

The Effect of Cross-Listing, Institutional Ownership, External Monitoring, and Capital Stringency Regulation on Bank Performance: A Comparison of Developed and Developing Economies

Nischala Reddy, Ben Le, and Paula Moore*

Abstract

A bank listed on a single exchange must endure complex rules and high compliance costs. Those rules and costs are magnified when a bank decides to cross-list on multiple exchanges especially when the exchanges are in countries with varying degrees of development. We study the impact of cross-listing, institutional ownership, external monitoring, and capital stringency regulation on banks' performance in developed and developing economies. The effect of cross-listing from a more developed to a less developed country differs in the opposite direction. We find that cross-listing results in higher profit and lower asset quality in banks from developed economies and lower profit and higher asset quality in banks from developing economies due to higher regulations and compliance costs. Cross-listing is associated with higher capital in banks from developed countries and higher asset growth and loan growth in banks from developing economies, especially after the 2008 crisis period. Higher institutional ownership results in higher profit, better asset quality, higher growth in banks from both developed and developing economies, and higher tier-1 capital in banks from developed countries. Higher external monitoring results in lower profit, better asset quality, and higher tier-1 capital but lower growth of assets and loans in banks from developing economies. Higher capital stringency regulation results in lower profit and higher tier-1 capital in developing countries and higher profit and better asset quality but lower growth in banks from developed countries. During the financial crisis, US listed banks were positively associated with asset quality when compared to non-US listed banks, and US listed banks were positively associated with tier-1 capital. After the Dodd-Frank Act was implemented, banks with higher capital stringency regulation and investor protection are associated lower profit due to increased regulatory requirements and cost.

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Keywords: Cross-listing, External monitoring, Capital stringency regulation, Institutional ownership, performance, capital, growth

I Introduction

Banks play an important and unique role in economic growth and financial stability (Demirgüç-Kunt *et al.*, 2011). Though many industries are subjected to strict regulation, banks are also highly leveraged when compared to non-bank firms. Their business model naturally includes savings, lending, investment, and real estate, with their two major sources of income being interest income where the bank is taking risk on its own behalf and provision earnings where the bank is taking risk on behalf of investors (Jeucken and Bouma, 1999). Their critical role in the economy coupled with their enhanced leverage require that banks be highly regulated and supervised (Barth *et al.*, 2004 and 2008). Hirtle *et al.* (2020) distinguish between regulation and supervision. According to their analysis, regulation specifies the activities the bank can or cannot perform and the minimum financial standards such as capital and liquidity requirements. In contrast, supervision identifies a bank's regulatory compliance and the issues that threaten its immediate or long-term health. Due

* Nischala Reddy (nreddy@ucmo.edu), University of Central Missouri, USA; Ben Le (ble4@utm.edu), University of Tennessee at Martin, USA; Paula Moore (pmoore44@utm.edu), University of Tennessee at Martin, USA

to the significant differences between banks and other corporations and the extensive compliance requirements by regulators and supervisors, cross-listing of bank stock has an impact on a bank's performance and risk.

Vast literature find the cross-listing of non-banking firms has numerous benefits such as higher value (King and Segal 2004; Foucault and Gehrig 2008), growth (Khurana *et al.*, 2008), better corporate governance (Lel and Miller, 2008 and Berkman and Nguyen, 2010), and increased shareholder protection (Coffee, 1999 and Stulz, 1999). Non-banking firms that are listed in a strong investor protection country such as the United States adhere to the regulations in that country (Coffee, 1999; Stulz, 1999; and Lel and Miller, 2008). Despite all the literature on non-banking firms, there is limited literature on cross-listing in banking firms. While most studies in banking literature focus on the effect of cross-listing on economic development and growth of the country (Bhattacharya, 1993; Bruno *et al.*, 2014 and Demirguc-Kunt *et al.*, 1998), Claessens *et al.* (2001) study the effect of foreign banks on domestic banks in developed and developing countries for the 1988-1995 period and find that foreign banks in developing countries have higher profitability when compared to domestic banks. Our paper contributes to the literature by providing insight to the effects of cross-listing, institutional ownership, external monitoring, and capital stringency in banking firms for the period 2004-2018. We analyze how the bank's profitability, asset quality, capital maintenance and growth differ in banks in developed and developing countries.

In analyzing the general operation of foreign banks in poor countries one study found those banks struggle to overcome distance and cultural issues to monitor their subsidiaries (Detragiache *et al.*, 2008). This struggle results in a reduction in overall efficiency and welfare of the bank. When a bank from a less developed country desires to be cross-listed in a more developed country, we expect that bank to adhere to regulations of the more developed country resulting in both lower profit due to higher compliance costs and higher asset quality due to greater monitoring. Alternatively, when a bank from a more developed country desires to be cross-listed in a less developed country, we expect that bank to experience higher profit due to lower compliance costs but lower asset quality due to less monitoring. Each country may have different requirements for banking operations; therefore, the study of the cross-listing effect on banks' performance is important.

We use a sample of banks from 98 countries and classify them into banks from developed and developing countries. If the bank lists its stock in multiple exchanges, we consider such banks as cross-listed banks. We test the effect of cross-listing in multiple stock exchanges, institutional ownership, external monitoring, and capital stringency regulation on bank performance and risk. To analyze a bank's performance and risk we use four factors: (1) its profitability, (2) its asset quality, (3) its capital maintenance and (4) its growth.

We use return on assets (ROA) and return on equity (ROE) as proxies for profitability of the bank. We measure the banks' asset quality using several variables including non-performing loans (NPL), bad loans to deposits ratio (BLOAND) and bad loans to total loans ratio (BLOANP). Our methodology is like Liang *et al.* (2013) who use ROA and ROE as proxies for bank performance and who use NPL and NCO (Net charge offs) as proxies for asset quality. To measure the banks' capital maintenance, we use tier-1 and total capital percentages (Tier-1 + Tier-2 capital). Tier-1 capital consists of the banks' core capital (mostly equity) and tier-2 capital is supplementary capital both of which are regulatory requirements. Bank regulators impose a minimum amount of capital and recommend that a bank operates at above minimum levels to protect debtholders and to reduce the possibility of failure. Barth *et al.* (2004) note that capital serves as a buffer against bank failure and asset losses. To measure the growth of the bank we analyze the growth of assets,

loans, and deposits. One of the banks' main businesses is lending, and loans are typically the largest component of the banks' asset. Deposit growth defines a core source of funding that banks can obtain to lend and continue growing.

When comparing banks in developed countries with banks in developing countries, we find significant differences in the impact of cross-listing, capital stringency, and increased external monitoring from institutional ownership. Banks from developed countries that cross-list are more profitable but have lower asset quality due to listing in other exchanges where regulations are not as stringent. Comparatively, banks from developing countries that cross-list in more developed countries experience a higher level of compliance requirements; therefore, they are less profitable due to an increased compliance cost but have better asset quality due to increased compliance requirements. These findings are consistent with research on non-banking firms by Ribstein (2005), Coffee (1999), and Stulz (1999). We further find that banks from developing countries that specifically cross-list on US stock exchanges have better asset quality (i.e., lower NPL and bad loans).

We find that capital levels are consistent among cross-listed firms regardless of whether the firm originates from a developed or a developing country. Studies find that non-US firms that are listed in the US can access higher equity capital (Reese and Weisbach, 2002) and have higher liquidity (Berkman and Nguyen, 2010). We also find that larger firms have lower profit and capital and higher quality of assets. While Hakenes and Isabel (2011) find that large banks have a competitive advantage under the IRB Basel II approach and hence require less capital, Avramidis *et al.* (2018) finds larger banks have higher levels of monitoring over smaller banks.

The presence of high levels of institutional ownership in banks located in both developed and developing countries also has a positive and significant impact. Banks with high levels of institutional ownership (which creates an increased amount of external monitoring in both developed and developing countries) have higher profit and better asset quality; however, those from developed countries also have higher capital and higher loan growth. Banks from developing countries with high external monitoring experience better asset quality but lower profit due to compliance costs. If that same category of banks have higher capital regulation stringency, they will also experience higher capital levels.

Investor protection variable (ADRI) is a country-based variable to indicate the strength of that country's protection of investors. In banks from developing economies, the ADRI variable is positively associated with asset quality and negatively associated with profit. These positive and negative relationships imply that higher protection countries have both higher compliance requirements and greater transparent operations of the bank which increase compliance costs.

We conduct additional tests by dividing the sample into crisis-period only (2008-2009) and post-crisis period and into before and after the Dodd-Frank Act (2010) implementation period. Due to several bank failures during the financial crisis, the Dodd-Frank Act was implemented which imposed more stringent regulations on financial institutions.

The results in the post-crisis period are similar to the full sample with the exceptions listed below. US listing was positively associated with profit implying that only profitable firms remained listed on US stock exchanges. Banks from developed countries with low external monitoring that are listed on US exchanges were negatively associated with profitability. The capital stringency regulation and ADRI (investor protection variable) were positively associated with profitability in banks from developed countries and negatively associated with profitability in banks from developing countries. Banks from developed countries that are listed in US are positively associated with tier-1 capital due to greater regulations and risk reduction requirements.

In the crisis-period sample, banks from high external monitoring countries and high capital stringency were negatively associated with profitability, and banks with higher investor protection were positively associated with tier-1 and total capital.

In the post-Dodd-Frank Act sample, banks from developing countries that list in multiple exchanges are negatively associated with profitability due to higher compliance costs. Banks that have higher tier-1 capital are positively associated with profitability. After the Dodd-Frank Act, US listed firms are positively associated with profitability implying that only profitable banks chose to be listed in US. DiSalvo (2019) mentions that regulatory changes since the Dodd-Frank Act have resulted in tighter post-crisis regulation and higher costs which led to some banks withdrawing from US.

The remainder of the paper proceeds as follows. Section 2 discusses the literature and Hypotheses. Section 3 describes and discusses the data sources and variables used in our empirical analysis. Section 4 provides our methodology and discusses the results of our analysis. Section 5 concludes.

II Literature and Hypotheses

In a theory known as the “Bonding Hypothesis,” Coffee (1999) and Stulz (1999) proposed that a foreign firm that bonds itself to a major US stock exchange through cross-listing will increase the protection for its minority shareholders. That theory encouraged Huang *et al.* (2013) to study firms that cross-listed using American Depository Receipts (ADRs). They discovered that the Bonding Hypothesis created a higher cash reserve when compared to other firms. In a related study, Lel and Miller (2008) find that firms from weak investor protection countries are more likely to terminate poorly performing CEOs when they cross-list in a major US exchange.

When examining the banking industry, Siddique *et al.* (2020) compare the performance of commercial banks in India and Pakistan (developing countries) with those of banks in Japan and Saudi Arabia (developed countries). They find non-performing loans and cost efficiency ratios have a negative relationship with ROA and ROE in both pools while the capital adequacy ratio is positively related to the ROA and ROE. Since Asian banks in general have higher non-performing loans, their study recommends the banks enhance their loan approval process and monitoring. Aebi *et al.* (2011) find that banks with better risk management strategies such as having a chief risk officer who reports to the board of directors have better stock performance and ROE during the 2008 financial crisis. Using a sample of US banks, Hirtle *et al.* (2020) find that banks with higher supervision hold higher quality loans and experience less volatility of earnings and market returns. Using a sample of Chinese banks, Liang *et al.* (2013) test the effect of board characteristics on bank performance (ROA and ROE) and asset quality (non-performing loans and net charge offs). They find stronger bank performance and asset quality occur in banks with a larger number of board meetings and the presence of independent directors while weaker bank performance and asset quality occur in banks with a larger board size and a greater number of political connections. With the lower level of compliance efforts and related cost, Claessens *et al.* (2001) find that foreign banks in developing countries have higher profitability when compared to domestic banks.

Typically, developed countries have more stringent regulatory requirements and higher monitoring when compared to developing countries. Hence, we hypothesize

Hypothesis 1: Cross-listing increases profit but decreases asset quality for banks from developed countries, and decreases profit but increases asset quality for banks from developing countries.

Reese and Weisbach (2002) find that non-US firms cross-list in the US to increase minority shareholder protection. This cross-listing increases equity issues. They find that equity issue increases (a) from outside the US in firms from weak protection countries and (b) from inside the US in firms from strong protection countries. In a similar study that focused on non-banking firms, Berkman and Nguyen (2010) find that firms that are cross-listed in US have higher stock liquidity as compared with firms that are not cross-listed.

Banks that are cross-listed are expected to have higher tier-1 capital since they can raise more equity capital from multiple countries. Hence, we hypothesize:

Hypothesis 2: Banks that are cross-listed have a higher capital when compared to banks that are not cross-listed.

Elyasiani and Jia (2010) find that a bank holding company's performance is positively associated with institutional ownership stability. They also mention that institutional owners monitor the bank which reduces information asymmetry. By disclosing information more readily, management can attract more Wall Street coverage which increases demand for shares and increases liquidity of stock. Deng *et al.* (2013) find that large and stable institutional ownership is associated with higher diversification and lower risk among bank holding companies.

Several studies focus on institutional ownership in non-banking firms. Chung and Wang (2014) find that a firm's leverage decreases when institutional ownership increases. They also find that institutions effectively monitor the firm's capital structure. Using a sample of Chinese firms, Lin and Fu (2017) find that foreign and large institutional ownership increases firm performance. Duggal and Millar (1999) find a positive relationship between institutional ownership and bidder gains in takeovers. Examining a sample of Indian firms, Nashier and Gupta (2016) find that institutional ownership has a positive impact on firm performance and managerial actions and decisions. Higher institutional ownership also increases liquidity and analyst coverage because of the increase in monitoring.

Banks with higher institutional ownership can generate higher profit, improve asset quality, increase growth, and maintain higher tier-1 capital. Hence, we hypothesize:

Hypothesis 3: Banks with higher institutional ownership have better performance and higher capital.

Barth *et al.* (2013b) make three findings: (a) tighter restrictions on bank activities is negatively associated with bank efficiency, (b) greater capital regulation stringency is positively associated with bank efficiency, and (c) market-based monitoring of banks is positively associated with efficiency. While capital regulation, official supervision, and restrictions on bank activity policies are positively related to bank performance, Ly (2015) finds that deposit insurance and private monitoring are negatively related to bank performance. Additionally, Lee and Lu (2015) find that bank development is improved with higher capital regulatory requirements and supervisory monitoring.

Anginer and Demirguc-Kunt (2014) find that higher forms of capital (tier-1 capital) reduce systematic risk in banks whereas lower forms of capital (tier-2 capital) have a negative effect especially during the financial crisis. The negative effect is less prominent in smaller banks, countries and higher monitoring. Their findings also support existing research that capital acts as a buffer to absorb liquidity risk and information and economic shocks and acts to reduce defaults. Kim and Sohn (2017) find that bank capital is positively related to lending growth in large banks that have retained sufficient liquid assets. They also mention that recent regulations require banks to maintain sufficient capital, liquid assets, and stable funding sources to reduce risk from negative economic shocks.

The effect of monitoring is more pronounced in banks from developing countries. While higher monitoring results in higher compliance costs (thus lower profit), it increases asset quality and tier-1 capital levels. Also, stringent capital requirements require banks to maintain more tier-1 capital which is predominantly equity capital.

Banks with higher tier-1 capital are expected to experience higher cost of capital. Hence, we hypothesize:

Hypothesis 4: Banks from developing countries with higher monitoring and higher capital stringency regulations have lower profit, better asset quality and higher tier-1 capital.

III Data and Variables

3.1 Data

The banks' accounting and cross-listing data is collected from Capital IQ (CIQ) for the period 2004–2018. We restrict our sample to depositary institutions, by requiring that (a) the bank's primary SIC code be in the range 6000–6099 and (b) the bank is classified as "Diversified Banks" or "Regional Banks" when using CIQ industry descriptions. Banks are also excluded from the sample if they have zero deposits or loans such as non-depositary brokerages and insurance companies. With the exception of country-level controls, we winsorize all of our continuous variables at 1.0% in each tail to reduce the impact of outliers. This method results in 2,019 unique banking firms in 98 countries. The final sample consists of an unbalanced panel data with a total of 16,407 observations.

To develop our sample, we use a variety of sources. The World Bank Regulation Surveys and Barth, Caprio, and Levine (2013) provided bank regulatory and monitoring indexes, and Spamann Anti-Director Rights Index (ADRI) (Spamann, 2010) provided the investor protection variable. We also utilized the United Nations Development Programme's classification of countries to divide the sample based on the bank's headquarters being in a developed economy (including G7 countries) or developing economy. This classification uses various factors and combines them into a single score called Human Development Index (HDI).

3.2 Variables

3.2.1. Dependent variables

Our dependent variables are classified into four categories: financial performance, asset quality, capital maintenance, and growth. Financial performance is measured by the variables ROA (net income divided by total assets) and ROE (net income divided by common equity). Asset quality is measured by non-performing loans (problem loans to loans ratio, bad loans to deposits (BLOAND) and bad loans percentage (BLOANP). Capital maintenance is measured by regulatory

requirements for Tier-1 capital (CAP1) and total capital to risk adjusted assets. Finally, growth is measured by asset growth (AGRTH), loan growth (LGRTH) and deposit growth (DGRTH).

3.2.2 Independent variables

We incorporate several independent variables in our analysis. DEV is a dummy variable to indicate if the bank is from developing country. US is a dummy variable to indicate if a bank is listed in the US exchanges. NUM is the number of exchanges in which a bank is listed. ASSET is the natural logarithm of assets. LOAN is the ratio of loans/ total assets. DEBT is the total debt scaled by total assets. DIV, dividend payment scaled by total assets to measure dividend payments. RISK is the standard deviation of monthly returns over the fiscal year.

We also include variables to measure regulatory pressure. CAPSTRIN is the level of regulatory pressure to maintain the required capital levels. EXTMOR is the level of external monitoring in a country. ADRI is anti-director rights index defined as the level of shareholder protection in the country. Finally, INSTPER is the bank's institutional ownership defined as the percentage ownership by institutions like pension funds, mutual funds, insurance companies, etc.

Table 1: Summary of statistics and country origin of observations

Variables	Num. of Obs.	Mean	Median	Q1	Q3	Std. Dev.
ADRI	16,407	3.186	3	2	4	1.194
AGRTH	16,320	0.108	0.074	0.009	0.173	0.169
ASSET	16,407	8.710	8.508	7.070	10.082	2.091
BLOAND	16,407	2.954	1.421	0.902	3.072	4.601
BLOANP	16,407	2.994	1.634	1.068	3.402	3.666
CAP1	13,232	1.136	0.280	0.043	1.157	3.990
CAP12	7,776	2.152	1.763	1.069	2.674	3.196
CAPSTRIN	16,256	4.051	4.125	2.875	4.75	1.049
DEBT	16,407	0.125	0.090	0.038	0.174	0.122
DEV	16,407	0.409	0	0	1	0.492
DGRTH	16,303	0.116	0.075	0.008	0.178	0.196
DIV	16,407	0.003	0.002	0.000	0.004	0.004
DODD	16,407	0.521	1	0.000	1	0.499
EXTMOR	15,929	4.781	4.800	4.500	5.500	1.019
INSTPER	16,407	0.220	0.141	0.026	0.326	0.242
LEX	15,929	0.087	0	0	0	0.282
LGRTH	16,312	0.119	0.084	0.008	0.188	0.192
LOAN	16,407	0.651	0.666	0.575	0.745	0.143
NPL	16,407	1.978	0.913	0.263	2.240	4.298
NUM	16,407	1.600	1	1	2	1.821
RISK	16,407	0.084	0.069	0.048	0.101	0.136
ROA	16,407	0.822	0.833	0.415	1.208	0.997
ROE	16,407	8.343	9.279	5.327	13.486	11.395
US	16,407	0.568	1	0	1	0.495

Table 1 presents the summary statistics for the variables used in our analysis. The average ROA in our sample is about 0.82% and the average ROE is 8.34%. On average, 56.80% of the banks in our sample were listed in US exchanges, and 41% of the sample banks are from developing countries.

Table 2 presents pairwise correlations of the variables used in our analysis. We find that assets are highly correlated with number of exchanges on which the bank is listed, and loan growth is positively correlated with the growth of both deposits and assets.

IV Method and Results

We use OLS regression to test the impact of cross-listing, institutional ownership, regulation and monitoring on three areas: the banks' performance, their capital maintenance, and their growth. We include year fixed effects in all regression models.

Panel A of Table 3 reports OLS regression results for bank profitability and asset quality as the dependent variables using the full sample. The results show a significantly negative relationship between the variable US indicating if a bank is listed in a US exchange and the variables of ROA, BLOAND and BLOANP. The coefficients of US are -0.132 with t-stat of -2.14, -1.999 with t-stat of -5.24, -2.118 with t-stat of -6.25, and -1.665 with t-stat of -6.13 in the models for ROA, NPL, BLOAND, and BLOANP, respectively. These coefficients are negative and significant at the five percent level for the models of ROA and at the one percent level for the models of NPL, BLOAND and BLOANP, suggesting that banks listed in US have a lower profitability (lower ROA) and higher asset quality (lower non-performing loans and bad loans). The coefficient on dummy variable to indicate if the bank is from developing country (DEV) is significant and positive for the models of ROA, ROE, NPL and BLOAND. This result implies that when compared to banks from developed countries, the banks from developing countries report higher profitability (coefficient = 1.281 with t-stat = 12.22 for the model of ROA, coefficient = 15.37 with t-stat = 11.70 for the model of ROE) but lower quality assets (coefficient = 2.638 with t-stat = 5.50 for the model of NPL, coefficient = 3.703 with t-stat = 8.71 for the model of BLOAND, coefficient = 2.460 with t-stat = 7.03 for the model of BLOANP). The coefficients of the variable measuring the number of exchanges a bank is listed, NUM, are positive and significant at 1% for the models of both ROA and ROE (coefficient = 0.0721 with t-stat = 6.06 for the model of ROA, coefficient = 0.691 with t-stat = 5.34 for the model of ROE) implying that as the number of exchanges a firm is listed increases, its profitability increases. Conversely, the evidence shows that the coefficients of NUM are positive and significant in the models of bad loans, implying that listing in multiple exchanges reduces asset quality (coefficient = 0.401 with t-stat = 5.41 for the model of NPL, coefficient = 0.406 with t-stat = 6.15 for the model of BLOAND, coefficient = 0.3 with t-stat = 5.68 for the model of BLOANP). The coefficient on interaction variable Developing and Multiple exchanges (NUMDEV) is negative and significant in the model for ROA (coefficient = -0.0597 with t-stat = -2.66). This result implies that for every additional exchange on which the bank is cross-listed, banks from developing countries experience a reduction of 0.0597% in ROA compared to banks from developed countries that are cross-listed. This reduction directly relates to the compliance cost to the bank from a developing country to list in a greater number of exchanges. Because banks from developed countries already have higher regulations in their home country, fewer additional compliance costs are incurred by these banks when listing in an additional exchange. Our results support Ribstein (2005) documenting that firms cross-listing in other countries are pressured to incur excessive compliance costs to meet that country's legal

Table 2. Correlation matrix

	US	DEV	LEX	NUM	ASSET	LOAN	CAP1	AGRTH	LGRTH	DGRTH	DIV	RISK	DEBT	INSTPER	CAPSTRIN	EXTMOR	ADRI	DODD	
US	1																		
DEV	-0.5733*	1																	
LEX	-0.1221*	0.1742*	1																
NUM	0.2209*	0.0508*	0.1834*	1															
ASSET	-0.0565*	0.1820*	0.2211*	0.6446*	1														
LOAN	0.0713*	-0.1563*	-0.1122*	-0.2540*	-0.2356*	1													
CAP1	0.0889*	-0.0992*	-0.0628*	-0.1432*	-0.3526*	0.0234*	1												
AGRTH	-0.0287*	0.0858*	0.0921*	-0.0454*	-0.0933*	-0.0196*	0.1021*	1											
LGRTH	-0.0201*	0.0792*	0.0899*	-0.0423*	-0.1038*	0.0241*	0.1107*	0.8452*	1										
DGRTH	-0.0314*	0.0751*	0.0886*	-0.0327*	-0.0909*	-0.0158*	0.1021*	0.8511*	0.7452*	1									
DIV	-0.0292*	0.1842*	0.0038	0.0223*	0.0016	-0.0969*	0.0274*	0.0174*	0.0185*	0.0245*	1								
RISK	-0.0551*	0.0683*	0.0483*	-0.0088	-0.0008	-0.0240*	0.0187*	-0.0041	-0.0139	0.0095	-0.0456*	1							
DEBT	0.0822*	0.0276*	0.1472*	0.2862*	0.3015*	-0.0279*	-0.1270*	-0.0212*	-0.0218*	-0.0447*	-0.0151	0.0198*	1						
INSTPER	0.3514*	-0.2547*	-0.0545*	0.2557*	0.2774*	-0.0055	-0.1399*	-0.0074	-0.0079	-0.0054	0.0082	-0.0262*	0.1154*	1					
CAPSTRIN	0.0188*	0.1764*	-0.0581*	0.0192*	-0.0453*	-0.0115	-0.0240*	-0.0491*	-0.0519*	-0.0448*	0.0319*	-0.0096	-0.1019*	0.0422*	1				
EXTMOR	0.3091*	-0.2244*	-0.6952*	-0.1511*	-0.2774*	0.0773*	0.0603*	-0.0490*	-0.0517*	-0.0406*	0.0348*	-0.0616*	-0.1341*	0.2092*	0.3231*	1			
ADRI	-0.5287*	0.3966*	0.1423*	0.1968*	0.4913*	-0.1335*	-0.1594*	-0.0488*	-0.0663*	-0.0361*	-0.0688*	0.0213*	0.1389*	-0.2020*	-0.2338*	-0.3602*	1		
DODD	-0.0778*	0.1239*	-0.1198*	0.1181*	0.1716*	-0.0603*	-0.0906*	-0.1928*	-0.1878*	-0.1740*	-0.0035	-0.0689*	-0.0885*	0.1356*	0.4027*	0.3145*	0.0601*	1	

Table 3. Baseline Regression Results
Panel A.

This panel reports regression results of bank performance with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	-0.132** (-2.14)	-0.132** (-2.14)	0.281 (0.41)	0.322 (0.47)	-1.999*** (-5.24)	-2.010*** (-5.29)	-2.118*** (-6.25)	-2.125*** (-6.26)	-1.665*** (-6.13)	-1.670*** (-6.15)
DEV	1.281*** (12.22)	1.249*** (11.88)	15.37*** (11.70)	14.80*** (11.20)	2.638*** (5.50)	2.994*** (6.24)	3.703*** (8.71)	3.954*** (9.27)	2.460*** (7.03)	2.720*** (7.75)
USDEV	0.258** (2.54)	0.257** (2.53)	0.643 (0.58)	0.591 (0.53)	2.316*** (3.59)	2.273*** (3.54)	3.083*** (5.38)	3.056*** (5.33)	3.054*** (6.67)	3.021*** (6.60)
NUM	0.0721*** (6.06)	0.0659*** (5.55)	0.691*** (5.34)	0.638*** (4.91)	0.401*** (5.41)	0.435*** (5.89)	0.406*** (6.15)	0.419*** (6.35)	0.300*** (5.68)	0.313*** (5.93)
NUMDEV	-0.0597*** (-2.66)	-0.0544** (-2.43)	-0.245 (-1.01)	-0.176 (-0.72)	-0.584*** (-4.07)	-0.604*** (-4.23)	-0.595*** (-4.67)	-0.608*** (-4.76)	-0.574*** (-5.63)	-0.584*** (-5.74)
EXTMOR	0.100*** (6.13)	0.100*** (6.11)	0.918*** (4.29)	0.899*** (4.19)	0.184*** (3.04)	0.206*** (3.40)	0.144*** (2.69)	0.161*** (3.01)	0.0492 (1.08)	0.0679 (1.50)
DEVEXT	-0.151*** (-8.20)	-0.146*** (-7.88)	-2.067*** (-8.54)	-1.970*** (-8.10)	-0.200*** (-2.94)	-0.253*** (-3.72)	-0.251*** (-4.19)	-0.290*** (-4.83)	-0.0305 (-0.60)	-0.0707 (-1.38)
ASSETS	-0.0413*** (-4.07)	-0.0385*** (-3.77)	-0.0413 (-0.36)	-0.0515 (-0.44)	-0.278*** (-5.19)	-0.292*** (-5.44)	-0.268*** (-5.65)	-0.260*** (-5.46)	-0.224*** (-5.75)	-0.218*** (-5.60)
LOAN	0.175** (2.29)	0.0337 (0.44)	-0.407 (-0.43)	-1.955** (-2.07)	4.520*** (14.26)	5.381*** (16.93)	5.410*** (19.29)	5.954*** (21.15)	-0.400* (-1.69)	0.104 (0.44)
CAP1	-0.0120*** (-5.28)	-0.00910*** (-3.57)	-0.157*** (-5.70)	-0.172*** (-5.54)	-0.0380*** (-3.62)	-0.0434*** (-3.76)	0.0632*** (6.80)	0.0782*** (7.64)	0.0234*** (3.03)	0.0330*** (3.88)
AGRTH	0.638*** (15.64)		9.652*** (17.82)		-2.427*** (-16.47)		-1.575*** (-12.09)		-1.443*** (-13.03)	

LGRTH		0.501***		8.071***		-2.400***		-1.544***		-1.526***
		(13.59)		(16.50)		(-18.04)		(-13.12)		(-15.27)
DIV	85.72***	85.22***	664.9***	660.7***	-55.34***	-53.78***	-18.62**	-19.04**	-13.70**	-13.81**
	(36.08)	(35.84)	(22.00)	(21.79)	(-6.08)	(-5.92)	(-2.31)	(-2.37)	(-2.01)	(-2.03)
RISK	-2.725***	-2.714***	-41.58***	-41.17***	9.796***	9.602***	5.922***	5.770***	5.185***	5.020***
	(-21.57)	(-21.43)	(-24.87)	(-24.54)	(21.46)	(21.04)	(14.68)	(14.30)	(15.10)	(14.64)
DEBT	-0.324***	-0.331***	-0.600	-0.707	-0.0807	-0.0755	5.430***	5.470***	-0.921***	-0.912***
	(-3.50)	(-3.57)	(-0.53)	(-0.63)	(-0.21)	(-0.19)	(15.62)	(15.74)	(-3.15)	(-3.13)
INSTPER	0.328***	0.340***	2.672***	2.769***	-1.133***	-1.119***	-0.521***	-0.520***	-0.509***	-0.495***
	(6.58)	(6.83)	(4.41)	(4.55)	(-5.40)	(-5.34)	(-2.80)	(-2.80)	(-3.26)	(-3.17)
CAPSTRIN	-0.0601***	-0.0597***	-0.366***	-0.364***	0.143***	0.134***	0.0857**	0.0793**	0.0409	0.0344
	(-5.66)	(-5.62)	(-2.68)	(-2.66)	(3.56)	(3.33)	(2.41)	(2.23)	(1.36)	(1.14)
ADRI	-0.0621***	-0.0638***	-0.122	-0.115	0.130	0.136	-0.203*	-0.203*	-0.141	-0.143*
	(-3.13)	(-3.22)	(-0.55)	(-0.52)	(1.08)	(1.13)	(-1.89)	(-1.89)	(-1.64)	(-1.66)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.221	0.218	0.286	0.279	0.111	0.114	0.101	0.105	0.0691	0.0748
Obs.	12883	12877	12883	12877	12883	12877	12883	12877	12883	12877

Panel B.

This panel reports regression results of bank performance measured in CAPI CAP12, asset growth, loan growth and deposit growth. All dependent variables are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAPI	CAP12	AGRTH	LGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)
US	0.629 (0.97)	0.0921 (0.19)	-0.0115 (-1.00)	-0.0173 (-1.33)	-0.0137 (-1.03)
DEV	-2.246*** (-3.52)	0.551 (1.03)	0.195*** (10.34)	0.291*** (13.73)	0.185*** (8.34)
USDEV	-0.433 (-0.39)	-0.0306 (-0.04)	-0.0337* (-1.75)	-0.0377* (-1.74)	-0.0206 (-0.93)
NUM	0.343*** (2.84)	0.292*** (3.39)	-0.00540** (-2.30)	0.00328 (1.24)	0.00231 (0.86)
NUMDEV	0.237 (0.95)	-0.0915 (-0.57)	0.0110** (2.51)	0.00530 (1.08)	0.00331 (0.66)
EXTMOR	-0.184*** (-4.66)	-0.0903 (-1.59)	0.0312*** (10.31)	0.0376*** (11.05)	0.0285*** (7.92)
DEVEXT	0.369*** (8.32)	-0.0267 (-0.37)	-0.0330*** (-9.34)	-0.0478*** (-12.04)	-0.0292*** (-6.96)
ASSETS	-1.326*** (-26.78)	-0.831*** (-15.46)	-0.0000859 (-0.05)	-0.00218 (-1.07)	-0.00210 (-1.00)
LOAN	-0.200 (-0.91)	0.236 (0.76)	-0.0839*** (-5.95)	0.137*** (8.63)	-0.0688*** (-4.14)
DIV	64.12*** (10.65)	35.95*** (4.56)	-0.414 (-0.96)	-0.150 (-0.31)	-0.261 (-0.51)
RISK	1.228*** (4.17)	0.286 (0.67)	-0.0255** (-2.53)	-0.0368*** (-3.24)	-0.00980 (-0.82)
DEBT	-1.994*** (-7.18)	1.275*** (3.68)	-0.0472*** (-2.80)	-0.0657*** (-3.46)	-0.269*** (-13.53)
INSTPER	0.955*** (6.51)	0.144 (0.73)	0.0766*** (7.95)	0.0835*** (7.71)	0.0816*** (7.21)
CAPSTRIN	0.0971*** (3.68)	0.256*** (8.56)	-0.00453** (-2.38)	-0.00814*** (-3.80)	-0.00294 (-1.30)
ADRI	0.474** (2.37)	0.284** (2.03)	-0.00289 (-0.79)	-0.00488 (-1.18)	0.00166 (0.39)
Year FF	Yes	Yes	Yes	Yes	Yes
R-squares	0.107	0.0754	0.0466	0.0533	0.0997
Obs.	12925	7509	15842	15835	15825

requirements. The coefficients of NUMDEV are negative and significant in all models of bad loans (models 6 through 10 for NPL, BLOAND and BLOANP) implying banks from developing countries that cross-list on multiple exchanges have better asset quality.

The variable “ASSETS” has a negative coefficient in the ROE and ROA models implying that larger banks have a lower profitability (Aladwan, 2015 and Goddard *et al.*, 2004) and have better asset quality (coefficient on NPL = -0.278 with t-stat = -5.19 and BLOAND = -0.268 with t-stat = -5.65). Coefficient on variable LOAN is positively and significantly related to NPL (coefficient = 4.52 with t-stat = 14.26) and bad loans (coefficient = 5.410 with t-stat = 19.29) since banks with higher loans (when compared to their other assets) are expected to have higher percentage of bad loans. Because tier-1 capital (i.e., equity capital and retained earnings) is more expensive as compared with other forms of capital, banks with higher tier-1 capital tend to have a lower profitability (ROA). but have a negative and significant relation with non-performing loans (NPL) and a positive and significant relation with bad loans. Banks with higher asset growth (AGRTH) experienced higher ROA and lower NPL and bad loans. Banks that pay more dividends are more profitable and have lower NPL and bad loans. Banks with higher standard deviation (RISK) on stocks have monthly returns that are negatively and significantly related to ROA and ROE and that are positively related to NPL and bad loans. This relationship implies that banks with higher risk experience lower profit and asset quality. The coefficient on the variable DEBT has similar results as the variable RISK implying a higher debt ratio will lower the banks’ profit and asset quality.

Variable “INSTPER” that measures the bank’s level of institutional ownership is positively related to ROE (coefficient 0.328) and ROA (coefficient 2.672) and is negatively related to NPL (coefficient = -1.133) and bad loans (coefficient = -0.521). Every 1% increase in institutional ownership increases the ROA by 0.328% and reduces NPL by 1.133%. Variables “CAPSTRIN” and “ADRI” represent capital regulation and investor protection, respectively. These variables are negative and significantly affect the ROA implying that banks from countries with greater regulation and investor protection will experience a lower profit (Ribstein 2005). Higher capital stringency did not result in better asset quality (positive and significant coefficient in the models with NPL and BLOAND as the dependent variables). Banks from higher investor protection countries (ADRI) show a reduction in the percentage of bad loans. Coefficients on interaction of variables DEV and external monitoring (DEVEXT) is negative and significant for ROA and ROE as dependent variables. Such a relationship implies that if the bank is from a developing country with high external monitoring, the ROA will decrease by 0.151% and ROE by 2.067%, respectively when compared to banks from developed countries with high external monitoring. The coefficient on DEVEXT is negative and significant in models with NPL and bad loans as dependent variables resulting in better asset quality for banks in developing countries compared to banks from developed countries when both have high external monitoring.

Table 3B reports OLS regression results for banks’ capital maintenance, asset growth, loan growth and deposit growth as the dependent variables using the full sample. Regarding capital maintenance, the variable for developing countries (DEV) is negatively associated with tier-1 capital which shows that banks from developing countries have 2.246% lower tier-1 capital when compared to banks from developed countries. Coefficient on variable NUM implies that for every additional exchange on which the bank is listed, the bank would have a 0.343% increase in tier-1 capital and 0.292% increase in total capital.

When analyzing asset growth, interaction variable “NUMDEV” is positively and significantly associated implying that for each additional exchange, banks from developing

economies experienced an increase in asset growth of 0.0110%. Banks with greater institutional ownership are positively and significantly associated with tier-1 capital and asset growth, loan growth and deposit growth. Elyasiani and Jia (2010) mention that institutional ownership increases firm performance, stock demand, and liquidity. Chung and Wang (2014) mention that institutional ownership can substitute for monitoring.

Although banks with greater capital stringency are associated with higher tier-1 and total capital, they have lower asset and loan growth. Jonghe and Oztekin (2015) mention that banks with higher capital stringency have lower risk as verified by supervisors. They also mention that such banks can quickly adjust (increase) equity capital. The coefficient on ADRI is positive and significant implying that Banks with higher shareholder protection tend to have higher tier-1 and total capital. Interaction variable DEVEXT (Banks from developing countries with higher external monitoring) is positively and significantly associated with tier-1 capital implying that higher monitoring increases the level of tier-1 capital among banks in developing countries but negatively associated with asset growth, loan growth and deposit growth.

In table 4A we divide the sample into banks from developed and developing countries and compare each using five proxies: ROA, ROE, NPL, BLOAND, and BLOANP. Banks from developed countries listed in US had better asset quality when compared to banks from developing countries (NPL and bad loans as dependent variable). For banks from developed countries with low external monitoring (LEX), the profitability increased by 0.216% when compared to banks from low external monitoring countries listed in US. If the bank is from a low external monitoring country, the asset quality improved (negative and significant coefficient on NPL and BLOANP). If the bank is from a high external monitoring country listed in multiple exchanges (variable NUM), the ROA increases by 0.0580% when compared with banks from developed and low external monitoring countries (variable NUMLEX). If banks from developing economies with low external monitoring are listed in the multiple exchanges (variable NUMLEX), the percentage of NPL decreases by 0.403% when compared to banks from high monitoring countries listed in multiple exchanges (Bonding hypothesis by Coffee 1999 and Stulz 1999).

The bank's asset size has a negative effect on ROA, BLOAND and BLOANP in developed countries. Larger banks in developing countries have a positive effect on ROE and a negative effect on NPLs and bad loans implying that larger banks have higher profit and better asset quality. The variable "LOAN" is positively and significantly associated with ROA for banks in developed economies and is negatively and significantly associated with ROA for banks in developing economies. Higher institutional ownership positively and significantly affects profit and increases asset quality (significant and negative coefficient on NPL, BLOAND and BLOANP) in banks from both developed and developing economies. Higher capital stringency and shareholder protection (ADRI) decrease ROA in banks from developing countries due to higher compliance costs.

Table 4B reports OLS regression results where banks' capital, asset growth, loan growth and deposit growth are the dependent variables. Models 1, 3, 5, 7 and 9 report results for developed economies and the remaining models report results for developing economies. Low external monitoring is positively associated with total capital in banks from developing economies (coefficient on variable ROE = 0.856 and significant at 1%) and negatively (insignificant) associated with tier-1 capital. Interaction variable "USLEX" is negative and significant in the "loan growth" model for developing countries implying that banks from developing countries with low external monitoring have restricted loan growth due to higher regulations in US which require higher tier-1 capital maintenance to generate additional loans. The variable "NUM" is positively associated with tier-1 and total capital in banks from developed economies and higher tier-1

Table 4
Panel A.

This panel reports regression results of bank performance with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. Columns 1, 3, 5, 7, 9 report results for banks from developed economies and columns 2, 4, 6, 8, 10 report results for banks from developing economies. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	-0.0697 (-1.15)	0.171* (1.67)	0.226 (0.33)	0.982 (0.97)	-0.317*** (-2.60)	0.830 (1.35)	-1.065*** (-5.06)	2.124*** (3.19)	-1.213*** (-6.81)	2.200*** (4.07)
LEX	0.216*** (2.99)	-0.0963 (-1.58)	0.803 (0.83)	0.0189 (0.03)	-1.536*** (-10.03)	1.306*** (3.85)	-0.301 (-1.61)	1.697*** (6.27)	-0.533*** (-3.42)	1.646*** (7.09)
USLEX	-0.121 (-0.91)	-0.00632 (-0.06)	-0.933 (-0.55)	-2.592** (-2.03)	0.406 (1.45)	0.258 (0.44)	-1.528*** (-4.18)	-0.686 (-1.51)	-0.630** (-2.07)	0.203 (0.52)
NUM	0.0580*** (5.11)	0.00632 (0.22)	0.541*** (4.27)	0.178 (0.63)	-0.0205 (-0.90)	0.328* (1.95)	0.197*** (4.95)	0.0608 (0.34)	0.206*** (6.13)	-0.0661 (-0.46)
NUMLEX	0.00742 (0.33)	0.0117 (0.43)	0.769*** (2.64)	0.852*** (2.65)	0.00586 (0.12)	-0.403*** (-2.64)	0.126** (2.11)	-0.186 (-1.53)	0.0593 (1.19)	-0.316*** (-3.03)
ASSETS	-0.0431*** (-3.72)	0.00658 (0.38)	-0.130 (-0.94)	0.648*** (3.63)	0.171*** (7.18)	-0.668*** (-6.62)	-0.195*** (-5.42)	-0.826*** (-8.47)	-0.122*** (-4.05)	-0.693*** (-8.55)
LOAN	0.315*** (3.72)	-0.379*** (-3.27)	0.343 (0.32)	-3.567*** (-2.73)	1.534*** (8.62)	9.350*** (14.35)	3.620*** (15.93)	11.98*** (22.20)	0.294 (1.56)	1.980*** (4.30)
DIV	88.45*** (26.09)	70.59*** (25.40)	777.3*** (17.09)	521.1*** (15.87)	-58.16*** (-8.06)	-51.11*** (-3.33)	-3.465 (-0.40)	-30.83** (-2.55)	-16.44** (-2.28)	-26.12** (-2.52)
RISK	-0.374*** (-8.27)	-0.749*** (-4.21)	-5.009*** (-8.40)	-7.545*** (-3.52)	0.661*** (6.95)	7.611*** (7.77)	0.572*** (4.34)	6.782*** (8.91)	0.543*** (4.92)	5.496*** (8.39)
DEBT	-0.215** (-2.19)	-0.441*** (-3.00)	-1.181 (-0.93)	0.118 (0.07)	-0.702*** (-3.39)	3.564*** (4.31)	4.776*** (18.30)	7.212*** (10.59)	-0.694*** (-3.20)	-1.911*** (-3.29)
INSTPER	0.399***	0.274***	3.384***	3.456***	-1.120***	-1.737***	-0.359**	-1.742***	-0.457***	-1.160***

	(7.10)	(3.11)	(4.77)	(3.36)	(-9.54)	(-3.55)	(-2.33)	(-4.46)	(-3.57)	(-3.47)
CAPSTRIN	0.00774	-0.0358***	0.134	-0.231	0.283***	0.100	-0.142***	0.115**	-0.154***	0.0854*
	(0.52)	(-2.77)	(0.65)	(-1.52)	(8.87)	(1.40)	(-3.84)	(2.04)	(-5.02)	(1.76)
ADRI	-0.0176	-0.147***	0.142	-0.836***	0.270***	-0.544***	0.0932	-0.739***	-0.0797	-0.229
	(-0.68)	(-4.52)	(0.47)	(-2.60)	(5.10)	(-2.79)	(1.07)	(-3.50)	(-1.09)	(-1.34)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.250	0.0998	0.210	0.0618	0.187	0.0630	0.0884	0.134	0.0892	0.0583
Obs.	9563	6366	9563	6366	9563	6366	9563	6366	9563	6366

Panel B.

This panel reports regression results of bank performance measured in CAPI, CAP12, asset growth, loan growth and deposit growth. All dependent variables are winsorized at the one percent level. Columns 1, 3, 5, 7, 9 report results for banks from developed economies and columns 2, 4, 6, 8, 10 report results for banks from developing economies. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAPI	CAPI	CAP12	CAP12	AGRTH	AGRTH	LGRTH	LGRTH	DGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	1.096	0.229	0.400	0.327	-0.00818	-0.0356**	-0.00791	-0.0319*	-0.0153	-0.0295*
	(1.42)	(0.30)	(1.25)	(0.43)	(-0.57)	(-2.57)	(-0.50)	(-1.93)	(-0.95)	(-1.73)
LEX	-0.360	-0.0843	0.00351	0.856***	-0.00935	0.00785	-0.0135	0.0322**	0.0939***	0.0258*
	(-0.84)	(-0.43)	(0.01)	(3.02)	(-0.57)	(0.71)	(-0.74)	(2.50)	(4.92)	(1.89)
USLEX	0.114	-0.152	-0.183	-0.169	-0.0248	-0.0143	0.0163	-0.0760***	-0.112***	-0.0150
	(0.19)	(-0.44)	(-0.45)	(-0.32)	(-0.81)	(-0.71)	(0.48)	(-3.26)	(-3.16)	(-0.60)
NUM	0.452***	0.422**	0.271***	0.259	-0.00831***	0.00463	0.000651	0.00630	-0.00109	0.0114**
	(3.45)	(2.12)	(5.12)	(1.29)	(-3.09)	(1.17)	(0.22)	(1.34)	(-0.36)	(2.35)
NUMLEX	-0.00188	-0.0776	0.0320	-0.0895	0.0175***	0.00533	0.00866	0.0107*	0.00905	-0.00424
	(-0.03)	(-0.92)	(0.75)	(-0.81)	(3.41)	(1.07)	(1.53)	(1.85)	(1.52)	(-0.69)
ASSETS	-1.723***	-1.015***	-0.840***	-0.944***	0.000574	-0.00100	-0.00364	-0.00182	0.00733**	-0.00760**
	(-29.59)	(-11.20)	(-18.11)	(-9.13)	(0.21)	(-0.40)	(-1.22)	(-0.61)	(2.37)	(-2.44)

LOAN	-1.472***	2.163***	-0.199	0.792	0.0173	-0.180***	0.241***	0.0316	0.0438*	-0.176***
	(-6.20)	(4.92)	(-0.77)	(1.45)	(0.89)	(-9.13)	(11.23)	(1.37)	(1.94)	(-7.25)
DIV	73.31***	59.93***	-27.90***	51.98***	-2.871***	0.0462	-3.094***	0.393	-1.736*	-0.136
	(8.91)	(6.44)	(-2.93)	(4.48)	(-3.72)	(0.09)	(-3.62)	(0.66)	(-1.93)	(-0.21)
RISK	1.973***	1.200**	0.401	0.198	-0.0293***	-0.0912***	-0.0372***	-0.131***	-0.0205*	-0.0814*
	(6.03)	(2.07)	(1.06)	(0.28)	(-2.82)	(-2.63)	(-3.24)	(-3.30)	(-1.71)	(-1.92)
DEBT	-0.931***	-3.614***	0.484*	1.798***	0.00779	-0.0664***	0.0171	-0.118***	-0.315***	-0.208***
	(-2.96)	(-7.01)	(1.76)	(2.78)	(0.35)	(-2.66)	(0.69)	(-4.03)	(-12.04)	(-6.77)
INSTPER	1.768***	0.436	0.696***	-0.112	0.0856***	0.0450***	0.0986***	0.0404**	0.0683***	0.0380*
	(11.01)	(1.40)	(4.48)	(-0.29)	(6.62)	(2.79)	(6.90)	(2.17)	(4.57)	(1.92)
CAPSTRIN	-0.201***	0.263***	-0.0377	0.311***	-0.00283	-0.000279	-0.0107***	-0.000304	-0.00921**	0.00111
	(-5.00)	(6.49)	(-1.24)	(6.52)	(-0.84)	(-0.12)	(-2.86)	(-0.11)	(-2.32)	(0.38)
ADRI	1.092***	0.207	0.305***	0.186	-0.0187***	-0.00198	-0.0207***	-0.00756	-0.0295***	0.00544
	(3.91)	(0.78)	(2.58)	(0.70)	(-3.06)	(-0.45)	(-3.07)	(-1.44)	(-4.24)	(1.00)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.173	0.0838	0.169	0.0713	0.0869	0.224	0.122	0.213	0.0730	0.185
Obs.	8463	4462	3900	3609	9527	6315	9523	6312	9519	6306

capital in banks from developing economies implying that banks listed in multiple exchanges have access to higher capital when compared to banks that are not listed in multiple exchanges. Reese and Weisbach (2002) find that non-US firms cross-list in US to increase minority shareholder protection. This action increases equity issue following cross-listing. They find that firms from weak protection countries receive more equity issue from non-US sources and firms from strong protection countries receive more equity issue from the US. Interaction variable “NUMLEX” is positive and significant in the model where “asset growth” is the dependent variable implying that low monitoring banks listed in multiple exchanges are associated with greater asset growth when compared to banks listed on a single exchange. The variable “ASSETS” is negatively associated with capital. Hakenes and Isabel (2011) find that large banks have a competitive advantage under the IRB Basel II approach and hence require less capital. The variable “Institution ownership” (INSTPER) is positively and significantly associated with dependent variables tier-1 capital, asset growth, loan growth and deposit growth in banks from developed economies. Institutional ownership positively influences the growth variables in developing economies. Higher capital stringency requirement is positively and significantly associated with tier-1 and total capital in developing economies. Higher ADRI (shareholder protection) is associated with higher tier-1 and total capital in developed countries. Caprio *et al.* (2007) find a positive relationship between shareholder protection and firm valuation.

Tables 5A and 5B are like tables 3A and 3B except that we include only observations after the 2008 financial crisis period. The variable for the level of external monitoring in a country (EXTMOR) is negative and significant in the models with NPL and Bad loans as the dependent variables. This result supports the hypothesis that firms with higher external monitoring have better asset quality. Hirtle *et al.* (2020) find that banks with higher supervision hold less-risky loans and have less volatile earnings and market returns. Higher tier-1 capital is positively and significantly associated with ROA and ROE implying that maintenance of tier-1 capital increased profitability of banks in the post-crisis period. Other variables’ coefficients are similar in sign but have a different magnitude when compared to the entire time period in table 3A and 3B.

Tables 6A and 6B are like tables 4A and 4B except that they report regression results for only the post-crisis period. We divide the sample into banks from developed and developing countries. Table 6A shows that since the crisis period, banks from developed countries experience an increase of 0.146% in ROA if they are listed in the US (in model (1), the coefficient of US = 0.146 with t-stat = 1.96). In developed economies, banks from low external monitoring countries listed in the US experience a 0.396% decrease in ROA when compared to banks from high external monitoring countries (in model (1), the coefficient of the interaction variable, USLEX = -0.369 with t-stat = -2.04). An increase in investor protection (ADRI) by 1 in developed countries results in a 0.108% increase in ROA (in model (1), the coefficient of the interaction variable, USLEX = -0.369 with t-stat = -2.04).

In table 6B, US listed banks in developed countries have a 1.075% increase in tier-1 capital following the crisis period (in model (1), the coefficient of US = 1.075 with t-stat = 3.83). The remaining variables show similar results for the entire sample.

Tables 7A and 7B include results for the crisis period (2008-2009) only. Table 7A shows that interaction variable USDEV is positively associated with ROA implying that banks from developing countries and listed in the US outperform banks from developing countries but do not list in the US markets. Further, the coefficient is much larger when compared to the full sample implying the benefits listing in the US for developing countries’ banks during the crisis period.

Table 5
Panel A

This panel reports regression results for the post-crisis period of bank performance with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	-0.0777 (-0.95)	-0.0699 (-0.86)	0.720 (0.68)	0.840 (0.79)	-1.706*** (-3.34)	-1.740*** (-3.41)	-2.256*** (-5.19)	-2.272*** (-5.22)	-1.595*** (-4.59)	-1.610*** (-4.63)
DEV	2.073*** (14.54)	1.983*** (13.87)	26.41*** (14.05)	25.07*** (13.27)	1.120* (1.74)	1.535** (2.39)	3.116*** (5.68)	3.348*** (6.08)	1.757*** (3.92)	2.030*** (4.52)
USDEV	0.276** (2.21)	0.275** (2.21)	0.974 (0.61)	0.984 (0.61)	2.160*** (2.71)	2.116*** (2.65)	3.096*** (4.56)	3.073*** (4.52)	2.939*** (5.42)	2.898*** (5.34)
NUM	0.0923*** (6.28)	0.0836*** (5.71)	1.182*** (6.26)	1.081*** (5.70)	0.478*** (5.23)	0.513*** (5.63)	0.422*** (5.43)	0.441*** (5.67)	0.342*** (5.50)	0.358*** (5.75)
NUMDEV	-0.0975*** (-3.68)	-0.0895*** (-3.39)	-0.770** (-2.26)	-0.676** (-1.98)	-0.627*** (-3.70)	-0.647*** (-3.83)	-0.564*** (-3.91)	-0.574*** (-3.98)	-0.572*** (-4.97)	-0.580*** (-5.03)
EXTMOR	0.209*** (8.99)	0.196*** (8.45)	2.150*** (6.98)	1.968*** (6.36)	-0.286*** (-3.29)	-0.229*** (-2.64)	-0.0503 (-0.68)	-0.0180 (-0.24)	-0.224*** (-3.61)	-0.185*** (-2.98)
DEVEXT	-0.291*** (-11.25)	-0.275*** (-10.59)	-4.001*** (-11.65)	-3.761*** (-10.91)	0.136 (1.43)	0.0676 (0.71)	-0.192** (-2.34)	-0.232*** (-2.82)	0.0837 (1.22)	0.0383 (0.56)
ASSETS	-0.0378*** (-2.92)	-0.0380*** (-2.94)	-0.456*** (-2.72)	-0.468*** (-2.78)	-0.448*** (-6.46)	-0.451*** (-6.52)	-0.344*** (-5.81)	-0.348*** (-5.88)	-0.332*** (-6.91)	-0.330*** (-6.87)
LOAN	-0.00186 (-0.02)	-0.195** (-1.99)	-1.858 (-1.45)	-4.268*** (-3.31)	5.516*** (13.49)	6.360*** (15.49)	6.425*** (18.33)	6.893*** (19.57)	-0.153 (-0.53)	0.340 (1.17)
CAP1	0.0183*** (4.86)	0.0201*** (5.31)	0.0278 (0.57)	0.0292 (0.59)	-0.212*** (-12.04)	-0.214*** (-12.11)	0.123*** (8.17)	0.125*** (8.26)	0.0387*** (3.12)	0.0411*** (3.31)
AGRTH	0.721*** (13.84)		9.840*** (14.16)		-1.977*** (-10.70)		-1.162*** (-7.33)		-1.152*** (-8.70)	

LGRTH	0.564***		8.499***		-1.921***		-1.084***		-1.263***	
	(12.10)		(13.66)		(-11.62)		(-7.63)		(-10.66)	
DIV	88.73***	88.28***	679.5***	674.0***	-53.32***	-52.01***	-1.046	-0.700	-2.071	-1.459
	(29.07)	(28.93)	(16.83)	(16.66)	(-4.55)	(-4.44)	(-0.10)	(-0.07)	(-0.25)	(-0.17)
RISK	-2.688***	-2.666***	-39.40***	-38.78***	7.570***	7.383***	4.652***	4.559***	4.144***	3.994***
	(-17.97)	(-17.78)	(-19.77)	(-19.41)	(14.00)	(13.65)	(10.03)	(9.81)	(10.70)	(10.32)
DEBT	-0.528***	-0.547***	-2.443	-2.548	-0.315	-0.299	7.169***	7.198***	-0.585	-0.603
	(-4.37)	(-4.53)	(-1.54)	(-1.60)	(-0.61)	(-0.58)	(16.12)	(16.19)	(-1.59)	(-1.64)
INSTPER	0.365***	0.389***	4.073***	4.247***	-1.839***	-1.858***	-0.577**	-0.579**	-0.490**	-0.476**
	(5.75)	(6.13)	(4.91)	(5.10)	(-6.55)	(-6.62)	(-2.40)	(-2.40)	(-2.47)	(-2.40)
CAPSTRIN	-0.0741***	-0.0758***	-0.442**	-0.463**	0.289***	0.288***	0.169***	0.170***	0.153***	0.152***
	(-4.99)	(-5.11)	(-2.26)	(-2.36)	(4.92)	(4.92)	(3.36)	(3.37)	(3.66)	(3.65)
ADRI	0.0168	0.0108	1.066***	0.998***	0.000691	0.0218	-0.168	-0.153	-0.0820	-0.0717
	(0.67)	(0.43)	(3.28)	(3.06)	(0.00)	(0.14)	(-1.30)	(-1.18)	(-0.79)	(-0.69)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.174	0.171	0.411	0.406	0.0993	0.101	0.115	0.117	0.0663	0.0709
Obs.	9224	9220	9224	9220	9224	9220	9224	9220	9224	9220

Panel B

This panel reports regression results for the post-crisis period of bank performance measured in CAP1, CAP12, asset growth, loan growth and deposit growth. All dependent variables are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAP1	CAP12	AGRTH	LGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)
US	0.627 (1.34)	0.129 (0.25)	0.00166 (0.14)	-0.0117 (-0.88)	0.00775 (0.60)
DEV	-0.324 (-0.67)	1.721** (2.48)	0.124*** (5.28)	0.252*** (9.52)	0.0728*** (2.68)
USDEV	-0.496 (-0.67)	-0.282 (-0.36)	-0.0487*** (-2.73)	-0.0464** (-2.29)	-0.0516*** (-2.63)
NUM	0.328*** (4.07)	0.264*** (2.97)	-0.00601*** (-2.72)	0.00372 (1.48)	0.00120 (0.49)
NUMDEV	-0.0761 (-0.49)	-0.144 (-0.89)	0.0129*** (3.29)	0.00528 (1.19)	0.00902** (2.10)
EXTMOR	-0.152*** (-3.35)	0.00305 (0.03)	0.0187*** (4.65)	0.0363*** (8.04)	0.0119** (2.53)
DEVEXT	0.175*** (3.52)	-0.184 (-1.63)	-0.0177*** (-3.86)	-0.0396*** (-7.66)	-0.00529 (-0.98)
ASSETS	-0.784*** (-16.79)	-0.654*** (-10.60)	0.000909 (0.49)	0.00164 (0.78)	-0.00139 (-0.67)
LOAN	0.0859 (0.38)	1.277*** (3.46)	-0.0782*** (-5.04)	0.130*** (7.44)	-0.0745*** (-4.21)
DIV	22.62*** (3.66)	25.19*** (2.75)	-0.157 (-0.31)	0.196 (0.35)	-0.859 (-1.47)
RISK	0.768*** (2.75)	0.194 (0.40)	-0.250*** (-9.12)	-0.343*** (-11.13)	-0.231*** (-7.14)
DEBT	-3.473*** (-12.11)	1.899*** (4.53)	-0.107*** (-5.62)	-0.139*** (-6.48)	-0.269*** (-12.44)
INSTPER	0.272* (1.72)	-0.368 (-1.49)	0.0719*** (6.83)	0.0729*** (6.15)	0.0725*** (6.09)
CAPSTRIN	0.172*** (5.53)	0.216*** (5.28)	-0.00282 (-1.17)	-0.00379 (-1.40)	-0.00408 (-1.47)
ADRI	0.296** (2.19)	0.201 (1.37)	-0.00666* (-1.81)	-0.00422 (-1.01)	-0.00609 (-1.49)
Year FF	Yes	Yes	Yes	Yes	Yes
R-squares	0.0664	0.0403	0.0386	0.0427	0.0759
Obs.	9239	6035	11269	11265	11257

Table 6
Panel A.

This panel reports regression results for the post-crisis period of bank performance with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. Columns 1, 3, 5, 7, 9 report results for banks from developed economies and columns 2, 4, 6, 8, 10 report results for banks from developing economies. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	0.146** (1.96)	0.138 (1.23)	2.988*** (2.68)	0.664 (0.58)	-0.668*** (-3.16)	0.782 (1.18)	-1.564*** (-6.88)	1.942*** (2.71)	-1.639*** (-7.66)	2.205*** (3.88)
LEX	0.466*** (3.81)	-0.136 (-1.50)	2.796 (1.58)	0.334 (0.32)	-1.063*** (-3.85)	1.876*** (3.62)	0.766** (2.53)	2.140*** (5.50)	0.484* (1.87)	1.940*** (6.01)
USLEX	-0.396** (-2.04)	0.0971 (0.55)	-6.866** (-2.40)	-3.097 (-1.51)	0.154 (0.31)	0.629 (0.63)	-0.600 (-1.10)	-0.502 (-0.71)	-0.0130 (-0.03)	-0.373 (-0.63)
NUM	0.0817*** (6.21)	0.00523 (0.16)	1.059*** (5.39)	0.266 (0.80)	0.0136 (0.37)	0.362* (1.92)	0.257*** (6.47)	0.199 (1.00)	0.309*** (8.32)	0.0205 (0.13)
NUMLEX	0.0266 (0.70)	0.0200 (0.45)	1.554*** (2.81)	0.906* (1.83)	0.0121 (0.13)	-0.710*** (-2.80)	-0.143 (-1.42)	-0.409** (-2.08)	-0.114 (-1.29)	-0.387** (-2.38)
ASSETS	-0.0990*** (-6.44)	0.0180 (0.92)	-1.182*** (-5.20)	0.587*** (2.85)	0.164*** (4.11)	-0.574*** (-5.03)	-0.267*** (-6.16)	-0.863*** (-7.98)	-0.286*** (-7.31)	-0.757*** (-8.66)
LOAN	-0.225** (-2.06)	-0.401*** (-2.87)	-5.440*** (-3.43)	-3.948** (-2.50)	2.441*** (9.57)	8.512*** (10.61)	3.905*** (13.95)	11.81*** (19.37)	0.480** (1.99)	1.483*** (2.93)
DIV	89.07*** (17.22)	69.96*** (21.38)	794.1*** (10.67)	511.6*** (13.39)	-44.44*** (-3.90)	-55.52*** (-2.99)	11.15 (0.89)	-0.0603 (-0.00)	0.662 (0.06)	-7.654 (-0.70)
RISK	-3.951*** (-22.00)	-1.469*** (-6.78)	-60.10*** (-23.45)	-15.90*** (-6.19)	6.975*** (18.31)	9.433*** (7.69)	5.310*** (12.60)	7.159*** (8.41)	4.910*** (13.98)	5.915*** (8.31)
DEBT	-0.430*** (-3.17)	-0.513*** (-2.97)	-2.916 (-1.48)	2.927 (1.50)	-0.486 (-1.55)	3.699*** (3.73)	5.635*** (16.39)	6.358*** (8.47)	-0.228 (-0.77)	-2.570*** (-4.13)
INSTPER	0.417*** (5.94)	0.525*** (4.51)	4.870*** (4.74)	5.590*** (4.20)	-1.455*** (-8.55)	-2.894*** (-4.34)	-0.154 (-0.83)	-2.034*** (-4.11)	-0.0703 (-0.43)	-1.417*** (-3.44)

CAPSTRIN	0.0766*** (2.77)	-0.0655*** (-3.96)	0.980** (2.44)	-0.361* (-1.89)	0.0192 (0.30)	0.311*** (3.30)	-0.234*** (-3.33)	0.215*** (3.17)	-0.182*** (-3.03)	0.207*** (3.64)
ADRI	0.108*** (3.14)	-0.157*** (-4.25)	2.134*** (4.17)	-0.907** (-2.39)	-0.0619 (-0.67)	-0.441** (-2.02)	-0.0821 (-0.82)	-0.599** (-2.54)	-0.122 (-1.34)	-0.108 (-0.58)
Year FF	0	1.707***	7.752**	0	-1.429***	2.010	2.272***	0	5.344***	0
R-squares	0.215	0.0876	0.176	0.0533	0.169	0.0526	0.0920	0.130	0.0952	0.0677
Obs.	6301	4993	6301	4993	6301	4993	6301	4993	6301	4993

Panel B.

This panel reports regression results for the post-crisis period of bank performance measured in CAP1 CAP12, asset growth, loan growth and deposit growth. All dependent variables are winsorized at the one percent level. Columns 1, 3, 5, 7, 9 report results for banks from developed economies and columns 2, 4, 6, 8, 10 report results for banks from developing economies. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAP1	CAP1	CAP12	CAP12	AGRTH	AGRTH	LGRTH	LGRTH	DGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	1.075*** (3.83)	0.0600 (0.08)	0.330 (1.31)	-0.0143 (-0.02)	0.00791 (0.56)	-0.0396*** (-2.86)	0.0132 (0.87)	-0.0334** (-2.00)	-0.000388 (-0.03)	-0.0346** (-2.07)
LEX	-0.0751 (-0.23)	-0.0101 (-0.03)	-0.405 (-0.92)	1.329*** (2.62)	-0.0207 (-0.84)	0.0301** (2.00)	-0.0259 (-0.96)	0.0585*** (3.34)	0.0797*** (2.85)	0.0246 (1.35)
USLEX	0.335 (0.50)	0.0985 (0.16)	0.136 (0.19)	0.0726 (0.05)	-0.0341 (-0.90)	-0.00956 (-0.31)	-0.0394 (-0.96)	-0.0898** (-2.52)	-0.0797** (-1.96)	-0.0545 (-1.46)
NUM	0.356*** (8.24)	0.129 (0.60)	0.218*** (5.37)	0.163 (0.72)	-0.00956*** (-3.81)	0.00782* (1.92)	-0.00346 (-1.29)	0.0101** (2.06)	-0.00198 (-0.76)	0.0144*** (2.93)
NUMLEX	-0.00670 (-0.08)	-0.0679 (-0.44)	0.0322 (0.42)	-0.100 (-0.38)	0.00886 (1.19)	-0.00227 (-0.33)	0.0121 (1.50)	0.00612 (0.75)	-0.000401 (-0.05)	-0.00171 (-0.20)
ASSETS	-1.074*** (-32.25)	-0.491*** (-4.76)	-0.611*** (-15.12)	-0.722*** (-6.03)	0.00585** (1.96)	-0.00122 (-0.46)	0.00502 (1.56)	-0.00326 (-1.04)	0.00769** (2.42)	-0.00640** (-2.02)
LOAN	-0.810*** (-5.49)	1.430*** (2.81)	0.288 (1.27)	2.180*** (3.37)	0.0000650 (0.00)	-0.184*** (-8.26)	0.186*** (7.91)	0.0580** (2.22)	0.0146 (0.61)	-0.197*** (-7.32)

DIV	17.86*** (3.10)	24.46** (2.31)	-32.42*** (-3.96)	40.03*** (2.95)	-1.537 (-1.48)	-0.296 (-0.51)	-1.462 (-1.28)	0.143 (0.21)	-1.889 (-1.60)	-1.057 (-1.49)
RISK	0.499*** (2.63)	1.300** (2.13)	-0.00352 (-0.01)	-0.0170 (-0.02)	-0.344*** (-9.40)	-0.138*** (-3.40)	-0.466*** (-11.51)	-0.215*** (-4.62)	-0.291*** (-6.78)	-0.169*** (-3.43)
DEBT	-0.202 (-1.02)	-6.917*** (-11.50)	0.559** (2.24)	3.052*** (3.98)	-0.0499* (-1.85)	-0.0999*** (-3.62)	-0.0284 (-0.97)	-0.170*** (-5.27)	-0.248*** (-8.31)	-0.265*** (-7.96)
INSTPER	0.600*** (5.81)	0.171 (0.42)	0.116 (0.84)	-0.995* (-1.94)	0.0507*** (3.67)	0.0677*** (3.46)	0.0610*** (4.07)	0.0571** (2.50)	0.0413*** (2.76)	0.0563** (2.39)
CAPSTRIN	0.0245 (0.66)	0.221*** (4.31)	0.00289 (0.08)	0.185*** (2.98)	0.00490 (0.90)	-0.00377 (-1.33)	0.0150** (2.51)	-0.00491 (-1.49)	0.00516 (0.85)	-0.00744** (-2.17)
ADRI	0.726*** (7.21)	0.171 (0.61)	0.130 (1.39)	0.131 (0.45)	-0.0156** (-2.34)	-0.00739 (-1.59)	-0.00771 (-1.07)	-0.0104* (-1.86)	-0.0211*** (-2.99)	-0.000188 (-0.03)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.200	0.0682	0.115	0.0478	0.0657	0.153	0.0920	0.143	0.0593	0.141
Obs.	5536	3703	2973	3062	6292	4977	6289	4976	6285	4972

Table 7 - Bank Performance During the Crisis Period
Panel A.

This panel reports regression results of bank performance with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP during the financial crisis period, 2008-2009. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables. VARS

	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	-0.0215 (-0.16)	-0.00449 (-0.03)	2.564 (1.33)	2.790 (1.43)	-0.749* (-1.67)	-0.768* (-1.70)	-1.537*** (-2.88)	-1.535*** (-2.88)	-1.252*** (-3.09)	-1.260*** (-3.10)
DEV	0.549 (1.01)	0.592 (1.07)	17.95** (2.29)	18.27** (2.32)	0.310 (0.17)	0.302 (0.17)	-2.791 (-1.29)	-2.939 (-1.36)	-1.607 (-0.98)	-1.666 (-1.01)
USDEV	0.477** (2.16)	0.437* (1.95)	3.800 (1.19)	3.408 (1.06)	0.169 (0.23)	0.212 (0.28)	0.986 (1.12)	1.041 (1.19)	1.794*** (2.69)	1.831*** (2.74)
NUM	0.108*** (4.33)	0.104*** (4.10)	1.573*** (4.36)	1.527*** (4.20)	0.122 (1.45)	0.147* (1.74)	0.319*** (3.20)	0.323*** (3.25)	0.227*** (2.98)	0.235*** (3.10)
NUMDEV	-0.152*** (-3.09)	-0.141*** (-2.82)	-1.721** (-2.41)	-1.609** (-2.24)	-0.117 (-0.72)	-0.140 (-0.85)	-0.143 (-0.73)	-0.151 (-0.77)	-0.311** (-2.10)	-0.322** (-2.17)
EXTMOR	-0.222* (-1.91)	-0.215* (-1.82)	-2.238 (-1.33)	-2.155 (-1.28)	-0.0161 (-0.04)	-0.0303 (-0.08)	-0.00304 (-0.01)	-0.0180 (-0.04)	0.254 (0.72)	0.244 (0.69)
DEVEXT	0.0930 (0.75)	0.0847 (0.67)	-0.934 (-0.52)	-1.003 (-0.56)	0.228 (0.55)	0.238 (0.57)	1.300*** (2.63)	1.327*** (2.69)	0.927** (2.47)	0.940** (2.50)
ASSETS	-0.0209 (-0.75)	-0.0213 (-0.75)	-0.421 (-1.05)	-0.440 (-1.09)	-0.246*** (-2.71)	-0.257*** (-2.80)	-0.238** (-2.21)	-0.254** (-2.36)	-0.238*** (-2.88)	-0.245*** (-2.96)
LOAN	-0.112 (-0.47)	-0.289 (-1.19)	-0.767 (-0.22)	-2.847 (-0.81)	3.186*** (4.78)	3.868*** (5.80)	5.750*** (7.46)	5.629*** (7.34)	-0.724 (-1.16)	-0.520 (-0.83)
CAP1	0.0651*** (4.01)	0.0631*** (3.83)	0.378 (1.61)	0.350 (1.48)	-0.190*** (-3.81)	-0.183*** (-3.64)	0.173*** (2.95)	0.174*** (2.96)	0.0856* (1.86)	0.0881* (1.91)
AGRTH	0.974*** (6.96)		12.08*** (5.68)		-1.205*** (-4.77)		-0.0914 (-0.32)		-0.514** (-2.06)	

LGRTH		0.537*** (4.14)		8.081*** (4.14)		-0.683*** (-2.86)		0.419 (1.57)		-0.108 (-0.46)
DIV	145.6*** (17.87)	144.3*** (17.45)	1188.6*** (10.00)	1168.7*** (9.76)	-121.3*** (-5.64)	-119.7*** (-5.52)	31.12 (1.26)	27.22 (1.10)	-47.54** (-2.33)	-48.50** (-2.37)
RISK	-3.573*** (-9.58)	-3.754*** (-10.02)	-56.39*** (-10.09)	-58.49*** (-10.47)	5.341*** (7.30)	5.511*** (7.56)	3.978*** (4.85)	4.091*** (5.00)	4.678*** (6.51)	4.800*** (6.69)
DEBT	0.168 (0.66)	0.116 (0.45)	3.958 (1.07)	3.460 (0.93)	-1.653** (-2.22)	-1.658** (-2.21)	4.190*** (4.84)	4.252*** (4.91)	-0.313 (-0.45)	-0.281 (-0.41)
INSTPER	0.186 (1.30)	0.192 (1.33)	3.945* (1.90)	4.089* (1.96)	-0.649 (-1.59)	-0.606 (-1.48)	0.999** (2.11)	1.063** (2.25)	0.786** (2.06)	0.816** (2.13)
CAPSTRIN	-0.117*** (-2.95)	-0.123*** (-3.05)	-1.002* (-1.75)	-1.049* (-1.82)	0.479*** (3.66)	0.484*** (3.66)	-0.0411 (-0.26)	-0.0404 (-0.26)	0.158 (1.34)	0.162 (1.36)
ADRI	-0.0376 (-0.83)	-0.0469 (-1.02)	0.282 (0.43)	0.180 (0.27)	0.222 (1.50)	0.247 (1.64)	-0.0713 (-0.40)	-0.0602 (-0.34)	0.0271 (0.20)	0.0381 (0.28)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.141	0.126	0.401	0.396	0.233	0.230	0.122	0.122	0.145	0.143
Obs.	1663	1662	1663	1662	1663	1662	1663	1662	1663	1662

Panel B.

This panel reports regression results of bank performance measured in CAP1 CAP12, asset growth, loan growth and deposit growth during the financial crisis period, 2008-2009. All dependent variables are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAP1	CAP12	AGRTH	LGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)
US	0.750*** (2.79)	0.459 (0.96)	0.0136 (0.72)	-0.00914 (-0.43)	-0.00001 (-0.00)
DEV	-0.777 (-0.71)	3.304* (1.71)	0.193*** (2.77)	0.242*** (3.06)	0.0274 (0.34)
USDEV	-0.232 (-0.52)	-0.125 (-0.16)	-0.0627** (-2.07)	-0.0624* (-1.81)	-0.0628* (-1.77)
NUM	0.291*** (6.13)	0.209** (2.35)	-0.00242 (-0.64)	0.00306 (0.72)	-0.000396 (-0.09)
NUMDEV	-0.0153 (-0.16)	-0.0709 (-0.38)	0.0122* (1.77)	0.0104 (1.33)	0.0171** (2.13)
EXTMOR	-0.0955 (-0.40)	0.244 (0.61)	0.0126 (0.86)	0.0173 (1.04)	-0.0152 (-0.89)
DEVEXT	0.203 (0.81)	-0.630 (-1.44)	-0.0347** (-2.14)	-0.0434** (-2.36)	0.00116 (0.06)
ASSETS	-0.826*** (-17.97)	-0.712*** (-7.87)	-0.000711 (-0.20)	0.00157 (0.39)	-0.00201 (-0.48)
LOAN	-0.815*** (-3.14)	0.272 (0.49)	-0.147*** (-4.41)	0.0179 (0.48)	-0.101** (-2.56)
DIV	-11.31 (-1.39)	18.75 (1.24)	1.656 (1.36)	4.195*** (3.09)	-0.298 (-0.20)
RISK	-0.107 (-0.47)	0.705 (1.39)	-0.380*** (-6.31)	-0.269*** (-4.04)	-0.308*** (-4.22)
DEBT	-0.933*** (-2.93)	2.663*** (4.37)	-0.0728** (-1.98)	-0.0798* (-1.93)	-0.112*** (-2.59)
INSTPER	0.306* (1.83)	1.044*** (2.60)	0.00190 (0.09)	-0.0271 (-1.08)	0.0210 (0.80)
CAPSTRIN	-0.0115 (-0.15)	0.00194 (0.01)	-0.0148*** (-2.86)	-0.0194*** (-3.32)	-0.0122** (-2.02)
ADRI	0.406*** (4.66)	0.509*** (3.21)	-0.00779 (-1.27)	-0.00435 (-0.62)	-0.0107 (-1.49)
Year FF	Yes	Yes	Yes	Yes	Yes
R-squares	0.106	0.0911	0.0852	0.105	0.0685
Obs.	1671	844	2018	2017	2011

Table 8. The Effect of Dodd-Frank Act
Panel A.

This panel reports regression results of bank performance after the Dodd-Frank Act became effective in 2010 with several proxies for the performances of the banks: ROA, ROE, NPL, BLOAND, and BLOANP. The sample period of this table starts after 2010. The dependent variables, AGRTH, and LGRTH are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	ROA	ROA	ROE	ROE	NPL	NPL	BLOAND	BLOAND	BLOANP	BLOANP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
US	0.0517 (0.63)	0.0433 (0.52)	1.195 (1.31)	1.097 (1.20)	-1.568*** (-3.19)	-1.509*** (-3.07)	-1.561*** (-2.83)	-1.514*** (-2.75)	-1.092** (-2.54)	-1.053** (-2.45)
DEV	0.553** (1.99)	0.534* (1.90)	5.643* (1.83)	5.458* (1.77)	2.945* (1.77)	3.147* (1.89)	3.074* (1.65)	3.224* (1.73)	7.033*** (4.83)	7.199*** (4.95)
USDEV	0.177 (1.55)	0.192* (1.67)	0.694 (0.55)	0.847 (0.67)	1.374** (2.00)	1.254* (1.83)	1.828** (2.37)	1.741** (2.25)	1.877*** (3.12)	1.781*** (2.96)
NUM	0.0240* (1.77)	0.0217 (1.58)	0.164 (1.09)	0.127 (0.84)	0.450*** (5.61)	0.469*** (5.85)	0.376*** (4.25)	0.394*** (4.45)	0.413*** (5.94)	0.422*** (6.09)
NUMDEV	-0.0455* (-1.89)	-0.0436* (-1.80)	-0.150 (-0.57)	-0.116 (-0.44)	-0.314** (-2.16)	-0.328** (-2.26)	-0.301* (-1.84)	-0.313* (-1.91)	-0.447*** (-3.50)	-0.455*** (-3.56)
EXTMOR	-0.0110 (-0.24)	-0.0109 (-0.23)	-0.287 (-0.56)	-0.258 (-0.50)	-0.114 (-0.41)	-0.120 (-0.43)	-0.340 (-1.08)	-0.348 (-1.11)	0.165 (0.67)	0.167 (0.68)
DEVEXT	-0.00994 (-0.18)	-0.00796 (-0.14)	-0.399 (-0.65)	-0.390 (-0.64)	-0.191 (-0.57)	-0.211 (-0.63)	0.00213 (0.01)	-0.0128 (-0.03)	-0.789*** (-2.70)	-0.807*** (-2.77)
ASSETS	-0.0104 (-0.83)	-0.0120 (-0.95)	0.0596 (0.42)	0.0566 (0.40)	-0.317*** (-4.66)	-0.316*** (-4.65)	-0.353*** (-5.14)	-0.357*** (-5.22)	-0.421*** (-7.66)	-0.414*** (-7.58)
LOAN	0.102 (1.05)	-0.00230 (-0.02)	-0.402 (-0.36)	-1.517 (-1.34)	4.654*** (10.36)	5.389*** (11.97)	6.079*** (15.49)	6.651*** (16.89)	-0.410 (-1.27)	0.121 (0.37)
CAP1	0.0160*** (4.75)	0.0160*** (4.72)	-0.0200 (-0.52)	-0.0249 (-0.64)	-0.110*** (-6.64)	-0.107*** (-6.48)	0.105*** (7.01)	0.107*** (7.15)	0.00922 (0.75)	0.0112 (0.91)
AGRTH	0.403***		5.777***		-1.734***		-1.139***		-0.942***	

	(7.49)		(8.68)		(-8.60)		(-7.04)		(-7.00)	
LGRTH		0.371***		5.454***		-1.932***		-1.211***		-1.250***
		(7.63)		(9.06)		(-10.58)		(-8.27)		(-10.27)
DIV	80.55***	79.86***	602.6***	602.6***	-57.10***	-56.99***	-6.004	-5.998	-11.08	-10.97
	(26.47)	(26.26)	(16.58)	(16.59)	(-4.57)	(-4.57)	(-0.58)	(-0.58)	(-1.30)	(-1.29)
RISK	-1.625***	-1.552***	-27.50***	-26.57***	6.246***	5.843***	3.239***	2.993***	3.053***	2.773***
	(-9.45)	(-9.03)	(-13.05)	(-12.58)	(9.47)	(8.85)	(6.09)	(5.62)	(6.90)	(6.27)
DEBT	-0.680***	-0.690***	-2.071	-2.116	-1.139**	-1.150**	7.278***	7.297***	-1.080***	-1.108***
	(-5.53)	(-5.60)	(-1.45)	(-1.48)	(-2.02)	(-2.04)	(14.83)	(14.89)	(-2.68)	(-2.76)
INSTPER	0.307***	0.318***	2.438***	2.466***	-1.368***	-1.360***	-0.304	-0.300	-0.353	-0.331
	(4.95)	(5.11)	(3.42)	(3.46)	(-4.61)	(-4.59)	(-1.15)	(-1.13)	(-1.63)	(-1.53)
CAPSTRIN	-0.0335	-0.0361*	0.425*	0.391*	-0.531***	-0.514***	-0.708***	-0.696***	-0.704***	-0.692***
	(-1.57)	(-1.68)	(1.80)	(1.65)	(-4.16)	(-4.02)	(-4.95)	(-4.86)	(-6.30)	(-6.20)
ADRI	-0.0868***	-0.0872***	-0.145	-0.142	-0.217	-0.214	-0.643***	-0.635***	-0.149	-0.150
	(-3.12)	(-3.11)	(-0.47)	(-0.46)	(-1.31)	(-1.28)	(-3.47)	(-3.42)	(-1.03)	(-1.03)
Year FF	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squares	0.0666	0.0684	0.323	0.324	0.0460	0.0520	0.105	0.109	0.0457	0.0550
Obs.	6702	6700	6702	6700	6702	6700	6702	6700	6702	6700

Panel B.

This panel reports regression results of bank performance measured in CAP1 CAP12, asset growth, loan growth and deposit growth after the Dodd-Frank Act became effective in 2010. Consequently, the sample period starts after 2010. All dependent variables are winsorized at the one percent level. All models include the robust option to obtain robust standard errors. Numbers in parentheses represent the t-statistics. The superscripts, ***, **, and * denote the 1%, 5%, and 10% levels of significance, respectively. Please refer Appendix 1 for the definitions of variables.

VARS	CAP1	CAP12	AGRTH	LGRTH	DGRTH
	(1)	(2)	(3)	(4)	(5)
US	1.066* (1.83)	0.531 (0.89)	0.000514 (0.04)	0.0162 (1.08)	0.00311 (0.21)
DEV	1.336 (0.68)	2.802 (1.39)	0.0177 (0.39)	0.0306 (0.59)	0.0296 (0.58)
USDEV	-0.998 (-1.22)	-0.476 (-0.56)	-0.0313* (-1.71)	-0.0511** (-2.43)	-0.0357* (-1.74)
NUM	0.330*** (3.61)	0.329*** (3.37)	-0.00674*** (-2.94)	-0.000215 (-0.08)	0.00263 (1.02)
NUMDEV	-0.0896 (-0.52)	-0.196 (-1.09)	0.00958** (2.40)	0.00398 (0.87)	0.00474 (1.06)
EXTMOR	-0.161 (-0.48)	-0.0833 (-0.24)	0.00471 (0.60)	-0.00236 (-0.26)	0.00826 (0.94)
DEVEXT	-0.0446 (-0.11)	-0.254 (-0.63)	0.00125 (0.14)	0.00394 (0.37)	0.00206 (0.20)
ASSETS	-0.718*** (-11.82)	-0.744*** (-10.33)	-0.00154 (-0.77)	-0.00258 (-1.12)	-0.00405* (-1.79)
LOAN	0.617** (2.00)	0.289 (0.70)	-0.0525*** (-3.13)	0.121*** (6.34)	-0.0569*** (-2.97)
DIV	31.05*** (3.97)	18.19* (1.92)	-0.906 (-1.64)	-1.186* (-1.92)	-1.155* (-1.81)
RISK	1.471*** (3.69)	0.508 (0.96)	-0.160*** (-4.61)	-0.327*** (-8.43)	-0.171*** (-4.20)
DEBT	-4.578*** (-12.02)	-0.515 (-1.11)	-0.0648*** (-3.05)	-0.0804*** (-3.34)	-0.224*** (-9.20)
INSTPER	-0.0118 (-0.06)	0.254 (0.93)	0.0832*** (7.41)	0.0920*** (7.22)	0.0802*** (6.27)
CAPSTRIN	-0.156 (-1.03)	-0.116 (-0.73)	0.00758** (2.18)	0.0118*** (2.98)	0.00170 (0.44)
ADRI	0.189 (0.97)	0.136 (0.67)	-0.0107** (-2.40)	-0.0133*** (-2.61)	-0.00870* (-1.74)
Year FF	Yes	Yes	Yes	Yes	Yes
R-squares	0.0627	0.0257	0.0735	0.0980	0.0625
Obs.	6708	4722	8226	8224	8223

Higher institutional ownership is not significantly associated with ROA and is negatively associated with the asset quality in the crisis-period.

Table 7B shows that US listing is positively associated with a 0.75% increase in tier-1 capital during the crisis period. The presence of institutional ownership and high investor protection (ADRI) banks are positively associated with tier-1 capital and total capital, but their effect is insignificant on asset growth, loan growth, and deposit growth. Capital stringency regulation is negatively associated with asset growth, loan growth and deposit growth (coefficient on asset growth = -0.0148, loan growth = -0.0194, deposit growth = -0.0122).

Tables 8A and 8B report regression results for post Dodd-Frank Act. In table 8A, the results indicate that banks from higher capital stringency countries are associated with 0.425% increase in ROE and 0.531% decline in NPLs and 0.708% decline in bad loans after the Dodd-Frank Act. During the pre-Dodd-Frank Act higher capital stringency is associated with higher profits and lower asset quality before the Dodd-Frank Act (untabulated results). Post-Dodd-Frank sample also reports that higher ADRI is associated with 0.0868% decline in ROA and 0.643% decline in bad loans.

Table 8B reports that a US listing increases the tier-1 capital by 1.066%. Cross-listing (variable NUM) is associated with a 0.330% increase in tier-1 capital and 0.329% increase in total capital. Cross-listing is associated with a 0.00674% decline in asset growth. Higher capital stringency banks experienced a 0.00758% increase in asset growth and 0.0118% increase in loan growth. Whereas higher ADRI (investor protection) is associated with a 0.0107% decline in asset growth, 0.0133% decline in loan growth and 0.0087% decline in deposit growth, the higher ADRI protects shareholders but not the rights of depositors or creditors.

V Conclusion

Overall, we find that cross-listing, institutional ownership, external monitoring, and capital stringency have different impacts on banks from developed and developing countries. Banks from developed countries that cross-list in multiple exchanges have higher ROA and ROE but lower asset quality whereas banks from developing countries that cross-list have lower ROA due to higher compliance costs. Conversely, cross-listing improves the asset quality and loan growth of banks from developing countries while it is also associated with higher tier-1 capital in banks from developed countries. This effect implies that cross-listing benefits banks from developed countries with the raising of more tier-1 capital and banks from developing countries with attaining higher asset and loan growth.

Institutional ownership has a positive impact on bank profitability, asset quality, asset growth, loan growth and deposit growth in all banks. Institutional ownership is associated with higher tier-1 capital in banks from developed countries. Institutional ownership increases monitoring which helps banks access more capital and increases analyst coverage.

Higher external monitoring is positively associated with ROA and ROE in banks from developed countries since they are already subjected to stringent regulations but negatively associated with ROA in banks from developing countries due to higher compliance costs. Higher external monitoring is positively associated with asset quality in banks from developing countries. Banks from low external monitoring countries that cross-list in multiple exchanges are associated with better asset quality especially after the post-crisis period. During the crisis-period, most variables are negatively associated with profitability, asset quality, asset growth, loan growth and

deposit growth. US listed banks are positively associated with asset quality when compared to non-US listed banks, and US listed banks were positively associated with tier-1 capital.

Higher capital stringency regulation is negatively associated with profitability and positively associated with capital maintenance in banks from developing countries due to higher compliance costs and higher regulations respectively. Higher capital stringency is associated with lower profit and better asset quality after the Dodd-Frank Act was implemented due to increased regulations and costs. Banks from high investor protection countries (ADRI) had lower profits after the Dodd-Frank Act. Our findings are important to investors, depositors, and bank regulators.

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Appendix 1. Definition of Variables

Variables	Descriptions
ADRI	Investor protection variable from Spamann Anti-Director Rights Index (Spamann, 2010). Country level variable where a high value indicates higher investor protection.
AGRTH	Growth of assets when compared to the previous year
ASSET	Natural Logarithm of total assets
BLOAND	Bad loans to deposits ratio. Bad loans are defined as loans that are no longer considered redeemable.
BLOANP	Bad loans to total loans
CAP1	Tier-1 capital percentage
CAP12	Total capital percentage (i.e., sum of tier-1 and tier-2 capital)
CAPSTRIN	Capital Stringency variable from Barth <i>et al.</i> (2006). Country level variable which measures the stringency of banks' capital requirements based on amount and source of capital and if it incorporates certain risk elements and deducts certain market value losses from capital adequacy.
DEBT	Total Debt scaled by total assets
DEV	Dummy Variable to indicate if the bank is from developing country
DGRTH	Growth of deposits when compared to the previous year
DIV	Total Dividends to Assets
DODD	Dummy variable equal 1 for the year after the Dodd-Frank Act became effective, zero otherwise
EXTMOR	Index that measures the degree of incentivized bank monitoring by private sector
INSTPER	Percentage of institutional ownership in the bank
LEX	Dummy variable for low external monitoring in a country
LGRTH	Growth of loans when compared to the previous year
LOAN	Total loans scaled by total assets
NPL	Non-performing loans to total loans. Non-performing loans are loans on which scheduled payments have not been paid over 90 days.
NUM	Number of exchanges on which the bank is listed
RISK	Standard deviation of stock's monthly returns over the fiscal year
ROA	Return on Assets
ROE	Return on Equity
US	Dummy variable to indicate if the bank is listed in US stock exchange