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State-controlled Banks and the Effectiveness of Monetary Policy

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Abstract

Monetary policy correlates more significantly with lending by state controlled banks than by private sector banks. At the country-level, monetary policy is more significantly related to credit and fixed capital formation growth where larger fraction of the banking system is state controlled. SOE banks may thus strengthen monetary policy levers. We hypothesize that SOE bank managers are more responsive to political pressure, and thus more cooperative with monetary policy. Reverse causality scenarios and alternative explanations are rendered implausible by the bank-level results, and by tests exploiting bank privatizations, election years, economic cycles, and cross-country variation in measures of civil servants' effectiveness and sensitivity to political pressure.

KEYWORDS: ownership structure, loan growth, capital investment, monetary policy, banking.

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Monetary policy is thought to affect the real economy, at least in the short term, by affecting bank lending among other things.[1] Specifically, Kashyap and Stein (2000) highlight a bank credit channel, whereby monetary expansion expands bank lending, which in turn stimulates aggregate investment and thus aggregate demand. Following that study, we examine the empirical connection between monetary policy, bank credit, and capital spending.

Bank managers' value-maximizing response to monetary policy may depend on their expectations about ensuing real effects and their incentives. A banker expecting no effect might rationally ignore monetary policy, while a banker expecting real effects might respond. Moreover, bankers, like other top executives, maximize their utility, and not necessarily firm value (Jensen and Meckling 1976; Saunders et al. 1990; Rajan and Zingales, 2003, 2004; Almeida and Wolfenzon 2006; Caprio et al. 2007; Perotti and Vorage, 2008; Laeven and Levine 2010). CEO incentives may vary with the ownership structure of banks; CEOs of widely held and publicly traded firms may prefer quiet lives (Bertrand and Mullainathan 2003; John et al. 2008), build empires (Jensen 1986), and extract private benefits of control (Johnson et al. 2000). Analogous incentives might induce the managers of state-controlled banks to oversee manifestly unprofitable politically-driven lending policies (La Porta et al. 2002; La Porta, López-de-Silanes and Zamarripa 2003; Sapienza 2004; Dinc 2005; Deng et al 2010).

Our focus is the importance of state-controlled banks in the transmission of monetary policy. Deng et al. (2010) link the effectiveness of China's 2008 monetary stimulation to state-controlled banks' managers' obedience to the Communist Party hierarchy, rather than to the effectiveness of standard transmission channels. China's 2008 monetary stimulus worked because top cadres could order state-controlled banks' top managers to lend more – arguably, an extreme form of "jawboning".

If China's experience generalizes, monetary policy would be more effective where state-controlled banks are more important.[2] This generalization is not *a priori* valid. Self-interest clearly motivates bureaucrats (Wilson 1989); but Hood (2011) argues their career concerns often induce blame-aversion. Blame-averse state-controlled bank managers, fearing responsibility for non-performing loans, might plausibly restrict credit especially tightly during times of greater economic uncertainty, perhaps reacting perversely to expansionary monetary policies. In contrast, if state-controlled bank managers' incentives induce obedience to top government officials, they might respond enthusiastically to monetary policy signals, regardless of whether or not they expected monetary policy to have real

[1] See Gordon (2007) for an overview and Caballero (2010) for a more critical perspective.

[2] State-controlled banks are linked to credit constrain alleviation during economic downturns in Brazil (Coleman and Leo Feler 2012), Chile (Micco and Ugo 2006), Japan (Lin et al. 2013), and perhaps 1930s Canada (Caldarola 1979).

economy-level effects.

We assemble bank-level panel data on the largest banks in each of 40 economies from 2001 through 2011. Following La Porta et al. (1999), we identify banks' ultimate controlling shareholders to construct a bank governance indicator classifying each bank as state-controlled or private sector. Bank-level panel regressions with country-level clustering, bank fixed effects, and controls for bank size and liquidity as well as their interactions with money growth, show state-controlled banks' lending statistically and economically significantly more responsive to money growth.[3] A baseline regression reveals a one percent increase in nominal monetary base in the prior 6 months to be transmitted into a 0.38% larger annual real increase in lending by a state-controlled bank than by an otherwise similar private sector bank. We obtain similar results by using change in interest rates as an alternative monetary policy indicator. Partitioning private sector banks reveals lending by widely-held banks to be marginally less responsive than lending by banks with controlling shareholders to monetary policy in some specifications.

Our bank-level results are representative in that analogous economy-level patterns are evident. Aggregate lending is significantly more correlated with monetary policy in countries where state-controlled banks are more important. A one per cent increase in monetary base presages a 0.38% higher subsequent real annual rate of aggregate loan growth in a country with a fully state-controlled banking system as opposed to one with a fully private sector banking system.

If monetary policy affects real economic activity, this should be most readily discernable in aggregate capital investment, the most volatile and pro-cyclical component of aggregate demand. Economy-level panel regressions, controlling for country fixed effects, show fixed-capital spending responding statistically and economically more significantly to money growth where banking systems are more predominantly state-controlled. A fully state controlled banking system achieves 0.81% higher growth in fixed capital spending than does a fully private sector banking system in response to a one per cent increase in monetary base in the prior 6 months.

We explore the direction of causation in several ways. First, to mitigate concern about causality flowing from latent factors, we include a broad range of additional controls and their interactions with monetary base growth – per capita GDP, trade openness, financial openness, economic freedom, output gap, and exchange rate depreciation. In particular, in countries with larger control of state over the economy, consumption could be stimulated by using state controlled enterprises and fiscal policy. We

[3] We are able to replicate in our cross country sample the U.S. finding of Kashyap and Stein (2000) that smaller banks transmit monetary policy more robustly.

therefore include additional controls for the government's share of aggregate consumption, fiscal policy and their interaction with monetary base growth. These leave our key results essentially unchanged.

Second, we follow Kashyap and Stein (2000) in using nuances in micro-level evidence to infer causality in macro-level correlations. Because our bank-level regressions control for bank fixed effects, and thus for country fixed effects too, the significance of the interaction of monetary base growth with the state-control indicator means that each country's state-controlled banks' lending more related to monetary base growth than is lending by that same county's private sector banks. This is consistent with state-controlled banks responding more strongly to an expansionary monetary policy, or at least with contemporaneous political pressure to expand lending.

The simplest reverse causality scenario in this context envisions a real business cycle shock stimulating aggregate demand, which boosts demand for loans, which forces the central bank to increase the money supply. This scenario should affect private sector and state controlled banks' lending similarly, and might plausibly even affect private sector banks more strongly if they are more sensitive to market signals. This is not observed.

Obviously, such reasoning cannot be utterly conclusive. For example, a real business cycle shock might increase demand for loans, but state-controlled banks might be flusher with subsidies and more able to boost lending in response. Again, bank-level evidence suggests that this is implausible: while state-controlled banks do have more liquid balance sheets on average, they still lend more given a unit increase in base money after controlling for liquidity and its interaction with monetary base growth.

Another possibility is that state banks might lend disproportionately to firms whose demand for loans is more responsive to real shocks. We explore this possibility using bank privatizations and find that state-controlled banks' lending becomes significantly less correlated with monetary policy immediately after their privatizations. The presumption is that changes in clientele base and loan portfolios is quite gradual, the evidence casts doubt on that loan demand emanating from different clienteles explain our finding. More generally, while the evidence is not conclusive, these findings weigh against reverse causation via any bank-specific attribute unrelated to state control. Thus, state control, perhaps as a proxy for sensitivity to political pressure, remains our focus.

Pursuing this reasoning, tests exploiting heterogeneity in likely political pressure on state-controlled banks weighs in favour of direct causality. Thus, state-controlled banks' lending growth given a unit increase in base money outpaces that of private sector banks by a significantly larger margin in countries whose civil servants are rated as more sensitive to political pressure and more effective in fulfilling their duties. This margin is also significantly larger in pre-election years and amid cyclical

downturns, when politicians might plausibly more urgently press for a monetary stimulus to be effective.

Thus, the entirety of our findings appears inimical to a range of initially plausible latent factors and reverse causality scenarios. We conclude that Occam's razor favours state-controlled banks' lending being more affected by monetary policy, or rather by political pressure for which monetary policy is a proxy. Certainly, this explanation accords with an extensive literature showing that state-controlled banks' lending to be more subject to politicians influence than is lending by private sector banks (Sapienza 2004; Dinc 2005).

We control for governments' role in economy and its interaction with monetary policy, however it is possible that monetary stimulus boosts lending by state-controlled banks because it boosts state-controlled non-financial firms' demand for credit, often from state controlled banks. Although this adds an intermediate step, political pressure on nonfinancial state-controlled firms to demand more loans from state-controlled banks is not fundamentally different from political pressure directly applied to the latter. Either way, political pressure emerges as an economically significant link in the chain of causation that includes state-controlled banks.

State-controlled banks might thus let politicians better alter credit growth and capital investment. To the extent that this is an important public policy goal, state control over banks might be defensible. However, state-controlled banks appear to allocate capital inefficiently (La Porta et al. 2002; La Porta, López-de-Silanes and Zamarripa 2003; Sapienza 2004; Dinc 2005, Deng et al 2010; Morck et al. 2011). A policy trade-off might thus exist, with state-controlled banks having short-run benefits as conduits for affecting aggregate credit and investment, but long-term costs from capital misallocation.

2. Sample, data, and variable construction

2.1. Sample

Our bank-level sample begins with the 2001 cross-section of data on the ultimate controlling shareholders of at least the three largest banks in each of 44 countries used in Morck, Yavuz and Yeung (2011, Table 1), which extend data provided by Caprio et al. (2007). Using BankScope, changes in ultimate owners are documented for subsequent years through 2010. The result is a bank-level annual panel of ultimate controlling owner identities and stakes spanning 44 countries. The data for each bank start after its ownership is identified for the first time. A controlling owner is identified for 79% of the

sample by 2001; and for the rest after 2001. Merging this list of banks with BankScope yields bank-level financial data. To remain in the sample, a bank must have comparable financial statements for two consecutive years as elaborated below.

Our sample is formed by merging the list of economies containing these banks with the IMF's International Financial Statistics (IFS), Government Financial Statistics (GFS), and World Economic Outlook (WEO) databases, as well as with the World Bank's World Development Indicators (WDI) database and Thomson Reuters DataStream. The merged sample has economy-level data on monetary base growth rates, gross fixed capital formation rates and other variables. Because of missing GFS data on monetary base growth rates, our basic sample is reduced to 40 economies. Because fixed capital formation data are available only for 30 countries, and interest rates are available for 38 countries a smaller sample is used in tests involving these variables. Table 2 lists the countries in our bank level and country level samples, together with summary statistics for key variables.

2.2. Bank Governance Indicators

Following La Porta et al. (2002a), Caprio et al. (2007), and Morck, Yavuz and Yeung (2011), ultimate controlling shareholders are identified as follows. First, all shareholders with voting blocks of 5% or more are identified. If these are biological persons or government organs, their names are recorded; otherwise these corporations' owners, their owners' owners, and so on are identified until reaching either discernible ultimate owners (state organs or biological persons) or diffusely held entities. The identified owners' voting blocks are aggregated at each level of the chain by assuming members of a family act in concert and state organs obey a single authority. The ultimate owner type is assigned based on the largest combined voting block of 10% or more. If no 10% voting block exists, the bank is classified as widely-held.

In bank level tests, our primary variable is an indicator distinguishing state controlled banks from private sector banks. This *state control indicator* is:

[1] $$\delta_{i,t} \equiv \begin{cases} 1 & \text{if bank i is state-controlled in year t,} \\ 0 & \text{otherwise.} \end{cases}$$

State controlled is inferred if any state organ or combination of state organs is the largest block holder with at least 10% of equity block and to zero otherwise. The banks for which this variable is zero, all private sector banks, are further partitioned into widely-held banks, which have no ultimate controlling shareholder, and shareholder-controlled banks, which have a biological person or family as an ultimate

controlling shareholder.

In country level tests, bank governance importance variables weigh each bank in each category by lagged total net credit. Thus, $f_{j,t}$ measures the fraction of country *j*'s banking system that is *state controlled*, as opposed to *private sector* banks in year *t*. Again, within the private sector category, we also calculate the fractions of each country's banking system that are widely-held and shareholder-controlled.

2.3. Monetary policy variable

Broadly speaking, monetary policy can consist of regulatory changes that affect banks' ability to lend, market interventions that move key interest rates, and direct changes in the money supply. We focus on the last because regulatory changes are infrequent and neither regulatory changes nor interest rates are easily comparable across economies. The impact of any given regulatory change depends on multiple regulatory, legal, and other country-specific considerations. In contrast, monetary aggregates change continuously and are more readily comparable across countries. We further narrow out attention to monetary base growth because, among available monetary aggregates, this has the least direct overlap with the banking sector's balance sheet and the most consistent definition across countries. Nonetheless, we revisit changes in interest rates as an alternative monetary policy variable below.

Monetary base growth is available at a monthly frequency for 40 countries in the IFS Database in the Central Bank Survey (section 10) of IFS country tables (line 14). Monetary Base is currency in circulation (line 14a) plus central bank liabilities to other depository corporations (line 14c) plus central banks liabilities to other sectors (line 14d). For the bank-level regressions, monetary base growth in country *j* and year *t* (ΔM) is calculated over 6 and 12 month intervals immediately prior to the beginning of bank *i*'s fiscal year:

$$[2] \qquad \Delta M_{i,j,t} = \frac{M_{i,j,t} - M_{i,j,t-1}}{M_{i,j,t-1}}.$$

Thus, although the growth rate in the monetary base is conceptually a country-level variable, it can differ across banks in a given country if their fiscal years differ. For example, a bank with a fiscal year beginning on January 1st would have a prior 6 month monetary base growth rate calculated from the end of June through the end of December of the prior calendar year. In contrast, a bank whose fiscal year begins in March 1st would have its monetary base growth rate calculated from the end of August in

the previous calendar year through the end of February in the current calendar year. In country level tests, $\Delta M_{j,t}$ is calculated for each half-year or year using the prior 6 or 12 month monetary base growth depending on the specification.

Seasonal adjustment is necessary where variables are constructed across disparate subsets of months. Where seasonally adjusted monetary base data are available from the IMF, these are used. Otherwise, we use five-year rolling regressions of monetary base growth on month dummies to remove seasonal effects. The 12-month monetary base growth rates, in contrast, largely avoid concerns about seasonality affecting the results. These variables are winsorized at 5% to limit the influence of outliers.

Interest rates that are directly controlled by central banks, denoted the "monetary policy related interest rate", is available for 22 countries in our sample from IMF IFS dataset. Given the limited availability of this data and inconsistencies in the definition of that interest rates across countries, we relegate changes in interest rates as a measure of monetary policy to robustness tests. We construct a monetary policy variable "drop in interest rates" based on changes in prior 6 or prior 12 month in various interest rates across countries. We use changes in "monetary policy related interest rate" for 22 countries. If this interest rate is not available we use changes in "discount rate", "lending rate" or "money market rate", in order, taken from IMF IFS dataset. We note that changes in market based rates may not necessarily reflect changes in monetary policy therefore this is a noisy measure of monetary policy. Overall, we end up with a sample of 38 countries if we use drop in interest rates as our monetary policy variable.

2.4 Outcome variables

The outcome variables capture real growth in bank-level lending, economy-level lending and economy-level fixed capital formation. These data are winsorized at 5% to limit the influence of outliers. Unwinzorized data are used in robustness checks.

2.4.1 Bank Level Loan Growth

In the bank level analysis, the key dependent variable is the annual real growth in a bank's gross loans in local currency, from BankScope, defined as:

[3] $$\Delta \mathrm{credit}_{\mathrm{i,j,t+1}} = \frac{\mathrm{credit}_{\mathrm{i,j,t+1}} - \mathrm{credit}_{\mathrm{i,j,t}}}{\mathrm{credit}_{\mathrm{i,j,t}}},$$

where the subscripts *i*, *j, t* index the bank, country, and fiscal year, respectively. For credit, we use gross

loan growth where available because this measure is not mechanically affected by changes in discretionary loan loss provisions.[4] However, if gross loans are unavailable, net loans are used. Real values are calculated by deflating nominal values using the country's CPI index.

BankScope sometimes provides multiple accounting statements for a bank in one year. For example, Bankscope provides separate financial statements for Jyske Bank A/S (Group) and Jyske Bank A/S from Denmark, but under the same bvd identifier number. To avoid artificially inflating the sample, only one financial statement is included each year for each *bvd-id* number. For better comparability across countries, the following procedure is applied. First, consolidated statements are preferred over unconsolidated statements if both are available. This is because the overall lending of a bank group is arguably more important to the economy as a whole than is the lending of one of its subsidiaries. Indeed, financial conglomerates might respond to monetary policy with internal capital market transactions that cancel out across the group as a whole (Campello, 2002). However, unconsolidated statements are used in robustness tests. Second, "audited" or "qualified" statements preferred over "not audited" and "unqualified" statements if both are available. Finally statements based on international accounting standards (codes IFRS, IFRS-NFC or IAS) are preferred over statements using local accounting systems (designated local GAAP or regulatory) if both are available.

Despite these filters, a few extreme real growth rates in loans remain. We identify some as resulting from bank mergers and acquisitions. In these cases, BankScope either discontinues data for one of the merged banks and continues data for the merged entity under the other's identification code or discontinues data for both and starts recording data for a new bank. The former procedure can generate extreme loan growth rates. Spot checking the data reveals M&A responsible for most extreme observations. We therefore drop 39 bank-year observations for which real annual gross loan growth lies outside plus or minus 50% from our main sample but include them in a robustness test.

2.4.2 Country Level Aggregate Loan Growth

We have controlling shareholder data for the largest banks in each country, and use these in our bank level loan growth tests. While these banks are few in number, this sample constitutes a large fraction of each country's banking sector.[5] We therefore anticipate that our bank-level results can provide useful insights into economy level questions.

[4] Bushman and Williams (2012), (2013) argue that U.S GAAP and IFRS allow scope for discretion in loan provisioning and discretionary loan provisioning practices, and that this varies across countries.

[5] See Morck et al. (2011) for more detail.

Economy-level gross lending is obtained by using the domestic credit provided by banking sector from WDI dataset. The WDI provides domestic credit extended by the banking sector divided by GDP; so we obtained our variable by multiplying this ratio with GDP in current local currency. Each country's CPI index is used to deflate its nominal aggregates. Aggregate real annual loan growth $\Delta credit_{j,t+1}$ is calculated for each country-year using equation 2, where j denotes country. This is a broad measure of banking sector credit growth, which also includes other banking institutions such as savings and mortgages institutions and building and loan associations where data are available. Therefore, we use these data with some circumspection to complement our bank level loan growth measure.

2.4.3 Country Level Fixed Capital Formation Growth

We gauge the impact of monetary policy on aggregate demand by its relationship with gross fixed capital investment. One can link the effect of monetary expansion to various components of aggregate demand, e.g., consumption, investment, exports, imports, and government expenditure. We pick investment because of its purported role in the accelerator effect (Samuelson, 1939). More importantly, our focus is on the transmission of monetary stimulation via banks. If monetary policy affects aggregate demand by altering banks' supply of loans, its effects should be most evident in variables measuring investment as well as in measures of bank lending.

We take gross fixed capital formation from the IMF's International Financial Statistics database: National Accounts and Population line 93e. Gross fixed capital formation is the total value of fixed asset acquisitions, less disposals, during the accounting period, plus certain additions to the value of non-produced assets (such as subsoil assets or major improvements in the quantity, quality, or productivity of land). We use each country's PPI index to deflate these data. The real annual growth rate of gross fixed capital formation $\Delta capex_{j,t+1}$ is measured for each country-half year.

[4] $$\Delta \text{capex}_{\text{j,t+1}} = \frac{\text{capex}_{\text{j,t+1}} - \text{capex}_{\text{j,t}}}{\text{capex}_{\text{j,t}}}.$$

2.5 Control Variables

All bank-level regressions control for bank fixed effects and all country-level regressions control for country fixed effects. This removes time invariant bank-level and country-level omitted variable bias. However, the interactions of such variables with monetary policy or time-varying omitted variables may matter nonetheless. We therefore construct a series of control variables. Table 1 provides details as to their sources and construction.

2.5.1 Bank-level control variables

Kashyap and Stein (2000) find lending by smaller and less liquid U.S. banks to be more affected by monetary policy. All our bank-level tables therefore include regressions controlling for each bank's size, the log of the bank's prior year-end total assets in US dollars, and *liquidity*, its prior year holdings of government securities plus cash and funds due from other banks, all divided by total assets, as well as the interactions of these variables with monetary base growth. These variables are lagged to preclude any contemporaneous relationship between monetary base growth and resultant changes in bank size or liquidity.

In robustness tests, we use alternative controls for size and liquidity. One alternative proxy for size is a *large bank* indicator, set to one if the bank in question was a large bank the previous year according to Kashyap and Stein's (2000) criterion.[6] An alternative liquidity measure is all securities plus cash and funds due from other banks, all divided by total assets.

2.5.2 Country-level control variables

Our tests require several more control variables to address alternative explanation of results. Our dependent variables, such as loan growth and fixed capital expenditure growth, are likely correlated with past per capita GDP because of its impact on current corporate liquidity, household income, and thus on current change in consumption. Fixed country effects cannot absorb these time varying effects, which if not controlled for could raise heteroskadasticity; additionally, they can be correlated with other independent variables like monetary growth. Hence, we add the log of lagged real per capita GDP as a control.

Monetary policy may have different effects at different points in the business cycle. Neo-Keynesian macroeconomics holds that a monetary base expansion boosts aggregate demand and supply amid a recession, but is apt to stimulate inflation if the economy is already operating at or near capacity. A standard measure of excess capacity is an economy's output gap, which is defined as potential GDP minus actual GDP over potential GDP. We calculate lagged output gaps using Hodrick and Prescott (1997) methodology.

Monetary policy may be less effective in a more open economy (Fleming 1962; Mundell 1963). Openness can be measured in several ways. Trade openness is exports plus imports over GDP, lagged by

[6] Kashyap and Stein (2000) define large banks as banks larger than 99%. We use 95% because some countries have fewer than 100 banks in BankScope.

1 year, from WDI database. Financial openness is the Chinn-Ito index (Chinn and Ito, 2006), again lagged by one year. This index takes higher values the more open the country is to global capital markets. The index is based on binary indicator variables for various restrictions on cross-border capital flows, as reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). These include indicators for multiple exchange rates, current account transactions restrictions, capital account transactions restrictions, and the mandatory surrender of exports proceeds.

The effectiveness of monetary policy might also depend on economic freedom of countries. In freer economies, prices and wages might respond faster to monetary policy, more effectively limiting its real effects. The Fraser Institute's *economic freedom* index is therefore considered as a rough proxy for freedom of market forces in responding to monetary policy. The index has five main components: the size of government, legal structure and security of property rights; access to sound money, trade openness, and the freedom from regulation of business. The index is lagged by one year.

In practice, governments tend to vary fiscal policy and monetary policy in tandem (Easterly and Rebelo, 1993). To verify that differently governed banks are not responding differently to fiscal policies – for example deficit spending might be channelled through state-owned banks – we construct a fiscal policy control variable. This is the change in the government's fiscal balance over the prior 12 months divided by the prior year's GDP. Complete data are unavailable for Pakistan and Venezuela, so tests using this control variable use a sample of 38 countries, rather than 40 in the bank level tests.

Similarly, we control for the government's share in consumption as a percentage of the GDP and its interaction with monetary policy. Presumably in countries where government accounts for larger fraction of the economic activity high ranking officials can stimulate economy by increasing government consumption together with monetary policy.

Another policy variable is the exchange rate depreciation. Devaluation of a country's own currency can, in the short run at least, boost its exports and discourage imports, potentially stimulating domestic producers' demand for credit and capital spending. This control variable is the percent change in exchange rate of the country with respect to the U.S. dollar in the prior 12 months, as recorded in the IMF's IFS dataset. We include this control because currency devaluations can result from many different policy decisions or exogenous shocks. However, an inflationary monetary expansion, or even just the anticipation of it, can put downward pressure on a country's currency as well. Thus, including this control may work against finding significant explanatory power of our monetary base growth measures. Some of the largest banks in some economies are subsidiaries of foreign banks. These banks may have better access to international money markets than purely domestic banks, and thus might potentially be

less affected by domestic monetary policy. Also, the importance of foreign banks might correlate with overall openness. Using our data on controlling owners for each bank each year, we create a dummy variable indicating that the local bank is a subsidiary of a foreign bank. We then use these data in robustness tests.

2.5.3 Definitions of subsamples

We posit that state-controlled bank managers may be subject to political pressure, which might predispose them to respond to a monetary stimulus more robustly than would the managers of otherwise similar private sector banks. This mechanism may plausibly differ across time with politicians' incentives to employ "jawboning" and across countries and in countries where civil servants are more susceptible to political pressure and more effective implementers of government policy. Here we define the variables that may be used to identify such countries and time periods.

Politicians may press more heavily on state-controlled banks to respond to a monetary stimulus during an economic downturn, so we might expect a larger effect during periods of low growth.[7] To explore how the role of state-controlled banks in the transmission of monetary policy might vary over the business cycle, we apply a fourfold partition to our panel data. Specifically, we distinguish periods of monetary expansion versus contraction, and of high versus low economic growth.

A number of caveats are worth mentioning. First, this partition has intrinsic endogeneity problems: monetary expansions and contractions are not obviously independent of the real business cycle. Second, our time window is too short to observe a large number of business cycles for each economy. Third, few degrees of freedom remain after controlling for fixed effects in subsamples, especially at the bank level. Finally, business cycle phases are not unambiguously identifiable, consistently defined, or even entirely objectively determined (Morley and Piger 2012).

Given these issues, we adopt simple definitions of monetary policy and economic cycles. We define a time period as a *monetary expansion* if the past 6 months monetary base growth rate is positive and as a *monetary contraction* otherwise. We define a time period as exhibiting *high economic growth* if the past period's annual GDP growth rate is above its long-run average starting from 1960, and as exhibiting *low economic growth* otherwise.

[7] Monetary policy might be more effective amid downturns, when aggregate demand falls below aggregate supply, and merely inflationary when the economy is already operating at capacity. However, this would explain monetary policy being more generally effective amid downturns. A differential transmission via state-controlled banks is not implied by extant models of this genre.

During election campaigns, politicians might particularly intensively press state-controlled banks to respond to a monetary expansion (Dinc, 2005). To code election years, we first assign each country as having a parliamentary or presidential system each year based on the World Bank Database of Political Institutions (see Beck et al., 2001). We identify presidential or parliamentary election years, depending on which system is in use, from the International Institute for Democracy and Electoral Assistance (IDEA) database. We use presidential elections dates with presidential systems and parliamentary elections with parliamentary and assembly-elected presidential systems. We drop elections (or countries) classified as "not free" by Freedom House organization. We merge election dates with our loan growth rates so that fiscal year end of loan growth period is prior to election year. For instance, bank loan growth calculated between December 2004 and December 2005 is matched with elections occurring in 2006. This matching ensures that loan growth period is always prior to the election time assuming that political pressure for state banks to lend would be applied prior to elections. As before, a time period is defined as a *monetary expansion* if the past 6 months monetary base growth rate is positive. Again caution is appropriate because our sample window is short, and thus includes only a few elections for each country.

State-controlled banks' reactions to "jawboning" could vary across countries depending on civil servants' independence from political pressure and effectiveness in implementing public policy. In a country where state-controlled banks' managers were promoted solely for running their banks efficiently, or were subject to the same political pressures as private sector banks' managers, we should expect no difference between state-controlled and private sector banks' transmission of monetary policy. However, if state-controlled banks' management were less independent of political pressure, these banks could be more responsive than private-sector banks to monetary policy. On the other hand, if state-controlled banks' management were part of a generally ineffective civil service, political pressure might dissipate amid bureaucratic inertia, incompetence, or even corruption; damping the ultimate effect of jawboning on their actual lending.

The above considerations suggest that state-controlled banks' might transmit monetary policy most reliably where state controlled bank management is both more subject to political pressure and more able to affect their banks' actual lending policies. We lack direct measures of state-controlled bank managers' effectiveness and independence from political influence. As proxies, we therefore use measures of effectiveness and sensitivity to political pressure of civil servants in general.

To measure the effectiveness of civil servants, we use the *government effectiveness index* provided by Worldwide Governance Indicators. The index is available in 2000, 2002 and annually every

year afterwards in our sample period. We say a country's civil service is effective or ineffective as its index lies above or below the median for our sample of countries. This index is designed to capture the quality of public services, the civil service, and policy formulation and implementation, as well as the credibility of the government's commitment to its policies (Kaufmann, Kraay and Mastruzzi, 2010). Unfortunately, the government effectiveness index also incorporates measures for the independence of civil service from political pressure, treating this as yet another characteristic of an effective civil service. To develop a distinct measure of the extent to which political pressure can sway civil servants' decisions, we take the average response to two survey questions (Q8.b and Q8.e) from the Quality of Government Expert Survey Dataset (Teorell, Dahlström and Dahlberg, 2011): Between 2008 and 2012, in three waves, experts are asked to evaluate the extent to which public sector employees (1) strive to fulfil the ideology of the party/parties in government, and (2) strive to implement the policies decided upon by the top political leadership. Higher numbered responses (ranging from one to seven) indicate a civil service more sensitive to political direction. Again, we say a country's civil service is *sensitive* or *insensitive* to political pressure as this index falls above or below its median in our sample. We hypothesize that state-controlled banks' lending might respond more to monetary policy in countries whose civil services are both effective and sensitive to political pressure.

3. Empirical Methodology

The empirical tests below use either bank-level data or country-level data. The following sections explain each set of tests in turn.

3.1 Bank-level Tests

The bank-level tests are derived from a specification of the form:

[5] $$\Delta\text{credit}_{\text{i,j,t+1}} = \text{a}\Delta\text{M}_{\text{i,j,t}} + \text{b}\delta_{\text{i,t}} + \sum_{\text{k}} \text{c}_{\text{k}}\, \text{x}_{\text{k,i,j,t}} + \sum_{\text{i}} \text{d}_{\text{i}}\, \lambda_{\text{i}} + \text{e}_{\text{i,j,t}}$$

with i, j and t indexing banks, countries, and time, respectively. The variables $\Delta M_{i,j,t}$ and $\Delta credit_{i,j,t+1}$ are as defined in [2] and [3] above, respectively. Other right-hand side variables are the private sector versus state control bank governance indicator variable, $\delta_{i,t}$; bank-level control variables $x_{k,i,j,t}$; and bank fixed-effects denoted λ_i. In some specifications, additional controls at the country-level are added. Time-varying control variables are lagged, as described above, so their measurement intervals do not overlap with the interval in which credit or monetary growth is

calculated. The residuals $e_{i,j,t}$ are estimated allowing for clustering at the country-level. Eurozone countries are considered one cluster because their banks experience a common monetary policy.

Each observation is a bank-year. Our objective is to see if *a*, the regression coefficient of $\Delta M_{i,j,t}$, which gauges the bank's response to monetary base growth, depends on the governance of the bank, or on any of its other characteristics. To this end, we use a varying coefficient model: we replace the fixed coefficient, *a*, with the expression

[6] $$a = \alpha + \beta\delta_{i,t} + \sum_k \gamma_k x_{k,i,j,t}.$$

Substituting [6] into [5] gives the bank-level regressions we estimate, which are of the form:

[7] $$\Delta\text{credit}_{i,j,t+1} = \Delta M_{i,j,t}\left[\alpha + \beta\delta_{i,t} + \sum_k \gamma_k x_{k,i,j,t}\right] + b_i\delta_{i,t} + \sum_k c_k x_{k,i,j,t} + \sum_i d_i \lambda_i + e_{i,j,t}.$$

3.2 Country Level Tests

At the country level we estimate analogous regressions of the form

[8] $$\Delta\text{credit}_{j,t+1} = \Delta M_{j,t}\left[\alpha + \beta f_{j,t} + \sum_k \gamma_k x_{j,t-l}\right] + b f_{j,t} + \sum_k c_k x_{k,j,t-l} + \sum_i d_j \lambda_j + e_{j,t},$$

where credit growth, $\Delta credit_{j,t+1}$, and the control variables, $x_{j,t}$, are now country-level aggregates. The governance control structure of country j's banking system is characterized by the fraction of the banking system that is private sector, as opposed to state controlled, denoted $f_{j,t}$, calculated for each country each year using lagged bank credit as weights. The λ_j are now country-fixed effects, and the residuals $e_{j,t}$ again allow for clustering at the economy-level, with the Eurozone again counting as one economy for this purpose only.

At the country-level, we are also interested in how effectively the banking system translates a monetary base expansion into real capital investment growth. We therefore also consider regressions of the form:

[9] $$\Delta capex_{j,t+1} = \Delta M_{j,t}\left[\alpha + \beta f_{j,t} + \sum_k \gamma_k x_{j,t}\right] + b f_{j,t} + \sum_k c_k x_{k,j,t} + \sum_i d_j \lambda_j + e_{j,t}.$$

Regressions [8] and [9], like [7], are varying coefficient models, in which the coefficient of country-level monetary base growth $\Delta M_{j,t}$ may depend on $f_{j,t}$ and the controls $x_{k,j,t}$.

4. Empirical Results

4.1 Summary statistics

Table 2 provides the means and standard deviations of the main variables of interest. Most countries, except Japan and Sweden, experience monetary expansion on average. Gross loan growth is also positive on average for most countries, except Japan and Thailand. There are more variations in fixed capital growth: for countries where we have data twenty one register a positive average and nine a negative average.

Table 3 displays pairwise cross-country correlation coefficients of the loan growth rate, monetary growth rate, fraction of state-controlled, private, widely-held and shareholder-controlled banks and key controls. In calculating the correlations we take economy level averages of all variables. The correlation coefficient for loan growth and monetary base growth is positive but not significant. However loan growth is significantly positively associated with lagged higher liquidity, lower financial openness and lower economic freedom.

Countries with more state controlled banks tend to have fewer widely-held banks; while the importance of shareholder-controlled banks is not correlated with state control over banking. State-controlled banks and shareholder-controlled banks tend to be more liquid, while the opposite is observed among widely-held banks. Liquidity and size are negatively correlated.

4.2 Bank-level loan growth

Table 4 Panel A reports regressions of the form [7] explaining bank-level real loan growth with nominal monetary base growth in the prior 6 and 12 months and its interactions with bank governance control indicators. The base case is private sector banks. The main effect of monetary policy varies substantially across specifications – a one percent elevation in monetary base growth is associated with changes in loan growth ranging from a significant -0.31 to a significant +0.75. However, when we control for bank liquidity and size the main effect of monetary base growth is positive and significant when prior 6 month monetary base growth is used and insignificant when prior 12 months monetary base growth is used.

The main result in Table 4 Panel A is that state controlled bank lending varies economically and statistically significantly more with monetary base growth than does lending by an otherwise similar private sector bank. Specifically, a state-controlled bank increases lending by a 0.26 to 0.28 percent more than a private sector bank after a one percent increase in monetary base growth over the prior 12 months; and by 0.34 to 0.45 percent more after a one percent increase in monetary base growth over

the prior 6 months.

Repeating the regressions, but including alternate permutations of indicator variables for state controlled versus private sector banks, and for widely-held private sector banks versus shareholder-controlled private sector banks, provides a more nuanced picture while preserving the main result above. Based on prior 6 months monetary base growth, regression 4A.1 shows state-controlled bank lending rising by +0.35 percent more than that of private sector banks in general. Regression 4A.2, which is also based on prior 6 months monetary base growth but allows for a separate interaction for shareholder-controlled private sector banks, reveals that a one percent increase in monetary base growth corresponds to a +0.45 percent larger increase in lending by a state bank than by an otherwise similar widely-held private sector bank. The insignificant +0.26 coefficient on the interaction with the indicator for a shareholder-controlled private bank indicates that such a bank's lending rises insignificantly (0.26 percent) more than that of a similar widely-held bank and 0.19 percent (0.45 – 0.26) less than that of a similar state controlled banks, with the last difference also insignificant ($p = 0.19$). Shareholder-controlled private sector banks are thus insignificantly different from both state-controlled banks and from widely-held banks, while the latter two are significantly different from each other.

Consistently, based on prior 12 months monetary base growth, regressions 4A.7 and 4A.8 reveal the two genres of private-sector banks statistically indistinguishable from each other and both to be statistically significantly different from state-controlled banks. Specifically, a widely held private sector bank and a private sector bank with a controlling shareholder, respectively, increase lending by 0.26 ($p = 0.01$) and 0.30 ($p = 0.02$) percent less than does an otherwise similar state controlled bank. Further work is needed to explore the differences, if any, between differently governed private sector banks in this context.

The varied responses of different types of banks to prior monetary base growth ensue independent of the inclusion or exclusion of controls for bank size and bank liquidity along with their interactions with monetary base growth. Bank size interacted with monetary base growth frequently attracts a significant negative coefficient, as in regressions 4A.3 and 4A.4, where monetary base growth is assessed over the prior 6 months, rather than the prior 12 months. This finding replicates that of Kashyap and Stein (2000): lending by smaller banks is more strongly related to monetary policy. Among all the other variables, only the liquidity main effect even approaches significance, with a p-level of 0.11 in regression 4A.4. More liquid banks may thus lend more, regardless of monetary policy. That the inclusion of bank size and liquidity and their interactions alters the coefficient of the state-control interaction term little suggests that monetary policy transmission effects associated with bank size and

liquidity are largely independent of any effect associated with state-control.

In Panel B of Table 4 we replicate our regressions in Panel A by using drop in interest rates as our monetary policy proxy. Consistent with our previous findings, state controlled bank lending varies economically and statistically significantly more with drop in interest rates than does lending by an otherwise similar private sector bank. Specifically, a state-controlled bank increases lending by 1 to 2 percent more than a private sector bank after a one percent drop in interest rates over the prior 12 months; and by 2 to 3 percent more after a one percent drop in interest rates over the prior 6 months.

We include alternate permutations of indicator variables for bank control in Panel B as well. Regression 4B.2, which is based on prior 6 months' drop in interest rates but allows for a separate interaction for shareholder-controlled private sector banks, reveals that shareholder-controlled private bank's lending rises significantly (2 percent) more than that of a similar widely-held bank. However, the same coefficient becomes insignificant when drop in interest rates in the prior 12 months is used. Bank size interacted with drop in interest rates often generates negative coefficients but they are not statistically significant. Similarly interaction of liquidity with drop in interest rates does not attract significant coefficients in any of the specifications.

In regressions without the state-controlled bank indicator or the shareholder-controlled private sector bank indicator, but with bank level size and liquidity main effects and their interactions with monetary base growth, the main effect of monetary base growth is positive and significant only if it is calculated over the prior 6 months (not reported). This observation, plus the finding that bank size interacts significantly with monetary base growth only if the latter is measured over the prior 6 months motivates our focus on that measure of monetary policy in subsequent tables, and the relegation of the 12 month monetary base growth rate and drop in interest rates to a robustness check (also considering the issues with estimation of drop interest rates discussed above).

A wide range of robustness checks using prior 6 month monetary base growth fill the remainder of this subsection. Except where specifically indicated, all yield qualitatively similar results. By this, we mean that the coefficient of the interaction of the state-controlled indicator variable with the monetary base growth rate consistently retains a positive sign and high statistical significance.

Some banks in some countries are subsidiaries of foreign banks; dropping these observations yields qualitatively similar results to those in the table; as does including an indicator variable set to one for foreign subsidiaries and its interaction with monetary base growth as additional control variables.

The monetary base growth rates and bank-level loan growth rates are winsorized at 5%, and observations with loan growth rates higher than 50% and lower than -50% are dropped. Rerunning

these tests with unwinzorized data and including extreme observations generates qualitatively similar results. Where banks report both consolidated and unconsolidated balance sheets, the data in the tables use the consolidated version. Repeating the exercise using the unconsolidated version generates qualitatively similar results. In the tables, statistical significance is assessed allowing for clustering by country; heteroscedasticity consistent standard errors without clustering, clustering by year and clustering by country-year all lead to qualitatively similar results. Country-level clustering is used in the tables because this procedure makes the most conservative independence assumption in panel data of this form (Petersen 2009) , and thus works most strongly against our finding significant results.

The regressions in the tables contain insignificant coefficients. This motivates a robustness check using a stepwise regression to identify the most important variables. The interaction of state-owned banks with monetary base growth remains significant and attracts point estimates and significance levels higher than those in the Tables. The exercise reveals no significant interactions with other variables, save that with bank size.

We construct an alternative size measure similar to that used in Kashyap and Stein (2000). This is a *large bank* indicator set to one if the bank ranks among top 95% of all banks in the economy the prior year. As an alternative liquidity measure, we use all securities plus cash and funds due from banks, all divided by total assets. Substituting one or both of these for the measures used in Table 4 yields qualitatively similar results.

All the regressions include bank fixed effects, and therefore country-fixed effects as well. Dropping these fixed effects yields qualitatively similar results. Fixed-effects absorb the main effects of time-invariant bank-level and country-level omitted variables. However, they do not control for time-varying omitted variables that might alter the coefficient of monetary base growth. Fixed effects also fail to control for an omitted variable's interaction with monetary-base growth, which is necessarily time-varying.

Table 5 therefore investigates a range of omitted time-varying variables that might interact with monetary base growth rate measured over the prior 6 months. Each of these robustness check regression is of the form [7], but the additional control's main effect and its interaction with monetary base growth are included at the bottom of the table. These additional variables are: the log of real per capita GDP, fiscal policy, output gap, exchange rate depreciation (rise in unit of local currency per U.S. dollar), trade openness, financial openness, economic freedom and government consumption. The rightmost regression in each panel includes all the interactions and main effects, for all of these controls together; and thus only reports joint significance p-levels.

The interaction of the state-controlled bank indicator with monetary policy is highly statistically significantly positive across the specifications in Table 5. The coefficient magnitudes, ranging from 0.28 to 0.43, are comparable to those in Table 4. The interactions of the additional variables with monetary base growth are insignificant; the only exception being the economic freedom interaction with monetary growth rate. We also find that real loan growth is lower if the economy's output gap is larger, the country's currency is depreciating relative to the US dollar, government consumption is higher and financial openness is higher. When all controls are included none of the interactions of control variables with monetary policy remains significant. On the other hand, the main effect of liquidity and economic freedom are both positive and significant.

4.3 Evidence from bank privatizations

Next we examine the change in the responsiveness of state banks to monetary policy after privatization. We expect banks to be less subject to political pressure and lend more prudently after privatization (Megginson, 2005b; Berger et al. 2005). The goal is to observe the effects of change in ownership on responsiveness of lending to monetary policy while the client base remains relatively unchanged. The quality of loan decisions may change after privatization. However given that bank-client relationships are established over long term and often can only be terminated with a considerable time lag, it may be reasonable to assume that bank clientele do not change much immediately after privatization. Even in intermediate horizons change in clientele base could be minimal due to persistent factors such as geographical focus (Berger et al. 2005). Berger et al. (2005) point out that any differences in loan portfolios of privatized banks in Argentina within their sample period of 1993-1999 could be largely due to cleaning of bank balance sheets from non-performing loans before privatization. If in our sample banks are prepared for privatization we are less likely to find significant differences in lending policy immediately before and after privatization. It is also possible that political pressure on lending could be reduced on state banks that are going to be privatized further reducing the possibility of finding significant differences in responsiveness to monetary policy.

We start with the sample of bank privatizations from Megginson (2005a) and augment this data with more recent transactions from Privatization Barometer database and World Bank privatization transactions database. If privatization is done in stages we only consider the first date of privatization transaction where more than 10% of the bank is privatized. We then merge this data with Bankscope

dataset and monetary base data. Availability of monthly monetary base data and coverage of Bankscope limits our sample to post 2000 bank privatizations in most countries. We apply same filters as before for the financial statements of banks. We construct two samples. In the balanced sample we only include banks where we have data for both a year before privatization date and the year after the privatization date. In the unbalanced sample we include all observations within three years before and after privatization. The sample is unbalanced in the sense that 3 years of data may not be available both before and after privatization for some banks.

We first check whether size of loan portfolios change substantially after privatization. We find that the average loan growth rate at the end of the fiscal year immediately after privatization is 0.3%. In Table 6, we report regressions of real loan growth on monetary base, after privatization dummy and the interaction between the two while including bank fixed effects. The main effect of after privatization dummy changes between 0.01% to 0.04% and is not statistically significant immediately after privatization as shown in the balanced sample regressions (Table 6). These results support the idea that aggregate loan portfolios and presumably clientele base of banks are not likely to change very quickly immediately after privatization. When we include data up to 3 years before and after privatization the main effect of after privatization dummy is 8% and significant, implying that banks experience some growth in their loan portfolio in the medium term. As a result, the balanced sample makes a cleaner comparison of the effect of privatization on bank responsiveness to monetary policy while keeping clientele base relatively unchanged. The unbalanced sample maximizes the number of observations, which is valuable given the small sample size of the balanced sample, but results could be contaminated by the changes in the clientele base.

Regardless, both in the balanced and unbalanced sample we find that a 1% increase in monetary base in the prior 6 months correlates with 0.50% lower growth in loans after privatization compared to before privatization. In both samples we continue to obtain similar results after controlling for bank size, liquidity and their interaction with monetary base growth. In other words, responsiveness to monetary policy is significantly reduced after privatization. The magnitude of change is consistent with our earlier findings of differences between state banks and private sector banks.

4.4 Economy-level loan growth

The putative purpose of monetary policy is to affect the macroeconomy. Our sample covers largest banks in each country and these banks account a significant fraction of the overall banking system in each country in 2001 (Morck, Yavuz and Yeung, 2011). Therefore we expect our bank level results to

generalize at the economy level. The transmission of monetary policy at the aggregate level can be investigated using the economy-level measure of the importance of state-controlled banks described in section 3.

Table 7 presents regressions of the form of [8], which explain annual aggregate real loan growth. The regressions include country fixed effects; and different specifications include alternative sets of time-varying control variables. Table 7 reveals the interaction of monetary base growth with the fraction of the banking sector under state control to attract consistently positive significant coefficients. Specifically, a state-controlled banking system increases lending by a 0.38 to 0.54 percent more than a private sector banking system after a one percent increase in monetary base growth over the prior 6 months. The coefficients suggest economic magnitudes consistent with the bank level results. In short, the bank-level results appear to aggregate to the economy level.

These results are also quite robust. Qualitatively similar results are generated after controlling for our list of variables that could interact with the transmission of the monetary policy as in the bank level results. The interactions of these additional controls with monetary base growth are always insignificant while main effects of few variables are significant: The main effect of trade openness is positive and significant and main effect of government consumption is negative and significant. If all controls and their interactions with monetary base growth are included together, the main effect of economic freedom is positive and significant and the main effect of the output gap is negative and significant. Again, none of the control variables' interactions with monetary policy are significant.

Our economy-level credit growth variable may be excessively broad because it is based on all credit, rather than credit extended by commercial banks. We construct an alternative aggregate bank credit growth measure by adding up the gross credit extended by all banks in each country each year covered by the BankScope dataset, and constructing a real growth rate in this aggregate for each country each year. This measure can be criticized for incomplete or time varying coverage of banks by the BankScope dataset and for omitting non-bank financial institutions of many sorts. Repeating our tests with this alternative measure of country-level bank credit growth also generates significant positive interactions of state control over the banking system with monetary base growth, though not for the main effect coefficients on monetary base growth, which are negative in some specifications. In addition, controlling for the fraction of banks held by foreign banks and its interaction with monetary policy does not alter our results. Finally, the monetary base growth rates and aggregate loan growth rates are winsorized at 5%. Rerunning these tests with un-winsorized data generates qualitatively similar results.

4.5 Economy-level capital expenditure growth

Capital spending is the most procyclical major component of aggregate demand, and its fluctuations are the most important element of the business cycle (Samuelson, 1939). Monetary policy aimed at smoothing the business cycle therefore may aim to stimulate capital spending by loosening money supply or braking capital spending by tightening it.

Table 8 presents regressions of the form of [9], explaining economy-level annual growth rates in real capital formation with the interaction of monetary base growth and the fractional importance of state-controlled banks in the economy. The regressions also control for the main effect of state-control over the banking system and include country fixed-effects. Alternative specifications also include the fraction of shareholder-controlled banks and its interaction with the monetary base growth rate.

The key result in Table 8 is a uniformly positive and significant coefficient on the interaction of monetary base growth with the fraction of the banking system under state control: monetary base growth corresponds to more subsequent capital expenditure growth in countries with more state-control over their banking systems. The table also shows the main effect of monetary base growth on gross capital formation growth to be negative and significant in many specifications but it is positive and insignificant when we include all control variables.

Thus, regression 8.1 implies that a one percent increase in monetary base growth presages a decline of 0.27 percent in capital spending growth the following year in an economy whose banks are 100% private sector. The 0.81 coefficient on the interaction of monetary base growth with the fraction of the banking system under state control indicates that the same one percent increase in monetary base growth presages a boost in the capital spending growth rate of 0.81– 0.27 or +0.54 percent in an economy whose banks are 100% state-owned.

Regressions 8.2 through 8.11 introduce controls in turn, each accompanied by their main effect and their interaction with monetary base growth. Regression 8.2 includes a second banking system governance indicator, the fractional importance of shareholder-controlled banks, which interacts significantly with the monetary base growth rate. The coefficient implies that one percent boost in base money growth in a 100% private sector banking system translates into 0.28% more in capital spending growth if every bank has a controlling shareholder than if every bank is widely-held.

We introduce several control variables. The main effects of controls are generally insignificant, indicating no effect on capital spending growth in an entirely private sector banking system. The exceptions are that higher per capita GDP and a larger output gap both correspond to a slower capital

expenditure growth. The interactions of output gap, capital openness, economic freedom and government consumption with monetary base growth are all negative and significant. In regression 8.11, which contains the full list of controls and interactions, we find a +0.45 percent boost in capital spending for a one percent boost in base money growth the prior six months in a country whose banks are all state-controlled. In this regression, the main and interaction effects of all the control variables are insignificant, except that the main effect of per capita GDP is negative and significant. The economic impact of the interaction of the state-controlled fraction of the banking system with monetary policy echoes that in previous tables.

These results are highly robust, and survive similar robustness checks described in connection with Table 5. Thus, the capital spending growth rate and monetary base growth rate are winsorized at 5%. Unwinsorized data generates qualitatively similar results. In addition, regenerating the table using the prior 12 months monetary base growth yields qualitatively similar results. Controlling for the fraction of foreign banks and its interaction with monetary base growth yields higher coefficients and more significant results.

4.6 Variation in the Intensity of Political Pressure

We hypothesize that state controlled banks' lending tracks monetary policy more closely than does private sector banks' lending because the former are more subject to political pressure. If so, this difference should vary with the intensity of that pressure. We therefore consider various sources of variation in the intensity of political pressure on state-controlled bankers.

Business Cycles

First, politicians are plausibly most concerned with stimulating the economy during downturns. We therefore explore whether or not the differential lending by state banks varies across phases of the business cycle.

Regressions 9A.1 through 9A.5 in Panel A of Table 9 are bank-level credit growth regressions of the form [7]. Following monetary expansions, state controlled banks transmit monetary policy significantly more robustly than do private sector banks. In contrast, following monetary contraction periods, bank credit growth rates appear unresponsive to monetary base growth regardless of who controls the bank. State-controlled banks are significantly better conductors of monetary policy than are private sector banks during low economic growth periods. In contrast, no significant difference is

evident between state-controlled and private sector banks during periods of high economic growth. As a result, the largest difference between state banks and private banks in transmitting monetary policy is during expansionary monetary policy periods amid economic slowdowns.

Regression 9A.6 reruns the economy-level loan growth regression in the subsample of periods with low economic growth and expansionary monetary policy. In countries whose banking systems are entirely controlled by the state, aggregate loans expand by 0.64% upon a 1% in monetary base growth over the prior 6 months. For comparison, the aggregate loans expansion is 0.38% if entire time sample is used.[8]

Regressions 9B.1 through 9B.5 in Panel B of Table 9 run analogous economy-level capital spending regressions within these same sub-periods. A greater preponderance of state controlled banks does not significantly alter the relationship of a monetary expansion or contraction to growth in capital expenditure. However, closely echoing the bank-level results in Panel A, a larger fraction of the banking system under state control corresponds to a stronger linkage between base money growth and subsequent capital spending growth amid low economic growth, but not amid high economic growth. The last column reaffirms that more state-control over banks corresponds to better transmission of an expansionary monetary policy to capital formation amid low GDP growth.

In summary, state-controlled banks most faithfully transmit monetary policy when that policy is expansionary and the real economy is growing slowly. During such periods, Panel A shows that a 1% boost in monetary base in the prior 6 months corresponds to a 0.81% larger boost to real gross loan growth the next year by a state-controlled bank than by an otherwise similar private sector bank. In comparison the boost offered by state-control is only 0.38% across all time periods. Panel B shows that a one percent monetary expansion over the prior 6 months during a low GDP growth periods, corresponds to a 1% higher boost in capex growth, compared to 0.81% average across all times, where banks are 100% state-controlled than where they are 100% private sector. However, we interpret these results as suggestive because of the issues discussed above.

Election Cycles

Political pressure may be hardest for state-controlled banks to resist in the run-ups to elections. We therefore explore impending elections as sources of heterogeneity in political pressure. We repeat our tests in a bank-year panel subsample containing data immediately prior to elections and immediately

[8] Insufficient observations in economic downturn with monetary contractions preclude meaningful statistical analysis for this subsample.

following monetary expansions. Because these are observations in which electioneering politicians are most likely to be concerned with monetary growth translating into ready credit and economic growth, we call them "monetary pump priming" periods. Election years are defined in Panel D of Table 1, and monetary expansion and contraction years are defined as above.

Regression 9A.7 in Table 9 Panel A displays a bank-level credit growth regression estimated using only monetary pump priming periods. State-controlled banks transmit expansionary monetary policy significantly more robustly than do private sector banks in these periods, and the difference is significantly larger than in other periods of monetary expansion ($p = 0.02$). The point estimates indicate that, amid pre-election pump priming, a one percent boost in monetary base in the prior 6 months corresponds to a 1.54% larger boost to real gross loan growth the next year by a state-controlled bank than by an otherwise similar private sector bank. Regression 9A.8 explains aggregate loan growth, which expand by 0.51% more during pre-election pump priming where the banking system is entirely state-controlled than where it is entirely private-sector.[9]

Regression 9B.6 in Table 9 Panel B summarizes a corresponding economy-level capital spending regression in pre-election years that also follow monetary expansions. Consistent with the bank level results, the regression suggests that a more fully state-controlled banking system transmits an expansionary monetary policy to accelerated capital formation especially strongly in these pump priming years. Where banks are 100% state-controlled, as opposed to 100% private sector, a one percent monetary expansion over the prior 6 months corresponds to a 1.38% higher boost in capex growth during pump priming years. Again, this is significantly ($p = 0.09$) higher than the boost during non-pre-election years following monetary expansions.

This evidence, while admittedly circumstantial, is consistent with state-controlled banks most effectively transmitting monetary base growth during election run-ups. In other words, state banks respond to monetary policy more strongly than usual when political pressure to do so is more intense than usual.

Effective and Sensitive Civil Servants

If state-controlled banks transmit monetary policy more effectively because their managers are more vulnerable to political pressure, the effect should be more pronounced in countries where civil servants

[9] The coefficient on the interaction term is less robust than our other results. It is significant only if a regression robust to outliers is used. This drops three observations as outliers – Israel 2006, Peru 2006 and Ireland 2007. Quintile regressions generate significant results similar to those in the table.

are (1) more sensitive to political pressure and (2) more generally effective in doing whatever they do. We say country's civil service is *effective* if its government effectiveness index, as provided by Worldwide Governance Indicators, lies above the sample median and *ineffective* otherwise. This index lists independence from political influence as one element of an effective civil service. To identify countries whose civil services are effective in most ways, but heavily subject to political influence nonetheless we require an index specifically measuring their independence from political pressure. We say a country's civil servants are *sensitive* to political pressures if their average response to two survey questions about public sector employees' duty to implement politically driven agendas lies above the sample median; and that they are *insensitive* to political pressure otherwise. Further details about these two partitions of the data are provided in Panel D of Table 1.

Regressions 10A.1 and 10A.2, in Panel A, of Table 10 summarize bank-level credit growth regressions in subsamples of countries with effective and ineffective civil services, respectively. State-controlled banks transmit monetary policy significantly more robustly than do private sector banks only in countries whose civil services are effective. Regressions 10A.3 and 10A.4 analogously show state-controlled banks transmitting monetary policy significantly more robustly than do private sector banks in countries with politically sensitive civil servants, but not in countries with politically insensitive civil servants.

Regression 10A.5 features an even larger point estimate for the difference between state-controlled banks and private sector banks in transmitting monetary policy in countries whose civil servants are rated as both effective and politically sensitive. In these countries, a 1% boost in monetary base in the prior 6 months corresponds to a 0.81% larger boost to real gross loan growth the next year by a state-controlled bank than by an otherwise comparable private sector bank (compared to 0.34% in the full sample).

Regression 10A.6 presents the analogous economy-level exercise, with aggregate loan growth on the left-hand side. Consistent with bank-level results, the interaction of the fraction of banking system controlled by the state with the monetary base growth rate attracts a large and positive coefficient point estimate of 1.19%. Although this coefficient is statistically insignificant, the sample for this exercise is only 54 country-year observations.

Table 10 Panel B summarizes corresponding economy-level capital spending regressions in subsamples of countries with civil servants that are effective, ineffective, politically sensitive, politically insensitive, and simultaneously politically sensitive and effective. Parallel results to those of the loan growth regressions ensue. The interaction of the fraction of the banking system that is state-controlled

with the monetary base growth rate is significantly positive in countries with effective civil servants, but not in those with ineffective civil servants. If all banks are state-controlled, a 1% boost in monetary base growth in the prior 6 months corresponds to a 1.01% larger boost to real fixed capital formation growth in countries with politically sensitive civil servants, but only a 0.52% boost in countries with a politically insensitive civil service. However, state controlled banks are better transmitters of monetary policy than are private sector banks in countries with either politically sensitive or politically insensitive civil servants. In countries with sensitive and effective civil servants, a 1% boost in monetary base in the prior 6 months corresponds to a 0.60% larger boost to real fixed capital formation growth by 100% state-controlled banking systems than in countries with purely private sector banks.

Overall, the findings in this subsection are consistent with state-controlled banks being more efficient transmitters of monetary policy relative to private sector banks in countries whose civil servants are more effective in implementing government policies and more sensitive to political pressure in deciding what policies to implement. In summary, these characteristics of the civil service significantly explaining the observed difference between the responses of state-controlled and private sector banks to monetary policy accords with state banks' managers responding more reliably to "jawboning".

4.7 Discussion of Causality

Economy level regressions cannot readily resolve the direction of causality between credit growth and capital expenditure growth, on the one hand, and monetary base growth, on the other. Thus, a common reverse causality explanation in the context of monetary policy posits real business cycle shocks affecting aggregate demand, which affects the demand for loans, which causes the central bank to change the monetary base. A growing literature inferring causality from bank-level data or from natural experiments favours monetary policy causing changes in bank lending via the bank-lending channel. Nonetheless, debate persists[10] – perhaps because finding unambiguously exogenous instrumental variables and unambiguously randomized natural experiments uncontaminated by other contemporaneous events (especially if multiple countries are considered) is inevitably problematic.

Our findings affirm these findings regarding causation in three ways. First, following the

[10] For this debate see Kashyap, Lamont and Stein (1994), Ludvigson (1988), Peek and Rosengren(1997), Peek and Rosengren (2000), Campello (2002), Gambacorta and Mistrulli, 2004; Ashcraft(2005, 2006), Ashcraft and Campello (2007), Gan (2007), Khwaja and Mian(2008), Paravisini (2008), Chava and Purnanandam (2011), Iyer and Pedro (2011), Schnabl (2012), and others.

methodology for inferring causation developed by Kashyap and Stein (2000), we exploit bank-level variation to illuminate the direction of causation at the aggregate level. That state-controlled banks would respond to increased demand for credit, while similarly liquid private sector banks of similar size would not, seems *a priori* implausible. Thus, our bank-level regression results support monetary policy affecting bank lending, and affecting lending by state-controlled banks more strongly than lending by private sector banks.

However, this reasoning is not necessarily conclusive. For example, state-controlled banks might disproportionately lend to firms whose demand for loans is more sensitive to real business cycle shocks. If so, such shocks would alter monetary aggregates as the central bank's balance sheet changes in response to aggregate demand for loans and state-controlled banks' lending would vary with the growth rate of the monetary base.

Our findings also address such concerns. First, lending by state-controlled banks that are privatized becomes significantly less responsive to monetary policy immediately after their privatizations despite no major contemporaneous changes in their loan portfolios. Second, such reverse causality scenarios cannot easily explain how our results vary across countries and time with plausible proxies for the likely intensity of political pressure on state-controlled banks.

Yet another possibility is that state-controlled banks differ systematically from private-sector banks in some unobserved way that correlates with monetary policy. We control for size and financial health (liquidity) and include bank fixed-effects in all bank-level loan growth regressions to mitigate this concern. Such an unobserved factor would have to be highly correlated with state-control, unrelated to the additional control variables in our robustness checks, and related across time and countries to the phase of the business cycle, elections, and proxies for civil servants' likely responsiveness to political pressure. We cannot categorically preclude such a factor; but conclude tentatively that state-controlled banks responding more strongly to monetary policy because of political pressure provides a simple causal explanation consistent with all of the above findings.

Finally, a substantial empirical literature argues that politicians' priorities economically and statistically significantly affect state-controlled banks' lending (La Porta et al. 2002; La Porta, López-de-Silanes and Zamarripa 2003; Sapienza 2004; Dinc 2005; Deng et al 2010). If political factors also affect monetary policy, as seems inevitable, a correlation between monetary policy and state-controlled bank lending ensues, with causality flowing from political priorities to both.

Some final caveats are in order. First, politics is not itself exogenous, and undoubtedly interacts with economics in important ways. We are forced to relegate these issues to future research, and thus

to qualify our causal conclusions. Second, private-sector banks are also subject to political pressure – that is, to "jawboning" by government officials. We acknowledge this, but only posit that state-controlled banks are more sensitive to political pressure than are private sector banks. Third, we remain agnostic as to how political pressure might affect state-controlled banks. State-controlled banks' top managers' career prospects might depend on cooperating with whatever monetary policy top government officials implement. Or, state-controlled bank managers might obey direct orders from government officials, with monetary policy merely proxying for the sort of orders being relayed through a command and control hierarchy. Yet more involved mechanisms are conceivable. For example, political pressure contemporaneous with monetary policy might affect the capital spending plans of non-financial state-controlled enterprises (or private-sector firms dependent on government business) and thus their demand for loans. If such firms disproportionately sought loans from state-controlled banks, the latter would alter their lending in response. All these chains of causality amount to direct causality, in that political pressure ultimately affects state-controlled banks' lending, however direct or indirect the mechanism.

5. Conclusion

The empirical results above are consistent with state-controlled banks transmitting monetary policy to bank loan growth and fixed capital formation growth more effectively than private sector banks do. Consistent with political pressure inducing this, state-controlled banks become less conducive to transmitting monetary policy immediately after their privatizations. Further supporting this interpretation of our findings, state-controlled banks differential response is more pronounced in election years and years of slow growth and monetary expansion and in countries whose civil servants are more effective and more sensitive to political influence. Our results are consistent with state-control of banks being subject to extreme "jawboning" – a more well-known form of political influence on bank lending wherein government leaders exhort bankers to lend more in response to a monetary stimulus.

Private sector banks, in contrast, appear cautious and relatively unresponsive to monetary policy. In some specifications, they actually "pull against" monetary policy, seemingly contracting lending in response to a monetary expansion and vice versa, although this effect is always insignificant if a full range of control variables is included. At present, we can only speculate as to possible unresponsiveness of private sector banks. Private sector banks' management might rationally expect monetary policy to be ineffective (Lucas 1972), and therefore ignore it. Alternatively, agency problems

may induce private sector banks' managers to pursue quiet lives (Bertrand and Mullainathan 2003; John et al. 2008), and thus to avoid taking bold action such as increasing lending during an economic downturn merely because of an expansionary monetary policy.

More seemingly effective monetary policy in countries with more extensively state-controlled banking sectors is also consistent with evidence that these countries' economies are less volatile (Morck, Yavuz and Yeung 2011). However, a greater effect of monetary policy need not imply that the resulting investment is allocated efficiently. Indeed, state banks pursuit of political goals is elsewhere associated with inefficiently allocated capital (La Porta et al. 2002a; Sapienza 2004; Dinc 2005; Deng, Morck, Wu and Yeung 2010; Morck, Yavuz and Yeung 2011). These considerations suggest that policy makers may wish to consider the transmission of monetary policy when weighing the advantages and disadvantages of nationalizing troubled banks during a downturn. However, policy makers confront a trade-off: state control over banks may increase the transmissibility of monetary policy and thus assist them in the short-run goal of stabilizing the economy, but imposes long-term capital misallocation costs (La Porta et al. 2001).

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Table 1: Variable definitions and sources

Panel A: Variables reflecting bank control	
State-controlled	Bank-year panel dummy set to 1 if the bank has a state organ as an ultimate controlling shareholder. Control is imputed to the largest blockholder whose voting control, direct and indirect, sum to at least 10%. Indirect control is inferred using the "weakest link" method (La Porta et al. 1999).
% State-controlled	Economy-year panel lagged credit-weighted fraction of banks ultimately controlled by state organs.
Panel B: Main monetary policy and outcome measures	
Loan Growth	Bank-year real growth rates in gross loans, i.e. (gross loan(t+1)-gross loan(t))/gross loan(t), deflated using the producer price index and winsorized at 5% within the entire panel. If gross loans are missing net loans are used. Source: Bankscope.
Aggregate Loan Growth	Economy-year panel annual real growth rate of domestic credit provided by banking sector. WDI provides domestic credit provided by banking sector divided by GDP so we obtained our variable by multiplying this ratio with GDP in current local currency. Each country's CPI index is used to deflate its nominal aggregates. The variable is winsorized at 5% level within the entire panel. Source: WDI.
Aggregate Capex Growth	Economy-year panel annual real growth rates in gross fixed capital formation, (capex (t+1)-capex(t))/capex(t) and always winsorized at 5% level within the entire panel. Gross fixed capital formation is the seasonally adjusted total value of producers' acquisitions, less disposals, of fixed assets plus certain additions to the value of non-produced assets (e.g. subsoil assets or major improvements in the quantity, quality, or productivity of land), deflated by the producer price index. We take seasonally adjusted values from either the reporting country or the IMF, if available; and otherwise run a rolling regression for 5 prior years of gross fixed capital formation on quarter dummies to calculate seasonal adjusted values. Source: IMF International Financial Statistics (IFS) Database: National Accounts and Population, Gross Fixed Capital Formation (line 93e).
Monetary Base Growth	Economy-year panel of nominal growth rates of monetary base during the last 6-12 months of the previous year, (monetary base (t)-monetary base(t-1))/monetary base(t-1) winsorized at the 5% level within entire panel. Seasonally adjusted values are used if last 6 months monetary based growth is used. If seasonally adjusted values are not available in the dataset seasonal adjustment is made as for Capex Growth by using month dummies. Euro-zone countries are considered one economy in calculating this variable after adoption of the euro. Source: IMF International Financial Statistics (IFS) Database, Central Bank Survey, section 10, country table line 14.
Drop in interest rates	Economy-year panel of nominal change in interest rates during the last 6-12 months of the previous year, (interest rate (t)-interest rate(t-1)) winsorized at the 5% level within entire panel. If available we use "monetary policy related interest rate" if not we use "discount rate", "lending rate" or "money market rate", in order, as taken from IMF IFS dataset. Source: IMF International Financial Statistics (IFS) Database.
Panel C: Control variables	
Size	Bank-year panel variable equal to the previous fiscal year-end log total assets in USD. Source: Bankscope
Liquidity	Bank-year panel variable equal to the bank's previous year-end ratio of government securities plus cash and due from banks to total assets. Source: Bankscope.
Shareholder-controlled	Bank-year panel dummy variable set to 1 if the bank has an individual or family as an ultimate controlling shareholder. Constructed analogously to State.

Widely-held	Bank-year panel dummy set to 1 if the bank has no ultimate controlling shareholder. Constructed analogously to State.
Foreign-controlled	Bank-year panel dummy set to 1 if the bank is a subsidiary of a foreign bank. Constructed analogously to State.
GDP per capita	Log real GDP per capita. Source: World Development Indicators.
Fiscal Policy	Economy-level panel of changes in fiscal balance during the prior 12 month, as a fraction of the prior years' year-end nominal GDP. Sources: Government Surplus/Deficit data are from DataStream (DS Mnemonic=..govbala), and are supplemented with IMF GFS data on either net operating balances or net lending. These variables can be calculated on accounting or cash bases, and at for the government overall, the central government, or budgetary central government; and we take data as available in those orders of priority. Net operating balances (line anob) are revenue (a1) less expenses (a2). Revenues includes taxes, social contributions, grants and other revenues; expenses include compensation of employees, use of goods and services, consumption of fixed capital, interest, subsidies, grants, social benefits and other expenses (GFSM manual 2001). Net cash inflow from operating activities (ccio) is cash receipts from (c1) less payments for (c2) operating activities. Net lending/borrowing (anlb) is net operating balance (anob) less net acquisition of nonfinancial assets (a31). The cash equivalent, the cash surplus/deficit (ccsd), is net cash inflow from operating activities (ccio) less net cash outflow from investments in nonfinancial assets (c31).
Government consumption	This variable is the general government final consumption expenditure as % of GDP. General government final consumption expenditure includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defense and security, but excludes government military expenditures that are part of government capital formation. Source: World Development Indicators.
Output gap	Potential GDP less actual GDP, as a percent of potential GDP, all lagged one year. Potential GDP is estimated using the filter developed by Hodrick and Prescott (1997) using past annual GDP growth, with the smoothing parameter of 6.25 they suggest for annual GDP data.
Trade Openness	The sum of exports and imports of goods and services as shares of gross domestic product lagged by one year. Source: World Development Indicators.
Financial Openness	The Chinn-Ito index takes higher values the more open an economy is to cross-border capital transactions. The index is constructed from binary dummy variables that codify restrictions on cross-border financial transactions, as reported in the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). These include dummies indicating the presence of multiple exchange rates, restrictions on current account transactions, restrictions on capital account transactions (5 year average), and requirement to surrender of export proceeds. The index is lagged by one year. Source: The index was initially introduced in Chinn and Ito (2006).
Exchange Rate	Change in the exchange rate measured as local currency in US dollar, over the prior 12 months. A positive and higher value implies local currency depreciation against the U.S. dollar. Source: IMF Financial Statistics.
Economic Freedom	Economic Freedom of the World Index lagged by one year. The index has five main components: 1) Size of Government: Expenditures, Taxes, and Enterprises, 2) Legal Structure and Security of Property Rights 3) Access to Sound Money 4) Freedom to Trade Internationally and 5) Regulation of Credit, Labour, and Business. Source: Fraser institute.
Panel D: Variables used to define subsamples	
Election years	Each country is identified as having a parliamentary or presidential system each year by the World Bank Database of Political Institutions (Beck et al., 2001). Election dates (presidential elections for presidential systems and parliamentary elections for parliamentary and assembly-elected

presidential systems) are from the International Institute for Democracy and Electoral Assistance (IDEA) database. Elections (or countries) classified as "not free" by Freedom House are dropped.

Civil service effectiveness Each country's civil service is defined as effective if its Government Effectiveness index, as provided by Worldwide Governance Indicators (Kaufmann, Kraay and Mastruzzi, 2010), lies above the median for our sample of countries and is defined as ineffective otherwise. The index is available for 2000, 2002, and annually thereafter. For the year 2001 we use the index in 2000.

Civil service sensitivity A country's civil service is defined as sensitive to political pressure if an index constructed from the average response to two survey questions (Q8.b and Q8.e) in the Quality of Government Expert Survey Dataset (Teorell, Dahlström and Dahlberg, 2011) lies above the median for our sample of countries and defined as insensitive otherwise. The two questions ask experts to evaluate the extent to which public sector employees (1) strive to fulfil the ideology of the party/parties in government, and (2) strive to implement the policies decided upon by the top political leadership. Higher numbered responses (ranging from one to seven) indicate a civil service more sensitive to political direction. The survey is conducted between 2008 and 2012 in three waves. The index is averaged over all responses.

Central bank independence Each country's central bank is defined as independent if its legal central bank independence index (from Cukierman, Webb and Neyapti, 1992) lies above the median for our sample of countries and is defined as dependent otherwise. The legal central bank independence index is compromised of 16 different legal variables that is grouped under four categories. These include 1) the appointment, dismissal and the term of office of the chief executive officer of the central bank 2) resolution of conflicts between the executive branch and the central bank over monetary policy and the participation of the central bank in the budget process 3) the objectives of the central bank 4) limitations on the ability of the central bank to lend to public sector.

Table 2: Country Level Descriptive Statistics of Main Variables

Means and standard deviations of key variables. Prior 6 month monetary base growth and annual future gross loan growth are averages calculated using bank level panel data within each economy. Capex growth, %state, %non-state, %widely-held and %shareholder-controlled are time series averages at the economy level. Monetary base growth, loan growth and capex growth are winsorized at 5%. Variables are as defined in Table 1.

	Monetary Base Growth (6 mo.)		*Loan Growth*		*Capex Growth*		*Percent of Banking System*			
Country	*Mean*	*σ*	*Mean*	*σ*	*Mean*	*σ*	*%State*	*%Private*	*%Shr. Contr.*	*%Widely Held*
Argentina	0.119	0.091	0.030	0.134	0.098	0.134	57	43	23	20
Austria	0.084	0.070	0.072	0.117	0.009	0.049	0	100	0	100
Brazil	0.058	0.071	0.130	0.130	0.037	0.087	43	57	44	14
Canada	0.011	0.009	0.067	0.083	0.044	0.060	0	100	0	100
China: Hong Kong	0.040	0.087	0.077	0.119	NA	NA	3	97	69	27
Colombia	0.037	0.029	0.141	0.109	0.108	0.087	13	87	39	48
Denmark	0.032	0.090	0.092	0.125	-0.002	0.082	0	100	0	100
Egypt	0.118	0.104	0.014	0.167	0.092	0.141	94	6	6	0
Finland	0.098	0.087	0.073	0.160	NA	NA	0	100	0	100
France	0.079	0.070	0.079	0.119	0.026	0.032	12	88	0	88
Germany	0.084	0.067	0.040	0.125	-0.015	0.048	25	75	13	62
Greece	0.085	0.081	0.151	0.126	-0.027	0.112	79	21	14	7
India	0.106	0.046	0.175	0.079	NA	NA	100	0	0	0
Indonesia	0.047	0.064	0.158	0.128	0.113	0.077	93	7	3	3
Ireland	0.068	0.072	0.159	0.145	-0.018	0.129	0	100	4	96
Israel	0.002	0.062	0.008	0.074	0.004	0.080	56	44	39	5
Italy	0.065	0.069	0.090	0.097	-0.009	0.049	0	100	1	99
Japan	-0.006	0.031	-0.002	0.063	-0.029	0.047	20	80	0	80
Jordan	0.062	0.029	0.106	0.131	NA	NA	7	93	93	0
Kenya	0.014	0.019	0.104	0.094	NA	NA	73	27	8	19
Korea	0.015	0.057	0.097	0.093	0.041	0.056	53	47	3	44
Malaysia	0.055	0.049	0.060	0.052	0.026	0.057	6	94	84	10
Mexico	0.036	0.030	0.058	0.168	0.048	0.063	0	100	48	52
Netherlands	0.071	0.081	0.031	0.092	0.008	0.061	26	74	0	74
Norway	0.101	0.109	0.051	0.040	-0.004	0.071	59	41	0	41
Pakistan	0.046	0.017	0.180	0.165	NA	NA	93	7	7	0
Peru	0.048	0.075	0.065	0.170	0.091	0.109	12	88	72	16
Philippines	0.121	0.100	0.046	0.158	0.008	0.091	6	94	92	2
Portugal	0.083	0.080	0.089	0.096	NA	NA	10	90	24	66
Singapore	0.034	0.038	0.048	0.064	NA	NA	42	58	58	0
South Africa	0.060	0.042	0.081	0.136	0.115	0.053	0	100	83	16
Spain	0.079	0.079	0.122	0.126	0.026	0.085	10	90	43	48
Sri Lanka	0.047	0.018	0.053	0.114	NA	NA	58	42	0	42
Sweden	-0.004	0.013	0.103	0.078	0.015	0.074	0	100	45	55
Switzerland	0.009	0.056	0.036	0.097	0.011	0.039	29	71	9	62
Thailand	0.011	0.038	-0.002	0.086	0.024	0.087	51	49	49	1
Turkey	0.044	0.086	0.176	0.118	0.059	0.124	22	78	70	8
UK	0.046	0.061	0.036	0.129	-0.022	0.102	0	100	9	91
United States	0.032	0.075	0.051	0.151	-0.017	0.063	0	100	1	99
Venezuela	0.147	0.106	0.085	0.261	NA	NA	0	100	50	50

Table 3. Simple Correlations

We collapse variables at the economy level using 40 country sample and calculate across country correlations of averages. Numbers in parentheses are p-levels. Boldface indicates significance at 10% or better. All variables are described in detail in Table 1. *Monetary base growth* rate is over the six months prior to the year in question. Variable 15 is *exchange rate*.

	Bank Loan Growth	***Monetary Base Growth***	***Bank-level indicator variables***				***Additional Regression Control Variables***							
			State Controlled	***Widely Held***	***Shareholder Controlled***	***Foreign Controlled***	***Bank Size***	***Bank Liquidity***	***GDP per capita***	***Trade Openness***	***Financial Openness***	***Economic Freedom***	***Fiscal Policy***	***Output Gap***
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
2	0.10 (0.53)													
3	0.09 (0.57)	0.14 (0.39)												
4	-0.13 (0.43)	0.03 (0.85)	**-0.71** **(0.00)**											
5	0.08 (0.61)	-0.20 (0.22)	-0.08 (0.63)	**-0.64** **(0.00)**										
6	-0.20 (0.22)	0.09 (0.57)	**-0.51** **(0.00)**	**0.60** **(0.00)**	**-0.30** **(0.06)**									
7	-0.12 (0.46)	0.10 (0.53)	-0.12 (0.44)	0.10 (0.55)	0.00 (0.99)	0.18 (0.28)								
8	**0.32** **(0.04)**	0.20 (0.22)	**0.56** **(0.00)**	**-0.64** **(0.00)**	**0.30** **(0.06)**	-0.04 (0.81)	**-0.39** **(0.01)**							
9	-0.01 (0.94)	**-0.47** **(0.00)**	-0.05 (0.77)	0.09 (0.57)	-0.08 (0.62)	-0.12 (0.48)	-0.10 (0.53)	-0.11 (0.51)						
10	-0.16 (0.33)	-0.14 (0.40)	-0.14 (0.39)	-0.19 (0.25)	**0.42** **(0.01)**	0.00 (1.00)	0.07 (0.67)	-0.08 (0.63)	0.04 (0.82)					
11	**-0.32** **(0.04)**	-0.14 (0.40)	**-0.40** **(0.01)**	**0.45** **(0.00)**	-0.19 (0.23)	-0.10 (0.52)	**0.32** **(0.05)**	**-0.68** **(0.00)**	0.02 (0.91)	0.23 (0.16)				
12	**-0.32** **(0.04)**	**-0.34** **(0.03)**	**-0.35** **(0.03)**	**0.28** **(0.08)**	-0.01 (0.94)	0.05 (0.76)	**0.30** **(0.06)**	**-0.62** **(0.00)**	0.15 (0.37)	**0.54** **(0.00)**	**0.72** **(0.00)**			
13	-0.03 (0.85)	-0.07 (0.67)	-0.18 (0.27)	0.22 (0.18)	-0.11 (0.52)	**0.40** **(0.01)**	0.23 (0.17)	-0.16 (0.35)	0.12 (0.46)	**0.28** **(0.09)**	0.02 (0.92)	0.23 (0.16)		
14	0.07 (0.68)	-0.09 (0.57)	0.25 (0.12)	**-0.28** **(0.08)**	0.12 (0.45)	-0.05 (0.77)	-0.23 (0.16)	**0.36** **(0.02)**	-0.12 (0.46)	-0.11 (0.48)	-0.18 (0.27)	-0.20 (0.21)	0.20 (0.24)	
15	0.01 (0.96)	0.18 (0.27)	0.06 (0.71)	-0.13 (0.41)	0.12 (0.45)	0.23 (0.15)	0.04 (0.80)	0.24 (0.13)	-0.11 (0.51)	-0.05 (0.77)	**-0.27** **(0.09)**	**-0.34** **(0.03)**	0.26 (0.12)	**-0.38** **(0.02)**

Table 4. Bank-Level Loan Growth Regressions

Left-hand side variable is bank-level *loan growth*, defined as the bank's year-on-year growth rate in real gross loans. We control for bank fixed effects, with residuals clustered by economy and Euro-zone countries considered to be one economy after introduction of the euro. Variables are as defined in Table 1. Sample is 288 banks in the 40 countries listed in Table 2. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Panel A: Monetary Base Growth

Monetary base growth rate is	***measured over prior 6 months***				***measured over prior 12 months***			
Regression	4A.1	4A.2	4A.3	4A.4	4A.5	4A.6	4A.7	4A.8
Monetary base growth	-0.21	**-0.31**	**0.75**	**0.67**	**-0.16**	**-0.18**	-0.12	-0.08
	(0.15)	**(0.03)**	**(0.07)**	**(0.07)**	**(0.00)**	**(0.00)**	(0.69)	(0.77)
State-controlled X	**0.35**	**0.45**	**0.34**	**0.38**	**0.26**	**0.28**	**0.27**	**0.26**
Monetary base growth	**(0.00)**	**(0.00)**	**(0.01)**	**(0.00)**	**(0.00)**	**(0.01)**	**(0.00)**	**(0.00)**
Bank size X			**-0.10**	**-0.09**			-0.01	-0.01
Monetary base growth			**(0.00)**	**(0.00)**			(0.74)	(0.64)
Bank liquidity X			-0.18	-0.25			0.16	0.19
Monetary base growth			(0.75)	(0.69)			(0.67)	(0.63)
Shareholder-controlled X		0.26		0.10		0.07		-0.04
Monetary base growth		(0.27)		(0.55)		(0.68)		(0.60)
State-controlled	0.01	-0.02	0.01	-0.05	-0.00	-0.03	-0.00	-0.06
	(0.78)	(0.73)	(0.66)	(0.37)	(0.99)	(0.56)	(0.97)	(0.25)
Bank size			-0.00	-0.00			-0.01	-0.01
			(0.89)	(0.84)			(0.66)	(0.64)
Bank liquidity			0.14	0.15			0.14	0.14
			(0.14)	(0.11)			(0.17)	(0.16)
Shareholder-controlled		-0.04		-0.07		-0.05		-0.07
		(0.46)		(0.19)		(0.40)		(0.20)
Bank fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R^2	0.18	0.18	0.21	0.21	0.22	0.20	0.20	0.23
Observations	1,328	1,328	1,163	1,163	1,261	1,261	1,098	1,098

Panel B: Drop in interest rates

Drop in interest rates	***measured over prior 6 months***				***measured over prior 12 months***			
Regression	4B.1	4B.2	4B.3	4B.4	4B.5	4B.6	4B.7	4B.8
Interest rate drop	**-0.01**	**-0.03**	0.01	-0.01	-0.01	**-0.01**	-0.01	-0.02
	(0.09)	**(0.00)**	(0.73)	(0.75)	(0.24)	**(0.04)**	(0.69)	(0.35)
State-controlled X	**0.02**	**0.03**	**0.02**	**0.03**	**0.01**	**0.02**	**0.01**	**0.02**
Interest rate drop	**(0.00)**	**(0.00)**	**(0.02)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.01)**	**(0.01)**
Bank size X			-0.00	-0.00			-0.00	0.00
Interest rate drop			(0.23)	(0.33)			(0.91)	(0.91)
Bank liquidity X			0.01	0.01			0.01	0.01
Interest rate drop			(0.67)	(0.77)			(0.67)	(0.70)
Shareholder-controlled X		**0.02**		**0.02**		**0.01**		0.01
Interest rate drop		**(0.02)**		**(0.05)**		**(0.09)**		(0.24)
State-controlled	0.03	-0.01	0.02	-0.04	0.03	-0.01	0.02	-0.04
	(0.41)	(0.85)	(0.46)	(0.42)	(0.41)	(0.93)	(0.47)	(0.49)
Bank size			-0.02	-0.02			-0.02	-0.02
			(0.31)	(0.33)			(0.27)	(0.28)
Bank liquidity			0.09	0.10			0.06	0.07
			(0.38)	(0.34)			(0.56)	(0.51)
Shareholder-controlled		-0.04		-0.07		-0.03		-0.07
		(0.51)		(0.18)		(0.58)		(0.22)
Bank fixed effects	yes	yes	yes	yes	yes	yes	yes	yes
Adjusted R^2	0.18	0.19	0.20	0.20	0.18	0.19	0.20	0.20
Observations	1,199	1,199	1,063	1,063	1,197	1,197	1,062	1,062

Table 5. Bank-Level Loan Growth Regressions: Additional Controls

Left-hand side variable is bank-level *loan growth*, defined as the bank's year-on-year growth rate in real gross loans. First seven columns include one additional control variable and its interaction with monetary base growth rate and the last column includes all additional control variables together. Monetary base growth is for the prior 6 months. We control for bank fixed effects, with residuals clustered by economy and Euro-zone countries considered to be one economy after introduction of the euro. Variables are as defined in Table 1. Sample is 288 banks in the 40 countries listed in Table 2. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
Monetary base growth	0.92	0.49	0.74	0.63	**0.80**	**0.89**	1.27	**0.91**	1.44
	(0.21)	(0.32)	(0.14)	(0.13)	**(0.09)**	**(0.05)**	(0.15)	**(0.10)**	(0.47)
State-controlled X	**0.37**	**0.41**	**0.43**	**0.43**	**0.35**	**0.28**	**0.28**	**0.34**	**0.35**
Monetary base growth	**(0.01)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.01)**	**(0.03)**	**(0.03)**	**(0.01)**	**(0.01)**
Bank size X	**-0.09**	**-0.07**	**-0.10**	**-0.08**	**-0.10**	**-0.09**	**-0.08**	**-0.10**	-0.06
Monetary base growth	**(0.01)**	**(0.05)**	**(0.03)**	**(0.01)**	**(0.00)**	**(0.03)**	**(0.04)**	**(0.00)**	(0.15)
Bank liquidity X	-0.06	-0.12	-0.03	-0.44	-0.15	-0.50	-0.31	-0.27	-0.76
Monetary base growth	(0.92)	(0.87)	(0.96)	(0.44)	(0.81)	(0.55)	(0.67)	(0.69)	(0.44)
State-controlled	0.01	**-0.02**	0.01	0.01	0.01	0.03	0.02	0.01	**-0.04**
	(0.68)	**(0.09)**	(0.80)	(0.69)	(0.58)	(0.26)	(0.22)	(0.65)	**(0.09)**
Bank size	-0.01	-0.01	-0.01	-0.00	-0.02	-0.02	-0.03	-0.02	-0.00
	(0.74)	(0.72)	(0.51)	(0.79)	(0.42)	(0.41)	(0.22)	(0.46)	(0.92)
Bank liquidity	**0.14**	**0.20**	0.15	0.14	0.15	**0.18**	**0.19**	**0.15**	**0.20**
	(0.10)	**(0.02)**	(0.11)	(0.13)	(0.12)	**(0.04)**	**(0.05)**	**(0.08)**	**(0.01)**
Bank fixed-effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Additional control is:	***log per capita GDP***	***fiscal policy***	***output gap***	***exchange rate***	***trade openness***	***financial openness***	***economic freedom***	***government consumption***	***all controls***
Additional control X	-0.02	3.71	5.26	0.06	-0.00	-0.11	0.10	-0.01	**F=405**
Monetary base growth rate	(0.54)	(0.26)	(0.21)	(0.85)	(0.24)	(0.30)	(0.01)	(0.75)	**(0.00)**
Additional control	-0.04	-0.21	**-0.69**	**-0.13**	0.00	**0.05**	-0.10	**-0.01**	
	(0.72)	(0.76)	**(0.07)**	**(0.04)**	(0.20)	**(0.02)**	(0.38)	**(0.02)**	
Adjusted R^2	0.24	0.23	0.24	0.26	0.24	0.25	0.25	0.25	0.32
Observations	1,098	954	1,098	1,098	1,098	1,098	1,098	1078	934

Table 6. Privatizations

Left-hand side variable is bank-level *loan growth*, defined as the bank's year-on-year growth rate in real gross loans. In the first three columns we include all observations within 3 years of privatization year. This sample is unbalanced: some banks may have observations only before privatization while others only after privatization and the number of observations before and after privatization may not be equal. The last three columns include observations immediately (1 year) before and after privatization and only for banks that have observation both before and after privatization. Monetary base growth is for the prior 6 months. We control for bank fixed effects, with residuals clustered by economy. Variables are as defined in Table 1. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

	Within 3 years of before and after privatization (unbalanced sample)			Immediately before and after privatization (balanced sample)		
	6.1	6.2	6.3	6.4	6.5	6.6
Monetary base growth rate	**0.39**	0.21	0.44	0.08	-0.59	-0.83
	(0.00)	(0.74)	(0.54)	(0.56)	(0.12)	(0.59)
After privatization dummy X Monetary base growth rate	**-0.56**	**-0.49**	**-0.45**	**-0.51**	**-0.75**	**-0.85**
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.03)**
Bank size X Monetary base growth rate		0.01	-0.01		0.08**	0.10
		(0.92)	(0.89)		(0.04)	(0.47)
Bank liquidity X Monetary base growth rate			-0.76			0.21
			(0.22)			(0.90)
After privatization dummy	**0.08**	**0.08**	**0.08**	0.01	0.04	0.04
	(0.00)	**(0.00)**	**(0.00)**	(0.82)	(0.30)	(0.22)
Bank size		-0.10	-0.11		0.09	0.12
		(0.28)	(0.23)		(0.67)	(0.67)
Bank liquidity			0.26			0.00
			(0.39)			(0.99)
Bank fixed-effects	yes	yes	yes	yes	yes	yes
Adjusted R2	0.39	0.49	0.49	0.36	0.37	0.30
Number of Observations	160	135	135	52	46	46
Number of Banks	53	48	48	26	23	23
Number of Countries	25	25	25	16	15	15

Table 7. Growth in Domestic Credit Provided by Banking Sector

Left-hand side variable is the aggregate loan growth, defined as the country level year-on-year real growth rate in domestic credit provided by banking sector. Columns 3-9 include one additional control variable and its interaction with monetary base growth rate and the last column includes all additional control variables together. Monetary base growth is calculated in the prior 6 months. Residuals clustered by economy and Euro-zone countries considered to be one economy after introduction of the euro. Variables are as defined in Table 1. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Regression	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	7.10	7.11
Monetary base growth	-0.12	**-0.24**	**-0.46**	-0.12	-0.13	-0.10	**-0.32**	-0.08	-0.66	-0.03	-0.52
	(0.23)	**(0.06)**	**(0.09)**	(0.28)	(0.16)	(0.33)	**(0.00)**	(0.37)	(0.29)	(0.88)	(0.64)
% state-controlled X	**0.38**	**0.52**	**0.40**	**0.37**	**0.40**	**0.47**	**0.49**	**0.37**	**0.53**	**0.40**	**0.51**
Monetary base growth	**(0.05)**	**(0.01)**	**(0.02)**	**(0.09)**	**(0.03)**	**(0.02)**	**(0.00)**	**(0.02)**	**(0.02)**	**(0.04)**	**(0.10)**
% shareholder-controlled X		0.41									
Monetary base growth		(0.16)									
% state-controlled	0.00	-0.02	0.01	0.02	0.01	0.00	-0.02	-0.00	0.01	0.00	**0.07**
	(0.91)	(0.78)	(0.78)	(0.63)	(0.88)	(0.95)	(0.62)	(0.93)	(0.62)	(0.99)	**(0.03)**
% shareholder-controlled		-0.02									
		(0.60)									
Additional control is:			***log per capita GDP***	***fiscal policy***	***output gap***	***exchange rate***	***trade openness***	***financial openness***	***economic freedom***	**government consumption**	**all controls**
Additional control X			0.03	0.68	-0.15	-0.03	0.00	0.01	0.04	-0.01	**F =39**
Monetary base growth			(0.22)	(0.19)	(0.58)	(0.62)	(0.73)	(0.69)	(0.20)	(0.42)	**(0.00)**
Additional control			0.04	-3.17	0.98	-0.14	**0.00**	-0.04	0.07	**-0.01**	
			(0.61)	(0.17)	(0.50)	(0.56)	**(0.00)**	(0.32)	(0.40)	**(0.04)**	
Adjusted R^2	0.18	0.08	0.18	0.17	0.18	0.14	0.20	0.19	0.19	0.20	0.27
Observations	259	259	259	230	259	259	259	252	259	252	223

Table 8. Fixed Capital Investment Growth

Future 12 month fixed capital formation growth regressed on prior 6 month monetary base growth, banking system fractional control variables and interactions between them at the country level. We use country fixed effects, with residuals clustered by economy and Euro-zone countries considered to be one economy after introduction of the euro. Variables are as defined in Table 1. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Regression	8.1	8.2	8.3	8.4	8.5	8.6	8.7	8.8	8.9	8.10	8.11
Monetary base growth	**-0.27**	**-0.34**	-0.27	**-0.25**	**-0.13**	**-0.27**	-0.05	-0.08	0.97	0.10	0.30
	(0.00)	**(0.00)**	(0.22)	**(0.00)**	**(0.01)**	**(0.00)**	(0.71)	(0.47)	(0.08)	(0.50)	(0.70)
% state-controlled X Monetary base growth	**0.81**	**0.82**	**0.61**	**0.81**	**0.69**	**0.78**	**0.71**	**0.64**	**0.56**	**0.65**	**0.45**
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
% shareholder-controlled X Monetary base growth		**0.28**									
		(0.08)									
% state-controlled	**0.13**	**0.10**	**0.13**	**0.14**	**0.20**	**0.13**	**0.15**	**0.11**	**0.10**	**0.12**	**0.17**
	(0.01)	**(0.04)**	**(0.02)**	**(0.01)**	**(0.00)**	**(0.01)**	**(0.01)**	**(0.02)**	**(0.04)**	**(0.03)**	**(0.01)**
% shareholder-controlled		-0.05									
		(0.62)									
Additional control is:			***log per capita GDP***	***fiscal policy***	***futput gap***	***exchange rate***	***erade openness***	***capital openness***	***economic freedom***	***government consumption***	***all controls***
Additional control X Monetary base growth			0.01	1.53	**-5.09**	-0.05	-0.00	**-0.11**	-0.16	**-0.02**	**F=95**
			(0.51)	(0.65)	**(0.04)**	(0.85)	(0.17)	**(0.02)**	(0.02)	**(0.01)**	**(0.00)**
Additional control			**-0.49**	0.61	**-0.68**	0.04	-0.00	-0.01	-0.04	-0.01	
			(0.00)	(0.32)	**(0.10)**	(0.53)	(0.12)	(0.66)	(0.32)	(0.24)	
Adjusted R^2	0.20	0.20	0.31	0.21	0.26	0.20	0.22	0.21	0.21	0.21	0.33
Observations	376	376	376	364	376	376	376	376	376	376	364

Table 9. Variation over the Business and Election Cycles

Panel A regressions 1-6 explain of year-on-year growth in bank-level real gross loans and regressions 7-8 year-on-year growth in country-level domestic credit. In columns 7-8 %state-controlled replaces state-controlled dummy. Panel B regressions explain future 12 month fixed capital formation growth. Monetary base growth is calculated in the prior 6 months. Monetary expansions and contractions are defined as on the prior 6 months in which the country's monetary base increases and decreases, respectively. Low and high GDP growth periods are defined relative to prior year growth compared to long run average GDP growth rate of the country. Election years are identified using IDEA voter turnaround dataset and World Bank Database of Political Institutions. We drop elections that are classified as not free by Freedom House organization. Residuals clustered by economy and Euro-zone countries considered to be one economy. Panel A, column 8 regression is robust to outliers. Variables are as defined in Table 1. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Panel A. Loan growth

Loan Growth Level	***Bank***	***Bank***	***Bank***	***Bank***	***Bank***	***Country***	***Bank***	***Country***
Sample: Years	***All***	***All***	***All***	***All***	***All***	***All***	***Election years***	***Election years***
Monetary policy	***Expansionary***	***Contractionary***			***Expansionary***	***Expansionary***	***Expansionary***	***Expansionary***
Economic Growth			***Low***	***High***	***Low***	***Low***		
Regression	9A.1	9A.2	9A.3	9A.4	9A.5	9A.6	9A.7	9A.8
Monetary base growth	0.27	-0.86	**0.79**	0.07	**1.01**	-0.15	-1.86	**-0.20**
	(0.65)	(0.69)	**(0.07)**	(0.93)	**(0.08)**	(0.13)	(0.41)	**(0.00)**
State-controlled X	**0.63**	-1.57	**0.44**	0.17	**0.81**	**0.64**	**1.54**	**0.51**
Monetary base growth	**(0.00)**	(0.21)	**(0.00)**	(0.47)	**(0.00)**	**(0.06)**	**(0.00)**	**(0.00)**
Bank size X	-0.07	0.10	**-0.10**	-0.07	**-0.13**		0.12	
Monetary base growth	(0.13)	(0.61)	**(0.00)**	(0.32)	**(0.01)**		(0.58)	
Bank liquidity X	0.25	**11.97**	-0.26	**3.01**	-1.11		**-3.82**	
Monetary base growth	(0.81)	**(0.01)**	(0.65)	**(0.02)**	(0.32)		**(0.02)**	
State-controlled	-0.02	Dropped	0.05	-0.00	-0.01	-0.02	Dropped	**0.13**
	(0.66)		(0.23)	(0.99)	(0.60)	0.54		**(0.00)**
Bank size	-0.03	0.01	0.00	**-0.13**	0.00		**0.11**	
	(0.42)	(0.14)	(0.85)	**(0.00)**	(0.91)		**(0.05)**	
Bank liquidity	0.07	**0.64**	0.04	-0.14	0.01		**0.54**	
	(0.55)	**(0.02)**	(0.64)	(0.50)	(0.96)		**(0.00)**	
Fixed effects	yes	yes	yes	yes	yes	yes	yes	Yes
Adjusted R^2	0.21	0.45	0.20	0.34	0.17	0.24	0.53	0.99
Observations	831	267	748	350	537	164	166	45

Panel B. Fixed Capital Investment Growth

Sample: Years	***All***	***All***	***All***	***All***	***All***	***Election years***
Monetary policy	***Expansionary***	***Contractionary***			***Expansionary***	***Expansionary***
Economic Growth			***Low***	***High***	***Low***	
Regression	9B.1	9B.2	9B.3	9B.4	9B.5	9B.6
Monetary base growth	**-0.32**	-0.10	**-0.29**	-0.01	**-0.34**	**-0.35**
	(0.03)	(0.82)	**(0.00)**	(0.96)	**(0.00)**	**(0.00)**
% state-controlled X	0.70	0.23	**0.90**	0.44	**1.00**	**1.38**
Monetary base growth	(0.17)	(0.88)	**(0.00)**	(0.16)	**(0.00)**	**(0.00)**
% state-controlled	0.12	**0.32**	**0.22**	0.06	**0.17**	0.05
	(0.13)	**(0.09)**	**(0.01)**	(0.61)	**(0.04)**	(0.43)
Country fixed effects	Yes	yes	yes	yes	Yes	yes
Adjusted R^2	0.20	0.09	0.26	0.11	0.24	0.30
Observations	294	82	261	115	221	86

Table 10. Central Banks and Civil Servants

Panel A column 1-5 regressions explain of year-on-year growth in bank-level real gross loans and column 6 explain year-on-year growth in country-level domestic credit. In column 6, the fraction of the banking system under state-controlled replaces the state-controlled bank dummy. Panel B regressions explain future 12 month fixed capital formation growth. Monetary base growth is calculated in the prior 6 months. We divide countries into two subgroups based on whether their effectiveness index or sensitivity of civil servants are higher or lower than the median in our sample. Residuals clustered by economy and Euro-zone countries considered to be one economy. Variables are as defined in Table 1. Panel A, column 6 regression is robust to outliers. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Panel A. Loan growth

Loan Growth	***Bank***	***Bank***	**Bank**	**Bank**	***Bank***	***Country***
Civil service effectiveness subsample	***Effective***	***Ineffective***			***Effective***	***Effective***
Civil service sensitivity subsample			***Sensitive***	***Insensitive***	***Sensitive***	***Sensitive***
Regression	10A.1	10A.2	10A.3	10A.4	10A.5	10A.6
Monetary base growth	0.41	**1.32**	-0.47	**1.36**	0.02	-0.11
	(0.30)	**(0.01)**	(0.31)	**(0.01)**	(0.98)	(0.14)
State-controlled X	**0.50**	0.17	**0.81**	0.14	**0.81**	1.19
Monetary base growth	**(0.00)**	(0.34)	**(0.00)**	(0.42)	**(0.00)**	(0.30)
Bank size X	**-0.06**	**-0.15**	0.01	**-0.15**	-0.03	
Monetary base growth	**(0.07)**	**(0.00)**	(0.82)	**(0.00)**	(0.57)	
Bank liquidity X	**-1.47**	0.65	0.13	0.01	-0.31	
Monetary base growth	**(0.03)**	(0.52)	(0.91)	(0.98)	(0.79)	
State-controlled	-0.00	0.01	**-0.08**	**0.05**	-0.02	0.06
	(0.93)	(0.69)	**(0.00)**	**(0.00)**	(0.12)	(0.53)
Bank size	0.02	**-0.06**	**-0.07**	0.02	**-0.05**	
	(0.32)	**(0.01)**	**(0.00)**	(0.18)	**(0.09)**	
Bank liquidity	0.04	0.12	**0.24**	-0.01	-0.23	
	(0.84)	(0.16)	**(0.01)**	(0.92)	(0.55)	
Fixed effects	Yes	yes	yes	yes	yes	yes
Adjusted R^2	0.20	0.23	0.27	0.23	0.20	0.04
Observations	513	585	518	576	211	54

Panel B. Fixed Capital Investment Growth

Civil service effectiveness subsample	***Effective***	***Ineffective***			***Effective***
Civil service sensitivity subsample			***Sensitive***	***Insensitive***	***Sensitive***
Regression	10B.1	10B.2	10B.3	10B.4	10B.5
Monetary base growth	**-0.27**	0.08	**-0.23**	-0.14	**-0.30**
	(0.00)	(0.62)	**(0.06)**	(0.22)	**(0.00)**
% state-controlled X	**0.52**	0.34	**1.01**	**0.52**	**0.60**
Monetary base growth	**(0.00)**	(0.13)	**(0.00)**	**(0.00)**	**(0.00)**
% state-controlled	**0.12**	0.12	**0.20**	-0.10	**0.11**
	(0.00)	(0.42)	**(0.00)**	(0.48)	**(0.00)**
Country fixed effects	yes	yes	yes	yes	yes
Adjusted R^2	0.09	0.12	0.24	0.13	0.11
Observations	126	141	133	150	58