

How does foreign entry affect domestic banking markets?

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Abstract:

Using 7900 bank observations from 80 countries for the 1988-1995 period, this paper examines the extent and effect of foreign presence in domestic banking markets. We investigate how net interest margins, overhead, taxes paid, and profitability differ between foreign and domestic banks. We find that foreign banks have higher profits than domestic banks in developing countries, but the opposite is the case for developed countries. Estimation results suggest that a increased presence of foreign banks is associated with a reduction in profitability and margins for domestic banks.

Keywords: foreign entry, domestic banking.

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1. *Introduction*

In recent decades, international trade in goods and financial services has become increasingly important. To facilitate such trade, many banking institutions have also become international.² Banks have expanded internationally by establishing foreign subsidiaries and branches or by taking over established foreign banks. The internationalization of the banking sector has been spurred by the liberalization of financial markets worldwide. Developed and developing countries alike now increasingly allow banks to be foreign-owned and allow foreign entry on a national treatment basis.

Financial liberalization of this kind proceeds, among other reasons, on the premise that the gains from foreign entry to the domestic banking system outweigh any losses. Several authors have addressed the potential benefits of foreign bank entry for the domestic economy in terms of better resource allocation and higher efficiency (see Levine (1996), Walter and Gray (1983), and Gelb and Sagari (1990)). Levine (1996) specifically mentions that foreign banks may (i) improve the quality and availability of financial services in the domestic financial market by increasing bank competition, and enabling the greater application of more modern banking skills and technology, (ii) serve to stimulate the development of the underlying bank supervisory and legal framework, and (iii) enhance a country's access to international capital.

There may also be costs to opening financial markets to foreign competition. Stiglitz (1993), for instance, discusses the potential costs to domestic banks, local entrepreneurs, and the government resulting from foreign bank entry. Domestic banks

² See Aliber (1984) for an early survey of the literature on the internationalization of banking.

may incur costs since they have to compete with large international banks with better reputation; local entrepreneurs may receive less access to financial services since foreign banks generally concentrate on multinational firms; and governments may find their control of the economy diminished since foreign banks tend to be less sensitive to their wishes.

As yet, little evidence exists of the effects of an internationalization of the banking sector other than several case studies of foreign bank entry. McFadden (1994) reviews foreign bank entry in Australia, and finds that this has led to improved domestic bank operations. Bhattacharaya (1993) reports on specific cases in Pakistan, Turkey, and Korea, where foreign banks facilitated access to foreign capital for domestic projects. Pigott (1986) describes the policies that have made increased foreign bank activity possible in nine Pacific Basin countries, and provides some aggregate statistics on the size and scope of foreign banking activities in these markets.³ Using aggregate accounting data, Terrell (1986, Table 20-2) compares the banking markets of 14 developed countries (8 of which allow foreign bank entry) for 1976 and 1977. Interestingly, in this sample, countries that allowed foreign bank entry on average experience lower gross interest margins, lower pre-tax profits, and lower operating costs (all scaled by the volume of business). Terrell (1986), however, does not control for influences on domestic banking other than whether or not foreign banks are permitted to enter.

³ Cho and Khatkhate (1989) provide in-depth case studies of financial liberalization in five Asian countries, however with no particular emphasis on foreign bank entry. Liberalization, though, is shown to lead to faster growth of the financial system and to increased competitiveness of the banking system, even if there

This paper aims to provide a systematic study of how foreign bank presence has affected domestic banking markets in 80 countries. To do this, we use bank-level accounting data and macroeconomic data for the 1988-1995 period. We first examine the scale of foreign bank operations in each of the 80 countries. We define a bank to be foreign if at least 50 percent of its shares is foreign-owned, i.e., when there is foreign control of a bank's operations. As measures of foreign bank presence, we consider the importance of foreign banks both in terms of numbers and in terms of assets.

We then extend the work on the accounting decomposition of interest margins by Hanson and Rocha (1986) and, more recently, Demirgüç-Kunt and Huizinga (1999). Specifically, we use the data to investigate how foreign banks differ from domestic banks in terms of interest margins, taxes paid, overhead expenses, loan loss provisioning, and profitability. We find that, while foreign banks have lower interest margins, overhead expenses, and profitability than domestic banks in developed countries (consistent with Terrell's (1986) findings), the opposite is true in developing countries. This suggests that the reasons for foreign entry, as well as the competitive and regulatory conditions found abroad, differ significantly between developed and developing countries.

Next, we estimate empirically how increased foreign bank presence, measured as the change in the ratio of the number of foreign banks to the total number of banks, affects the operation of domestic banks. We find that increased presence of foreign banks is associated with reductions in profitability, lower non-interest income, and overall expenses of domestic banks.

is no conclusive evidence that financial liberalization leads to lower intermediation margins. In their comparative study, Frankel and Montgomery (1991) also bypass the issue of internationalization.

The remainder of this paper is organized as follows. Section 2 presents data on the relevance of foreign banks in 80 national banking markets. Section 3 presents the empirical results, while section 4 concludes.

2. *The data*

We use information from the financial statements of domestic and foreign commercial banks. The data comes from the BankScope data base provided by IBCA (for a complete list of data sources and variable definitions, see the Appendix). Coverage by IBCA is comprehensive, with banks included roughly accounting for 90 percent of the assets of banks in each country. The data are compiled by IBCA mostly from the balance sheet, income statement and applicable notes found in audited annual reports. Each country has its own data template which allows for differences in reporting and accounting conventions. These are converted to a “global format” which is a globally standardized template derived from the country-specific templates. The global format contains thirty six standard ratios which can be compared across banks and between countries. To our knowledge, this is the most comprehensive data base that allows cross-country comparisons. While the underlying data reflects international accounting standards as much as possible, and IBCA makes an effort to standardize individual bank data while converting to the global format, some differences in accounting conventions regarding the valuation of assets, loan loss provisioning, hidden

reserves, etc., no doubt remain.⁴ We try to capture some of these remaining differences by using country-dummies in our regressions.

We start with the entire universe of commercial banks, with the exception that for France, Germany and the United States only several hundred commercial banks listed as 'large' are included. To ensure reasonable coverage for individual countries, we include only countries where there are data for at least three banks -- domestic and/or foreign -- in a country for a given year. This yields a data set covering 80 countries during the years 1988-1995, with about 7900 individual commercial bank observations. This data set includes all OECD countries, as well as many developing countries and economies in transition.

While comprehensive, this data set does not allow us to distinguish between wholesale versus retail banking markets. It can be argued that since foreign bank entry initially commonly takes place in the wholesale banking market, it is more appropriate to study the impact of entry in this market instead of the national geographic market. However, unless various customer markets are completely segmented, foreign bank presence at the wholesale level can be expected to have an impact at the retail level as well. Specifically, as foreign banks expand their operations at the wholesale level, the threat of foreign banks encroaching on retail markets may be also induce greater efficiency and lower costs of domestic banks at the retail level.

Another, related distinction concerns de novo foreign entry versus entry through the foreign acquisition of a (sizable) domestic bank. The two types of foreign entry may

⁴ See Vittas (1991) for an account of the pitfalls in interpreting international bank operating ratios.

have different implications for domestic banks. Data available, however, does not allow us to make this distinction either.

We first provide information on the aggregate income statement items for all domestic and foreign banks in each of the 80 countries individually. We then present averages for country groups, by income and geographical location to better illustrate the differences between domestic and foreign banks in developing and developed countries. From the bank's income statement, the following accounting identity follows:

$$(1) \quad \textit{net margin/ta} + \textit{non-interest income/ta} = \textit{before tax profits/ta} + \textit{overhead/ta} + \textit{loan loss provisioning/ta}$$

The first two ratios are the accounting values of a bank's net interest income over its total assets, or *net margin/ta*, and its net non-interest income over total assets, *non-interest income/ta*. The *non-interest income/ta* captures the fact that many banks also engage in non-lending activities, such as investment banking and brokerage services, which generate income. To measure bank profitability in the accounting identity, we use the bank's before-tax profits over total assets, or *before tax profits/ta*. This latter variable can subsequently be broken down into the *after tax profits/ta* and *tax/ta* variables. The *overhead/ta* variable represents the bank's entire overhead over total assets, while *loan loss provisioning/ta* simply measures actual provisioning for bad debts over total assets.

Similar to other studies on the effects of changes in market structures on firm performance, we focus on accounting measures of income and profitability rather than

rates of return on stocks. This is for several reasons. For one, (risk-adjusted) financial returns on bank stocks are equalized by investors in the absence of prohibitive international investment barriers or other transaction costs. Comparing these returns across different banking systems would thus not allow us to investigate the effects of different degrees of competition and the effects of foreign bank entry. For this reason, Gorton and Rosen (1995) and Schranz (1993) focus on accounting measures of profitability when examining managerial entrenchment and bank takeovers. Also, financial returns data are not available for a similarly large set of banks and countries.

First, we document the extent of foreign bank presence in national banking environments. Table 1 presents two measures of foreign bank presence: the share of the number of banks that are foreign-owned, and the share of foreign bank assets in total bank assets. The number presence measure is an appropriate measure, if the number of domestic and foreign banks determines competitive conditions. This might be the case, if domestic banking firms adjust the pricing of their lending and other activities as soon as foreign entry occurs to prevent the foreign entrants from capturing significant market share. Alternatively, the share presence measure can be appropriate, if foreign banks start to have an impact on the pricing and profitability of domestic banks only after gaining market share. Foreign banks may, for example, have to be sizable for there to be any significant pressure on the spreads of domestic banks. Note that both presence measures capture actual foreign banking presence, and thus do not capture the disciplining effects on domestic banks of potential foreign bank entry. The threat of foreign bank entry is difficult to measure, however, in part as it very difficult to

objectively measure the barriers to entry in a banking market, and in any case the absence of barriers may be closely related to actual entry.

From Table 1, we see that for about three-fifth of the countries the number foreign presence measure exceeds the asset presence measure (this is the case for France, Germany, Italy, the U.K. and the U.S., but not Japan). This is also the case for a simple average of all the countries. This reflects that foreign banks tend to be smaller than domestic banks. Either presence measure is zero for Finland, Guatemala, Haiti, India, Malta, Oman, and Yemen, reflecting in part regulatory barriers to foreign bank entry. At the other extreme, Nepal and Swaziland only have foreign-owned banks in our sample. Other countries with a large foreign bank presence (with both foreign presence measures exceeding 75 percent) are Bahrain, Botswana, Luxembourg, and New Zealand. A colonial past or the presence of a large neighboring country might explain some of these high ratios. Among the developed countries, Denmark, Finland, Italy, Sweden and the United States have relatively insulated banking markets, with foreign presence measures below 10 percent.⁵ The last column for each country reports the total number of banks in the sample for 1995.

Next, we consider whether there is a systematic link between foreign bank presence and national income. In Table 2 we present average foreign presence shares by national income group.⁶ Interestingly, the foreign asset share in the low-income

⁵ Previous studies, such as DeYoung and Nolle (1996) report foreign bank presence ratios of almost 50 percent for the U.S. However these studies define a bank as foreign if has more than 10 percent foreign ownership. In addition, these studies include off-shore operations of foreign banks. Data reported in Federal Reserve Bulletins confirm the figures we obtain above.

⁶ For country groupings by income, see the World Development Report (1996).

countries in our sample is comparable to that of high-income countries, with somewhat higher presence shares for middle-income countries. This finding suggests that the differences in national foreign presence shares in Table 1 are not necessarily due to differences in levels of national income. Table 2 also provides a breakdown of the average foreign presence share by geographical regions which exhibits quite a bit of variation.⁷ While these aggregates are interesting, the high dispersion within groups suggests that grouping by income or region may not be very informative.

Next, Table 3 presents the net interest margins and other accounting variables for domestic and foreign banks separately in each of the 80 countries in the 1988-1995 period. An ownership indicator of “D” refers to the group of domestic banks, while an indicator of “F” refers to the foreign banks. As already evident from Table 1, not all countries have both domestic and foreign banks.

In some developing countries (such as Argentina, Costa Rica, and Venezuela), foreign banks realize net interest incomes of around 10 percent of assets or higher. Also in many developing countries (for example Egypt, Indonesia, Argentina and Venezuela) foreign banks in fact report significantly higher net interest margins than domestic banks. Instead, in most developed countries (for instance, in France, Austria, Australia, Japan, the United Kingdom, and the United States), foreign banks report significantly lower net interest margins than domestic banks.

⁷ Countries in transition are China, the Czech Republic, Estonia, Hungary, Lithuania, Poland, Romania, Russia, and Slovenia. Neither this group of countries nor the industrial economies are in regions in the strict sense.

These differences may reflect the differing market conditions foreign banks find abroad. In developing countries, foreign banks may be able to realize high interest margins because they are exempt from credit allocation regulations and other restrictions which are a net burden on margins. Where state banks dominate a large share of the banking system, non-commercial criteria may be frequently used to allocate credit, with resulting downward pressure on margins. Furthermore, pervasive market inefficiencies and outmoded banking practices that exist in developing countries should also allow foreign banks to reap higher net interest margins than domestic banks, outweighing the information disadvantages they possibly may face.

Developed country banking markets tend to be more competitive with more sophisticated participants. The low margins of foreign banks in developed countries may in addition be due to the fact that any technical advantages foreign banks may have in these markets are not significant enough to overcome the informational disadvantages they face relative to domestic banks.

The *overhead/ta* variable reflects the bank's overhead associated with its deposit and loan operations as well as any other activities. Foreign banks might on the one hand have high overhead costs if they have to overcome large informational disadvantages, but on the other hand they may have low overhead expenses if they engage mostly in wholesale transactions. Many developed countries, such as Australia, Japan, the United Kingdom, and the United States have foreign banks with significantly lower overhead costs (as a percentage of assets) than domestic banks. In many developing countries,

however, foreign banks tend to have higher overhead than domestic banks, although the difference is not significant most of the time.

Next, the *tax/ta* variable reflects primarily the corporate income tax in the host country. Differences in this variable between domestic and foreign banks may reflect different de-jure tax treatment, although most countries do not discriminate in this regard. More likely, any tax burden differences reflect differences in the activity mix between foreign and domestic banks and foreign banks' efforts to shift profits worldwide so as to minimize their global tax bill. Prima facie, foreign banks can be expected to have more opportunities to shift taxable income abroad than domestic banks. In any event, banks have an incentive to shift profits out of (into) high-tax (low-tax) jurisdictions. An interesting case is the United States where foreign banks pay taxes as a share of assets at about two-thirds the taxes paid by domestic banks (*tax/ta* of 0.3 vs. 0.5 percent). Also in some other developed countries, such as in Australia, Austria, Belgium, the Netherlands, Spain, and the United Kingdom foreign banks pay relatively low taxes. This pattern is not as pervasive in developing countries: counter examples include Malaysia and Egypt. An important determinant of actual tax bill is no doubt tax enforcement, which varies from country to country.

The *loan loss provisioning/ta* variable measures the new provisioning made during the accounting year for any previously contracted credits. Differences between domestic and foreign banks here may reflect a difference in customer mix (with foreign banks concentrating on large corporations rather than mortgage or consumer loans). Alternatively, different provisioning ratios may reflect differences in foreign and

domestic banks' ability to screen bad credit risks and willingness to provision for bad risks. Foreign banks have higher provisioning ratios in some countries including Australia, Canada, Germany, Japan, and the United Kingdom but most of these differences are not significant. We see significantly lower provisioning ratios in Austria, Denmark, France and Sweden. Also in some developing countries, foreign banks differ statistically significantly from domestic banks in this regard.

Finally, the table provides information on differences in net profits over assets, or *net profits/ta*, between domestic and foreign banks. As an accounting residual, this variable is affected by each of the foregoing accounting variables in the table. In addition, the required net profits of foreign banks may be influenced by the tax regime of the bank's parent country. A foreign bank that will benefit from a foreign tax credit, for instance, may accept a relatively low net-of-host-country-tax profitability. At the same time, domestic and foreign banks may accept different net profits to the extent that their cost of capital differs. Foreign banks, specifically, may be able to raise equity capital internationally, and therefore accept a lower net profitability. Although the significance levels vary, the data shows that foreign banks have lower net profits in most developed countries, whereas they generally have higher net profits in developing countries. This supports DeYoung and Nolle (1996) who argue that foreign banks in the United States have been relatively less profitable because they valued growth above profitability.

Table 4 provides a summary of Table 3 by averaging this data for domestic and foreign banks by different country groupings. Considering the breakdown by income, we see that foreign banks on average obtain the lowest interest margins in high-income

countries, and their margins are significantly lower than those of domestic banks in upper middle and high income countries. At the same time, foreign banks achieve higher interest margins than domestic banks in low income and lower middle income countries, although this difference is significant only for the lowest income group. Overhead expenses, taxes and net profitability of foreign banks in low-income countries similarly tend to be relatively high (although these results are not significant). In high income countries, however, these ratios are significantly lower for foreign banks. Note that banks in low-income countries have significantly higher overhead expenses than banks in high-income countries, despite generally lower wages in low-income countries. This probably reflects bank overstaffing and possibly difficulties in evaluating loans in low-income countries. Differences in loan loss provisioning ratios vary across income groups. Foreign bank provisioning ratios are significantly lower than those of domestic banks in high income countries, possibly reflecting the fact that foreign banks generally provide relatively little risky consumer credit. The opposite is true in upper middle income countries, however. The reason may be that foreign banks are at an informational disadvantage in identifying good credit risks, or that they have more conservative provisioning policies.

Turning to the breakdown by geographical region, we see that interest margins are highest in Latin America and in the transitional economies. In both cases, high overhead expenses seem to be the driving factor behind the high interest margins. In Asia and Latin America foreign banks have higher interest margins than domestic banks, but this difference is significant only for the first group. These are the two geographic

regions where foreign banks also have higher non-interest income ratios. In Africa, Middle East and industrial economies domestic banks have significantly higher non-interest income. Turning to taxes paid, the taxation of banking appears to be very high in transition economies. Foreign banks pay higher taxes than domestic banks only in Latin America. Provisioning levels are not significantly different except in industrialized economies where foreign banks provision less. Finally, only in Asia and in Latin America do foreign banks achieve significantly higher net profitability than domestic banks.

3. *Empirical estimation*

In previous work, Demirgüç-Kunt and Huizinga (1999) investigate how a variety of bank variables, including ownership, affect banks' net interest income and profitability.⁸ Foreign ownership was found to be associated with higher net interest margins and profits in developing countries, while this result was reversed in developed countries. That paper did not investigate, however, how foreign bank entry, i.e., a change in foreign bank presence, might affect the operation of domestic banks. In this paper, we extend the previous work by examining in detail if foreign bank entry is correlated with changes in any of the five variables in the accounting equation (1).

To start, we estimate the following equation in first differences⁹

⁸ See also Barth, Nolle, and Rice (1997) who use bank-level accounting data for 1993 to study the impact of bank powers on the return to equity for a set of 19 countries.

⁹ Eq. (2) is a reduced form equation that relates endogenous banking variables, such a profitability to banking 'inputs' such as bank equity and non-interest earning assets and a set of controls, including the foreign bank share. DeYoung and Nolle (1996), among others, more explicitly derive a profit function that relates profitability to bank inputs and various controls.

$$(2) \quad DI_{ijt} = \alpha_o + \beta DFS_{jt} + \beta_i DB_{it} + \beta_j DX_{jt} + \varepsilon_{ijt}$$

where I_{ijt} = is the dependent variable (say, *before tax profits/ta*) for domestic bank i in country j at time t ; FS_{jt} is the share of foreign banks in country j at time t (i.e., number of foreign banks divided by the total number of banks); B_{it} are bank variables for domestic bank i at time t ; X_{jt} are country variables for country j at time t . Further, α_o is a constant, and β , β_i , and β_j are coefficients, while ε_{ijt} is an error term. All regressions include country and time-specific fixed effects. The estimation uses weighted least squares, with the weights being the inverse of the number of domestic banks in a country in a given year (to correct for varying numbers of banks across countries). We report heteroskedasticity-corrected standard errors.

The estimation results, Table 5, indicate that foreign bank entry is significantly associated with a reduction in domestic bank profitability (column 3), and also a reduction in non-interest income and overhead expenses (columns 2 and 4), although these results are less significant. We do not see a significant association of net interest margins or loan loss provisioning with foreign entry. We interpret these results to mean that foreign bank entry is associated with greater efficiency in the domestic banking system. Holding other factors constant, high profits reflect an absence of competition, while high overhead costs may reflect less efficient management and inferior organizational structures. Foreign bank entry may enable domestic banks to reduce costs as they assimilate any superior banking techniques and practices of foreign entrants.

Alternatively, or complementary, foreign bank entry may force domestic bank managers to give up their sheltered ‘quiet life’ and to exert greater effort to reach cost efficiency.¹⁰

Turning to control variables, we see that inflation and real interest rate variables are positively related to the net interest margin, before tax profits, and overheads.¹¹ These results are consistent with the notion that a higher interest rate and a higher inflation lead to higher bank margins and profits, but also to higher operating costs. Increases in *overhead/ta* are also associated with relatively higher interest and non-interest income and lower profits.¹² The first difference of per capital income, or *Gdp/cap*, interestingly is associated with reduced costs as well as lower loan loss provisioning. Perhaps banks can more easily reduce costly employment when incomes are growing.

As an alternative definition of the foreign bank share, we use the ratio of foreign bank assets to total bank assets. After substituting for the foreign bank share, we find this variable enters all five (unreported) regressions as in Table 5 with the same, negative sign, but with an insignificant coefficient. This suggests that the number of foreign banks rather than their size is associated with competitive conditions in national banking markets. One possible explanation is that domestic banks already change their competitive behavior upon the entry of foreign banks before these banks have gained their long-run market share. It may also reflect that a contestable and competitive

¹⁰ Berger and Hannan (1998) estimates that the efficiency costs related to market power as explained by the ‘quiet life’ hypothesis are substantial.

¹¹ Throughout the paper excluding variables with insignificant coefficients from regressions does not change the results in any significant way. Insignificant coefficients are reported to facilitate comparisons across different specifications.

banking system depends more on the number of banks, rather than their asset shares.

Even in the long run, the number of foreign competitors may be related to, say, domestic banking profits, even if their lending market share (as proxied by relative asset size) does not.¹³

4. *Conclusion*

Banking markets are becoming increasingly international on account of financial liberalization and overall economic and financial integration. This paper presents evidence on the scale of foreign participation in national banking markets in 80 countries. Also, it provides some evidence on how foreign banks' financial conditions differ from those of domestic banks. These differences can reflect a different customer base, different bank procedures as well as different relevant regulatory and tax regimes. A main finding is that foreign banks tend to have higher interest margins, profitability, and tax payments than domestic banks in developing countries, while the opposite is true in developed countries.

¹² This is consistent with the findings of Demirgüç-Kunt and Huizinga (1999) that some portion of overhead costs is passed on to bank depositors and other lenders. Nevertheless, since the cost are not passed on completely, bank profits do suffer from higher overhead.

¹³ This can be illustrated by a simple Cournot model of competition between n domestic banks and n^* foreign banks. Let domestic and foreign banks offer a homogeneous product ('loans'). Marginal cost of production is constant at c and c^* for domestic and foreign banks, respectively. Demand is negatively related to price, as $a - bp$, while total supply is $nq + n^*q^*$, with the q 's being loan supply of a domestic and a foreign bank. By number, the relative foreign bank share is n^*/n . By asset size, relative foreign bank share is $s^* = (n^*q^*)/(nq)$. In the Cournot-Nash equilibrium, we find that, $s^* = 1 + [(n^* - n)(a - bc) + bn^*(c - c^*)(2n + 1)] / N$ with $N = n [a - b(n^* + 1)c + bn^*c^*]$. Let fixed costs of entry be such that one or more foreign banks can enter, i.e. n^* increases. To assess the impact on s^* , we can differentiate this variable w.r.t. n^* (not ignoring the integer constraint on n^*). Unreported calculations show that ds^*/dn^* has the same sign as $a - bc + b(c - c^*)[(2n + 1)(a - bc) - n]$ which is ambiguous. Hence, it is possible to change the ratio n^*/n (and profits of domestic banks), while not changing s^* . Therefore, the foreign number share

In the literature on foreign banking, it is frequently asserted that foreign bank entry can render national banking markets more competitive, and thereby can force domestic banks to start operating more efficiently. This paper provides empirical evidence that for most countries a larger foreign ownership share of banks is associated with a reduction in the profitability and margins of domestically owned banks.

Overall, these results are consistent with a hypothesis that in the long run foreign bank entry may improve the functioning of national banking markets, with positive welfare implications for banking customers.

Another interesting finding of the paper is that the number of entrants matters rather than their market share. This indicates that the impact of foreign bank entry on local bank competition is felt immediately upon entry rather than after they have gained substantial market share.

The relaxation of restrictions on foreign bank entry can have risks, however. In particular, by increasing competition and thereby lowering the profits of domestic banks, foreign entry may reduce charter values of domestic banks, making them more vulnerable. This may have a destabilizing effect on the financial system especially if the domestic prudential regulations and supervision are not strong. To reap the benefits of foreign bank entry and minimize its potential costs, policymakers need to pay attention to the timing of the liberalization process and ensure adequate regulation and supervision.

may be correlated with profits, even if the foreign asset share is not. It is then possible that a change in n^* affects the profits of each domestic bank without affecting the relative market share of foreign banks.

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Table 1. Share of Foreign Banks in Domestic Banking Systems: 1988-1995

A foreign bank is defined to have at least 50 percent foreign ownership. Figures reported are ratios of number of foreign banks to total number of banks and foreign bank assets to total bank assets in each country, respectively, averaged over the 1988-1995 period. Total number of banks is for 1995.

	No. of foreign banks in total	Foreign bank assets in total	Total number of banks		No. of foreign banks in total	Foreign bank assets in total	Total number of banks
Argentina	0.37	0.10	9	Lithuania	0.10	0.09	7
Australia	0.37	0.05	26	Luxembourg	0.89	0.80	107
Austria	0.29	0.31	10	Malaysia	0.09	0.06	47
Bahrain	0.81	0.97	7	Malta	0.00	0.00	7
Belgium	0.29	0.05	47	Mexico	0.04	0.02	19
Bolivia	0.29	0.36	10	Morocco	0.33	0.21	8
Botswana	0.75	0.94	4	Nepal	1.00	1.00	3
Brazil	0.37	0.30	41	Netherlands	0.48	0.10	20
Canada	0.64	0.07	69	New Zealand	0.85	0.91	8
Chile	0.32	0.25	20	Nicaragua	0.17	0.20	12
China	0.13	0.00	5	Nigeria	0.30	0.51	9
Colombia	0.23	0.05	28	Norway	0.12	0.01	19
Costa Rica	0.24	0.05	22	Oman	0.00	0.00	6
Cyprus	0.25	0.11	7	Pakistan	0.30	0.12	15
Czech Rep.	0.54	0.51	15	Panama	0.35	0.39	8
Denmark	0.02	0.00	56	P. New Guinea	0.50	0.34	5
Dom. Rep.	0.08	0.03	12	Paraguay	0.43	0.39	20
Ecuador	0.46	0.52	5	Peru	0.43	0.35	22
Egypt	0.10	0.01	9	Philippines	0.46	0.57	17
El Salvador	0.20	0.28	4	Poland	0.30	0.14	28
Estonia	0.43	0.35	7	Portugal	0.18	0.04	34
Finland	0.00	0.00	11	Qatar	0.00	0.00	3
France	0.24	0.08	95	Romania	0.17	0.01	7
Germany	0.37	0.25	80	Russia	0.08	0.06	14
Greece	0.58	0.77	16	S. Africa	0.22	0.02	14
Guatemala	0.00	0.00	24	Saudi Arabia	0.34	0.43	4
Haiti	0.00	0.00	3	Singapore	0.29	0.62	19
Honduras	0.29	0.23	3	Spain	0.36	0.31	38
Hong Kong	0.60	0.69	28	Sri Lanka	0.14	0.08	7
Hungary	0.61	0.61	19	Swaziland	1.00	1.00	3
India	0.00	0.00	5	Sweden	0.07	0.00	18
Indonesia	0.35	0.16	18	Taiwan	0.14	0.09	24
Ireland	0.42	0.11	12	Thailand	0.08	0.02	12
Israel	0.09	0.02	22	Tunisia	0.39	0.35	7
Italy	0.09	0.01	64	Turkey	0.13	0.01	29
Jamaica	0.50	0.48	10	U.K.	0.24	0.19	70
Japan	0.09	0.21	73	U.S.	0.04	0.03	370
Jordan	0.43	0.95	7	Venezuela	0.07	0.02	17
Korea	0.23	0.23	40	Yemen	0.00	0.00	3
Lebanon	0.49	0.57	5	Zambia	0.71	0.46	3
Average for 80 Countries					0.31	0.26	25

Table 2. Share of Foreign Banks in Domestic Banking Systems: Aggregates by Income Group and Regions

A foreign bank is defined to have at least 50 percent foreign ownership. Figures reported are number of foreign banks to total number of banks and foreign bank assets to total bank assets in each income group or region averaged over the 1988-1995 period. Income and region classifications follow World Bank definitions as published in the World Development Report (1996).

	No of foreign banks in total		Foreign bank assets in total		N
	Mean	Std. Dev.	Mean	Std. Dev.	
Income Groups					
Low income	0.26	0.31	0.21	0.30	12
Lower middle income	0.33	0.22	0.31	0.29	28
Upper middle income	0.32	0.25	0.31	0.31	14
High income	0.28	0.24	0.19	0.26	26
Regions					
Africa	0.59	0.33	0.58	0.40	5
Asia	0.31	0.27	0.28	0.31	14
Latin America	0.25	0.16	0.21	0.17	19
Middle East and North Africa	0.27	0.26	0.31	0.37	11
Transitional Economies	0.31	0.21	0.25	0.23	7
Industrial Economies	0.29	0.25	0.18	0.26	24

Table 3. Bank Spreads and Profitability : Domestic vs. Foreign Banks 1988-1995

Ownership denotes if a bank is a foreign bank (F) or domestic (D). A foreign bank is defined to have at least 50 percent foreign ownership. Net margin/ta is defined as net interest income over total assets. Non-interest income/ta is net non-interest income over total assets. Overhead/ta is overhead divided by total assets. Tax/ta is taxes paid over total assets. Loan loss provisions/ta is loan loss provisions over total assets. Net profit/ta is net profits divided by total assets. Ratios are calculated for each bank in each country and then averaged for domestic and foreign banks separately over the country's sample period. All ratios are in percentages. Data are from BankScope data base of the IBCA. Detailed variable definitions and sources are given in the appendix. Pairs of entries that are significantly different from each other (at a 5% level or less) are in bold.

	Ownership	Net margin/ ta	Non-int. income/ta	Overhead/ta	Tax/ta	Loan loss prov./ta	Net profit/ta
Argentina	D	5.8	5.2	7.5	0.4	1.5	1.7
	F	9.9	8.1	12.6	0.4	2.4	2.5
Australia	D	3.4	1.2	3.1	0.4	0.5	0.8
	F	1.0	1.9	1.8	0.0	0.9	0.1
Austria	D	1.9	0.5	1.5	0.1	0.6	0.4
	F	1.4	0.8	1.7	0.0	0.3	0.3
Bahrain	D	2.5	0.8	1.5	0.0	0.9	0.1
	F	1.9	0.8	1.4	0.0	1.0	0.4
Belgium	D	2.2	1.0	2.4	0.2	0.3	0.5
	F	2.1	0.6	2.5	0.1	0.5	0.2
Bolivia	D	1.7	2.1	5.0	0.6	0.5	-2.2
	F	3.8	1.7	3.5	0.5	0.9	0.7
Botswana	F	5.7	2.3	4.1	0.9	0.1	2.1
	D	9.8	4.9	11.9	1.1	1.4	0.9
Brazil	F	6.8	4.1	7.2	1.1	1.1	1.7
	D	2.5	1.2	2.2	0.3	0.6	0.3
Canada	F	1.9	0.7	2.7	0.2	1.1	0.0
	D	4.5	-0.2	3.1	0.1	0.7	0.5
Chile	F	3.9	-0.2	2.8	0.0	0.5	0.4
	D	5.8	6.0	8.2	0.6	1.0	2.2
Colombia	F	6.6	5.1	8.5	0.8	0.7	2.2
	D	9.9	1.6	6.6	0.3	5.2	1.2
Costa Rica	F	17.3	10.5	10.7	1.8	4.5	11.6
	D	3.3	3.1	3.1	0.6	0.3	1.1
Cyprus	D	2.9	1.4	1.8	0.4	2.2	-0.1
	F	2.9	1.7	2.5	0.6	1.3	0.5
Denmark	D	4.8	1.0	3.7	0.2	1.7	0.3
	F	6.5	1.5	5.0	0.6	1.1	1.2
Dominican Rep.	D	6.5	3.0	6.1	0.6	0.5	2.3
	F	8.2	3.1	5.2	1.1	0.8	2.6
Ecuador	D	8.1	2.7	8.3	0.3	1.0	1.8
	F	6.3	5.5	8.3	0.3	0.8	2.8
Egypt	D	1.0	2.0	1.4	0.2	1.0	0.9
	F	2.0	2.1	1.7	0.5	1.0	1.0
El Salvador	D	3.1	1.6	2.8	0.0	0.4	1.5
	F	3.8	1.6	2.9	0.2	0.7	1.7
Finland	D	2.0	1.2	2.4	0.2	2.2	-1.4
France	D	2.5	1.4	2.7	0.2	1.1	0.1
	F	1.7	1.6	2.5	0.1	0.8	0.1

Table 3. Continued

	Ownership	Net margin/ ta	Non-int. income/ta	Overhead/ta	Tax/ta	Loan loss prov./ta	Net profit/ta
Germany	D	2.2	1.2	2.1	0.3	0.6	0.3
	F	1.9	1.1	2.0	0.3	0.7	0.3
Greece	D	3.7	2.0	3.9	0.3	0.4	0.9
	F	2.7	2.4	3.0	0.4	0.6	1.0
Haiti	D	2.7	2.8	3.6	0.4	0.4	1.0
Hong Kong	D	2.7	1.3	1.6	0.3	0.1	2.0
	F	2.5	1.3	1.6	0.3	0.2	1.9
Hungary	D	5.4	8.6	9.2	0.7	2.0	1.5
	F	4.4	4.0	3.5	0.6	2.0	2.5
India	D	1.9	1.6	1.0	0.2	0.3	1.1
Indonesia	D	3.3	1.1	2.7	0.4	0.7	0.9
	F	4.0	1.4	3.4	0.4	0.7	1.0
Ireland	D	3.3	0.9	2.5	0.3	0.5	0.9
Israel	D	3.3	1.9	3.7	0.6	0.7	0.3
	F	2.9	1.5	3.3	0.7	0.6	0.6
Italy	D	3.4	1.3	3.3	0.5	0.5	0.4
	F	3.5	1.8	3.6	0.6	0.5	0.6
Jamaica	F	8.8	2.8	6.6	1.4	0.6	3.0
Japan	D	1.6	0.2	1.3	0.2	0.1	0.2
	F	1.4	0.3	1.1	0.2	0.2	0.2
Jordan	D	2.3	1.6	2.7	0.3	0.7	0.6
	F	1.9	1.2	1.9	0.2	0.3	0.8
Korea	D	2.1	1.5	2.4	0.3	0.5	0.6
	F	1.9	1.4	2.3	0.2	0.5	0.4
Lebanon	D	3.4	0.9	2.2	0.3	0.7	1.1
	F	2.6	1.1	2.0	0.2	0.5	0.9
Lithuania	D	10.0	4.5	7.6	1.6	5.6	0.4
	F	6.4	7.2	7.2	1.7	8.0	-3.3
Luxembourg	D	0.9	1.2	1.0	0.2	0.5	0.3
	F	0.8	0.9	1.0	0.2	0.3	0.4
Malaysia	D	2.7	0.8	1.9	0.4	0.4	0.8
	F	2.4	0.9	1.3	0.6	0.3	1.1
Malta	D	2.4	1.1	2.1	0.4	0.1	0.9
Mexico	D	4.6	2.1	4.5	0.3	1.2	1.0
	F	3.1	1.3	4.2	0.1	1.1	-0.9
Morocco	D	3.5	1.3	3.5	0.6	0.0	0.9
	F	3.3	1.1	3.7	0.3	0.0	0.4
Nepal	D	3.6	2.1	2.4	1.0	0.5	1.8
Netherlands	D	1.8	1.5	2.3	0.2	0.3	0.5
	F	1.0	0.5	0.9	0.1	0.3	0.2
Nicaragua	D	4.5	3.0	6.8	0.2	1.0	-0.5
	F	4.8	3.1	6.4	0.3	0.6	0.7
Nigeria	D	5.5	6.1	8.1	0.8	2.1	2.0
	F	4.4	4.9	5.7	0.5	1.7	1.4
Norway	D	3.2	1.1	2.7	0.1	1.2	0.3
	F	2.5	2.3	2.0	0.4	0.6	1.7

Table 3. Continued

	Ownership	Net margin/ Ta	Non-int. income/ta	Overhead/ta	Tax/ta	Loan loss prov./ta	Net profit/ta
Oman	D	4.2	1.4	3.3	0.2	0.5	1.5
Panama	D	2.2	1.5	2.1	0.1	0.4	1.2
	F	2.4	0.6	1.2	0.0	1.0	0.6
Papua New Guinea	D	4.5	3.5	5.4	0.1	1.8	0.2
	F	2.7	5.1	4.5	0.5	0.6	1.6
Paraguay	D	6.4	2.2	5.7	0.5	0.8	2.0
	F	7.2	2.5	7.3	0.4	1.3	1.7
Peru	D	6.6	5.8	9.6	0.7	1.8	0.8
	F	6.4	5.6	9.5	0.7	1.6	0.9
Philippines	D	3.8	2.9	3.9	0.3	0.3	2.0
	F	4.1	3.1	4.4	0.3	0.4	2.1
Poland	D	4.9	2.1	3.3	1.6	1.5	2.2
	F	6.6	3.0	4.3	1.8	1.1	2.6
Portugal	D	3.4	1.0	2.5	0.2	1.1	0.6
	F	3.4	1.3	2.3	0.6	0.4	1.4
Qatar	D	1.9	1.1	1.8	0.0	0.4	1.1
Romania	F	9.1	1.9	2.7	2.2	3.5	5.0
Russia	D	6.6	9.3	7.6	2.2	2.8	3.7
Singapore	F	1.7	0.9	1.2	0.4	0.1	1.1
South Africa	D	4.4	2.4	3.8	0.4	0.7	1.2
	F	3.2	0.9	3.1	0.3	1.1	0.4
Spain	D	4.0	1.1	3.1	0.5	0.6	0.9
	F	2.9	1.4	3.2	0.2	0.6	0.3
Sri Lanka	D	4.1	2.2	2.7	0.7	0.4	2.5
Swaziland	F	5.5	2.7	6.0	0.4	0.8	1.1
Sweden	D	2.9	1.5	2.4	0.1	1.8	0.2
	F	1.9	0.9	1.2	0.0	0.6	1.0
Taiwan	D	2.1	1.1	1.6	0.2	0.3	1.0
	F	2.1	0.8	1.5	0.2	0.3	0.9
Tunisia	D	2.3	1.9	2.9	0.2	1.1	0.7
Turkey	D	7.5	4.0	6.3	1.1	0.8	3.8
	F	8.0	3.7	7.1	1.0	0.8	3.8
U.K.	D	2.6	2.5	3.0	0.4	0.7	0.8
	F	1.8	1.4	1.8	0.3	1.4	0.0
U.S.	D	3.9	1.8	3.6	0.5	0.7	1.0
	F	3.3	1.2	3.0	0.3	0.7	0.5
Venezuela	D	6.7	2.7	6.3	0.2	1.1	1.9
	F	13.7	3.9	7.2	0.4	0.4	9.7
Yemen	D	2.8	-0.5	1.6	0.6	0.3	0.9
Zambia	D	-4.7	9.5	0.4	0.3	2.4	1.7

Country averages for China, Estonia, Guatemala, Honduras, New Zealand, Pakistan, Saudi Arabia and Thailand are not reported due to incomplete income statements.

**Table 4. Bank Spreads and Profitability - Domestic vs. Foreign Banks
Selected Aggregates 1988-1995.**

Net margin/ta is defined as net interest income over total assets. A foreign bank is defined to have more than 50 percent foreign ownership. Non-interest income/ta is net non-interest income over total assets. Overhead/ta is overhead divided by total assets. Tax/ta is taxes paid over total assets. Loan loss provisions/ta is loan loss provisions over total assets. Net profit/ta is net profits divided by total assets. Ratios are calculated for each bank in each country and then averaged for domestic and foreign banks separately over the country's sample period. All ratios are in percentages. Data are from Bankscope data base of the IBCA. Detailed variable definitions and sources are given in the appendix. Pairs of entries that are significantly different from each other (at 5% level or less) are in bold. Includes only countries that have both domestic and foreign banks.

	Net margin/ta	Non-int. income/ta	Overhead/tech nical assistance	Tax/ta	Loan loss prov./ta	Net profit/ta
Income Groups						
<i>Low income</i>						
domestic	2.72	2.64	3.69	0.38	1.15	1.05
foreign	3.71	3.01	4.39	0.54	1.20	1.21
<i>Lower middle income</i>						
domestic	5.93	3.30	5.73	0.65	1.30	1.89
foreign	6.09	3.90	5.84	0.67	1.07	2.44
<i>Upper middle income</i>						
domestic	4.23	2.10	4.31	0.41	0.87	0.83
foreign	3.78	2.35	3.60	0.44	1.11	1.12
<i>High income</i>						
domestic	3.22	1.44	2.97	0.37	0.72	0.65
foreign	1.70	1.12	1.97	0.24	0.62	0.35
Regions						
<i>Africa</i>						
domestic	4.88	3.82	5.38	0.55	1.24	1.49
foreign	3.78	1.94	4.36	0.41	1.44	0.89
<i>Asia</i>						
domestic	2.68	1.19	2.34	0.33	0.41	1.02
foreign	2.98	1.70	2.74	0.32	0.40	1.42
<i>Latin America</i>						
domestic	6.20	3.12	6.61	0.43	1.34	1.20
foreign	6.93	3.93	7.01	0.62	1.29	2.26
<i>Middle East and North Africa</i>						
domestic	2.43	1.72	2.69	0.39	0.83	0.63
foreign	2.18	1.05	1.93	0.21	0.96	0.58
<i>Transitional economies</i>						
domestic	5.23	4.40	5.06	1.13	2.30	1.34
foreign	4.48	3.30	3.43	0.89	1.68	1.87
<i>Industrial economies</i>						
domestic	3.38	1.49	3.10	0.39	0.73	0.73
foreign	1.78	1.19	2.07	0.25	0.64	0.36

Table 5. Change in Foreign Bank Presence and Change in Domestic Bank Performance

Regressions are estimated using weighted least squares pooling bank level data across 80 countries for the 1988-95 time period. Only domestic bank observations were used. Number of banks in each period is used to weight the observations. Regressions also include country and time dummy variables that are not reported. In column (1) the dependent variable is the one period change in net margin/ta defined as interest income minus interest expense over total assets. In column (2) it is the one period change in net non-interest income/ta. In column (3) it is the change in before tax profits over total assets (before tax profits/ta). In column (4) one period change in overhead/ta is the dependent variable defined as personnel expenses and other non-interest expenses over total assets. In column (5) the dependent variable is the change in loan loss provisions divided by total assets. Foreign bank share is the ratio of number of foreign banks to total number of banks. All independent variables are in first differences. Detailed variable definitions and data sources are given in the appendix. Heteroskedasticity-corrected standard errors are given in parentheses.

	(1) DNet margin/ta	(2) DNon-int. income/ta	(3) DBefore tax profits/ta	(4) DOverhead/ta	(5) DLoan loss prov./ta
DForeign bank share	-.001 (.012)	-.023* (.013)	-.028** (.014)	-.015* (.009)	-.009 (.012)
DEquity/ta	.017 (.033)	.040 (.085)	-.002 (.138)	.060 (.040)	.085 (.110)
DNon-int. assets/ta	-.000 (.016)	.032 (.027)	-.014 (.048)	.061*** (.018)	.071 (.056)
DCust& short term funding/ta	-.008 (.015)	.044 (.033)	.026*** (.028)	-.023* (.014)	-.005 (.014)
DOverhead/ta	.408*** (.147)	.411*** (.125)	-.597** (.279)		.482* (.265)
DGdp/cap	-.002* (.001)	-.001 (.001)	.001 (.002)	-.002** (.001)	-.003*** (.001)
DGrowth	.018*** (.007)	-.024** (.010)	.006 (.008)	.016*** (.005)	-.006 (.008)
DInflation	.019*** (.007)	-.009 (.006)	.013** (.007)	.016*** (.005)	-.002 (.006)
DReal interest	.025*** (.008)	-.013** (.006)	.016* (.009)	.015*** (.005)	-.004 (.009)
Adj. R ²	.19	.12	.15	.12	.22
N. of obs.	4592	3904	4592	4592	3993

*, ** and *** indicate significance levels of 10, 5 and 1 percent respectively.

Appendix

Variable Definitions and Sources

Net margin/ta - interest income minus interest expense over total assets.

Before tax profits/ta - before tax profits over total assets.

Equity/ta - book value of equity (assets minus liabilities) over total assets

Non-interest earning assets/ta - cash, non-interest earning deposits at other banks, and other non-interest earning assets over total assets

Customer & short term funding/ta - all short term and long term deposits plus other non-deposit short term funding over total assets

Overhead/ta - personnel expenses and other non-interest expenses over total assets

Foreign bank share - Foreign bank share is the number of foreign banks to total number of banks. A bank is defined to be a foreign bank if it has at least 50 percent foreign ownership.

All individual bank level variables are obtained from BankScope data base of IBCA.

Gdp/cap - real GDP per capita in thousands of US\$.

Growth - annual growth rate in real GDP.

Inflation - the annual inflation of the GDP deflator.

Real interest - the nominal interest rate minus rate of inflation. Where available, nominal rate is the rate on short term government securities. Otherwise, a rate changed by the Central Bank to domestic banks such as the discount rate is used. If that is not available, then the commercial bank deposit interest rate is used.

Openness – exports plus imports divided by Gdp.

Interest rate data are from the IMF, International Financial Statistics. Other macro data are from World Bank National Accounts.