Do Banking Crises Attract Foreign Banks?

Istvan Papp

Graduate School of Economics, Hitotsubashi University

2004

Abstract

Foreign banking has increased tremendously in the 1990's, especially in countries that have received little attention in empirical research. Most previous studies focus on the expansion of US banks and the entry of foreign banks into the US market. Such studies stress that foreign banks seek stable and prosperous markets to enter. A distinguishing feature of the recent trend toward internationalization of banking is the penetration of foreign banks into crisis-hit countries. In our empirical study we analyzed the determinants of foreign banks' presence in 77 countries. We found, similar to previous literature, that the level of FDI and the local market opportunity were important factors affecting the expansion of foreign banks. We extend these findings; our empirical results indicate that those host countries, which have experienced one or more banking crises in the 1990's, experience a greater presence of foreign banks. Thus, banking crises appear to have resulted in increased foreign bank participation, and this new factor should be considered in any explanation of the recent worldwide expansion of foreign banks.

Key words: Foreign banks, Banking crisis

JEL classification: G21

I. Introduction

Foreign banking has increased tremendously in the 1990's, especially in countries that have received little attention in empirical research. Most previous studies on multinational banks focus primarily on the expansion of US banks or the entry of foreign banks into the US market. Such studies stress that foreign banks seek stable economic conditions and prosperous markets[1].

However, one distinguishing feature of the recent trend toward internationalization of banking is the eager penetration of foreign banks into crisis-hit countries. That is, contrary to previous foreign bank behavior, in recent years, foreign banks have not retrenched in response to economic problems in the host country. Indeed, we can observe an increase in their overseas activities in the wake of distress.

Considering that entry into a crisis-hit country is not without risk, foreign banks could be compensated handsomely for taking the risk. For instance, heavily protected markets open up to foreign entry in crisis situations[2], because the admission of foreign participants lessens the heavy burden of revitalizing failed financial institutions. On the other hand, foreign banks can acquire distressed local banks at a bargain price, and significantly reduce the cost of overseas expansion. Thus, a banking crisis opens a window of opportunity for foreign banks to set foot in the local banking sector.

Countries which admit foreign banks in crisis periods, can also gain several benefits. First, due to foreign participation, the burden of revitalizing the local financial sector will be lessened and the time span shorter. Second, foreign banks provide a safe haven for local depositors, avoiding the problem of capital flight. Third, despite the crisis situation, foreign banks can provide loans to credible local borrowers, since multinational banks rely upon an internationally-diversified funding base. Thus, the presence of foreign banks reduces the credit crunch effect of a crisis. Fourth, foreign banks introduce new management technologies and innovations in financial products and services. Fifth, the local brick-and-mortar foreign banks' ties with the local economy are much stronger than the local commitment of international banks which are engaged only in cross-border lending[3].

Although US banks took part in the 1990's wave of acquiring distressed local banks, the most active participants were non-US banks. In Latin America[4], Spanish banks played a leading role, while in the Central and Eastern European transition economies German, Dutch and other European banks were most

active. In Asia, British, Dutch and Singaporean banks acquired failed banks after the Asian financial crisis.

Prior to the 1990's, very few foreign banks (mostly US banks) were present in Latin America, but in the aftermath of the Tequila Crisis foreign banks established a significant local retail presence. Foreign investors took sizeable equity stakes when local banks, in desperate straits, were privatized in Central and Eastern Europe, and by the end of the 1990's, in several transition economies foreign banks controlled more than fifty percent of total banking assets. In regions outside Latin America and Central Europe, the penetration of foreign banks has been slower, but the trend is similar.

Although the processes of internationalization of US banks and the US financial market is a widely researched topic, there has been limited empirical research carried out on those non-US banks whose overseas activities intensified in recent years[5]. To understand the recent developments, we conduct an empirical research in which we analyze the determinants of foreign banks' worldwide presence.

Our analysis differs from previous studies in several respects. The most obvious difference is that our data set, in terms of country coverage, is much broader than previous empirical works; it covers the presence of foreign banks in 77 host countries from 23 home countries (see the Appendix).

Employing a multi-host-country and multi-home-country framework we extend previous research. The vast majority of empirical studies adopt either a single-host-country and single-home-country (e.g. Terrell (1979), Goldberg et al. (1980), Hultman et al. (1990), or a single-home-county and multi-host-countries (e.g. Nigh et al. (1986), Goldberg et al. (1990), Sabi (1994), Yamori (1999), Buch (2000)) or a single-host-country and multi-home-countries approach (e.g. Hultman et al. (1989), Grosse et al. (1991), Hondroyiannis et al. (1996)).

Although various recent case studies – e.g. Goldberg et al. (2000) etc. – report that overseas banks intensify their activities in the wake of banking crises, no empirical research has been conducted on the determinants of foreign banks' recent growth. The remainder of the paper is organized as follows. In Section II we review the previous literature. Section III describes the hypotheses, and in Section IV we present our model used in the estimation process. Section V reports and discusses the empirical results. Summarizing remarks conclude the paper.

II. Review of Literature

Numerous empirical studies have been conducted investigating the determinants of foreign banking activity abroad. The bulk of studies which deal with US banks entering into a foreign country e.g. Nigh et al. (1986), Sabi (1994), Goldberg et al. (1990) find that US foreign direct investment (FDI) is significantly correlated with US bank activities in host countries, pointing out that serving home country customers abroad is a significant motive in the overseas expansion of US banks.

Goldberg et al. (1980) in their empirical analysis on US bank penetration into the UK, conclude that US trade is conducive to the growth of US banks into the host country. Moreover, Hultman et al. (1989, 1990) and Grosse et al. (1991) seek to explain the determinants of foreign banking presence in the US by the country of origin. They find that FDI in the US, foreign trade with the US, and the size of the banking sector in the home country are positively correlated with that country's bank presence in the US.

These empirical studies have shown the importance of commercial ties (FDI, trade) with the host country as key determinants of foreign banking activity abroad.

Although Nigh et al. (1986) examine the role of local market opportunity in overseas banking in their study on US bank expansion into 30 host countries in the period of 1976-82, they find that local market opportunity (the amount of manufacturing production) has no significant effect on US banking activities in host countries. However, later studies analyzing US banks (Goldberg et al., 1990) and non-US banks (Yamori, 1998, Buch, 2000) find that the local market opportunity – in a less regulated environment – is a significant determinant in the location choice of multinational banks.

Buch (2000) in her empirical analysis on the determinant factors of German bank expansion finds that foreign activities are positively related to demand conditions on the local market, overseas activities of German firms and the presence of international financial centers.

Nevertheless, the vast majority of previous studies address only foreign bank activities in the US or US banks' activities abroad. Regarding the growing overseas presence of non-US banks we should carefully examine to what extent these findings hold true for the recent trend toward internationalization of banking.

III. Hypotheses

The literature on the determinants of foreign bank expansion stresses the importance of commercial ties with the host country. The importance of other factors such as local market opportunity, hosting financial centers also is often mentioned. In spite of the numerous empirical studies, we lack an explanation of the recent dramatic growth in foreign banking. In this paper we analyze the determinants of foreign banks' increased worldwide presence, and incorporating a new variable into our empirical model, we focus on whether banking crises bring increased foreign participation in local markets.

Since home-country customers doing business overseas generate demand for banking services abroad, the existing literature considers that there is a positive relationship between the presence of home country customers and the presence of banks from the same home country in the host country. The internalization theory suggests that banks internalize the accumulated information about their corporate customers when they provide banking services to them abroad. This hypothesis was extensively tested in the previous literature Nigh et al. (1986), Goldberg et al. (1990), Yamori (1998), Buch (2000). The results of these empirical studies confirm that there is a positive relationship. Since we employ a multi-host-country and multi-home-country framework, our first hypothesis concerning the relationship between customers abroad and foreign banking presence will be the following:

Hypothesis 1. The greater the presence of foreign customers in a country, the more foreign banking presence is attracted to that host country.

The presence of foreign customers is measured by the accumulated foreign direct investment (FDI) in the host country at the end of 2000. We adjusted for size effect by scaling this variable by the GDP of the host country.

Hypothesis 2 complements hypothesis 1 and considers that foreign banks service the trade-related financial needs of their customers who undertake export or import transactions. The internalization theory suggests that the home country customers in a foreign country can get trade finance at favorable terms from fellow country banks which have information about them. That is, the more the bilateral trade between the home country and the host country, the greater the presence of foreign banks in the host

country. This hypothesis was extensively tested in the previous literature e.g. Goldberg et al. (1990), Yamori (1998), Buch (2000). In general, the results of these studies suggest that there is a positive relationship. As we use a multi-host-country and multi-home-country framework, our second hypothesis concerning the relationship between foreign trade and foreign banking presence will be the following:

Hypothesis 2. The greater the volume of a country's foreign trade (export+import), the more foreign banking presence is attracted to that host country.

The volume of foreign trade is measured in two ways: First, as exports plus imports between a host country and the outside world. Second, as exports plus imports between a host country and developed countries. In the latter, we use developed countries, since the vast majority of foreign banks come from these parent countries. We scaled the trade variable by the GDP of the host country in both cases.

Hypothesis 3 considers that foreign banks offer financial services in the host countries not only to foreign customers, but to local customers also. Recent empirical works e.g. Yamori (1998), Buch (2000) extensively test this relationship and these studies find a positive relationship between the presence of foreign banks and local market opportunities, pointing out that foreign banks – nowadays enjoying a less regulated financial environment – consider local banking opportunity when they set foot abroad.

Hypothesis 3. The greater the potential of doing business with local customers in a country, the more foreign banking presence is attracted to that host country.

There are several possible ways to capture the extent of local market opportunity. Similar to Buch (2000) we also expect that large spreads are signs of possible lucrative businesses for foreign banks.

Moreover, Terrell (1979) argues that the tightness or ease of lending conditions can affect the penetration of foreign banks. Tight conditions in the host country, as measured by a high loan/deposit ratio would be expected to encourage lending by foreign participants, because local banks would experience difficulty satisfying and servicing loan demand with existing resources. Thus the loan/deposit ratio functions as a proxy for the profitability of lending business in the host country, that is, a country with a high loan/deposit ratio would offer foreign banks several business opportunities.

Hypothesis 4 considers that countries that host international financial centers will have a greater

presence of foreign banks. Buch (2000) explaining the determinants of the worldwide presence of German banks, uses this kind of dummy variable to control for presence of international financial centers and she finds a positive relationship between hosting financial centers and the presence of German banks. We expect that international financial centers provide an alluring business environment not only for German but other country's banks as well.

Hypothesis 4. Countries hosting international financial centers will have larger foreign bank participation.

We use a financial center dummy in order to control for the presence of international financial centers.

Hypothesis 5 considers that countries that have experienced systemic banking sector problems in the past will have a greater presence of foreign banks. A key element in our study is the introduction of a banking crisis dummy variable to control for experiencing a banking crisis. According to Demirgüc-Kunt et al. (1998) we can define a banking sector distress as a banking crisis if one of the following four conditions occurs:

1. The ratio of non-performing assets to total bank assets exceeded 10 percent
2. The cost of the rescue operation was at least 2 percent of GDP
3. Banking sector problems resulted in nationalization of banks
4. Extensive bank runs took place or emergency measures (e.g. deposit freezes, generalized deposit guarantees etc.) were enacted by the government

Hypothesis 5. Countries that have experienced one or more banking crises in the 1990's will have increased foreign bank participation.

We employ a banking crisis dummy in order to control for the emergence of a banking crisis in the host country during the 1990's. Including this new variable into our model, we can provide empirical evidence on the role of financial sector distress in the recent expansion of foreign banks.

Since various case studies pointed out that the recent rise in the presence of overseas banks resulted in expanded lending by foreign subsidiaries, we calculated our measure of foreign banks' physical presence as claims of foreign subsidiaries within the host country.

IV. Data and Methodology

These hypotheses suggest that the following relationship describes the factors that determine foreign bank participation:

$$Share_j = a + b_1 FDI_j + b_2 Trade_j + c_1 LMO1_j + c_2 LMO2_j + d_1 Center_j + d_2 Crisis_j + \varepsilon_j \quad (1)$$

Where,

Share= Local currency claims of foreign banks in the host country divided by the sum of domestic credit

FDI= Inward foreign direct investment stock in the host country divided by the host country's GDP

Trade= Volume of foreign trade of the host country divided by the host country's GDP

LMO1= Local Market Opportunity 1: Spread = domestic lending rate minus domestic deposit rate

LMO2= Local Market Opportunity 2: Loan/deposit ratio = total domestic credit divided by total domestic deposits

Center= Dummy variable for financial centers (If the host country holds an international financial center its value takes 1, otherwise 0)

Crisis= Dummy variable for banking crisis (If the host country experienced one or more banking crises in the 1990's its value takes 1, otherwise 0)

In addition to the model above (Model 1), in Model 2 we analyze what role the development level of the local financial sector (M2/GDP) plays in the location choice of foreign banks.

To conduct our empirical analysis, we collected data on 77[6] host countries from several sources. For the independent variables, value of inward FDI stock was taken from the World Investment Report. Data on export, import, GDP, domestic lending rates, domestic interest rates and domestic credit was derived from the IMF publication, International Financial Statistical Yearbook. We collected data on Taiwan from Financial Statistics, because Taiwan is not an IMF member.

For the dependent variable the source of data was the BIS (Bank for International Settlements) Quarterly Review. At the time we were conducting our research, this data included foreign banks from 23

BIS reporting countries[7]. Choosing this data source allowed us a broad assessment of foreign banks in terms of country coverage. Our test was run as cross-sectional regressions using data from 77 host countries for the year 2000. Table 1 presents basic statistics.

(Insert Table 1 somewhere here)

V. Results of Estimation

The results of estimation are reported in Table 2. We used two models in our estimation work and in both cases we divided the sample countries (77) into two subgroups, namely developed countries (20) and emerging markets (57).

(Insert Table 2 somewhere here)

Our results reveal that the presence of foreign banks in a particular country and the level of FDI in that host country are positively related in all cases. Thus, our empirical evidence identifies that there is a significant positive correlation between the overseas activities of multinational firms and the overseas activities of multinational banks. That is, the presence of foreign companies in a particular country is an important factor in the overseas expansion motives of foreign banks worldwide.

Concerning the role of foreign trade finance we found, somewhat surprisingly, that this is not a significant factor in the location choice of foreign banks. In our estimation we used a multi-host-country and multi-home-country framework, hence we first captured the volume of foreign trade as the host country's trade with every foreign country. Considering the fact that the vast majority of foreign banks come from developed countries, we employed our second approach, and re-estimated our model capturing foreign trade as the host country's trade with developed countries[8]. Our results improved, but we could not obtain any significant result.

We used two variables to capture foreign banks' local market opportunity. As for spread, we found a

positive relationship, but our results were not significant. However, in the case of loan/deposit ratio we found a positive and significant relationship. That is, spreads themselves do not, but potential lending opportunities do work as important overseas expansion motives.

We found a positive relationship between the presence of foreign banks and holding an international financial center in both models, but our results were only significant in the case of emerging markets. Thus, being a host country of an international financial center is an important motivational factor, when foreign banks expand to emerging markets.

The banking crisis dummy has the expected positive sign, thus our empirical results indicate that host countries which have experienced financial sector distress in the 1990's, have a greater foreign bank participation in the year 2000. We obtained similar results from both models.

Goldberg et al. (2000) reported in their case study on Latin America that foreign banks recently consider banking crises not as a reason to withdraw but as an opportunity to enter or expand. Our analysis provides empirical evidence that this kind of opportunistic behavior is not a characteristic feature of only Spanish and other foreign banks' penetration into Latin America, but this holds for foreign banks' recent worldwide expansion, too.

Our results reveal that regarding emerging markets, the effect of a banking crisis on foreign banks' expansion motives is stronger than in the case of developed countries. While the entry of foreign banks into developed countries was deregulated several years ago, in the case of emerging markets foreign banks often were kept waiting for years to obtain a license and start operations. Furthermore, when a widespread bank failure occurs in an emerging market, the domestic players often lack the funds and/or the proper knowledge to revitalize the failed financial institutions.

In Model 2 we analyzed what role the development level of the local financial sector (M2/GDP) plays in the location choice of foreign banks. We found no significant relationship between the presence of foreign banks and the development level of the host country's financial system. That is, foreign banks concentrate rather on business opportunities and do not regard the development of the local banking system as a decisive factor when they expand abroad.

VI. Summary and Conclusions

Summing up our findings we can conclude the following: First, we found that the higher the level of FDI in a host country, the more foreign banking presence is attracted to that country. Second, our results suggest that foreign banks seek local market opportunities in host countries. Third, in the case of emerging markets, hosting an international financial center helps to attract foreign banks. Fourth, our empirical results indicate that banking crises resulted in increased foreign bank participation in affected host countries. At the same time we could not find empirical evidence that supports the hypothesis that foreign banks prefer to enter into more developed financial markets.

We contributed to the previous empirical research in several ways. Employing a multi-host-country and multi-home-country framework, we were able to capture the presence of foreign banks in 77 host countries from 23 home countries[9]. Up to the present there was only one empirical study (Brealey et al., 1996) which applied a similar framework to explain the determinants of foreign banking location, but they used a rather inflexible (the number of bank offices) and heterogeneous (bank offices include subsidiaries, branches and representative offices) proxy to capture the foreign presence of the world's 1000 largest banks.

Although we employed a flexible and responsive variable to measure the worldwide presence of foreign banks, our proxy also has bias[10], hence it excludes a part of foreign banking activities, namely the local lending in foreign currency. We obtained our data from the BIS and at the present moment they do not make public this kind of information. Since foreign trade finance is denominated mostly in foreign currency, this shortcoming of our data set could be a possible reason why we could not find any significant relationship between the presence of foreign banks and the volume of foreign trade.

In conclusion, incorporating the banking crises variable into our analysis, we extended previous research, and our empirical findings indicate that banking crises appear to have resulted in increased foreign bank participation, and this new factor should be considered in any explanation of the recent worldwide expansion of foreign banks.

VII. References

Brealey, R. A. and E. C. Kaplanis, 1996, The Determination of Foreign Banking Location, *Journal of International Money and Finance* 15, 577-597.

Buch, C.M., 2000, Why Do Banks Go Abroad? – Evidence from German Data, *Journal of Financial Markets, Institutions, and Instruments* 9, 33-67.

Demirgüc-Kunt, A. and E. Detragiache, 1998a, The Determinants of Banking Crises in Developing and Developed Countries, *IMF Staff Papers*

Demirgüc-Kunt, A., R. Levine and Hong-Ghi Min, 1998b, Opening to Foreign Banks: Issues of Stability, Efficiency, and Growth, In S. Lee, ed.: *The Implications of Globalization of World Financial Markets* (Bank of Korea, Seoul)

Goldberg, L., B. G. Dages and D. Kinney, 2000, Foreign and Domestic Bank Participation in Emerging Markets: Lessons from Mexico and Argentine, NBER, Working Paper 7714.

Goldberg, L. G. and A. Saunders, 1980, The Causes of U.S. Bank Expansion Overseas: The Case of Great Britain, *Journal of Money, Credit and Banking* 12, 630-643.

Goldberg, L. G. and D. Johnson, 1990, The Determinants of US Banking Activity Abroad, *Journal of International Money and Finance* 9, 123-137.

Grosse, R. and L. G. Goldberg, 1991, Foreign Bank Activity in the United States: An Analysis by Country of Origin, *Journal of Banking and Finance* 15, 1093-1112.

Hondroyiannis, G. and E. Papapetrou, 1996, International Banking Activity in Greece: The Recent Experience, *Journal of Economics and Business* 48, 207-215.

Hultman, Ch. W. and R. McGee, 1989, Factors Affecting the Foreign Banking Presence in the U.S., *Journal of Banking and Finance* 13, 383-396.

Hultman, Ch. W. and R. McGee, 1990, The Japanese Banking Presence in the United States and Its Regional Distribution, *Growth and Change* 21, 69-79.

Nigh, D., K. R. Cho and S. Krishnan, 1986, The Role of Location-Related Factors in U.S. Banking Involvement Abroad, *Journal of International Business Studies* 17, 59-72.

Sabi, M., 1994, Motivational Factors for the Establishment of U.S. Banks in Developing Countries, *Social and Economic Studies* 43, 91-105.

Terrell, H., 1979, U.S. Banks and Japanese Banks in the United States: An Empirical Comparison, *Economic Review of Federal Reserve Bank of San Francisco* Summer, 18-30.

Yamori, N., 1998, A Note on the Location Choice of Multinational Banks: The Case of Japanese Financial Institutions, *Journal of Banking and Finance* 22, 109-120.

Appendix:

Home countries (BIS reporting countries): Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Italy, Japan, Luxemburg, Netherlands, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Taiwan, Turkey, United Kingdom, United States.

Host countries: Emerging markets: Argentina, Bahrain, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Cyprus, Czech, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Guatemala, Haiti, Honduras, Hong Kong, Hungary, India, Indonesia, Israel, Jamaica, Jordan, Korea, Lebanon, Lithuania, Malaysia, Malta, Mexico, Morocco, Nepal, Nicaragua, Nigeria, Oman, Pakistan, Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Qatar, Romania, Russia, Saudi Arabia, Singapore, South Africa, Sri Lanka, Taiwan, Thailand, Tunisia, Turkey, Venezuela, Yemen, Zambia; **Developed countries**: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, U.K., U.S.

Table 1. Basic Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
Share (%)	0.162	0.193	0.000	0.809
FDI	0.383	0.420	0.012	2.891
Trade	0.751	0.504	0.176	2.966
Spread	5.374	5.314	-5.142	34.478
Loan/deposit ratio	0.900	0.397	0.289	3.418
Financial center dummy	0.091	0.289	0.000	1.000
Banking crisis dummy	0.429	0.498	0.000	1.000
Development level of financial sector	0.619	0.444	0.147	2.630

Table 2. Results of Estimation

		Model 1		Model 2	
Variable		**All Sample Countries**	**Emerging Markets**	**All Sample Countries**	**Emerging Markets**
FDI	Estimated value	0.167	0.179	0.176	0.148
	t-value	2.401**	2.106**	3.322***	2.101**
Trade	Estimated value	-0.222	-0.051		
	t-value	-0.013	-0.739		
Spread	Estimated value	0.005	0.003		
	t-value	1.181	0.576		
Loan/deposit ratio	Estimated value	0.116	0.105		
	t-value	2.231**	1.685*		
Financial center dummy	Estimated value	0.101	0.218	0.112	0.244
	t-value	1.387	1.713*	1.499	1.994*
Banking crisis dummy	Estimated value	0.126	0.181	0.113	0.161
	t-value	3.034***	3.345***	2.691***	3.074***
Development level of financial sector	Estimated value			-0.038	-0.038
	t-value			-0.769	-0.684
Intercept	Estimated value	-0.076	-0.046	0.067	0.072
	t-value	-1.261	-0.546	1.618	1.514
Number of observations		77	57	77	57
Adjusted R^2		0.24	0.27	0.20	0.26

(Note) (1) *, **and *** represent significance at level 10%, 5% and 1% significance level.

Endnotes

[1] Sabi (1994) examines US bank penetration into developing countries and finds that the stability of host countries is a significant factor.

[2] After the Asian financial crisis (1997) several seriously affected countries (e.g. Thailand, Indonesia, Korea) allowed foreign investors to play a greater role in their financial sector. Prior to the crisis, most Asian countries had restrictions or even an explicit ban on the entry of foreign banks, e.g., in Thailand no new banking license had been issued for more than twenty years.

[3] This type of lending tends to decrease during crisis periods.

[4] Mexico experienced several financial crises in its history, however, only after the Tequila Crisis (1994) were troubled banks offered to foreign investors. Formerly, it was a government policy to nationalize failed financial institutions.

[5] Increasing competition, lower margins put pressure on domestic banks to expand abroad. Large banks from small countries have no choice but to expand abroad due to their congested domestic markets.

[6] When we constructed our sample we selected the same countries that were used by Demirgüc-Kunt et al. (1998b) in their empirical research. Due to lack of data we dropped 3 countries (Botswana, Swaziland and Luxemburg) from the original sample.

[7] At present, detailed data on foreign banks by source countries is confidential.

[8] We obtained the value of trade with industrial countries from the Direction of Trade Statistics Quarterly.

[9] Our data set on the worldwide presence of foreign banks included all banks from 23 BIS reporting countries, banks from non-reporting countries were left out. We are confident we captured by far the majority of foreign banks operating in sample countries. Though foreign bank penetration data vary substantially depending on the measure applied, we consider our data set comprehensive and consistent.

[10] That is, where foreign banks are allowed to lend in foreign currency, we underestimate the actual size of foreign bank lending. In order to compute a better foreign bank penetration measure, equivalent information for the domestic banking market of each country would be required.