Chapter **15**

The Rise of Asian-Owned Foreign Banks and the Implications for Credit Stability in Asia

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This chapter focuses on foreign banks' local lending and its implication for credit stability in Asia. Employing a large and the most recent banking data set for 10 major Asian economies for 2000–09, this study provides fresh evidence that the country of origin of foreign banks explains variations in lending behavior. Asian-owned foreign banks showed the mildest change in credit growth during the recent Global Financial Crisis (GFC), contributing to credit stabilization in Asia in times of stress, whereas non-Asian foreign banks—particularly those from North America and Europe—cut off credit sharply from the Asian periphery, undermining credit stability in the region. Preliminary evidence suggests that the breakdown in the wholesale funding market in the GFC put pressure on non-Asian foreign banks, thus transmitting credit turbulence to Asia. The study calls for policies supporting regional financial integration with Asian-owned foreign banks, which help to build a robust and stable Asian banking system.

1. Introduction

There has been a surge of foreign bank entry to Asian countries since the Asian Financial Crisis (AFC) in 1997–98, which has important welfare effects. On one hand, foreign ownership has the potential to improve overall banking efficiency and modernize banking industries in Asia; on the other hand, foreign bank entry raises serious concerns about its implications for credit stability, especially during crisis periods.

A certain amount of empirical studies exist exploring the implications of foreign bank lending on domestic credit stability. Yet the evidence has been dominated by developed countries (for example, Peek and Rosengren, 2000) and Central Europe and Latin America (Dages et al., 2000; de Haas and van Lelyveld, 2005; Goldberg et al., 2002). There are few systematic analyses on this issue for Asian economies, probably due to the limited presence of foreign banks in Asia and lack of data until very recently. With the data becoming available, this study is a first attempt to examine the Asian evidence with a focus on foreign banks' lending behavior during the recent Global Financial Crisis (GFC). It employs a large banking data set compiled for 10 major Asian economies covering the period 2001–09.

Changes in credit growth are used to proxy and gauge credit stability. If foreign banks reduce credit supply sharply during economic downturns (that is, foreign banks' credit supply augments business-cycle effects), they cause a deterioration in credit stability. Similarly, if foreign banks show slow credit contraction during a depression (that is, they help alleviate business-cycle effects), they are considered to be contributing to credit stability in the host country.

An important finding from this study is a distinctive and stabilizing role played by Asian-owned FBs in Asian credit markets during the GFC. The evidence suggests that these banks' lending momentum remained strong in spite of the crisis, whereas their non-Asian counterparts—mainly of North American and European origin—and local banks reduced credit sharply and considerably, which had important implications for local credit stability. The former helped stabilize the credit line but the latter devastated credit conditions during the turbulence.

The evidence lends support for national and regional polices to promote regional financial integration with Asian-owned foreign banks. This implies adoption of long-term liberal polices to support the entry of Asian-owned FBs and their business expansion in the region. With proper supervision and regulation, these banks are expected to contribute to regional financial stability and dynamism.

The remainder of the paper is structured as follows. The following section introduces the existing empirical literature and theoretical underpinnings, followed by a review of FBs in Asia, highlighting the role of Asian-owned FBs. Sections 4 and 5 explain the empirical framework and the data set. Section 6 presents the results, and the final section concludes with policy recommendations.

2. Literature Review

The existing literature reports mixed evidence of FBs' lending behavior during crises, which is distinguished by host and home-country crises and has varying implications for local credit stability. Dages et al. (2000) find that FBs showed stronger credit growth compared with domestic banks during host-country crises in Argentina, Mexico and Central and Eastern Europe in the 1990s; they claim this is because the parent bank has an international, diversified asset portfolio and can act as the 'lender of last resort'. Moreover, FBs view local economic problems as opportunities to expand their presence and business activities. On the other hand, Morgan and Strahan (2004) also produce tentative evidence of a positive link between FB presence and local economic volatility from a panel of 100 countries. Foreign banks might have destabilized credit supply and therefore local macroeconomic situations. They explain it as FBs having access to other markets and being better able to relocate or 'fly their capital' to other markets when the economic situation of a particular host country deteriorates.

Many studies suspect that during home-country crises, foreign credit can be destabilizing, because when economic conditions in the home country worsen, the parent bank is likely to downsize its business and foreign operations are likely to be

among the first to be cut off. Host countries can easily fall victim to sudden cut-offs of credit lines when economic conditions in the home country worsen—the so-called common lender effects (Masson, 1998). These 'common lender effects' were observed in the United States in the 1990s when Japanese bank subsidiaries responded to the banking crisis in Japan by reducing lending in the United States (Peek and Rosengren, 2000). There is, however, also evidence that FBs tended to increase their lending in Central and Eastern Europe when economic conditions in their home countries worsened. Worsening home-country conditions led banks to seek external lending opportunities.

The theoretical foundation of the relationship between FB lending and local credit stability is not yet fully established, but the work of Morgan and Strahan (2004) is one of the few substantial modeling attempts. One of their key findings is that types of shocks in the host country play an important role in identifying the direction of effects on credit stability. They show the intuition of the model in a simple but useful credit supply-and-demand diagram to explain the inner mechanisms of the above empirical cases (Appendix B).

Although this theoretical framework applies to international banking in general, including FBs' cross-border lending and local lending, it is important to recognize their different nature and implications for stability. Cross-border lending implies the case where foreign banks extend credit from overseas to local borrowers. In comparison with cross-border lending, local lending tends to be retail oriented and lending decisions are made locally with consideration of the local business situation and under host-country regulations. A closer connection with the host country's environment and business cycles makes local lending more likely to be affected by shocks from the host, whereas cross-border wholesale lending with decisions made overseas is inclined to reflect headquarters' conditions subject to home-country influence (Herrero and Simon, 2006).

The origin of FBs and its relation to local credit stability is mentioned only briefly in the literature. Clarke et al. (2001) suggest that diversity in foreign ownership matters for stability and that too much exposure to banks from any single country can increase instability. For instance, Spain—in control of 30 major banks in Latin America with almost 10 percent of the Latin American banking sector—is a high-risk factor in the

region, if Spain is subject to fluctuations. Hence, an increase in diversity reduces the risk of concentration and thereby improves stability. Nevertheless, there is no systematic analysis conducted beyond this conjecture.

Building on this existing literature, this study examines how FBs' local lending in Asia responded to the GFC and whether the increasingly diversified FB group helped reduce instability and smooth the turbulence in the credit market. The next section reviews foreign bank presence in Asia and the rising number of Asian-owned FBs.

3. Foreign Banks in Asia

Foreign banks in Asia show distinctive features compared with other regions. First, despite the gradual rise of FBs after the AFC, their presence remains at a moderate level in the majority of Asian countries. Second, Asian and non-Asian FBs differ significantly in their lending behavior. Though non-Asian FBs account for a significant share of foreign bank presence in Asia, Asian-owned FBs start to play an increasingly important role in Asian lending markets specifically during the GFC.

Figure 1. Upper Limits on Foreign Ownership of Banks: 1997 and 2008
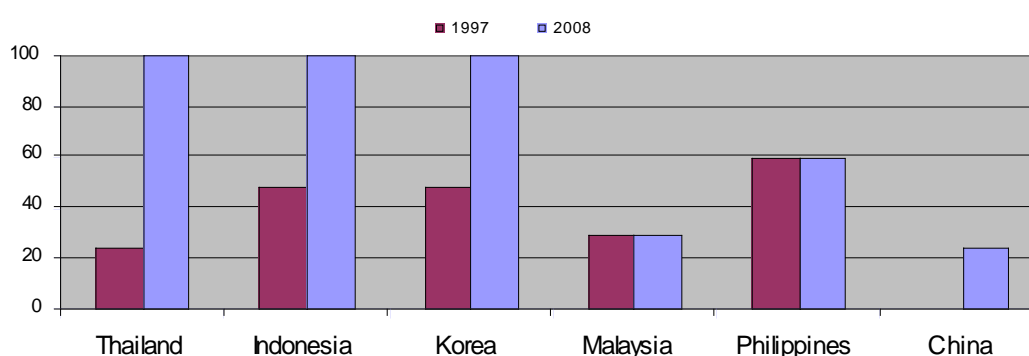
Source: Gopalan and Rajan (2009).

Figure 2. Increase in Asset Shares of Foreign Banks: 1997 and 2008
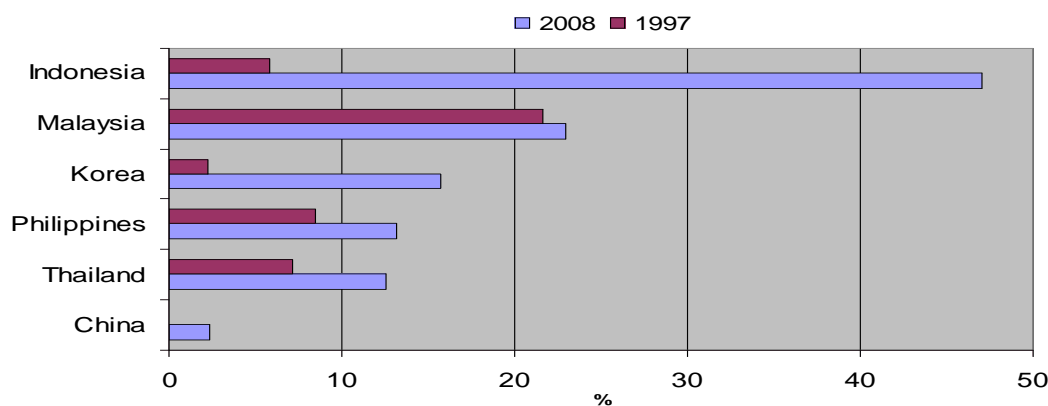
Source: Gopalan and Rajan (2009).

As in Latin America, in Asia, foreign bank entry has been most important in the aftermath of financial crises. Asia was one of the most closed financial systems in the world. Heavy banking regulations and closed banking sectors are often cited as the main factors hampering banking development in Asia. Since the 1997–98 AFC, there has been a notable trend of financial sector deregulation in Asia and the easing of entry barriers has been one of the most prominent. For instance, Thailand, Indonesia and Korea all removed ceilings on foreign ownership of domestic banks. China, which has one of the most prohibitive banking sectors in the world, opened itself to investment from overseas financial institutions in 2001 (see Figure 1).

An increasing number of foreign banks have since entered the newly liberalized Asian financial markets and shares of foreign banking assets have grown substantially over the past decade, from 5.8 to 47 percent in Indonesia, from 2.2 to 15.7 percent in Korea, and from 7.1 to 12.6 percent in Thailand (see Figure 2). Nevertheless, the average share of foreign bank assets in total banking assets in Asia remains about half that of Latin America (see Figure A3 in Appendix A).

3.1. Asian-Owned Foreign Banks

Asian-owned FBs have an increasing presence in Asia. A glance at the sample data compiled from the Bankscope that covers roughly 90 percent of the total banking assets in each country indicates that Asian-owned FBs have outnumbered their non-Asian

counterparts. Although they remain small in terms of assets and loans in some Asian economies, such as Hong Kong, the gap is no longer unbridgeable elsewhere. After years of engaging in Asian financial markets, banks from Japan, Singapore and Hong Kong have grown into internationally competitive players. Along with, most recently, China, they have been active participants in regional financial markets owing to the strong liability side of their balance sheets. More importantly, in the long term, these Asian banks have a competitive advantage in dealing with the institutional environment in their Asian neighbors. Regional economic integration, common language and proximity are just a few among the positive factors that predict the sustainable rising presence of Asian-owned FBs in Asia (Van Horen, 2007).

Table 1. Comparing Asian-Owned and Non-Asian FBs: Number, size and loans

	Number		Average assets		Average loans	
	Asian-owned	Non-Asian	Asian-owned	Non-Asian	Asian-owned	Non-Asian
China	16	10	30.26	55.36	20.65	23.55
Hong Kong	15	12	126.01	528.15	57.58	195.81
Indonesia	19	12	25.70	5.72	12.05	2.92
Malaysia	5	8	39.44	43.16	24.48	21.07
Philippines	4	3	3.05	3.07	1.57	0.52
Thailand	4	2	26.59	43.07	18.06	20.15

The active engagement of Asian banks in the regional banking system enhances the diversity of foreign ownership in Asia. Diversified foreign ownership increases stability (Clarke et al., 2001). Figure 3 reveals Asian FBs' other important feature. Although the shares of total numbers and assets in Asia dropped from 2008—with the onset of the GFC, as in Latin America—the share of total loans rose considerably in Asia, in sharp contrast with Latin America. A disaggregation of foreign banks into Asian-owned and non-Asian FBs in the sample shows that through the GFC both groups' loan extensions slowed, but in almost all Asian economies that have Asian-owned FBs the reduction in bank credit was sharper and faster in non-Asian than in Asian FBs. The preliminary evidence suggests that unlike their local and non-Asian FB counterparts, Asian FBs maintained a stable credit supply and helped stabilize the credit market during the crisis (Table 2).

Table 2. Comparing Asian-owned and non-Asian FBs' credit growth: pre-GFC and during the GFC

| | Credit growth pre-GFC | | Credit growth during the GFC | | Change in credit growth: | |
	Non-Asian	Asian-owned	Non-Asian	Asian-owned	Non-Asian	Asian-owned
China	0.26	0.19	0.03	0.10	–0.23	–0.09
Hong Kong	0.02	0.13	–0.13	0.07	–0.15	–0.06
Indonesia	0.10	0.15	–0.21	0.15	–0.31	0.00
Malaysia	0.01	0.14	–0.11	0.11	–0.12	–0.03
Philippines	0.23	–0.11	0.77	0.07	0.54	0.18
Thailand	0.19	0.15	0.01	0.00	–0.18	–0.15

4. Empirical Framework

A formal statistical analysis is employed to examine the relationship between foreign banks' local lending and credit stability. The empirical models are constructed as follows. Model 1 is a baseline model: a structure form credit growth equation. Model 2 adds interaction terms of the foreign bank dummy with all the other terms to examine whether foreign banks show different lending behavior to domestic banks and specifically whether they behaved differently during the GFC. In Model 3, foreign banks are disaggregated into Asian-owned FBs and non-Asian FBs. With domestic banks as a benchmark, the model tests the main hypothesis of whether Asian-owned FBs responded to the GFC in a manner that helped stabilize local credit markets.

Model 1

$$rcg_{ijt} = \alpha + bank_{ijt-1}'\beta + Mac_{jt}'\gamma + \delta FB_{ijt} + \theta GFC_t + u_i + u_t + \varepsilon_{jit}$$

Model 2

$$rcg_{ijt} = \tilde{\alpha} + bank_{ijt-1}'\tilde{\beta} + Mac_{jt}'\tilde{\gamma} + \tilde{\theta}GFC_t + FB_{ijt}(\tilde{\delta} + bank_{ijt-1}'\tilde{\lambda} + Mac_{jt}'\tilde{\phi} + \tilde{\eta}GFC_t)$$
$$+ \tilde{u}_i + \tilde{u}_t + \tilde{\varepsilon}_{jit}$$

Model 3

$$rcg_{ijt} = \hat{\alpha} + bank_{ijt-1}'\hat{\beta} + Mac_{jt}'\hat{\gamma} + \hat{\theta}GFC_t + aFB_{ijt}(\hat{\delta}^a + bank_{ijt-1}'\hat{\lambda}^a + Mac_{jt}'\hat{\phi}^a + \hat{\eta}^a GFC_t)$$
$$+ wFB_{ijt}(\hat{\delta}^w + bank_{ijt-1}'\hat{\lambda}^w + Mac_{jt}'\hat{\phi}^w + \hat{\eta}^w GFC_t) + \hat{u}_i + \hat{u}_t + \hat{\varepsilon}_{jit}$$

$\ln rc_{ijt} - \ln rc_{ijt-1}$ is the real credit growth of bank i in country j at year t; rc_{ijt}^d is real credit, calculated as the total amount of net loans extended by the bank divided by the consumer price index (CPI) in country j at year t. Bank variables, $bank_{ijt-1}^d$, account for a vector of bank-specific characteristics that might influence banks' credit extension. They include equity to total assets as a measure of bank solvency, liquid assets to customer and short-term funding as a measure of liquidity, return to average assets as a measure of profitability, and the logarithm of individual banks' real total assets as a measure of size, following de Haas and van Lelyveld (2005).[1] All bank variables are one-year lag to address possible endogeneity.

Foreign banks (FB_{ijt}) are identified as banks with foreign ownership holdings of no less than 50 percent. They are disaggregated into two key dummy variables—aFB_{ijt} and wFB_{ijt} respectively—to detect Asian and non-Asian FBs' varying lending behaviors.

Bank credit growth is linked closely to local business cycles and is often considered highly pro-cyclical (e.g., Bernanke and Gertler, 1989). Mac_{jt} are two macroeconomic variables that are commonly used in the literature to capture domestic business cycles.[2] One is the real GDP growth rate and the other is the inflation rate or CPI.

Another macroeconomic variable and also key variable of interest is GFC_t, a year dummy (2008 and 2009) to capture the influence of the GFC,[3] which caused a major

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[1] In de Haas and van Lelyveld (2005), bank size is measured by the share of individuals' total banking assets in the total banking assets of the country in a year. Definitions of total banking assets of the country vary significantly, however, across 10 Asian countries, which results in large measurement errors from cross-country comparison. Hence, the logarithm of individuals' total banking assets is used instead.

[2] These two variables are also useful to control for individual countries' monetary policies, as these policies might affect the supply of loans from banks if banks are the main providers of funds for households or firms, which is the case in Asia (Bernanke and Gertler, 1989).

[3] The GFC is normally considered as beginning in July 2007, but was in full swing over the period 2008–09.

visible shock to Asian exports and consequently economic growth. Credit demand was depressed subsequently, which is suspected to have caused a substantial decline in credit growth.

The GFC might, however, have dissimilar impacts on Asian and Western financial systems. As the crisis originated in the US sub-prime mortgage market and spread largely into the European financial system, it put severe stress on Western banks' balance sheets and liquidity conditions, resulting in a sharp braking by these banks on credit supply both in their home markets and in foreign peripheries. Nevertheless, the impact of the GFC on the Asian financial system might be milder. Owing to a large and continuously rising deposit pool and less dependency on wholesale funding markets, Asian banks and specifically the liability side of Asian banks were less affected by the crisis. This forms the key hypothesis that Asian-owned FBs might have reacted less acutely to the GFC on credit extension. Two sets of interaction terms between aFB_{ijt} and wFB_{ijt}, and with other variables in the equation, are employed to put this hypothesis to the test. $\hat{\theta}$ and $\tilde{\theta}$ show specifically how Asian and non-Asian FBs responded differently to domestic banks and to each other to the GFC.

Model 4

$$rcg_{ijt} = \alpha + bank_{ijt-1}{}'\beta + \tau MMD_{ijt} + \xi G*MMD_{ijt} + Mac_{jt}{}'\gamma + \delta FB_{ijt} + \theta GFC_t + u_i + u_t + \varepsilon_{jit}$$

To further understand the role of the wholesale funding market in foreign bank lending in Asia and how it might have transmitted the credit turbulence from the West to Asia, the variable of money market dependence, MMD_{ijt}, is introduced into the model equation (Model 4). The variable is calculated as $-\log(1 + customer\_deposits/total\_liabilites)$ to reduce the role of outliers following Raddatz (2010). A high value of MMD_{ijt} measures a high dependence on wholesale funds. The interaction term $G*MMD_{ijt}$ captures the transmission effect through the money market during the GFC.

Two-way fixed-effects panel models are adopted as a result of the Hausman test and within-group estimators are produced. The two-way error component disturbances are

u_i, denoting the unobservable individual bank effect, such as location and age, and u_t, the unobservable time effect to catch the macro-trend. ε_{ijt} is the remaining stochastic disturbance term.

5. Data

The data set employed in this study is an unbalanced panel of annual data of banks in 10 major Asian economies over the period 2000–09. Bank coverage varies across years as a result of frequent bank entry/exit as well as data availability,[4] with a maximum of 417 in 2007 and a minimum of 314 in 2002. There are, in total, 129 foreign banks covered. Major mergers and acquisitions are recorded. As merged and acquired banks often show changed lending behaviors, each acquired or merged bank is treated as a new bank to control for potential structural changes. The total number of observations is 2,774.

The main source for bank data is IBCA and Bureau van Dijk's Bankscope Database. This is a global database of banks' financial statements, which contains detailed and updated accounts for each bank in a universal format to compare banks globally. Data for all commercial banks in the 10 economies compiled in the database are extracted to construct a data set—possibly the largest in the empirical literature on Asian banking at the micro-level. The data set begins in 2001 when Asia started to show a marked increase in foreign bank presence following its region-wide regulatory reforms on foreign entry. Bankscope keeps archived data in its ownership database only from January 2003. The author extends the ownership data to 2001 based on other information sources such as bank annual reports and individual banks' history from their web sites. The ultimate owners of foreign banks are specified in the data set so the origin of foreign ownership either in Asia or non-Asian countries is distinguished.

Real GDP growth and CPI data are from the US Department of Agriculture (USDA) *International Macroeconomic Data Set*. It has consistent and comparable macro data across economies covering Taiwan and Hong Kong, whereas most of the conventional

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[4] Numbers of banks covered in the data set for each year in each country are recorded in Table 1.

data sources such as the World Bank and the IFC do not. Table 3 presents a summary of variable definitions and data sources and Table 4 reports the summary statistics of variables.

Table 3. Variable Definitions and Data Sources

Variables	Definitions	Data sources
Dependent variable		
Real credit growth	Growth of real credit and real credit are the total amount of net loans divided by the consumer price index (CPI)	Net loans data from Bankscope and CPI data from US Department of Agriculture (USDA) *International Macroeconomic Data Set*
Independent variables		
<u>Bank control variables</u>		
Solvency	Equity to total assets	Bankscope
Liquidity	Liquid assets to customer and short-term funding	Bankscope
Profitability	Return on average assets	Bankscope
Size	Logarithm of bank real total assets	Bankscope
<u>Foreign bank variables</u>		
Foreign banks	Banks with foreign ownership holding no less than 50% = 1; otherwise = 0	Bankscope*
Asian-owned FBs	Foreign banks from Asian countries = 1; otherwise = 0	Bankscope
Non-Asian FBs	Foreign banks with Western countries (North America and Europe) = 1; otherwise = 0	Bankscope
<u>Macroeconomic variables</u>		
GDP growth	Annual growth rate of real GDP	USDA
Inflation	Percentage change in the CPI	USDA

* Bankscope keeps archived ownership data for 2003–09. The author extends the data to 2000 based on other information sources such as bank annual reports and individual banks' history from their web sites.

Table 4. Summary Statistics, Domestic Versus Foreign Banks, 2001–09

	Real credit growth		Equity ratio		Liquidity ratio		ROAA		Size	
	D	F	D	F	D	F	D	F	D	F
China	0.24	0.14	0.24	0.14	0.24	0.61	0.74	0.71	15.46	14.21
	(0.19)	(0.45)	(0.19)	(0.45)	(0.23)	(0.77)	(0.51)	(1.47)	(1.78)	(1.55)
Hong Kong	0.07	0.06	0.07	0.06	0.98	0.57	0.64	2.36	14.56	15.13
	(0.64)	(0.21)	(0.64)	(0.21)	(1.56)	(1.01)	(0.61)	(7.60)	(2.16)	(2.50)
Indonesia	0.15	0.12	0.15	0.12	0.45	0.46	1.08	2.26	13.54	13.40
	(0.26)	(0.35)	(0.26)	(0.35)	(0.34)	(0.45)	(4.79)	(2.30)	(1.64)	(1.56)
Japan	0.08	–0.11	0.08	–0.11	0.16	0.79	0.06	0.30	16.68	14.40
	(0.29)	(0.50)	(0.29)	(0.50)	(0.63)	(1.05)	(2.05)	(4.71)	(1.36)	(2.61)
Korea	0.13	0.03	0.13	0.03	0.09	0.39	0.78	1.02	16.88	16.90
	(0.21)	(0.49)	(0.21)	(0.49)	(0.04)	(0.79)	(1.48)	(0.81)	(1.63)	(2.19)

Table 4. *(continued)*

	Real credit growth		Equity ratio		Liquidity ratio		ROAA		Size	
	D	F	D	F	D	F	D	F	D	F
Malaysia	0.07	0.04	0.07	0.04	0.32	0.57	1.04	1.34	15.88	14.41
	(0.18)	(0.30)	(0.18)	(0.30)	(0.19)	(0.39)	(0.93)	(0.81)	(1.29)	(1.42)
Philippines	0.13	0.15	0.13	0.15	0.27	1.17	1.02	4.11	14.08	12.38
	(0.27)	(0.52)	(0.27)	(0.52)	(0.14)	(1.80)	(1.41)	(24.05)	(1.86)	(0.99)
Singapore	0.19	0.18	0.19	0.18	0.34	0.98	1.38	2.09	15.70	13.77
	(0.76)	(0.18)	(0.76)	(0.18)	(0.26)	(1.48)	(1.63)	(2.42)	(2.30)	(1.82)
Taiwan	0.06	–0.05	0.06	–0.05	0.21	0.33	–0.05	–0.17	16.19	16.44
	(0.17)	(0.42)	(0.17)	(0.42)	(0.36)	(0.18)	(1.49)	(0.73)	(1.02)	(0.43)
Thailand	0.21	0.12	0.21	0.12	0.16	0.19	0.54	0.50	15.38	14.62
	(0.37)	(0.24)	(0.37)	(0.24)	(0.18)	(0.14)	(3.59)	(0.98)	(1.84)	(1.04)
Total	0.12	0.09	0.12	0.09	0.23	0.57	0.42	1.71	15.88	14.24
	(0.29)	(0.35)	(0.29)	(0.35)	(0.52)	(0.82)	(2.26)	(6.04)	(1.83)	(1.98)

Note:

1) The first-line numbers are means and the second-line in parentheses are standard deviations.
2) Real credit growth = $\ln rc_{ijt} - \ln rc_{ijt-1}$.
3) Equity ratio = equity/total assets.
4) Liquidity = liquid assets/customer and short-term funding.
5) ROAA = net return/average assets.
6) Size = ln(total real assets).

6. Results

The full sample covers 10 major economies in Asia, accounting for one-fifth of the world's total GDP. They by no means, however, form a homogenous group; rather, they are diversified by various measures: size of the economy, level of growth, social and economic institutions, etc. Japan, Singapore, Korea and Taiwan have developed and sophisticated banking systems in the region, so non-Asian FBs are dominant in those countries and Asian-owned FBs merely exist. They form one group without the presence of Asian-owned FBs. Among the group of Asian economies that hosts Asian-owned FBs, China is unique. The state has a strong role in its banking system. Its massive fiscal stimulus package created a lending boom during the GFC. Lending from domestic and especially state banks remained strong despite the GFC. Hence, three

samples are examined separately: China, five economies that host Asian-owned FBs, and four economies that do not.

6.1. China

The general insignificance of key variables is noteworthy from the Chinese sample (Table 5). The GFC seems to have passed the Chinese credit markets without leaving a significant mark. Note that domestic banks are set as the benchmark. Both Asian-owned FBs and non-Asian FBs compare with domestic banks. As expected, aggressive lending by Chinese local banks kept credit growth strong during the GFC, which reinforced confidence in the Chinese economy. Neither Asian nor non-Asian FBs showed significantly varying patterns in credit growth compared with their Chinese counterparts.

Table 5. The China sample
(Dependent variable: credit growth—growth in real credit)

	Model 1	Model 2	Model 3
FB	.	.	
	.	.	
GFC	0.118	0.090	0.125
	(0.329)	(0.474)	(0.200)
FB*GFC		–0.001	
		(0.998)	
aFB			4.320
			(0.217)
wFB			4.834
			(0.555)
aFB*GFC			–0.182
			(0.459)
wFB*GFC			–1.780
			(0.670)
N	478	478	478
R^2	0.173	0.264	0.323
F	14.429	76.362	.[5]
p	0.000	0.000	.

Note: 1) Results are compressed to key variables to save space.
2) Regressions are estimated using two-way fixed-effects methods.
3) Robust standard errors in parentheses. Significance levels: * 10%; ** 5%; *** 1%.

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[5] There is not sufficient rank to perform the F test for Model 3 when using the cluster-robust estimators. Key results remain when cluster-robust estimators are not used.

6.2. Economies that Have Asian-Owned FBs

Among the five economies that host Asian-owned FBs, it is clear that the GFC had a significantly negative impact on credit growth (Table 6). Nevertheless, positive coefficients associated with *FB*GFC* and *aFB*GFC* suggest that the Asian-owned FBs helped alleviate the tension in the credit market and counter-balanced the negative effects from the GFC stress. This pattern was not shown, however, on the side of the non-Asian FBs.

This has an important implication for credit stability. A fast credit contraction exacerbates a volatile credit market in crises, amplifying instability, whereas a slower credit reduction is able to enhance stability. This evidence suggests that Asian-owned FBs constituted a major stabilizing force in the Asian credit market during the GFC.

Table 6. The Five Economies that Have Asian-Owned FBs
(Dependent variable: credit growth—growth in real credit)

	Model 1	Model 2	Model 3
FB	–0.037	0.295	
	(0.707)	(0.524)	
GFC	–0.103***	–0.145***	–0.136***
	(0.009)	(0.000)	(0.001)
FB*GFC		0.111*	
		(0.074)	
aFB			0.462
			(0.290)
wFB			0.038
			(0.968)
aFB*GFC			0.113**
			(0.028)
wFB*GFC			0.009
			(0.955)
N	901	901	901
R^2	0.088	0.103	0.138
F	6.442	17.395	64.217
p	0.000	0.000	0.000

Note: Same as Table 5; the five economies are Hong Kong, Indonesia, Malaysia, the Philippines and Thailand.

6.3. Economies that Do Not Have Asian-Owned FBs

As a counter example, the results from the sample of the four economies that do not have Asian-owned FBs confirm the above discussion (Table 7). Foreign banks—all of them non-Asian—reduced credits faster than did domestic banks. They worsened credit conditions and deteriorated credit stability during the GFC.

Table 7. The Four Economies Without Asian-Owned FBs
(Dependent variable: credit growth—growth in real credit)

	Model 1	Model 2
FB	–0.042	1.683**
	(0.268)	(0.038)
GFC	–0.027	–0.002
	(0.202)	(0.909)
FB*GFC		–0.369**
		(0.030)
N	1,466	1,463
R^2	0.341	0.377
F	21.679	29.768
p	0.000	0.000

Note: Same as Table 5; the four economies are Japan, Singapore, Korea and Taiwan.

The theoretical framework reviewed is useful to analyze the results. Multiple forces seem to have been in play in response to the GFC. First, it is widely agreed that the recent global crisis influenced Asia mainly through the trade channel, which indirectly depressed the Asian credit market. Weak consumer demand in North America and Europe resulted in a severe drop in Asian exports to these markets. Low expected returns discouraged new investment and business expansion, which led to a significant fall in credit demand, resulting in an overall reduction in credit growth in Asia.

Foreign banks, however, were subject to two additional, different types of influence: non-Asian FBs were around the epicentre of the GFC and were largely exposed to liquidity shocks back home. They quickly withdrew capital and credit from subsidiaries around the world including Asia. Nonetheless, the reason this 'common lender' effect was not explicit compared with Latin America might lie in the presence of Asian FBs.

Few Asian FBs were experiencing a credit supply shock at home—quite the opposite: the benign liquidity situation at home served as 'lender of last resort'. In addition, the retreat of some of the non-Asian FBs might have generated new

opportunities for Asian FBs to enter the market and expand their market shares in their neighboring countries, which explains their strong lending momentum and the important role in stabilizing Asian credit markets in times of stress.

6.4. Money Market Transmission

Lastly, it is suspected that credit contraction in non-Asian FBs might be a transmission effect from the global money market, which nearly collapsed during the GFC. Asian FBs have, on average, a lower level of money market dependence compared with non-Asian FBs. Table 8 shows that a higher level of money market dependence seems to have relentlessly distressed credit conditions in non-Asian FBs during the GFC, although the money market funding facilitates credit extension for FBs in general in the pre-crisis period. Apparently, money market funding is pro-cyclical and highly unstable, constituting a key element of transmission of shocks and credit instability.

Table 8. Money Market Transmission of Credit Instability
(Dependent variable: credit growth—growth in real credit)

	Domestic banks		Foreign banks		Asian-owned FBs		Non-Asian FBs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MMD	0.212	0.206	0.719**	0.821***	0.907***	0.898***	0.046	0.274
	(0.246)	(0.249)	(0.023)	(0.007)	(0.000)	(0.000)	(0.946)	(0.649)
GFC	−0.017	0.036	−0.135**	−0.427**	−0.107***	−0.080	−0.202	−0.912**
	(0.519)	(0.758)	(0.037)	(0.038)	(0.015)	(0.647)	(0.283)	(0.015)
G*MMD		0.085		−0.554*		0.047		−1.502***
		(0.642)		(0.083)		(0.876)		(0.010)
N	2338	2338	487	487	274	274	208	208
R^2	0.152	0.153	0.125	0.136	0.199	0.199	0.059	0.125
F	14.506	13.100	19.573	19.884	13.615	12.211	1.510	8.451
p	0.000	0.000	0.000	0.000	0.000	0.000	0.173	0.000

Note: Same as Table 5; full sample.

7. Concluding Remarks

The study sets out to understand the impact of foreign bank lending on credit stability in Asia during the Global Financial Crisis. Employing a large and the most recent banking data set for 10 major Asian economies during 2001–09, the analysis provides evidence that Asian-owned FBs played a distinctive and stabilizing role during the recent GFC compared with their non-Asian counterparts and local banks in the host countries.

Non-Asian FBs exhibited the sharpest credit contraction in Asia during the crisis. Yet the destabilizing impact did not endanger local banking systems largely because of the presence and influence of Asian-owned FBs. Statistical evidence suggests that Asian-owned FBs showed the slowest credit reduction during the crisis, which helped counterbalance the contagion effect from the GFC and stabilize the credit markets in Asia.

Preliminary evidence also suggests that the contagion effect of non-Asian FBs might have transmitted through the money market. Non-Asian FBs have a relatively higher reliance on wholesale funding whereas Asian-owned FBs finance their lending mainly by customer deposits. The GFC had a devastating effect on the global money market, which depressed the main funding source of non-Asian FBs and caused them to cut off credit sharply. In contrast, Asian-owned FBs kept their lending momentum in spite of the crisis and took the opportunity to further expand their presence and influence in Asia.

These findings have important policy implications. In brief, the study suggests that FBs did not threaten credit stability in Asia during the GFC. The reason lies in the diversity of origin of foreign banks and specifically the important stabilizing role of Asian-owned FBs. Since the beginning of the financial deregulation after the AFC, there has always been concern about its implications for banking stability, which directly links to Asian policymakers' conservatism and uncertain policies towards foreign bank entry. This study lends support to opening up to foreign banks and especially opening up to Asian-owned FBs' participation in the local banking market, which not only benefits local banks in terms of the transfer of technology and healthy

competition that many studies have demonstrated, but also reduces the risk of instability shown by this new evidence.

It is important, however, to distinguish between opening up to foreign banks' local business and cross-border lending. One of the important lessons from the AFC is that too much reliance on footloose, short-term overseas borrowing and cross-border lending might provoke credit market volatility and a banking crisis. Foreign banks' local business is of a different nature. They establish local facilities and carry out banking business under local regulations, which is a much more stable and reliable source of funding.

Lastly, encouraging Asian-owned FBs to enter the market is not only favorable but also feasible. Many Asian countries have been favoring large international banks—most of which are non-Asian FBs—over regional banks due to the former's reputation and financial expertise and technology. After the GFC, however, North American and European banks are undergoing extensive restructuring. Their influence in the Asian financial market has started to decline. In contrast, Asian-owned FBs, specifically from Singapore, Japan and Hong Kong and most recently China, have been active participants in the regional financial market owing to the strong liability side of their balance sheets. They have been a rising force and have accumulated valuable experience and expertise in foreign banking in the region. With sufficient supervision arrangements, opening to those Asian-owned FBs is expected to invigorate Asian banking systems and foster financial development.

Nevertheless, a few cautions are in order. Although Asian-owned FBs showed slow credit reduction during the GFC, the impact of stabilization should not be overstated and might be visible only in sectors in which FBs were allowed to participate because their presence and areas of business are highly regulated and restricted in Asia. At the same time, non-Asian FBs' contagion effects were not fully captured, as the study did not take into account the effects of liquidation or the complete withdrawal from the Asian market. Those impacts on credit stability are much more severe than slower credit extension. Case studies of individual US, UK and European banks' changes in shareholdings in Asian markets during the crisis might help elucidate the situation. Lastly, slow credit contraction during economic downturns is counter to the business cycle and beneficial to credit stability. Rapid and over-rapid credit growth in normal
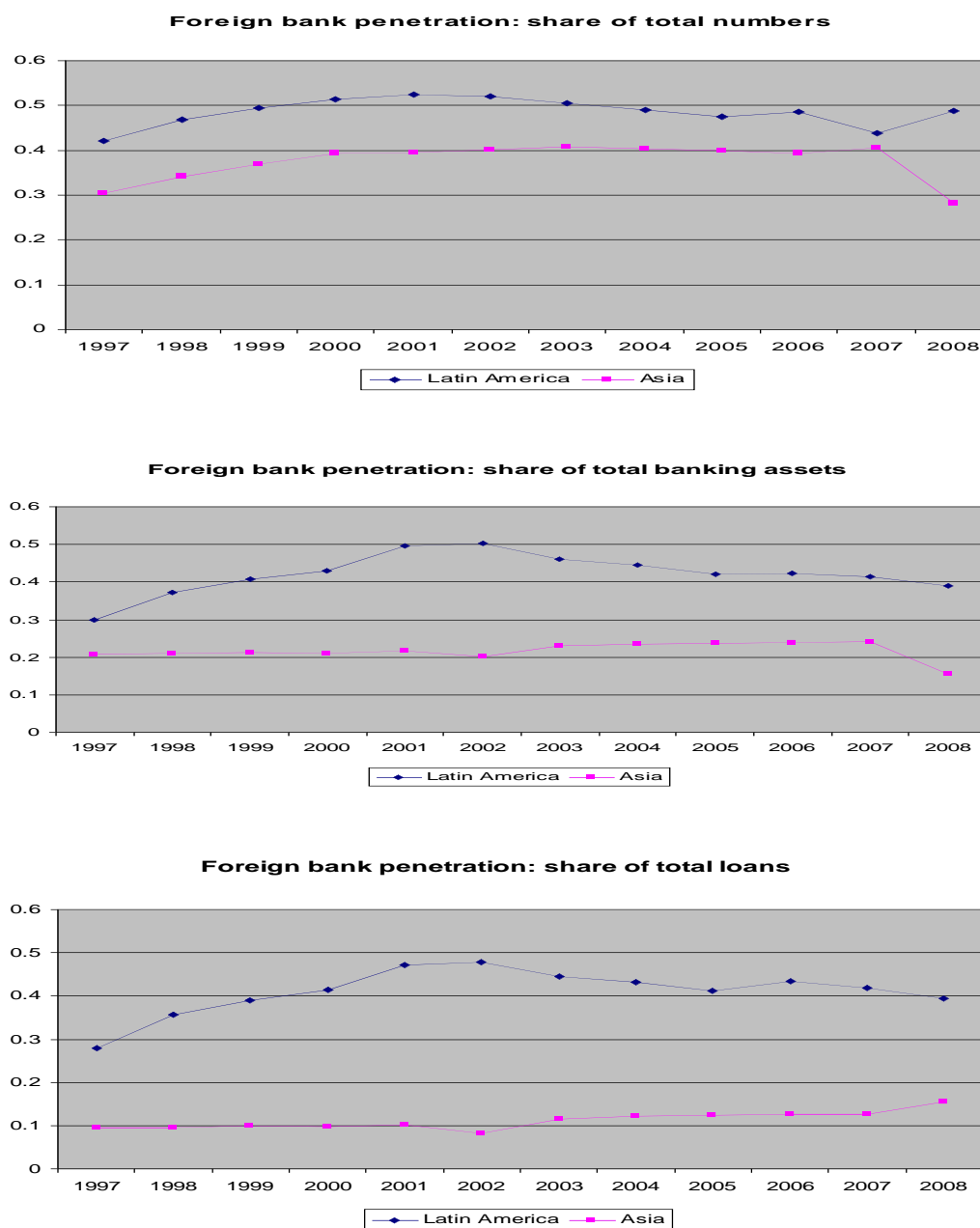
times are not, however, always favorable. It is legitimate to worry that over-rapid credit growth might be planting the seeds of a future crisis.

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Appendix A

Figure A1. Trend of Foreign Bank Presence in Asia (1997–2008)

Foreign bank penetration: share of total numbers

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008

Legend: Latin America — Asia

Foreign bank penetration: share of total banking assets

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008

Legend: Latin America — Asia

Foreign bank penetration: share of total loans

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008

Legend: Latin America — Asia

Source: Jeon et al. (2011).

Note: Latin America includes Argentina, Bolivia, Brazil, Chile, Colombia, Mexico, Paraguay, Mexico, Peru, Uruguay and Venezuela. Asia includes Hong Kong, Indonesia, Korea, Malaysia, the Philippines, Singapore and Thailand.

Appendix B

The Relationship Between Foreign Bank Lending and Local Credit Stability

This conceptual framework (Table B1) extends Morgan and Strahan's (2004) host-country focus by adding home-country shocks to cover all four cases. In a nutshell, identification of credit supply and demand shocks in the host and home countries is critical to predict foreign banks' implications for credit stability.

As shown in Diagram 1, a reduction in credit demand as a result of credit demand shock in HOST (country) decreases return on investment. Foreign capital and credits will flow out of HOST, amplifying decline in investment and destabilizing credit supply ('capital fly' case). Diagram 2 illustrates the case of 'lender of last resort', where a reduction in credit supply increases bank returns in HOST. Higher returns attract more credits from HOME (country) and this inflow offsets HOST credit constraints and stabilizes the credit line, as elucidated by Morgan and Strahan (2004). Similarly, the impact of home-country shocks on foreign bank lending behaviour can also be interpreted by the same framework. In the case of the 'common lender effect', supply shocks in HOME increase returns on investment. Foreign banks with parents in HOME will rip back funds from the periphery and invest in HOME. A sudden drop of credit destabilizes the credit market in HOST (Diagram 3). If demand shock hits HOME instead (the last case in Diagram 4), bank returns decline. Foreign banks with HOME origins look for investment opportunities abroad, with the location depending on expected returns. A promising HOST with higher expected returns will attract credit whereas an unpromising one will not.

Table B1. The Relationship of Foreign Bank Lending and Local Credit Stability

	Types of shocks	Rationale	Implication for credit stability
Host country	Case 1 Credit demand shock – interest rate rises – capital flows out – foreign credit falls	Diagram 1	Destabilizing
	Case 2 Credit supply shock – interest rate falls – capital flows in –foreign credit rises	Diagram 2	Stabilizing
Home country	Case 3 Credit supply shock –foreign capital withdraws – foreign credit falls	Diagram 3	Destabilizing
	Case 4 Credit demand shock –foreign capital flows out –foreign credit might or might not increase in a particular host country	Diagram 4	No particular effects

Diagram 1: HOST — D, D', S, S˙, S; (1), (2). HOME — D, S, S'; (3).

Diagram 2: HOST — D, S', S'', S; (1), (3). HOME — D, S', S; (2).

Diagram 3: HOST — D, S', S; (3). HOME — D, S', S'', S; (1), (2).

Diagram 4: HOST — D, S, S'; (3). HOME — D, D', S˙, S; (1), (2).