FOREIGN BANKS' ACTIVITY AND FUNDING STRATEGIES AND RISK-TAKING: EVIDENCE FROM EMERGING COUNTRIES

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Abstract

Looking at a sample of 863 commercial banks in 28 transition and emerging countries for the 1998-2008 period, we find that foreign banks are different than domestic banks in terms of both activity mix and funding strategy. Specifically, we find that foreign banks rely more on non-interest income activities and non-deposit funding. Also, foreign banks have smaller maturity mismatch between assets and liabilities than domestic banks. This difference in terms of business model leads also to different levels of risk between foreign banks and domestic banks. Indeed, we find that foreign banks engage in more risky activities than domestic banks; however foreign banks have better loan portfolio quality than domestic banks.

Keywords: foreign banks, business model, bank risk, emerging economics

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1 Introduction

Over the past two decades, important changes have occurred in the banking sectors of transition and emerging countries. These changes are the outcome of several factors such as the implementation of financial liberalization policies that removed barriers to entry across geographic areas and markets sectors in Latin America and Central Asia and the dissolution of the Soviet Union for Central and Eastern European countries. A major consequence of these financial sector reforms is the sharp increase of foreign bank entry in these countries. Thus, in terms of numbers, the share of foreign banks in Eastern European and Central Asian banking systems has increased from 15 % in 1995 to 47 % in 2009. Similarly, this share increased from 25 % to 39 % in Latin America and the Caribbeans. In 2009, in terms of assets, the share of foreign total assets in the total assets of the banking system was 28% in Eastern Europe and Central Asia and 31% in Latin America and Caribbean countries (Claessens and Van Horen (2012)). In some Central and Eastern European countries, the average market share of foreign-owned banks in terms of assets often exceeds 80%. For example, in 2009, the market share of foreign banks in the Czech Republic, Estonia and Slovakia were 86%, 99% and 88%, respectively.[1]

The significant presence of foreign banks in the banking industry raises a number of important issues among economists. Indeed, several studies have addressed the benefits and disadvantages of foreign bank entry for the host economy in terms of resource allocation, efficiency and financial sector development. Particularly, several studies question the reasons for entry of foreign banks in developing and emerging countries (see Wezel (2004) and Focarelli and Pozzolo (2005)). Some authors compare the profitability of domestic banks and foreign banks or analyze the determinants of foreign bank profits (Martínez Pería and Mody (2004), Demirguc-Kunt et al. (2001)).

Turning to the difference in business model between foreign banks and their domestic peers in emerging countries, existing studies examine the question of whether foreign banks are different from domestic banks in the type of firms they finance and why. Theoretical and empirical studies argue that because of their informational and agency costs due to cultural and geographical differences, foreign banks lend mainly to large domestic firms, or the

[1] See Claessens and van Horen (2012) for a comprehensive database on bank ownership trend for 137 countries around the world.

government rather than lending to soft information-based relational firms such as small firms or firms not backed by large business group (Mian (2006), Detragiache et al. (2008)). In this paper we focus on possible differences in the type of activity and the funding strategies between foreign and domestic banks.

Also, some studies analyze the impact of foreign banks' presence on financial stability, mainly during times of financial stress and find mixed results. Indeed, some studies find a positive impact of foreign banks presence on host country bank system stability when parent banks relieve their foreign subsidiaries during times of financial stress through internal capital markets (Detragiache and Gupta (2006), De Haas and Van Lelyveld (2010), Barba-Navaretti et al. (2010)). Other studies find that foreign banks presence weakens host countries' bank system stability as a distress of parent banks can be transmitted to their foreign subsidiaries with negative consequences for their lending (Acharya and Schnabl (2010)).

Our paper investigates the possible differences of banks' activity mix and funding strategies between foreign and domestic banks and its implications on risk-taking behavior. Specifically, using bank-level and country-level data from 1998 to 2008 for 28 transition and emerging countries, we start by addressing the question of how the share of non-interest income in total operating income, the share of short-term deposit (funding) and the share of non-deposit funding vary with bank ownership. We further examine the impact of different bank's activity mix and funding strategy on bank risk-taking behavior, especially on default risk.

We draw three conclusions from our findings. First, there is a difference in activity mix and funding strategy between foreign banks and domestic banks in emerging countries. Foreign banks rely more on non-interest income in their operating income. Second, on the liability side, foreign banks attract more long term funding than domestic banks, and they rely more on non-deposits funding. Third, due to their activity mix and funding strategy, foreign banks exhibit a higher insolvency risk than that of domestic banks, even if foreign banks have better loan portfolio quality as measured by the ratio of non-performing loans to net total loans.

The remainder of this paper is organized as follows. Section 2 reviews the literature and explains how this work extends the existing literature. Section 3 presents our sample,

variables and summary statistics. Regression analyses and results are presented in section 4. Section 5 concludes.

2. Review of Literature

2.1 Do foreign and domestic banks differ in host countries?

Existing studies that analyze the effect of the entry of foreign banks compare the lending portfolios of foreign and domestic banks. Overall, these studies show that foreign banks "cherry pick" borrowers in poor countries, by lending predominantly to multinational corporations, larges domestics firms or the government (Detragiache et al. (2008)). Using a sample of Argentinean banks, Berger et al. (2001) find that large banks and foreign banks were reluctant to lend to small opaque firms. Clarke et al. (2006), meanwhile, investigate whether higher foreign bank participation improves the accessibility of external financing for firms by combining responses from a survey of firms operating in 35 developing and transition economies. They find that all enterprises, including small and medium-sized ones, report facing lower financing obstacles in countries having higher levels of foreign banks presence. Further, Mian (2006) shows that due to greater cultural and geographical distance between a foreign bank's headquarters and local branches, foreign banks further avoid lending to "informationally difficult" firms, using a loan-level dataset for Pakistan. Also, Claessens and van Horen (2012) using a database on bank ownership for 137 countries over the 1995-2009 period, find a negative relationship between private credit and foreign banks presence, but only in countries with relatively distant foreign banks. Using bank-level data for Argentina, Chile, Colombia, and Peru during the mid-1990s, Clarke et al. (2005) find that foreign banks lend a smaller fraction of their funds to SMEs than similar domestic banks. However, comparing large domestic banks' and large foreign banks' lending behavior, they find that large foreign banks appeared to lend more to SMEs than large domestic banks in Chile and Colombia. Detragiache et al. (2008) investigate the impact of foreign bank entry on private credit levels using a sample of 89 low income and lower middle income countries. They find that credit to the private sector is lower in countries marked with higher foreign banks penetration.

Some of these studies that analyze the differences between foreign banks and domestic banks compare the performance of foreign banks and domestic banks. Berger et al. (2005)

find that foreign banks exhibit lower cost of financial intermediation and lower profitability, contrary to Micco et al. (2004) who find that foreign-owned banks tend to have higher profitability and lower costs, particularly in developing countries. Moreover, their results do not indicate a significant correlation between bank ownership and performance in industrialized countries. Also, Claessens et al. (2001) investigate how net interest margins, overhead, taxes paid, and profitability differ between foreign and domestic banks. They find that foreign banks have higher profits than domestic banks in developing countries, but the opposite is the case for developed countries.

Turning to the strand of studies that deal with the impact of foreign bank entry on financial stability in the host country, Demirgüç-Kunt et al. (1998), using a broad cross-section of countries find that foreign banks penetration is associated with lower financial fragility. Acharya and Schnabl (2010) find that a distress of parent banks can be transmitted to their foreign subsidiaries with negative consequences for their lending which can result in more banking distress. On the other hand, Detragiache and Gupta (2006), De Haas and Van Lelyveld (2010) and Barba-Navaretti et al. (2010) find a positive impact of foreign banks presence on host country bank system stability when parent banks relieve their foreign subsidiaries during times of financial stress through internal capital markets. Barth et al. (2004), analyzing bank regulation and supervision in 107 countries, find that the degree of foreign ownership could not explain the likelihood of banking crisis but barriers to foreign-bank entry are positively associated with bank fragility. Haber and Musacchio (2005) analyze Mexico's experience and find that with foreign banks entry, bank capitalization improved both loan portfolio quality and operational efficiency in terms of a lower nonperforming loans (NPLs) ratio and a decrease in operational expenses. Their results suggest that the banking system has become more stable and profitable as a result of foreign bank entry. However they find that lending to the private sector declined. Levy-Yeyati and Micco (2007) find that foreign banks are associated with higher risks, measured by the *Z-SCORE*, than domestic banks in a sample of Latin American banks.

2.2 Activity and funding strategy and risk

Several studies investigate the impact of combining traditional banking with other financial activities on bank risk-taking. Acharya et al. (2002), using data from Italian banks analyze the tradeoffs between (loan portfolio) focus and diversification. They find that diversification of bank assets is not guaranteed to produce higher performance and/or safer banks.

In the case of U.S. banks, Stiroh (2004) finds that greater reliance on noninterest income, particularly trading revenue, is associated with higher risk and lower risk-adjusted profits. Lepetit et al. (2008) find that a heavier engagement in commission and fee activities implies higher risk for western European banks.

Meanwhile, Baele et al. (2007) examine how a bank's share of non-interest income affects bank risk for a sample of European banks over the 1989-2004 period. They find that bank's non-interest income share is associated with higher systematic risk; measured by the market beta. Idiosyncratic risk, in turn, is found to be associated to the non-interest income share in a non-linear way, with most banks beyond the point where idiosyncratic risk is minimized.

Demirgüç-Kunt and Huizinga (2010) examine the implications of bank activity and short-term funding strategies for bank risk and returns. They find that banks with a high non-interest income share are riskier. On the liability side, they find that banks with a large share of non-deposit wholesale funding in total short-term funding are also riskier.

This paper connects the literature on both business model and its implication on risk-taking, and on foreign bank participation and banking stability by extending earlier works.

First, contrary to most previous research on foreign bank participation and banking stability which investigate whether foreign banks amplify or attenuate the banking problems in host countries, in this paper we examine the intrinsic foreign banks' risk regardless of the economic and banking situation. The closest study to ours as regards the relationship between foreign bank penetration and banking stability is Levy-Yeyati and Micco (2007) which find that foreign banks are associated with higher risks, measured by the *Z-SCORE*, than domestic banks in a sample of Latin American banks. However, there are at least two differences between this study and ours. Contrary to Levy-Yeyati and Micco (2007), we consider a

broader data set including transition economies, Latin American countries, Asian countries and African countries, whereas Levy-Yeyati and Micco (2007) consider only Latin American

countries. Besides, contrary to us, they analyze an indirect relationship between foreign banks' penetration and banks stability through the impact of competition on risk-taking.

Second, most of existing studies analyzing the foreign banks' business model examine the question of whether foreign banks are different from domestic banks in the type of firms they finance, specifically difference in their loan portfolios. Besides, the other studies that analyze banking business strategies focus predominantly on banking company size or on categories of banks (commercial banks, cooperative banks, investment banks, etc.). In this paper we focus on possible differences in the type of activity and the funding strategies between foreign and domestic banks.

Third, our paper is also related to Demirgüç-Kunt and Huizinga (2010) regarding the impact of business model on risk-taking. Our paper goes beyond Demirgüç-Kunt and Huizinga (2010) as in their analysis they do not take into account the connection between foreign banks and business model and the impact of foreign ownership on risk-taking.

3 Data, variables and summary statistics

To investigate how bank ownership affects bank's activity and funding mix and further how bank's activity and funding mix impacts bank risk-taking, we combine bank-level-data with information on the ownership type, along with other macro-level variables and institutional variables that might affect either banks' business strategies or bank risk-taking behavior. These variables are compiled from various sources. Before presenting our set of variables and the method, we provide information about our sample of banks and the collected data.

3.1 Sample

Our sample consists of 863 commercial banks established in 28 countries in Central and Eastern Europe, Latin America, Asia and Africa defined by World Bank as emerging countries.[2] Only commercial banks are selected in the dataset to reduce the possible bias resulting from the different business models among different categories of banks. Income statement and balance sheet information on individual banks are obtained from Bankscope Fitch IBCA. The sample period is from 1998 to 2008. Coverage by Bankscope database is comprehensive in most countries, accounting for over 90% of all the banking assets in each country. In this study the sample is chosen based on the requirement that data are available to compute our risk measures defined below. We keep only banks with at least 3 consecutive years of time series observations for the return on assets (ROA) series, which allows us to compute standard deviations using at least 3-year consecutive observations.

3.2 Presentation of variables

We present our dependent variables reflecting bank ownership, the bank's activity mix and funding strategy, bank risk and the different independent variables introduced in our estimations.

3.2.1 Identifying bank ownership

A bank is classified as a foreign bank if at least 50% of its capital is owned by non local residents. As Bankscope does not provide ownership history, but only for the most recent year, we use several sources in coding bank ownership. In addition to Bankscope, we also look into individual banks' websites to review their historical evolution or into their annual reports. We also explore Central Banks' websites and publications such as Bloomberg BusinessWeek, Asiamoney, Euromoney, the Banker, Funding Universe, ECBS (European

[2] We do not consider all the countries defined by the World Bank as emerging countries due to the unavailability of information on the banks' ownership in these countries. These countries and the number of banks per country are: Brazil=126; Bulgaria=23; China=84; Colombia=29; Czech Rep.=25; Egypt=30; Estonia=6; Hong Kong=41; Hungary=30; India=65; Indonesia=59; Korea Rep. =14; Latvia=23; Lithuania=8; Malaysia=36; Mexico=22; Morocco=8; Peru=19; Philippines=26; Poland=48; Romania=22; Saudi Arabia=10; Singapore=12; Slovakia=17; Slovenia=19; South Africa=27; Thailand=19; Turkey=15.

Banking Guides and Resources) etc. This allows us to identify a banks' ownership structure year-by-year for the 1998-2008 period. Finally, in this paper, we define our foreign ownership variable, *FOREIGN*, as a dummy variable equals to 1 if, during the considered year, the bank is foreign-owned that is if at least 50% of its capital is owned by non local residents, and 0 otherwise. Table 1 reports the number of domestic and foreign banks per country for a few years in our dataset as a guide.

< Insert Table 1>

3.2.2 Measuring activity mix and funding strategy

To test whether foreign banks and domestic banks differ in their business model, we need to identify the proxies that measure a bank's business model. Regarding activity mix we consider the share of non-interest income in total operating income (*NONII*). This variable is usually used to proxy the overall relative importance of a bank's non-interest generating activities (see Demirgüç-Kunt and Huizinga (2010)). A higher value of the share of non-interest income in total operating income indicates stronger expansion towards nontraditional intermediation activities.

Banks use several sources of funding among deposits or other short-term or long-term instruments. In this paper we consider two proxies to identify a bank's funding strategy. First, we use the share of non-deposit funding (*NONDEPOS*) defined as the share of total funding excluding derivatives minus customer deposits to total funding. As mentioned in Demirgüç-Kunt and Huizinga (2010), deposits tend to be instantly demandable, while non-deposits are considered term financing, even if the term may be very short as in the case of overnight inter-bank lending. Second, we look at the strategy of a bank based on the maturity of its debt and thus on more or less reliance on short-term funding. We define short-term funding as bank's customer and short term funding as a share of total interest-bearing debt (*SHORTDEBT*).

3.2.3 Measuring risk-taking

We take as a measure of individual bank insolvency risk the *Z-SCORE* defined as the return on asset plus the capital to total assets ratio divided by the standard deviation of assets return. Specifically, $ZSCORE = (ROA + EQTA) / SDROA$.

As previously mentioned, we collect data ranging from 1998 to 2008. The *ROA*, the return on assets defined as the ratio of net income to average total assets and *EQTA*, the ratio of equity to total assets are calculated as follows:

- If a bank maintains its ownership over the entire study period the ROA and the capital-asset ratio are calculated as the mean over 1998-2008, and *SDROA* which is the standard deviation of *ROA* estimated over the time period 1998-2008.

- If there is a change in the ownership of a bank over the period 1998-2008 the *ROA* and capital-asset ratio are calculated as the means over the period over which the bank is foreign-owned and domestic-owned respectively, and *SDROA* is estimated as the standard deviation of *ROA* over the period over which the bank is foreign-owned and domestic-owned respectively.

In all cases, a *Z-SCORE* is calculated only if we have accounting information for at least three years. Also, whenever we use the *Z-SCORE* as the dependent variable, the independent variables are calculated as averages over different periods depending on the evolution of the bank ownership as described above. All the ratios are in percentages. The *Z-SCORE* has been widely used in the literature as a measure of bank default risk (see Roy (1952), Hannan and Hanweck (1988), Demirgüç-Kunt and Huizinga (2010) and Distinguin et al. (2012)). A lower *Z-SCORE* value indicates a higher probability of bank failure.

We also use another method to calculate the *Z-SCORE*. Indeed, instead of using the ROA and capital-asset ratio calculated as the mean over 1998-2008 or over the sub-period corresponding to one ownership type, we use the ROA and capital-asset ratio in 2008, in the case where the bank maintains its ownership over the whole period, and the standard deviation of *ROA* is estimated over the time period 1998-2008. We denote this variable, *ZSCORET* , which is defined as $ZSCORET = (ROA_t + EQTA_t) / SDROA$.

3.2.4 Control variables

In our empirical analysis, we include a set of control variables known to explain the business model choice and the riskiness of individual banks. These variables capture individual bank characteristics and reflect macroeconomic factors and the institutional environment at the country level.

Bank characteristics

We consider several control variables at the bank level. First, we include the natural logarithm of total assets (*LTA*) as a proxy of bank size. Second, we control for bank capitalization defined as the ratio of equity to total assets (*EQTA*). Third, the ratio of personnel and other non-interest expenses to total assets *(OVERHEAD*) is included to control for the bank's cost structure. We expect lower costs of financial intermediation to be associated with greater foreign bank presence (see for example Berger et al. (2005)). Fourth, we control for banks' total assets growth rate, assuming that fast-growing banks have different income and funding strategies as well as risk-taking.

Country characteristics

We also consider country-level variables that might affect bank risk as well as income and funding strategies. We take into account the annual growth rate of the real Gross Domestic Product (*GDPG*) to control for business cycle fluctuations and the overall economic conditions. We also include GDP per capita (*GDPCAP*) to capture the degree of economic development of the country. We also control for inflation (*INFLATION*). Indeed, inflation may impact a bank's decision to move towards nontraditional intermediation activities and can affect bank risk-taking. Macroeconomic control variables are retrieved from the World Development Indicator (WDI) database provided by the World Bank.

Furthermore, we include a series of political and other institutional variables in some of our empirical specifications. These variables are:

- Voice and Accountability (*VOICE*) reflects perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

- Political Stability and Absence of Violence/Terrorism (*STABILITY*) reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

- Government Effectiveness (*GOVEFFECT*) reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

- Regulatory Quality (*REGQUAL*) reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

- Rule of Law (*RULEOFLAW*) reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

- Control of Corruption (*CORRUP*) reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

These indices of governance ranges from -2.5 (weak) to 2.5 (strong) governance performance and are retrieved from the World Governance Indicators of Kaufmann et al. (2010).

3.3 Data Summary and Univariate Results

We present the summary statistics for the dependent and independent variables in Table 2. On average, banks derive 32.45 % of their income from noninterest fees. However, this average is 34.89% for foreign banks against 30.73% for domestic banks. On average, banks fund themselves at 24.92% with non-deposit funding. This ratio is 21.60 % for domestic banks and 30.43 % for foreign banks. With regards to the maturity of debt, we can

see that, on average, banks attract 92.99% of their funds from short-term funding. This ratio is 93.19 % for domestic banks and 92.52 % for foreign banks. The mean *Z-SCORE* is 21.66 for all banks, 23.25 for the domestic banks and 19.14 for the foreign banks. The ratio of overhead expenses to assets has a sample mean of 3.99%. This ratio for the domestic banks and foreign banks is 4.10% and 3.85%, respectively.

< Insert Table 2>

Table 3 displays the correlation coefficients for the independent variables. As can be seen from this table, the institutional and political indices are highly correlated with each other; therefore, we include the indices individually in the different specifications.

< Insert Table 3>

Table 2 shows that foreign and domestic banks have roughly different business models as measured by the share of non-interest income in total operating income, the share of non-deposit funding and the share of short-term funding. It shows also that foreign and domestic banks exhibit different level of risk as measured by the bank insolvency risk (*Z-SCORE*).

This descriptive analysis, however, has a limitation because it does not tell us whether these differences between foreign and domestic banks are statistically significant. To address this limitation, we test for mean differences and report *t*-test for some variables in Table 4.

As shown in Table 4, foreign banks rely significantly more on nontraditional intermediation activities compared to domestic banks. A look at the maturity structure shows that foreign banks depend significantly less on short-term debt than domestic banks. On the other hand, foreign banks are relying more significantly on non-funding deposits when compared with domestic banks. Finally, foreign banks exhibit significantly higher level of risk as measured by the bank insolvency risk than domestic banks.

< Insert Table 4>

The statistical framework is consistent with the descriptive statistics presented in Table 2, however, there are no serious econometric investigations to confirm that foreign and domestic banks differ in term of activity mix or funding strategy or in terms of risk-taking behavior. The next section deals with the multivariate analysis.

4. Regression Analysis

4.1 Bank ownership and activity and funding strategy

4.1.1 Basic empirical estimation

The theoretical literature provides two explanations as to why foreign banks may be different from domestic banks in their business model. The first explanation is based on distance constraints: greater physical distance between a principal (the controlling shareholder of a foreign bank) and his agent (the loan officer) leads to higher informational and agency costs for foreign banks which can influence the lending behavior of foreign banks, and more generally their business model (Berger et al (2005), Mian (2006)). The second explanation argues that the differences between foreign and domestic banks are due to the fact that the former have higher standards and more prudent preferences when evaluating risk, rather than additional cost due to distance.[3] Based on these theories, this section tests whether foreign banks and domestic banks have a different business model. We address this question by estimating the following panel regression:

$$BUSMODEL_{i,j,t} = \alpha_0 + \alpha_1 FOREIGN_{i,j,t} + \beta'_1 X_{i,j,t} + \beta'_2 Z_{j,t} + \eta_j + \tau_t + \varepsilon_{i,j,t}, \qquad (1)$$

where $BUSMODEL_{i,j,t}$ is either the share of non-interest income in total operating income (*NONII*), the share of non-deposit funding in total funding (*NONDEPOS*), or the share of short-term funding (*SHORTDEBT*) in interest-bearing debt, indicating the activity or funding strategy of bank *i* in country *j* in year *t*, $FOREIGN_{i,j,t}$ is a dummy variable equal to one if

[3] See, e.g., Demsetz, et al. (1996) and Mian (2006) for more details on these theories.

bank *i* in country *j* in year *t* is foreign-owned, *Xijt* is a vector of bank-level control variables. $Z_{j,t}$ is a vector of factors at the country level such as macroeconomic and institutional environment factors that are expected to affect business model at time t. α_k and β_h' are vectors of parameters to be estimated, η_j is the country fixed effects, τ_t time fixed effects, and ε_{ijt} is the error term. The set of bank-level control variables includes bank size, bank capitalization, bank's cost efficiency, expressed as the ratio of overhead expenses to assets, and the growth rate of real bank assets. The set of country-level control variables includes GDP per capita, GDP growth rate, and the inflation of the economy. The detailed definitions of these variables can be found in Section 2 and Appendix A.

In the regressions, the standard errors are clustered at the bank level since repeated observations on a given bank's business model proxy are not necessarily independent. The results of the regressions are presented in Table 5.

< Insert Table 5>

As can be seen from Table 5, for each of the specification, the coefficients of the foreign bank dummy variable, *FOREIGN*, are statistically significant. When non-interest income share is the dependent variable, we see that foreign banks rely more on fee income than domestic banks. Indeed, for foreign banks, the non-interest income share is increased by 1.112 compared to domestic banks. The coefficient of bank capitalization is negative and statistically significant, suggesting that better capitalized banks have lower fee income share. The coefficient of the bank size proxy is positive and statistically significant, suggesting that large banks have higher fee income share. The coefficient of bank's annual asset growth rate is negative and statistically significant suggesting that fast-growing banks have lower shares of fee income. The coefficient of overhead costs variable is positive and statistically significant, suggesting that fee-generating activities are relatively costly. As might be expected, we see that the GDP per capita variable is positively and significantly related to the share of non-interest income, suggesting that in countries with relative higher economic development, banks have higher fee income share.

When the share of short-term funding is the dependent variable, we see that foreign banks rely less on short-term funding than domestic banks. Indeed, the share of short-term funding is reduced by 0.66 for foreign banks compared to domestic banks.

This result might imply that foreign banks have smaller maturity mismatch between assets and liabilities than domestic banks and thus, are less vulnerable to liquidity risk. The coefficient of bank capitalization is negative and statistically significant, suggesting that better capitalized banks have lower short-term funding. The coefficient of the bank size proxy is negative and statistically significant, suggesting that large banks have lower short-term funding. The coefficient of the GDP per capita variable is negative and statistically significant, suggesting that in countries with relative higher economic development, banks have lower short-term funding share.

Looking at the specification with the non-deposit funding share as the dependent variable, we see that foreign banks rely more on non-deposit funding than domestic banks. Indeed, compared to domestic banks, the non-deposit funding share is increased by 4.28 for foreign banks. Furthermore, banks with better capitalization have higher non-deposit funding shares. We find that larger banks tend to rely less on non-deposit funding share. The coefficient of overhead costs variable is negative and statistically significant, suggesting that non-deposit funding are relatively cheaper. Examining the coefficients of country-level control variables, we find that inflation is negatively related to non-deposit funding share, and we find that banks rely more on non-funding deposit in more developed countries, as measured by the GDP per capita.

We test the robustness of these results by including individually a series of macro institutional indexes in addition to the macroeconomic variables. The results related to these specifications are presented in Appendix B. In all specifications, the results are highly consistent with the previous findings as regard to the foreign bank dummy variable, bank-level and country-level control variables.

To summarize, the regressions indicate that the ownership matters in bank's funding and activity strategies. Foreign banks rely more on non-interest income activities and non-deposit funding. Also, foreign banks have smaller maturity mismatch between assets and liabilities than domestic banks. Next, we consider some robustness checks of these results.

4.1.2 Robustness Checks

To check the robustness of our results, we conduct several sensitivity analyses.

First, we re-estimate the regressions using bank-level cross-sectional regressions. We calculate mean values for all bank-level and country-level variables over the sample period. As explained above, if there is a change in the ownership of a bank over the period 1998-2008, we calculate the mean value on each sub-period when the bank have different ownership profile. We report the estimates from the cross-sectional regression in Appendix C. Consistent with the previous finding, the results show that foreign banks rely more on non-interest income activities and non-deposit funding. Also, foreign banks have smaller maturity mismatch between assets and liabilities than domestic banks.

Second, in the bank-level cross country regressions more weight is given to country with more banks. To address this concern, we delete Brazil in our regression since it has the highest number of banks in our panel. Excluding this country from our tests does not reverse our conclusions; however we find only difference in terms of the funding strategy between foreign banks and domestic banks. Appendix D reports regression results without Brazil.

Third, the bank-level cross-country analysis can have some limitations. Indeed, even if we control for country difference with the inclusion of macroeconomics variables and country fixed effects, the differences may not have been fully controlled. To address this concern we examine a within country analysis to test the robustness of our results. We choose Brazil for this within-country analysis since Brazil has the highest number of banks in our panel. We report the estimates from within-country regression in Appendix E. Foreign banks and domestic banks do exhibit differences in activity and funding strategies; however we do not find a significant difference in their maturity mismatch between assets and liabilities.

Overall, the results support a difference in activity mix and funding strategy between foreign banks and domestic banks. Next, we investigate the impact of bank ownership on risk-taking.

4.2 Bank ownership and risk-taking

4.2.1 Direct evidence

In the literature of foreign banking, it is frequently admitted that foreign banks can achieve better economies of scale and risk diversification than domestic banks and have advantage in evaluating risk. However foreign banks have some limitations due to distance constraints.

Moreover, our findings above support a difference in activity mix and funding strategy between foreign banks and domestic banks. Based on the arguments above, we empirically examine the relationship between bank ownership and risk-taking. We examine this relationship by estimating the following cross sectional regression:

$$RISK_{i,j} = \alpha_0 + \alpha_1 FOREIGN_{i,j} + \beta'_1 X_{i,j} + \beta'_2 Z_j + \varepsilon_{i,j} \qquad (2)$$

where $RISK_{i,j}$ is the risk-taking proxy (say, *Z-SCORE* or *Z-SCORET*) of bank *i* in country *j* , $FOREIGN_{i,j}$ is an indicator variable equal to one if bank *i* in country *j* is foreign-owned, *Xij* is a vector of bank-level control variables, Z_j is a vector of factors at the country level such as macroeconomic variables that are expected to affect bank risk-taking. α_k and β'_h are vectors of parameters to be estimated, and $\varepsilon_{i,j}$ is the errors term.

The model is estimated with ordinary least squared (OLS) using the heteroskedasticity-robust standard errors clustered at the country level to compute t-values. Table 6 displays the estimation results.

< Insert Table 6>

As can be seen from Table 6, the coefficients of the foreign dummy variable are negative and statistically significant, suggesting that foreign banks exhibit a higher default risk than domestic banks. Indeed, the *Z-SCORE* is reduced by 4.40 for foreign banks compared to domestic banks. The coefficients of bank capitalization are positive and statistically significant, suggesting that better capitalized banks are safer. The coefficients on the bank size proxy variable are negative and statistically significant, suggesting that large banks have a higher insolvency risk, probably because the latter have incentives to take higher

risk because of the presence of a too-big-to-fail (TBTF) phenomenon. The coefficients of the overhead costs variable are negative and statistically significant, suggesting that less efficient banks are more risky. We find that inflation is negatively related to bank insolvency risk. The coefficients on GDP per capita variable are positively and statistically significant, suggesting that in countries with relative higher economic development, banks have lower probability of default. Similarly, in times of economic growth, banks are more solvent, as the coefficients on GDP growth are positive and statistically significant.

To summarize, the regressions indicate that bank ownership directly impacts bank solvency, specifically foreign banks have higher default risk than domestic banks. Next, we examine whether bank ownership indirectly affects its risk-taking behavior.

4.2.2 Indirect evidence

Since we find that foreign banks differ from domestic banks in their activity mix and funding strategy, we investigate whether the activity mix and funding strategies affect default risk as measured by the *Z-SCORE*. Specifically, as in Demirgüç-Kunt and Huizinga (2010), we regress the risk proxy on the different proxies of bank activity and funding strategies. Thus, we run the following cross sectional regressions:

$$RISK_{i,j} = \alpha_0 + \alpha_1 BUSMODEL_{i,j} + \beta'_1 X_{i,j} + \beta'_2 Z_j + \varepsilon_{i,j} \quad (3)$$

where $RISK_{i,j}$ is the risk-taking proxy (say, *Z-SCORE* or *Z-SCORET*) of bank *i* in country *j* , $BUSMODEL_{i,j}$ is either the share of non-interest income in total operating income (*NONII*), the share of non-deposit funding in total funding (*NONDEPOS*), or the share of short-term funding in interest-bearing debt (*SHORTDEBT*), indicating the activity or funding strategy of bank *i* in country *j*, *Xij* is a vector of bank-level control variables, Z_j is a vector of factors at the country level such as macroeconomic variables that are expected to affect bank risk-taking. α_k and β'_h are vectors of parameters to be estimated, and $\varepsilon_{i,j}$ is the errors term.

The model is estimated with ordinary least squared (OLS) using the heteroskedasticity-robust standard errors clustered at the country level to compute t-values. As we consider banks' business model proxies to be endogenous in section 4.1, we regress this model using also a two stage procedure. Thus, the first-stage estimation consists in the regression in section

4.1(Eq.1) where we regress banks' business model variables (the ratio of non-interest income to total operating income, the share of non-deposit short-term funding and the share non-deposit funding) on various control variables. We calculate the predicted values of the different business model proxies from these regressions, and replace each observed business model proxies by its predicted value in Eq. 3.3 to complete the two-stage procedure.

The empirical results of both specifications are reported in Table 7.

< Insert Table 7>

The results of both specifications are very similar. We see from Table 7 that the coefficient on non-interest income share is negative and statistically significant, indicating that higher non-interest income share translates into lower *Z-SCORE*. Indeed, considering the specifications where we use the observed business model proxies as independent variables, a one standard deviation increase of non-interest income share decreases the *Z-SCORE* by 2.63.

This result suggests that higher non-interest income share reduces bank solvency. Also, the coefficient on non-deposit funding share is negative and statistically significant, indicating that higher non-deposit funding share translates into lower *Z-SCORE*. Indeed, increasing the non-deposit funding share by one standard deviation will result in a 1.64 decrease in the *Z-SCORE*. This result suggests that higher non-deposit funding share reduces bank solvency. These results confirm the findings in Demirgüç-Kunt and Huizinga (2010). By contrast the coefficient on short-term funding share is positive and statistically significant, indicating that higher short-term funding share translates into higher *Z-SCORE*. Indeed, a one standard deviation increase of short-term funding share is associated with an increase in the *Z-SCORE* of 3.10.

Examining the coefficients on control variables, we find the same results as in direct evidence, except for the bank size proxy which is no longer significant. More precisely, the results on Table 7 indicate that banks with higher overhead costs have a higher default risk. We find that inflation is negatively related to bank insolvency risk. The coefficients on the GDP per capita variable are positively and statistically significant, suggesting that in countries with relatively higher economic development, banks' default risk is lower. Similarly, when the economy is growing, banks exhibit lower default risk, as the coefficients on GDP growth are positive and statistically significant.

These results provide evidence that higher non-interest income share and non-deposit funding share translate into lower bank stability. By contrast, the results indicate that higher short-term funding share is associated with higher bank stability.

We interpret these findings as indirect evidence that foreign banks are more risky than domestic banks through their business model, as we show above that foreign banks rely more on non-interest income and non-deposit funding. These results are consistent with those found in the direct investigation of the relationship between foreign bank and insolvency risk.

4.3 Bank ownership and loan quality

Are foreign banks' loans of better quality? Indeed, because of their higher cost of acquiring information about local firms, foreign banks focus primary on the most profitable local firms when lending (Dell'Arricia and Marquez (2004), Detragiache et al. (2008)). Thus, foreign banks are assumed to practice cream-skimming lending that leads them to have a better quality loan portfolio than domestic banks. We test this prediction on our sample by regressing banks' portfolio quality measured by the ratio of non-performing loans to net total loans on the foreign dummy variable, *FOREIGN*, and other control variables.

Thus we run the following panel regression:

$$NPL_{i,j,t} = \alpha_0 + \alpha_1 FOREIGN_{i,j,t} + \beta'_1 X_{i,j,t} + \beta'_2 Z_{j,t} + \eta_j + \tau_t + \varepsilon_{i,j,t} \qquad (3.4)$$

where $NPL_{i,j,t}$ is the non-performing loan of bank *i* in country *j* in year *t*, expressed as the ratio of non-performing loans to net total loans, $FOREIGN_{i,j,t}$ is a dummy variable equal to one if bank *i* in country *j* in year *t* is foreign-owned, *Xijt* is a vector of bank-level control variables, $Z_{j,t}$ is a vector of factors at the country level such as macroeconomic and institutional environment factors that are expected to affect loan portfolio quality at time t. α_k and β'_h are vectors of parameters to be estimated, η_j is the country fixed effects, τ_t time fixed effects, and *εijt* is the error term. The set of control variables are the same as those in Eq. (1), Section 4.1.1.

The empirical results are reported in Table 8.

< Insert Table 8>

As can be seen from Table 8, the coefficient on the foreign dummy variable is negative and statistically significant, suggesting that foreign banks have loan portfolios of better quality than domestic banks, as predicted by the cream-skimming model. Thus, the ratio of non-performing loans to net total loans is reduced by 1.21 for foreign banks. Banks with higher overhead costs have worst loan portfolio quality. Higher economics growth translates into lower non-performing loans level of banks.

5. Conclusion

In this paper, we employ a data set of 863 commercial banks from 28 transition and emerging countries for the 1998-2008 period. We analyze the differences in activity and funding strategies between foreign and domestic banks and look into their risk implications.

We find that foreign banks differ from domestic banks in terms of activity and funding strategies. Specifically, we find that foreign banks rely more on non-interest income activities and non-deposit funding than domestic banks, while the latter fund themselves more with short-term funding.

We also examine the impact of ownership on bank stability. We find that foreign banks exhibit higher default risk than domestic banks; however foreign banks have better loan portfolio quality than domestic banks. We also find that reliance on fee incomes and non-deposit funding leads to lower bank stability. These results taken together, suggest that foreign banks are more risky because of their activity mix and their funding strategy in the host countries.

APPENDIX

Appendix A

Table A1: Variables definition and sources of data.

Variables	Description	Sources
NONII	Ratio of non-interest income to total operating income (%)	Bankscope
SHORT_TERMDEBT	Ratio of bank's customer and short term funding to total interest-bearing debt (%)	Bankscope
NON_DEPOFUND	Total funding excluding derivatives minus customer deposits divided by total funding (%)	Bankscope
Z-SCORE	Z-SCORE= (ROA+EQTA)/SDROA, where ROA return on average assets, EQTA is the ratio of Total equity to total assets; SDROA is the standard deviation of the ROA.	Bankscope
NPL	Ratio of non-performing loan to net total loans (%)	Bankscope
OVERHEAD	Ratio of overheads to total assets (%)	Bankscope
GROWTH_TA	Growth rate of bank assets (%)	Bankscope
LTA	Natural logarithm of total assets	Bankscope
EQTA	Ratio of equity to total assets (%).	Bankscope
FOREIGN	Equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise	Bankscope and miscellaneous
GDP PER CAPITA	GDP per capita in thousands of 2000 constant U.S. dollars	WDI
GDP GROWTH	Rate of real per capita GDP growth	WDI
INFLATION	Consumer Price inflation rate	WDI

Table A1- *Continues*

Variables	Description	Sources
VOICE	Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.	Kaufmann, Kraay, and Mastruzzi(2010)
STABILITY	Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.	Kaufmann, Kraay and Mastruzzi(2010)
GOVEFFECT	Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.	Kaufmann, Kraay and Mastruzzi(2010)
REGQUAL	Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.	Kaufmann, Kraay and Mastruzzi(2010)
RULEOFLAW	Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.	Kaufmann, Kraay and Mastruzzi(2010)
CORRUP	Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.	Kaufmann, Kraay and Mastruzzi(2010)

Appendix B

Table B1: Bank ownership and activity and funding strategies. Panel Regression with additional institutional variables.

VARIABLES	NONII	NONII	NONII	NONII	NONII	NONII
FOREIGN	1.117***	1.114***	1.087***	1.149***	1.190***	1.087***
	(4.654)	(4.674)	(4.448)	(4.709)	(4.967)	(4.676)
EQTA	-0.075*	-0.074*	-0.077*	-0.075*	-0.074*	-0.076*
	(-1.881)	(-1.876)	(-1.963)	(-1.905)	(-1.875)	(-1.913)
LTA	0.291**	0.291**	0.287**	0.287**	0.311**	0.282**
	(2.898)	(2.853)	(2.869)	(2.707)	(3.049)	(2.739)
GROWTH_TA	-0.021**	-0.021**	-0.020**	-0.021**	-0.023**	-0.022**
	(-2.448)	(-2.392)	(-2.420)	(-2.456)	(-2.591)	(-2.394)
OVERHEAD	0.548***	0.546***	0.559***	0.546***	0.549***	0.551***
	(4.800)	(4.788)	(5.060)	(4.839)	(4.770)	(4.831)
INFLATION	-0.147	-0.134	-0.142	-0.151	-0.165	-0.141
	(-1.553)	(-1.375)	(-1.503)	(-1.576)	(-1.830)	(-1.468)
GDPG	0.058	0.084	0.067	0.070	0.130	0.041
	(0.453)	(0.640)	(0.508)	(0.528)	(1.156)	(0.327)
GDPCAP	0.001**	0.001**	0.001	0.001***	0.001***	0.001**
	(2.886)	(2.902)	(1.794)	(3.853)	(3.404)	(3.181)
CORRUP	-1.014					
	(-0.549)					
GOVEFFECT		-3.194				
		(-1.235)				
RULEOFLAW			4.955			
			(1.482)			
REGQUAL				-2.718		
				(-1.527)		
STABILITY					-3.037***	
					(-3.876)	
VOICE						1.745
						(1.499)
CONSTANT	7.595***	7.021***	11.310**	8.161***	6.436***	7.673***
	(3.737)	(3.356)	(3.036)	(4.670)	(3.717)	(4.613)
OBSERVATIONS	4806	4806	4806	4806	4806	4806
R-SQUARED	0.324	0.325	0.325	0.325	0.325	0.325

NONII=Ratio of non-interest income to total operating income; *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars; *VOICE*= Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; *STABILITY*= Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; *GOVEFFECT*= Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; *REGQUAL*= Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *RULEOFLAW*= Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; *CORRUP*= Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Country and time fixed effects are included in all regressions but not reported. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table B1 *continues*:

VARIABLE	SHORT_TERMDEBT	SHORT_TERMDEBT	SHORT_TERMDEBT	SHORT_TERMDEBT	SHORT_TERMDEBT	SHORT_TERMDEBT	NON_DEPOFUND	NON_DEPOFUND	NON_DEPOFUND	NON_DEPOFUND	NON_DEPOFUND	NON_DEPOFUND
FOREIGN	-0.657*	-0.659*	-0.669**	-0.645*	-0.661*	-0.672**	4.278***	4.256***	4.271***	4.278***	4.316***	4.274***
	(-2.255)	(-2.254)	(-2.265)	(-2.224)	(-2.225)	(-2.295)	(8.035)	(7.868)	(7.853)	(7.993)	(7.844)	(7.628)
EQTA	-0.168***	-0.170***	-0.169***	-0.168***	-0.168***	-0.169***	0.169**	0.170**	0.169**	0.169**	0.169**	0.169**
	(-3.640)	(-3.698)	(-3.659)	(-3.646)	(-3.667)	(-3.655)	(2.648)	(2.680)	(2.650)	(2.652)	(2.654)	(2.674)
LTA	-0.824*	-0.826*	-0.824*	-0.824*	-0.825*	-0.828*	-0.607**	-0.608**	-0.608**	-0.607**	-0.603**	-0.607**
	(-2.071)	(-2.092)	(-2.075)	(-2.088)	(-2.103)	(-2.079)	(-3.073)	(-3.019)	(-3.045)	(-3.031)	(-2.949)	(-3.076)
GROWTH_TA	0.020*	0.020*	0.020*	0.020*	0.020*	0.020*	0.024	0.023	0.024	0.024	0.022	0.024
	(1.879)	(1.841)	(1.905)	(1.879)	(1.854)	(1.837)	(1.115)	(1.071)	(1.129)	(1.102)	(1.009)	(1.072)
OVERHEAD	0.252*	0.257*	0.258*	0.250*	0.252*	0.252*	-0.471***	-0.481***	-0.468***	-0.471***	-0.477***	-0.471***
	(2.009)	(2.043)	(2.027)	(1.963)	(1.965)	(1.971)	(-5.014)	(-5.097)	(-4.882)	(-5.010)	(-4.958)	(-4.984)
INFLATION	0.100	0.091	0.100	0.098	0.101	0.101	-0.367***	-0.322***	-0.360***	-0.366***	-0.359***	-0.367***
	(1.364)	(1.352)	(1.534)	(1.508)	(1.518)	(1.457)	(-4.065)	(-3.854)	(-3.828)	(-4.308)	(-4.186)	(-4.318)
GDPG	0.078	0.053	0.083	0.082	0.073	0.066	-0.273**	-0.225**	-0.270**	-0.272**	-0.211	-0.275**
	(1.084)	(0.699)	(1.234)	(1.146)	(0.996)	(0.835)	(-2.916)	(-2.317)	(-2.906)	(-2.879)	(-1.521)	(-2.689)
GDPCAP	-0.0002*	-0.0004***	-0.0005***	-0.0002	-0.0002*	-0.0003*	0.001**	0.001**	0.001**	0.001**	0.001**	0.00100*
	(-1.872)	(-3.987)	(-5.523)	(-1.709)	(-2.191)	(-2.015)	(2.468)	(2.660)	(2.338)	(2.431)	(2.723)	(2.256)
CORRUP	0.158						0.042					
	(0.099)						(0.021)					
GOVEFFECT		3.294*						-5.089***				
		(2.086)						(-5.148)				
RULEOFLAW			3.037***						1.846			
			(4.295)						(0.522)			
REGQUAL				-0.842						-0.149		
				(-0.743)						(-0.093)		
STABILITY					0.229						-2.422	
					(0.428)						(-1.173)	
VOICE						1.276						0.269
						(1.087)						(0.136)
CONSTANT	98.160***	98.970***	100.200***	98.200***	98.230***	97.980***	43.430***	42.430***	44.330***	43.460***	42.800***	43.340***
	(13.160)	(13.360)	(13.920)	(13.810)	(13.930)	(14.020)	(15.070)	(14.180)	(12.250)	(15.410)	(13.520)	(17.500)
OBS.	5103	5103	5103	5103	5103	5103	2884	2884	2884	2884	2884	2884
R-SQUARED	0.115	0.116	0.116	0.115	0.115	0.115	0.292	0.293	0.292	0.292	0.293	0.292

SHORT_TERMDEBT= SHORT_TERMDEBT = Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars; *VOICE*= Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; *STABILITY*= Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; *GOVEFFECT*= Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; *REGQUAL*= Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *RULEOFLAW*= Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; *CORRUP*= Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Country and time fixed effects are included in all regressions but not reported. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Appendix C

Table C1: Activity mix, funding strategy and bank ownership: OLS cross-sectional regressions

VARIABLES	NONII	SHORT_TERMDEBT	NON_DEPOFUND
FOREIGN	3.225**	-1.150*	6.087***
	(2.102)	(-1.805)	(4.195)
EQTA	-0.379***	-0.182	0.358***
	(-4.853)	(-1.686)	(3.320)
LTA	-0.617	-0.736*	-0.623
	(-0.940)	(-1.912)	(-0.711)
GROWTH_TA	-0.0644	0.0127	0.153***
	(-1.238)	(0.568)	(3.552)
OVERHEAD	0.244	0.138	-0.353
	(0.454)	(1.085)	(-1.343)
INFLATION	-0.073	-0.044	-0.115
	(-0.271)	(-0.445)	(-0.513)
GDPG	-0.967	0.946	-3.196***
	(-0.773)	(1.607)	(-3.994)
GDPCAP	6.01e-05	0.0001	-4.90e-05
	(0.299)	(1.404)	(-0.176)
CONSTANT	49.200***	100.600***	42.800***
	(3.481)	(10.640)	(2.803)
OBSERVATIONS	887	897	675
R-SQUARED	0.063	0.052	0.197

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= *SHORT_TERMDEBT*= SHORT_TERMDEBT = Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); LTA= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. The models are estimated using OLS. T-statistics are in parentheses and are based on robust standard errors clustered at country-level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Appendix D

Table D1: Activity mix, funding strategy and bank ownership: Panel regression without Brazil.

VARIABLES	NONII	SHORT_TERMDEBT	NON_DEPOFUND
FOREIGN	0.547	-0.026	2.590***
	(1.781)	(-0.0614)	(3.355)
EQTA	-0.096**	-0.269***	0.122
	(-2.652)	(-5.735)	(1.656)
LTA	-0.154	-1.204**	-0.895**
	(-0.619)	(-2.908)	(-3.070)
GROWTH_TA	-0.017**	0.001	0.049***
	(-2.689)	(0.157)	(3.324)
OVERHEAD	0.837***	-0.004	-0.681***
	(8.595)	(-0.048)	(-5.631)
INFLATION	-0.128	0.196***	-0.320**
	(-1.343)	(5.549)	(-2.724)
GDPG	0.031	0.097	-0.468***
	(0.225)	(1.251)	(-4.636)
GDPCAP	0.001***	-0.0004***	0.001**
	(4.029)	(-3.311)	(2.550)
CONSTANT	-5.263	128.4***	0
	(-0.799)	(11.55)	
OBSERVATIONS	4205	4348	2156
R-SQUARED	0.320	0.103	0.310

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= *SHORT_TERMDEBT*= SHORT_TERMDEBT = Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. Country and time fixed effects are included in all regressions but not reported. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Appendix E

Table E1 Activity mix, funding strategy and bank ownership: single country regressions using Brazilian case.

VARIABLES	NONII	SHORT_TERMDEBT	NON_DEPOFUND
FOREIGN	3.200***	-2.409	8.174***
	(3.313)	(-1.756)	(4.179)
EQTA	0.064	0.101**	0.234***
	(0.702)	(2.353)	(3.322)
LTA	2.567***	0.637	0.073
	(3.891)	(1.644)	(0.260)
GROWTH_TA	-0.030	0.061***	-0.002
	(-1.554)	(4.403)	(-0.074)
OVERHEAD	0.301	0.534**	-0.265
	(1.558)	(2.816)	(-1.091)
INFLATION	0.067	-0.712***	-0.450***
	(0.347)	(-4.931)	(-7.601)
GDPG	0.123	-0.090	-1.054**
	(0.301)	(-0.250)	(-2.829)
GDPCAP	-0.002	-0.009*	0.012***
	(-1.323)	(-2.125)	(4.093)
CONSTANT	-11.680	111.300***	-8.503
	(-1.087)	(8.953)	(-0.707)
OBSERVATIONS	601	755	728
R-SQUARED	0.077	0.074	0.060

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= *SHORT_TERMDEBT*= SHORT_TERMDEBT = Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; GDPG= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

REFERENCES

Acharya, Viral, V., Hasan, Iftekhar**,** Saunders, Anthony, 2002. The Effects of Focus and Diversification on Bank Risk and Return: Evidence from Individual Bank Loan Portfolios, CEPR Discussion Paper no. 3252.

Acharya, Viral, V., Schnabl, Philipp, 2010. Do Global Banks Spread Global Imbalances? The Case of Asset-Backed Commercial Paper during the Financial Crisis of 2007-2009. IMF Economic Review, Vol. 58, Pp. 37-73.

Baele, Lieven, De Jonghe, Olivier, Vennet, Rudi, V., 2007. Does the stock market value bank diversification. Journal of Banking and Finance 31, 1999-2023.

Barba-Navaretti, Giorgio, Calzolari, Giacomom, Levi, Micol, Pozzolo, Alberto, 2010. Multinational Banking in Europe: Financial Stability and Regulatory Implications Lessons from the Financial Crisis. CEPR Discussion Papers, No. 7823.

Barth, James R., Caprio, Gerard Jr., Levine, Ross, 2004. Bank regulation and supervision: what works best? Journal of Financial Intermediation, 13, 205-248.

Berger, Allen N., Klapper, Leora, Udell, Gregory, 2001. The ability of banks to lend to informationally opaque small businesses. Journal of Banking and Finance 25, 2127-2167.

Berger, Allen N., Clarke, George, Cull, Robert, Klapper, Leora Udell, Gregory 2005. Corporate Governance, and Bank Performance: A Joint Analysis of the Static, Selection and Dynamic Effects of Domestic, Foreign and State Ownership," World Bank Policy Research Working Paper, No. 3632.

Berger, Allen N., Miller, Nathan H., Petersen, Mitchell A., Rajan, Raghuram, Stein, Jeremy, 2005. Does function follow organizational form? Evidence from the lending practices of large and small banks. Journal of Financial Economics 76, 237-269.

Claessens, Stijn, Demirguc-Kunt, Asli, Huizinga, Harry, 2001. How Does Foreign Entry Affect Domestic Banking Markets? Journal of Banking and Finance 25, 891-911.

Claessens, Stijn, van Horen, Neeltje, 2012. Foreign Banks: Trends, Impact and Financial Stability. International Monetary Fund Working Paper 12/10.

Clarke, George R.G., Cull, Robert, Martínez Pería, María Soledad, 2006. Foreign bank participation and access to credit across firms in developing countries. Journal of Comparative Economics 34, 774-795.

Clarke, George R.G., Cull, Robert, Martínez Pería, Maria S., Sánchez, Susana, 2005. Bank lending to small businesses in Latin America: Does bank origin matter? Journal of Money, Credit and Banking 37, 83-118.

De Haas, Ralph, Van Lelyveld, Iman 2010. Internal Capital Markets and Lending by Multinational Bank Subsidiaries. Journal of Financial Intermediation 19,689-721

Dell'Ariccia, Giovanni, Robert Marquez, Robert, 2004. Information and bank credit allocation. Journal of Financial Economics, 72, 185-214.

Demirgüç-Kunt, Asli, Huizinga, Harry, 2010. Bank Activity and Funding Strategies: The Impact on Risk and Returns. Journal of Financial Economics 98, 626-650.

Demirgüç-Kunt, Asli, Levine, Ross, and Min. H.G., 1998. 'Opening Up to Foreign Banks: Issues of Efficiency, Stability and Growth', in: S. Lee (ed.), The Implications of Globalization of World Financial Markets, Seoul, Korea: the Bank of Korea, pp. 83-105.

Demsetz, Rebecca S., Saidenberg, Marc R., Strahan, Philip E., 1996. Banks with something to lose: The disciplinary role of franchise value, Federal Reserve Bank of New York Economic Policy Review 2, 1-14.

Detragiache, Enrica, Tressel, Thierry, Gupta, Poonam, 2008. Foreign Banks in Poor Countries: Theory and Evidence, Journal of Finance 63, 2123- 2160.

Detragiache, Enrica, Gupta, Poonam, 2006. Foreign banks in emerging market crises: Evidence from Malaysia. Journal of Financial Stability 2, 217-242.

Focarelli, Dario, Pozzolo, Alberto, F., 2005. Where Do Banks Expand Abroad? An Empirical Analysis. Journal of Business 78, 2035-2065.

Haber, Stephen, Musacchio, Aldo, 2005. Contract rights and risk aversion: Foreign banks and the Mexican economy, 1997-2004. Working paper, Stanford Center for International Development.

Hannan, Timothy H., Hanweck, Gerald A., 1988. Bank Insolvency Risk and the Market for Large Certificates of Deposit. Journal of Money, Credit and Banking 20, 203-11.

Kaufmann, Daniel, Kraay, Aart, Mastruzzi, Massimo, 2010. The Worldwide Governance Indicators: A Summary of Methodology, Data and Analytical Issues. World Bank Policy Research Working Paper No. 5430

Lepetit, Laetitia, Nys, Emmanuelle, Rous, Philippe, Tarazi, Amine, 2008. Bank income structure and risk: An empirical analysis of European banks. Journal of Banking and Finance 32, 1452-1467.

Levy-Yeyati, Eduardo, Micco, Alejandro, 2007. Concentration and Foreign Penetration in Latin American Banking Sectors: Impact on Competition and Risk. Journal of Banking and Finance 31, 1633-1647. Journal of Banking & Finance 31, 1633-1647.

Martinez Peria, Maria Soledad, Mody, Ashoka, 2004. How foreign participation and market concentration impact bank spreads: Evidence from Latin America, Journal of Money, Credit, and Banking 36, 511-537.

Micco, Alejandro, Ugo Panizza, and Monica Yanez, 2004, Bank ownership and performance: Are public banks different? Working paper, Inter-American Development Bank.

Mian, Atif, 2006. Distance Constraints: The Limits of Foreign Lending in Poor Economies. Journal of Finance 61, 1465-1505.

Roy, Andrew D. 1952, Safety First and the Holding of Assets. Econometrica 20, 431-449

Stiroh, Kevin J., 2004. Diversification in banking: Is non-interest income the answer? Journal of Money, Credit and Banking 36,853-882.

Wezel, Torsten, 2004. Foreign Bank Entry into Emerging Economies: An Empirical Assessment of the Determinants and Risks Predicated on German FDI Data Discussion Paper Series 1: Studies of the Economic Research Centre, No 01/2004.

Table 1: Distribution of foreign banks and domestic banks per country in our sample.

COUNTRY	1998		2000		2002		2004		2006		2008	
	D	F	D	F	D	F	D	F	D	F	D	F
BRAZIL	102	38	102	37	104	36	105	32	109	37	106	42
BULGARIA	14	9	14	11	11	13	11	14	10	15	11	15
CHINA	79	5	79	6	77	7	75	7	77	6	78	8
COLOMBIA	31	7	31	7	32	7	32	7	32	7	32	7
CZECH REP.	15	15	15	15	14	17	14	17	14	18	14	18
EGYPT	16	12	16	12	16	12	16	12	14	13	14	15
ESTONIA	7	3	5	5	5	5	5	5	5	5	5	5
HONG KONG	16	26	16	27	15	28	15	28	14	29	16	29
HUNGARY	11	22	10	22	9	24	9	23	9	24	9	24
INDIA	65	5	66	5	65	6	65	6	64	6	65	6
INDONESIA	42	18	55	22	52	28	50	30	50	31	48	33
KOREA REP.	11	3	11	3	10	4	10	4	10	4	10	4
LATVIA	16	5	17	7	16	8	15	9	14	10	14	11
LITHUANIA	8	1	6	2	3	6	3	7	3	7	3	7
MALAYSIA	35	11	36	11	36	11	36	11	36	11	36	11
MEXICO	16	8	16	8	15	9	15	9	15	9	15	9
MOROCCO	9	4	9	4	9	4	9	4	9	4	9	4
PERU	15	10	15	10	14	11	14	11	14	11	14	11
PHILIPPINES	30	6	30	6	30	6	30	5	28	6	29	6
POLAND	20	34	18	37	18	37	18	35	18	36	18	37
ROMANIA	8	16	7	15	7	15	5	19	5	18	5	19
SAUDI ARABIA	11	0	11	0	11	0	11	0	11	0	11	0
SINGAPORE	13	5	13	5	13	5	13	5	13	5	13	5
SLOVAKIA	8	10	9	10	6	14	5	15	5	15	5	15
SLOVENIA	18	2	18	2	14	6	13	7	13	7	13	7
SOUTH AFRICA	24	5	25	5	25	5	25	5	24	6	24	6
THAILAND	12	5	13	5	13	5	12	5	13	5	13	5
TURKEY	11	3	11	3	10	4	10	4	9	5	9	5

NB: D=Domestic banks; F=Foreign banks.

Calculations are based on our sample.

Table 2: Summary statistics for the regression variables.

Panel A: Summary statistics on all the banks in the sample.

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
NONII	6030	32.455	19.207	0	99.641
SHORT_TERMDEBT	6452	92.989	13.567	0.038	118.618
NON_DEPOFUND	3443	24.920	20.937	0.339	100
ZSCORE	901	21.657	23.808	0.438	154.612
ZSCORET	901	21.664	23.809	0.438	154.612
NPL	4168	8.406	10.900	0	97.316
OVERHEAD	6423	3.986	4.308	0	75.82729
GROWTH_TA	5323	17.321	29.285	-97.118	140.912
LTA	6461	14.135	1.976	7.525	21.079
EQTA	6461	12.664	11.209	0.004	99.723
FOREIGN	9248	0.385	0.487	0	1
VOICE	9482	0.110	0.774	-1.704	1.224
STABILITY	9482	-0.192	0.853	-2.412	1.327
GOVEFFECT	9482	0.294	0.581	-0.623	2.374
REGQUAL	9482	0.360	0.645	-0.775	2.150
RULEOFLAW	9482	0.081	0.633	-0.946	1.763
CORRUP	9482	0.0491	0.676	-1.140	2.391
GDPG	9482	4.775	3.522	-13.127	14.200
INFLATION	9252	6.271	8.532	-4.023	84.641
GDPCAP	9482	4977.116	6395.967	413.287	34570.240

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); Z-SCORE= bank insolvency risk; ZSCORET = bank insolvency risk; *NPL*=Ratio of non-performing loan to net total loans (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars; *VOICE*= Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; *STABILITY*= Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; *GOVEFFECT*= Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; *REGQUAL*= Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *RULEOFLAW*= Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; CORRUP= Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interest.

Panel B: Summary statistics on Domestic banks *versus* foreign banks.

	DOMESTIC BANKS					FOREIGN BANKS				
VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX	OBS	MEAN	STD. DEV.	MIN	MAX
NONII	3438	30.733	19.820	0	99.027	2435	34.886	17.948	0	99.641
SHORT_TERMDEBT	3694	93.189	13.782	0.038	110.400	2592	92.523	13.539	1.259	118.618
NON_DEPOFUND	2050	21.598	19.290	0.339	100	1322	30.434	22.458	0.632	100
ZSCORE	551	23.253	26.690	0.438	154.612	350	19.144	18.130	0.438	154.612
ZSCORET	551	23.262	26.689	0.438	154.612	350	19.148	18.136	0.438	154.612
NPL	2517	8.855	10.481	0	91.032	1552	7.735	11.609	0	97.316
OVERHEAD	3671	4.105	4.471	0.002	42.195	2588	3.848	4.139	0	75.827
GROWTH_TA	3003	16.203	28.430	-88.968	139.434	2185	19.076	30.357	-97.118	140.912
LTA	3699	14.310	2.079	7.525	21.079	2596	13.899	1.782	9.060	20.125
EQTA	3699	12.360	12.061	0.088	99.723	2596	13.161	10.001	0.004	97.486
VOICE	5684	-0.033	0.803	-1.704	1.224	3564	0.352	0.652	-1.704	1.224
STABILITY	5684	-0.361	0.805	-2.412	1.327	3564	0.074	0.852	-2.412	1.327
GOVEFFECT	5684	0.216	0.529	-0.623	2.374	3564	0.416	0.628	-0.623	2.374
REGQUAL	5684	0.224	0.585	-0.775	2.150	3564	0.574	0.665	-0.775	2.150
RULEOFLAW	5684	-0.012	0.587	-0.946	1.763	3564	0.225	0.668	-0.946	1.763
CORRUP	5684	-0.046	0.620	-1.140	2.391	3564	0.194	0.716	-1.140	2.391
GDPG	5684	5.052	3.666	-13.127	14.2	3564	4.323	3.215	-13.127	14.200
INFLATION	5511	6.081	8.411	-4.023	84.641	3507	6.635	8.739	-4.023	84.641
GDPCAP	5684	4061.397	5241.302	413.287	34570.240	3564	6297.841	7470.361	413.287	34570.240

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); Z-SCORE= bank insolvency risk; ZSCORET = bank insolvency risk; *NPL*=Ratio of non-performing loan to net total loans (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars; *VOICE*= Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; *STABILITY*= Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; *GOVEFFECT*= Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; *REGQUAL*= Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *RULEOFLAW*= Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; CORRUP= Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interest.

Table 3: Correlations between Independent Variables.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
NONII	**1**	1																
SHORT_TERMDEBT	**2**	0.053	1															
NON_DEPOFUND	**3**	-0.010	-0.569	1														
LTA	**4**	0.050	0.0434	-0.147	1													
EQTA	**5**	-0.077	-0.115	0.234	-0.491	1												
OVERHEAD	**6**	-0.021	-0.037	0.161	-0.417	0.376	1											
GROWTH_TA	**7**	-0.045	0.027	0.022	0.071	-0.162	-0.110	1										
FOREIGN1	**8**	0.178	-0.157	0.222	-0.089	0.085	-0.060	-0.009	1									
VOICE	**9**	0.260	-0.193	0.317	-0.218	0.134	0.212	-0.032	0.307	1								
STABILITY	**10**	-0.003	-0.171	0.276	0.119	0.028	-0.045	0.039	0.276	0.393	1							
GOVEFFECT	**11**	0.147	-0.017	0.087	0.240	-0.097	-0.219	0.010	0.199	0.299	0.749	1						
REGQUAL	**12**	0.196	-0.090	0.217	0.116	-0.000	-0.058	-0.011	0.350	0.468	0.832	0.871	1					
RULEOFLAW	**13**	0.259	0.020	0.063	0.260	-0.153	-0.283	0.005	0.213	0.417	0.719	0.887	0.822	1				
CORRUP	**14**	0.170	-0.084	0.203	0.123	0.028	-0.031	-0.031	0.234	0.438	0.770	0.880	0.919	0.824	1			
GDPG	**15**	-0.113	0.189	-0.267	0.231	-0.271	-0.351	0.276	-0.177	-0.452	-0.110	-0.031	-0.202	-0.020	-0.194	1		
INFLATION	**16**	-0.042	-0.094	0.098	-0.206	0.182	0.273	-0.077	0.031	0.131	-0.135	-0.214	-0.128	-0.230	-0.190	-0.334	1	
GDPCAP	**17**	0.108	-0.034	0.094	0.171	0.023	-0.112	-0.039	0.227	0.209	0.606	0.777	0.791	0.733	0.881	-0.112	-0.177	1

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= = Ratio of bank's customer and short term funding to total interest-bearing debt (%); NON_*DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding; OVERHEAD= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; FOREIGN=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars; *VOICE*= Perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media; *STABILITY*= Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; *GOVEFFECT*= Perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; *REGQUAL*= Perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development; *RULEOFLAW*= Perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence; *CORRUP*= Perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

Table 4: Mean comparison test for some key variables

	NONII	SHORT_TERMDEBT	NON_DEPOFUND	NPL	EQTA	ZSCORE	ZSCORET
FOREIGN=0							
Mean	30.733	93.189	21.600	8.855	12.360	23.253	23.262
observations	3438	3694	2050	2517	3699	551	551
FOREIGN=1							
Mean	34.886	92.523	30.434	7.7348	13.161	19.144	19.147
observations	2435	2592	1322	1552	2596	350	350
T-statistic of the mean test	-8.364***	1.904***	-11.776***	3.101***	-2.871***	2.750***	2.754***

T-statistics test for the null: ‘‘There is not different on the above variables between for foreign-owned banks and domestic banks”. ***,** and * indicate significance, respectively, at the 1%, 5% and 10% levels for a bilateral test. Variable definitions: *NONII*=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= = Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *Z-SCORE*= bank insolvency risk; *ZSCORET* = bank insolvency risk; *NPL*=Ratio of non-performing loan to net total loans (%); EQTA= equity to assets ratio. *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise.

Table 5: Bank ownership and activity mix and funding strategy. Panel regression

VARIABLES	NONII	SHORT_TERMDEBT	NON_DEPOFUND
FOREIGN	1.112***	-0.656*	4.278***
	(4.598)	(-2.242)	(7.981)
EQTA	-0.075*	-0.168***	0.169**
	(-1.907)	(-3.654)	(2.651)
LTA	0.288**	-0.823*	-0.607**
	(2.776)	(-2.084)	(-3.037)
GROWTH_TA	-0.021**	0.020*	0.024
	(-2.416)	(1.859)	(1.098)
OVERHEAD	0.550***	0.252*	-0.471***
	(4.813)	(1.967)	(-4.983)
INFLATION	-0.142	0.100	-0.367***
	(-1.442)	(1.504)	(-4.179)
GDPG	0.058	0.078	-0.272**
	(0.449)	(1.096)	(-2.964)
GDPCAP	0.001***	-0.0002*	0.001**
	(3.411)	(-2.134)	(2.408)
CONSTANT	7.850***	98.120***	43.43***
	(4.500)	(13.670)	(15.100)
OBSERVATIONS	4806	5103	2884
R-SQUARED	0.324	0.115	0.292

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*= Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding *(%)*; *OVERHEAD*= Ratio of overheads to total assets (%); GROWTH_TA= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. Country and time fixed effects are included in all regressions but not reported. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 6: Bank ownership and risk-taking.

VARIABLES	ZSCORE	ZSCORET
FOREIGN	-4.403**	-4.404**
	(-2.360)	(-2.359)
EQTA	0.363**	0.363**
	(2.054)	(2.054)
LTA	-0.900*	-0.899*
	(-1.817)	(-1.814)
GROWTH_TA	-0.044	-0.044
	(-0.683)	(-0.684)
OVERHEAD	-1.123***	-1.123***
	(-4.796)	(-4.795)
INFLATION	-0.239*	-0.240*
	(-1.985)	(-1.988)
GDPG	1.658**	1.664**
	(2.183)	(2.186)
GDPCAP	0.0003**	0.0003**
	(2.149)	(2.146)
CONSTANT	28.330***	28.310***
	(3.025)	(3.022)
OBSERVATIONS	879	879
R-SQUARED	0.102	0.102

Z-SCORE= bank insolvency risk; *ZSCORET* = bank insolvency risk; *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. The models are estimated using OLS. T-statistics are in parentheses and are based on robust standard errors clustered at country-level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7: Activity mix and funding strategy and risk-taking

VARIABLES	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORE	ZSCORET	ZSCORET	ZSCORET	ZSCORET	ZSCORET	ZSCORET
EQTA	0.325*	0.390**	0.442**	-0.160	1.059***	0.456*	0.325*	0.390**	0.442**	-0.160	1.060***	0.456*
	(1.989)	(2.178)	(2.129)	(-0.567)	(3.037)	(1.960)	(1.989)	(2.178)	(2.130)	(-0.568)	(3.037)	(1.960)
LTA	-0.850	-0.692	-0.100	-1.740**	1.919*	-0.138	-0.850	-0.691	-0.100	-1.740**	1.920*	-0.138
	(-1.699)	(-1.460)	(-0.157)	(-2.393)	(1.758)	(-0.228)	(-1.696)	(-1.457)	(-0.157)	(-2.390)	(1.759)	(-0.227)
GROWTH_TA	-0.069	-0.062	0.029	-0.136*	-0.092	0.036	-0.069	-0.062	0.029	-0.136*	-0.093	0.036
	(-1.056)	(-0.897)	(0.442)	(-1.719)	(-1.312)	(0.459)	(-1.056)	(-0.898)	(0.440)	(-1.719)	(-1.313)	(0.457)
OVERHEAD	-1.051***	-1.110***	-0.781**	-0.780***	-1.652***	-0.801**	-1.051***	-1.110***	-0.781**	-0.780***	-1.652***	-0.800**
	(-4.829)	(-4.344)	(-2.622)	(-3.170)	(-4.518)	(-2.340)	(-4.830)	(-4.342)	(-2.622)	(-3.169)	(-4.517)	(-2.339)
INFLATION	-0.227	-0.238**	-0.230**	-0.308**	-0.072	-0.235**	-0.227	-0.239**	-0.231**	-0.309**	-0.072	-0.235**
	(-1.659)	(-2.321)	(-2.297)	(-2.132)	(-0.517)	(-2.204)	(-1.661)	(-2.324)	(-2.301)	(-2.135)	(-0.518)	(-2.209)
GDPG	1.778**	1.688**	2.257***	0.381	-1.962	2.111*	1.783**	1.693**	2.263***	0.386	-1.957	2.117*
	(2.456)	(2.134)	(3.516)	(0.333)	(-0.975)	(1.776)	(2.458)	(2.136)	(3.515)	(0.337)	(-0.972)	(1.779)
GDPCAP	0.0003*	0.0002*	0.0005***	0.0004**	-0.0001	0.0005***	0.0003*	0.0003*	0.0005***	0.0004**	-0.0001	0.0005***
	(1.847)	(1.742)	(3.843)	(2.520)	(-0.479)	(3.435)	(1.845)	(1.739)	(3.837)	(2.517)	(-0.481)	(3.430)
NONII	-0.106**						-0.106**					
	(-2.233)						(-2.237)					
SHORT_TERMDEBT		0.134**						0.134**				
		(2.604)						(2.606)				
NON_DEPOFUND			-0.080**						-0.080**			
			(-2.177)						(-2.178)			
NONII_PREDICTED				-1.383**						-1.383**		
				(-2.360)						(-2.360)		
SHORT_TERMDEBT_PREDICTED					3.828**						3.830**	
					(2.360)						(2.359)	
NON_DEPOFUND_PREDICTED						-0.122						-0.122
						(-0.554)						(-0.554)
CONSTANT	29.440***	11.340	8.107	95.640**	-356.600**	10.260	29.430***	11.310	8.094	95.640**	-356.800**	10.240
	(3.098)	(1.343)	(0.843)	(2.677)	(-2.271)	(0.801)	(3.096)	(1.340)	(0.841)	(2.676)	(-2.271)	(0.798)
OBSERVATIONS	869	879	665	869	879	665	869	879	665	869	879	665
R-SQUARED	0.098	0.099	0.150	0.100	0.102	0.145	0.098	0.099	0.150	0.100	0.102	0.145

NONII=Ratio of non-interest income to total operating income (%); *SHORT_TERMDEBT*== Ratio of bank's customer and short term funding to total interest-bearing debt (%); *NON_DEPOFUND*=Total funding excluding derivatives minus customer deposits divided by total funding (%); *Z-SCORE*= bank insolvency risk; *ZSCORET* = bank insolvency risk*; OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. The models are estimated using OLS. T-statistics are in parentheses and are based on robust standard errors clustered at country-level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively

Table 8: Bank ownership and loan portfolio quality

VARIABLES	NPL
FOREIGN	-1.211***
	(-6.072)
EQTA	0.020
	(0.369)
LTA	-0.195
	(-1.786)
GROWTH_TA	-0.039**
	(-2.844)
OVERHEAD	0.528***
	(4.151)
INFLATION	-0.268**
	(-2.263)
GDPG	-0.427***
	(-6.051)
GDPCAP	-0.0001
	(-1.636)
CONSTANT	12.120***
	(6.275)
OBSERVATIONS	3443
R-SQUARED	0.213

NPL=Ratio of non-performing loan to net total loans (%); *OVERHEAD*= Ratio of overheads to total assets (%); *GROWTH_TA*= Growth rate of bank total assets (%); *LTA*= Natural logarithm of total assets; *EQTA*= equity to assets ratio; *FOREIGN*=Foreign bank dummy variable. This dummy equals 1 if the bank is at least 50% owned by foreign interests, and 0 otherwise; *GDPG*= growth rate of real GDP; *INFLATION*= Consumer price inflation rate; *GDPCAP*= GDP per capita in thousands of 2000 constant U.S. dollars. Country and time fixed effects are included in the regression but not reported. T-statistics are in parentheses and are based on robust standard errors clustered at bank level. *, **, *** represent statistical significance at the 10%, 5%, and 1% levels, respectively.