	-0.005	-0.692	-0.813
	(4.90)***	(4.70)***	(3.39)***	(4.94)***	(4.70)***	(0.48)	(0.46)	(0.00)	(0.56)	(0.64)
Region-Time-Fixed Effects	YES	YES	NO	YES	YES	YES	YES	NO	YES	YES
Observations	1810	1810	1810	1810	1810	1810	1810	1810	1810	1810
R-squared	0.27	0.27	0.14	0.27	0.27	0.25	0.25	0.17	0.25	0.26