BANCA D'ITALIA

Temi di discussione
del Servizio Studi

**The Determinants of Cross-Border Bank Shareholdings:
an Analysis with Bank-Level Data from OECD Countries**

by D. Focarelli and A. F. Pozzolo

Number 381 - October 2000

The purpose of the "Temi di discussione" series is to promote the circulation of working papers prepared within the Bank of Italy or presented in Bank seminars by outside economists with the aim of stimulating comments and suggestions.

The views expressed in the articles are those of the authors and do not involve the responsibility of the Bank.

THE DETERMINANTS OF CROSS-BORDER BANK SHAREHOLDINGS:
AN ANALYSIS WITH BANK-LEVEL DATA FROM OECD COUNTRIES

by Dario Focarelli* and Alberto Franco Pozzolo[*]

Abstract

This paper investigates which factors determine a bank's decision to expand its activities abroad and what determines its choice of the countries to invest in. The empirical analysis is conducted using firm-level data on foreign subsidiaries for a representative sample of nearly 2,500 OECD banks. The results show that the banks with cross-border shareholdings are larger and have headquarters in countries with a more developed and efficient banking market. They prefer to invest in countries where expected profits are larger, owing to higher expected economic growth and the prospect of reducing local banks' inefficiency. These factors are overall more important in banks' decisions than those related to the degree of openness of the origin country and its economic integration with the destination country.

JEL classification: E30, G21, F21, F23.

Keywords: banks, foreign banks, foreign direct investment.

---

* Bank of Italy, Research Department.

Contents

1. Introduction[1]

The rapid increase in international trade and cross-border financial transactions in the last two decades has been coupled, in more recent years, with an expansion in international banking. This has determined an increase in both the number of acquisitions of foreign banks and the scale of activity of foreign branches (see, for example, ECB, 1999).

The literature on international banking has considered mainly three kinds of operations abroad: loan provision and asset and liability management with foreign counterparts, foreign branching, and the acquisition of shareholdings in foreign banks (subsidiaries).[2] Commonly, foreign branches are used by parent banks to support the activities of home-country clients who operate abroad and in order to operate in the leading financial centers (Brealey and Kaplanis, 1996). Instead, banks prefer to operate through subsidiaries in order to offer retail services to local residents or to engage in activities that are not permitted to branches (deposit-taking and lending).

Our analysis focuses on the acquisition of foreign shareholdings, which is how banks commonly choose to expand abroad in the retail sector. In fact, although recent developments in information technology and telecommunications make it possible to sell banking services worldwide, personal relationships remain fundamental for most traditional banking activities (see, for example, Rajan, 1998). For this reason, banks that wish to gain a significant market share in a foreign country often find it more profitable to buy an equity share in an already established bank: though a foreign bank may have a comparative

[2] Goldberg and Saunders (1981) analyze the different organizational structures available to a bank that wants to expand its activities abroad: representative offices, agencies, branches and subsidiaries. They find that, in practice, a bank essentially has two options: it can open a new branch or it can buy an equity share in a bank that is already operational.

advantage in terms of its organization of banking activity, it is very unlikely to be in a better position than local banks with regard to building new relationships with local clients.

Historically, the pattern of bank international shareholdings followed that of the economic integration between countries: banks extended their activities abroad in order to provide services to their home-country clients in international transactions; afterwards, with a growing understanding of the foreign market (in particular of regulatory and institutional aspects) and a developed network of relationships with local financial institutions, some banks were induced to increase the range of their operations and provide services to the local population too.

Although this account is likely to be accurate in general, we believe that today the actual pattern of bank international shareholdings depends on a wider range of factors than just the overall degree of economic integration between countries. In this paper we provide some evidence in favor of this view. Our contribution is twofold. First, we use a larger sample of banks (nearly 2,500 banks) and countries (the 29 OECD countries) than previous studies. This permits us to examine jointly the motivations of cross-border bank shareholdings and the factors that lead some countries to be preferred destinations, to make comparisons between banks with and without cross-border shareholdings for each country in our sample, and to separate individual bank characteristics from home-country factors determining the pattern of internationalization. Second, we consider a wider set of explanatory variables than previous studies. We are then able to show that profit opportunities in the destination market of the investment are a key factor in determining the pattern of bank international shareholdings, even controlling for the degree of economic integration and the regulatory and institutional characteristics of each country.

The paper is organized as follows. The next section sets a basic framework for the empirical analysis, reviewing the explanations suggested in the literature, with regard to banks' decisions to expand abroad. Section 3 presents the main theoretical hypotheses for scrutiny and the econometric methodology adopted. Section 4 describes the data from the 29 OECD countries used in the empirical analysis. Section 5 presents the results of the econometric analysis on the characteristics of banks that expand cross-border and of the countries where banks prefer to acquire shareholdings. Conclusions are set out in the final section.

2. Determinants of banks' cross-border shareholdings

An enterprise can profitably extend its activities to foreign countries only if it has a comparative advantage with respect to local competitors: otherwise, local firms would crowd it out of the market. Cross-border expansion therefore follows a pattern that reflects the structure of comparative advantages of the home-country enterprise.[3]

Previous studies examined the patterns of international banking by analyzing the location chosen by banks of a specific home-country or by studying foreign banks' activities in a specific host-country. Two major groups of factors determining banks' decisions to expand abroad have been found: bank-specific and location-specific.[4]

2.1 Bank-specific factors

2.1.1 Size

Among bank-specific characteristics, size has been found to affect mainly the patterns of foreign direct investment: larger banks are much more international than smaller ones.[5] A number of different reasons can justify this result. In particular, the customers of

---

[3] Two main strands of theoretical literature have developed to explain such a pattern in multinational investment: the internalization theory, which stresses that the advantages of multinational enterprises derive from the possibility of limiting the cost of market failures by carrying out a share of their transactions within the boundaries of the firm, and the eclectic theory, which adds ownership-specific advantages (for example, access to the endowments of the parent company at costs below market price) and location advantages (for example, barriers to trade or institutional arrangements) to the incentives related to internalization (see Dunning, 1988, for a review of these theories). The standard point of view in the banking literature is the eclectic theory (see, for example, Williams, 1997). In this paper, we simply assume that the maximization of the stream of expected profits determines a bank's decision to expand abroad.

[4] A number of papers on multinational banking were published at the beginning of the eighties: see, for example, Goldberg and Saunders (1980 and 1981), Houpt (1980), Tschoegel (1982), Ball and Tschoegel (1982), Giddy (1983), Tschoegel (1983) and the survey by Aliber (1984). More recently, this topic has been studied by Jones (1990), Goldberg and Johnson (1990), Grosse and Goldberg (1991), Goldberg and Grosse (1994), Brealey and Kaplanis (1996), DeYoung and Nolle (1996), Mahajan, Rangan and Zardkoohi (1996), Demirgüç-Kunt, Levine and Min (1998), Claessens, Demirgüç-Kunt and Huizinga (1998), Yamori (1998), Williams (1996, 1997 and 1998), Buch (1999), and Peek, Rosengren and Kasirye (1999).

[5] A positive correlation between the size of banks and their degree of internationalization has been found in a number of empirical studies. Ball and Tschoegel (1982) show that foreign banks that are more committed to doing business in California (i.e., those having a subsidiary) are larger than those that only have a branch. Tschoegel (1983) analyzes the world's 100 largest international banks in 1976, defined as those with at least one office abroad. He finds a positive correlation between the size of the bank and the degree of trans-

larger banks are generally larger and more internationally diversified enterprises (see, Berger, Kashyap and Scalise, 1995). Therefore, these banks have more incentive to follow their clients when they operate abroad. Moreover, in some countries a few large banks hold a very large share of total credit and therefore are more exposed to credit risk; these banks have a stronger incentive to extend their activities abroad as a way of either diversifying their portfolio or smoothing the effects of asynchronous fluctuations of loans and deposits. Finally, some specific activities such as portfolio management and investment banking may be characterized by economies of scale and scope.[6]

2.1.2 Efficiency

On average, banks that normally operate in developed markets are more efficient and therefore more likely to hold a comparative advantage with respect to their competitors in the destination market. Grosse and Goldberg (1991) confirm this hypothesis, finding a positive correlation between the number of foreign banks in the United States from a given country and the development of that country's financial sector. Berger, DeYoung, Genay, and Udell (1999) find that although domestic banks in France, Germany, Spain, the United Kingdom and the United States are on average more cost efficient and more profit efficient than foreign-owned banks, this is not true of foreign-owned banks from the United States.

---

nationality (measured by the number of countries where it is present). Ursacki and Vertinsky (1992), studying a sample of Japanese banks with investment in South Korea, find a positive relation between a bank's asset size and the number of branches. Williams (1996) finds similar results for a sample of Japanese banks with shareholdings in Australia; Williams (1998) again finds similar results for a larger sample of foreign banks in Australia.

[6] These activities entail high start-up costs, mainly in connection with accumulating the levels of human capital and expertise that are essential for efficient operations in the most advanced financial markets. This has favored the development of networks of multinational banks, capable of offering highly innovative services at a marginal cost that is almost zero. Casson (1990) argues that this is one reason why multinational banks are generally organized hierarchically, with a hub towards which all activities of foreign subsidiaries and branches converge.

2.2   Location-specific factors

2.2.1   Economic integration

There is broad consensus that the pattern of bank foreign direct investment is strongly correlated with the degree of integration between the home country of the parent company and the country where the investment is made. This has been measured by at least three variables: geographical distance (Ball and Tschoegel, 1982; Grosse and Goldberg, 1991); the volume of bilateral trade flows (Goldberg and Saunders, 1980 and 1981; Goldberg and Johnson, 1990; Grosse and Goldberg, 1991; Brealey and Kaplanis, 1996; Yamoori, 1998); and the value of bilateral foreign direct investment (Nigh, Cho and Krishnan, 1986; Goldberg and Johnson, 1990; Grosse and Goldberg, 1991; Sagari, 1992; Brealey and Kaplanis, 1996; Williams, 1998; Yamori, 1998; Miller and Parkhe, 1998; Buch, 1999). All these studies find a positive and significant correlation between the flow of bank foreign direct investment and the measures of bilateral integration between countries.[7] The explanation is that banks often extend their activities abroad in order to provide bank services to their home clients who operate in a foreign country.[8]

2.2.2   Regulatory restrictions

Regulatory restrictions in each country also affect the pattern of bank international investment. A number of studies (e.g., Nigh, Cho and Krishnan, 1986; Goldberg and Johnson, 1990; Sagari, 1992; Miller and Parkhe, 1998) find that restrictions on the entry of

---

[7]   An exception is given by Miller and Parkhe (1998), who find a negative correlation between both the number of foreign offices of US banks and their total foreign assets and the level of bilateral trade with the destination country of the investment, although they find a positive relation with the volume of non-bank foreign direct investment. Moshirian and Van der Laan (1998) find a similar correlation for the values of total assets held abroad by Japan, UK and US banks. Miller and Parkhe (1998) attribute this result to a "suppression effect", related to the capability of US banks to offer trade-related financial services directly from the United States home owing to the dollar's role as an international currency.

[8]   An interesting and related finding by Yamoori (1998) is that the probability of a bank having an equity interest abroad is positively correlated with the number of foreign banks from the same country already operating there. This may be explained by the fact that if foreign banks from the same country of origin offer their services abroad to customers of their parent companies' nationality, they can eventually establish a closer customer relationship and gain market share at home too. In order to limit the risk of losing customer fidelity, the leading banks of a country might tend to expand abroad following the identical pattern.

foreign investors significantly reduce the degree of internationalization of a country's banking market. A related result is that US banks prefer to expand in countries where capital requirements are less stringent and taxes are lower (Miller and Parkhe, 1998).

2.2.3 Local market opportunities

No conclusive evidence has been reached on the relevance of profit opportunities in the destination market (local market opportunities) for the location choice of multinational banks. Several studies include a country risk proxy in the analysis (Grosse and Goldberg, 1991; Fisher and Molyneux, 1996; Yamori, 1998) and find that banks prefer to invest their resources in countries with more stable economic conditions. Nigh, Cho, and Krishnan (1986) examine the determinants of US banks' expansion into 30 countries, both developed and less developed, and find that local market opportunities appear insignificant. On the contrary, Grosse and Goldberg (1991) find that the level of foreign banking activities in each US state is correlated with the share of employment in the financial sector in that same state. Yamori (1998) finds that Japanese multinational banks prefer to locate in countries with higher per capita income. Goldberg and Johnson (1990) find that the number of foreign offices of US banks in a given country is positively correlated with per capita income, but total assets are negatively correlated. Brealey and Kaplanis (1996) and Buch (1999) find a positive correlation between host country GDP and the presence of foreign banks, concluding in favor of the hypothesis that the activity of a foreign office is related to capital market activities. However, a previous study by Sagari (1992) does not find a positive effect of market size (measured by GDP) on the pattern of international expansion of US banks. Finally, Miller and Parkhe (1998) suggest that banks prefer to invest in countries where the banking sector is more developed. However, they find only partial confirmation of this hypothesis in the data, which show that the correlation between assets held abroad by banks and the degree of development of the financial market is positive for developed countries but negative for developing countries.[9]

---

[9] Giddy (1983), by contrast, argues that foreign bank presence be greater in countries where the banking sector is protected and less competitive, as this is generally associated with higher average profits.

3.   Empirical model

3.1   Choice of explanatory variables

Research on banking consolidation at domestic level shows that in a substantial share of mergers and acquisitions, larger and more efficient institutions tend to take over smaller, less efficient firms, presumably to spread their expertise and operating procedures over additional resources (see, for example, Berger, Demsetz, and Strahan, 1999). Consolidation may also enhance efficiency if greater diversification improves the risk-expected return tradeoff.

Following this literature, we assume that banks that are larger, more efficient and from countries with a more efficient banking system are more likely to expand abroad. Moreover, we verify that, conditional on the levels of bilateral economic integration and regulatory restrictions, they are more likely to expand to countries where local market opportunities are greater.

As we have seen before, previous literature on international banking has considered total and per capita GDP as proxies for local market opportunities. In our view, these measures have two main drawbacks. First, unitary bank profits are likely to be lower in more developed countries, where the banking sector is usually more competitive. Second, within a group of countries whose long-run rate of economic growth is converging to a common level, poorer nations might have higher expected rates of economic development than wealthier ones.

For these reasons, we adopt a broader definition of local market opportunities: we assume that banks prefer to expand to countries where the banking system is on average less efficient and where the expected rate of economic growth is higher.

Following Levin and Zevros (1998), we interpret that lower levels of initial output and inflation and higher levels of stock market capitalization, banking-sector development and of judicial-system efficiency forecast higher expected rates of economic growth.[10]

The measure of banks' efficiency is also a complicated issue and it is crucial to correctly identify the effects of banking consolidation (Berger, Demsetz, and Strahan, 1999). In the following, we consider profitability as a proxy for efficiency. This is justified by the fact that in the econometric analysis we control for other market characteristics that may influence the level of the return on assets: the degree of market concentration, the banks' average size, the availability of free cash flow, the presence of state-owned banks and the level of non-interest income.[11] We subsequently try to identify the source of profit (again conditional on market characteristics): the net interest margins after charge-offs, which measures retail banking profitability, and the cost-income ratio (overheads to total income), which is our proxy for cost efficiency.

The role of local market opportunities in determining the pattern of bank internationalization is the central issue of our empirical analysis. However, following the literature, we also control for the effects of two other sets of factors: the degree of economic integration between countries (measured by the geographical distance, the level of bilateral trade and the flow of bilateral foreign direct investment) and the presence of regulatory restrictions, both on domestic banking activity and on bank foreign investment.

---

[10] Foreign banks are also likely to feel more secure about acquiring assets in countries where the judicial system is more efficient and market transactions (including their purchase) are better guaranteed.

[11] It is an empirical regularity that the most efficient banks in developed countries earn a smaller percentage of profits from traditional activities and a larger percentage from off-balance-sheet operations (see, for example, Generale and Gobbi, 1999). These banks have reduced the relative size of their traditional activities, not because of lower productivity, but because of lower growth potential. In fact, these banks are also likely to be more efficient. However, an opposite force might offset this effect: off-balance-sheet activities normally require less frequent 'face-to-face' meetings with clients, are more standardized and, in general, imply less intense personal relationships; as a result they can often be exported directly. Therefore, if banks with a larger share of their revenues coming from off-balance-sheet operations were not interested in expanding their traditional banking activities abroad, but only their most advanced ones, we would find a negative correlation between the share of revenues coming from non-traditional activities and the degree of internationalization of the bank. Whether these two forces offset each other or whether one prevails is an empirical question.

3.2   Econometric setup

Two phases of the process of internationalization are considered. First, we analyze the determinants of a bank's decision to expand abroad. Second, we study the factors determining the choice of where to expand; we limit our analysis to a sub-sample of banks that have at least one foreign shareholding.

3.2.1 Determinants of a bank's decision to expand abroad

A bank's decision on whether to expand abroad is modeled as a binary choice, based on all the available information used to forecast the expected profitability of the investment. We look for an answer to the following question: which characteristics of a bank, and its country of origin, make it more probable that it will hold an equity interest in a foreign bank? Accordingly, we estimate the following binary choice model:

$$Pr\ (Y_{ij} = 1) = f\ (X_i, Z_j), \qquad (1)$$

where: Y_{ij} equals one when the bank *i* of country *j* has a foreign subsidiary and zero otherwise, X_i is a vector of bank-specific variables and Z_j is a vector of country-specific variables. We adopt a discrete choice model because in general it is difficult to infer the effective degree of involvement in the operations of an invested bank from the share of capital controlled: in some cases shareholdings of 10 per cent of capital may be sufficient to significantly control a bank; in others, 50 per cent plus one share is necessary.

We use a probit specification to estimate equation (1). This choice is the result of the following specification search process. We first estimated a fixed effect and a random effect logit (where the individual effect was calculated with respect to the country of origin) on the same covariates, in order to test for independence of the random effect from the exogenous variables. We prefer the random effect model as it allows us to introduce country-specific exogenous variables in the regression. The Hausman test confirmed that the hypothesis of absence of correlation could be accepted at the 99 per cent confidence level. Then we estimated a random effect probit, including a number of country-specific variables. The null

hypothesis of absence of random effect in this case was accepted at the 99 per cent level, suggesting that the presence of a significant random effect in the logit regression was due to the absence of country-specific variables. We therefore estimate our model using a probit specification.

3.2.2   Choice of where to expand

The second part of our empirical analysis seeks to answer the following question: what are the characteristics of countries with a larger number of foreign banks? We model this as a set of binary choices that each bank makes on whether or not to operate a subsidiary in any one of the countries in our sample. In practice, we estimate

$$Pr\ (Y_{ijh} = 1) = f\ (B_i, K_h), \qquad\qquad (2)$$

where: Y_{ijh} equals one when the bank i of country j has a foreign subsidiary in country h and zero otherwise; B_i is a vector of variables describing the relationships between the home country and the destination country and K_h is a vector of variables specific to the destination country. This model is estimated on the sub-sample of banks that have at least one equity interest abroad.

We use a random effect probit specification to estimate equation (2). As before, this choice is the result of a specification search process. In order to test for the independence of the random effect from the exogenous variables, we first estimated a random effect and a fixed effect logit (where the individual effect was calculated with respect to each bank) on the same covariates. We prefer the random effect model as it allows us to hypothesize a correlation between the probabilities of a bank's having foreign shareholdings in more than one country. The Hausman test confirmed that the hypothesis of absence of correlation with the covariates could be accepted at the 99 per cent confidence level. We then estimated a random effect probit, including a number of country-specific variables. The null hypothesis of absence of random effect was in this case rejected at the 99 per cent level.

4. Data and summary statistics

4.1 Data on banks

All bank-specific data used in this work are taken from Bankscope, an international data set of balance sheet items on individual banks, where all the main information on assets, liabilities and revenues is reported according to a common, comparable standard. The analysis is conducted on a sub-sample of 2,449 banks with total assets of more than $ 1 billion and with headquarters in one of the 29 OECD countries. Foreign subsidiaries are included in the sample as autonomous banks, while foreign branch activity is included in that of the controlling bank. As is common in the literature, we consider only the first level of foreign shareholdings.

In order to minimize the effects of particular events, all data on banks' assets, liabilities and revenues are averages of annual values from 1994 to 1997. Information on foreign shareholders refers to the end of 1998. Some clear outliers are identified,[12] so that only 2,148 banks are included in the sample. Further, we also consider a sub-sample of the 260 banks with total assets of more than $ 25 billion.

The distribution of the banks in the sample by size and by country is reported in Table 1. The United States has the largest number of banks in the sample (488); Germany has 472 banks; Italy, the United Kingdom, Japan and France have between 119 and 178 each; and all the other countries have fewer then 100. Japan has the highest number of large banks (56), followed by the United States (42), Germany (33), the United Kingdom (22) and France (20). Of the 2,148 banks in the sample, 146 have cross-border shareholdings (6.8 per cent of the sample), while 276 have foreign shareholders (12.8 per cent).

Table 2 reports all the cross-border shareholdings between banks included in the sample. There are 345 instances of shareholdings in foreign countries (on average, each of the 146 banks has at least one cross-border shareholding in approximately 2,4 countries).

---

[12] In particular, 301 banks are excluded because they have either negative interest margins, negative operating income, net return on asset lower than −1 per cent or higher than 4 per cent, or overheads higher than total operating income.

A first question in evaluating the degree of internationalization of each country's banking system is how to compare different shareholdings in banks of different size. In principle, one would like to measure the effective power of each shareholder in determining the bank's activity. However, this clearly depends on the distribution of ownership, so that an approximation such as assuming that a majority interest is needed for effective control may be strongly biased. As already mentioned, in the econometric analysis we adopt a discrete choice model. However, in Table 3 the degree of international openness of each country's banking system is measured as the average percentage held by foreign shareholders (which is a broader definition since it also includes non-bank shareholders), weighted by each bank's total assets.

The country with the largest share of its banking market controlled by foreign investors is Luxembourg (81.4 per cent, more than half of which by German investors), thanks to its particularly favorable institutional environment. The percentage is also high in some other small countries, such as New Zealand (56.2 per cent of the banking market controlled by foreign investors, mainly from Australia and the UK), Ireland (30.2 per cent, mainly from Germany) and Belgium (22.8 per cent, mainly from the Netherlands and France). Foreign investors also control large portions of the banking markets of East European OECD countries: 32.2 per cent in Hungary (mainly from Germany and Italy); 30.1 per cent in the Czech Republic (mainly from the United States and Japan) and 16.8 per cent in Poland (mainly from the United States). This is partly explained by the recent privatization of state-owned banks, which have been open to foreign investors. Italy has the highest degree of internationalization among the G7 countries (7.6 per cent, mainly investors from France and Germany); Japan has the lowest (0.2 per cent). Finally, the last row of Table 3 shows the ratio of foreign-controlled bank assets to the size of the domestic banking market. The degree of active openness is higher in smaller countries such as Belgium, Ireland, the Netherlands, Austria and Switzerland (21.0, 18.0, 17.4, 12.2 and 10.2 per cent, respectively). Among the G7 countries, Canada (6.0 per cent), Germany (6.0 per cent) and France (5.6 per cent) have a higher degree of active internationalization, while Italy, Japan and the United States record figures ranging between 3 and 4 per cent. No foreign shareholdings in OECD banks are reported for investors from the three East European OECD countries, Iceland, Mexico, New Zealand, South Korea and Turkey.

Panel A in Table 4 reports some summary statistics for the 2,148 banks included in the sample. Panel B reports on the sub-sample of 260 large banks (i.e., those with total assets of more than $ 25 billion). In both samples, banks with foreign shareholdings are on average much larger than other banks and have a higher share of revenues from non-traditional activities. The returns on equity are similar, but the return on assets is lower for larger banks, owing to smaller net interest margins and cash flows.

4.2   Data on countries

Data on GDP, population, bank credit and inflation are from IMF, *International Financial Statistics* (1998). Bilateral trade and foreign direct investment data are respectively from IMF, *Direction of Trade Statistics* (1998) and OECD, *International Direct Investment Statistics Yearbook* (1998). Stock market capitalization is from IFC, *Emerging Stock Markets Factbook* (1998). Data on the "efficiency of the judicial system" are taken from La Porta *et al*. (1998). Data on the level of regulatory restrictions on domestic banking activity and on the relevance of state-owned banks are taken from Barth *et al*. (2000). Finally, the indices on the level of restrictions on inward and outward shareholdings in the banking sector have been built from IMF, *Exchange Arrangements and Exchange Restrictions* (1997). All the variables considered have a high degree of cross-country variability (Table 5).

5. Econometric results

5.1 Determinants of a bank's decision to expand abroad

5.1.1   Results from basic regressions

Table 6 reports the estimates of three specifications of equation (1). Of the 2,148 observations originally used in the regressions, 56 are lost in the estimation presented in Panel A, because we do not have data on total credit, stock market capitalization and exports for Luxembourg. In Panel B, an additional 33 observations relative to the Czech Republic, Hungary and Poland are also excluded, because we do not have information on the

regulatory restrictions on banking activity in these countries. Panel C considers the sub-sample of 257 banks with more than $ 25 billion of total assets (excluding 3 large banks from Luxembourg). In all three specifications, both bank-specific and home-country-specific characteristics are included as explanatory variables.[13]

In the first regression (Panel A) the coefficients of five country-specific variables are significantly different from zero. As expected, the degree of trade openness (measured by the ratio of exports to GDP) is positively correlated with the probability that a bank has an equity interest abroad, consistent with the hypothesis that one of the main determinants of banking internationalization is the incentive for banks to "follow their clients" when they operate in foreign markets. The size of the banking sector (measured by the ratio of total credit to the economy to GDP) and the average country level of return on assets in the banking sector are also positively correlated with the degree of bank internationalization. These results confirm that banks originating in countries with a more profitable and developed banking sector are more likely to have a comparative advantage with respect to their competitors in the destination market. More surprisingly, we find that the size of the stock market (measured by the value of stock market capitalization over GDP) is negatively correlated with banks' internationalization. We interpret this result as evidence that the choice to expand abroad is driven by the banks' search for profit opportunities beyond those offered by traditional banking activity in their home market: when the financial sector is sufficiently developed so that additional profit opportunities are exploitable in the home country simply by offering more innovative financial services, there is less incentive to expand abroad. Finally, we find that banks from countries with a higher average rate of inflation are less internationalized: a higher rate of inflation weakens the exchange rate and therefore makes foreign acquisitions more expensive.

Three coefficients of bank-specific variables are significant in the regression reported in Panel A. The return on assets is positively correlated with the probability that the bank has an equity interest abroad; this result is consistent with the hypothesis that efficiency, here

---

[13] Banks in the sample are categorized as commercial banks, cooperative banks, investment banks, medium and long-term banks, real estate-mortgage banks, savings banks, specialized government credit institutions, and investment banks and securities houses. Although not reported in the tables, dummies for each category of banks are included in all the regressions.

proxied by profitability, positively affects the level of internationalization. Banks with a larger share of non-interest income are also more likely to have foreign equity interests. Apparently, this result is in contrast with the hypothesis that banks which are able to shift their activity toward innovative financial services in their home market have a less incentive to expand abroad. However, conditional on the opportunities of diversification offered by the home market (measured by the size of the stock market) it is not surprising to find that more innovative banks look for new profit opportunities and, therefore, have both a larger share of revenues from non traditional activities and a higher propensity to expand abroad.

Finally, consistent with previous literature, our results show that the size of the bank (measured by the logarithm of its total assets) is positively correlated with its degree of internationalization. As discussed above, at least three reasons contribute to this result. First, multinational enterprises are more likely to be customers of larger banks and, therefore, it is more probable that these banks will decide to offer some of their services abroad. Second, banks with a large home-market share are more likely to have a strong incentive to search for risk diversification and new profit opportunities abroad. Third, increasing returns to scale in some of the banking activities that characterize international banking, such as portfolio management and investment banking, may favor larger banks.

In our view, the variables included in the regression reported in Panel A offer a very plausible characterization of the pattern of bank internationalization. The explanatory power is also fairly good: the pseudo R^2 is 0.56.

In theory, this specification might be problematic since it assumes that balance sheet data affects the decisions of banks to expand abroad; some of the variables may instead depend on the fact that a bank has a foreign shareholding (i.e., there may be problems of reverse causality: in particular, banks may be larger owing to their degree of internationalization). However, in an unreported regression with individual banks' fixed effect we have checked for this possibility; we found a negative and insignificant effect of foreign shareholdings on the rate of growth of total assets between 1994 and 1997.

Table 6 also reports the magnitude of the effect of each explanatory variable, measured as the change in the probability that a bank has a foreign shareholding (expressed in percentage points) associated with a change in the covariate from the 25th to the 75th

percentile of the sample distribution, leaving all other variables at their sample values; we refer to this as the marginal effect. The results show that the measures of bank profitability and efficiency most affect the probability that a bank has a foreign shareholding. The marginal effects of changes in the average country level of return on assets and in the size of the banking sector are particularly strong (respectively 7.00 and 5.31 percentage points). The impact of the measure of trade openness is weaker (1.53). Among individual bank characteristics, the most relevant is size (4.71); return on assets and non-interest income have weaker effects (1.98 and 1.12, respectively). These results confirm our claim that the overall degree of economic integration between countries is only one, and probably the least important, of the determinants in explaining the pattern of bank international shareholdings.

Panel B reports the estimates of a specification that includes two variables describing the regulatory restrictions on domestic banking activity and on banks' outward foreign direct investment. The coefficients of both variables are significant and with the expected sign. Restrictions on outward foreign direct investment obviously reduce the propensity of banks to acquire foreign equity interests. More interestingly, we find that banks in more regulated markets are less likely to hold foreign equity interests. We interpret this as evidence that the restrictions reduce the efficiency of the banking sector. As a result, banks from these countries are less likely to have a comparative advantage with respect to their competitors in the destination market.

Including the variables on regulatory restrictions results in only two changes with respect to the first regression: the coefficient on inflation becomes insignificant and that on average country level bank non-interest income becomes significant at the 10 per cent level. However, the change in the inflation coefficient is due to the elimination of the observations from the Czech Republic, Hungary and Poland (where there has been high inflation) and not to the inclusion of the measures of regulatory restrictions.

The result concerning the average level of bank non-interest income might depend on the fact that when no measure of regulatory restrictions is included, this variable may capture two opposite effects. In fact, higher non-interest income implies: a) that banks can search for new profit opportunities within their home country; b) that there are fewer institutional restrictions and a higher degree of internationalization. Only the first effect, which reduces the probability that banks have international shareholdings, remains after including a direct

measure of regulatory restrictions. Aside from these changes, the results reported in Panel B are substantially identical to those of Panel A, including the magnitude of the marginal effects.

Panel C presents the results of a regression on the sub-sample of 257 banks with total assets of more than $ 25 billion. The decision to analyze this sub-sample is suggested by the large impact of bank size in the first two regressions. Surprisingly, narrowing the sample to larger banks does not reduce the level of significance of the coefficient on size; on the contrary, it does increase the magnitude of its marginal effect relative to the other explanatory variables. This result seems to suggest that the hypothesis that banks must reach a minimum scale to find it profitable to expand their activities abroad is probably not true, while the idea that there are increasing returns to scale from internationalization is more plausible.

There are other differences between the results of Panel C and those of the first two regressions. The coefficient of the degree of openness of the origin country becomes insignificant when we consider only larger banks. This may be explained by the fact that larger banks have the same incentive to follow their clients abroad, since all of them have international firms among their clients. However, this assumption is too strong, given the large number of banks from different countries included in our sample. Therefore we are inclined to interpret this result as evidence that the "follow the clients" determinant for internationalization is only relevant for small banks, while the behavior of larger banks is determined by more complex diversification policies. The coefficient of the measure of the restrictions on domestic banking activity is insignificant, possibly because the smaller sample includes only fairly competitive markets and because larger banks more easily find ways to sidestep regulations. The coefficient of the average country bank non-interest income is also insignificant, although it remains negative as in the first two regressions.

Finally, perhaps surprisingly, the coefficient of individual bank return on assets is negative and largely insignificant, while it was positive and highly significant in the first two regressions. Probably, this depends on the reduced variability of return on assets within the same country when only larger banks are considered. In fact, in an unreported regression we find that including only return on assets at the individual level the coefficient is positive and significant at the 13 per cent level.

The pseudo R^2 of the regression in Panel C is 0.40, lower than in the previous two specifications but still reasonably high.

Table 7 shows the results of three regressions similar to those reported in Table 6, where return on assets is split into its two major components: net interest margins less charge-offs over total assets (a measure of profitability of traditional activities) and the cost-income ratio. Overall, the results are consistent with the view that banks with higher returns from traditional activity and lower costs are more internationalized, but the estimates of the cost-income coefficients are not precise.

In Panel A, the coefficients have the expected sign, positive for interest margins and negative for costs (although only the average country level of costs is significant). The coefficients of the other variables are essentially unchanged with respect to the correspondent specification in Table 6, with the exception of that on average country bank non-interest income, which is now positive and significant. This upward bias can be explained by the presence of banks that have a high return on assets because of their income from off-balance-sheet operations; this effect is in fact accounted for in the specification in Table 6 but not here. Panel B reports the results obtained including the measure of regulatory restrictions: in this case the cost-income variables are not significant, although they still have the expected sign. Finally, Panel C reports the results of estimates on the sample of larger banks. The findings in this case are less neat. On the revenues side, only the coefficient of the average country level of interest margins is significant, probably due to its low variability on individual observations within each country when only large banks are considered. On the cost side, the coefficient of the average country level is negative and significant, as expected, but surprisingly that of individual bank overheads is positive and significant. This last result might be consistent with the anecdotal evidence that in countries with the most efficient banking systems, more innovative banks have high levels of investment in technology and human capital and, therefore, their costs are above average.

5.1.2 *Robustness checks*

In order to verify the robustness of our preferred specification (Table 6, Panel B), we test for the significance of other explanatory variables that are consistent with explanations

of the patterns of international shareholdings suggested in the literature. The results, reported in Table 8, show that none of the additional covariates is significant at least at the 10 per cent level and that their inclusion does not affect the coefficients of the variables included in the basic specification.

The average country level of banks' total assets verifies the hypothesis that banking systems with fewer and larger banks are more likely to expand abroad than more fragmented systems. The coefficient of this variable is positive but insignificant, showing that size matters only at individual level. The degree of market concentration, measured by the Herfindahl index, controls for the effects of lower competition on the level of return on assets and verifies if higher concentration leads to a greater need for cross-border diversification. The coefficient is negative (consistent with the hypothesis that higher concentration is associated with lower efficiency) but not significantly different from zero. Similarly, the hypothesis that banking systems largely controlled by the government are relatively less efficient is checked including the share of assets controlled by state-owned banks. As before, the coefficient has the expected sign but is not significant. The average country level and the individual level of bank cash flow can be interpreted as a measure of bank efficiency (if the cash flow is too high, resources could be used more profitably) but also of the availability of liquid assets for acquisitions abroad. The coefficients of these variables are not significant, perhaps because the two opposing effects offset each other. The level of per capita GDP verifies the hypothesis that more developed countries, with generally more efficient banking and financial markets, are more likely to host international banks. The negative and insignificant coefficient shows that the other variables included in the basic regression already measure the effects of the average efficiency of the banking system. The size of the population verifies the possibility that there is a correlation between country-size and the degree of internationalization of the banking system (e.g., because smaller countries have more open economies). However, the estimated coefficient is insignificant, possibly because this effect is already captured by the degree of trade openness. Countries with more efficient judicial systems might have a less developed banking system, because they have more efficient markets. As a result, local banks may have a lower degree of internationalization. The coefficient of this variable is however insignificant, although it is negative as expected. Finally, the average turnover in the stock market has been included as

an alternative measure of the efficiency of the non-banking financial sector.[14] Its coefficient, however, is insignificant.

5.2   Choice of where to expand abroad

5.2.1   Results from basic regressions

Equation (2) is estimated using a random effect probit model, where the dependent variable equals one if a bank of country j has a foreign subsidiary in country $i \neq j$ and zero otherwise. We restrict our analysis to the 143 banks that have at least one shareholding abroad and, again, we exclude Luxembourg from our sample. Multiplying the number of banks by the number of countries we obtain 3,861 pairs of bank-country observations, which are used in the estimates reported in Table 9, Panel A. The regression reported in Panel B is based on a sample that excludes 572 of the original bank-country observations due to the lack of information on the regulatory restrictions on banking activity and on the "efficiency of the judicial system" for Iceland, the Czech Republic, Hungary and Poland. All the variables included in these regressions are destination-country-specific characteristics.

Our preferred specification is reported in column 4 of Panel B. The results of previous regressions are likely to be biased because of the absence of information on the institutional environment of the destination country and, in fact, this is clearly shown by the change in the coefficients of many variables from column 2 to columns 3-4 of Panel B.

The loss of significance in the coefficient of return on assets from Panel A to the first column of Panel B is clearly due to the exclusion of the Czech Republic, Hungary Iceland, and Poland. However, comparing the results in columns 2 and 3 it is clear that including the measure of regulatory restrictions on banking activities and the market share of state-owned banks has a sizeable effect on the estimates. The most striking result is that once we control for the institutional environment, the coefficient of the size of the banking sector is no longer significant, clearly owing to the high explanatory power of other variables in the regression

---

[14]   In fact, the value of stock market capitalization is more comparable with the level of development of the banking sector since they are both stock measures.

for the ratio of credit to GDP. After controlling for the effects of institutional restrictions, we also find that banks prefer to invest in countries where the stock market is more developed, possibly because they offer greater profit opportunities.[15]

In our preferred specification (column 4, Panel B), the coefficient of bilateral trade is positive and significant, thus confirming the hypothesis that the pattern of bank international shareholdings depends on the overall degree of economic integration between countries. The coefficient of the time-zone distance is also positive and significant, confirming that banks prefer to acquire equity interests in countries where the financial markets are open when their home offices are closed.

We also find strong evidence of the importance of local market opportunities. According to our assumptions, these are greater in countries where the expected rate of economic growth is higher and the banking system is on average less efficient.

The coefficients of the levels of per capita GDP and of inflation are both negative, while that of the stock market capitalization is positive. Following Levine and Zevros (1998), we interpret these results as confirming the hypothesis that banks prefer to invest in countries with higher expected rates of economic growth. Turning to the variables which describe the characteristics of the banking sector, we find that banks in countries with a larger number of foreign investors on average have higher costs, lower net interest margins less charge-offs, higher cash flows (signaling an inefficient use of equity capital) and higher shares of non-interest income. The evidence is therefore consistent with the hypothesis that foreign investors plan to utilize their know-how and human resources in order to restructure inefficient banks. Moreover, we find that foreigners are more likely to invest in countries where banks are smaller, probably because it is easier to acquire such banks and there is more opportunity to increase market share after the restructuring.

An important set of variables in this specification describes the institutional environment of the destination country. We find that banks prefer to acquire equity interests in countries where there are fewer regulatory restrictions on banking activity and where the

---

[15] Once again, the control is essential, because profit opportunities would be substantially reduced if banks were not allowed to operate in non-banking financial markets.

judicial system is more efficient, although the latter coefficient is only marginally significant. These results are not obvious; some authors have suggested that banks prefer to invest in more regulated and protected markets, where average profits are likely to be higher than average. A possible explanation for the negative coefficient of the restrictions on domestic banking activity is that a heavily regulated system is less accessible to foreign banks, even if explicit legislative limitations are not present. Moreover, the positive coefficient of the efficiency of the judicial system suggests that foreign investors prefer to invest in countries where market transactions (including their own investment) are more guaranteed since, even when they enter the foreign country by acquiring a local bank, they have a disadvantage with respect to domestic competitors in establishing the personal relationships that are necessary to circumvent market imperfections. The market share of state-owned banks has a positive and significant coefficient, probably because such banks are on average less efficient. Moreover, in a number of countries in our sample bank privatizations have offered many investment opportunities to foreigners. Finally, the positive coefficient of the dummy variable for countries that eventually joined the European Monetary Union shows that the prospect of a common monetary market and the absence of exchange rate risk resulted in an increase in the number of cross border bank shareholdings.

As before, Table 9 also reports the magnitude of the marginal effect of each explanatory variable. The results clearly show that the variables that we referred to as measures of local market opportunities, in particular those related to bank inefficiency, have the most impact on the probability that a bank has a foreign shareholdings in a given country. Increasing average country net interest margins and decreasing of costs have negative marginal effects of 8.64 and 7.71 percentage points, respectively. Non-interest income has a negative effect of (10.99) as does average total assets (9.77). Per capita GDP has the greatest impact: 13.38 percentage points. As claimed before, the level of bilateral trade has a smaller effect (7.28). This evidence confirms our view that local market opportunities have a major role in explaining the pattern of international bank investment.

5.2.2 Robustness checks

In order to verify the robustness of our preferred specification (Table 9, Panel A, column 4), we test for the significance of other explanatory variables. As before, the results

reported in Table 10 show that none of the additional covariates is significant, at least at the 10 per cent level, and their inclusion does not affect the value of the parameters of the variables included in the basic specification.

We consider six additional variables, either alternative measures of variables included in our preferred specification or characteristics which are consistent with other explanations of the patterns of international shareholdings suggested in the literature. The concentration of the banking market does not affect the pattern of bank international shareholding, as shown by the largely insignificant coefficients of the Herfindhal index, since the effects related to the level of competition are already captured by other variables.

The population size of the country, which some authors have suggested could be indicative of development opportunities, also has a negative and insignificant coefficient. Perhaps surprisingly, the restrictions on foreign investment in the banking sector do not significantly affect the pattern of international bank shareholding. A possible interpretation for this result is that some countries might not have explicit legal restrictions on foreign entry, but there are implicit restrictions that are better proxied by the restrictions on domestic banking activity.

Stock market liquidity (an alternative measure of the development of non-bank financial markets) and the geographical distance between countries both have coefficients that are not significantly different from zero. The inclusion of the latter reduces the size of the coefficient on the dummy variable for countries that eventually joined the European Monetary Union (which in fact are very closed), though it remains significant at the 10 per cent level. Finally, the coefficient of the ratio of bilateral foreign direct investment to GDP is positive and significant, and its inclusion does not affect the significance of the coefficient of bilateral exports, although it reduces its size.[16]

---

[16] The inclusion of this variable results in a loss of 476 more observations.

6. Conclusions

The entry of foreign banks in the domestic market has traditionally been a matter of concern for policymakers. On one side it is believed that supervision of foreign banks is far more complicated than supervision of domestic banks (mainly because it is often very difficult to evaluate the degree of risk of the parent bank; see, Dale, 1984) and that foreign institutions are also less receptive to "moral suasion" on the part of the local authorities. On the other side, foreign banks are often accused of enhancing the financial fragility of the country where they operate, by failing to continue in operation when a worsening of the economic environment squeezes their profitability or increases their risk.[17].

The estimation of the model studying the determinants of a bank's decision to expand abroad shows the importance of the factors associated with the efficiency of the single bank and of the overall banking market in the origin country. Banks operating in countries where the banking sector is larger and more profitable, after controlling for market characteristics, should be able to export a superior skill and are therefore more likely to expand their activities abroad. With reference to the sample that includes only the largest banks, we also find evidence that cost-efficiency plays an important role. More surprisingly, we find that the size of the stock market (measured by the value of stock market capitalization over GDP) is negatively correlated with banks' internationalization. We interpret this result as evidence that banks of countries where the non-banking financial sector is smaller have poorer prospects of growth at home (as the non-banking financial sector will eventually expand at the expense of the banking sector) and lower profit opportunities. However, it appears that banks with a larger share of non-interest income are more likely to have foreign shareholdings, perhaps because they have more innovative and aggressive strategies in both home and foreign markets. Finally, restrictions on outward foreign direct investment and to domestic banking activity reduce the propensity of banks to acquire foreign equity interests.

The size of the bank is a key determinant of the decision to expand abroad. Larger banks are more likely to have foreign shareholdings, and this remains true even considering

---

[17] Moreover, it is believed that they are excessively sensitive to economic conditions in the home country of the parent company. Peek and Rosengren (1997) actually found that lending by Japanese banks in the U.S. declined as a result of the stock market crash in Japan.

a sub-sample of banks with more than $ 25 billion of total assets. This result is coherent with the view that larger banks have stronger incentives to search for additional profit opportunities abroad.

The importance of the degree of openness of the country for the choice of a bank to expand abroad is confirmed by the positive and significant coefficient on the share of export over GDP, but the marginal effect of this variable is quite small, suggesting that the need to follow home-country clients operating abroad is not the major factor affecting bank choices. Further, when only large banks are considered, the significance of this variable disappears.

The results of the estimation of the model studying banks' choice of where to expand abroad show that local market opportunities are the main determinant of the decision. We use a broad definition of local market opportunities which combines higher expected rate of economic growth and the banks' inefficiency in the destination country. We are able to test this definition since we use a larger sample of banks and countries (the 29 OECD countries) than previous studies, which generally examined the pattern of international banking by analyzing the location chosen by banks of a specific home-country or by studying foreign banks' activities in a specific host-country.

The positive correlation between the presence of foreign banks and high costs, low returns and a less efficient use of equity capital makes plausible the view that foreign investors plan to gain profits with a deep restructuring of inefficient banks. The importance of lower per capita GDP, lower inflation, and higher financial deepening assign a decisive role to the expected growth of the destination country.

The level of bilateral trade between the home-country and the destination country also has a highly significant effect on the probability that a bank will have a foreign subsidiary. The size of the marginal effect is also substantial, but lower than that of the variables associated with expected profitability.

Finally, we find that banks prefer to acquire equity interests in countries where either regulatory restrictions on banking activities are lower, possibly because these restrictions are a proxy of actual, sometimes implicit, limitations to the entry from abroad, or the efficiency of the judicial system is higher, thus suggesting that foreign investors prefer countries where market transactions (including their own investment) are more guaranteed.

Although our analysis is static, and therefore we are not able to verify if the banking system of the destination country benefits from the entry of foreign banks, our results seem to mitigate the negative view on the entry of foreign banks. In fact, on one side we provide evidence showing that foreign banks are likely to be among the most efficient in their country of origin and to come from the most developed banking markets. On the other side, we show that bank foreign investment is generally towards markets where the banking sector is less efficient. Foreign banking might therefore have a positive effect on the average efficiency of the banking sector in the country of destination.

Table 1

Bank's Distribution by Size and Country

Source: Bankscope. Panel A includes the 2,148 banks in the regression sample. From the 2,449 banks with headquarters in an OECD country and total assets of more than $ 1 billion at December 1997 are excluded 301 banks with either negative net interest margins, or negative non-interest income, or net return on asset lower than −1.0 per cent or higher than 4.0 per cent, or overheads higher than total operating income. Panel B refers to the subset of banks with total assets of more than $ 25 billions.

Country	Panel A: All banks			Panel B: Banks with total assets of more than $ 25 billions		
	Total	With share-holdings abroad	With foreign share-holders	Total	With share-holdings abroad	With Foreign share-holders
Australia	42	3	10	4	3	0
Austria	41	5	8	3	3	2
Belgium	27	8	7	6	5	1
Canada	23	4	9	7	4	0
South Korea	36	0	10	9	0	2
Denmark	14	2	2	4	2	1
Finland	7	0	1	3	0	0
France	178	15	11	20	12	1
Germany	472	32	19	33	26	3
Japan	159	14	6	56	14	5
Greece	12	1	1	1	1	0
Ireland	23	2	9	2	2	0
Iceland	2	0	0	0	0	0
Italy	138	10	13	15	7	5
Luxembourg	56	3	46	3	0	2
Mexico	12	0	1	3	0	0
Norway	21	1	10	1	0	1
New Zealand	9	0	6	0	0	0
Netherlands	31	4	8	5	3	0
Poland	16	0	10	0	0	0
Portugal	26	3	8	3	2	1
United Kingdom	119	11	29	22	8	2
Czech Republic	10	0	6	0	0	0
Spain	94	5	12	8	4	3
United States	488	18	18	42	14	1
Sweden	14	2	1	5	2	0
Switzerland	62	3	11	5	2	0
Turkey	9	0	0	0	0	0
Hungary	7	0	4	0	0	0
Total	2148	146	276	260	114	30

Table 2

Number of Cross-Border Shareholdings
(columns: markets of origin; rows: markets of destination)

Country	Australia	Austria	Belgium	Canada	Denmark	France	Germany	Japan	Greece	Ireland	Italy	Luxembourg	Norway	Netherlands	Portugal	United Kingdom	Spain	United States	Sweden	Switzerland	Total
Australia				1		2	1	3						2		1		1		1	12
Austria							1	5			1					1		1			9
Belgium				1		1	2	1						2				1			8
Canada						1	1	1			1			1		1		2	1		9
South Korea				1		1	2	4						1				1			10
Denmark													1					1	1		3
Finland																		1			1
France		2					4	1	1		4			1	1	1	1	4			20
Germany		1				3		3	1		3			1		1	2	4		2	21
Greece																1					1
Japan							1														1
Iceland																					0
Ireland	1						8				1	1		1		2		1			15
Italy						6	5	1						1		1	1	1		2	18
Luxembourg						9	28	1			2			1		1	1	8	1	2	54
Mexico																		1			1
New Zealand	3							3													6
Norway					1			1				1		1	1	4		6	1		16
Netherlands						2		3								2		1			8
Poland				1			2	2		1	1			1	2		4	3			17
Portugal						4	1	1		1	1						4	2			14
United Kingdom	2			2		2	3	8		2	2			3	1		1	8	1	1	36
Czech Republic		1	1			3	2														7
Spain							1	8			1				3	2		1			16
United States	1					5	3	1	1	1				1		4	1			2	20
Sweden							1														1
Switzerland						5	3	1	1	1				1		1		2			15
Turkey																					0
Hungary		1	1				1	1						1				1			6
TOTAL	7	7	2	17	4	42	74	39	2	4	24	4	16	5	23	11	42	5	14		345

Source: Bankscope. The table reports the number of countries where each of the 146 banks with at least one cross-border shareholding has at least one equity interest.

Table 3

Total Assets Controlled by Foreign Shareholders in Banking Market
(columns: markets of origin; rows: markets of destination)

Country	Australia	Austria	Belgium	Canada	Denmark	France	Germany	Japan	Greece	Ireland	Italy	Luxembourg	Norway	Netherlands	Portugal	United Kingdom	Spain	United States	Sweden	Switzerland	Other	Total
Australia				0.44		0.92	0.38	0.81						1.18		0.84		1.17		0.23	0.53	6.50
Austria						0.32	5.48			0.72						0.51	0.04	0.24	0.21	0.18	0.19	6.95
Belgium						7.89	0.47	0.37		0.27				13.10	0.39	0.00	0.26	1.48		0.19	1.03	22.80
Canada						0.33	0.60	0.25			0.16			0.37		1.86				0.41		5.46
South Korea						0.17	2.46	0.41								0.12		0.67			0.08	3.91
Denmark																1.54		0.14	0.54			2.25
Finland																			0.22			0.22
France			1.23				0.77									0.51	0.04	0.41	0.12	0.18	0.29	4.62
Germany	0.01	0.02	0.21			0.57		0.10			0.12			0.32		0.10	0.17	0.43		0.21	0.29	2.53
Japan									0.02				0.03									0.24
Greece	1.02					0.51	0.49					0.21		0.28		0.16		0.08		2.31	0.04	2.56
Ireland						1.64	16.52				0.95			3.19		3.29		1.82			1.72	30.15
Iceland												0.05										0.00
Italy		0.45				2.83	1.93					0.33							0.27	5.61	0.27	7.56
Luxembourg			12.56			10.75	42.70	0.26			6.13		0.12	0.96		0.50	0.53	0.56		5.61		81.36
Mexico																	8.00					8.00
Norway			0.39		0.61		0.01							0.20		3.10		5.91	0.16	0.02	0.02	10.53
New Zealand	36.24					0.78	0.57									17.85				0.19	0.19	56.22
Netherlands			5.32			0.78	1.84			1.85	0.26			2.98				5.79		0.46	1.03	6.86
Poland			0.39			1.84	1.84			1.85	0.26			2.98				5.79	0.37	0.46	1.03	16.81
Portugal			0.38			0.99	1.19				0.45	2.19		0.34		0.19	3.44	2.36		0.05	0.05	11.63
United Kingdom	0.69			0.49		0.07	0.19	1.91		0.72	0.10	0.14		0.22			0.03	3.26		1.29	2.21	11.32
Czech Republic		2.07				4.05	3.11	7.21						2.98				9.03		4.61	4.61	30.07
Spain	0.12			0.20		0.97	1.44	1.41	0.01	0.10	0.10	0.41		0.08	0.67	0.68		0.55		0.57	0.53	5.35
United States						0.07	0.17					0.14				0.85				0.27	0.08	3.66
Sweden					0.42													0.26		0.18	0.26	0.68
Switzerland		0.04	0.09			0.84	0.36	0.26				0.67		0.23		0.27		0.26			0.07	3.02
Turkey							0.45									0.21					0.52	0.73
Hungary		2.19	2.73				9.37											1.83		0.62	4.32	32.18
TOTAL	12.24	0.77	21.02	5.98	4.23	5.62	6.03	3.06	1.65	17.97	8.57	8.68	0.06	17.44	2.60	4.59	5.07	3.26	0.62	10.23		

Table 4

Bank Summary Statistics

Panel A refers to the 2,148 banks included in the regression sample. In particular, from the 2,449 banks with headquarters in an OECD country and assets of more than $ 1 billion at December 1997 are excluded 301 banks with negative net interest margins or negative non-interest income or with net return on asset lower than –1.0 per cent or higher than 4.0 per cent or with overheads higher than total operating income; Panel B refers to all the banks of the sample with assets of more than $ 25 billion. Total assets are expressed in billions of US dollars. ROE is defined as income after tax in proportion to equity. ROA (defined as income after tax), net interest margin, cash-flow (defined as equity minus fixed assets and loan loss reserves), off-balance operations, and net charge-offs are expressed as percentages ratios of total assets. Non-interest income is expressed as a percentage ratio of the sum of net interest margin and non-interest income. All data are calculated as the average value of 1994-1997 figures.

Variables	Obs.	Median	Mean	Std. Dev.	Min.	Max.
Panel A: All Banks						
Total Assets	2148	3.29	17.15	51.50	0.57	715.45
Net ROE	2148	7.84	8.87	8.19	-34.01	122.06
Net ROA	2148	0.39	0.58	0.61	-0.87	3.90
Net Interest Margin	2147	2.56	2.55	1.46	0.02	14.51
Non-Interest Income	2148	22.11	26.30	17.98	0.00	100.00
Overheads	2148	63.38	62.31	14.93	0.00	100.00
Cash Flow	2148	3.87	4.69	4.74	-10.23	88.13
Off-Balance	1911	9.30	23.45	73.71	0.00	1131.28
Net Charge-offs	2148	0.27	0.37	0.56	-1.87	7.03
Banks with no shareholding abroad						
Total Assets	2002	2.99	9.13	23.20	0.57	432.00
Net ROE	2002	7.82	8.86	8.20	-34.01	122.06
Net ROA	2002	0.39	0.59	0.61	-0.87	3.90
Net Interest Margin	2001	2.64	2.60	1.46	0.02	14.51
Non-Interest Income	2002	20.97	25.44	17.62	0.00	100.00
Overheads	2002	63.18	62.19	14.98	0.00	100.00
Cash Flow	2002	4.01	4.74	4.66	-10.23	88.13
Off-Balance	1776	8.82	22.58	72.99	0.00	1131.28
Net Charge-offs	2002	0.27	0.37	0.57	-1.87	7.03
Banks with shareholding abroad						
Total Assets	146	77.58	127.16	137.04	1.17	715.45
Net ROE	146	8.47	9.03	8.08	-15.19	34.19
Net ROA	146	0.36	0.49	0.60	-0.85	3.72
Net Interest Margin	146	1.50	1.78	1.14	0.13	8.12
Non-Interest Income	146	34.43	38.00	18.86	4.12	91.84
Overheads	146	65.27	64.03	14.26	18.68	98.61
Cash Flow	146	2.83	4.02	5.79	-0.68	64.81
Off-Balance	135	19.32	34.99	81.99	0.75	873.94
Net Charge-offs	146	0.22	0.31	0.42	-0.94	2.84

Table 4 (continued)

Variables	Obs.	Median	Mean	Std. Dev	Min.	Max.
Panel B: Banks with total assets of more than $25 billion						
Total Assets	260	57.93	105.93	113.12	25.08	715.45
Net ROE	260	7.61	7.57	8.40	-20.95	31.92
Net ROA	260	0.28	0.41	0.50	-0.85	2.27
Net Interest Margin	259	1.63	1.75	1.02	0.09	5.07
Non-Interest Income	260	32.08	33.71	20.98	0.47	100.00
Overheads	260	65.11	63.55	15.20	14.91	98.61
Cash Flow	260	2.74	3.36	2.95	-1.21	31.10
Off-Balance	218	13.22	22.56	28.85	0.00	257.69
Net Charge-offs	260	0.22	0.31	0.37	-0.94	2.15
Banks with no shareholding abroad						
Total Assets	146	42.89	64.15	61.79	25.08	432.00
Net ROE	146	6.81	7.16	8.67	-20.95	31.92
Net ROA	146	0.27	0.43	0.52	-0.66	2.27
Net Interest Margin	145	1.75	1.86	1.12	0.09	5.07
Non-Interest Income	146	28.75	30.22	21.66	0.47	100.00
Overheads	146	64.05	62.07	16.36	14.91	95.33
Cash Flow	146	3.04	3.50	3.39	-1.21	31.10
Off-Balance	113	6.80	18.04	23.65	0.00	112.11
Net Charge-offs	146	0.21	0.33	0.41	-0.42	2.15
Banks with shareholding abroad						
Total Assets	114	110.91	159.44	138.88	28.25	715.45
Net ROE	114	8.01	8.08	8.04	-15.19	29.73
Net ROA	114	0.30	0.38	0.46	-0.85	1.77
Net Interest Margin	114	1.45	1.62	0.86	0.13	3.92
Non-Interest Income	114	35.26	38.18	19.26	4.12	91.84
Overheads	114	65.95	65.46	13.40	26.64	98.61
Cash Flow	114	2.68	3.18	2.25	-0.68	14.09
Off Balance	105	19.38	27.43	32.99	0.75	257.69
Net Charge-offs	114	0.23	0.30	0.32	-0.94	1.33

Table 5

Country Summary Statistics

The summary statistics in Panel A are country averages of the 2,168 banks included in the sample. ROA is defined as income after tax as a percentage of total assets. Net interest margin (NIR) minus net charge-offs and cash flow (defined as equity minus fixed assets and loan loss reserves) are expressed as percentages of total assets. Overheads and non-interest income are expressed as percentages of the sum of net interest margin and non-interest income. Total assets are expressed in billions of dollars. Market concentration is computed by the Herfindhal index. In panel B, data on GDP, population, bank domestic credit and inflation are from IMF, *International Financial Statistics* (1998); stock market capitalization is from IFC (1998), *Emerging Stock Markets Factbook*. Exports are from IMF, *Direction of Trade Statistics* (1998). GDP is expressed in billions of dollars. Per capita GDP is expressed in dollars. Bank domestic credit, stock market capitalization and exports are expressed as percentages of GDP. All data in Panels A and B are calculated as the average value of 1994-1997 figures. In panel C, "Efficiency of judicial system" is taken from La Porta *et al.* (1998); "Restrictions on Banking" and "State-Owned Banks" are from Barth *et al.* (2000); "Restrictions on inward and outward Foreign Direct Investment" are our computation based on IMF, *Exchange Arrangements and Exchange Restrictions* (1997).

Country	Panel A							Panel B						Panel C				
	Return on Assets	Non-Interest Income	NIR - Net Charge Offs	Over-heads	Cash flow	Average Total Assets	Market Concentration	GDP	Per capita GDP	Bank Domestic Credit	Stock Market	Inflation	Exports	Restrictions on banking	State-owned banks	Efficiency of Judicial System	Restrictions on outward FDI	Restrictions on inward FDI
Australia	0.84	38.4	1.86	59.6	5.25	12.8	0.108	362.3	19918	84.9	114.2	2.4	8.9	2.00	0.00	10.00	0	3
Austria	0.28	28.8	1.29	64.0	2.96	11.3	0.118	213.4	26503	128.9	15.5	2.1	22.1	1.25	0.04	9.50	0	0
Belgium	0.33	28.0	1.48	70.7	2.88	28.6	0.119	253.2	24992	151.0	44.0	1.9	54.0	2.50	0.00	9.50	1	0
Canada	0.43	33.3	1.69	67.4	4.85	31.9	0.142	579.2	19445	76.2	74.9	1.4	31.0	2.25	0.00	9.25	0	1
South Korea	0.45	36.0	1.40	64.8	3.39	15.8	0.049	388.2	8566	64.4	35.7	5.0	15.2	2.25	0.00	6.00	2	0
Denmark	0.74	19.0	2.54	63.0	6.57	16.3	0.183	171.1	32635	55.1	40.3	2.1	23.1	1.75	0.00	10.00	0	0
Finland	0.30	37.7	1.24	62.2	2.59	33.7	0.286	118.1	23079	65.0	46.3	1.0	23.6	1.75	0.41	10.00	0	0
France	0.41	30.9	2.17	72.4	4.67	21.4	0.043	1451.4	24915	101.4	38.6	1.7	14.9	2.00	0.15	8.00	1	0
Germany	0.28	17.9	2.10	60.7	3.28	12.0	0.027	2220.6	27194	133.2	28.6	2.0	18.1	1.75	0.43	9.00	0	0
Japan	-0.03	14.9	1.31	67.2	1.79	56.7	0.029	4429.3	35347	134.6	71.6	0.6	5.3	3.25	0.00	10.00	2	0
Greece	0.96	41.0	2.63	70.6	3.14	9.5	0.190	112.4	10751	59.2	20.1	8.4	5.9	2.25	0.63	7.00	0	0
Ireland	0.79	18.4	1.90	44.6	7.06	5.5	0.134	64.8	18159	44.6	27.2	2.0	60.4	1.75	0.00	8.75	0	0
Iceland	0.46	37.0	2.67	69.5	2.71	1.3	0.519	7.0	25757	54.8	11.6	1.8	24.2	2.75	0.64	.	2	0
Italy	0.39	28.5	2.68	67.1	6.33	12.4	0.038	1113.8	19422	96.5	22.3	3.8	15.8	2.25	0.25	6.75	0	0
Luxembourg	0.40	37.7	0.69	47.3	2.62	7.2	0.034	16.3	39873	.	192.0	1.7	.	.	.	9.50	0	0
Mexico	0.46	25.4	3.29	73.7	3.29	11.9	0.095	304.3	3234	29.4	39.8	24.2	26.4	3.25	0.42	6.00	1	2
Norway	0.99	21.6	2.65	60.4	5.28	5.5	0.120	145.5	33304	57.7	35.2	1.9	27.4	2.00	0.38	10.00	0	0
New Zealand	0.75	40.6	2.07	67.5	2.09	9.4	0.150	59.9	16673	89.1	78.6	2.2	15.5	1.25	0.00	10.00	1	0
Netherlands	0.53	29.0	1.28	56.9	4.12	30.4	0.203	368.7	23804	121.7	100.8	2.2	41.6	1.50	0.00	10.00	0	0
Poland	2.49	27.2	5.30	45.3	6.66	3.0	0.117	113.9	2950	36.4	6.2	24.0	15.4	.	.	5.50	1	1
Portugal	0.57	33.5	1.74	62.8	4.15	8.9	0.087	100.7	10199	93.1	24.4	3.6	19.8	2.00	0.17	5.50	0	0
United Kingdom	0.76	35.8	1.80	58.7	6.25	24.7	0.044	1174.4	20043	125.9	135.3	2.9	16.1	1.25	0.00	10.00	0	0
Czech Republic	0.85	41.1	1.54	53.7	3.98	4.6	0.174	48.8	4731	79.2	26.9	9.1	26.9	1.75	0.02	6.25	1	.
Spain	0.83	21.2	2.83	62.0	3.97	10.5	0.057	535.5	13648	105.4	41.4	3.7	14.3	3.00	0.00	10.00	1	1
United States	1.01	27.2	2.80	60.0	6.89	10.6	0.011	7496.2	28368	78.3	105.8	2.7	5.7	3.00	0.00	10.00	0	1
Sweden	0.52	16.9	1.41	49.7	3.28	27.6	0.113	229.8	26045	70.0	90.2	1.5	28.0	3.00	0.00	10.00	0	0
Switzerland	0.64	48.7	1.07	69.2	4.60	20.5	0.259	278.2	39478	182.8	152.3	1.0	22.4	1.50	0.15	10.00	0	0
Turkey	1.30	18.5	4.81	62.3	4.42	4.2	0.082	127.9	2058	31.1	26.1	90.1	10.7	3.00	0.37	4.00	1	3
Hungary	1.78	40.0	4.00	61.7	3.80	2.7	0.242	40.3	3945	55.8	15.1	22.2	26.5	.	.	.	0	0

Table 6

The Determinants of a Bank's Decision to Expand Abroad

The empirical model in equation (1) has been estimated using a probit specification, where the dependent variable equals one if the bank has a foreign subsidiary and zero otherwise. ROA is defined as income after tax as a percentage of total assets. Non-interest income is expressed as a percentage of the sum of net interest margin and non-interest income. Total assets are expressed in billions of dollars. Data on GDP, inflation, and bank domestic credit are from IMF, *International Financial Statistics* (1998). Stock market capitalization is from IFC, *Emerging Stock Markets Factbook* (1998). Exports are from IMF, *Direction of Trade Statistics* (1998). All data are calculated as the average value of 1994-1997 figures. "Restrictions on Banking" is taken from Barth *et al*. (2000); "Restrictions on Outward Foreign Direct Investment" is our computation based on IMF, *Exchange Arrangements and Exchange Restrictions* (1997). The regression also includes dummy variables (unreported) to account for the nature of the main activity of the bank (commercial banks, cooperative banks, investment banks, medium and long term banks, real estate-mortgage banks, savings banks, specialized government credit institutions, and investment banks and securities houses). Standard errors are reported in italics. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Marginal effect is the change in the average of the individual predicted probability (expressed in percentage points) due to an increase from the 25th percentile to the 75th percentile of the variable of interest.

VARIABLES	Panel A: All Banks except those from Luxembourg			Panel B: All Banks except those from Luxembourg, Czech Republic, Hungary and Poland			Panel C: Banks with Total Assets of more than $25 billion		
	Coeff. (*Std. Err.*)	Signif.	Marginal Effect	Coeff. (*Std. Err.*)	Signif.	Marginal Effect	Coeff. (*Std. Err.*)	Signif.	Marginal Effect
Exports / GDP	2.151 *0.582*	***	1.53	1.801 *0.602*	***	1.26	0.498 *1.116*		1.45
Bank Credit / GDP	1.536 *0.338*	***	5.31	1.419 *0.416*	***	4.69	1.651 *0.755*	**	21.41
Stock Market Capitalization / GDP	-1.579 *0.348*	***	-3.76	-1.374 *0.330*	***	-3.35	-2.136 *0.523*	***	-24.10
Inflation	-0.141 *0.041*	***	-0.64	-0.006 *0.013*		-0.02			
Restrictions on banking				-0.323 *0.153*	**	-1.75	-0.273 *0.187*		-6.73
Restrictions on outward FDI				-0.851 *0.343*	**	0.00	-1.160 *0.456*	**	0.00
Return on Assets (Country)	1.421 *0.387*	***	7.00	1.349 *0.427*	***	6.54	2.540 *0.836*	***	29.08
Non-Interest Income (Country)	-0.001 *0.010*		-0.06	-0.020 *0.012*	*	-1.61	-0.026 *0.018*		-11.08
Return on Assets (Individual)	0.489 *0.164*	***	1.98	0.486 *0.167*	***	1.90	-0.196 *0.326*		-2.87
Non-Interest Income (Individual)	0.010 *0.004*	**	1.12	0.011 *0.004*	***	1.18	0.021 *0.008*	***	10.64
Total Assets (log value)	0.881 *0.068*	***	4.71	0.897 *0.066*	***	5.28	0.962 *0.143*	***	31.89
No. Of Observations	2,092			2,059			257		
Pseudo R-Square	0.56			0.58			0.40		
Observed Prob.	6.84			6.95			44.36		

Table 7

The Determinants of a Bank's Decision to Expand Abroad

The empirical model in equation (1) has been estimated using a probit specification, where the dependent variable equals one if the bank has a foreign subsidiary and zero otherwise. Net interest margin (NIR) minus net charge-offs is expressed as a percentage of total assets. Non-interest income and overheads are expressed as a percentage of the sum of net interest margin and non-interest income. Total assets are expressed in billions of dollars. Data on GDP, inflation, and bank domestic credit are from IMF, *International Financial Statistics* (1998). Stock market capitalization is from IFC, *Emerging Stock Markets Factbook* (1998). Exports are from IMF, *Direction of Trade Statistics* (1998). All data are calculated as the average value of 1994-1997 figures. "Restrictions on Banking" and "State-Owned Banks' are taken from Barth *et al*. (2000); "Restrictions on Outward Foreign Direct Investment" is our computation on IMF, *Exchange Arrangements and Exchange Restrictions* (1997). The regression also includes dummy variables (unreported) to account for the nature of the main activity of the bank (commercial banks, cooperative banks, investment banks, medium and long term banks, real estate-mortgage banks, savings banks, specialized government credit institutions, and investment banks and securities houses). Standard errors are reported in italics. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Marginal effect is the change in the average of the individual predicted probability (expressed in percentage points) due to an increase from the 25th percentile to the 75th percentile of the variable of interest.

VARIABLES	Panel A: All Banks Except those from Luxembourg			Panel B: All Banks Except those from Luxembourg, Czech Republic, Hungary and Poland			Panel C: Banks with Total Assets of more than $25 billion		
	Coeff. (*Std. Err.*)	Signif.	Marginal Effect	Coeff. (*Std. Err.*)	Signif.	Marginal Effect	Coeff. (*Std. Err.*)	Signif.	Marginal Effect
Exports / GDP	2.643	***	1.83	2.621	***	1.83	1.468		4.26
	0.686			*0.696*			*1.024*		
Bank credit / GDP	1.568	***	5.41	1.138	***	3.81	1.873	**	23.63
	0.345			*0.427*			*0.745*		
Stock Market Capitalization / GDP	-1.261	***	-3.10	-0.846	**	-2.25	-2.325	***	-24.64
	0.314			*0.367*			*0.518*		
Inflation	-0.164	***	-0.76	-0.030		-0.13			
	0.054			*0.042*					
Restrictions on banking				-0.299		-1.76	-0.155		-3.55
				0.191			*0.196*		
Restrictions on outward FDI				-0.561	*	0.00	-0.800	*	0.00
				0.297			*0.419*		
Overheads (Country)	-0.054	***	-2.28	-0.023		-0.98	-0.093	***	-15.67
	0.020			*0.023*			*0.030*		
NIR - Net Charge-Offs (Country)	0.671	***	4.60	0.524	***	3.45	1.024	***	24.84
	0.166			*0.178*			*0.363*		
Non-Interest Income (Country)	0.032	**	2.45	0.001		0.10	0.033		13.08
	0.014			*0.019*			*0.022*		
Overheads (Individual)	-0.008		-0.78	-0.008		-0.76	0.021	**	7.45
	0.006			*0.006*			*0.010*		
NIR - Net Charge-Offs (Individual)	0.172	*	1.83	0.185	**	1.96	0.006		0.19
	0.096			*0.093*			*0.143*		
Non-Interest Income (Individual)	0.019	***	1.98	0.020	***	2.08	0.017	*	8.30
	0.005			*0.005*			*0.009*		
Total Assets (log value)	0.873	***	5.01	0.872	***	5.31	0.996	***	32.49
	0.066			*0.065*			*0.166*		
No. Of Observations	2,092			2,058			256		
Pseudo R-Square	.566			.570			.413		
Observed Prob.	6.84			6.95			44.53		

Table 8

The Determinants of a Bank's Decision to Expand Abroad
(robustness check)

All Banks

All Banks Except those from Luxembourg, Czech Republic, Hungary and Poland

Last rows: Included variables

Variables	Average Total Assets Market Concentration (Country; log value)		Per capita GDP		State‑owned Bank		Efficiency of judicial system		Population (log value)		Stock Market Liquidity / GDP		Cash Flow (Country and Individual)	
	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.	Coeff.	Signif.
Exports / GDP	1.769	***	2.251	***	1.791	***	1.649	**	1.977	***	2.202	***
	0.612		*0.722*		*0.599*		*0.664*		*0.608*		*0.778*	
Bank credit / GDP	1.454	***	1.360	***	1.496	***	1.504	***	1.441	***	1.352	***
	0.400		*0.435*		*0.416*		*0.423*		*0.424*		*0.437*	
Stock Market Capitalization / GDP	-1.437	***	-1.310	***	-1.328	***	-1.492	***	-1.081	**	-1.373	***
	0.428		*0.332*		*0.340*		*0.370*		*0.438*		*0.324*	
Restrictions on banking	-0.332	**	-0.329	**	-0.308	**	-0.354	**	-0.342	**	-0.351	**
	0.163		*0.153*		*0.148*		*0.157*		*0.157*		*0.162*	
Restrictions on outward FDI	-0.896	**	-0.801	***	-0.975	**	-0.967	***	-1.125	***	-0.817	**
	0.346		*0.308*		*0.416*		*0.364*		*0.430*		*0.315*	
Return on Assets (Country)	1.469	**	1.221	***	1.353	***	1.416	***	1.339	***	1.253	***
	0.710		*0.436*		*0.425*		*0.442*		*0.442*		*0.435*	
Non‑Interest Income (Country)	-0.021		-0.014		-0.023		-0.022	*	-0.030	**	-0.016	
	0.013		*0.013*		*0.014*		*0.012*		*0.015*		*0.013*	
Return on Assets (Individual)	0.488	***	0.487	***	0.487	***	0.490	***	0.492	***	0.486	***
	0.166		*0.167*		*0.166*		*0.167*		*0.165*		*0.167*	
Non‑Interest Income (Individual)	0.011	***	0.011	***	0.011	***	0.011	***	0.012	***	0.011	***
	0.004		*0.004*		*0.004*		*0.004*		*0.004*		*0.004*	
Total Assets (log value)	0.896	***	0.896	***	0.897	***	0.896	***	0.898	***	0.898	***
	0.068		*0.066*		*0.066*		*0.067*		*0.066*		*0.066*	
Column‑title variable	0.058		-1.516		-0.170		-0.350		-0.101			
	0.295		*1.807*		*0.313*		*0.553*		*0.091*		*0.099*	
No. Of Observations	2,059		2,059		2,059		2,059		2,057		2,059	

Variables	Stock Market Liquidity / GDP		Cash Flow (Country and Individual)	
	Coeff.	Signif.	Coeff.	Signif.
Exports / GDP	1.811	***	1.906	***
	0.615		*0.594*	
Bank credit / GDP	1.417	***	1.482	***
	0.429		*0.427*	
Stock Market Capitalization / GDP	-1.366	***	-1.354	***
	0.400		*0.327*	
Restrictions on banking	-0.325	**	-0.318	**
	0.153		*0.153*	
Restrictions on outward FDI	-0.862	**	-0.775	**
	0.333		*0.344*	
Return on Assets (Country)	1.331	***	1.288	***
	0.507		*0.478*	
Non‑Interest Income (Country)	-0.020	*	-0.022	*
	0.012		*0.012*	
Return on Assets (Individual)	0.487	***	0.384	***
	0.166		*0.181*	
Non‑Interest Income (Individual)	0.011	***	0.011	***
	0.004		*0.004*	
Total Assets (log value)	0.897	***	0.907	***
	0.067		*0.067*	
Column‑title variable	0.008		0.044	
	0.546		*0.067*	
Cash Flow (Individual)			0.017	
			0.012	
No. Of Observations	2,059		2,059	

The last row of each column refers to the coefficient of the variable in the column title. The empirical model in equation (1) has been estimated using a probit specification, where the dependent variable equals one if the bank has a foreign subsidiary and zero otherwise. ROA (defined as income after tax) and cash flow (defined as income minus fixed assets and loan loss reserves) are expressed as a percentage of total assets. Non‑interest income is expressed as a percentage of the sum of net interest margin and non‑interest income. Total assets are expressed in billions of dollars. Market concentration is computed by the Herfindhal index. Data on GDP, population and bank domestic credit are from IMF, *International Financial Statistics* (1998). Stock market capitalization and liquidity are from IFC, *Emerging Stock Markets Factbook* (1998). Exports are from IMF, *Direction of Trade Statistics* (1998). All data are calculated as the average value of 1994‑1997 figures. "Restrictions on Banking" and "State‑Owned Banks" are taken from Barth *et al.* (2000); "Restrictions on Outward Foreign Direct Investment" are our computation based on IMF, *Exchange Arrangements and Exchange Restrictions* (1997); "Efficiency of Judicial System" are taken from La Porta *et al.* (1998). The regression also includes dummy variables (unreported) to account for the nature of the main activity of the bank.. Standard errors are reported in italics. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent.

Table 9

The Choice of the Where to Expand Abroad

The empirical model in equation (2) has been estimated using a random effect probit specification, where the dependent variable equals one if a bank of country j has a foreign subsidiary in country $i \neq j$ and zero otherwise, and the random effect has been calculated with respect to the investing bank. We have restricted our analysis to the 143 banks that have at least one shareholding abroad. Multiplying the number of banks in our sample by the number of OECD countries, except Luxembourg, we have obtained pairs of bank-country observations, which constitute our regression sample in panel A. Panel B is obtained by further excluding Iceland, Czech Republic, Hungary and Poland, for which some data are not available (see Table 5). ROA is defined as income after tax as percentage of total assets. Net interest margin (NIR) minus net charge-offs and cash flow (defined as equity minus fixed assets and loan loss reserves) are expressed as percentages of total assets. Overheads and non-interest income are expressed as percentages of the sum of net interest margin and non-interest income. Total assets are expressed in billions of dollars. Data on inflation, GDP, population and bank domestic credit are from IMF, *International Financial Statistics* (1998). Stock market capitalization is from IFC, *Emerging Stock Markets Factbook* (1998). Exports are from IMF, *Direction of Trade Statistics* (1998). Bilateral exports are expressed as percentage ratio of destination country's GDP. All data are calculated as the average value of 1994-1997 figures. "Efficiency of judicial system" is taken from La Porta *et al.* (1998); "Restrictions on Banking" and "State-Owned Banks' are taken from Barth *et al.* (2000). Standard errors are reported in italics. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent. Marginal effects are the changes in the sample average of the individual predicted probability (expressed in percentage points) due to an increase from the 25th percentile to the 75th percentile of the variable of interest.

VARIABLES	Panel A: All Countries except Luxem. — Coeff (*Std. Err.*) / Signif	Marginal Effect	Panel B — Coeff (*Std. Err.*) / Signif	Marginal Effect	Coeff (*Std. Err.*) / Signif	Marginal Effect	Coeff (*Std. Err.*) / Signif	Marginal Effect	Coeff (*Std. Err.*) / Signif	Marginal Effect
Exports (bilateral)	0.277 *** *0.033*	6.47	0.286 *** *0.036*	6.36	0.290 *** *0.038*	6.42	0.326 *** *0.040*	7.28	0.326 *** *0.039*	7.28
Distance (no. Of time-zone)	0.039 *** *0.012*	3.10	0.031 ** *0.012*	2.43	0.030 ** *0.013*	2.37	0.047 *** *0.014*	3.63	0.047 *** *0.014*	3.63
Euro area	0.352 *** *0.121*		0.328 ** *0.134*		0.327 ** *0.134*		0.400 *** *0.138*		0.400 *** *0.132*	
Per capita GDP	-0.338 *** *0.129*	-3.59	-0.421 *** *0.157*	-3.31	-0.467 ** *0.202*	-3.70	-1.427 *** *0.436*	-13.38	-1.427 *** *0.401*	-13.38
Bank credit / GDP	0.600 *** *0.174*	2.99	0.454 ** *0.205*	3.03	0.395 ** *0.200*	2.65	0.000 *0.284*	0.00		
Stock Market Capitalization / GDP	-0.124 *0.191*	-0.69	0.123 *0.239*	0.69	0.250 *0.277*	1.38	1.048 *** *0.365*	5.51	1.048 *** *0.300*	5.51
Inflation	-0.055 *** *0.019*	-2.29	-0.074 *** *0.027*	-1.75	-0.074 ** *0.030*	-1.74	-0.139 *** *0.039*	-3.62	-0.139 *** *0.038*	-3.62
Average Total Assets (log value)	-0.237 ** *0.095*	-3.70	-0.437 *** *0.138*	-5.09	-0.529 *** *0.165*	-6.21	-0.841 *** *0.191*	-9.77	-0.841 *** *0.190*	-9.77
Cash Flow	0.141 *** *0.034*	3.02	0.127 *** *0.036*	2.81	0.142 *** *0.044*	3.12	0.284 *** *0.062*	5.91	0.284 *** *0.059*	5.91
Non-Interest Income	0.008 *0.006*	1.31	0.009 *0.006*	1.39	0.001 *0.015*	0.21	-0.058 *** *0.020*	-10.99	-0.058 *** *0.019*	-10.99
Return on Assets	0.484 ** *0.203*	2.15	0.045 *0.335*	0.21						
Overheads					0.010 *0.019*	0.77	0.086 *** *0.026*	7.71	0.086 *** *0.025*	7.71
NIR – Net Charge Offs					-0.111 *0.174*	-1.53	-0.610 *** *0.211*	-8.64	-0.610 *** *0.197*	-8.64
Efficiency of Judicial System							0.106 *0.080*	3.66	0.106 *0.066*	3.66
Restrictions on banking							-0.458 *** *0.121*	-2.48	-0.458 *** *0.103*	-2.48
State-owned Banks							1.222 *** *0.396*	5.60	1.222 *** *0.394*	5.60
No. Of Observations	3,861		3,289		3,289		3,289		3,289	
Observed Prob.	7.43		7.81		7.81		7.81		7.81	

Table 10

The Choice of the Where to Expand Abroad
(robustness check)

The last row of each column refers to the coefficient of the variable in the column title. The empirical model in equation (2) has been estimated using a random effect probit specification, where the dependent variable equals one if a bank of country j has a foreign subsidiary in country $i \neq j$ and zero otherwise, and the random effect has been calculated with respect to the investing bank. We have restricted our analysis to the 143 banks that have at least one shareholding abroad. Multiplying the number of banks in our sample by the number of OECD countries, except Luxembourg, we have obtained pairs of bank-country observations, which constitute our regression sample in Panel A. Panel B is obtained by further excluding Iceland, Czech Republic, Hungary and Poland, for which some data are not available (see Table 5). ROA is defined as income after tax as percentage of total assets. Net interest margin (NIR) minus net charge-offs and cash flow (defined as equity minus fixed assets and loan loss reserves) are expressed as percentages of total assets. Overheads and non-interest income are expressed as percentages of the sum of net interest margin and non-interest income. Total assets are expressed in billions of dollars. Market concentration is computed by the Herfindhal index. Data on inflation, GDP and population are from IMF, *International Financial Statistics* (1998). Stock market capitalization and liquidity are from IFC, *Emerging Stock Markets Factbook* (1998). Exports and direct investment are from IMF, *Direction of Trade Statistics* (1998). Bilateral exports and direct investment are expressed as percentage ratio of destination country's GDP. All data are calculated as the average value of 1994-1997 figures. "Efficiency of judicial system" is taken from La Porta *et al.* (1998); "Restrictions on Banking" and "State-Owned Banks' are taken from Barth *et al.* (2000); "Restrictions on inward Foreign Direct Investment" is our computation based on IMF, *Exchange Arrangements and Exchange Restrictions* (1997). Standard errors are reported in italics. The symbol *** indicates a significance level of 1 per cent or less; ** between 1 and 5 per cent; * between 5 and 10 per cent.

All Countries, except Luxembourg, Iceland, Czech Republic, Hungary and Poland

Last rows: Included variables

VARIABLES	Market Concentration Coeff. (*Std. Err.*)	Signif.	Stock Market liquidity / GDP Coeff. (*Std. Err.*)	Signif.	Population (log value) Coeff. (*Std. Err.*)	Signif.	Restrictions on inward FDI Coeff. (*Std. Err.*)	Signif.	Distance (miles; log value) Coeff. (*Std. Err.*)	Signif.	Direct Investment (bilateral) Coeff. (*Std. Err.*)	Signif.
Exports	0.313	***	0.332	***	0.344	***	0.321	***	0.336	***	0.197	***
(bilateral)	*0.047*		*0.040*		*0.052*		*0.039*		*0.045*		*0.045*	
Distance	0.397	***	0.377	***	0.399	***	0.436	***	0.398	***	0.411	***
(no. Of time-zone)	*0.132*		*0.137*		*0.132*		*0.141*		*0.132*		*0.136*	
Euro area	0.044	***	0.048	***	0.051	***	0.045	***	0.040	*	0.039	***
	0.015		*0.014*		*0.016*		*0.014*		*0.021*		*0.014*	
Per capita GDP	-1.331	***	-1.266	***	-1.445	***	-1.449	***	-1.429	***	-1.574	***
	0.442		*0.485*		*0.403*		*0.403*		*0.401*		*0.417*	
Stock Market Capitalization / GDP	1.010	***	1.172	***	1.087	***	1.040	***	1.039	***	1.173	***
	0.310		*0.365*		*0.309*		*0.300*		*0.301*		*0.319*	
Inflation	-0.131	***	-0.129	***	-0.141	***	-0.145	***	-0.138	***	-0.164	***
	0.042		*0.042*		*0.038*		*0.039*		*0.038*		*0.039*	
Average Total Assets	-0.817	***	-0.861	***	-0.819	***	-0.827	***	-0.847	***	-0.907	***
(log value)	*0.196*		*0.193*		*0.193*		*0.190*		*0.191*		*0.202*	
Cash Flow	0.273	***	0.271	***	0.287	***	0.294	***	0.286	***	0.267	***
	0.062		*0.062*		*0.059*		*0.060*		*0.059*		*0.061*	
Non-Interest Income	-0.054	**	-0.056	***	-0.060	***	-0.057	***	-0.058	***	-0.067	***
	0.021		*0.020*		*0.020*		*0.019*		*0.019*		*0.021*	
Overheads	0.082	***	0.083	***	0.087	***	0.087	***	0.087	***	0.096	***
	0.027		*0.026*		*0.025*		*0.025*		*0.025*		*0.026*	
NIR – Net Charge Offs	-0.602	***	-0.622	***	-0.593	***	-0.603	***	-0.628	***	-0.645	***
	0.198		*0.198*		*0.199*		*0.196*		*0.202*		*0.207*	
Efficiency of Judicial System	0.102		0.071		0.098		0.129	*	0.109		0.099	
	0.067		*0.089*		*0.068*		*0.073*		*0.066*		*0.068*	
Restrictions on banking	-0.453	***	-0.440	***	-0.451	***	-0.453	***	-0.472	***	-0.458	***
	0.103		*0.107*		*0.104*		*0.104*		*0.108*		*0.108*	
State-owned Bank	1.173	***	1.161	***	1.272	***	1.333	***	1.220	***	1.568	***
	0.405		*0.408*		*0.408*		*0.423*		*0.394*		*0.416*	
	-0.500		-0.196		-0.035		0.090		0.033		0.105	***
	0.970		*0.329*		*0.066*		*0.123*		*0.077*		*0.026*	
No. Of Observations	3,289		3,289		3,289		3,289		3,289		2,813	

References

Aliber, R. Z. (1984), "International Banking: A Survey", *Journal of Money Credit and Banking*, 16, pp. 661-78.

Ball, C. A. and A. E. Tschoegel (1982), "The Decision to Establish a Foreign Branch or Subsidiary: An Application of Binary Classification Procedures", *Journal of Financial and Quantitative Analysis*, 17, pp. 411-24.

Barth, J. R., G. Caprio Jr., R. Levine (2000), "Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability?, mimeo.

Berger, A. N., R. S. Demsetz, P. E. Strahan (1999), "The Consolidation of the Financial Services Industry: Causes, Consequences, and Implications for the Future" *Journal of Banking & Finance,* 23, pp.135-94.

_____, R. DeYoung, H. Genay and G. F. Udell (1999), "The Globalization of Financial Institutions: Evidence from a Cross-Border Banking Performance", mimeo, Federal Reserve Bank of Chicago.

_____, A. K. Kashyap and J. M. Scalise (1995), "The Transformation of the U. S. Banking Industry: What a Long, Strange Trip It's Been", *Brookings Papers on Economic Activities*, 2, pp. 55-218.

Brealey, R. A. and E. C. Kaplanis (1996), "The Determination of Foreign Banking Location", *Journal of International Money and Finance*, 15, pp. 577-97.

Buch , C. M. (1999), "Why Do Banks Go Abroad? Evidence from German Data", Kiel Working Paper, 948, Kiel Institute of World Economics.

Casson, M. (1990), "Evolution of Multinational Banks: a Theoretical Perspective", in G. Jones (ed.), *Banks as Multinationals*, London, Routledge.

Claessens, S., A. Demirgüç-Kunt and H. Huizinga (1997), "How Does Foreign Entry Affect the Domestic Banking Market?", mimeo, World Bank.

Dale, R. (1984), "The Regulation of International Banking", Cambridge, Woodhead Faulkner.

Demirgüç-Kunt, A., R. Levine and H. G. Min (1998), "Opening to Foreign Banks: Issues of Efficiency, Stability and Growth", mimeo, World Bank.

DeYoung, R. and D. E. Nolle (1996), "Foreign-Owned Banks in the United States: Earning Market Share or Buying It?", *Journal of Money, Credit, and Banking*, 28, pp. 622-36.

Dunning, J. (1988), "The Eclectic Paradigm of International Production: a Restatement and Some Possible Extension", *Journal of International Business Studies*, 19, pp. 1-32.

ECB (1999), "Possible effects on the EU banking systems in the medium to log term".

Fisher, A. and P. Molyneux (1996), "A note on the determinants of foreign bank activity in London between 1980 and 1989", *Applied Financial Economics*, 6, pp. 271-77.

Generale, A. and G. Gobbi (1999), "Corporate Governance and Bank Profitability: Empirical Evidence from the Italian Experience", in *The Monetary and Regulatory Implications of Changes in the Banking Industry*, BIS Conference Papers, 7, pp. 34-54.

Giddy, I. H. (1983), "The Theory and Industrial Organization of International Banking", in R. Hawkins, C. G. Wihlborg and R. M. Levich (eds.), *Research in International Business and Finance: the Internationalization of Financial Markets and National Economic Policy*, Greenwich CT, JAI Press.

Goldberg, L. G. and R. Grosse (1994), "Location Choice of Foreign Banks in the United States", *Journal of Economics and Business,* 46, pp. 367-79.

_____ and D. Johnson (1990), "The Determinants of U.S. Banking Activity Abroad", *Journal of International Money and Finance*, 9, pp. 123-37.

_____ and A. Saunders (1980), "The Causes of U.S. Bank Expansion Overseas: The Case of Great Britain", *Journal of Money Credit and Banking*, 12, pp. 630-43.

_____ (1981), "The Growth and Organizational Form of Foreign Banks in the U. S.", *Journal of Money Credit and Banking*, 13, pp. 365-74.

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, pp. 1092-112.

Houpt, J. V. (1980), "Foreign Ownership and the Performance of US Banks", *Federal Reserve System Board of Governors Staff Studies*, 109.

IFC (1998), *Emerging Stock Markets Factbook*.

IMF (1997), *Exchange Arrangements and Exchange Restrictions*.

___ (1998), *International Financial Statistics Yearbook*.

___ (1998), *Direction of Trade Statistics*.

Jones, G. (ed.) (1990), "Banks as multinationals", London and New York, Routledge.

La Porta, R., F. Lopez-de-Silanes, A. Shleifer and R. W. Vishny (1998), "Law and Finance", *Journal of Political Economy*, 106.

Levine, R. and S. Zevros (1998), "Stock Markets, Banks, and Growth", *The American Economic Review*, 88, 3, pp. 537-58.

Mahajan, A., N. Rangan and A. Zardkoohi (1996), "Cost Structures in Multinational and Domestic Banking", *Journal of Banking and Finance*, 20, pp. 283-306.

Miller, S.R. and A. Parkhe (1998), "Patterns in the Expansion of U.S. Banks' Foreign Operations", *Journal of International Business Studies*, 29, pp. 359-90.

Moshirian, F. and A. Van der Laan (1998), "Trade in Financial Services and the Determinants of Banks' Foreign Assets", *Journal of Multinational Financial Management*, 8, pp. 23-38.

Nigh, D., K.R. Cho and S. Krishnan (1986), "The Role of Location-Related Factors in U.S. Banking Involvement Abroad: An Empirical Analysis", *Journal of International Business Studies*, pp. 59-72.

OECD (1997), *International Direct Investment Statistics Yearbook.*

Peek, J. and E. S Rosengren (1997), "The International Transmission of Financial Shocks: The Case of Japan", *American Economic Review*, 87, pp. 495-505.

———————————— and F. Kasirye (1999), "The Poor Performance of Foreign Bank Subsidiaries: Were the Problems Acquired or Created?", *Journal of Banking and Finance*, 23, pp. 579-604.

Rajan, R. G. (1998), "The Past and Future of Commercial Banking Viewed through an Incomplete Contract Lens", *Journal of Money Credit and Banking*, 30, pp. 524-50.

Sagari, S. B. (1992), "United States Foreign Direct Investment in the Banking Industry", *Transnational Corporations*, pp. 93-123.

Tschoegel, A. E. (1982), "Concentration Among International Banks", *Journal of Banking and Finance*, 6, pp. 567-78.

—————— (1983), "Size, Growth and Transnationality among the World's Largest Banks", *Journal of Business,* pp.187-201.

Ursacki, T. and I. Vertinsky (1992), "Choice of Entry Timing and Scale by Foreign Banks in Japan and Korea", *Journal of Banking and Finance*, 16, pp. 405-21.

Williams, B. (1996), "Determinants of the Performance of Japanese Financial Institutions in Australia 1987-1992", *Applied Economics*, 28, pp. 1153- 65.

———— (1997), "Positive Theories of Multinational Banking: Eclectic Theory versus Internalisation Theory", *Journal of Economic Surveys*, 11, pp. 71-100.

———— (1998), "Factors Affecting the Performance of Foreign-Owned Banks in Australia: a Cross-Sectional Study", *Journal of Banking and Finance*, 22, pp. 197-219.

Yamori, N. (1998), "A Note on the Location Choice of Multinational Banks: the Case of Japanese Financial Institutions", *Journal of Banking and Finance*, 22, pp. 109-20.

RECENTLY PUBLISHED "TEMI" (*)

No. 357 — *Are Model-Based Inflation Forecasts Used in Monetary Policymaking? A Case Study,* by S. SIVIERO, D. TERLIZZESE and I. VISCO (September 1999).

No. 358 — *The Impact of News on the Exchange Rate of the Lira and Long-Term Interest Rates,* by F. FORNARI, C. MONTICELLI, M. PERICOLI and M. TIVEGNA (October 1999).

No. 359 — *Does Market Transparency Matter? a Case Study,* by A. SCALIA and V. VACCA (October 1999).

No. 360 — *Costo e disponibilità del credito per le imprese nei distretti industriali,* by P. FINALDI RUSSO and P. ROSSI (December 1999).

No. 361 — *Why Do Banks Merge?,* by D. FOCARELLI, F. PANETTA and C. SALLEO (December 1999).

No. 362 — *Markup and the Business Cycle: Evidence from Italian Manufacturing Branches,* by D. J. MARCHETTI (December 1999).

No. 363 — *The Transmission of Monetary Policy Shocks in Italy, 1967-1997,* by E. GAIOTTI (December 1999).

No. 364 — *Rigidità nel mercato del lavoro, disoccupazione e crescita,* by F. SCHIVARDI (December 1999).

No. 365 — *Labor Markets and Monetary Union: A Strategic Analysis,* by A. CUKIERMAN and F. LIPPI (February 2000).

No. 366 — *On the Mechanics of Migration Decisions: Skill Complementarities and Endogenous Price Differentials,* by M. GIANNETTI (February 2000).

No. 367 — *An Investment-Function-Based Measure of Capacity Utilisation. Potential Output and Utilised Capacity in the Bank of Italy's Quarterly Model,* by G. PARIGI and S. SIVIERO (February 2000).

No. 368 — *Information Spillovers and Factor Adjustment,* by L. GUISO and F. SCHIVARDI (February 2000).

No. 369 — *Banking System, International Investors and Central Bank Policy in Emerging Markets,* by M. GIANNETTI (March 2000).

No. 370 — *Forecasting Industrial Production in the Euro Area,* by G. BODO, R. GOLINELLI and G. PARIGI (March 2000).

No. 371 — *The Seasonal Adjustment of the Harmonised Index of Consumer Prices for the Euro Area: a Comparison of Direct and Indirect Methods,* by R. CRISTADORO and R. SABBATINI (March 2000).

No. 372 — *Investment and Growth in Europe and in the United States in the Nineties,* by P. CASELLI, P. PAGANO and F. SCHIVARDI (March 2000).

No. 373 — *Tassazione e costo del lavoro nei paesi industriali, by* M. R. MARINO and R. RINALDI (June 2000).

No. 374 — *Strategic Monetary Policy with Non-Atomistic Wage-Setters, by* F. LIPPI (June 2000).

No. 375 — *Emu Fiscal Rules: is There a Gap?,* by F. BALASSONE and D. MONACELLI (June 2000).

No. 376 — *Do Better Institutions Mitigate Agency Problems? Evidence from Corporate Finance Choices,* by M. GIANNETTI (June 2000).

No. 377 — *The Italian Business Cycle: Coincident and Leading Indicators and Some Stylized Facts,* by F. ALTISSIMO, D. J. MARCHETTI and G. P. ONETO (October 2000).

No. 378 — *Stock Values and Fundamentals: Link or Irrationality?,* by F. FORNARI and M. PERICOLI (October 2000).

No. 379 — *Promise and Pitfalls in the Use of "Secondary" Data-Sets: Income Inequality in OECD Countries,* by A. B. ATKINSON and A. BRANDOLINI (October 2000).

No. 380 — *Bank Competition and Regulatory Reform: The Case of the Italian Banking Industry,* by P. ANGELINI and N. CETORELLI (October 2000).