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Marcin Borsuk
European Central Bank, Germany
Institute of Economics, Polish Academy of Sciences, Poland
School of Economics, University of Cape Town, South Africa

Oskar Kowalewski
Institute of Economics, Polish Academy of Sciences, Poland
IESEG School of Management, Univ. Lille, CNRS, UMR 9221 - LEM - Lille Économie Management, F-59000 Lille, France
Univ. Lille, UMR 9221 - LEM - Lille Economie Management, France
CNRS, UMR 9221 - LEM - Lille ´Economie Management, France

Pawel Pisany
Institute of Economics, Polish Academy of Sciences, Poland

IÉSEG School of Management Lille Catholic University 3, rue de la Digue F-59000 Lille Tel: 33(0)3 20 54 58 92
www.ieseg.fr

State-owned banks and international shock transmission*

Marcin Borsuk[a,b,c], Oskar Kowalewski[b,d,e,f,*], Pawel Pisany[b]

[a]*European Central Bank, Germany*
[b]*Institute of Economics, Polish Academy of Sciences, Poland*
[c]*School of Economics, University of Cape Town, South Africa*
[d]*IESEG School of Management, UMR 9221 - LEM - Lille Économie Management, France*
[e]*Univ. Lille, UMR 9221 - LEM - Lille Économie Management, France*
[f]*CNRS, UMR 9221 - LEM - Lille Économie Management, France*

Abstract

In this study, we employ a new dataset on bank ownership and reassess the links between domestic and foreign ownership and lending during the 1996– 2018 period. Additionally, we distinguish between privately-owned and state-controlled banks and find that the lending activities of foreign state-controlled and privately-owned banks differ, particularly following the financial crisis of 2008. Our analysis confirms that foreign state-controlled and privately-owned banks provided credit during domestic banking crises in host countries, whereas lending by domestic state-controlled banks contracted. Further, foreign state-controlled banks reduced their credit base during a home banking crisis, whereas foreign privately-owned banks expanded lending. Hence, we find that the credit supply of foreign state-controlled and privately-owned banks differs in host countries because of exogenous shocks. We also find weak evidence that foreign state control can be a transmission channel during a sovereign crisis in the home country. However, we find no evidence that foreign banks, state-controlled or privately-owned, transmit a currency crisis to a host country. Overall, our results suggest a mixed banking sector comprising foreign and domestic state-controlled banks and privately-owned banks to contribute to financial stability during domestic and international crises.

Keywords: foreign banks, state-controlled banks, private banks, credit growth, crisis
JEL: G01, G21, G28

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*IESEG School of Management, Socle de la Grande Arche, 1 Parvis de La Défense - F-92044 Paris La Défense cedex, France

Email addresses: mborsuk@inepan.waw.pl (Marcin Borsuk), o.kowalewski@ieseg.fr (Oskar Kowalewski), ppisany@inepan.pl (Pawel Pisany)

1. Introduction

A dramatic increase in foreign bank activities has been observed across countries during the last two decades. This trend has been viewed positively in the literature, as foreign banks have improved the functioning of domestic banking markets, particularly in developing countries. The extant literature documents that foreign banks stabilized the lending situation during crisis periods in host developing countries. Moreover, foreign banks have been perceived as more efficient than domestic banks, particularly state-owned banks. Consequently, governments have tended to privatize institutions owned by them and reduce entry barriers to multinational banks.[1]

However, the situation reversed dramatically following the global financial crisis (GFC) of 2007–2009. During this period, foreign-owned banks often reduced their lending activity compared to domestic banks, particularly state-owned banks. The resilience of state-owned banks to the GFC provided a renewed impetus to the debate on the economic costs and benefits of state banking.[2] Previous research has illustrated that state banks tend to perform poorly (Cornett et al., 2010), misallocate resources, and lead to lower economic growth (La Porta et al., 2002). Brei and Schclarek (2013) documented that government-owned banks increase their lending during crisis periods relative to normal times. They clarified that government-owned banks can counteract the lending slowdown of private banks, and consequently, argued that governments can play an active countercyclical role in their banking systems directly through government-owned banks. However, the existing studies concentrate on domestic-owned government banks, while little is known about how state-controlled foreign banks operate abroad during normal times and crisis periods . In this study, we aim to enhance the understanding of foreign banks' lending behavior, especially by distinguishing foreign private-owned and government-owned banks. Gonzalez-Garcia et al. (2013) distinguished four groups of state-owned financial institutions: retail commercial banks, development banks, quasi-narrow banks, and development agencies. In our study, we focus on state-owned commercial banks that perform the same type of operations as private commercial banks. In other words, they collect deposits and use them to provide loans to firms and individ-

[1] Cull et al. (2018) present an excellent review of the empirical literature on the implication of government and foreign ownership on bank performance and competition, financial stability, and access to finance.

[2] An good example is the AAF Virtual Debate between Charles Calomiris and Franklin Allen on state-owned banks available at https://blogs.worldbank.org/allaboutfinance/the-aaf-virtual-debates-join-charles-calomiris-and-franklin-allen-in-a-debate-on-state-owned-banks

uals. Moreover, state-owned retail banks provide different financial services and act as universal or near-universal commercial banks both at home and abroad.

However, state-owned commercial banks can be significantly different in their lending behaviors from privately-owned banks, as they pursue a different lending agenda in response to the government's needs. Gonzalez-Garcia et al. (2013) argued that the objectives of state-owned banks often lead to reduced profitability, as they provide loans at non-commercial terms or based on non-economic criteria.

Cornett et al. (2010) documented that state-owned banks finance the government to a greater degree and have greater credit risk than privately-owned banks. This, in turn, leads to higher risk and misallocation of capital within the economy. The existing evidence demonstrates that domestic government banks behave differently from privately-owned banks during normal times as well as crisis periods (Cull and Peria, 2013; Allen et al., 2017; Bosshardt and Cerutti, 2020). However, whether this behavior also applies to privately-owned and state-owned subsidiaries in host countries is not known.

In host countries, foreign banks can have a stabilizing or destabilizing influence on the banking sector, depending on the type and origin of the shocks that hit the host economy. On the one hand, existing studies reveal that foreign banks can have a stabilizing impact by continuing to extend credit in host countries during their banking crisis periods (De Haas and Van Lelyveld, 2006), unlike domestic banks in general and government-owned banks, in particular, which reduce lending during such episodes (Allen et al., 2017). On the other hand, foreign banks can import shocks from abroad, either from their home country or from other countries where they have significant operations. This, in turn, can destabilize the host country's banking sector. In such a situation, recent research demonstrates that domestic government-owned banks can help stabilize the banking sector. However, whether foreign state-owned banks behave differently from domestic government-owned banks or more like foreign privately-owned banks is not known. Moreover, recent research demonstrates that ownership explains the behavior of banks during a sovereign crisis. Consequently, foreign banks and their ownership may influence whether they act as external shock amplifiers during a sovereign crisis in the home country.

We attempt to provide some answers to the issues outlined above using a unique dataset of 9,967 banks from 102 countries for the 1996–2018 period. The dataset allows us to control for the state

and private ownership of foreign banks. Moreover, we can control for the period before and after the GFC. The two periods differ not only in terms of the dynamics of foreign bank expansion (Claessens and Van Horen, 2014) but also in terms of bank regulations, including exposure to foreign banks (Fratzscher et al., 2016). We document that the lending practices of foreign privately-owned and state-controlled banks differed during prosperous and crisis periods. Moreover, we demonstrate that ownership plays a role in the transmission of the crisis from the home market during banking and sovereign crises. By contrast, we find no such evidence when we control for currency crises in the host or home markets, which indicates that our results are not accidental. Further, we find no evidence that the poor financial performance of the parent banks was directly related to the decline in the lending of its subsidiaries during crisis periods. In line with Allen et al. (2017), however, we find that bank-specific characteristics, such as profitability and liquidity, are more important determinants of credit growth than parent banks' health. Overall, our results are robust to the augmentation of the estimation method, sample, and variables employed in the regression.

We contribute to the existing literature in the following three ways. First, we extend the existing literature on the lending activities of foreign-owned banks by providing evidence—for the first time, to the best of our knowledge—on how state-controlled banks operate abroad. In our study, we present evidence on foreign state-controlled banks' lending activities abroad during normal and crisis periods.

As such, we contribute to the literature by providing new evidence on the transmission of shocks to the real economy via the banking channel. We confirm that foreign banks can mitigate the impact of host country-induced crises and can act as external shock amplifiers. In our analysis, we distinguish between foreign private and state-controlled banks and document that their behavior differs, particularly during a sovereign crisis in the home market. We find evidence that a systematic banking crisis and sovereign crisis can be transmitted via the banking channel from the home market to the host market, although we find no such evidence for a currency crisis in the home market.

Lastly, this study complements the literature on foreign bank lending by providing evidence on how the lending of domestic and foreign banks changed over the last two decades, particularly following the GFC period. In addition, we calculate loan growth rates in domestic currency, in

contrast to the existing studies that use bank-level data generally denominated in US dollars. Consequently, we can better address exchange rate fluctuations, particularly during crisis periods in developing countries. Thus, we present robust evidence on domestic and foreign bank lending during the normal and crisis periods.

This paper is organised as follows. Section 2 presents a short review of the literature on state and foreign bank lending. Section 3 describes the data and introduces the econometric methodology. Section 4 presents the main results as well as the studies for different crisis periods. Finally, Section 5 provides concluding remarks.

2. Literature

Our study combines two main strands of literature, foreign bank and government bank lending before and after the GFC. While studies before the GFC concentrate on the analysis of government and foreign-owned bank lending during crisis periods in the host country, the studies following the GFC focus more on the transmission of the home banking crisis, particularly the GFC, to the host countries. The topic of foreign and governmental ownership in the banking sector remains a controversial subject, and the viewpoint has changed strongly following the GFC. In this section, we briefly summarize studies that we find important from the perspective of our study.

Before the GFC, the literature on foreign ownership concentrates, particularly on developing and emerging markets. Several studies have illustrated that foreign banks are more efficient than domestic banks in general and government-owned banks, in particular. More importantly, studies have revealed that foreign-owned banks do not reduce lending during domestic crises. De Haas and Van Lelyveld (2006) analyzed the lending behavior of domestic and foreign-owned banks in Central and Eastern European (CEE) countries during the 1993–2000 period and documented that, unlike greenfield foreign banks, domestic banks reduced lending during crisis periods.

Moreover, they demonstrated that the home country conditions and the health of parent banks influence subsidiaries' lending in host countries. In a later study, De Haas and Van Lelyveld (2010) presented an extended version based on the behaviors of 45 multinational banks from 18 home countries with 194 subsidiaries across 46 countries. The authors provided evidence that within multinational banks, an internal capital market exists and is used as a tool to manage the credit growth of their subsidiaries. Overall, the authors claim that having a financially strong

parent bank allows subsidiaries to expand their lending activities at a faster pace. Moreover, foreign bank subsidiaries supported by healthy parent organizations, unlike domestic banks, do not reduce lending in host country crisis periods.

Claessens and Van Horen (2014) argued that foreign bank presence may be negatively related to domestic credit creation, especially in developing countries. Furthermore, they illustrated that during the GFC, foreign banks reduced credit more than domestic banks, except where the whole host country banking system was dominated by foreign banks.

In a later study, De Haas and Van Lelyveld (2014) revised their prior approach while considering the experience of GFC and presented a much more complex view. First, they confirmed that, unlike domestic banks, multinational bank subsidiaries did not reduce lending in the case of the host country-banking crisis. However, when the home country experiences a banking crisis, thereby impacting the parent organization, it can no longer support subsidiaries, and internal funding may even be sourced from subsidiaries to rescue the business activity of the parent organization in its home market. In particular, subsidiaries of banking groups that relied significantly on wholesale funding were forced to slow down lending more than other banks. These observations lead the authors to figuratively compare financial integration to a double-edged sword. Foreign banks may act counter cyclically in the case of only host country crises. However, the GFC indicated that if a parent home-banking crisis occurs, the lending policy of multinational banking groups may become pro-cyclical in host countries and may contribute to the deterioration of their financial system conditions. In other words, the core market is protected to the detriment of peripheral markets, from the group's perspective.

Bonin and Louie (2017) distinguished two different groups of foreign banks in their study and separately examined: (i) subsidiaries of six big European multinational banks and (ii) other foreign banks in emerging Europe. They investigated foreign bank behaviors during the GFC and the Eurozone crisis (2010) and found that bank lending was hampered during both these crises, although the two foreign bank groups defined by the authors behaved differently. The selected multinational banks' lending in host countries did not differ significantly from domestic bank lending and they continued financing the respective host economies during the hard times of crises. By contrast, other smaller foreign banks behaved pro-cyclically, that is, they contributed to the credit boom during the prosperity period and decreased lending abruptly during crises.

The second strand of the literature deals with government-owned bank lending behaviors. In a seminal study, Micco and Panizza (2006) related bank credit growth to gross domestic product (GDP) growth and an interaction term of GDP growth and a state ownership variable for a cross-country sample of banks and found that credit growth of state banks was less pro-cyclical than that of private banks. Similarly, in their comprehensive study on banks from 111 countries, Bertay et al. (2015) contended that lending by state-owned banks is less pro-cyclical than lending by privately-owned banks, especially in countries with good governance. Lending by state-owned banks in high-income countries is even countercyclical.

Cull and Peria (2013) examined the impact of bank ownership on credit growth in a sample of Latin American and Eastern European countries before and after the GFC and found mixed results. They reported that unlike in Eastern Europe, state banks in Latin America acted counter cyclically during the crisis, thus emphasizing regional differences.

Using an international sample of banks from 50 countries, Brei and Schclarek (2013) found that government-owned banks lent relatively more than private banks during a financial crisis. Similarly, Allen et al. (2017) bank examined banks in CEE countries and provided a complex view of the role of government-owned banks. During the GFC, the lending of government-owned banks increased relatively, most likely because of stimulus programs or political pressure. However, the results revealed that foreign and domestic government-owned bank behaviors were strongly dependent on the type of turmoil. During host country banking crises in CEE, the credit growth of foreign-owned banks remained constant or increased, whereas the lending by government-owned banks declined, with the notable exception of the recent global crisis. By contrast, the home crisis periods resulted in decreased lending by affected foreign bank subsidiaries.

In a study of 108 government-owned and 2,547 private banks from both developed and emerging markets between 2004 and 2010, Chen et al. (2016) analyzed lending behaviors through the prism of institutional quality in the host country. They documented that government-owned banks had higher loan growth rates than private banks during the crisis. Moreover, in countries with low corruption, increased lending by government banks was associated with better bank performance and more favorable GDP and employment growth during the crisis period. However, the results for countries with high corruption were more consistent with the so-called political view presented, for instance, by Sapienza (2004). The increased lending by government-owned banks is

associated with underperformance relative to privately-owned banks and creates no beneficial effects on either GDP growth or employment.

In a recent study, Bosshardt and Cerutti (2020) investigated lending by government-owned banks during the GFC. Using data for a sample of banks, of which 96 were state-owned, from 25 emerging economies, they argued that state-owned banks indeed lent more during the GFC, which was probably caused by external factors that motivated those banks to pursue a stabilizing role during economic turmoil. Moreover, they contended that relatively high lending during the GFC did not compromise the portfolio quality and stability of state-owned banks in emerging economies.

Overall, the empirical evidence suggests that foreign-owned banks tend to help stabilize credit when host developing countries face domestic shocks. Consequently, foreign ownership has increased dramatically in many developing countries. However, the GFC experience demonstrated a trade-off as foreign-owned banks can also transmit external shocks and might not always contribute to expanding access to credit. The record on the impact of government bank ownership suggests few benefits, especially for developing countries. While government-owned banks can help stabilize credit growth during crises, which was observed especially during the GFC, they have a negative impact on competition and performance and provide no clear benefits of expanding access to credit in the context of institutional quality. Moreover, government bank ownership can lead to resource misallocation because government-owned banks are prone to engage in political lending.

Studies that have also put forth political and environmental influence as reasons include that of Jain and Nigh (1989), which illustrated that the lending behavior of banks was affected by the political relationships between the home and host countries. This has also been studied by Hadjikhani et al. (2012), who documented how political turbulence in Russia between 1995 and 2010 affected Swedish banks to commit or de-commit themselves, based on the stability of the political climate.

3. Data and methodology

We construct an unbalanced panel dataset using both bank-level and macroeconomic data. We retrieved the bank-level data for commercial, saving, and cooperative banks from Bureau van Dijk's BankScope and BankFocus databases. In our study, we do not include development banks,

which often have a strong international presence, as their mission and business models differ from those of commercial banks. Commercial banks, particularly those with foreign presence, tend to be listed as universal banks, often with broad mandates. However, development banks vary in mandate and scope, are usually equipped with public guarantees, and often combine for-profit and non-profit activities. Most importantly, commercial banks generally operate as first-tier institutions, which means they interact directly with the final borrower. By contrast, a substantial number of development banks are second-tier institutions (Fernández-Arias et al., 2020), which also often manage and distribute state aid (e.g., KfW in Germany, BPI in France, CDP in Italy, and ICO in Spain).

To create time series information on the ownership of banks, we used past and current information on ownership structures from the two above-mentioned databases. In addition, we used various websites, including Orbis's online database, to classify the owner as private or state. We complement this information with information from several other sources, including individual banks' websites and annual reports, and websites of parent companies, banking regulatory agencies, and central banks.

Using the ownership information, we first established whether the banks are owned by private shareholders or controlled by the government. We classify a bank as government-owned if the government controls, directly or indirectly, at least 20% of the bank. This threshold for state ownership has often been used in the literature. Panizza (2021) and La Porta et al. (1999) argued that this benchmark level is sufficient to control a company. We employ two dummies to encode domestic and foreign government-controlled banks. The dummy GOV_{D} takes the value of one if the bank is owned by the domestic government, and zero otherwise. The dummyGOV_{F} takes the value of one if the bank is owned, directly or indirectly, by the foreign government.

Consequently, we classify banks in our sample with government ownership of less than 20% as privately-owned banks. However, we consider a bank as foreign-owned, including foreign state-controlled, when at least 50% of its capital is owned by foreign shareholders (Allen et al., 2017), which we encode using a dummy variable FGN. $PRIV_{\mathrm{F}}$ to encode foreign privately-owned banks, which takes the value of 1 when at least 50% of the capital is owned by a foreign entity and the government ownership is less than 20%. Finally, we encode all the remaining banks as domestic privately-owned banks using a dummy $PRIV_{\mathrm{D}}$. We omit the dummy from the regressions to avoid

multicollinearity, although it is captured by the constant in the regressions.

In the remainder of the study, we use the definition of state-controlled banks to underline the difference in ownership thresholds between state and private banks. However, we generally find that, unlike foreign privately-owned banks, state-controlled banks are often wholly-owned subsidiaries.

Using these data, we construct a panel of 46,419 observations for 9,967 banks from 102 countries for the 1996–2018 period. Following De Haas and Van Lelyveld (2010), we also use a subsample that consists of bank subsidiaries and parent banks in the regression. In contrast to De Haas and Van Lelyveld (2010) and Allen et al. (2017), we control for the impact of parent banks' financial health on foreign as well as domestic subsidiaries if they operate independently from the parent bank in the host country. Consequently, we can compare the impact of parent banks' fundamentals on domestic and foreign operations, which, to the best of our knowledge, has not been conducted in the past. Using ownership data for the ultimate owners, we identified 4,219 parent banks that owned 3,791 subsidiaries over the 1996–2018 period. A total of 2,902 subsidiaries were domestic, while 899 subsidiaries were foreign-owned, of which, 196 were state-controlled parent banks and 731 were privately-owned multinational banks. The sum of state-controlled and privately-owned subsidiaries is higher than the total number of subsidiaries due to ownership changes over the analysis period.

We retrieved the necessary financial data for parent banks from the BankScope database, and our final sample comprised 9,413 parent-subsidiary-year observations, as in some cases, the data for the parent banks were missing. We use only unconsolidated accounts for parent banks, while for the full sample, we use consolidated financial statements when unconsolidated accounts are not available. We winsorize at the 1% level for all bank-level variables in both datasets, and provide the definitions of the variables used in the study and their sources in the Appendix Table A1.

3.1. Bank characteristics

Our dependent variable is the percentage of real growth in total gross loans in the domestic currency (Δ *Loans*) of bank i in country c in year t. We follow Bonin and Louie (2017) and calculate the real (inflation-adjusted) growth of gross lending using domestic currency.

By contrast, most studies convert loans to US dollars (eg. Cull and Peria (2013); Allen et al. (2017); Panizza (2021)), which is not problematic for developed countries. However, the share

of state-owned banks is not uniform across countries. Panizza (2021) illustrates that the share of state-controlled banks in advanced economies dropped from 5.5% in 1995 to below 4% over the 1999–2007 period, but started to increase following the GFC. In middle- and low-income economies, the share of total assets of state-controlled banks decreased from approximately 20% in the mid-1990s to around 15% in 2018. By contrast, state ownership increased rapidly in developing countries in East Asia after the Asian financial crisis and then remained constant at about 30%. In developing countries of other regions, state ownership mostly decreased in the last two decades, and then flattened to about 25% of bank assets in East Europe and Central Asia or increased again in Latin America and the Caribbean, the Middle East, North Africa, and Sub-Saharan Africa. In South Asia, state ownership, despite its ongoing decline, remained high at about 50% in 2018. Thus, the figures illustrate that state ownership remains relatively high in most of the developing or emerging countries, which dominate the world economy as well as our sample.

Domestic currencies of developing countries often fluctuate, particularly during periods of economic uncertainty. Therefore, loan growth rates may be biased because of domestic currency volatility against the US dollar or other hard currencies. For example, Corsetti et al. (1999) demonstrated that during the Asian crisis of 1997, the currencies of Thailand, Malaysia, Indonesia, and the Philippines came under speculative pressure, which eventually led to a devaluation of domestic currencies in the region. The loss in the value of domestic currencies against the US dollar within a period of six months ranged from 5% in Taiwan to more than 40% in Thailand, Malaysia, Indonesia, and the Philippines. Similarly, the domestic currencies in CEE countries first appreciated against the US dollar in the 2005–2007 period, and then sharply depreciated as the GFC hit the region. Bonin and Louie (2017) illustrated that the correction in the calculation of bank loan growths in eight European Union–countries provides slightly different results and contradicts those presented earlier in the literature.

In the regression, we control for the following bank characteristics that may influence a bank's tendency to expand its loan portfolio: *liquidity* (liquid assets to total assets), *profitability* (return on assets), *solvency* (equity to assets), and total bank assets to countries' GDP as a measure of *size*. The bank-specific characteristics mentioned in the literature are found to be important determinants of foreign banks' lending behavior. Jeon et al. (2013) contended that banks can resort to liquid assets to finance their lending, and therefore, more liquid banks tend to increase their credit at faster

rates. Peek and Rosengren (1997) found that better-capitalized banks facilitate faster loan growth. However, Black and Strahan (2002) demonstrated that less liquid banks or undercapitalized banks can be prone to moral hazard and rapidly expand lending. Kishan and Opiela (2000) found that the effects of monetary policy on bank loans depend on bank capitalization and size and illustrated that undercapitalized and small banks are more responsive than well-capitalized and large banks to monetary shocks.

Indeed, Allen et al. (2017) documented that bank-specific characteristics are more important than ownership in explaining the supply of credit during a financial crisis. They found that in periods of simultaneous host and home financial crises, only the bank characteristics of profitability, liquidity, and deposit growth were important in explaining the lending behavior in CEE countries. However, De Haas and Van Lelyveld (2010) documented that affiliations with parent banks can also affect subsidiary banks' credit supply in the host country. Hence, we control for parent bank characteristics that may determine subsidiaries' loan growth, including the following bank-specific measures in the regression as independent variables: *liquidity* (parent liquid assets to total assets), *profitability* (parent banks' return to assets), and *size* (parent bank assets to home country GDP).

3.2. Country characteristics

Claessens and Van Horen (2012) documented that the relative performance of foreign banks is better when the geographical, cultural, and institutional distance is small. However, they demonstrated that foreign banks perform better when the economic distance is large and the parent's home country has a higher level of development than the host country. We control for geographical *distance* using a variable that measures the differences in the log of kilometers between the capitals of the home and host countries. We control for cultural aspects using a dummy *language*, which equals one if the official language in both countries is identical. Additionally, we control for the differences in the institutional environment in the host and home countries using a dummy *common law* that equals one if the countries have the same legal origins (Buch and DeLong, 2004). The language and common law variables also proxy for information costs, which are important for multinational banks.

We follow Allen et al. (2017) and employ country GDP *growth* and inflation rate (*CPI*) as country macroeconomic variables reflecting the attractiveness of expanding credit in the host country. We

expect banks to be positively and relatively strongly related to host countries' GDP growth. By contrast, we expect a negative relationship between CPI and loan growth, as a high inflation rate reflects unstable macroeconomic conditions in the host country.

Lastly, we control for a systematic banking crisis using a dummy variable, *crisis*, which takes a value of one for years in which the host (or home) country experienced a systematic banking crisis. We identify the years of the domestic systematic banking crisis in a particular country using the Laeven and Valencia (2020) database. Furthermore, we use the database to identify domestic sovereign and currency crises, which we use in the sensitivity analysis. Finally, we employ a GFC crisis dummy that takes the value of one for the years 2008–2009 and zero otherwise. In the regression, we interact the crisis dummies with the ownership variables to observe the impact of ownership on bank loan growth during crisis periods.

Table 1

3.3. Methodology

The relationship between loan growth, bank-specific characteristics is evaluated using the following specification:

$$\Delta L_{ict} = \alpha_0 + \beta_1 Bank_{i,ct-1} + \beta_2 Own_{i,c,t} + \beta_3 Host_{c,t} + \iota_t + \epsilon_{ict} \tag{1}$$

where the dependent variable is the real credit growth of bank *i* in country *c* and year *t*; $Bank_i, c, t$ represents one period lagged variables controlling for characteristic of banks *i*; Own_i, c, t are ownership dummy variable controlling for domestic and foreign government-owned banks as well private foreign-owned banks; $Host_c, t$ is set of host-country macroeconomic variables including crisis dummy. When we use the subsample of multinational bank subsidiaries, $Bank_i, c, t-1$ includes in addition one period lagged variables controlling for parent bank characteristics. We estimate the specification using polled ordinary least squares with year fixed effects. We weigh the observations, with the weights equal to the number of banks in the host country to prevent any bias due to differences in market size. All standard errors are robust and allow for clustering at the host country level.

4. Results

Columns (1)-(2) in Table 2 present the results of estimating Eq.1 for the growth of the full sample's total gross loans. Columns (3)–(4) and (5)–(6) list the results for the subsamples that include the years 1996–2007 and 2008–2018, respectively. We decided to split the sample into two subsamples as we expected that foreign bank lending may have changed following the GFC. Our assumption is confirmed by the results, as we find that in columns (1)–(4), the coefficients of foreign bank lending are positive and significant at the 1% level. Moreover, in columns (2) and (4), we find that the coefficient of ownership is positive for foreign state-controlled and privately-owned banks and statistically significant. Thus, the results supplement the existing empirical results and demonstrate that foreign state-controlled and privately-owned bank lending was pro-cyclical before the GFC. The results in columns (5) and (6), however, reveal that the situation changed following the GFC. The ownership coefficients are negative but statistically insignificant. The results imply that the change in lending affected both private and state-controlled foreign subsidiaries. However, the coefficients indicate state-owned foreign banks were more aggressive than privately-owned banks before the GFC but reduced their lending more than the latter following the GFC. The results may reflect the low economic growth rates in most of the countries following the GFC, and consequently, the dynamics could change again with economic recovery.

As expected, we find that domestic government-owned banks provided less credit than domestic privately-owned banks and foreign banks. In all specifications, the coefficient was negative and statistically significant. The effect seems to be slightly stronger for the period following the GFC, which can be due to the nationalization of privately-owned banks that encountered financial problems. As a robustness test, we decided to exclude all financial institutions that received state aid or were nationalized. The exclusion of these institutions does not change our main results, although we do not present them here for brevity.

On the one hand, columns (3)–(4) indicate that the coefficient of distance is negative in all specifications and statistically significant at the 1% level. On the other hand, these two columns also reflect that the coefficient of common language is negative in all specifications and significant at the 5% level. In other words, we find that banks are more likely to provide loans in areas closer to the country of the parent bank, but that country does not need to be close in terms of culture, as the coefficient of common language is negative. These results were driven mainly by the pe-

riod before the GFC. By contrast, we find that the coefficient of common law is negative, but the results are statistically significant in columns (5)–(6) at the 1% level. Hence, we find no evidence that culture proximity explains the growth of loans. Nevertheless, the results demonstrate that the lending characteristics changed following the GFC . The remaining macroeconomic control variables are aligned with the literature. The coefficient of economic growth is positive and significant in all specifications at the 1% level. By contrast, the coefficient of inflation is negative and significant in all specifications. Thus, the results confirm that the macroeconomic environment is important in explaining the lending levels in the host countries. As the cultural and economic control variables do not differ across the different specifications, we do not discuss them here.

Table 2

4.1. Host Banking Crisis

In Table 3, we present the specification where we introduce a dummy for a systematic banking crisis in the host country. We interact the variable with the ownership variables to analyze the impact of the host country crisis on bank lending depending on the type of bank. Columns (1)–(3) in Table 3 present the results for the full sample, while columns (4)–(5) and (6)–(7) list the results for the subsamples covering the years 1996–2007 and 2008–2018, respectively. In all the following regressions, we control for bank-level variables and macro-country variables as in Table 2, although we do not report them here for brevity.

In line with our previous results, we find that domestic government-owned banks provided less credit than domestic privately-owned or foreign-owned banks. In all specifications, the coefficients of domestic government-owned banks remain negative and statistically significant. By contrast, we find that foreign-owned banks, both privately-owned and state-controlled, expanded lending before the GFC. In columns (4)–(5), the coefficients of foreign ownership are positive for both privately-owned and state-controlled banks and statistically significant at the 1% level.

As expected, we find that the coefficient of the host country crisis is negative and statistically significant. In other words, we illustrate that, on average, banks reduce lending in periods of a systematic banking crisis. The interaction between the host country crisis and domestically-owned banks is negative in all specifications, although statistically insignificant. By contrast, the coefficients of the interaction term between host country crisis and foreign ownership, both privately-

owned and state-controlled, are positive in all specifications but are statistically insignificant. The coefficient of the interaction term between host crisis and foreign subsidiaries controlled by the state is positive and statistically significant at the 1% level only in column (5). These foreign state-controlled banks stabilized the lending situation during a systematic banking crisis in the host country. In column (7), the coefficient of the interaction term is positive but insignificant, implying that this effect diminished following the GFC, which may be attributed to the financial problems of many state-controlled banks.

Table 3

In Table 4 , we present the results for the subsample of the domestic and foreign bank subsidiaries where we can control for parent bank financial standing. Columns (1)–(2) list the results for the full sample, which includes both domestic and foreign bank subsidiaries. Next, we divided the sample into subsamples based on ownership. Columns (4)–(5) illustrate the results for the subsample that includes only domestic and foreign-owned banks, respectively. Additionally, in columns (6)–(7), we present the results for foreign state-controlled and foreign privately-owned banks, respectively.

The results, controlling for parent bank characteristics, confirm our previous findings. In almost all specifications, the dummy for the host country crisis is negative and statistically significant. The dummy is insignificant only in specifications (4) and (6). Thus, the results confirm that foreign state-controlled banks behave differently during a systematic banking crisis.

In line with Allen et al. (2017), we find little evidence that parent banks' financial situation determines the loan growth of domestic and foreign subsidiaries. The coefficient of liquidity is negative and statistically significant in almost all specifications at the 1% level. However, unlike in Allen et al. (2017), we find that parent banks' health seems to play a role during a host country crisis, as the coefficients of the interaction term between crisis and parent bank profitability are positive and statistically significant in column (3). Thus, the results indicate that bank subsidiaries of profitable parent banks increased lending during systematic banking crisis periods. Moreover, the coefficients of the interaction terms are positive and statistically significant in columns (5) and (7), which suggests that parent banks' situation is more important for foreign banks, particularly those that are privately-owned.

Table 4

4.2. Home banking crisis

In Table 5, we present the results, where we control for the systematic banking crisis in the home countries of foreign banks. Columns (1)–(3) present the results for the full sample, while columns (4)–(5) and (6)–(7) for the subsamples covering the years 1996–2007 and 2008–2018, respectively. In all the following regressions, we control for bank-level variables and macro-country variables as in Table 2, although we do not report them here for brevity.

The results demonstrate that a banking crisis in a foreign subsidiary's home country is negatively related to lending in the host country. The coefficients of the home banking crisis are negative in all specifications, although they are significant only in columns (1)–(2) and (4)–(5). The results are in line with the literature indicating that foreign banks can act as external shock amplifiers (Peek and Rosengren, 1997; Aiyar, 2012). In particular, we confirm that foreign banks can transmit shocks via lending channels. However, we find that cross-border shock transmission via the lending channel is mainly related to foreign state-controlled banks. In column (4), the coefficient of the interaction term between home country crisis and government control is negative and statistically significant at the 1% level. By contrast, in column (5), the coefficient of the interaction term between home country crisis and private ownership is positive and statistically significant at the 1% level. This implies that foreign privately-owned banks expand their lending abroad during a home country-banking crisis. The results are in line with the substitution effect reported by De Haas and Van Lelyveld (2010), who find some evidence that multinational bank subsidiaries expand lending faster when economic growth in their home country decreases.

However, we find that the results for the banking crisis and the interaction terms are weaker for the post-GFC period. One explanation is that multinational banks limited their exposure to foreign markets following the GFC, particularly because of the new banking regulations (Fratzscher et al., 2016). Indeed, the results partially supportDermine (2013) warning that new regulations may reduce the supply of bank loans. Nevertheless, more time is needed to assess the impact of the new regulation on multinational banks, especially whether they render banking sectors safer and reduce the shock transmission, including cross-border transmission, from the banking sector to the real economy.

Table 5

In Table 6, we list the results for the subsample of domestic and foreign-owned subsidiaries, where we control for parent bank fundamentals. Columns (1)–(2) include the subsample of domestic and foreign subsidiaries, column (3) comprises only foreign-owned banks, and columns (4)–(5) include only foreign state-controlled and foreign privately-owned banks, respectively.

In line with the previous results, we find that a home country-banking crisis has a negative impact on the lending levels in the host country. In all specifications, the coefficient of the home-banking crisis is negative and statistically significant. The results partially support our previous findings, demonstrating that foreign state-controlled banks behave differently from foreign privately-owned banks. In column (4), the coefficient of home country crisis is almost three times larger than in column (5), indicating that foreign state-controlled banks reduce lending more significantly than foreign privately-owned banks.

In line with the previous results, we find that parent bank liquidity strongly determines the lending of subsidiaries. In all specifications, the coefficient of liquidity is negative and statistically significant, at least at the 5% level. Similarly, the interaction term between parent bank liquidity and home country crisis is negative and statistically significant in three out of four specifications. However, the remaining coefficients of the parent bank characteristics remain statistically insignificant.

We believe that the results confirm that bank funding structure influences lending stability. We may assume that only those domestic and foreign subsidiaries that could not rely on parent banks' liquidity reduced lending. The results supplement the findings of Allen et al. (2014), who documented that foreign bank subsidiaries dependent on interbank market financing increased their credit supply before the crisis but reduced their lending activities during the GFC. Moreover, the authors demonstrated that the reduction in the subsidiary's lending was strongly related to its parent bank's lending via the interbank market. They argued that the situation indicated that foreign bank subsidiaries could not rely on their parent banks' support via the interbank market during the GFC. As foreign bank subsidiaries encountered problems in attracting new depositors during this period, they were forced to reduce their lending significantly during the GFC.

Table 6

4.3. Global financial crisis

Table 7 presents the results for the determinants of bank lending during the GFC. Columns (1)–(3) list the results for the full sample, while columns (4)–(6) present the results that exclude those banks that either received government financial aid or we nationalized. We conducted this segregation to check whether it impacts our results, as government aid was often based on conditions, while the nationalization of multinational banks changed the composition of foreign state-controlled banks. We discover that excluding these banks did not alter the main results presented in columns (1)–(3).

We again find that domestic state-controlled banks provide significantly fewer loans than private domestic banks and foreign-owned banks in periods of normality. The coefficient of domestic state control is negative in all specifications and statistically significant at the 1% level. By contrast, foreign-owned banks, both state-controlled and privately-owned, are more likely to be procyclical. The coefficient of foreign ownership, including the variables controlling for state control and private ownership, are positive in all specifications and statistically significant at the 1% level. In line with Cull and Peria (2013); Chen et al. (2016); Allen et al. (2017); Bonin and Louie (2017), we find that the coefficient of GFC is negative and statistically significant in all specifications, at least at the 5% level. Similarly, the coefficient of the interaction term between foreign ownership and GFC is negative, although it is not statistically significant. Therefore, we find only weak evidence that foreign banks, both state-controlled and privately-owned, reduced lending in host countries during the GFC. The results can be explained by the fact that our sample consists of many countries, while the existing studies focus mainly on regions that were strongly affected by the GFC, such as CEE countries.

By contrast, we find that domestic state-controlled banks had higher lending growth rates than foreign-owned and domestic privately-owned banks during the GFC. The coefficient of the interaction term between domestic state-controlled banks and GFC is positive, although significant only at the 10% level. Thus, the results confirm that government ownership could be useful in smoothing the business cycle, especially during deep recessions.

We recognize that previous results indicated that state-owned banks are also likely to reduce lending during a domestic banking crisis. The differences in the results can be explained by the sample composition, which includes countries that were not directly affected by the GFC. In these

countries, we may expect that state-controlled banks were more likely to provide countercyclical lending. Moreover, Chen et al. (2016) find that the effect of an increase in lending by government banks relative to private banks depends on a country's degree of corruption.

Overall, the results support the argument of Yeyati et al. (2007) that the countercyclical lending of state-controlled banks may increase the effectiveness of countercyclical macroeconomic policies and help smoothen the business cycle.

Table 7

Table 8 presents the results when we control for the parent bank's financial situation. Columns (1)–(2) include the sample domestic and foreign banks, columns (3)–(4) list only the subsamples of domestic and foreign-owned banks, respectively, and columns (5)–(6) include the subsample of foreign state-controlled and foreign privately-owned banks, respectively.

In line with our previous results, we find that the coefficient of GFC is negative and highly statistically significant in all specifications. Moreover, as in previous results, the parent bank liquidity is a strong determinant of domestic and foreign subsidiaries' loan growth. When we interact the GFC dummy with the parent-specific variables, we find that the effect is not homogeneous across the sample. The results for the subsample of domestic banks in column (3) indicate that more liquid and more profitable banks expanded their loan portfolios during the GFC. One explanation for the results is that the domestic subsidiaries in our sample are cooperative, saving, and union banks, which are integrated within a group controlled by the parent bank. Hesse and Čihák (2007) documented that cooperative banks are more stable than commercial banks because they have significant soft information on the creditworthiness of customers, and are, therefore, less likely to commit lending mistakes. Moreover, they found that the earnings volatility of cooperative banks is significantly lower than that of commercial banks, which more than offsets their lower profitability and capitalization; Becchetti et al. (2016) illustrated that cooperative banks tightened loan intensity only slightly compared to commercial banks during the GFC and their loan intensity gradually converged to that of non-cooperative banks. Our results support the argument that liquid and profitable cooperative and saving banks expanded their lending compared to other groups of banks during the GFC.

The coefficient of the interaction term between size and GFC in column (4), which includes the

subsample for foreign banks, is positive and statistically significant. The result supports the findings of Bonin and Louie (2017) that the lending dynamics of the subsidiaries of large European multinational banks differed from those of all other foreign-controlled banks. They demonstrated that subsidiaries owned by large multinational banks remained committed to the region, that is, their lending behavior did not differ from that of domestic banks. By contrast, the other foreign banks that were involved in fueling the credit boom in the region before the GFC decreased their lending aggressively during the crisis periods. Although the coefficients of the interaction terms are negative for foreign state-controlled banks, they are positive for privately-owned banks. Hence, the results seem to be driven mainly by private banks, although almost all are statistically insignificant. Only the coefficient of the interaction term between liquidity and GFC for foreign state-controlled banks is statistically significant at the 10% level, again indicating that access to parent bank funding is an important factor explaining subsidiaries' lending during normal and crisis periods.

Table 8

4.4. Sovereigns and currency crisis

To analyze the sensitivity of our results, we expand our analysis and employ a crisis dummy that takes the value of one if the particular host or home country experienced a sovereign crisis or currency crisis during the 1996–2018 period. As these crises do not directly affect the banking sector, the conducted test may be viewed as a placebo test to our previous results. We expect the effects to be weaker, yet these crises affect the economy, and hence, most likely the lending activity of the banks in the host country. As the number of these crises is smaller than that of the banking crises, we decided not to split the sample into the pre-and post-GFC periods. Columns (1)–(3) of Table 9 present the results where we control for the sovereign crisis in the host country, while in columns (4)–(6), we control for the sovereign crisis in the home country. The results confirm that domestic state-controlled banks lent less aggressively than privately-owned and foreign-owned banks. By contrast, the growth in lending of foreign banks, both state-controlled and privately-owned, was pro-cyclical.

We find that the coefficient of the sovereign crisis in the host country is negative and significant at the 1% level in all specifications. Similarly, the sovereign crisis in the home country has a negative

effect on bank lending in the host country. However, the results are slightly weaker for foreign banks, as the coefficient is only significant in columns (4) and (6), where we control for all foreign banks and foreign privately-owned banks, respectively.

Consequently, we find that a sovereign crisis in the home and host countries has a negative effect on the average credit growth in the host country across all banks. One explanation for these results is that banks tend to hold a large amount of government debt securities on their balance sheets. Popov and Van Horen (2015) demonstrated that in Europe. Banks also hold sizable amounts of debt issued by foreign sovereigns. Therefore, they are exposed to a sovereign crisis in the home as well as the host country.

Popov and Van Horen (2015) and De Marco (2019) distinguished between two channels through which sovereign debt held by banks can lead to a decline in bank credit. First, banks' losses on sovereign debt imply equity loss, which increases their default risk, and hence, their funding costs, forcing the most highly exposed banks to deleverage. Second, banks often use sovereign debt as collateral in the interbank market. Hence, a sovereign default reduces the eligibility of collateral and lowers banks' funding capacity.

The existing link between the domestic sovereign crisis and bank lending was confirmed by Altavilla et al. (2017) and De Marco (2019), who investigated the determinants of banks' sovereign exposures and their effects on lending during and after the 2009 Eurozone crisis. They found that the domestic sovereign exposure of banks in stressed countries led to reduced lending in their home markets. Meanwhile, Popov and Van Horen (2015) illustrated a direct link between the deteriorating creditworthiness of foreign sovereign debt and lending by banks holding this debt on their balance sheet. We supplement these results, demonstrating that a sovereign crisis in the home country leads to a reduction in lending in the host country.

Although our results confirm that both home and host sovereign crises have a negative impact on credit supply, we find only weak evidence of the different effects of the crises on banks based on their ownership. In all specifications, the coefficients of the interaction term between ownership and sovereign crises are insignificant. One explanation for the results is that the level of exposure to the risk depends on the bank's holding of domestic and sovereign government debt, which differs across banks and countries. Altavilla et al. (2017) documented that in stressed countries, banks more exposed to sovereign risk reported sharper reductions in loans and more pronounced

rises in lending rates than less exposed banks. Our results supplement the findings of Altavilla et al. (2017), who argued that banks' exposure to sovereign risk via government bond holdings acts as an amplification mechanism in the transmission of stress to the banking system. Column (5), which lists the results of the interaction of foreign state-controlled banks with sovereign crisis, indicates that the crisis dummy remains negative but insignificant. The coefficient of the interaction term for foreign state-controlled banks and sovereign crisis is negative. By contrast, the interaction term for foreign privately-owned banks is positive. We believe that the results indicate that the transmission of the home sovereign crisis is more likely to occur through foreign state-controlled banks. Altavilla et al. (2017) (2017) found that domestic state-owned banks react to the sovereign crisis by increasing their domestic public debt holdings significantly more than privately-owned banks. In response, we assume that state-controlled banks are forced to reduce their lending, particularly abroad. This explains the different effects of the sovereign crisis in the home market on the lending activity of foreign state-controlled and foreign privately-owned banks in the host countries.

Table 9

Finally, columns (1)–(3) and (4)–(6) of Table 10 present the results of the impact of the currency crisis in the host and home countries, respectively. The results again confirm that domestic state-controlled banks provided less credit than private and foreign-owned banks in normal time. Foreign banks, both state-controlled and privately-owned, were pro-cyclical during normal economic periods.

Next, we find that the coefficient of the currency crisis is negative in all specifications. However, it is statistically significant only for the host country currency crisis, as illustrated in columns (1)–(3), but at the 1% level. Hence, the results demonstrate that the domestic currency crisis has a negative effect on credit growth in the host country. However, none of the interaction terms between ownership variables and the host country are statistically significant. Therefore, we can assume that a currency crisis is related to the overall decline in lending activity, which affects all banks equally.

In contrast to the previous results, we find only weak evidence that a currency crisis in the home country has a negative effect on the host country's credit growth. In columns (4)–(6), the co-

efficient of the currency crisis in the home country is negative but statistically insignificant in all specifications. Consequently, the results confirm that only a systematic banking crisis and sovereign crisis can be transmitted via subsidiaries to host countries. However, we document that the sovereign crisis is more likely to be transmitted mainly through foreign state-controlled banks.

Table 10

Overall, the final results confirm that our previous results are not likely to be driven by accident, as ownership seems to play a role only during a banking crisis, and only to some extent, during a sovereign crisis. We conduct a wide array of additional analyses to check the robustness of our main results, although we do not report them here for brevity.[3] First, we check the consistency of the results after removing countries that are over-represented in our sample, such as the United States. Second, we increase the set of explanatory variables and add additional control variables for banks and countries. Third, we employ the generalized method of moments estimation that better controls for the three sources of endogeneity, unobserved heterogeneity, simultaneity, and dynamic endogeneity. The results of the robustness test using different methods, data, and, variables confirm our results and the relationship between bank ownership and lending during normal and crisis periods. As in other studies, however, our empirical analysis has its limitations. Consequently, we interpret our results as a causal relationship; however, we are aware that it is not a precise test of the direction of the relationship.

5. Conclusions

The globalization of financial systems in most countries has reshaped the structure of banking industries worldwide, leading to the intensive development of multinational banks **?**. A number of these multinational banks entered new markets through the acquisition of state-controlled banks, which was perceived as a positive development, given that existing research demonstrated that foreign banks can stabilize lending during a domestic banking crisis. By contrast, domestic banks, especially in developing countries, reduced lending, which amplified the economic shock

[3]The full results of the main regressions and the additional robustness check are available upon request.

in those countries. The same applies to state-controlled banks in developing countries, which, on average, are found to be less efficient and their lending volume to the real economy is lower than that of privately-owned banks (Micco and Panizza, 2006).

However, the situation changed dramatically following the GFC. New evidence has emerged illustrating that foreign banks can act as external shock amplifiers in host countries. In particular, in response to the financial problems of parent banks in industrialized countries, De Haas and Van Lelyveld (2014) and Allen et al. (2017) documented that subsidiaries of these banks reduced lending in the CEE. Brei and Schclarek (2013) found evidence that domestic government-owned banks increased their lending during crises relative to normal times, while private banks' lending decreased. They argued that domestic government-owned banks counteract the lending slowdown of private banks, and therefore, have an active countercyclical role in their banking systems. Our study aimed to enhance the understanding of foreign banks' lending behaviors, especially by distinguishing foreign private-owned and foreign government-controlled banks. We contribute to the existing research by clarifying whether ownership of foreign banks determines their behavior during normal times as well as crisis periods in the host and home countries. Further, we demonstrate the difference between foreign government-controlled and foreign privately-owned banks' reactions during a crisis period. We also contribute to the extant literature by analyzing the behavior of banks during banking crises, sovereign crises, and currency crises in the host and home countries by utilizing a unique database with financial and ownership data on banks operating worldwide during the 1996–2018 period. Moreover, we analyzed the lending behaviors of domestic and foreign banks using subsamples for the periods before and after the GFC. Analyzing the behavior of banks during normal times, our results confirmed the existing findings that foreign banks and domestic privately-owned banks lend more than domestic state-controlled banks. Therefore, we confirmed that domestic government-controlled bank lending is less sensitive than that of private banks to business cycle fluctuations. We found that the credit supply of foreign banks changed significantly in the host countries after the GFC. Our results demonstrated that foreign banks, both privately-owned and government-controlled, had lent significantly more than domestic banks in the host country market before the GFC; however, after the GFC, this effect disappeared.

We also confirmed that during a domestic banking crisis, the overall supply of credit declines. We

documented that foreign banks, both privately-owned and state-controlled, can have a stabilizing influence during a domestic banking crisis. We found foreign-controlled banks provided more credit than foreign private banks during banking crises in the host country. Thus, the lending of foreign state-controlled banks was countercyclical during the host country banking crises. However, countercyclical lending by foreign banks during the banking crisis in the host country was not observed after the GFC, regardless of the specific owner type. Additionally, we found no such effect for foreign banks during domestic sovereign and currency crises.

We illustrated that foreign banks reduced their lending earlier and faster than domestic banks during a banking crisis in the host country. A closer analysis revealed that the reduction in lending can be mainly attributed to foreign state-controlled banks. By contrast, foreign privately-owned banks increased lending in host countries during a home banking crisis. These effects, however, disappeared again after the GFC. Furthermore, we documented that foreign state-controlled banks can import shocks from their home country to the home country during a sovereign crisis. By contrast, we found no such effect in a period of a currency crisis in the home country.

Finally, we found that bank-specific characteristics explain the supply of credit during normal times and crisis periods. In periods of financial shocks, we found that bank profitability and liquidity were important in explaining the level of credit supply. Moreover, we demonstrated that the subsidiaries' financial situation was a more important determinant of credit growth than parent banks' health during crisis periods.

One key takeaway is that substantial heterogeneity exists across domestic and foreign banks, countries, and time. The result is important from a policy perspective, as we illustrated that a mixed composition within the banking sector, consisting of foreign and domestic-owned banks that are controlled by the state and private owners, is advisable. Thus, future research should focus on understanding the drivers of the heterogeneity among domestic and foreign banks. In particular, in a recent study, Ture and Medas (2021) confirmed that state-controlled bank lending is less pro-cyclical than private bank lending, but that this is not the case in developing economies with high levels of public debt. However, we leave new questions for future research.

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Table 1: Descriptive statistics

The table provides the descriptive statistics of the variables employed in the empirical specifications. The summary statistics for the bank-and country-level variables are based on the full sample for 1996–2018.

	Mean	Median	Std. dev.	Obs.
Subsidiary characteristics				
Δ Gross loans	0.085	0.058	0.196	66,717
Liquidity	0.214	0.160	0.172	66,717
Loan to Deposit	0.697	0.718	0.275	66,717
Profitability	0.011	0.010	0.011	66,717
Solvency	0.115	0.100	0.066	66,717
Size	0.006	0.001	0.009	66,717
GOV_D	0.040	0.000	0.195	66,717
FGN	0.292	0.000	0.455	66,717
GOV_F	0.034	0.000	0.181	66,717
$PRIV_F$	0.258	0.000	0.438	66,717
Parent bank characteristics				
Profitability	0.038	0.020	0.037	18,093
Size	38.946	0.067	98.376	20,975
Liquidity	0.131	0.077	0.140	20,926
Host country characteristics				
Distance	2.004	0.000	3.412	64,114
Language	0.096	0.000	0.294	57,775
Common law	0.358	0.000	0.479	66,717
GDP growth	0.028	0.027	0.029	66,717
CPI	0.042	0.021	0.160	66,717

Table 2: Main results

This table reports the coefficients of the linear regression model using weighted least squares. Columns (1)–(2), (3)–(4), and (5)–(6) include the samples for the years 1996–2018, 1996–2007, and 2008–2018, respectively. The dependent variable is the change in real gross loans. The independent variables are presented in Table A1. All specifications include constants, year, and country-fixed effects. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Liquidity	0.069***	0.069***	0.119***	0.118***	0.020	0.021
	(0.017)	(0.017)	(0.030)	(0.030)	(0.018)	(0.018)
Loan to Deposit	0.002	0.002	0.019	0.019	-0.015	-0.015
	(0.012)	(0.012)	(0.018)	(0.018)	(0.014)	(0.014)
Profitability	1.325***	1.320***	2.474***	2.478***	0.956***	0.949***
	(0.350)	(0.351)	(0.618)	(0.619)	(0.337)	(0.339)
Solvency	0.011	0.011	-0.075	-0.076	0.051	0.052
	(0.051)	(0.051)	(0.105)	(0.105)	(0.051)	(0.052)
Size	-0.131	-0.131	-0.594	-0.593	-0.307	-0.308
	(0.315)	(0.315)	(0.496)	(0.497)	(0.345)	(0.344)
GOV_D	-0.029***	-0.029***	-0.026*	-0.026*	-0.029***	-0.029***
	(0.007)	(0.007)	(0.014)	(0.014)	(0.008)	(0.008)
FGN	0.070***		0.195***		-0.003	
	(0.024)		(0.044)		(0.027)	
GOV_F		0.069***		0.200***		-0.005
		(0.024)		(0.045)		(0.028)
$PRIV_F$		0.071***		0.194***		-0.002
		(0.024)		(0.045)		(0.027)
Distance	-0.010***	-0.010***	-0.024***	-0.024***	-0.001	-0.001
	(0.003)	(0.003)	(0.006)	(0.006)	(0.004)	(0.004)
Language	-0.013	-0.013	-0.044**	-0.044**	-0.001	-0.001
	(0.008)	(0.008)	(0.017)	(0.017)	(0.009)	(0.009)
Common law	-0.017*	-0.017*	0.013	0.013	-0.028***	-0.028***
	(0.009)	(0.009)	(0.018)	(0.018)	(0.010)	(0.010)
GDP growth	1.105***	1.105***	1.341***	1.339***	0.842***	0.841***
	(0.197)	(0.197)	(0.200)	(0.200)	(0.242)	(0.241)
CPI	-0.045***	-0.045***	-0.026***	-0.026***	-0.140*	-0.140*
	(0.012)	(0.012)	(0.008)	(0.008)	(0.071)	(0.071)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,419	46,419	17,426	17,426	28,993	28,993
R^2	0.14	0.14	0.12	0.12	0.11	0.11
Adj R^2	0.13	0.13	0.12	0.12	0.11	0.11

Table 3: Host banking crisis

This table reports the coefficients of the linear regression model using weighted least squares. Columns (1)–(3), (4)–(5), and (6)–(7) include the years 1996–2018, 1996–2007, and 2008–2018, respectively. The dependent variable is the change in real gross loans. The variable crisis controls for systematic banking crisis in the host country. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GOV_D	-0.029***	-0.029***	-0.029***	-0.024*	-0.025*	-0.028***	-0.028***
	(0.007)	(0.007)	(0.007)	(0.014)	(0.013)	(0.008)	(0.008)
FGN	0.074***	0.072***					
	(0.023)	(0.024)					
GOV_F			0.069***	0.202***	0.197***	0.000	-0.002
			(0.024)	(0.044)	(0.045)	(0.028)	(0.028)
$PRIV_F$			0.073***	0.195***	0.194***	0.004	0.003
			(0.024)	(0.043)	(0.044)	(0.027)	(0.027)
Host Crisis	-0.049***	-0.054***	-0.054***	-0.057***	-0.071***	-0.048***	-0.053***
	(0.010)	(0.011)	(0.011)	(0.018)	(0.017)	(0.010)	(0.013)
GOV_DxCrisis	-0.002			-0.017		-0.001	
	(0.015)			(0.018)		(0.018)	
FGNxCrisis		0.013					
		(0.016)					
GOV_FxCrisis			0.037		0.145***		0.022
			(0.030)		(0.054)		(0.028)
$PRIV_F$xCrisis			0.009		0.030		0.007
			(0.016)		(0.033)		(0.017)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,419	46,419	46,419	17,426	17,426	28,993	28,993
R^2	0.14	0.14	0.14	0.12	0.12	0.11	0.11
Adj R^2	0.14	0.14	0.14	0.12	0.12	0.11	0.11

Table 4: Host banking crisis and parent bank fundamentals

This table reports the coefficients of a linear regression model using weighted least squares using the sample of subsidiaries and parent banks for the years of 1996-2018. The subsample include in columns (1)-(3) domestic and foreign banks that are controlled by another bank; in column (4) only domestic owned banks; in column (5) foreign-owned banks; in column (6) foreign state controlled banks and in column (7) private foreign banks. The dependent variable is the change in real gross loans. The variable crisis controls for systematic banking crisis in the host country. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Subsidiary characteristics							
Liquidity	-0.015	-0.016	-0.016	-0.021	-0.011	0.001	0.004
	(0.039)	(0.039)	(0.039)	(0.085)	(0.043)	(0.097)	(0.044)
Loan to Deposit	-0.037	-0.038	-0.037	-0.044	-0.032	-0.043	-0.043*
	(0.023)	(0.023)	(0.023)	(0.039)	(0.025)	(0.062)	(0.024)
Profitability	-0.310	-0.344	-0.341	3.212	-0.610	-1.745	-0.231
	(0.715)	(0.713)	(0.713)	(2.380)	(0.725)	(1.331)	(0.816)
Solvency	0.260**	0.267**	0.254**	-0.024	0.266**	0.115	0.323**
	(0.107)	(0.109)	(0.109)	(0.381)	(0.123)	(0.243)	(0.134)
Size	0.852	0.816	0.803	-0.404	0.961	-4.008***	1.730***
	(0.556)	(0.558)	(0.556)	(0.729)	(0.588)	(1.240)	(0.617)
Host crisis		-0.051***	-0.265**	-0.094	-0.298**	-0.171	-0.337**
		(0.017)	(0.131)	(0.077)	(0.143)	(0.157)	(0.165)
Parent bank characteristics							
Liquidity	-0.108***	-0.106***	-0.116***	-0.177	-0.128***	-0.327**	-0.151***
	(0.037)	(0.037)	(0.036)	(0.115)	(0.039)	(0.154)	(0.045)
Profitability	-0.280	-0.273	-0.310	-0.783**	-0.344	0.134	-0.282
	(0.288)	(0.287)	(0.289)	(0.359)	(0.370)	(0.509)	(0.405)
Size	-0.000	-0.000	-0.000	0.000	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LiquidityxCrisis			0.700	0.329*	0.757	0.515	0.827
			(0.577)	(0.195)	(0.611)	(0.488)	(0.630)
ProfitabilityxCrisis			2.972*	1.095	3.607**	-0.613	5.233***
			(1.507)	(0.770)	(1.714)	(1.466)	(1.576)
SizexCrisis			-0.000	-0.000	-0.000	-0.002	-0.000
			(0.001)	(0.001)	(0.001)	(0.002)	(0.000)
Country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,413	9,413	9,413	5,487	3,926	634	3,292
R^2	0.10	0.10	0.11	0.18	0.12	0.19	0.15
Adj R^2	0.10	0.10	0.10	0.17	0.11	0.14	0.14

Table 5: Impact of home banking crisis on lending

This table reports the coefficients of the linear regression model using weighted least squares. Columns (1)–(3), (4)–(5), and (6)–(7) include the years 1996–2018, 1996–2007, and 2008–2018, respectively. The dependent variable is the change in real gross loans. The variable crisis controls for systematic banking crisis in the home country. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
GOV_D	-0.029***	-0.029***	-0.029***	-0.025*	-0.025*	-0.028***	-0.028***
	(0.007)	(0.007)	(0.007)	(0.014)	(0.014)	(0.008)	(0.008)
FGN	0.075***	0.075***					
	(0.024)	(0.024)					
GOV_F			0.074***	0.198***	0.198***	-0.002	-0.002
			(0.025)	(0.046)	(0.046)	(0.029)	(0.029)
$PRIV_F$			0.075***	0.190***	0.190***	0.001	0.001
			(0.024)	(0.045)	(0.045)	(0.027)	(0.027)
Home crisis	-0.026***	-0.024**	-0.031	-0.050***	-0.172***	-0.011	-0.011
	(0.010)	(0.011)	(0.029)	(0.017)	(0.037)	(0.013)	(0.030)
GOV_FxCrisis		-0.008		-0.122***		0.001	
		(0.029)		(0.039)		(0.032)	
$PRIV_F$xCrisis			0.007		0.122***		-0.001
			(0.031)		(0.039)		(0.032)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,329	46,329	46,329	17,409	17,409	28,920	28,920
R^2	0.14	0.14	0.14	0.12	0.12	0.11	0.11
Adj R^2	0.13	0.13	0.13	0.12	0.12	0.11	0.11

Table 6: Home banking crisis and parent bank fundamentals

This table reports the coefficients of a linear regression model using weighted least squares using the sample of subsidiaries and parent banks for the years of 1996-2018. The subsample include in columns (1)-(2) domestic and foreign banks that are controlled by another bank; in column (3) only foreign-owned banks; in column (4) foreign state controlled banks and in column (5) private foreign banks. The dependent variable is the change in real gross loans. The variable crisis controls for systematic banking crisis in the home country. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
Subsidiary characteristics					
Liquidity	-0.016	-0.016	-0.010	-0.001	0.005
	(0.039)	(0.039)	(0.043)	(0.098)	(0.044)
Loan to Deposit	-0.038	-0.038	-0.033	-0.040	-0.043*
	(0.023)	(0.023)	(0.025)	(0.062)	(0.024)
Profitability	-0.344	-0.354	-0.621	-1.797	-0.224
	(0.713)	(0.713)	(0.725)	(1.331)	(0.814)
Solvency	0.267**	0.266**	0.282**	0.111	0.341**
	(0.109)	(0.109)	(0.122)	(0.243)	(0.133)
Size	0.816	0.834	0.998*	-3.948***	1.762***
	(0.558)	(0.558)	(0.591)	(1.236)	(0.624)
Home crisis	-0.051***	-0.050***	-0.051***	-0.119*	-0.043*
	(0.017)	(0.017)	(0.017)	(0.068)	(0.024)
Parent bank characteristics					
Liquidity	-0.106***	-0.103***	-0.111***	-0.323**	-0.132***
	(0.037)	(0.037)	(0.041)	(0.152)	(0.046)
Profitability	-0.273	-0.271	-0.280	0.061	-0.194
	(0.287)	(0.290)	(0.375)	(0.498)	(0.414)
Size	-0.000	-0.000	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LiquidityxCrisis		-0.145*	-0.224***	-0.287	-0.197***
		(0.080)	(0.069)	(0.407)	(0.074)
ProfitabilityxCrisis		-0.160	-0.411	-0.304	-0.371
		(0.372)	(0.408)	(1.350)	(0.513)
SizexCrisis		-0.000	-0.000	-0.002	-0.000
		(0.000)	(0.000)	(0.001)	(0.000)
Country controls	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Observations	9,413	9,413	3,926	634	3,292
R^2	0.10	0.10	0.11	0.19	0.14
Adj R^2	0.10	0.10	0.10	0.14	0.13

Table 7: Global financial crisis

This table reports the coefficients of the linear regression model using weighted least squares. Columns (1)–(3) include the full sample of banks for the 1996–2018 period. Columns (4)–(6) lists a subsample that excludes banks that received government aid following the GFC. The dependent variable is the change in real gross loans. The variable GFC controls for global financial crisis of 2007-2008. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
GOV_D	-0.031***	-0.029***	-0.029***	-0.031***	-0.029***	-0.029***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
FGN	0.071***	0.071***		0.077***	0.077***	
	(0.024)	(0.024)		(0.025)	(0.025)	
GOV_F			0.069***			0.084***
			(0.024)			(0.025)
$PRIV_F$			0.071***			0.076***
			(0.024)			(0.025)
GF crisis	-0.062***	-0.058**	-0.058**	-0.063***	-0.057**	-0.058**
	(0.023)	(0.026)	(0.026)	(0.023)	(0.027)	(0.026)
GOV_DxGFC	0.036*			0.038*		
	(0.020)			(0.020)		
FGNxGFC		-0.002			-0.005	
		(0.015)			(0.015)	
GOV_FxGFC			-0.006			-0.023
			(0.029)			(0.032)
$PRIV_F$xGFC			-0.002			-0.002
			(0.015)			(0.015)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,419	46,419	46,419	46,026	46,026	46,026
R^2	0.14	0.14	0.14	0.13	0.13	0.13
Adj R^2	0.14	0.13	0.13	0.13	0.13	0.13

Table 8: Global financial crisis and parent bank fundamentals

This table reports the coefficients of a linear regression model using weighted least squares using the sample of subsidiaries and parent banks for the years of 1996-2018. The subsample include in columns (1)-(2) domestic and foreign banks that are controlled by another bank; in column (3) only domestic owned banks; in column (4) foreign-owned banks; in column (5) foreign state controlled banks and in column (6) private foreign banks. The dependent variable is the change in real gross loans. The variable crisis controls for global financial crisis of 2007-2008. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Subsidiary characteristics						
Liquidity	-0.015	-0.015	-0.021	-0.008	0.007	0.006
	(0.039)	(0.039)	(0.085)	(0.043)	(0.098)	(0.044)
Loan to Deposit	-0.037	-0.037	-0.044	-0.031	-0.038	-0.042*
	(0.023)	(0.023)	(0.039)	(0.025)	(0.062)	(0.024)
Profitability	-0.310	-0.307	3.210	-0.568	-1.596	-0.175
	(0.715)	(0.716)	(2.378)	(0.728)	(1.303)	(0.817)
Solvency	0.260**	0.260**	-0.025	0.277**	0.129	0.332**
	(0.107)	(0.108)	(0.381)	(0.120)	(0.243)	(0.130)
Size	0.852	0.854	-0.402	1.015*	-4.116***	1.785***
	(0.556)	(0.556)	(0.729)	(0.589)	(1.232)	(0.619)
GF crisis	-0.176***	-0.254***	-0.395***	-0.242**	-0.053	-0.263**
	(0.058)	(0.080)	(0.110)	(0.092)	(0.211)	(0.101)
Parent bank characteristics						
Liquidity	-0.108***	-0.109***	-0.177	-0.118***	-0.317**	-0.140***
	(0.037)	(0.037)	(0.116)	(0.040)	(0.154)	(0.045)
Profitability	-0.280	-0.287	-0.782**	-0.300	0.054	-0.221
	(0.288)	(0.291)	(0.357)	(0.373)	(0.477)	(0.411)
Size	-0.000	-0.000	0.000	-0.000*	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LiquidityxCrisis		0.258	0.723**	0.160	-0.687*	0.270
		(0.187)	(0.305)	(0.209)	(0.381)	(0.221)
ProfitabilityxCrisis		1.223	2.610**	0.918	-0.777	1.194
		(0.804)	(1.127)	(0.921)	(4.840)	(1.028)
SizexCrisis		0.000	-0.000	0.000*	-0.044	0.000
		(0.000)	(0.001)	(0.000)	(0.449)	(0.000)
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	9,413	9,413	5,487	3,926	634	3,292
R^2	0.10	0.10	0.18	0.11	0.18	0.14
Adj R^2	0.10	0.10	0.17	0.10	0.13	0.13

Table 9: Sovereign crisis in host and home country

This table reports the coefficients of a linear regression model using weighted least squares using the sample of domestic and foreign banks for the years of 1996-2018. The dependent variable is the change in real gross loans. Columns (1)–(3) and (4)–(6) include the crisis variable controls for sovereign crises in the host and home countries, respectively. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
GOV_D	-0.030***	-0.029***	-0.029***	-0.029***	-0.029***	-0.029***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
FGN	0.068***	0.068***		0.071***		
	(0.024)	(0.024)		(0.024)		
GOV_F			0.066***		0.070***	0.070***
			(0.024)		(0.024)	(0.024)
$PRIV_F$			0.068***		0.071***	0.071***
			(0.024)		(0.024)	(0.024)
Sov. crisis	-0.111***	-0.090***	-0.090***	-0.046***	-0.039	-0.049***
	(0.020)	(0.033)	(0.033)	(0.014)	(0.030)	(0.013)
GOV_DxCrisis	0.014					
	(0.044)					
FGNxCrisis		-0.057				
		(0.041)				
GOV_FxCrisis			0.005		-0.010	
			(0.039)		(0.030)	
$PRIV_F$xCrisis			-0.066			0.010
			(0.044)			(0.030)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,419	46,419	46,419	46,329	46,329	46,329
R^2	0.14	0.14	0.14	0.14	0.14	0.14
Adj R^2	0.14	0.14	0.14	0.14	0.14	0.14

Table 10: Currency crisis in host and home country

This table reports the coefficients of a linear regression model using weighted least squares using the sample of domestic and foreign banks for the years of 1996-2018. The dependent variable is the change in real gross loans. Columns (1)–(3) and (4)–(6) include the crisis variable controls for currency crises in the host and home countries, respectively. The independent variables are presented in Table A1. All specifications include constant and year fixed effects as well as bank-level and country control variables (as illustrated in Table 2), which are not presented here for brevity. Robust standard errors controlling for clustering at the country level are in parentheses. ***, **, * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
GOV_D	-0.029***	-0.028***	-0.028***	-0.029***	-0.029***	-0.029***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
FGN	0.065***	0.065***		0.071***		
	(0.023)	(0.023)		(0.024)		
GOV_F			0.063***		0.070***	0.070***
			(0.023)		(0.024)	(0.024)
$PRIV_F$			0.065***		0.072***	0.072***
			(0.024)		(0.024)	(0.024)
Currency crisis	-0.158***	-0.155***	-0.155***	-0.036	-0.037	-0.029
	(0.021)	(0.018)	(0.018)	(0.024)	(0.030)	(0.044)
GOV_DxCrisis	0.015					
	(0.030)					
FGNxCrisis		-0.003				
		(0.029)				
GOV_FxCrisis			0.024		0.008	
			(0.042)		(0.057)	
$PRIV_F$xCrisis			-0.010			-0.008
			(0.030)			(0.057)
Bank controls	Yes	Yes	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	46,419	46,419	46,419	46,329	46,329	46,329
R^2	0.14	0.14	0.14	0.14	0.14	0.14
Adj R^2	0.14	0.14	0.14	0.14	0.14	0.14

Table A1: Variables and their definitions

Variable	Description
Bank level variables	
Loan growth	Real growth rate of gross loans in domestic currency
Liquidity	Liquid assets over total assets
Loan to Deposits	Ratio of total loans to total deposits
Profitability	Ratio of gross profit to total assets
Solvency	Ratio of equity capital to total assets
Size	Ratio of bank's total assets to countries GDP
GOV_D	Binary variable identifying domestic banks directly or indirectly controlled by the government in a given year
FGN	Binary variable identifying banks owned by foreign investors in a given year
GOV_F	Binary variable identifying foreign banks directly or indirectly controlled by the host government in a given year
$PRIV_F$	Binary variable identifying foreign banks directly or indirectly controlled by private investors in a given year
Parent bank level variables	
Liquidity	Liquid assets over total assets
Profitability	Ratio of gross profit to total assets
Size	Ratio of bank's total assets to countries GDP
Country control variables	
Host crisis	Binary variable equal to 1 for the years of systemic banking crisis in a host country, and 0 otherwise.
Home crisis	Binary variable equal to 1 for the years of systemic banking crisis in a home country, and 0 otherwise.
GF crisis	Binary variable equal to 1 for the years 2008-2009 and zero otherwise
Sov. crisis	Binary variable equal to 1 for the years of sovereign crisis in a host or home country and 0 otherwise.
Cur. crisis	Binary variable equal to 1 for the years of currency crisis in a host or home country and 0 otherwise.
Distance	Logarithm of distance between most populated city of each country (km)
Language	Dummy variable equal to 1 if countries share a common language spoken by at least 9% of the population, and 0 otherwise
Common law	Binary variable identifying countries that share common legal origins
Growth	Real rate of growth of GDP
CPI	Consumer price inflation