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ABSTRACT

We find lending by state controlled banks to be significantly more associated with monetary policy than is lending by private sector banks. At the country-level, we further find monetary policy to be significantly closely linked to aggregate loan growth and aggregate fixed capital investment growth in countries whose large banks are more predominantly state controlled. These differences are more pronounced during monetary expansions amid slow GDP growth periods. Other factors, such as small bank size and the presence of a controlling shareholder in a private sector bank also correlate with more lending sensitivity to monetary policy.

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1. Introduction

Governments use monetary policy to stimulate or cool bank lending. Empirical evidence reveals nominal monetary expansions correlating positively with subsequent real investment and GDP growth, though causality remains an issue.[1] Kashyap and Stein (2000) demonstrate direct causality in the "bank credit channel" by exploiting variation across banks[2]. Nonetheless, debate persists. New Keynesian "saltwater" macroeconomists consider monetary policy a useful policy instrument; while rational expectations "freshwater" macroeconomists affirm its neutrality.[3] Certainly, monetary stimuli can prove futile on occasion, reducing government officials to "jawboning" – publicly exhorting bankers to lend.

Bank CEOs' value-maximizing response to monetary policy depends on their expectations about ensuing real effects. A banker expecting no effect might rationally ignore monetary policy, while a banker expecting real effects would respond. Moreover, bankers, like other top executives, maximize their utility, and not necessarily firm value (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); CEOs of listed firms are known to 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 career concerns can induce the CEOs of state-controlled banks to direct manifestly unprofitable politically-driven lending policies (La Porta et al. 2002; La Porta, López-de-Silanes and Zamarripa 2003;

[1] 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 regarding these issues.

[2] The "bank credit channel" (Stein 1998; Diamond and Rajan 2006; Bolton and Frexias 2006) posits "loose" monetary policy lowering nominal interest rates, which attract lower-risk potential borrowers, who ease banks' information asymmetry problems so they lend more freely. Kashyap and Stein (2000) find lending by smaller and less liquid US banks, arguably more constrained by information asymmetry, to be more sensitive to monetary policy shifts. See Mishkin (1996) for an overview of this and alternate channels.

3 Hall (1976) coined these terms noting that macroeconomists advocating intervention predominate at universities along American's coasts, while those favouring laissez-faire populated inland universities around the Great Lakes. See Gordon (2007) for an overview of the controversy, and Caballero (2010) for a more critical perspective.

Sapienza 2004; Dinc 2005; Deng et al 2010).

Deng et al. (2010) link the effectiveness of China's 2008 monetary stimulation to state-controlled banks' CEOs' perceptions that increased lending would enhance their odds of promotion in the Communist Party hierarchy, rather than to economic incentives acting through the money supply or interest rates. Monetary stimulus worked because top cadres ordered state-controlled bank CEOs to act as macroeconomic models said they were supposed to act – an extreme form of "jawboning".

If the Chinese experience generalizes, monetary policy would be more effective where state-controlled banks are more important. Generalization is not *a priori* valid. Self-interest clearly motivates civil servants (Wilson 1989); but Hood (2011) argues that bureaucrats' career concerns often induce blame-aversion. Blame-averse state-controlled bank CEOs, fearing responsibility for non-performing loans, might plausibly restrict credit more tightly especially during times of greater economic uncertainty, reacting perversely to expansionary monetary policies. In contrast, if state-controlled banks' CEOs get ahead by pleasing top government officials, they should respond enthusiastically to monetary policy, regardless of whether or not they expect monetary policy to have real effects. Consistent with the Chinese example generalizing, we find monetary policy more reliably transmitted by state-controlled banks than by private sector banks and more reliably transmitted in economies where state controlled banks are more important.

We assemble panel data on the largest banks in each of 40 economies from 2001 through 2011. Applying the methodology of La Porta et al. (1999) for identifying ultimate controlling shareholders, we construct a bank governance indicator variable by classifying each bank as state-controlled or private sector. Bank-level regressions controlling for bank fixed effects reveal state bank lending statistically and economically significantly more responsive to monetary policy. 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.

The goal of a monetary policy is to affect aggregate demand, especially aggregate capital investment, its most volatile and pro-cyclical major component. Economy-level regressions controlling for country fixed effects find aggregate fixed-capital spending and aggregate lending both responding statistically and economically significantly more to monetary base growth in countries whose banking systems more predominantly state-run. A fully state controlled banking system transmits a one per cent increase in monetary base in the prior year into 0.30% greater real annual aggregate loan growth and 0.81% growth in fixed capital spending than does a fully private sector banking system.

These effects vary with the state of the economy and the sign of monetary policy. Partitioning time into periods of monetary expansion and contraction, and periods of rapid versus slow economic growth reveals the boost in monetary policy associated with state control to be greatest amid monetary expansion and slow economic growth in both bank level and economy level regressions. State controlled banks appear to boost the transmission of monetary policy precisely when its efficacy is most at issue.

These findings are highly robust, surviving controls for main effects and interactions with monetary policy of bank size, bank liquidity, and numerous other controls that may interact with the effectiveness of monetary policy including per capita GDP, trade openness, financial openness, economic freedom, fiscal policy, output gap, exchange rate depreciation, and the presence of foreign or global banks. These exercises replicate the finding of Kashyap and Stein (2000) that smaller banks transmit monetary policy more robustly. Subdividing private sector banks into widely held and family-controlled banks reveals the former marginally less sensitive than the latter to monetary policy, though only in some specifications.

As in Kashyap and Stein (2000), bank-level variation validates direct causality by making alternative causality scenarios implausible. For example, a real business cycle shock, such as new technology might stimulate aggregate demand by allowing new consumer products, boosting consumer demand for credit, business demand for credit to finance capital expansion, and thus investment. That state-controlled banks would respond to increased demand for credit, while private sector banks would not, seems unlikely. More generally, alternative explanations are challenged by the heterogeneous response across differently governed banks. We welcome plausible alternative explanations.

We posit that monetary policy "works better" in countries with more state controlled banks, and speculate that this is because state-bank CEOs career concerns induce cooperation with government policies. State-controlled or nationalized banks may be a defensible public policy if efficacious monetary policy is deemed socially important, as might be the case amid a deep macroeconomic contraction. However, sate-run banks can allocate capital very 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 social welfare trade-off thus pits the near-term benefits of state-controlled banks as conduits of monetary policy against the longer-term costs of the ensuing 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 starts 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 yields 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, a smaller sample is used in tests involving this variable. 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] $$\delta_{i,t} \equiv \begin{cases} 1 & \text{if bank } i \text{ is state-controlled in year } t \\ 0 & \text{otherwise} \end{cases}$$

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

In country level tests, bank governance importance variables weight 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 *manager controlled* and versus *privately controlled* banks.

2.3. Monetary policy variable

Monetary policy can be conducted using different tools. First, central banks can try to change the quantity of government debt securities outstanding, and hence their prices and yields by buying or selling government debt securities in the open market, a practice dubbed *open market operations*. Quantitative easing is a variant of open market operations entailing the central bank or treasury buying

up a broader range of securities. In either case, buying up debt securities with money increases the money supply and selling debt securities for money deceases the money supply. Buying up debt securities decreases the supply of debt instruments, increasing their prices and driving down their yields. This arguably force other key rates, such as the U.S. federal funds rate or the prime rate in Canada, to move as well, and this affects the real economy by altering potential borrowers' costs of capital and capital budgeting hurdle rates. A second method of conducting monetary policy has the central banks altering liquidity and capital structure regulations that limit bank lending. Changes that allow increased bank lending also increase the money supply. In a third approach to monetary policy, central banks can change interest rates at which they lend directly to commercial banks, such as the *discount window rate* in the US. Increased loans from the central bank to commercial banks also constitute an addition to the money supply.

These considerations suggest *monetary base growth* as a viable proxy for monetary policy in general. The advantage of this over broader measures of the money supply, which also include bank deposits, is that items from commercial banks' balance sheets are excluded. This is desirable in this context because we wish to explain commercial bank lending, and so must avoid monetary measures that depend mechanically on commercial banks' balance sheets. Finally, monetary base growth is available at a monthly frequency for 40 countries in the IFS Database, and its definition and measurement across countries are relatively consistent. Other money supply measures and interest rates are either unavailable for some countries or inconsistently constructed across countries.

Monetary policy is therefore measured by monetary base growth, as reported in central bank balance sheets. These data that are from 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] $$\Delta M_{i,j,t-l} = \frac{M_{i,j,t} - M_{i,j,t-l}}{M_{i,j,t-l}}$$

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, $\Delta M_{j,t-l}$ 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. The 12-month monetary base growth rates, in contrast, avoid concerns about seasonality affecting the results. These variables are winsorized at 5% to limit the influence of outliers.

2.4 Outcome variables

The output 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, from BankScope, defined as

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

where the subscripts *i*, *j, t* index the bank, country, and fiscal year, respectively. If gross loans are not available, 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%. As discussed below, our findings are robust across reasonable alternatives to this procedure.

2.4.2 Country Level Aggregate Loan Growth

Economy-level gross lending is obtained by using the domestic credit provided by banking sector from WDI dataset. The 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. 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. The variable includes all credit to all sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations.

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] $$\Delta capex_{j,t+1} = \frac{capex_{j,t+1} - capex_{j,t}}{capex_{j,t}}$$

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 the following variables, and include both their main effects and their interactions with monetary base growth as additional control variables. The sources of these variables and detailed accounts of their construction are provided in Table 1.

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 the log of the bank's prior year-end total assets in US dollars and the interaction of this with monetary base growth; as well as the bank's prior year-end *liquidity*, defined as government securities plus cash and funds due from other banks, all divided by total assets, and the interaction of this 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 control for size is a *large bank* indicator, set to one if the bank in question was a large bank according to the criterion of Kashyap and Stein (2000) in the previous year. That criterion defined a small bank as ranking in the smallest 5% of the country's banks that year, and all other banks as large banks.[4] 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 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

[4] 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.

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 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 how heavily regulated an economy is. The Fraser Institute's *economic freedom* index is therefore considered as yet another possible control variable. The index has five main components: the size of government, legal structure and security of property rights; access to sound money, trade openness, and 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.

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. While currency devaluations can result from many different policy decisions or exogenous shocks, 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 a robustness tests.

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] $$\Delta credit_{i,j,t+1} = a\Delta M_{i,j,t-l} + b\delta_{i,t} + \sum_k c_k\, x_{k,i,t-l} + \sum_i d_i\, \delta_i + e_{i,j,t}$$

with i, j and t indexing banks, countries, and time, respectively. The variables $\Delta M_{i,j,t-l}$ 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 $x_{k,i,t-l}$; and bank fixed-effects denoted δ_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 $e_{i,t}$ 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 $\Delta M_{i,j,t-l}$, 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] $$a = \alpha + \beta\delta_{i,t} + \sum_k \gamma_k\, x_{k,i,t-l}$$

Substituting [5] into [4] gives the bank-level regressions we estimate, which are of the form

[7] $$\Delta credit_{i,j,t+1} = a\Delta M_{i,j,t-l}\left[\alpha + \beta\delta_{i,t} + \sum_k \gamma_k\, x_{k,i,t-l}\right] + b_i\delta_{i,t} + \sum_k c_k\, x_{k,i,t-l} + \sum_i d_i\, \delta_i + e_{i,j,t}$$

or, equivalently, expanding the cross terms,

[8] $$\Delta credit_{i,j,t+1} = \tilde{a}\Delta M_{i,j,t-l} + \tilde{\beta}\delta_{i,t}\Delta M_{i,j,t-l} + \sum_k \tilde{\gamma}_k\, x_{k,i,t-l} + b_i\delta_{i,t} + \sum_k c_k\, x_{k,i,t-l} + \sum_i d_i\, \delta_i + e_{i,j,t}$$

3.2 Country Level Tests

At the country level we estimate analogous regressions of the form

[9] $$\Delta credit_{j,t+1} = a\Delta M_{j,t-l}\left[\alpha + \beta f_{j,t} + \sum_k \gamma_k x_{j,t-l}\right] + b f_{j,t} + \sum_k c_k x_{k,j,t-l} + \sum_i d_j \delta_j + e_{j,t}$$

where credit growth, $\Delta credit_{j,t+1}$, and the control variables, $x_{j,t-l}$, 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 δ_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.

[10] $$\Delta capex_{j,t+1} = a\Delta M_{j,t-l}\left[\alpha + \beta f_{j,t} + \sum_k \gamma_k x_{j,t-l}\right] + b f_{j,t} + \sum_k c_k x_{k,j,t-l} + \sum_i d_j \delta_j + e_{j,t}$$

Regressions [9] and [10], like [7], are varying coefficient models, in which the coefficient of country-level monetary base growth $\Delta M_{j,t-1}$ may depend on $f_{,j,t}$ and the controls $x_{k,j,t-1}$, and each can be expanded into a cross-products regression analogous to [8]

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 banks controlled by state, family, and widely held, 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 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 family controlled banks is not correlated with state control over banking. State controlled and family 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 reports regressions of the form [8] 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 positive. 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 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 0.35 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 private sector banks with controlling shareholders, provides a more nuanced picture while preserving the main result above. Regression 4.1 shows state-controlled bank lending rising by +0.35 percent more than that of private sector banks in general. Regression 4.2, which allows for a separate interaction for private sector banks with controlling shareholders, 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 private bank having a controlling shareholder 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 ($p = 0.19$). Private sector banks with controlling shareholders are thus insignificantly different from both state-controlled banks and from widely held banks, while the latter two are highly different from each other. Perhaps powerful bank-owning business families in some countries are so closely tied to their governments that their banks resemble state banks, at least as regards monetary policy transmission

(Faccio 2006; Faccio et al. 2006, 2009). However, regressions 4.7 and 4.8 reveal the two genres of private-sector bank statistically indistinguishable from each other and both to be statistically significantly different from state-controlled banks when we use prior 12 months monetary base growth. Specifically, a private sector bank and a private sector bank that is widely held , respectively, increase lending by 0.26 ($p = 0.01$) and 0.26 ($p = 0.02$) 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.

In regressions without the state-controlled bank indicator or the private sector controlling shareholder 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. 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 to a robustness check.

A wide range of robustness checks 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.

Thus, qualitatively similar results ensue despite the inclusion or exclusion of controls for bank size, bank liquidity, and a dummy indicating a private sector bank with a controlling shareholder, along with their interactions with monetary base growth. 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 (Peterson 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 non-state 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.

Bank size interacted with monetary base growth frequently attracts a significant negative coefficient, as in regressions 4.3 and 4.4, 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 4.4. 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. As a further robustness check, we construct an alternative size measure: 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 [8], 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 (exports plus imports, all as a fraction of GDP), financial openness, economic freedom (the Fraser Institute index of economic freedom). 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 loan growth is lower if the economy's output gap is larger, the country's currency is depreciating relative to the US dollar and capital 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 Economy-level loan growth

The putative purpose of monetary policy is to affect the macroeconomy. 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 6 presents regressions of the form of [9], 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 6 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 0.25 to 0.42 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. The main effect of trade openness is positive and significant. When all controls are included none of the interactions are significant but the main effect of economic freedom is positive and significant and the main effect of output gap is negative and significant (not reported). Also, 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 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 unwinzorized data generates qualitatively similar results.

4.4 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 aims to stimulate capital spending by loosening monetary policy or braking capital spending by tightening it.

Table 7 presents regressions of the form of [10], 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 banks with a private sector controlling shareholder and its interaction with the monetary base growth rate.

The key result in Table 7 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 7.1 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.

Regressions 7.2 through 7.10 introduce the list of controls and their interactions with monetary base growth. Regression 7.2 includes a second banking system governance indicator, the fractional importance of private sector banks with controlling shareholders, 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.

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 and economic freedom with monetary base growth are all negative and significant. In regression 7.10, which contains the full list of controls and interactions, a +0.45 percent boost in capital spending for a one percent boost in base money growth the prior year 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 Table5. 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 past 12 months monetary base growth and annual capital spending growth and including one country-year observation, yields qualitatively similar results. Controlling for the fraction of foreign banks and its interaction with monetary base growth yields higher and more significant results.

4.5 Sub-periods and the business cycle

Monetary policy is most important when an economy is in deep recession, when politicians and central bankers desire to stimulate growth. 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.

This is only an illustrative first pass exercise for several reasons. 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, the phases of the real business cycle are not unambiguously identifiable, consistently defined across counties, or entirely objectively determined. For example, the NBER's definition for U.S. counts a recession as two successive quarters of negative real GDP and GNI growth, subject to modification by the NBER's Business Cycle Committee.

Given these caveats, 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.

Panel A, columns 1-5 in Table 8 displays bank-level credit growth regressions of the form [8]. Amid monetary expansions, state controlled banks transmit monetary policy significantly more robustly than do private sector banks. In contrast, amid 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.

Panel A, column 6, reruns the regression in low economic growth and expansionary monetary policy using aggregate loan growth. In countries whose banking systems are entirely controlled by the state, aggregate loans expand by 0.56% on a 1% in monetary base over the prior 6 months. For comparison, the aggregate loans expansion is 0.30% if entire time sample is used. Large coefficients also arise during economic downturns and monetary contraction, but because of the paucity of such observations, limited degrees of freedom preclude statistical analysis

Panel B in Table 8 repeats economy-level capital spending regressions from Table 7, but 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. More closely echoing the bank-level results in Panel A, a larger fraction of state-controlled banks does correspond 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 are most highly conductive to monetary policy when monetary 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 banks 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.

4.6 On causality and alternative explanations

We find that state controlled banks expand credit more than private sector banks do following a given boost in monetary base growth. At the economy-level, monetary policy is economically and statistically significantly more related to loan growth and fixed capital investment growth where banks are more predominantly state-controlled. This effect is especially prominent during monetary expansions amid slow economic growth, exactly when government officials are most apt to employ a monetary expansion to stimulate aggregate demand.

An economy-level analysis 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. An increase in money supply might cause banks to offer more credit, or something else that boosted demand for credit might cause banks to make more loans and the central bank to facilitate this mechanically by expanding the monetary base. Unambiguously exogenous instrumental variables and unambiguously randomized natural experiments are rare. Practices such as lagging variables on the right-hand side, at best, only "mitigate" the problem. Including a broad range of controls and their interactions – per capita GDP, trade openness, financial openness, economic freedom, fiscal policy, output gap, and exchange rate depreciation– also can only mitigate concern about causality flowing from latent factors.

However, the bank-level regressions of Tables 4 and 5 provide strong circumstantial evidence that causality flows from monetary policy to bank lending. This is because economically plausible

reverse causation scenarios cannot obviously explain why state-controlled banks and private banks behave differently. Because both tables 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 lend more in accord with monetary base growth than do that same county's private sector banks. If elevated consumer demand for loans were causing money supply growth, an *a priori* credible reverse causality scenario, an explanation is needed for why borrowers demand more loans from state-controlled banks, but not from private sector banks. In contrast, if causality flows from the money supply to bank lending, we have a ready explanation for why state-controlled banks react more strongly: their top executives are accountable to higher-level government officials and are therefore likely to support the government's current political objectives. An expansionary monetary policy aimed at boosting bank lending is therefore most apt to be effective in state-controlled banks and at times when its efficacy is most politically important.

We thus tentatively conclude that causality appears most likely flows from monetary policy to bank credit and the next step thence to investment growth as well. However we welcome alternative explanations of our empirical findings.

5. Conclusions

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. We speculate that this is because state-controlled bank managers' careers depend on political loyalty, and this aligns their self-interest with the government's monetary policy. State-control of banks can thus be

thought of as providing an especially loud channel for "jaw boning" – government leaders' exhortations to 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, private sector banks actually "pull against" monetary policy, 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 and especially banks without controlling shareholders. The CEOs of private sector banks might rationally expect monetary policy to be ineffective, and therefore optimally ignore it. Alternatively, agency problems may induce the CEOs of private sector bank 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 in response to an expansionary monetary policy. We welcome further research to corroborate our findings and advance alternative explanations.

The effectiveness of monetary policy in countries with high level of direct state control of banks is also consistent with evidence that these countries' economies being less volatile (Morck, Yavuz and Yeung 2011). However, better transmission of monetary policy need not imply that the resulting investment is allocated efficiently. In contrast, state banks are used to pursue political goals (La Porta et al., 2002a; Sapienza, 2004; Dinc, 2005; Deng, Morck, Wu and Yeung 2010; Morck, Yavuz and Yeung 2011).

These findings suggest that policy makers may wish to consider the transmission of monetary policy as one factor in weighing the advantages and disadvantages of nationalizing troubled banks during a downturn. However, policy makers confront a trade-off: while state control over banks may increase the transmissibility of monetary policy and stabilizing the economy, state controlled banks may

also allocate capital inefficiently (La Porta et al. 2001). Thus, the short-term benefits of effective monetary policy may well come at the longer-term cost of malinvestment and compromised productivity growth.

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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	
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 for the last 6 months monetary based growth. If seasonally adjusted values are not available in the dataset seasonal adjustment is made as for Capex Growth. 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.
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. Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations. 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).
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.
Controlling shareholder	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.
% Family-controlled	Economy-year panel lagged credit-weighted fraction of banks ultimately controlled by a biological person or family.
% Widely held	Economy-year panel lagged credit-weighted fraction of banks with no controlling shareholder.
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).
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.

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 %family 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*	*%Family*	*%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***				***Bank Size***	***Bank Liquidity***	***Additional Regression Control Variables***					
			State Controlled	***Widely Held***	***Family Controlled***	***Foreign Controlled***			***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 Loans 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.

Monetary base growth	***measured over prior 6 months***				***measured over prior 12 months***			
Regression	4.1	4.2	4.3	4.4	4.5	4.6	4.7	4.8
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)
Controlling shareholder 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)
Controlling shareholder		-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

Table 5: Bank-Level Loans 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 M and the last column includes all additional control variables together. 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
Monetary base growth rate	0.92	0.49	0.74	0.63	**0.80**	**0.89**	1.27	0.81
	(0.21)	(0.32)	(0.14)	(0.13)	**(0.09)**	**(0.05)**	(0.15)	(0.67)
State-controlled X Monetary base growth rate	**0.37**	**0.41**	**0.43**	**0.43**	**0.35**	**0.28**	**0.28**	**0.36**
	(0.01)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.01)**	**(0.03)**	**(0.03)**	**(0.01)**
Bank size X Monetary base growth rate	**-0.09**	**-0.07**	**-0.10**	**-0.08**	**-0.10**	**-0.09**	**-0.08**	-0.05
	(0.01)	**(0.05)**	**(0.03)**	**(0.01)**	**(0.00)**	**(0.03)**	**(0.04)**	(0.26)
Bank liquidity X Monetary base growth rate	-0.06	-0.12	-0.03	-0.44	-0.15	-0.50	-0.31	-0.68
	(0.92)	(0.87)	(0.96)	(0.44)	(0.81)	(0.55)	(0.67)	(0.45)
State-controlled	0.01	**-0.02***	0.01	0.01	0.01	0.03	0.02	-0.02
	(0.68)	**(0.09)**	(0.80)	(0.69)	(0.58)	(0.26)	(0.22)	(0.20)
Bank size	-0.01	-0.01	-0.01	-0.00	-0.02	-0.02	-0.03	-0.00
	(0.74)	(0.72)	(0.51)	(0.79)	(0.42)	(0.41)	(0.22)	(0.82)
Bank liquidity	**0.14**	**0.20**	0.15	0.14	0.15	**0.18**	**0.19**	**0.27**
	(0.10)	**(0.02)**	(0.11)	(0.13)	(0.12)	**(0.04)**	**(0.05)**	**(0.01)**
Bank fixed-effects	yes	yes	yes	yes	yes	yes	yes	yes
Additional control is:	***log per capita GDP***	***fiscal policy***	***output gap***	***exchange rate***	***trade openness***	***capital openness***	***economic freedom***	***all controls***
Additional control X Monetary base growth rate	-0.02	3.71	5.26	0.06	-0.00	-0.11	**0.10**	F=63.7
	(0.54)	(0.26)	(0.21)	(0.85)	(0.24)	(0.30)	**(0.01)**	(0.00)
Additional control	-0.04	-0.21	**-0.69**	**-0.13**	0.00	**0.05**	-0.10	
	(0.72)	(0.76)	**(0.07)**	**(0.04)**	(0.20)	**(0.02)**	(0.38)	
Adjusted R^2	0.24	0.23	0.24	0.26	0.24	0.25	0.25	0.30
Observations	1,098	954	1,098	1,098	1,098	1,098	1,098	954

Table 6: 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 M and the last column includes all additional control variables together. 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. Numbers in parentheses are p-values with coefficients significant at 10% or better in boldface.

Regression	6.1	6.2	6.3	6.4	6.5	6.6	6.7	6.8	6.9	6.10
Monetary base growth	-0.07	**-0.15**	-0.37	-0.10	**-0.10**	-0.06	**-0.21**	-0.01	-0.52	-0.09
	(0.11)	**(0.05)**	(0.11)	(0.14)	**(0.04)**	(0.19)	**(0.00)**	(0.87)	(0.21)	(0.89)
% state-controlled X	**0.30**	**0.40**	**0.34**	**0.31**	**0.33**	**0.35**	**0.33**	**0.25**	**0.42**	**0.31**
Monetary base growth	**(0.03)**	**(0.01)**	**(0.01)**	**(0.04)**	**(0.01)**	**(0.02)**	**(0.01)**	**(0.03)**	**(0.01)**	**(0.09)**
% controlling shareholder X		0.29								
Monetary base growth		(0.14)								
% state-controlled	0.01	-0.01	0.01	0.02	0.01	0.01	-0.00	0.01	0.02	**0.08****
	(0.78)	(0.91)	(0.68)	(0.53)	(0.77)	(0.79)	(0.91)	(0.89)	(0.48)	**(0.02)**
% controlling shareholder		-0.01								
		(0.74)								
Additional control is:			***log per capita GDP***	***fiscal policy***	***output gap***	***exchange rate***	***trade openness***	***capital openness***	***economic freedom***	***all controls***
Additional control X			0.03	0.63	-0.22	-0.02	0.00	0.00	0.04	F =17.91
Monetary base growth			(0.19)	(0.24)	(0.46)	(0.65)	(0.67)	(0.76)	(0.20)	(0.00)
Additional control			0.04	-2.78	1.52	-0.15	**0.00**	-0.04	0.06	
			(0.63)	(0.24)	(0.24)	(0.48)	**(0.02)**	(0.29)	(0.29)	
Adjusted R^2	0.13	0.07	0.12	0.11	0.12	0.14	0.15	0.13	0.13	0.13
Observations	259	259	259	230	259	259	259	252	259	223

Table 7: Fixed Capital Investment Growth

Future 12 month fixed capital formation growth regressed on prior 6 month monetary base growth (M), 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	7.1	7.2	7.3	7.4	7.5	7.6	7.7	7.8	7.9	7.10
Monetary base growth	**-0.27**	**-0.34**	-0.27	**-0.25**	**-0.13**	**-0.27**	-0.05	-0.08	**0.97**	0.30
	(0.00)	**(0.00)**	(0.22)	**(0.00)**	**(0.01)**	**(0.00)**	(0.71)	(0.47)	**(0.08)**	(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**	**0.45**
	(0.00)	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**	**(0.00)**
% controlling shareholder 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**	**0.17**
	(0.01)	**(0.04)**	**(0.02)**	**(0.01)**	**(0.00)**	**(0.01)**	**(0.01)**	**(0.02)**	**(0.04)**	**(0.01)**
% controlling shareholder		-0.05								
		(0.62)								
Additional control is:			*log per capita GDP*	*Fiscal policy*	*Output gap*	*Exchange rate*	*Trade openness*	*Capital openness*	*Economic freedom*	*All*
Additional control X Monetary base growth			0.01	1.53	**-5.09**	-0.05	-0.00	**-0.11**	**-0.16**	F=42.0
			(0.51)	(0.65)	**(0.04)**	(0.85)	(0.17)	**(0.02)**	**(0.02)**	(0.00)
Additional control			**-0.49**	0.61	**-0.68**	0.04	-0.00	-0.01	-0.04	
			(0.00)	(0.32)	**(0.10)**	(0.53)	(0.12)	(0.66)	(0.32)	
Adjusted R^2	0.20	0.20	0.31	0.21	0.26	0.20	0.22	0.21	0.21	0.33
Observations	376	376	376	364	376	376	376	376	376	364

Table 8: Variation over the Business Cycle

Panel A regressions explain of year-on-year growth in bank-level real gross loans (columns 1-5) and country level real loan growth (column 6) using prior 6 months' monetary base growth (M), indicator variables for bank ownership structure, and interactions of M with these indicator variables in subperiods. Panel B regressions explain future 12 month fixed capital formation growth on prior 6 month monetary base growth (M), banking system fractional control variables and interactions between them at the country level. Panel A regressions include bank fixed effects and Panel B regressions include country fixed effects. 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. 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.

Panel A. Loan growth

Sample: Bank/Economy	***Bank***	***Bank***	***Bank***	***Bank***	***Bank***	***Economy***
Monetary policy	***Expansionary***	***Contractionary***			***Expansionary***	***Expansionary***
Economic Growth			***Low***	***High***	***Low***	***Low***
Regression	8A.1	8A.2	8A.3	8A.4	8A.5	8A.6
Monetary base growth	0.27	-0.86	**0.79**	0.07	**1.01**	**-0.10**
	(0.65)	(0.69)	**(0.07)**	(0.93)	**(0.08)**	**(0.04)**
State-controlled X	**0.63**	-1.57	**0.44**	0.17	**0.81**	**0.56**
Monetary base growth	**(0.00)**	(0.21)	**(0.00)**	(0.47)	**(0.00)**	**(0.03)**
Bank size X	-0.07	0.10	**-0.10**	-0.07	**-0.13**	
Monetary base growth	(0.13)	(0.61)	**(0.00)**	(0.32)	**(0.01)**	
Bank liquidity X	0.25	**11.97**	-0.26	**3.01**	-1.11	
Monetary base growth	(0.81)	**(0.01)**	(0.65)	**(0.02)**	(0.32)	
State-controlled	-0.02	Dropped	0.05	-0.00	-0.01	-0.01
	(0.66)		(0.23)	(0.99)	(0.60)	(0.68)
Bank size	-0.03	0.01	0.00	**-0.13**	0.00	
	(0.42)	(0.14)	(0.85)	**(0.00)**	(0.91)	
Bank liquidity	0.07	**0.64**	0.04	-0.14	0.01	
	(0.55)	**(0.02)**	(0.64)	(0.50)	(0.96)	
Fixed effects	Bank	Bank	Bank	Bank	Bank	Country
Adjusted R^2	0.21	0.45	0.20	0.34	0.17	0.07
Observations	831	267	748	350	537	164

Panel B. Fixed Capital Investment Growth

Monetary policy	***Expansionary***	***Contractionary***			***Expansionary***
Economic Growth			***Low***	***High***	***Low***
Regression	8A.1	8A.2	8A.3	8A.4	8A.5
Monetary base growth	**-0.32**	-0.10	**-0.29**	-0.01	**-0.34**
	(0.03)	(0.82)	**(0.00)**	(0.96)	**(0.00)**
State-controlled X Monetary base growth	0.70	0.23	**0.90**	0.44	**1.00**
	(0.17)	(0.88)	**(0.00)**	(0.16)	**(0.00)**
State-controlled	0.12	**0.32**	**0.22**	0.06	**0.17**
	(0.13)	**(0.09)**	**(0.01)**	(0.61)	**(0.04)**
Country fixed effects	yes	yes	yes	yes	yes
Adjusted R^2	0.20	0.09	0.26	0.11	0.24
Observations	294	82	261	115	221