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How does regulation affect the organizational form of foreign banks' presence in developing versus developed countries?*

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Abstract

Using a unique hand-collected dataset of 1,251 European Union banks and 20,850 foreign affiliates hosted in 154 countries, this paper investigates how both host country and home country regulation affect the decision on where and how to go abroad in developing countries as opposed to developed countries. We find that banks prefer high-income countries with numerous activity restrictions and weaker supervision but less developed countries with less restrictions and stronger supervision. In all cases, they avoid locations with stronger capital regulation than at home. Regarding the choice of foreign organizational form (branches versus subsidiaries), banks rather operate subsidiaries in both high and middle-income countries with stringent entry requirements but prefer branches in developing countries with stringent capital requirements and greater supervisory power. Our findings contribute to the literature examining bank internationalization and have several policy implications for regulatory reforms in developing and developed countries.

JEL classification: F23, F63, G21, G28

Keywords: Bank regulation, Cross-border entries, Foreign branch, Foreign subsidiary, Economic development

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1. Introduction

The liberalization of financial systems in most developing countries has totally reshaped the structure of banking industries worldwide and led to an intensive development of multinational banks [Kindleberger (1983), Berger et al. (2000), McCauley et al. (2010)]. Banking markets which were previously highly protected and regulated, specifically in developing countries, have experienced significant changes with a stronger presence of foreign banks. Over the decades, to benefit from such trends, banks have mastered cross-border lending plans through syndicated loans, engaged into mergers and acquisitions of domestic and foreign entities or, opened de novo entities [Focarelli and Pozzolo (2001), Focarelli et al. (2002), Buch and DeLong (2004)]. Yet, foreign bank penetration strategies are dependent on market characteristics and regulations in place in each country [Goddard et al. (2007), Buch et al. (2014)].

This paper investigates the determinants and the organizational forms of foreign bank presence in developed as opposed to developing countries by focusing on the regulatory environment in both home and host countries. We hereby build a bridge between two strands of the literature dedicated to banks' international expansion. Some works have looked into how banks go abroad (foreign branch or subsidiary) [Ball and Tschoegl (1982), Dell'Ariccia and Marquez (2010), Fiechter et al. (2011)] and into the impact of international banking regulations [Barth et al. (2001, 2004, 2008, 2013), Carbo-Valverde et al. (2012), Houston et al. (2012), Cihak et al. (2012), Karyoli and Taboada (2015)]. Other papers have investigated the presence and the role played by foreign banks in developing countries specifically [Clarke et al. (2003), Cerutti et al. (2007), Cerutti et al. (2010)]. We hence fill a gap by examining the determinants of banks' expansion abroad, in developed countries as opposed to developing countries, and under which form such expansion takes place. Specifically, among the different aforementioned strategies of internationalization, we look into why banks operate in a host country rather with branches or with subsidiaries. In particular, we construct a unique hand-collected database of banks in the European Union and their affiliates in 154 countries. Taking into account the level of economic development is important because the effectiveness and actual role played by regulatory factors is expected to be different in mature and in emerging financial systems.

Organizational forms play a major role because they deeply shape the constraints in terms of legal responsibility and financial support for the expanding bank. A subsidiary, which is an entity with 50% or more of its shares owned by another company, competes

directly and deeply on the domestic market, engages in full banking activities, abides the laws of that country, owns a full accounting statement, and is a total independent entity from the parent bank. On the contrary, a branch is an extension of the parent bank which undergoes the home country supervision and all its activities, assets, incomes, and costs are accounted for by the parent bank. The evolution of the organizational structure of a multinational bank can be measured by the number of its foreign subsidiaries and branches. Ball and Tschoegl (1982), Fisher and Molyneux (1996), Breakley and Kaplanis (1996), Herrero and Martinez Peria (2007), and Dell'Ariccia and Marquez (2010) highlight the differences between running a subsidiary or a branch in a host country. A subsidiary operates under limited liability and therefore the parent bank is shielded from great losses and yet more exposed to expropriation risk. Conversely, with a branch, the parent bank maintains its capital at home and to some extent avoids some of the constraints imposed by foreign regulators.

Our study builds on the existing literature on multinational banks' foreign operations and extends it to account for the organizational forms banks develop abroad given the regulation in place and the degree of development of each country. We construct for the year 2013 a sample of 1,251 banks from the 28 European Union countries. 289 of these banks conduct foreign activities under 20,850 foreign affiliates in 154 host countries with different levels of economic development. Following Barth et al. (2001, 2004, 2008, and 2013) and their survey updated in 2012, we build for all home and host countries four bank regulation indexes that measure the entry requirements into the banking system, the restrictiveness in bank activities, the stringency of capital requirements, and the power of supervisors. Our aim is to investigate how regulation affects the organizational form of banks' presence in developing as opposed to developed countries. From this perspective, our work is closely linked to Cerutti et al. (2007) who show that the world's top 100 banks look at legal differences when operating either branches or subsidiaries in Latin America and Eastern Europe. We extend the literature by specifically differentiating the level of development of the host countries as a factor that could influence the type of entry and business model in presence of a different regulatory environment. First, we determine both home and host factors and bank characteristics that influence the presence of banks in high-, middle-, or low-income foreign countries. Second, after controlling for the factors that explain such foreign expansion, we analyze whether banks penetrate the host market with an exclusive business model of subsidiaries only or branches only or with a dual business model of both forms. Our findings show that rather than countries with weak regulation, banks prefer being present in countries with strong bank regulation and supervision. Such a result is amplified in low-

income countries where severe entry conditions, stringent capital requirements, and greater supervisory power increase the likelihood for banks to operate foreign entities. Nevertheless, bank activity restrictions make low-income countries less likely to host foreign banks. Moreover, banks are more likely to run foreign branches in high-income countries that strongly restrict their activities and in middle and low-income countries with stringent capital requirements and supervisory power.

The remainder of the paper is organized as follows. Section 2 reviews the literature and Section 3 describes the data, the foreign organizational form variables we construct, and presents the empirical methodology as well as the other variables used in our study. In Section 4 we discuss the results and in Section 5 we perform some additional estimations and robustness checks. Section 6 concludes and provides some policy implications.

2. Related literature

2.1. Banks' foreign presence and regulatory restrictions

Previous research on bank internationalization has looked in different directions. Many papers have focused on foreign entry in the U.S. or entry by U.S. banks in foreign countries. Fieleke (1977) surveys the growth of U.S. banking abroad and argues that the observed fast expansion is essentially motivated by the profitability of foreign branches and the stability of lending rates in host countries which contributes to lower risk. Other papers have shown that because of former regulatory restrictions and government obstacles to foreign activity, the establishment of foreign banks affiliates had strongly relied on past cross-border experience, the maturity of the foreign banking market, per capita income, foreign direct investment (FDI), and foreign trade [Goldberg and Saunders (1980, 1981a), Hultman and McGee (1989), Groose and Goldberg (1991), Heinkel and Levi (1992), Goldberg and Groose (1994), Shiers (2002)]. Regulation plays an important role in foreign expansion as a bank might target fragile countries with low requirements and high expected profits to evade stricter conditions at home. The authors also find that these factors affecting the decision to expand overseas do play significant and different roles in the choice of the organizational entity set in foreign markets. Considering that a foreign branch undergoes the parent bank's country regulation and that a foreign subsidiary abides the host country regulation, the motivations behind how to penetrate foreign markets differ greatly. From the literature, FDI had a major influence on the extent of U.S. branching activity around the world and the extent of foreign subsidiaries in the U.S., banks from countries with small capital markets tended mainly to establish

subsidiaries, and foreign branches were sometimes used as a method to escape home banking regulation. Other works highlight the importance of expertise in banking services, participation in interbank markets and the concentration of multinational customers and firms [Terrell and Key (1977), Goldberg and Johnson (1990), Parkhe and Miller (1998)]. They point to the facts that establishing foreign subsidiaries needs a capital injection which require the parent bank to have internal equity capital in excess or to raise it on the market. They also find that banks usually establish branches to serve their international customers through wholesales banking services whereas subsidiaries are often used to conduct retail banking business and compete strongly with local institutions. Globally, similar conclusions have been reached in studies focusing on other countries such as Indonesia [Cho (1990)], Japan [Yamori (1998)], Germany [Buch (2000)], and China [Xu (2011)].

The numerous reforms of domestic and international banking regulations have continuously raised conflicting questions about the management of foreign-owned institutions and the stabilization of financial markets. Some authors have argued that more stringent regulatory requirements significantly affect cross-border banking as banks can either invest in a stringent country if they prefer to secure their investments rather than pursuing potentially high but not guaranteed profits or avoid such locations where they might have less room for maneuver. For instance, examining over 3,000 international bank mergers, Buch and DeLong (2008) find that the significant effect of tougher supervisory authorities on mergers differ as it is negative in the acquiring home countries and positive in the targeted host countries. Banks from less supervised country are attracted to countries with strong supervision where they wish to export their domestic loopholes and engage in aggressive competition with local institutions which are constrained by their strong local supervisors. As authorities of such host markets fear an increase of risk from foreign investors, they will discourage mergers. Hence, weak host country bank supervision could give banks the ability to shift risk from themselves to both home and host supervisors. Moreover, by investigating the effects of banking market structure, governance, and changes in bank supervision, Chen and Liao (2011) find that the compliance of the host country to the Basel guidelines increases foreign bank operations and profitability. Further, Allen et al. (2012) assess the impact of the Basel III banking regulation reforms and find that in the long-term the structural implications might reduce the supply of credit, and disrupt the economy. Regarding the stringency of capital and liquidity requirements, they also find that operating a foreign subsidiary will be less likely in the short run. Finally, other papers conclude that depending on bank's ownership structure, home bank

regulation, in terms of greater capital requirement, tighter restrictions on bank activities, stringent supervisory power, and lower barriers to entry amplifies costs, reduces foreign bank lending standards and leads to an increase of risk-taking activities in foreign markets and cross-border risks spillover [Laeven and Levine (2009), Ongena et al. (2013)].

2.2. Foreign bank presence, economic development, and crisis

Another strand of the literature has focused on foreign bank entry in emerging, transition and developing countries and examined the implications on domestic markets. Goldberg and Saunders (1981b), Miller and Parkhe (1998), and Clarke et al. (2003) have documented that besides chasing their customers abroad[2], foreign banks are principally interested in exploiting local lending opportunities and are more likely to use subsidiaries than branches to provide a wide range of activities. Jeon et al. (2011) examine the link between foreign bank penetration and the competitive structure of host emerging banking sectors in Asia and Latin America and find spillover effects from foreign to domestic banks. Bonin et al. (2014) analyze the evolution of banking in transition countries from Central Eastern Europe (CEE), South Eastern Europe (SEE), and the former Soviet Union (FSU) and study the effect of the global financial crisis. They show that the banking sector in such regions consists in a majority of foreign-owned institutions and has experienced significant retail credit surges over the years. Yet, given the local regulatory and supervisory policy responses the systemic impact in the three regions was rare and banks overall outperformed banks in more developped countries. Going further in considering both developed and developing markets, other studies show that because foreign banks perform better than domestic banks, higher competition either increases the efficiency and financial stability of the host country banking industry [Claessens et al. (2001, 2007, 2014), Lensink and Hermes (2004), Olivero et al. (2011), Giannetti and Ongena (2012)], or accelerates consolidation through mergers or acquisitions [Clarke et al. (2006)]. Koçak and Özcan (2013) have deeply documented the literature of multinational firms' market entry decisions from four theoretical perspectives namely strategic interactions, economic geography externalities, density dependence in ecological traditions, and institutional rules. Additionally, in times of crises, Adams-Kane et al. (2013), de Haas and van Lelyveld (2014), and Cerutti (2015) show that foreign banks that are exposed to their parent home country risk after a crisis and that are not supported by their parent bank through a group internal capital market change their patterns of lending by

[2] See Williams (2002) for a review of the literature on the "follow the customers" internationalization hypothesis.

decreasing credit supply in emerging, transition and developing host countries. However, foreign banks from non-crisis developed parent home countries increase their lending relatively to developing domestic institutions. Also, countries that have experienced a crisis tend to face higher foreign bank entry after the crisis than before [Cull and Martinez Peria (2007)].

3. Data and model

In this section we describe our sample of banks, the method we use to look into each bank's organizational structure abroad, and present the econometric specification used to estimate the likelihood of banks' presence abroad and the foreign affiliate types in host countries. We also present the country-level regulatory and institutional variables and bank-level variables used in our investigation.

3.1. Banks and their international affiliates

Our study is based on a hand-collected database specifying where and how banks are present abroad. Considering the European Union[3] (EU) with the diversity of the 28 countries and at the same time some similarities due to the economic integration in the Union [Goddard et al. (2007)], probably all specificities of bank foreign expansion can be observed at once. Thus, banks headquartered in the EU should provide a relevant environment for our empirical analysis. The data on banks and subsidiaries are retrieved from the Bureau Van Djik (BvD) Bankscope database and some of the banks' web sites. Additionally, to complete the number of affiliates, we hand-collect all the branches and their location from the SNL database. At the time of collection, branch data was available for the year 2013 only and due to the absence of a historical database, our database of banks' affiliates is limited to 2013. Checking on banks' web sites the locations and number of the affiliates abroad across 5 years (2010–2014), we did not find a significant difference in organizational structure in 2013 relatively to 2012 and 2011, unlike for the other years. Therefore, we assume that the structure observed in 2013 can be applied to 2012 and 2011 and hence, this study is based on the period 2011–2013. We extract from Bankscope information on 4,900 European banks. However, in order to keep the most representative institutions, we apply filters regarding the availability of all financial

[3] EU countries are Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and United Kingdom.

information and the nature of the main activity[4] of the bank. We end up with 1,251 European Union (EU) banks. 434 of these banks are global ultimate owners (EU GUO)[5], 358 are the controlled subsidiaries (CS) of these EU GUO (i.e. EU CS), and 459 banks are subsidiaries controlled by an ultimate owner outside the EU (i.e. non-EU CS).

[Insert **Table 1** here]

Table 1 reports the sample of 28 EU countries, the number of banks for each country and the number of countries where banks are established abroad. We observe that Germany and France have the highest number of banks whereas Lithuania and Estonia have the fewest. Of the 289 banks of our sample with operations in at least one of the 154 host countries, 43 French banks are present in 69 foreign countries, 34 German banks in 68 countries, 34 Italian banks in 30 countries and 25 British banks in 66 countries.

To identify the expansion of the 1,251 banks, we filter the full data set of affiliates and link each affiliate to its direct owner. Specifically, we identify all affiliates in the database by their official identification number and we mark those for which we observe more than one occurrence. Focusing on the marked entities and the associated bank at each time of appearance, we go through websites and annual reports to determine which bank is the direct parent of the affiliate. Hence a foreign branch or a foreign subsidiary is accounted only once as the affiliate of its immediate owner. Overall, to avoid duplicates of affiliates in the sample, we control whether the affiliates of a EU CS, a EU GUO, or a non-EU CS are identified only as the affiliates of their direct CS or GUO parent and we remove them elsewhere in the database if not.

[Insert **Table 2** here]

Table 2 shows the distribution of all the 154 home and host countries into three income-groups. Going from the four groups of countries in the 2013 classification of the gross national income (GNI) per capita from in the World Development Indicators (2015)[6] by the World Bank, we construct our three income-group specifications used in this study. Indeed,

[4] We consider six types of specialization: Bank Holding & Holding Companies, Commercial Banks, Cooperative Banks, Investment Banks, Real Estate & Mortgage Bank, and Savings Bank.

[5] We work only with the Global Ultimate Owner (GUO) and the Controlled Subsidiary (CS) entities defined in Bankscope at the control level of 50.01% of shares, i.e. GUO is a company which is the ultimate owner of a corporate group according to the ultimate ownership definition of at least 50.01% and the CS is a company which is controlled or majority owned at least at 50.01% by another company. A widely-owned bank (with no majority shareholder) is also classified as a GUO.

[6] In the original classification, the World Bank divides the countries into four groups according to 2013 gross national income (GNI) per capita: low-income (GNI ≤ $1,045), lower-middle-income ($1,045 < GNI ≤ $4,125), upper-middle-income ($4,125 < GNI < $12,736), and high-income (GNI ≥ $12,736).

due to the scarcity of country-level data and the relatively closeness of some countries to each other, we merge the two lowest categories to create our low-income group. In this paper, 55 low-income economies are defined as those with a GNI per capita of $4,125 or less; 35 middle-income economies have a GNI per capita of more than $4,125 but less than $12,736, and 64 high-income economies, a GNI per capita of $12,736 or more.

To identify banks' foreign strategy, we create a binary variable, $Foreign_{i,j,k}$, which takes the value 1 for each affiliate of bank *i* from EU country *j* located in a country *k* ($\neq j$), and 0 if there is no representative of the bank in *k*. We then build a second qualitative variable that maps the business models of banks each time $Foreign_{i,j,k}$ is equal to 1. This second variable $Affiliate_{i,j,k}$ accounts for the three possible choices of expansion in country *k*. $Affiliate_{i,j,k}$ takes the value 0 when bank *i* operates solely with subsidiaries in host country *k*, 1 when it operates only with branches, and 2 when it operates both branches and subsidiaries.

[Insert **Table 3** here]

In 2013, the dataset is made of 1,251 parent banks of which 289 conduct activities in 20,850 foreign affiliates across 154 countries. Table 3 presents the distribution of foreign branches and subsidiaries by continents and income-groups. Regarding that presence of banks affiliates abroad, we distinguish the exclusive business model with only one type of organizational form in the host country *k* from the dual model with both forms in the host country *k*. The exclusive model numbers 713 subsidiaries only and 2,595 branches only while the dual model totalizes 309 subsidiaries and 17,233 branches[7]. Gauging banks' foreign strategy by a simple foreign subsidiaries/foreign branches ratio FS/FB, we can see that foreign presence takes less the form of subsidiaries than branches and that this tendency is more pronounced in Europe (0.056) and America (0.027) than in other continents (Africa (0.745), Pacific (0.148) and Asia (0.108)). Rather than branch, banks prefer to operate the subsidiary structure in the world regions with predominantly low-income group countries.

3.2. Econometric methodology

Our aim is to evaluate how both home and host countries' bank regulations affect the likelihood for banks to expand in developed and developing foreign countries and the

[7] We do not report the detailed number of foreign affiliates and form of presence in each host country. The tables are available from the authors upon request.

organizational strategies banks build abroad. The empirical methodology is hence structured to address the two questions of foreign banking location and business models.

First, we run a Probit model to estimate the likelihood for a bank to operate an affiliate in a host country or not. We determine the factors that influence the decision of expanding abroad; i.e. the dummy $Foreign_{i,j,k}$ takes the value 1, and more specifically in each of the three income-group countries. The first part of our analysis is modeled as follows:

$$Foreign_{i,j,k} = \begin{array}{c} \alpha_0 + \beta_1 Country_Regulation_{j,k} \\ + \beta_2 Host_GDP\ per\ Capita\ (log)_k \\ + \beta_3 Country_Institutional_{j,k} \\ + \beta_4 Bank_Financial_i + \varepsilon_{i,j,k} \end{array} \qquad (1)$$

where $\text{Country_Regulation}_{j,k}$ is a vector of home and host countries' bank regulation variables: *Host_Entry into Banking Requirements*, *Diff (Host-Home)_Bank Activity Restrictions*, *Diff (Host-Home)_Capital Regulatory index*, and *Diff (Host-Home)_Official Supervisory Power*. *Host_GDP per Capita (log)*$_k$ captures the host country level of development; $\text{Country_Institutional}_{j,k}$ is a vector of both home and host countries macroeconomic, market structure and institutional variables: *Diff (Host-Home)_Economic Freedom score*, *Host_Foreign Bank Share*, *Host_Bank Concentration*, *Host_Depth of Credit Information index*, *Host_Size (log GDP)*, the dummy *Common Official Language*, *Distance* between capitals in kilometers, and *Bilateral Trade ratio*. The Bank_Financial_i vector of individual bank-specific characteristics is comprised of the *Specialization* dummy variable, the cost to income ratio (*CIR*), the loans to total assets ratio (*L_TA*), the non-interest income to net income ratio (*NII_NI*), the return on average assets (*ROAA*), and bank size (log of total assets (log*TA*)).

When estimating Eq. (1) for each high-, middle-, and low-income-group country, we remove the host country GDP per capita among the explanatory variables.

Second, we go deeper in the study of banks' internationalization strategies by focusing on the business models banks establish in a host country by investigating whether they follow a single strategy (exclusive choice of affiliate type) or a dual strategy (dual choice of an affiliate type). Indeed, while some multinational banks operate a strict and exclusive organizational form in the host country with either foreign subsidiaries only or foreign branches only, others set up both types of affiliates in the same host country.

To conduct our analysis, we estimate the variable $Affiliate_{i,j,k}$ that maps the organizational strategies banks develop abroad.

$$Affiliate_{i,j,k} = \begin{array}{c} \alpha'_0 + \beta'_1 Country_Regulation'_k \\ + \beta'_2 Host_GDP\ per\ Capita\ (log)_k \\ + \beta'_3 Country_Institutional'_k \\ + \beta'_4 Bank_Financial'_i + \varepsilon_{i,k} \end{array} \qquad (2)$$

Focusing only on the importance of host country factors in determining banks' organizational form, the vector Country_Regulation'$_k$ now refers only to the four host country bank regulation variables. Country_Institutional'$_k$ is reduced to *Host_Foreign Bank Share* and *Host_Size (log GDP)*, and Bank_Financial'$_i$ comprises the *Specialization* dummy variable, the cost to income ratio (*CIR*), the equity to total assets (*EQ_TA*), the net interest margin (*NIM*), the non-interest income to net income ratio (*NII_NI*), the return on average assets (*ROAA*), and bank size (log*TA*).

Considering the organizational forms represented by $Affiliate_{i,j,k}$, we proceed with two methods that will fully capture the different business models.

In a first approach, we focus on observations relative to banks that choose to establish a unique type of affiliate in a particular host country. We examine this special case in order to have greater chance of identifying which factors can be associated to the set-up of branches rather than subsidiaries in a host country. Yet, as the issue of "how" banks expand abroad is observable after a bank has decided "where" to expand, we model the sequential process in order to account for the selection bias in the second stage of the decision process. We run a Heckman[8] two-step sample-selection model for banks that conduct foreign activities with a unique type of affiliate in previously chosen host countries. The first step is based on Eq. (1) in which we use/consider the value 1 of the dependent variable $Foreign_{i,j,k}$ only when all the affiliates of a bank *i* in the host country *k* are of the same type (subsidiaries or branches exclusively). Through this first step, we investigate the factors that affect banks' decision to establish exclusive business entities abroad. In the second step of the Heckman procedure, we determine the likelihood to operate with foreign branches only instead of foreign subsidiaries only. So, we solely consider the cases where $Affiliate_{i,j,k}$ takes the value 1 (i.e. only branches) or 0 (i.e. only subsidiaries).

[8] Heckman (1976, 1979), Puhani (2000), Lee (2003), Greene (2012)

Second, we also follow a broader approach by considering the three outcomes of the dependent variable $Affiliate_{i,j,k}$ and therefore including the value 2 (i.e. both branches and subsidiaries). This allows us to use the whole sample to estimate Eq. (2) with a multinomial Probit model and determine the likelihood for a bank *i* from home country *j* to conduct its activities in host country *k* through either both foreign organizational forms or only one form: branch or subsidiary.

In both approaches, to estimate Eq. (2) for each high-, middle- and low-income-group specification, we do the same as for Eq. (1) and remove the host country GDP per capita.

3.3. Country-level bank regulation variables

We follow Barth et al. (2001, 2004, 2008, and 2013) to define regulatory variables and use the data from the Bank Regulation and Supervision Survey (BRSS) carried out by the World Bank towards each country regulatory authorities. We use information giving the state of regulation in 2010 to create four country-level regulation and supervision variables.

The four indexes that we use are the following[9]:

Entry into Banking Requirements is an index that accounts for all the documents that are legally required to be submitted before the issuance of the banking license in the country. Its value ranges from 0 to 9 and a higher value indicates a more restrictive entry and should positively drive the establishment of foreign subsidiaries [Cerutti et al. (2007)].

Bank Activity Restrictions is an index that assesses the ability for a bank to can engage in securities activities, insurance activities, real estate activities, and nonfinancial businesses except those businesses that are auxiliary to banking business. The index ranges from a lowest stringency at 1 to the highest at 16 when limitations of banking operations are extremely stringent. As Goldberg and Saunders (1981b), Miller and Parkhe (1998), and Clarke et al. (2003) have highlighted that subsidiaries offer a wider range of activities than branches, we expect a higher value of this index to be associated with a higher occurrence of subsidiaries than branches.

Capital Regulatory Index is a variable that ranges from 0 to 18 and provides information on certain risk elements, market value losses, and minimum capital rules. Also, it tells us whether certain funds were used to initially capitalize a bank and whether they are officially verified. As a branch does not own any personal capital, a high index means greater

[9] We provide in Appendix A the detailed description of all four indexes from the Barth et al. BRSS (updated in 2012).

stringency which negatively affects the probability to operate a foreign subsidiary. Setting up an independent entity such as a subsidiary imposes for parent banks to raise a larger amount of funds [Goldberg and Saunders (1981a), Dell'Ariccia and Marquez (2010), Ongena et al. (2013)].

Official Supervisor Power is an index that evaluates whether supervisory authorities have the power to take specific preventive and corrective actions on the basis of auditing, internal/board/ownership rights structure, profits and losses and other balance sheets items. The index ranges from 0 to 22 and a higher value indicates a greater power. The effect of this variable can go both ways for the choice of the host country as well as for the choice of the form of entry [Buch and DeLong (2008), Chen and Liao (2011), Ongena et al. (2013)]. Banks might prefer stringent countries where they expect a tougher supervision that will limit excessive risk-taking behavior. Conversely, some institutions might look for a weaker control and a freedom to run their business anyhow. Also, we expect different effects on the choice of the affiliate types since a subsidiary is totally under the supervision of the host country regulators and a branch complies with the parent home country directives.

As a bank might consider its home country regulation comparatively to the host country regulation as an important factor, we calculate the differences between home country and host country regulation for the three latter variables by subtracting home country values from host country values *Diff (Host-Home)_Bank Activity Restrictions*, *Diff (Host-Home)_Capital Regulatory index*, and *Diff (Host-Home)_Official Supervisor Power*.

[Insert **Table 4** here]

Table 4-a reports for the full sample of 154 countries and each income-group (high-income, middle-income and low-income) the descriptive statistics of all four bank regulation and supervision variables for the year 2010. Between the three income-groups, the statistical analysis indicates few and weak differences in the scatter of the extremes values (minimum and maximum). Yet, on average, low-income host countries have the most stringent bank activities restrictions and bank entry requirements. Home countries and high-income host countries have the highest capital requirements and middle-income host countries the lowest. Moreover, banks in low-income countries face a closer and tighter supervision than those in other countries.

For each country we sum all four indexes to define a variable named Global Regulation that ranges from 23 to 48 and we split it into three levels that identify different intensity of regulation: Stringent [40-48], Moderate [36-40], and Lax [23-35]. In Table 4-b the ratio of

foreign subsidiaries to foreign branches (FS/FB) indicates that the tendency of establishing foreign subsidiaries is higher in stringent (0.087) and lax (0.061) regulated host-countries than in the moderate ones (0.033). From Table 4-c we can see that regardless of the level of economic development, having lax regulation is always associated with the higher ratio FS/FB (0.081, 0.103, and 0.325 respectively in high-, middle-, and low-income countries). However, the ratio of foreign subsidiaries to foreign branches observed in the case of low-income countries with stringent regulation (0.211) indicates that when banks expand in developing and highly regulated economies, they likely prefer to operate the subsidiary structure.

3.4. Country-level macroeconomic, market structure and institutional variables

Various macroeconomic and institutional factors can also influence the bank's decision to enter a foreign country and the affiliate structure established abroad. Globally, most of the variables we use are common in the literature on bank internationalization strategies and come from the Financial Development and Structure dataset (2013), the Global Financial Development Database (2015), and the World Development Indicators (2015) provided by the World Bank.

We consider *GDP per capita*[10] as the likelihood to attract foreign investors is expected to be higher for developed economies. This variable captures the level of economic development and business opportunities in the host country [Yamori (1998), Buch (2000), Claessens et al. (2001)]. A high-income country is more likely to attract subsidiaries than branches as through a deeper penetration of the local markets, a subsidiary signals a desire to establish a stronger link in the host country, and is then better suited to ensure the loyalty of the bank to its wealthier customers and vice-versa [Kindleberger (1983), Chou and Shen (2014)].

Because multinational banks are found to be more attracted by host countries with higher GDP [Brealey and Kaplanis (1996) and Focarelli and Pozzolo (2001), Buch and DeLong (2004)], we also use the natural logarithm of the *gross domestic product (logGDP)* as a measure of country economic size. As the development of foreign branches and subsidiaries might depend on the past and current cross-countries relationships, we use CEPII[11] and

[10] We test the robustness of the results with the growth rate of the per capita GDP and find the coefficient signs not to be significantly different.
[11] CEPII distance measure: Mayer and Zignago (2011); CEPII language: Melitz and Toubal (2012).

OECD data to build three variables to measure the home and host countries' economic and cultural closeness. We introduce the natural logarithm of the *Distance* in kilometers between the capital cities and we expect a negative effect of this variable on the likelihood of being present in host country. As the proximity of a country to other countries and markets strongly and positively drives the choice of that country by multinational enterprises (MNEs) [Nachum et al. (2008)], parent banks as well tend to maintain their foreign investments in places close-by [Fisher and Molyneux (1996), Buch (2003, 2005), Claessens and van Horen (2014)]. *Language* is a variable equal to 1 when at least one official language is spoken in both the home and the host country and 0 otherwise. As a proxy of cultural proximity, this binary variable should have a positive effect on the probability of choosing a given country [Berger et al. (2001), Buch and DeLong (2004), Cerutti et al. (2007), Chou and Shen (2013, 2014)]. *Bilateral trade ratio*[12] is computed from the flow of transactions in goods and services between the EU country of origin and the 154 host countries. High commercial and corporate exchanges[13] indicate a strong bond and are likely to intensify cross-border banking operations. The bilateral trade ratio also stands for the "follow-the-customer" hypothesis in the choice of a host country [Kindleberger (1983), Nolle and Mohanty (1998), Esperanca and Gulamhussen (2001), Chou and Shen (2014)].

We also consider a set of host country banking market variables and institutional variables. *Bank Concentration* measures the percentage of aggregate bank assets held by the three largest banks in the country. A concentrated system could reflect low competition and discourage foreign investors from entering the market [Goldberg and Rai (1996), Sengupta (2007), Claessens and van Horen (2007), Tabak et al. (2012)]. We also account for transparency by considering the *Depth of Credit Information*, an index which measures the rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. This variable ranges from 0 to 8 and signals the extent to which information is available to facilitate lending decisions, reduce banks' information costs, and sharpen the interest of investors for the country. Banks are more likely to enter countries

OECD (2014) "STAN Bilateral Trade Database by Industry and End-Use Category, Rev. 4." OECD-WTO

[12] This variable is the ratio of the home country *j* imports from host country *k* in US dollar and its exports to the same host country *k* over the total volume of imports and exports of that EU country *j* in US dollar $= \frac{Imp_{Host_k \to Home\ EU_j} + Exp_{Home\ EU_j \to Host_k}}{Imp_{All \to Home\ EU_j} + Exp_{Home\ EU_j \to All}}$

[13] An alternative would be to consider the foreign direct investments between countries as in Ball and Tschoegl (1982) and Buch (2000). Due to data limitation, we use the bilateral trade ratio. Note that the volume of exports and imports has been used in former papers to measure the power of corporate customers [Groose and Goldberg (1991), Miller and Parkhe (1998), Focarelli and Pozzolo (2005)].

with private credit reporting agencies that provide high information quality as it reduce starting business' costs for newcomer banks. The results of Tsai et al. (2011) and Chou and Shen (2013) suggest that banks prefer branch entry in a country where a private credit bureau exists, but if this country's credit information quality is high enough, banks tend to prefer a subsidiary entry to a branch entry. We also account for *Foreign Bank Share* which is the ratio of the number of foreign-owned banks (more than 50% of shares are owned by foreigners) to the total number of banks in the system. The expected sign of this variable is undetermined. A higher share of foreign-owned banks in a country can reflect a more business friendly market for foreign investors. Alternatively, because the market can be considered as crowded with foreign entities, this could also reduce the appeal and the expansion in that country [Koçak and Özcan (2013)] especially if licenses become less accessible. Additionally, we retrieve the *Economic Freedom score*[14] from the Heritage Foundation web site. This score ranges from 0 to 100 and is an equally weighted average of ten quantitative and qualitative indicators. This variable captures the global risks, strengths and weaknesses of economies and conveys critical information on human dignity, autonomy and personal empowerment. We use it to construct the variable *Diff (Host-Home)_Economic Freedom Score* by subtracting the home country score from the host country score. We expect the freest nations to be the most likely to host international activities [Chou and Shen (2014)].

[Insert **Table 5** here]

In Table 5 we report the descriptive statistics of all the macroeconomic, market structure and institutional variables calculated on the basis of the 3-year averages from 2011 to 2013. The table also shows the full sample of countries, and each income-group: high-income, middle-income and low-income. We observe that on average in high-income host countries the banking sector is more concentrated, the economic freedom is the highest and the intensity of bilateral trade with the home EU countries is the strongest. As expected, low-income host countries are less transparent with regards to lending operations. They also exhibit lower economic freedom and are less engaged in bilateral exchanges with home countries.

[14] The Heritage Foundation: The 2015 Index of Economic Freedom. The overall index is dissociated in four categories of indicators: *Rule of Law* (Property Rights, Freedom from Corruption) ; *Government Size* (Government spending, Fiscal Freedom) ; *Regulatory efficiency* (Business Freedom, Labor Freedom, Monetary Freedom) and *Market Openness* (Trade Freedom, Investment freedom, Financial Freedom).

3.5. Bank-level financial characteristics

From the unconsolidated[15] balance sheets and income statements available in Bankscope, we compute bank-level variables to account for individual factors that could influence the presence and organizational forms of banks abroad. We control for efficiency by considering the cost to income ratio (*CIR*). Less efficient banks have less operating funds which make them are less likely to expand abroad. We also control for bank capitalization by introducing the ratio of equity to total assets (*EQ_TA*). Strongly capitalized banks are expected to expand abroad more easily and, where relevant, operating subsidiaries should be less of an issue for such institutions. Alternatively, in some countries operating branches might also be relatively costly in terms of capital. We further introduce the ratio of loans to total assets (*L_TA*) to control the extent to which banks are focused on traditional intermediation activities and the ratio of non-interest income to net income (*NII_NI*) to capture diversification into other activities such as commission and fee activities and trading activities. A bank's choice of activities (focus versus diversification) is likely to affect the way that it expands abroad. A bank aiming to pursue lending activities is more likely to operate a subsidiary whereas promoting modern banking activities by exporting the mother bank's skills and technology is expected to be easier through branches [Miller and Parkhe (1998)]. Also, we control for bank primary activity. *Specialization* is a dummy variable equal to 1 when retail banking is the principal activity of the bank and 0 when they engage mainly in wholesale banking services. As argued in Goldberg and Saunders (1981b, 1990), through their lending and deposit-taking operations, retail-oriented institutions rely on interest revenues which are less risky and they tend to serve their foreign customers in their foreign subsidiaries. Additionally, we consider the net interest margin (*NIM*) to measure how the performance of banks' investments affect their internationalization decisions, and the return on average assets (*ROAA*) to assess the effects of bank profitability. We expect better performing and profitable banks to engage more in foreign operations as they might benefit from economies of scale from previous activities [Fieleke (1977), Demirguc-Kunt and Huizinga (2000), Focarelli and Pozzolo (2001), Clarke et al. (2003)]. Finally, the natural log of total assets (*TA*) is used as a measure of parent bank size. Large banks might benefit from their portfolios of foreign customers and domestic customers with foreign activities which make them more likely to develop broader international networks. Also, the bigger a bank

[15] We do use unconsolidated data but, given the accounting requirements for subsidiaries and branches and the different level of responsibility towards the parent bank, the financial information of branches could not be separated from the balance sheet of the parent bank whereas all subsidiaries own an independent balance sheet.

gets, the smaller the local market might seem, and hence, foreign markets become more attractive in terms of profit opportunities, and business or risk diversification [Tschoegl (1983), Groose and Goldberg (1991), Cerutti et al. (2007)].

[Insert **Table 6** here]

Table 6 shows the individual bank variables for the full sample of EU banks and a number of sub-samples. Among the 289 multinational banks, compared to the 56 banks that operate only foreign branches, the 137 banks that are present abroad only with foreign subsidiaries and the 96 banks present with both foreign subsidiaries and branches are larger. Also, although these two subsamples of banks are both less lending-oriented (lower loans to total assets ratio), banks with foreign subsidiaries only are highly profitable and generate the highest interest margin. From these summary statistics, banks with both types of affiliates are the most leveraged and largest by their total assets. Comparatively to the whole sample, banks appear to be more present in foreign countries when they are primarily engaged in retail operations, more efficient in managing their fixed costs, less diversified and when they exhibit higher interest margin.

Table 7 reports the overall correlation matrix of all the variables. On the whole the test statistics reveal no collinearity issues.

[Insert **Table 7** here]

4. Empirical results

For all the tables, we present the results for the whole sample of countries in column (1) and the results for high-income, middle-income and low-income countries respectively in columns (2), (3) and (4).

4.1. Impact of bank regulation and economic development on banks' foreign location

Table 8 presents the results of the Probit estimation of Eq. (1) and shows that home and host countries' bank regulations are critical factors to foreign expansion. From the whole sample of countries, we observe that banks tend to expand in foreign countries with stricter entry into banking requirements meaning that they might favor sound markets where actors are able to provide all the legal submissions required by the authorities to obtain a banking

license. In the same vein, the likelihood to establish affiliates abroad increases when the foreign supervisory power is greater, meaning a preference for countries where banking authorities are expected to be able to prevent and correct a maximum of troubles. However, the presence abroad decreases in host locations with more bank activities restrictions and stringent capital requirements. These findings suggest that in their internationalization process, banks globally seem to aim at diversifying their activities and minimizing the regulatory capital constraints. But, in their prime decision to go abroad, banks from countries with highly regulated banking systems, as most of Europeans banks, are not necessarily trying to take advantage of other countries' regulation and supervision loopholes or trying to escape the stringency of their home authorities. These results extend the findings of Buch and Delong (2008) and Ongena et al. (2013), which have solely focused on the effects of home country regulation.

Looking precisely at the three income-groups of countries, some differences strike out and justify the necessity to take into account the level of economic development to go deeper in the understanding of the impact of regulation on the internationalization of banks. Alike the whole sample results, host country entry requirements have a positive and significant effect on the penetration in high-income countries. Probably banks from regulated and rich countries might prefer secured host markets in similar developed economies. Conversely, in middle- and low-income locations, the likelihood to run a foreign activity decreases with the stringency of entry requirements. Banks might weigh the benefits of entering these markets against the regulatory costs of entering and operating an affiliate. As well, a wider host-home difference in bank activity restrictions do not supports the presence of banks in middle- and low-income countries. This suggests that banks might engage in cross-border operations with developing economies to diversify their activities. Stringent capital requirements have a uniform negative influence on the likelihood to expand a foreign network, in high- and middle-income countries but no impact in the low-income group. Also, banks are more likely to establish affiliates in high-income countries with a supervisory power weaker than the domestic one which is the opposite in middle-income countries.

On a whole, our results conclude that parent banks have a highly significant incentive to expand in countries with stringent entry requirements into their banking system. As well, comparatively to their home regulation, banks seem to strongly prefer to establish their affiliates in locations with lower restrictions on bank activities and fewer capital rules but with higher power of supervisory authorities. However, across the three income-groups, there are strong peculiarities. In rich countries, banks prefer to settle where more stringent entry and

activity conditions lead to sound and secured banking markets, and consistently where the controlling authorities are then more lenient. In middle-income economies, banks seem to seek diversification allowed by wide range of permitted activities but under the supervision of rigorous supervisors. In poorest countries, only diversification guides the choice of banks to settle abroad and it is even the only group of countries where the strength of capital constraints does not hinder the establishment of banks.

In terms of, market structure, macroeconomic and institutional variables, we find that high bank concentration ratio in foreign markets has a negative effect on the entry in all countries. In a host market where the share of assets held by the three largest banks is relatively high, lower profit expectations might discourage foreign bank entries [Claessens and van Horen (2007)]. In addition, considering all host countries, foreign bank share is positively associated with the likelihood to host more foreign entities. The strong presence of foreign banks in a host country signals the attractiveness of the market as it can increase the efficiency and profitability of that local banking sector, and attract new investors [Jeon et al. (2011)]. This result stands particularly for high- and low-income economies with the exception of middle-income countries which have markets in transition and halfway between emerging and developed state. Regarding the depth of credit information, the existence of public and private credit bureaus, coupled with the availability and higher information quality on borrowers is found to favor foreign expansion consistent with Buch (2003) and Tsai et al. (2011). However, we find the opposite for low-income countries suggesting that, when they expand to developing countries, banks prefer countries where they can be the first movers and where they can play a stronger role in reducing asymmetric information issues on the loan market. Our results also indicate that the likelihood to expand abroad increases with a higher host-home gap in economic freedom scores. Banks from nations with freer rules of law, government size, regulatory efficiency and market openness preferable expand in as free nations possibly because successfully running their businesses might be easier to achieve. In the line of macroeconomic criteria, the size of the host country, measured by GDP, matters and encourages the presence of banks in foreign countries. However, comparing the three groups of countries, we observe an opposite yet slightly significant sign for high-income economies. Foreign banks probably anticipate fewer profits for new entrants and hence target less the richer countries. This finding is mirrored by the negative impact of high revenue per capita obtained for the whole countries estimation in column (1).

Regarding individual bank characteristics, retail-oriented banks are more likely, than other types of banks, to expand in developed as well as developing host countries. This result is in line with previous evidence on the internationalization of retail-oriented banks [Goldberg and Saunders (1981), (1990)]. Our findings suggest that traditional intermediation-oriented banks might benefit from economies of scale and scope and use their expertise in screening small and medium-size borrowers to expand strongly and significantly in both rich countries where the banking system is fully established and in poor countries still in the process of building their banking industry. More generally, as shown by the coefficient of the ratio of non-interest income to net income, more diversified banks, are significantly less likely to expand abroad and specifically in high and middle-income countries. Additionally, as expected, we find that more profitable and larger banks are more likely to expand worldwide in either developed or developing countries; contrary to less costs efficient, loaned-up and less liquid banks with higher cost to income and loans to total assets ratios.

Finally, we note that all gravity variables are highly significant with the expected signs. When the home and the host countries have strong trade ties, are geographically close and share at least one official language, the likelihood of operating a foreign affiliate in the host country increases. These results are consistent with previous findings in the literature on gravity models and international activities [Buch (2003, 2005), Chou and Shen (2014), Claessens and van Horen (2014)].

[Insert **Table 8** here]

4.2. Host country determinants of the choice of banks foreign affiliates

We now discuss the results regarding the influence of bank regulation and levels of economic development on “how” banks settle in foreign banking markets. We first consider the entry strategy with an exclusive organizational form (foreign branch versus foreign subsidiary), and second we account for all three models (branch only, subsidiary only, and both types).

4.2.1. Exclusive foreign business model: Branches versus subsidiaries

In Table 9 we report the results for the second-step[16] of the Heckman estimation of Eq. (2)[17].

From the estimation of the likelihood for banks to expand in a host country with branches exclusively instead of subsidiaries exclusively, we find that host country bank regulation and supervision are indeed critical for foreign organizational form strategies. Considering the global sample with all foreign countries, banks are strongly more likely to establish only branches in locations with fewer requirements to obtain a banking license and weaker supervisory power. Possibly; in foreign countries where the procedures to enter are relatively stringent, and nevertheless banks still desire to conduct operations, they might preferably choose to only set with a stronger structure which is the subsidiary. Yet, at a lower level of significance, we observe an effect in favor of branches when host capital requirements are stringent whereas restrictions of activities do not matter in determining the affiliate' structure. Then considering the three income-group specifications, the results of the rich countries group are quite similar to those of the overall sample, but those of the two others groups show strong discrepancies which validate the need for our thorough analysis of the choice of a foreign business model depending on host countries level of development. We find for intermediate countries that the stringency of entry requirements favors the choice of subsidiaries, as in rich countries, and that strong capital requirements and powerful supervisor favor the choices of branches, as in poor countries where branches are also fostered by the restriction of banking activities.

More specifically, in high- and middle-countries, while banks facing severe bank entry requirements have a greater incentive to operate foreign subsidiaries exclusively rather than branches, those barriers to entry have no influence in the choice of the organizational form established in low-income countries. Moreover, in regards of the weak influence of bank activities restrictions in high- and middle-income locations, banks seem to be weakly tempted

[16] The first step of this procedure determines what factors influence the decision to operate with a unique type of affiliates in a host country *k* and is reported in Appendix B. Briefly on the regulatory aspect, contrary to Table 8, we observe that, regardless the level of development and across all regressions, for banks that wish to set an exclusive business model, the difference of capital requirements between host and home countries portrays a positive, uniform and highly significant influence on the likelihood for banks to conduct foreign operations. As well, considering the whole sample of countries (column (1)) and the middle-income economies (column (3)) we note that banks now have an incentive to penetrate countries with more stringent bank activities restrictions than the home's. However, in developing countries (column (4)), banks greatly adjust their decision of expansion as they seem more likely to have an exclusive foreign presence in low-income countries with numerous barriers to entry, stringent capital requirements and powerful supervisory authorities i.e. banks might have a preference for secured markets in poor economies.

[17] The independence tests of the Heckman two-step model at the bottom of Table 9 confirm that the hypothesis of a selection bias in the choice of the foreign affiliate type cannot be rejected in our sample. The use of a two-step model is hence indispensable to make sure that the obtained results are unbiased.

to establish foreign branches only in high-income countries with more restricted activities and foreign subsidiaries exclusively in middle-income countries with a wider range of permitted activities. However, in poor foreign countries, the likelihood for banks to operate solely with branches is strongly and positively associated to the restrictiveness of bank activities. This last result is in line with Goldberg and Saunders (1981b), Miller and Parkhe (1998), and Clarke et al. (2003). As foreign banks are interested in exploiting diversified profits opportunities abroad, they are more likely to use subsidiaries rather than branches to provide a wide range of activities where possible. Further, turning to the influence of host countries capital requirements and supervisory power, we find that while developed economies with strong supervision have a greater incentive to host foreign subsidiaries exclusively rather than branches, the capital requirements have no influence. On a contrary, in middle- and low-income countries, more stringent capital rules or stronger supervisory power increases the likelihood to operate only with foreign branches. An increase in the capital regulatory index implies issuing additional capital for the parent bank which makes it more costly to set up a subsidiary. Also, parent banks from developed home countries[18] that are subject to strong supervisory power at home seem less prone to put their subsidiary under the control of the banking authorities of developing countries. Banks might open branches in such countries to harmonize the levels of supervision of their network of foreign affiliates.

The country-level factors represented by host country GDP per capita and size both positively and strongly impact the probability to operate the business model with foreign subsidiaries exclusively in all countries. The negative coefficients indicate that banks are less likely to establish branches in countries with relatively rich populations and elsewhere in general. A possible explanation may be that since the size of the host country, measured by GDP, matters and encourages the presence of banks abroad[19], foreign banks anticipated potential profits and growth, and preferably choose a straightforward entry with subsidiaries. However, the foreign bank share is significant only in low-income countries i.e. the power of the foreign actors is critical in developing markets and also lead to a penetration with subsidiaries only which might have more strength and offer more stability to better compete on the local banking system. In terms of bank financial characteristics, beside in low-income countries where there is no effect, the signs associated to banks with a retail business

[18] Of the 28 countries of the European Union, 26 are part of the high-income group and only Romania and Hungary are classified among middle-income countries.

[19] See the global Probit estimation of the likelihood for a bank to operate an affiliate in a foreign country *k* (Table 8) and the first step of the Heckman specific estimation of the likelihood for a bank to have an exclusive foreign affiliate form in the host country *k* (Appendix B).

orientation and to large banks are mirrored in the other regressions i.e. all, high-income, and middle-income countries and indicate that establishing foreign subsidiaries only is more common for this kind of banks. Retailed-oriented banks conduct their deposit-taking operations in foreign subsidiaries because they usually aim to deeply penetrate the local market and establish solid ties with their foreign customers [Goldberg and Saunders (1981b), (1990), Cerutti et al.(2007)]. Regardless the level of development of the country, less efficient banks are more likely to expand only with foreign branches since setting up this type of affiliate can be less costly for the parent bank. However the behavior of leveraged banks varies greatly across the different groups. From the literature [Terrell and Key (1977), Goldberg and Johnson (1990), Parkhe and Miller (1998)] highly capitalized banks tend to set abroad with subsidiary which we confirm with the negative coefficients obtain for the whole sample of host countries and also the high-income countries specifically. Yet, in middle-income countries, the likelihood to operate only with foreign branches instead of foreign subsidiaries increases with the capital ratio.

[Insert **Table 9** here]

As a whole, our baseline estimates show the relevance of taking into account the level of economic development of the host countries and the maturity of their financial system to investigate the regulatory determinants of foreign banks' presence and organizational strategies. Indeed, from Table 10 that summarizes our findings, we highlight that when facing higher barriers to entry, banks favor a foreign presence on mature markets of developed economies where they set subsidiaries rather than branches. As well, more restrictions on bank activities strongly increase the likelihood of penetrating these mature markets while reducing the incentive of entering middle and low-income economies. However, regarding the choice of an organizational strategy, such restrictions on activities affect poor economies where they favor the establishment of branches. Conversely, more stringent capital requirements uniformly discourage any presence abroad and yet, if banks still decide to expand, strong capital rules will lead them to set foreign branches in middle and low-income host countries. Finally, greater supervisory power produces opposite effects. On the one hand, it decreases the likelihood of banks' presence in high-income countries and increases it in middle-income economies. On the other hand, it leads banks to rather operate foreign subsidiaries in mature markets of high-income economies and operate foreign branches in middle and low-income host countries.

[Insert **Table 10** here]

4.2.2. Multinomial framework: Branches or/and subsidiaries

We report in Table 11 the results of the multinomial Probit estimation of Eq. (2) for the whole sample of all host countries and the three income groups separately. Whereas the analysis conducted in section 4.2.1 is limited to around 16 percent of all foreign affiliates, the multinomial regression allows us to consider the complete sample of foreign affiliates. In this multinomial approach we analyze both the likelihood to establish an exclusive business model of foreign branches in the host country instead of foreign subsidiaries only and the likelihood to establish the mix business models of both foreign branches and subsidiaries instead of foreign subsidiaries only.

In the first case regarding the choice of foreign branches only, results for all four regressions globally present similarities in signs and significances that reinforce the previous findings of the Heckman model. For instance, the impact of banking regulation stands in low-income host countries with stringent regulation (i.e. bank activities restrictions, capital requirements, and supervisory power) as banks are still more likely to expand with foreign branches exclusively. Also, with globally stronger significance, weak entry into banking requirements, numerous bank activities restrictions, stringent capital rules, and powerful supervisors in middle-income countries maintain the likelihood to host branches only. However, in developed economies while entry requirements and activities restrictions cease to matter, severe capital rules become a conclusive support for the branches structure only, and great supervisory power continue to favor the expansion with foreign subsidiaries exclusively.

In the second case we explore the alternative of establishing a foreign organizational network with both branches and subsidiaries in the same host country instead of a model made of foreign subsidiaries only. Regardless the level of economic development, the estimation on the whole sample of countries indicate that only bank activities restrictions and supervisory power matter and produce opposite effects since the first variable negatively affects the likelihood of a dual strategy with both branches and subsidiaries and the second positively. These results are perfectly mirrored for developing countries in column (4). However considering the foreign penetration of high- and middle-income countries, seven of the eight coefficients of banking regulation variables are strongly significant and opposite in signs within the two groups of countries, except for bank activities restrictions which favor the dual presence with both branches and subsidiaries in both groups. Thus in rich economies with stronger entry requirements, banks tend to establish a presence in such mature markets with both organizational forms rather than foreign subsidiaries exclusively. Indeed, if barriers

to entry are high and yet the parent banks can meet all the requirements, they might as well build up a stronger and deeper network. Moreover stringent capital rules and stronger supervisory power in high-income countries increases the likelihood to operate with foreign subsidiaries only rather both forms. Possibly, in developed countries, the parent bank builds the organizational structure that minimizes the capital requirements and related expenses. On the contrary, whereas higher barriers to entry in middle-income economies make banks more likely to establish foreign subsidiaries exclusively, severe capital regulation and authority supervision increase the bank preference to run both types of affiliates in such markets in transition.

[Insert **Table 11** here]

5. Further issues and robustness checks

In this section, we run various regressions to go deeper in the analysis of the influence of home and host countries' regulation and supervision on banks internationalization strategies. We also conduct some robustness checks of the previous results to test the consistency of our findings.

5.1. Economic integration and banking abroad: the EU case

Given the 1993 European Communities Regulation[20] on free establishment of branches from parent's home EU country in any other EU country, we differentiate host countries by their economic integration and run the Heckman regressions on the two subsamples of EU and non-EU host countries[21]. Relatively to the category of high-income countries, higher barriers to entry and weaker supervisory power become significant and make less likely the presence of an EU bank in another EU country. Moreover, banks specialized in deposit-taking activities tend to favor foreign expansion in EU countries. Regarding the choice of the unique organizational form, beside the entry into banking requirements that are now non-significant, the rest of bank regulation and supervision factors mirror the findings for high-income countries. Also, contrary to the previous results, banks that are less efficient or better performing or engage in diversified activities seem to establish foreign subsidiaries in other EU countries rather than branches. Overall, the regressions portray the similar conclusions.

[20] S.I. No. 395/1993 European Communities (Branch Disclosures) Regulations, 1993 http://www.irishstatutebook.ie/eli/1993/si/395/made/en/print

[21] We report the first step of the Heckman regression for this robustness check on EU host countries in Appendix C.

[Insert **Table 12** here]

5.2. Banks' regulation and foreign expansion with exclusive and mix business models

From the specifications of the previous regressions, we run two additional Heckman sample-selection models in which the selection equation analyzes presence abroad with any kind of operations and the second stages consider all foreign organizational structures. We estimate the probability of operating in the host country exclusively with foreign subsidiaries instead of the mix of foreign branches only or both affiliate types. We also model the probability of operating in a host country exclusively with foreign branches only rather than with foreign subsidiaries only or both affiliate types. This enables us to account for all foreign affiliate strategies and to gain a better representativeness with the whole sample.

Table 13[22] reports the second stage of the Heckman which estimates the probability of operating with foreign branches exclusively or both affiliate types in the host country instead of foreign subsidiaries only. With these estimations, we aim to capture deeply the foreign structures banks build abroad relatively to the special case of the expansion with the exclusive business modem. Looking at the three income-group subsamples, we observe a complete absence of significance of bank regulation and supervision variables in developed countries where as in middle and low-income host countries, all effects become strongly significant. Relatively to the results reported in Table 9, stringent entry into banking requirements make more likely the foreign presence with subsidiaries only. Yet, when facing stronger capital rules and greater supervisory power in a host country, banks will rather build a presence with branches only or establish both subsidiaries and branches. Overall, the findings regarding bank regulation and supervision variables strengthen those previously obtained. We also find that foreign bank presence positively affects the likelihood to establish only foreign subsidiaries in developed countries and either branches only or both affiliate' forms in developing countries. Business opportunities and competitive advantage of the parent bank might explain this difference of strategies.

[Insert **Table 13** here]

[22] The first-step of the Heckman is the same for both specifications and is reported in Appendix D. The results of this estimation are similar to the Probit estimation of the likelihood for a bank to operate an affiliate in a foreign country *k* (Table 8).

In the other second stage regression of the probability of operating in a host country with foreign subsidiaries only or both affiliate types rather than foreign branches only, the coefficients in Table 14 are globally opposite to the baseline Heckman estimations (Table 9). For instance, stringent capital regulation increases the likelihood to operate with branches exclusively instead of subsidiaries only or both forms in all host countries. Conversely, higher barriers to entry and greater supervisory power are positively associated to the foreign presence with subsidiaries only or both organizational forms in high and middle-income countries. On the whole, the country-level and bank-level characteristics portray the same pattern of opposite signs in line with the baseline model.

[Insert **Table 14** here]

5.3. Additional robustness checks

We test for the weight of foreign banks in the host country by replacing foreign bank share with the percentage of total banking assets held by foreign banks relatively to the total assets in the banking system (*ForeignTA_TotalTA*)[23] among the explanatory variables in Eq. (1) and Eq. (2). We estimate both Probit and Heckman sample selection models and our main findings globally remain unchanged[24] (see Appendixes E, F, G).

Finally, we dissociate the economic freedom index to capture the effect of each composite on banks' internationalization[25]. More precisely, this check will allow us to determine the individual importance of the four pillars (Rule of Law, Limited Government, Regulatory Efficiency, and Market Openness) on the likelihood for a bank to operate an affiliate in a foreign country[26]. We report all Probit estimations of Eq. (1) and we only focus on the differences from the baseline results (Table 8) and across the income groups.

First, the Probit regressions reported in Table 15, indicate for all columns that banks are more likely to be present in host countries where Rule of Law is higher than at home. As the effects

[23] This variable was extracted from the Global Financial Development Database (2015) provided by the World Bank

[24] For this robustness check with ForeignTA_TotalTA, we report the global Probit estimation of the likelihood for a bank to operate an affiliate in a foreign country *k* in Appendix E and the Heckman two-step sample selection specific estimation of the likelihood for a bank to have an exclusive foreign affiliate form in the host country *k* in Appendix F (first step) and Appendix G (second step).

[25] Rule of Law (property rights, freedom from corruption), Limited Government (fiscal freedom, government spending), Regulatory Efficiency (business freedom, labor freedom, monetary freedom), and Market Openness (trade freedom, investment freedom, financial freedom).

[26] For this robustness check on the four pillars of the Economic Freedom Index, we also run the Heckman two-step sample selection specific estimation of the likelihood for a bank to have an exclusive foreign affiliate form in the host country *k* and report both steps in Appendix H to Appendix O.

of property rights and freedom from corruption are similar to the global economic freedom score, this check supports the previous findings.

Second, we look at the influence of government in terms of the tax burden and expenditures relatively to the GDP and we observe an impact of Limited Government on the likelihood to expand abroad highly positive in developed economies, highly negative in middle-income countries, but an absence of significance in low-income host countries. The other coefficients of these regressions (see Table 16) are consistent with the baseline results (Table 8).

Third, we also find that an increase of the gap between the host and the home countries' Regulatory Efficiency has a positive impact on the selection of all host countries to establish foreign affiliates, regardless of the level of economic development. The results of this estimation, reported in Table 17, leave our previous findings unchanged.

Finally, when facing host countries with higher Market Openness score relatively to the home country, the bank incentive to establish a foreign affiliate abroad increases except in developing countries where it diminishes. As it was already the case for the previous categories, the rest of findings (see Table 18) again confirms the conclusions of Table 8 in Section 4.

[Insert **Table 15** to **Table 18** here]

6. Conclusion

In this paper we assemble a unique hand-collected database to capture the internationalization pattern of banks. Using 1,251 banks from the 28 European Union countries we empirically identify how home country bank regulation and host country regulation and level of development influence where and how banks expand abroad. More specifically, we look into whether they operate only with one type of affiliate (branches instead of subsidiaries) or with both organizational forms in the host country.

Globally, our results show that both home country and host country regulations matter but in different ways. Low-income countries with severe restrictions on bank activities are less likely to attract foreign entities; yet the likelihood increases when the barriers to entry are higher. Additionally, the incentives to go abroad decrease when the host country capital regulatory index, official supervisory power, and economic freedom scores are lower than at home. These findings suggest that in most host locations, rather than entering countries with lax regulation, banks prefer to expand in more stringent regulatory and supervisory

environments. Moreover, banks' business models also matter as we find that retail-oriented banks are more likely to penetrate low-income countries than high-income countries. In less developed countries, banks apparently expand to build up traditional deposit-taking operations but in mature markets they rather expand when they are focused on wholesale banking services. Nevertheless, we also find that such retail-oriented banks operate either subsidiaries solely or both forms in high-income and middle-income host countries. Also, banks are more likely to run foreign branches than subsidiaries in both high-income and low-income countries that restrain banking activities, and establish both type of affiliates when they enter middle-income countries that limit their activities. Furthermore, strong entry restrictions are likely to favor subsidiary operations in all locations but branch activities are more common in middle-income and low-income countries with stringent capital requirements and greater supervisory power.

Our findings have important policy implications. Home country and host country regulatory requirements and prudential rules play an important role in banks' foreign expansion but differently for low-income and high-income countries. When facing strong supervisory power, banks expand by rather opening foreign branches than subsidiaries in middle-income and low-income countries but by mostly establishing subsidiaries in high-income countries. To monitor and manage bank stability, specifically in times of financial turmoil, supervisors should account for the structure of banking groups and the organizational forms of their international expansion. Our results also show that highly capitalized banks mostly operate subsidiaries in both high and low-income countries. Internal capital markets through which parent banks can channel funds in both directions should therefore be given specific attention.

References

Allen, B., Chan, K. K., Milne, A., and Thomas, S. (2012). "Basel III: Is the Cure Worse than the Disease?" *International Review of Financial Analysis* 25: 159–66.

Adams-Kane, J., Caballero, J. A., Lim, J. J. (2013). "Foreign Bank Behavior During Financial Crises." *World Bank Policy Research Working Paper* WPS 6590.

Ball, C. A. and Tschoegl, A. E. (1982). "The Decision to Establish a Foreign Bank Branch or Subsidiary: An Application of Binary Classification Procedures." *Journal of Financial and Quantitative Analysis* 17 (3): 411–24.

Barth, J., Caprio Jr., G. and Levine, R. (2001). "The Regulation and Supervision of Banks around the World: A New Database." *World Bank Policy Research Working Paper* WPS 2588.

———(2004). "Bank Regulation and Supervision: What Works Best?" *Journal of Financial Intermediation* 13 (2): 205–48.

———(2008). "Rethinking Bank Regulation: Till Angels Govern" *Cambridge university Press*, 428 pages.

———(2013). "Bank Regulation and Supervision in 180 countries from 1999 to 2011" *National Bureau of Economic Research* NBER 18733.

Basel Committee on Banking Supervision. (2011). "Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems." *Bank for International Settlements BIS*.

Beck, T., Demirguc-Kunt, A., and Levine, R. (2000). "A New Database on the Structure and Development of the Financial Sector." *World Bank Economic Review* 14 (3): 597–605.

Beck, T., Demirguc-Kunt, A., Levine, R., Cihak, M., and Feyen, E. H. B. (2013). "Financial Development and Structure Dataset." *World Bank Policy Research Working Paper* WPS 4943.

Berger, A. N., DeYoung, R., Genay, H., and Udell, G. F. (2000). "The globalization of financial institutions: Evidence from a cross-border banking performance." *Brookings-Wharton Paper on Financial Service*, 23–120.

Bonin, J., Hasan, I., and Wachtel, P. (2014). "Banking in Transition Countries." *BOFIT Discussion Paper* No. 8/2014.

Brealey, R. A. and Kaplanis, E. C. (1996). "The Determination of Foreign Banking Location." *Journal of International Money and Finance* 15 (4): 577–597.

Buch, C. M. (2000). "Why Do Banks Go Abroad?-Evidence from German Data." *Financial Markets, Institutions and Instruments* 9 (1): 33–67.

———(2003) "Information or Regulation: What Is Driving the International Activities of Commercial Banks?" *Journal of Money, Credit and Banking* 35 (6): 851–69.

———(2005) "Distance and International Banking." *Review of International Economics* 13 (4):787–804.

Buch, C. M. and DeLong, G. (2004) "Cross-Border Bank Mergers: What Lures the Rare Animal?" *Journal of Banking & Finance* 28 (9): 2077–2102.

———(2008) "Do Weak Supervisory Systems Encourage Bank Risk-Taking?" *Journal of Financial Stability* 4 (1): 23–39.

Buch, C. M., Koch, C. T, and Koetter, M. (2014). "Should I Stay or Should I Go? Bank Productivity and Internationalization Decisions." *Journal of Banking & Finance* 42 (5): 266–82.

Carbo-Valverde, S., Kane, E. J., and Rodriguez-Fernandez, F. (2012). "Regulatory Arbitrage in Cross-Border Banking Mergers within the EU." Journal of Money, Credit and Banking 44 (8): 1609–29.

Cerutti, E. (2015). "Drivers of Cross-Border Banking Exposures during the Crisis." *Journal of Banking & Finance* 55 (6): 340–357.

Cerutti, E., Dell'Ariccia, G., and Martinez Peria, M. S. (2007). "How Banks Go Abroad: Branches or Subsidiaries?" *Journal of Banking & Finance* 31 (6): 1669–1692.

Cerutti, E., Ilyina, A., Makarova, Y., and Schmieder, C. (2010). "Bankers Without Borders? Implications of Ring-Fencing for European Cross-Border Banks," *IMF Working Paper* WP/10/247.

Chen, S-H. and Liao, C-C. (2011). "Are Foreign Banks More Profitable than Domestic Banks? Home- and Host-Country Effects of Banking Market Structure, Governance, and Supervision." *Journal of Banking & Finance* 35 (4): 819–39.

Cho, K-R. (1990). "Foreign Banking Presence and Banking Market Concentration: The Case of Indonesia." *Journal of Development Studies* 27 (1): 98–110.

Chou, H-H. and Shen, C-H. (2014). "Foreign Bank Expansion and the Follow-the-Customer Hypothesis." *Journal of Multinational Financial Management* 25–26: 95–109.

———(2013). "Credit bureaus and overseas expansion of banking industry." *Journal of Financial Studies* 21 (1): 29–52.

Cihak, M., Demirguc-Kunt, A., Martinez Peria, M. S., and Mohseni-Cheraghlou, A. (2012). "Bank regulation ad supervision around the world: a crisis update." *World Bank Policy Research Working Paper* WPS 6286.

Claessens, S., Demirguc-Kunt, A., and Huizinga, H. (2001). "How Does Foreign Entry Affect Domestic Banking Markets?" *Journal of Banking & Finance* 25 (5): 891–911.

Claessens, S. and van Horen, N. (2007). "Location Decisions of Foreign Banks and Competitive Advantage." *World Bank Policy Research Working Paper* WPS 4113.

———(2014a) "Location Decisions of Foreign Banks and Competitor Remoteness." *Journal of Money, Credit and Banking* 46 (1): 145–70.

———(2014b) "Foreign Banks: Trends and Impact." *Journal of Money, Credit and Banking* 46 (1): 295–326.

Clarke, G., Cull, R., and Martinez Peria, M. S. (2006). "Foreign Bank Participation and Access to Credit across Firms in Developing Countries." *Journal of Comparative Economics* 34 (4): 774–95.

Clarke, G., Cull R., Martinez Peria, M. S., and Sanchez, S. M. (2003). "Foreign Bank Entry: Experience, Implications for Developing Economies, and Agenda for Further Research." *World Bank Research Observer* 18 (1): 25–59.

Cull, R. and Martinez Peria, M. S. (2007). "Foreign Bank Participation and Crises in Developing Countries." *World Bank Policy Research Working Paper* WPS 4128.

de Haas, R. and Naaborg, I. (2006). "Foreign Banks in Transition Countries: To Whom Do They Lend and How Are They Financed?" *Financial Markets, Institutions and Instruments* 15 (4): 159–199.

de Haas, R. and van Lelyveld, I. (2014). "Multinational Banks and the Global Financial Crisis: Weathering the Perfect Storm?" *Journal of Money, Credit and Banking* 46 (1): 333–364.

Dell'Ariccia, G. and Marquez R. (2010). "Risk and Corporate Structure of Banks." *IMF Working Paper* WP/10/40.

Demirguc-Kunt, A. and Huizinga, H. (1998). "Determinants of commercial bank interest margins and profitability: some international evidence". *World Bank Policy Research Working Paper* WPS 1900.

Esperanca, J. P. and Gulamhussen, M. A. (2001). "(Re)Testing the 'follow the Customer' Hypothesis in Multinational Bank Expansion." *Journal of Multinational Financial Management* 11 (3): 281–293.

Fiechter, J., Ötker-Robe, I., Ilyina, A., Hsu, M., Santos, A., and Surti, J. (2011). "Subsidiaries or Branches: Does One Size Fit All?" *IMF Staff Discussion Note* SDN/11/04.

Fieleke, N. S. (1977) "The Growth of U.S. Banking Abroad: An Analytical Survey." *Key Issues in International Banking*.

Fisher, A. and Molyneux, P. (1996). "A Note on the Determinants of Foreign Bank Activity in London between 1980 and 1989." *Applied Financial Economics* 6 (3): 271–277.

Focarelli, D. and Pozzolo, A. F. (2001). "The Patterns of Cross-Border Bank Mergers and Shareholdings in OECD Countries." *Journal of Banking & Finance* 25 (12): 2305–2337.

Focarelli, D., Panetta, F. and Salleo, C. (2002). "Why Do Banks Merge?" *Journal of Money, Credit, and Banking* 34 (4): 1047–1066.

Giannetti, M., and Ongena, S. (2012). "'Lending by Example': Direct and Indirect Effects of Foreign Banks in Emerging Markets." *Journal of International Economics* 86 (1): 167–180.

Goldberg, L. G. and Grosse, R. (1994). "Location Choice of Foreign Banks in the United States." *Journal of Economics and Business* 46 (5): 367–379.

Goldberg, L. G. and Johnson, D. (1990). "The Determinants of US Banking Activity Abroad." *Journal of International Money and Finance* 9 (2): 123–137.

Goldberg, L. G. and Rai, A. (1996). "The Structure-Performance Relationship for European Banking." *Journal of Banking & Finance* 20 (4): 745–771.

Goldberg, L. G. and Saunders, A. (1980). "The Causes of U.S. Bank Expansion Overseas: The Case of Great Britain." *Journal of Money, Credit and Banking* 12 (4): 630.

———(1981a). "The Determinants of Foreign Banking Activity in the United States." *Journal of Banking & Finance* 5 (1): 17–32.

———(1981b). "The Growth of Organizational Forms of Foreign Banks in the U.S." *Journal of Money, Credit and Banking* 13 (3): 365.

Greene, W. H. (2012). Econometric Analysis. *Boston: Prentice Hall* 7th Ed.

Grosse, R. and Goldberg, L. G. (1991). "Foreign Bank Activity in the United States: An Analysis by Country of Origin." *Journal of Banking & Finance* 15 (6): 1093–1112.

Heckman, J. J. (1976). "The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models". *Annals of Economic and Social Measurement* 5: 475–492.

———(1979). "Sample Selection Bias as a Specification Error." *Econometrica* 47 (1): 153-161.

Heinkel, R. L. and Levi, M. D. (1992). "The Structure of International Banking." *Journal of International Money and Finance* 11 (3): 251–272.

Herrero, A. G. and Martinez Peria, M. S. (2007). "The Mix of International Banks' Foreign Claims: Determinants and Implications." *Journal of Banking & Finance* 31 (6): 1613–31.

Houston, J. F., Lin, C., and Ma, Y. (2012). "Regulatory Arbitrage and International Bank Flows." *Journal of Finance* 67 (5): 1845–95.
Hultman, C. W. and McGee, L. R. (1989). "Factors Affecting the Foreign Banking Presence in the U.S." *Journal of Banking & Finance* 13 (3): 383–396.
Jeon, B-N., Olivero, M. P., and Wu, J. (2011). "Do Foreign Banks Increase Competition? Evidence from Emerging Asian and Latin American Banking Markets." *Journal of Banking & Finance* 35 (4): 856–75.
Jones, G. (editor) (1991). "Multinational and international banking." Edward Elgar Publishing Ltd., 640 pages.
Karolyi, G. A. and Taboada, A. G. (2015). "Regulatory Arbitrage and Cross-Border Bank Acquisitions." *Journal of Finance* 70 (6): 2395–2450.
Kim, D. and Santomero, A. M. (1988). "Risk in Banking and Capital Regulation." *Journal of Finance* 43 (5): 1219–1233.
Kindleberger, C. P. (1983). "International Banks as Leaders or Followers of International Business." *Journal of Banking & Finance* 7 (4): 583–595.
Koçak, Ö. and Özcan, S. (2013). "How Does Rivals' Presence Affect Firms' Decision to Enter New Markets? Economic and Sociological Explanations." *Management Science* 59 (11): 2586-2603.
Koehn, M. and Santomero, A. M. (1980). "Regulation of Bank Capital and Portfolio Risk." *Journal of Finance* 35 (5): 1235–1244.
Laeven, L. and Levine, R. (2009). "Bank Governance, Regulation and Risk Taking." *Journal of Financial Economics* 93 (2): 259–75.
Lee, L-F. (2003) "Self-Selection." In A Companion to Theoretical Econometrics, *Badi H. Baltagi, Blackwell Publishing Ltd*: 383–409.
Lensink, R. and Hermes, N. (2004). "The Short-Term Effects of Foreign Bank Entry on Domestic Bank Behaviour: Does Economic Development Matter?" *Journal of Banking & Finance* 28 (3): 553–568.
Litan, R. E, Santomero, A. M, Brookings Institution, and Wharton School, eds. *Brookings-Wharton Papers on Financial Services, 2000*. Washington, D.C.: Brooking Institution Press, 2000.
Mayer, T. and Zignago, S. (2011). "Notes on CEPII's Distances Measures: The GeoDist Database." *CEPII Working Paper* 25.
McCauley, R. N., McGuire, P., and von Peter, G. (2010). "The Architecture of Global Banking: From International to Multinational?" *Bank for International Settlements BIS Quarterly Review*.
Melitz, J., and Toubal, F. (2012). "Native Language, Spoken Language, Translation and Trade." *CEPII Working Paper* 17.
Miller, S. R. and Parkhe, A. (1998). "Patterns in the Expansion of U.S. Banks' Foreign Operations." *Journal of International Business Studies* 29 (2): 359–388.
Miller, T. and Kim, A. B. (2015). *Index of Economic Freedom Promoting Economic Opportunity and Prosperity*. *The Heritage Foundation*.
Molyneux, P., Lloyd-Williams, D. M., and Thornton, J. (1994). "Competitive Conditions in European Banking." *Journal of Banking & Finance* 18 (3): 445–459.
Nachum, L., Zaheer, S., and Gross, S. (2008). "Does It Matter Where Countries Are? Proximity to Knowledge, Markets and Resources, and MNE Location Choices." *Management Science* 54 (7): 1252-1265
es Are? Proximity to Knowledge, Markets and Resources, and MNE Location Choices." *Management Science* 54 (7): 1252-1265
OECD. (2014) "STAN Bilateral Trade Database by Industry and End-Use Category, Rev. 4." OECD-WTO Bilateral Trade http://www.oecd.org/sti/ind/measuringtradeinvalue-addedanoecd-wtojointinitiative.html.
Olivero, M. P., Li, Y. and Jeon, B-N. (2011). "Competition in Banking and the Lending Channel: Evidence from Bank-Level Data in Asia and Latin America." *Journal of Banking & Finance* 35 (3): 560–571.
Ongena, S., Popov, A., and Udell, G. F. (2013). "'When the Cat's Away the Mice Will Play': Does Regulation at Home Affect Bank Risk-Taking Abroad?" *Journal of Financial Economics* 108 (3): 727–750
Outreville, J. F. (2007). "Foreign Affiliates of the World Largest Financial Groups: Locations and Governance." *Research in International Business and Finance* 21 (1): 19–31.
Parkhe, A., and Miller, S. R. (1998). "Foreign Operations of U.S. Banks: Impact of Environmental Differences and Ownership Advantages on Organizational Form Preferences." *Journal of International Management* 4 (1): 59–83.
Pecchioli, R.M. (1983). "The Internationalization of Banking: The Policy Issues." *Trend in Banking Structure and Regulation in OECD Countries Series*, 221 pages.
Puhani, P. "The Heckman Correction for Sample Selection and Its Critique." *Journal of Economic Surveys* 14 (1): 53–68.
Sagari, S. B. (1992) "United States Foreign Direct Investment in the Banking Industry." *Transnational Corporations* 1 (3): 93–123.
Sengupta, R. (2007). "Foreign Entry and Bank Competition." *Journal of Financial Economics* 84 (2): 502–528.

Seth, R., Nolle, D. E., and Mohanty, S K. (1998). “Do Banks Follow Their Customers Abroad?” *Financial Markets, Institutions and Instruments* 7 (4): 1–25.

Shiers, A. F. (2002) “Branch Banking, Economic Diversity and Bank Risk.” *The Quarterly Review of Economics and Finance* 42 (3): 587–598.

Tabak, B. M., Fazio, D. M., and Cajueiro, D. O. (2012). “The Relationship between Banking Market Competition and Risk-Taking: Do Size and Capitalization Matter?” *Journal of Banking & Finance* 36 (12): 3366–3381.

Tschoegl, A.E. (1983). “Size, growth, and transnationality among the world’s largest banks.” *Journal of Business* 56 (2): 187–201.

Terrell, H. S. and Key, S. J. (1977). “The U.S. Activities of Foreign Banks: An Analytic Survey” *International Finance Discussion Papers 113. Board of Governors Federal Reserve System.*

Tsai, H., Chang, Y., and Hsiao P-H. (2011). “What Drives Foreign Expansion of the Top 100 Multinational Banks? The Role of the Credit Reporting System.” *Journal of Banking & Finance* 35 (3): 588–605.

Tomsik, V. (2015). “International Banks’ Business Models: Branches vs Subsidiaries.” *Bank for International Settlements*.

United Nations Conference on Trade and Development, ed. *UNCTAD Handbook of Statistics 2014 =: Manuel de Statistiques de La CNUCED 2014*. New York: United Nations Publications, 2014.

van Horen, N. (2007). “Foreign Banking in Developing Countries; Origin Matters.” *Emerging Markets Review* 8 (2): 81–105.

Williams, B. (2002). “The Defensive Expansion Approach to Multinational Banking: Evidence to Date.” *Financial Markets, Institutions and Instruments* 11 (2): 127–203.

World Bank. (2015). *The Little Data Book on Financial Development 2015/16*.

———(2015). *World Development Indicators 2015*.

Xu, Y. (2011). “Towards a More Accurate Measure of Foreign Bank Entry and Its Impact on Domestic Banking Performance: The Case of China.” *Journal of Banking & Finance* 35 (4): 886–901.

Yamori, N. (1998). “A Note on the Location Choice of Multinational Banks: The Case of Japanese Financial Institutions.” *Journal of Banking & Finance* 22 (1): 109–120.

Table 1
Distribution of European Union' banks in 2013

EU Countries	All banks	Banks with a foreign activity	Host countries HC (154)
Euro Area	**943**	**234**	///
Austria	115	28	34
Belgium	31	12	18
Cyprus	10	6	6
Estonia	3	0	0
Finland	10	5	8
France	182	43	69
Germany	239	34	68
Greece	8	4	10
Ireland	10	1	10
Italy	120	34	30
Latvia	7	3	8
Lithuania	6	0	0
Luxembourg	46	22	21
Malta	8	2	3
Netherlands	15	7	40
Portugal	25	13	24
Slovakia	9	0	0
Slovenia	13	4	7
Spain	86	16	35
Non Euro Area	**309**	**55**	///
Bulgaria	13	2	4
Croatia	27	5	2
Czech Republic	15	2	3
Denmark	70	6	24
Hungary	14	4	7
Poland	29	3	6
Romania	16	4	2
Sweden	22	4	37
United Kingdom	102	25	66
Total : 28	**1,251**	**289**	///

Source: Bankscope, SNL Database, bank web pages

Table 2
Income-group classification of all countries

Low-income: 55 countries (GNI per Capita ≤ $4,125)		**Middle-income: 35 countries ($4,125 < GNI per capita < $12,736)**		**High-income: 64 countries (GNI per capita ≥ $12,736)**		
Armenia	Malawi	Albania	Romania (**EU**)	Andorra	Israel	Sweden (**EU**)
Bangladesh	Mali	Algeria	Serbia	Antigua and Barbuda	Italy (**EU**)	Switzerland
Burkina Faso	Mauritania	Angola	South Africa	Argentina	Japan	Taiwan
Burma	Moldova, Rep. of	Azerbaijan	Thailand	Australia	Korea	United Arab Emirates
Burundi	Morocco	Belarus	Tunisia	Austria (**EU**)	Kuwait	United Kingdom (**EU**)
Cambodia	Mozambique	Bosnia and Herzegovina	Turkey	Bahamas	Latvia (**EU**)	United States of America
Cameroon	Nepal	Botswana	Turkmenistan	Bahrain	Liechtenstein	Uruguay
Cape Verde	Nigeria	Brazil		Belgium (**EU**)	Lithuania (**EU**)	Venezuela
Chad	Pakistan	Bulgaria (**EU**)		Bermuda	Luxembourg (**EU**)	
Congo	Palestine	China		Brunei Darussalam	Macau	
Congo, Rep. Dem.	Philippines	Colombia		Canada	Malta (**EU**)	
Côte d'Ivoire	Rwanda	Dominican Republic		Cayman Islands	Netherlands (**EU**)	
Djibouti	Sao Tome and Principe	Fiji		Chile	New Caledonia	
Egypt	Senegal	Gabon		Croatia (**EU**)	New Zealand	
Ethiopia	Sierra Leone	Gibraltar		Curacao	Norway	
Gambia	Sri Lanka	Kazakhstan		Cyprus (**EU**)	Oman	
Georgia	St. Pierre and Miquelon	Lebanon		Czech Republic (**EU**)	Poland (**EU**)	
Ghana	Tanzania	Libya		Denmark (**EU**)	Portugal (**EU**)	
Guinea	Timor-Leste	Macedonia		Equatorial Guinea	Puerto Rico	
Guinea-Bissau	Uganda	Malaysia		Estonia (**EU**)	Qatar	
Haiti	Ukraine	Maldives		Finland (**EU**)	Russian Federation	
India	Uzbekistan	Mauritius		France (**EU**)	San Marino	
Indonesia	Vanuatu	Mexico		French Polynesia	Saudi Arabia	
Kenya	Viet Nam	Mongolia		Germany (**EU**)	Seychelles	
Kosovo	Wallis and Futuna	Montenegro		Greece (**EU**)	Singapore	
Kyrgyzstan	Zambia	Panama		Hong Kong	Slovakia (**EU**)	
Laos	Zimbabwe	Paraguay		Hungary (**EU**)	Slovenia (**EU**)	
Madagascar		Peru		Ireland (**EU**)	Spain (**EU**)	

We consider a slightly modified version of the classification of income-groups provided in the World Development Indicators (2015) by the World Bank. In his paper, 55 low-income economies are defined as those with a GNI per capita of $4,125 or less; 35 middle-income economies have a GNI per capita of more than $4,125 but less than $12,736, and 64 high-income economies, a GNI per capita of $12,736 or more. In Table 2, we list all 154 host countries by the defined income per habitant categories. In the original classification, the World Bank divides the countries into four groups: low-income (GNI ≤ $1,045), lower-middle income ($1,045 < GNI ≤ $4,125), upper-middle-income ($4,125 < GNI < $12,736), and the high-income (GNI ≥ $12,736).

Table 3
EU Banks foreign affiliates around the world in 2013

Foreign affiliates in host countries *k*	Only foreign subsidiaries in *k*	Only foreign branches in *k*	Both foreign subsidiaries and branches in *k*
20,850	713	2,595	17,542

Continents (Host countries)	Foreign affiliates	Foreign subsidiaries FS	Foreign branches FB	Foreign strategy (FS / FB)
Africa (41)	197	84	113	0.743
America (21)	9,311	246	9,065	0.027
Asia (41)	1,775	173	1,602	0.108
Europe (44)	9,466	506	8,960	0.056
Pacific (7)	101	13	88	0.148
Total : 154	**20,850**	**1,022**	**19,828**	

Income-groups (Host countries)	Foreign affiliates	Foreign subsidiaries FS	Foreign branches FB	Foreign strategy (FS / FB)
High Income (64)	10,134	709	9,425	0.075
Middle Income (35)	9,010	196	8,814	0.022
Low Income (55)	1,706	117	1,589	0.074
Total : 154	**20,850**	**1,022**	**19,828**	

Table 3 reports the distribution of banks' affiliates around the world for the year 2013. We separate the host countries by their geographical location and the levels of development following the World Development Indicators (2015) by the World Bank. The World Bank divides the countries into four income-groups by the amount of GNI per capita: low-income (GNI ≤ $1,045), lower-middle income ($1,045 < GNI ≤ $4,125), upper-middle-income ($4,125 ≤GNI < $12,736), and high-income (GNI ≥ $12,736). To differentiate our levels of development, we adjust the World Bank classification and merge the lower-middle-income and low-income to constitute our low-income group; the upper-middle-income represents our middle-income group; and the high-income group is unchanged. Foreign strategy is the ratio of the total number of foreign subsidiaries FS to the total number of foreign branches FB.

Source: Bankscope, SNL Database, banks web pages, World Bank

Table 4
Table 4-a – Country-level bank regulation and supervision summary statistics

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Host countries = 154 | Home Countries = 28						
Host_Bank Activity Restrictions	133	9,87	2,51	10	4	14
Host_Entry into Banking Requirements	133	8,57	0,70	9	6	9
Host_Capital Regulatory index	133	9,91	4,00	11	0	15
Host_Official Supervisory Power	133	9,88	1,75	10	6	14
Home_Bank Activity Restrictions	28	8.54	2.39	8.5	5	14
Home_Capital Regulatory index	28	11.71	2.81	12.5	2	15
Home_Official Supervisory Power	28	9.32	1.72	10	5	11
Diff (Host-Home)_Bank Activity Restrictions	3,696	1.35	3.44	2	-10	9
Diff (Host-Home)_Capital Regulatory index	3,696	-1.82	4.86	-1	-15	13
Diff (Host-Home)_Official Supervisory Power	3,696	0.56	2.43	0	-5	9

Note: Of the 154 countries in the sample (64 High income / 35 Middle income / 55 Low income), the Barth et al. 2012 survey provides regulatory information for 133 countries only (56 High income / 33 Middle income / 44 Low income).

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
High income Host countries = 64 | Home Countries = 28						
Host_Bank Activity Restrictions	56	9.55	2.75	10	4	14
Host_Entry into Banking Requirements	56	8.52	0.81	9	6	9
Host_Capital Regulatory index	56	11.05	3.65	12	0	15
Host_Official Supervisory Power	56	9.54	1.83	10	6	13
Diff (Host-Home)_Bank Activity Restrictions	1,542	1.03	3.63	1	-10	9
Diff (Host-Home)_Capital Regulatory index	1,542	-0.67	4.59	0	-15	13
Diff (Host-Home)_Official Supervisory Power	1,542	0.22	2.50	0	-5	8

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Middle income Host countries = 35 | Home Countries = 28						
Host_Bank Activity Restrictions	33	9.48	2.55	9	4	14
Host_Entry into Banking Requirements	33	8.54	0.67	9	6	9
Host_Capital Regulatory index	33	8.90	4.33	10	0	15
Host_Official Supervisory Power	33	9.79	1.76	10	6	12
Diff (Host-Home)_Bank Activity Restrictions	922	0.95	3.45	1	-10	9
Diff (Host-Home)_Capital Regulatory index	922	-2.81	5.09	-2	-15	13
Diff (Host-Home)_Official Supervisory Power	922	0.47	2.43	0	-5	7

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Low income Host countries = 55 | Home Countries = 28						
Host_Bank Activity Restrictions	44	10.57	2.02	10.5	6	14
Host_Entry into Banking Requirements	44	8.66	0.57	9	7	9
Host_Capital Regulatory index	44	9.20	3.89	10	0	15
Host_Official Supervisory Power	44	10.39	1.53	10	7	14
Diff (Host-Home)_Bank Activity Restrictions	1,232	2.03	3.08	2	-8	9
Diff (Host-Home)_Capital Regulatory index	1,232	-2.51	4.74	-2	-15	13
Diff (Host-Home)_Official Supervisory Power	1,232	1.06	2.27	1	-4	9

Country-level bank regulation and supervision variables: *Bank Activity Restrictions* = the restrictiveness in the participation into securities, insurance, real estate activities and the ownership power in nonfinancial firms; *Entry into Banking Requirements* = all the documents applicants are legally entitled to provide in order for the authority to grant a banking license in the country, *Capital Regulatory index* = the requirements in terms of minimum capital adequacy, risks and market value losses, sources of funding used to capitalize a bank and the level of official appraisal; *Official Supervisory Power* = all actions taken by the authorities to prevent and correct problems regarding auditing, internal/board/ownership rights structure, profits and losses and other balance sheets items. These qualitative variables for the year 2010 were winsorized at 1% and 99% levels to limit the influence of outliers.

Source: World Bank (Bank Regulation and Supervision Survey)

Table 4-b – Distribution of banks' affiliates around the world in 2013 by levels of global regulation

Global regulation [23-48] = Activity + Entry + Capital + Supervision (Host countries)	**S**tringent [40-48] (43)	**M**oderate [36-40] (52)	**L**ax [23-35] (38)	**Total : 133**
Foreign affiliates	5,977	11,089	3,659	**20,725**
Foreign subsidiaries FS	344	357	293	**994**
Foreign branches FB	5,633	10,732	3,366	**19,731**
Foreign strategy (FS / FB)	**0,061**	**0.033**	**0.087**	**0.050**

Note: Since only 133 countries of the 154 in the sample have regulatory information from the Barth et al. 2012 survey, we cross regulation and foreign affiliates for only 20,725 branches and subsidiaries of the 20,850 in the sample.

Table 4-c – Distribution of banks' affiliates around the world in 2013 by levels of global regulation and economic development

		High income				Middle Income				Low income			
	All	**Total**	**S**	**M**	**L**	**Total**	**S**	**M**	**L**	**Total**	**S**	**M**	**L**
Foreign affiliates	**20,725**	**10,033**	4,496	2,531	3,006	**9,007**	1,332	7,075	600	**1,685**	149	1,483	53
Foreign subsidiaries FS	**994**	**690**	276	190	224	**195**	42	97	56	**109**	26	70	13
Foreign branches FB	**19,731**	**9,343**	4,220	2,341	2,782	**8,812**	1,290	6,978	544	**1,576**	123	1,413	40
Foreign strategy FS / FB	**0.050**	**0.074**	0.065	0.081	0.081	**0.022**	0.033	0.014	0.103	**0.069**	0.211	0.05	0.325

*Global regulation is calculated as the sum of the four banking regulation and supervision variables and ranges from 23 to 48. We define the levels **S**tringent [40-48] ; **M**oderate [36-40] ; **L**ax [23-35] on the basis of multiples graphic and statistical analysis of the sample of countries and affiliates.*

Table 5
Country-level macroeconomics, market structure and institutional summary statistics

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Host countries = 154 | Home Countries = 28						
Host_Economic Freedom score	138	61.24	10.63	61.00	37.25	87.57
Host_Foreign Bank Share	129	0.43	0.32	0.39	0	1
Host_Bank Concentration	131	0.71	0.21	0.70	0.08	1
Host_Depth of Credit Information index	154	4.53	1.64	5.00	1.67	7
Host_GDP per Capita (log)	142	8.54	1.61	8.68	5.59	11.19
Host_Size (log GDP)	142	10.67	2.14	10.39	6.26	16.47
Home_ Economic Freedom score	28	67.46	6.10	69.10	57.03	76.97
Diff (Host-Home)_Economic Freedom score	3,836	-6.99	12.23	-6.87	-39.72	30.53
Bilateral Trade ratio (%)	3,410	0.71	1.76	0.08	0.00	10.75
Common Official Language	4,284	0.07	0.25	0	0	1
Distance between capitals (kilometers)	4,284	5,559.49	3,986.07	5,096.73	59.62	19,586.18
Distance between capitals (log)	4,284	8.28	0.94	8.54	4.09	9.88

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
High income Host countries = 64 | Home Countries = 28						
Host_Economic Freedom score	53	69.02	9.77	70.00	37.27	87.57
Host_Foreign Bank Share	55	0.39	0.34	0.26	0	1
Host_Bank Concentration	55	0.73	0.23	0.80	0.08	1
Host_Depth of Credit Information index	64	5.12	1.42	5.33	1.67	7
Host_GDP per Capita (log)	61	10.12	0.65	10.12	8.75	11.19
Host_Size (log GDP)	61	11.57	2.17	12.09	6.91	16.47
Diff (Host-Home)_Economic Freedom score	1,458	0.86	11.49	0.85	-39.7	30.533
Bilateral Trade ratio (%)	1,458	1.37	2.42	0.33	0.00	10.75
Common Official Language	1,766	0.06	0.25	0	0	1
Distance between capitals (kilometers)	1,766	5,071.15	4,618.21	3,075.53	59.62	19,586.18
Distance between capitals (log)	1,766	8.02	1.10	8.03	4.09	9.88

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Middle income Host countries = 35 | Home Countries = 28						
Host_Economic Freedom score	34	59.80	8.19	61.32	37.25	76.70
Host_Foreign Bank Share	32	0.47	0.33	0.47	0.01	1
Host_Bank Concentration	31	0.68	0.17	0.66	0.33	1
Host_Depth of Credit Information index	35	5.18	1.08	5.33	2.33	6.33
Host_GDP per Capita (log)	33	8.43	0.41	8.50	7.40	9.05
Host_Size (log GDP)	33	10.82	1.77	10.57	7.60	15.34

Diff (Host-Home)_Economic Freedom score	950	-8.39	10.03	-8.20	-39.72	19.67
Bilateral Trade ratio (%)	838	0.39	0.96	0.06	0.00	7.50
Common Official Language	978	0.05	0.22	0	0	1
Distance between capitals (kilometers)	978	5,601.55	3,986.80	5,368.16	168.10	17,627.30
Distance between capitals (log)	978	8.27	0.96	8.59	5.12	9.78

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
Low income Host countries = 55 | Home Countries = 28						
Host_Economic Freedom score	51	54.11	6.99	55.20	37.25	70.67
Host_Foreign Bank Share	42	0.44	0.30	0.47	0	1
Host_Bank Concentration	45	0.71	0.21	0.70	0.27	1
Host_Depth of Credit Information index	55	3.37	1.59	2.33	1.67	7
Host_GDP per Capita (log)	48	6.66	0.64	6.68	5.59	7.83
Host_Size (log GDP)	48	9.43	1.73	9.17	6.26	14.14
Diff (Host-Home)_Economic Freedom score	1,428	-14.08	9.26	-14.12	-39.72	13.63
Bilateral Trade ratio (%)	1,114	0.09	0.23	0.01	0.00	2.27
Common Official Language	1,540	0.07	0.26	0	0	1
Distance between capitals (kilometers)	1,540	6,092.78	3,018.03	5,604.83	356.67	17,685.19
Distance between capitals (log)	1,540	8.58	0.57	8.63	5.88	9.78

Country-level variables: *Foreign Bank Share* = the percentage of the number of banks with assets that are at least 50% foreign-owned among the total of banks in the system, *Bank Concentration* = the proportion of assets held by the three largest banks in a country over the total assets of the banking sector, *Depth of Credit Information index* = an index that facilitates lending decisions by dealing with the rules affecting the scope, accessibility, and quality of credit information from public registry or private bureau, *GDP per Capita (log)* = the logarithm transformation of the $US 2005 constant GDP per capita; *Size (log GDP)* = the logarithm transformation of the $US 2005 constant GDP, *Economic Freedom score* = an equally weighted average of ten quantitative and qualitative indicators (Property Rights, Freedom from Corruption, Government spending, Fiscal Freedom, Business Freedom, Labor Freedom, Monetary Freedom, Trade Freedom, Investment freedom, Financial Freedom) and *Diff (Host-Home)_ Economic Freedom score* is constructed by subtracting the host country score from the home country score, *Bilateral Trade Ratio* = the flow of transactions in goods and services between a EU country and the 154 host countries, *Common Official Language* = a dummy variable that takes the value 1 when at least one official language is spoken in the home and host countries, and 0 otherwise, and *Distance* = in kilometers between the capital cities of the home and host country. These 3-year average values of each country 2011-2013 figures were winsorized at 1% and 99% levels to limit the influence of outliers.

Source: CEPII, Heritage Foundation, OECD-WTO, UNCTAD, World Bank (Financial Development and Structure, Global Financial Development Structure, Supervisory and Deposit Insurance, World Development Indicators)

Table 6
Bank-level financial summary statistics

Variables	Obs.	Mean	Std. Dev.	Median	Min	Max
			All Banks			
Specialization	1,251	0,66	0,47	1	0	1
CIR	1,251	0,68	0,30	0,66	0,07	2,16
EQ_TA	1,251	0,12	0,12	0,08	0,03	0,65
L_TA	1,251	0,54	0,25	0,59	0,00	0,97
NII_NI (%)	1,251	-0,86	2,78	-0,68	-14,76	9,39
NIM (%)	1,251	2,15	1,53	1,90	-0,11	9,69
ROAA (%)	1,251	0,28	1,66	0,28	-7,37	10,40
TA (billions USD)	1,251	24,44	77,71	2,88	0,01	621,25
			Banks with a foreign presence			
Specialization	289	0,69	0,47	1	0	1
CIR	289	0,65	0,28	0,63	0,07	2,04
EQ_TA	289	0,11	0,12	0,07	0,03	0,65
L_TA	289	0,45	0,25	0,51	0,00	0,93
NII_NI (%)	289	-0,86	2,97	-0,45	-14,76	9,39
NIM (%)	289	1,74	1,46	1,47	-0,11	9,69
ROAA (%)	289	0,27	2,30	0,28	-7,37	10,40
TA (billions USD)	289	73,52	143,85	13,65	0,04	621,25
			Banks with only foreign subsidiaries abroad			
Specialization	137	0,66	0,48	1	0	1
CIR	137	0,66	0,32	0,62	0,07	2,04
EQ_TA	137	0,13	0,14	0,09	0,03	0,65
L_TA	137	0,45	0,28	0,50	0,00	0,93
NII_NI (%)	137	-0,62	3,25	-0,32	-14,76	9,39
NIM (%)	137	2,01	1,79	1,66	-0,11	9,69
ROAA (%)	137	0,49	2,78	0,35	-7,37	10,40
TA (billions USD)	137	35,99	93,27	4,80	0,04	621,25
			Banks with only foreign branches abroad			
Specialization	56	0,59	0,50	1	0	1
CIR	56	0,63	0,24	0,60	0,12	1,47
EQ_TA	56	0,10	0,11	0,06	0,03	0,65
L_TA	56	0,53	0,23	0,58	0,01	0,90
NII_NI (%)	56	-0,65	2,80	-0,54	-14,76	9,39
NIM (%)	56	1,41	0,80	1,37	-0,10	3,39
ROAA (%)	56	0,21	1,91	0,32	-5,46	10,40
TA (billions USD)	56	29,60	45,23	13,45	0,05	205,60
			Banks with both foreign subsidiaries and foreign branches abroad			
Specialization	96	0,78	0,42	1	0	1
CIR	96	0,64	0,23	0,64	0,12	1,59
EQ_TA	96	0,08	0,08	0,06	0,03	0,65
L_TA	96	0,42	0,22	0,45	0,00	0,91
NII_NI (%)	96	-1,33	2,61	-0,52	-14,76	1,57
NIM (%)	96	1,55	1,13	1,36	-0,03	5,69
ROAA (%)	96	-0,02	1,64	0,19	-7,37	8,09
TA (billions USD)	96	152,68	198,98	54,66	0,42	621,25

The table displays the descriptive statistics of the banks financial characteristics: *Specialization* is a dummy equal to 1 for retail banks and 0 when they engage in wholesale banking services, *CIR* cost to income ratio; *EQ_TA* capital ratio of equity to total assets; *L_TA* loans to total assets; *NII_NI* non-interest income to net income; *NIM* net interest margin; *ROAA* return on average assets; *TA* total assets). All variables are calculated as the 3-year average value of 2011-2013 figures and were winsorized at 1% and 99% levels to limit the influence of outliers.

Source: Bankscope

Table 7
Correlation coefficients matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1. Host_Entry into Banking Requirements	1																							
2. Host_Bank Activity Restrictions	-0,10	1																						
3. Host_Capital Regulatory index	0,32	-0,01	1																					
4. Host_Official Supervisory Power	0,00	0,13	-0,18	1																				
5. Host_Foreign Bank Share	0,05	0,01	0,01	0,10	1																			
6. Host_Bank Concentration	-0,06	-0,06	-0,01	0,10	0,23	1																		
7. Host_Depth of Credit Information	-0,03	-0,21	0,09	-0,26	-0,14	-0,18	1																	
8. Host_GDP per Capita (log)	-0,10	-0,19	0,25	-0,27	-0,11	-0,01	0,59	1																
9. Host_Size (log GDP)	-0,02	-0,12	0,26	-0,30	-0,45	-0,35	0,58	0,60	1															
10. Diff (Host-Home)_Bank Activity	-0,08	0,80	-0,01	0,12	0,01	-0,03	-0,17	-0,15	-0,10	1														
11. Diff (Host-Home)_Cap Regulatory	0,26	-0,01	0,83	-0,16	0,01	0,00	0,07	0,21	0,20	-0,10	1													
12.Diff (Host-Home)_Off Supervisory	0,00	0,10	-0,13	0,76	0,07	0,09	-0,20	-0,20	-0,23	0,18	-0,01	1												
13. Diff (Host-Home)_Economic Freedom	-0,06	-0,16	0,10	-0,05	0,11	0,14	0,40	0,61	0,30	-0,15	0,07	-0,10	1											
14. Bilateral Trade Ratio	0,03	-0,15	0,17	-0,21	-0,26	-0,28	0,28	0,41	0,59	-0,13	0,15	-0,14	0,22	1										
15. Common Official Language	0,06	-0,05	0,06	-0,04	0,03	-0,08	0,01	0,10	0,10	0,02	0,01	0,01	0,13	0,14	1									
16. Distance (log)	0,05	0,23	-0,03	0,19	-0,09	0,02	-0,10	-0,35	-0,08	0,19	-0,03	0,16	-0,14	-0,36	-0,06	1								
17. Specialization	0,02	0,00	0,01	0,00	0,00	-0,03	0,03	0,01	0,05	-0,04	-0,11	-0,10	0,03	0,04	0,04	0,00	1							
18. CIR	-0,02	0,02	-0,01	0,01	0,00	0,03	-0,03	-0,02	-0,05	0,09	-0,04	0,00	-0,03	-0,03	-0,07	-0,03	0,01	1						
19. EQ_TA	-0,01	0,00	-0,01	0,00	0,00	0,01	-0,02	-0,01	-0,03	-0,01	0,04	0,04	-0,02	-0,03	0,02	0,02	-0,08	-0,05	1					
20. L_TA	-0,02	0,02	-0,02	0,01	0,01	0,04	-0,03	-0,02	-0,06	-0,06	0,05	-0,01	0,00	-0,05	-0,08	0,00	-0,01	-0,10	-0,17	1				
21. NII_NI	0,00	0,00	0,00	-0,01	0,00	-0,01	0,01	-0,01	0,01	-0,03	0,01	-0,05	0,00	-0,01	0,02	0,03	0,03	-0,02	0,11	-0,11	1			
23. NIM	-0,01	0,00	-0,01	0,00	0,00	0,02	-0,02	-0,02	-0,03	-0,06	0,00	-0,01	-0,01	-0,03	-0,09	0,00	0,04	-0,09	0,23	0,26	-0,05	1		
23. ROAA	-0,01	-0,01	-0,01	-0,02	0,00	-0,01	0,00	0,00	0,00	-0,04	0,03	0,03	-0,03	-0,02	0,03	0,03	-0,09	-0,45	0,28	-0,04	0,07	0,21	1	
24. Bank size (logTA)	0,06	-0,03	0,04	-0,02	-0,01	-0,11	0,11	0,06	0,17	-0,11	0,02	-0,10	0,11	0,12	0,20	0,00	0,09	-0,24	-0,27	-0,09	0,05	-0,34	-0,08	1

Variables: the country bank regulation and supervision variables (**1 to 4** and **10-12**) account for the year 2010. Institutional variables (**5 to 9** and **13 to 16**) and bank financial characteristics (**17 to 24**) are the 3-year average value of 2011-2013 figures. All variables were winsorized at 1% and 99% levels to limit the influence of outliers and the correlation coefficients are all significant at a 5% level.

Sources: Bankscope, CEPII, Heritage Foundation, OECD-WTO, UNCTAD, World Bank (Bank Regulation and Supervision Survey, Financial Development and Structure, Global Financial Development Structure, Supervisory and Deposit Insurance, World Development Indicators)

Table 8
Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*.

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.153***	0.159***	-0.088*	-0.132*
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.006***	0.054***	-0.038***	-0.101***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.030***	-0.023***	-0.043***	0.014
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.030***	-0.074***	0.144***	0.027
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.864***	-1.395***	-2.958***	-2.995***
	(0.04)	(0.06)	(0.18)	(0.23)
Host_Foreign Bank Share	1.009***	0.990***	-0.388***	0.619***
	(0.03)	(0.05)	(0.10)	(0.17)
Host_Depth of Credit Information Index	0.230***	0.172***	0.384***	-0.116***
	(0.01)	(0.01)	(0.03)	(0.03)
Diff (Host-Home)_Economic Freedom Score	0.018***	0.005***	0.072***	0.031***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.363***			
	(0.01)			
Host_Size (log GDP)	0.235***	-0.023*	0.811***	0.204***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.631***	0.551***	0.682***	0.844***
	(0.02)	(0.03)	(0.05)	(0.10)
Cost to Income Ratio	-0.376***	-0.067	-1.197***	0.252**
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.749***	-0.504***	-1.770***	-1.303***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.065***	-0.085***	-0.058***	-0.004
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.049***	0.175***	0.053***	0.043**
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.652***	0.632***	0.747***	0.648***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.398***	0.582***	1.333***	0.271**
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.396***	-0.204***	-1.755***	-1.474***
	(0.01)	(0.01)	(0.04)	(0.06)
Bilateral Trade ratio	0.131***	0.151***	-0.036**	0.346***
	(0.00)	(0.00)	(0.02)	(0.08)
N° Observations	**151,598**	**67,690**	**39,893**	**44,015**
Wald chi2	84,331.1	36,394.4	36,010.6	11,651.1
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.71	0.67	0.85	0.82

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 9
Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*.

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.100***	-0.059***	-0.089**	0.087
	(0.01)	(0.02)	(0.04)	(0.10)
Host_Bank Activity Restrictions	-0.002	0.006*	-0.012*	0.103***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.004*	0.000	0.024***	0.047***
	(0.00)	(0.00)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.055***	-0.079***	0.026**	0.096***
	(0.00)	(0.01)	(0.01)	(0.03)
Host_Foreign Bank Share	-0.020	-0.072	-0.093	-0.403***
	(0.03)	(0.05)	(0.08)	(0.14)
Host_GDP per Capita (log)	-0.035***			
	(0.01)			
Host_Size (log GDP)	-0.077***	-0.107***	-0.059***	-0.090***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.090***	-0.049**	-0.091**	0.206
	(0.02)	(0.02)	(0.04)	(0.16)
Cost to Income Ratio	0.153***	0.073*	0.617***	0.629***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.162***	-1.530***	0.796***	-0.350
	(0.11)	(0.13)	(0.23)	(0.41)
Net Interest Margin	-0.008	0.001	-0.036***	-0.009
	(0.01)	(0.01)	(0.01)	(0.03)
Non-Interest Income to Net Income	0.010***	0.003	-0.000	-0.012
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.090***	-0.054***	-0.061***	-0.028
	(0.01)	(0.01)	(0.01)	(0.04)
N° Observations (step 1)	**134,683**	**60,634**	**31,523**	**42,526**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**3,113**	**2,389**	**543**	**181**
Wald test of indep. Eqns.	813.9	817.7	155.8	158.6
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 10
Summary of the baseline results for banking regulation variables in Table 8 and Table 9.

	Eq. (1) – Probit **Bank presence abroad**				**Eq. (2) – Heckman** **Choice of branches exclusively rather than subsidiaries**			
Host countries	All	High income	Middle	Low	All	High	Middle	Low
Entry into Banking Requirements	+++	+++	-	-	---	---	--	
Bank Activity Restrictions	---	+++	---	---		+	-	+++
Capital Regulatory index	---	---	---		+		+++	+++
Official Supervisory Power	+++	---	+++		---	---	++	+++

The table presents the summary of results for the **Probit** estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$) and the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income groups. For all four variables, higher values indicate more stringency of the regulation in the host country. The signs +++ / ++ / + (--- / -- / -) indicate an increase (a decrease) of the likelihood of Eq. (1) or Eq. (2) respectively at a 1% (*), 5% (**), or 10% (*) significance level, and empty cells indicate no significance.

Table 11
Multinomial Probit estimation the likelihood for a bank *i* to build a foreign organizational strategy in the host country *k* (base outcome $Affiliate_{i,j,k} = 0$).

	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Base outcome: the bank operates only foreign subsidiaries in the host country *k* $Affiliate_{i,j,k} = 0$				
The bank operates only foreign branches in the host country *k* $Affiliate_{i,j,k} = 1$				
Host_Entry into banking requirements	-0.298***	-0.010	-2.753***	-0.157
	(0.06)	(0.07)	(0.26)	(0.58)
Host_Bank Activity Restrictions	-0.025*	-0.004	-0.196***	0.402***
	(0.01)	(0.02)	(0.03)	(0.10)
Host_Capital Regulatory index	0.046***	0.046***	0.312***	0.629***
	(0.01)	(0.01)	(0.04)	(0.16)
Host_Official Supervisory Power	-0.215***	-0.277***	0.135*	0.881***
	(0.02)	(0.02)	(0.07)	(0.18)
Host_Foreign Bank Share	1.180***	1.581***	2.393***	-2.337**
	(0.13)	(0.23)	(0.39)	(0.98)
Host_GDP per Capita (log)	0.060*			
	(0.04)			
Host_Size (log GDP)	-0.127***	-0.013	-0.446***	-0.490***
	(0.03)	(0.04)	(0.08)	(0.17)
Specialization	-0.707***	-0.554***	-1.627***	-1.405
	(0.09)	(0.10)	(0.29)	(0.91)
Cost to Income Ratio	0.914***	0.535***	3.078***	2.729***
	(0.15)	(0.17)	(0.50)	(0.82)
Equity / Total Assets	-4.205***	-4.517***	-0.891	-5.447*
	(0.39)	(0.48)	(1.13)	(2.97)
Net Interest Margin	-0.516***	-0.420***	-0.806***	-0.562
	(0.04)	(0.04)	(0.11)	(0.37)
Non-Interest Income to Net Income	-0.023*	-0.034***	-0.111**	-0.130*
	(0.01)	(0.01)	(0.05)	(0.07)
Bank size (logTA)	0.068***	0.055**	0.402***	0.356**
	(0.02)	(0.03)	(0.07)	(0.16)
The bank operates both foreign subsidiaries and branches in the host country *k* $Affiliate_{i,j,k} = 2$				
Host_Entry into banking requirements	-0.068	0.120*	-0.664***	-0.058
	(0.06)	(0.06)	(0.22)	(0.31)
Host_Bank Activity Restrictions	-0.066***	0.058***	0.093***	-0.204***
	(0.01)	(0.02)	(0.03)	(0.07)
Host_Capital Regulatory index	-0.008	-0.061***	0.079***	-0.001
	(0.01)	(0.01)	(0.03)	(0.08)
Host_Official Supervisory Power	0.043**	-0.098***	0.525***	0.275**
	(0.02)	(0.02)	(0.06)	(0.13)
Host_Foreign Bank Share	0.719***	-0.705***	1.795***	4.173***
	(0.12)	(0.21)	(0.28)	(0.64)
Host_GDP per Capita (log)	-0.357***			
	(0.03)			
Host_Size (log GDP)	0.161***	-0.130***	0.143***	0.402***
	(0.02)	(0.03)	(0.05)	(0.11)
Specialization	1.775***	1.697***	6.807***	0.606
	(0.09)	(0.11)	(0.79)	(0.39)

Cost to Income Ratio	-0.711***	-1.283***	0.519	1.718***
	(0.14)	(0.17)	(0.43)	(0.63)
Equity / Total Assets	0.608*	-2.205***	16.460***	-3.287***
	(0.32)	(0.48)	(1.61)	(1.21)
Net Interest Margin	0.288***	0.326***	0.022	0.524***
	(0.02)	(0.03)	(0.06)	(0.11)
Non-Interest Income to Net Income	-0.001	0.028**	-0.112***	0.160**
	(0.01)	(0.01)	(0.04)	(0.07)
Bank size (logTA)	0.336***	0.274***	0.608***	0.507***
	(0.02)	(0.03)	(0.06)	(0.09)
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Observations	**20,692**	**10,069**	**8,934**	**1,689**
Wald chi2	4,350.4	2,569.7	884.4	440.7
Prob > Wald chi2	0.000	0.000	0.000	0.000

The table presents regression results of the multinomial Probit estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ ($Affiliate_{i,j,k} = 1$) or with both foreign organizational forms ($Affiliate_{i,j,k} = 2$) instead of operating with foreign subsidiaries only (base outcome $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 12
Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Host EU and non-EU countries**

	Foreign Organizational Form choice: Only branches = 0 vs Only subsidiaries = 1			
	(1) ALL	(2) Host_High-income	**(3) EU Host countries**	**(4) non-EU Host countries**
Host_Entry into Banking Requirements	-0.100***	-0.059***	0.019	-0.125***
	(0.01)	(0.02)	(0.02)	(0.02)
Host_Bank Activity Restrictions	-0.002	0.006*	0.007**	0.014***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_Capital Regulatory index	0.004*	0.000	-0.001	0.009**
	(0.00)	(0.00)	(0.00)	(0.00)
Host_Official Supervisory Power	-0.055***	-0.079***	-0.023***	-0.009
	(0.00)	(0.01)	(0.01)	(0.01)
Host_Foreign Bank Share	-0.020	-0.072	-0.199***	-0.150***
	(0.03)	(0.05)	(0.05)	(0.05)
Host_GDP per Capita (log)	-0.035***		-0.139***	-0.079***
	(0.01)		(0.02)	(0.01)
Host_Size (log GDP)	-0.077***	-0.107***	-0.013	-0.094***
	(0.01)	(0.01)	(0.01)	(0.01)
Specialization	-0.090***	-0.049**	-0.039*	-0.215***
	(0.02)	(0.02)	(0.02)	(0.02)
Cost to Income Ratio	0.153***	0.073*	-0.194***	0.605***
	(0.04)	(0.04)	(0.04)	(0.05)
Equity / Total Assets	-1.162***	-1.530***	-1.117***	-0.480***
	(0.11)	(0.13)	(0.16)	(0.12)
Net Interest Margin	-0.008	0.001	-0.029**	-0.002
	(0.01)	(0.01)	(0.01)	(0.01)
Non-Interest Income to Net Income	0.010***	0.003	-0.011***	-0.005
	(0.00)	(0.00)	(0.00)	(0.00)
Bank size (logTA)	-0.090***	-0.054***	-0.020**	-0.060***
	(0.01)	(0.01)	(0.01)	(0.01)
N° Observations (step 1)	**134,683**	**60,634**	**35,346**	**99,337**
N° foreign affiliates	20,850	10,134	4,396	16,454
N° Censored (step 1 → step 2)	131,570	58,245	33,444	98,126
Uncensored (step 2)	**3,113**	**2,389**	**1,902**	**1,211**
Wald test of indep. Eqns.	813.9	817.7	219.4	1,141.3
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 13
Heckman estimation of the likelihood for a bank *i* to operate foreign branches only or both affiliate types instead of foreign subsidiaries only in the host country *k*.

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches or both = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.019***	0.000	-0.074***	-0.239***
	(0.00)	(0.00)	(0.01)	(0.03)
Host_Bank Activity Restrictions	-0.003***	0.001	-0.004***	0.031***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Capital Regulatory index	0.004***	0.001	0.008***	0.043***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Official Supervisory Power	0.003***	0.002	0.016***	0.050***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Foreign Bank Share	-0.012**	-0.052***	0.073***	0.290***
	(0.01)	(0.01)	(0.01)	(0.06)
Host_GDP per Capita (log)	-0.013***			
	(0.00)			
Host_Size (log GDP)	-0.012***	-0.022***	-0.003*	-0.038***
	(0.00)	(0.00)	(0.00)	(0.01)
Specialization	0.008	0.009	0.100***	-0.005
	(0.01)	(0.01)	(0.01)	(0.03)
Cost to Income Ratio	0.011	0.016	-0.008	0.227***
	(0.01)	(0.01)	(0.02)	(0.06)
Equity / Total Assets	-0.103***	-0.984***	0.425***	-0.657***
	(0.02)	(0.05)	(0.04)	(0.13)
Net Interest Margin	0.017***	0.032***	0.004	-0.018*
	(0.00)	(0.00)	(0.00)	(0.01)
Non-Interest Income to Net Income	0.001	0.004***	-0.004*	0.000
	(0.00)	(0.00)	(0.00)	(0.01)
Bank size (logTA)	-0.017***	-0.024***	-0.004	-0.084***
	(0.00)	(0.00)	(0.00)	(0.01)
N° Observations (step 1)	**151,598**	**67,690**	**39,893**	**44,015**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**20,028**	**9,445**	**8,913**	**1,670**
Wald test of indep. Eqns.	734.4	743.9	466.4	311.2
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of the likelihood for a bank *i* from EU country *j* to operate in the host country $k \neq j$ with foreign branches only ($Affiliate_{i,j,k} = 1$) or with both organizational forms ($Affiliate_{i,j,k} = 2$) instead of with foreign subsidiaries only (base outcome $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 14

Heckman estimation of the likelihood for a bank *i* to operate foreign subsidiaries only or both affiliate types instead of foreign branches only in the host country *k*.

	Foreign Organizational Form choice: Only branches = 0 vs Only subsidiaries or both = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.091***	0.032***	0.213***	-0.026
	(0.01)	(0.01)	(0.01)	(0.03)
Host_Bank Activity Restrictions	0.007***	0.001	0.043***	-0.101***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Capital Regulatory index	-0.014***	-0.022***	-0.020***	-0.056***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Official Supervisory Power	0.020***	0.030***	0.023***	-0.139***
	(0.00)	(0.00)	(0.00)	(0.01)
Host_Foreign Bank Share	-0.042***	-0.276***	-0.166***	0.654***
	(0.01)	(0.02)	(0.01)	(0.06)
Host_GDP per Capita (log)	-0.053***			
	(0.00)			
Host_Size (log GDP)	0.038***	0.003	0.036***	0.067***
	(0.00)	(0.00)	(0.00)	(0.01)
Specialization	0.477***	0.437***	0.913***	-0.015
	(0.01)	(0.01)	(0.01)	(0.02)
Cost to Income Ratio	-0.212***	-0.282***	-0.313***	-0.020
	(0.02)	(0.02)	(0.02)	(0.04)
Equity / Total Assets	0.632***	0.873***	1.563***	0.794***
	(0.04)	(0.09)	(0.05)	(0.09)
Net Interest Margin	0.053***	0.055***	0.017***	-0.048***
	(0.00)	(0.00)	(0.00)	(0.01)
Non-Interest Income to Net Income	-0.002*	0.010***	-0.013***	0.026***
	(0.00)	(0.00)	(0.00)	(0.00)
Bank size (logTA)	0.043***	0.035***	-0.004	-0.049***
	(0.00)	(0.01)	(0.00)	(0.01)
N° Observations (step 1)	**151,598**	**67,690**	**39,893**	**44,015**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**20,028**	**9,445**	**8,913**	**1,670**
Wald test of indep. Eqns.	9045.3	4339.1	7289.9	1983.3
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of the likelihood for a bank *i* from EU country *j* to operate in the host country $k \neq j$ with foreign subsidiaries only ($Affiliate_{i,j,k} = 0$) or with both organizational forms ($Affiliate_{i,j,k} = 2$) instead of with foreign branches only (base outcome $Affiliate_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 15
Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*. **Economic Freedom – Rule of Law (property rights, freedom from corruption)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.140***	0.163***	-0.284***	-0.182***
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.004	0.053***	-0.021***	-0.101***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.032***	-0.023***	-0.047***	0.013
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.039***	-0.071***	0.150***	0.030*
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.878***	-1.376***	-1.913***	-2.587***
	(0.04)	(0.06)	(0.16)	(0.21)
Host_Foreign Bank Share	1.130***	1.035***	0.398***	0.564***
	(0.03)	(0.05)	(0.10)	(0.17)
Host_Depth of Credit Information Index	0.281***	0.181***	0.513***	-0.081***
	(0.01)	(0.01)	(0.03)	(0.03)
Diff (Host-Home)_Rule of Law Score	0.011***	0.002***	0.029***	0.010***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.428***			
	(0.01)			
Host_Size (log GDP)	0.223***	-0.018	0.694***	0.162***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.640***	0.553***	0.698***	0.827***
	(0.02)	(0.03)	(0.05)	(0.09)
Cost to Income Ratio	-0.330***	-0.059	-1.091***	0.268**
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.762***	-0.509***	-1.725***	-1.312***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.064***	-0.085***	-0.058***	-0.005
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.061***	0.174***	0.082***	0.050**
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.649***	0.630***	0.748***	0.646***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.424***	0.584***	1.380***	0.272**
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.387***	-0.204***	-1.573***	-1.355***
	(0.01)	(0.01)	(0.04)	(0.05)
Bilateral Trade ratio	0.129***	0.149***	0.021	0.380***
	(0.00)	(0.00)	(0.02)	(0.07)
N° Observations	**151,598**	**67,690**	**39,893**	**44,015**
Wald chi2	84,792.2	36,390.4	36,040.5	11,640.9
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.716	0.665	0.850	0.820

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 16
Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*. **Economic Freedom – Limited Government (fiscal freedom, government spending)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.174***	0.145***	-0.045	-0.201***
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.010***	0.045***	-0.008	-0.097***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.034***	-0.025***	-0.060***	0.016
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.035***	-0.072***	0.174***	0.007
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.667***	-1.234***	-0.488***	-2.606***
	(0.04)	(0.05)	(0.15)	(0.21)
Host_Foreign Bank Share	1.083***	1.007***	0.537***	0.562***
	(0.03)	(0.05)	(0.10)	(0.17)
Host_Depth of Credit Information Index	0.241***	0.131***	0.642***	-0.072**
	(0.01)	(0.02)	(0.03)	(0.03)
Diff (Host-Home)_Limited Government Score	0.000	0.007***	-0.018***	0.003
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.265***			
	(0.01)			
Host_Size (log GDP)	0.236***	0.024**	0.740***	0.139***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.632***	0.529***	0.867***	0.823***
	(0.02)	(0.03)	(0.05)	(0.09)
Cost to Income Ratio	-0.360***	-0.071	-1.062***	0.221*
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.734***	-0.496***	-1.548***	-1.212***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.071***	-0.086***	-0.050***	0.001
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.042***	0.173***	0.060***	0.026
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.650***	0.634***	0.778***	0.649***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.439***	0.598***	1.419***	0.200*
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.385***	-0.219***	-1.628***	-1.362***
	(0.01)	(0.01)	(0.04)	(0.06)
Bilateral Trade ratio	0.130***	0.155***	0.054***	0.474***
	(0.00)	(0.00)	(0.02)	(0.07)
N° Observations	**151,598**	**67,690**	**39,893**	**44,015**
Wald chi2	83,974.0	36,459.9	35,454.8	11,604.8
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.71	0.67	0.84	0.81

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 17
Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*. **Economic Freedom – Regulatory Efficiency (business, labor, monetary)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.174***	0.158***	0.081	-0.157**
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.008***	0.054***	-0.003	-0.093***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.031***	-0.022***	-0.037***	0.020**
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.034***	-0.074***	0.224***	0.015
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.691***	-1.357***	-2.260***	-2.775***
	(0.04)	(0.06)	(0.17)	(0.22)
Host_Foreign Bank Share	1.063***	1.003***	-0.048	0.588***
	(0.03)	(0.05)	(0.10)	(0.17)
Host_Depth of Credit Information Index	0.238***	0.173***	0.502***	-0.103***
	(0.01)	(0.01)	(0.03)	(0.03)
Diff (Host-Home)_Regulatory Efficiency Score	0.006***	0.005***	0.060***	0.018***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.294***			
	(0.01)			
Host_Size (log GDP)	0.234***	-0.025*	0.930***	0.180***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.636***	0.547***	0.871***	0.847***
	(0.02)	(0.03)	(0.05)	(0.09)
Cost to Income Ratio	-0.363***	-0.067	-1.177***	0.216*
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.739***	-0.509***	-1.731***	-1.239***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.070***	-0.086***	-0.051***	-0.000
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.041***	0.174***	0.041***	0.028
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.650***	0.631***	0.765***	0.643***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.421***	0.591***	1.247***	0.268**
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.389***	-0.206***	-1.898***	-1.384***
	(0.01)	(0.01)	(0.04)	(0.05)
Bilateral Trade ratio	0.130***	0.152***	-0.037**	0.417***
	(0.00)	(0.00)	(0.02)	(0.07)
N° Observations	**151,598**	**67,690**	**39,893**	**44,015**
Wald chi2	84,017.802	36,388.205	35,797.359	11,623.8
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.710	0.665	0.845	0.82

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 18
Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*. **Economic Freedom – Market Openness (trade, investment, financial)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.168***	0.162***	0.044	-0.131**
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.008***	0.047***	-0.051***	-0.097***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.032***	-0.025***	-0.063***	0.017*
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.031***	-0.068***	0.086***	0.022
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.760***	-1.199***	-2.853***	-3.042***
	(0.04)	(0.06)	(0.18)	(0.24)
Host_Foreign Bank Share	1.009***	1.106***	-0.988***	0.470***
	(0.03)	(0.05)	(0.11)	(0.17)
Host_Depth of Credit Information Index	0.006***	-0.003***	0.055***	0.021***
	(0.00)	(0.00)	(0.00)	(0.00)
Diff (Host-Home)_Market Openness Score	0.234***	0.165***	0.368***	-0.121***
	(0.01)	(0.01)	(0.03)	(0.03)
Host_GDP per Capita (log)	-0.311***			
	(0.01)			
Host_Size (log GDP)	0.235***	0.019	0.749***	0.175***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.629***	0.536***	0.598***	0.852***
	(0.02)	(0.03)	(0.05)	(0.10)
Cost to Income Ratio	-0.365***	-0.056	-1.045***	0.221*
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.739***	-0.518***	-1.737***	-1.245***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.069***	-0.089***	-0.053***	-0.001
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.043***	0.171***	0.038***	0.026
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.648***	0.629***	0.736***	0.646***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.428***	0.615***	1.396***	0.231**
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.380***	-0.209***	-1.699***	-1.391***
	(0.01)	(0.01)	(0.04)	(0.05)
Bilateral Trade ratio	0.128***	0.149***	0.011	0.441***
	(0.00)	(0.00)	(0.02)	(0.07)
N° Observations	**151,598**	**67,690**	**39,893**	**44,015**
Wald chi2	84,034.6	36,385.6	35,974.6	11,635.8
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.71	0.66	0.85	0.82

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix A

Description of bank regulation and supervision indexes from the Barth et al. survey (updated 2012) BRSS

Index	Description
Entry into Banking Requirements Binary "yes"=1 or "no"=0 answers Range from 0 (lower stringency) to 9 (greater stringency)	An index that accounts for all the documents that are legally required to be submitted before the issuance of the banking license in the country. Documents regarding: - Draft by laws - Intended organizational chart - Structure of Board (composition, committees, functions) - Market / business strategy - Financial projections for the first three years - Financial information on main potential shareholders - Background / experience of future Board directors - Background / experience of future senior managers - Source of funds to be used as capital
Bank Activity Restrictions Range from 0 (lower restrictiveness) to 16 (more restrictiveness)	An index that assesses the level of regulatory restrictiveness for bank participation in: - Securities activities (underwriting brokering and dealing in securities, and all aspects of mutual fund industry) - Insurance activities (insurance underwriting and selling) - Real estate activities (real estate investment, development, and management) - Nonfinancial businesses except those businesses that are auxiliary to banking business (ownership and control of nonfinancial firms) The level of regulatory restrictiveness is measured (weighted) as: - Unrestricted (=1) if full range of activities can be conducted directly in the bank or a bank may own 100 percent of the equity in any nonfinancial firm. - Permitted (=2) if full range of activities can be conducted, but some or all must be conducted in subsidiaries or a bank may own 100 percent of the equity in any nonfinancial firm, but ownership is limited based on bank's equity capital. - Restricted (=3) if less than full range of activities can be conducted in the bank or subsidiaries or a bank can only acquire less than 100 percent of the equity in any nonfinancial firm. - Prohibited (=4) if the activity cannot be conducted in either the bank or the subsidiaries or a bank may not acquire an of the equity investment in a nonfinancial firm.
Overall Capital Stringency	An index that assesses whether the capital requirement reflects information on certain risk elements and deducts certain market value losses from capital before the minimum capital adequacy is determined.
Initial Capital Stringency	An index that assesses whether certain funds may be used to initially capitalize a bank and whether they are officially verified.
Capital Regulatory Index Binary "yes"=1 or "no"=0 answers Range from 0 (lower stringency) to 18 (greater stringency)	The sum of the overall and initial capital stringency indexes.
Official Supervisory Power Binary "yes"=1 or "no"=0 answers Range from 0 (lower power) to 22 (greater power)	An index that evaluates whether supervisory authorities have the power to take specific preventive and corrective actions on the basis of auditing, internal/board/ownership rights structure, profits and losses and other balance sheets items.

Appendix B

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*.

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.018	-0.004	-0.217***	0.447***
	(0.02)	(0.02)	(0.08)	(0.13)
Diff (Host-Home)_Bank Activity Restrictions	0.010**	0.021***	0.031***	-0.062***
	(0.00)	(0.01)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.024***	0.033***	0.023***	0.030***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.019***	-0.005	0.058***	0.070***
	(0.01)	(0.01)	(0.02)	(0.02)
Host_Bank Concentration	-1.130***	-1.122***	-0.634**	-0.969***
	(0.06)	(0.09)	(0.26)	(0.23)
Host_Foreign Bank Share	0.637***	0.727***	0.272	-0.350*
	(0.05)	(0.07)	(0.17)	(0.18)
Host_Depth of Credit Information Index	0.135***	0.155***	0.308***	-0.123***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Economic Freedom Score	0.037***	0.032***	0.045***	0.013**
	(0.00)	(0.00)	(0.00)	(0.01)
Host_GDP per Capita (log)	-0.158***			
	(0.02)			
Host_Size (log GDP)	0.013	-0.018	0.209***	0.102**
	(0.01)	(0.02)	(0.04)	(0.04)
Specialization	-0.017	-0.046	-0.001	0.723***
	(0.03)	(0.03)	(0.07)	(0.13)
Cost to Income Ratio	0.322***	0.510***	-0.247*	0.423***
	(0.05)	(0.06)	(0.13)	(0.14)
Loans / Total Assets	-1.197***	-1.165***	-1.438***	-1.166***
	(0.05)	(0.06)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.062***	-0.080***	-0.026**	-0.013
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.101***	0.144***	0.031	0.185***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.475***	0.490***	0.525***	0.437***
	(0.01)	(0.01)	(0.02)	(0.03)
Common Official Language	0.074**	0.147***	0.518***	0.472***
	(0.04)	(0.04)	(0.11)	(0.11)
Distance between capitals	-0.302***	-0.221***	-1.017***	-0.509***
	(0.01)	(0.01)	(0.05)	(0.08)
Bilateral Trade ratio	0.148***	0.147***	0.164***	0.394***
	(0.01)	(0.01)	(0.03)	(0.14)
N° Observations	**134,683**	**60,634**	**31,523**	**42,526**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01. The 2nd step is reported in Table 9.

Appendix C

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Host EU and non-EU countries**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) ALL	(2) Host_High-income	**(3) EU Host countries**	**(4) non-EU Host countries**
Host_Entry into Banking Requirements	-0.018	-0.004	-0.052*	-0.026
	(0.02)	(0.02)	(0.03)	(0.04)
Diff (Host-Home)_Bank Activity Restrictions	0.010**	0.021***	0.054***	0.002
	(0.00)	(0.01)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	0.024***	0.033***	0.049***	0.007
	(0.00)	(0.00)	(0.00)	(0.00)
Diff (Host-Home)_Official Supervisory Power	0.019***	-0.005	0.017*	0.068***
	(0.01)	(0.01)	(0.01)	(0.01)
Host_Bank Concentration	-1.130***	-1.122***	-0.600***	-0.844***
	(0.06)	(0.09)	(0.11)	(0.11)
Host_Foreign Bank Share	0.637***	0.727***	0.669***	0.495***
	(0.05)	(0.07)	(0.10)	(0.09)
Host_Depth of Credit Information Index	0.135***	0.155***	-0.043	0.023
	(0.01)	(0.02)	(0.03)	(0.02)
Diff (Host-Home)_Economic Freedom Score	0.037***	0.032***	0.040***	0.035***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.158***		-0.529***	-0.245***
	(0.02)		(0.04)	(0.03)
Host_Size (log GDP)	0.013	-0.018	0.186***	0.274***
	(0.01)	(0.02)	(0.03)	(0.02)
Specialization	-0.017	-0.046	0.117***	0.010
	(0.03)	(0.03)	(0.04)	(0.04)
Cost to Income Ratio	0.322***	0.510***	0.441***	0.131*
	(0.05)	(0.06)	(0.07)	(0.08)
Loans / Total Assets	-1.197***	-1.165***	-0.927***	-1.408***
	(0.05)	(0.06)	(0.07)	(0.08)
Non-Interest Income to Net Income	-0.062***	-0.080***	-0.038***	-0.059***
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.101***	0.144***	0.098***	0.111***
	(0.01)	(0.01)	(0.01)	(0.01)
Bank size (logTA)	0.475***	0.490***	0.497***	0.449***
	(0.01)	(0.01)	(0.01)	(0.01)
Common Official Language	0.074**	0.147***	0.251***	0.187***
	(0.04)	(0.04)	(0.06)	(0.05)
Distance between capitals	-0.302***	-0.221***	-0.059***	-0.818***
	(0.01)	(0.01)	(0.02)	(0.03)
Bilateral Trade ratio	0.148***	0.147***	0.162***	-0.015
	(0.01)	(0.01)	(0.01)	(0.01)
N° Observations	**134,683**	**60,634**	**35,346**	**99,337**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01. The 2nd step is reported in Table 12.

Appendix D

Heckman estimation of the likelihood for a bank *i* to operate with least one foreign affiliate abroad.

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.153***	0.159***	-0.088*	-0.129*
	(0.01)	(0.02)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.006***	0.054***	-0.038***	-0.100***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.030***	-0.023***	-0.043***	0.014
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.030***	-0.074***	0.144***	0.028
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.864***	-1.395***	-2.958***	-2.945***
	(0.04)	(0.06)	(0.18)	(0.22)
Host_Foreign Bank Share	1.009***	0.990***	-0.388***	0.603***
	(0.03)	(0.05)	(0.10)	(0.17)
Host_Depth of Credit Information Index	0.230***	0.172***	0.384***	-0.113***
	(0.01)	(0.01)	(0.03)	(0.03)
Diff (Host-Home)_Economic Freedom Score	0.018***	0.005***	0.072***	0.030***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.363***			
	(0.01)			
Host_Size (log GDP)	0.235***	-0.023*	0.811***	0.201***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.631***	0.551***	0.682***	0.841***
	(0.02)	(0.03)	(0.05)	(0.09)
Cost to Income Ratio	-0.376***	-0.067	-1.197***	0.251**
	(0.04)	(0.05)	(0.10)	(0.12)
Loans / Total Assets	-0.749***	-0.504***	-1.770***	-1.298***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.065***	-0.085***	-0.058***	-0.004
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.049***	0.175***	0.053***	0.041*
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.652***	0.632***	0.747***	0.641***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.398***	0.582***	1.333***	0.271**
	(0.02)	(0.03)	(0.06)	(0.11)
Distance between capitals	-0.396***	-0.204***	-1.755***	-1.462***
	(0.01)	(0.01)	(0.04)	(0.06)
Bilateral Trade ratio	0.131***	0.151***	-0.036**	0.343***
	(0.00)	(0.00)	(0.02)	(0.07)
N° Observations	**151,958**	**67,690**	**39,893**	**44,015**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of the likelihood for a bank *i* from EU country *j* to have a foreign activity in the host country *k≠j*, for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01. The 2nd step is reported in both Table 13 and Table 14.

Appendix E

Probit estimation of the likelihood for a bank *i* to operate an affiliate in a foreign country *k*. **Foreign Assets to Total Assets**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.324***	0.371***	-0.098**	-0.154**
	(0.02)	(0.03)	(0.05)	(0.07)
Diff (Host-Home)_Bank Activity Restrictions	-0.022***	0.036***	-0.048***	-0.102***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Capital Regulatory index	-0.022***	0.013***	-0.044***	0.008
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.040***	-0.100***	0.159***	0.021
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-1.059***	-1.689***	-3.437***	-3.156***
	(0.04)	(0.07)	(0.18)	(0.23)
Host_ForeignTA_TotalTA	0.473***	0.435***	-0.872***	0.198
	(0.04)	(0.06)	(0.11)	(0.16)
Host_Depth of Credit Information Index	0.225***	0.135***	0.427***	-0.136***
	(0.01)	(0.02)	(0.03)	(0.03)
Diff (Host-Home)_Economic Freedom Score	0.020***	0.009***	0.075***	0.027***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.361***			
	(0.01)			
Host_Size (log GDP)	0.180***	-0.099***	0.789***	0.186***
	(0.01)	(0.01)	(0.03)	(0.04)
Specialization	0.610***	0.465***	0.684***	0.783***
	(0.02)	(0.03)	(0.05)	(0.09)
Cost to Income Ratio	-0.426***	-0.052	-1.169***	0.236*
	(0.04)	(0.06)	(0.10)	(0.12)
Loans / Total Assets	-0.956***	-0.894***	-1.776***	-1.441***
	(0.04)	(0.05)	(0.09)	(0.14)
Non-Interest Income to Net Income	-0.062***	-0.082***	-0.056***	-0.004
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.050***	0.197***	0.052***	0.034
	(0.01)	(0.01)	(0.01)	(0.02)
Bank size (logTA)	0.668***	0.655***	0.751***	0.641***
	(0.01)	(0.01)	(0.01)	(0.02)
Common Official Language	0.442***	0.617***	1.365***	0.227*
	(0.02)	(0.03)	(0.06)	(0.12)
Distance between capitals	-0.379***	-0.139***	-1.817***	-1.480***
	(0.01)	(0.01)	(0.04)	(0.06)
Bilateral Trade ratio	0.126***	0.137***	-0.051***	0.367***
	(0.00)	(0.00)	(0.02)	(0.08)
N° Observations	**133,380**	**54,468**	**39,893**	**44,015**
Wald chi2	79,063.0	32,954.9	36,057.8	11,226.7
Prob > chi2	0.000	0.000	0.000	0.000
Pseudo R-squared	0.72	0.69	0.85	0.81

The table presents regression results of the Probit estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to operate an affiliate in a host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix F

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Foreign Assets to Total Assets**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.106***	-0.135***	-0.195***	0.367***
	(0.03)	(0.04)	(0.08)	(0.11)
Diff (Host-Home)_Bank Activity Restrictions	0.001	0.008	0.033***	-0.042***
	(0.00)	(0.01)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.045***	0.063***	0.027***	0.013
	(0.00)	(0.01)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.001	-0.031***	0.050***	0.057***
	(0.01)	(0.01)	(0.02)	(0.02)
Host_Bank Concentration	-1.453***	-1.771***	-0.621**	-0.854***
	(0.07)	(0.10)	(0.26)	(0.23)
Host_ForeignTA_TotalTA	0.520***	0.520***	0.313	-0.621***
	(0.05)	(0.07)	(0.19)	(0.18)
Host_Depth of Credit Information Index	0.136***	0.187***	0.298***	-0.114***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Economic Freedom Score	0.034***	0.031***	0.044***	0.008
	(0.00)	(0.00)	(0.00)	(0.01)
Host_GDP per Capita (log)	-0.115***			
	(0.02)			
Host_Size (log GDP)	-0.038***	-0.132***	0.207***	0.063
	(0.01)	(0.02)	(0.04)	(0.04)
Specialization	-0.016	-0.054	-0.002	0.642***
	(0.03)	(0.03)	(0.07)	(0.12)
Cost to Income Ratio	0.323***	0.536***	-0.244*	0.367**
	(0.05)	(0.07)	(0.13)	(0.14)
Loans / Total Assets	-1.259***	-1.243***	-1.441***	-1.275***
	(0.05)	(0.07)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.062***	-0.082***	-0.026**	-0.013
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.102***	0.150***	0.032*	0.174***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.473***	0.491***	0.526***	0.418***
	(0.01)	(0.01)	(0.02)	(0.02)
Common Official Language	0.092**	0.178***	0.524***	0.417***
	(0.04)	(0.05)	(0.11)	(0.12)
Distance between capitals	-0.295***	-0.208***	-1.007***	-0.414***
	(0.01)	(0.01)	(0.05)	(0.08)
Bilateral Trade ratio	0.145***	0.151***	0.167***	0.402***
	(0.01)	(0.01)	(0.03)	(0.14)
N° Observations	**117,175**	**48,125**	**31,523**	**37,527**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix G

Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Foreign Assets to Total Assets**

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.115***	-0.154***	-0.089**	0.117
	(0.02)	(0.02)	(0.04)	(0.10)
Host_Bank Activity Restrictions	-0.007**	0.004	-0.011	0.098***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.006*	-0.042***	0.021***	0.033**
	(0.00)	(0.01)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.053***	-0.057***	0.027**	0.081***
	(0.01)	(0.01)	(0.01)	(0.03)
Host_ForeignTA_TotalTA	0.036	0.122**	-0.019	-0.477***
	(0.04)	(0.05)	(0.09)	(0.13)
Host_GDP per Capita (log)	-0.047***			
	(0.01)			
Host_Size (log GDP)	-0.067***	-0.067***	-0.050***	-0.090***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.113***	-0.093***	-0.087**	0.253*
	(0.02)	(0.02)	(0.04)	(0.15)
Cost to Income Ratio	0.170***	0.061	0.604***	0.659***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.218***	-1.663***	0.739***	-0.093
	(0.11)	(0.14)	(0.22)	(0.42)
Net Interest Margin	-0.009	-0.002	-0.031**	-0.006
	(0.01)	(0.01)	(0.01)	(0.02)
Non-Interest Income to Net Income	0.009***	-0.001	-0.001	-0.020*
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.092***	-0.057***	-0.059***	-0.011
	(0.01)	(0.01)	(0.01)	(0.04)
N° Observations (step 1)	**117,175**	**48,125**	**31,523**	**37,527**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	114,220	45,890	30,980	37,350
Uncensored (step 2)	**2,995**	**2,235**	**543**	**177**
Wald test of indep. Eqns.	822.0	890.1	153.3	153.4
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix H

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Economic Freedom – Rule of Law (property rights, freedom from corruption)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.017	0.039*	-0.203***	0.444***
	(0.02)	(0.02)	(0.08)	(0.13)
Diff (Host-Home)_Bank Activity Restrictions	0.004	0.016***	0.023**	-0.063***
	(0.00)	(0.01)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.017***	0.028***	0.019**	0.028**
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.034***	0.006	0.077***	0.072***
	(0.01)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-1.040***	-1.002***	-0.213	-0.841***
	(0.06)	(0.08)	(0.25)	(0.22)
Host_Foreign Bank Share	0.798***	0.901***	0.554***	-0.330*
	(0.05)	(0.07)	(0.16)	(0.18)
Host_Depth of Credit Information Index	0.202***	0.204***	0.386***	-0.116***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Rule of Law Score	0.012***	0.010***	0.015***	0.005*
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.146***			
	(0.02)			
Host_Size (log GDP)	-0.003	-0.001	0.147***	0.101**
	(0.01)	(0.02)	(0.04)	(0.04)
Specialization	-0.005	-0.036	0.005	0.722***
	(0.03)	(0.03)	(0.07)	(0.13)
Cost to Income Ratio	0.343***	0.527***	-0.227*	0.428***
	(0.05)	(0.06)	(0.13)	(0.14)
Loans / Total Assets	-1.185***	-1.144***	-1.471***	-1.181***
	(0.05)	(0.06)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.064***	-0.083***	-0.026**	-0.014
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.106***	0.149***	0.031	0.187***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.474***	0.487***	0.526***	0.439***
	(0.01)	(0.01)	(0.02)	(0.03)
Common Official Language	0.157***	0.240***	0.466***	0.478***
	(0.03)	(0.04)	(0.11)	(0.11)
Distance between capitals	-0.277***	-0.199***	-0.944***	-0.475***
	(0.01)	(0.01)	(0.05)	(0.07)
Bilateral Trade ratio	0.136***	0.131***	0.201***	0.389***
	(0.00)	(0.01)	(0.03)	(0.14)
N° Observations	**134,683**	**60,634**	**31,523**	**42,526**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

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Appendix I

Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Economic Freedom – Rule of Law (property rights, freedom from corruption)**

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.097***	-0.060***	-0.093**	0.082
	(0.01)	(0.02)	(0.04)	(0.10)
Host_Bank Activity Restrictions	-0.001	0.008**	-0.010	0.102***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.003	-0.002	0.024***	0.047***
	(0.00)	(0.00)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.053***	-0.077***	0.027**	0.095***
	(0.00)	(0.01)	(0.01)	(0.03)
Host_Foreign Bank Share	-0.039	-0.103**	-0.098	-0.404***
	(0.03)	(0.05)	(0.08)	(0.14)
Host_GDP per Capita (log)	-0.035***			
	(0.01)			
Host_Size (log GDP)	-0.083***	-0.115***	-0.061***	-0.091***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.071***	-0.035*	-0.094**	0.198
	(0.02)	(0.02)	(0.04)	(0.16)
Cost to Income Ratio	0.150***	0.069*	0.610***	0.631***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.192***	-1.551***	0.701***	-0.377
	(0.10)	(0.13)	(0.23)	(0.41)
Net Interest Margin	-0.005	0.000	-0.031**	-0.010
	(0.01)	(0.01)	(0.01)	(0.03)
Non-Interest Income to Net Income	0.009***	0.004*	0.001	-0.012
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.103***	-0.069***	-0.064***	-0.033
	(0.01)	(0.01)	(0.01)	(0.04)
N° Observations (step 1)	**134,683**	**60,634**	**31,523**	**42,526**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**3,113**	**2,389**	**543**	**181**
Wald test of indep. Eqns.	850.3	836.8	154.3	159.1
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix J

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Economic Freedom – Limited Government (fiscal freedom, government spending)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.016	0.050**	-0.222***	0.437***
	(0.02)	(0.02)	(0.08)	(0.13)
Diff (Host-Home)_Bank Activity Restrictions	-0.006	-0.003	0.019*	-0.060***
	(0.00)	(0.00)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.013***	0.022***	0.017*	0.029**
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.018***	-0.007	0.070***	0.063***
	(0.01)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.898***	-0.724***	0.068	-0.854***
	(0.06)	(0.08)	(0.25)	(0.22)
Host_Foreign Bank Share	0.722***	0.835***	0.808***	-0.311*
	(0.05)	(0.07)	(0.16)	(0.18)
Host_Depth of Credit Information Index	0.143***	0.136***	0.337***	-0.108***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Limited Government Score	0.006***	0.003***	0.016***	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	0.068***			
	(0.01)			
Host_Size (log GDP)	0.007	0.064***	0.211***	0.098**
	(0.01)	(0.02)	(0.04)	(0.04)
Specialization	-0.050*	-0.102***	0.054	0.716***
	(0.03)	(0.03)	(0.07)	(0.13)
Cost to Income Ratio	0.349***	0.536***	-0.194	0.415***
	(0.05)	(0.06)	(0.12)	(0.14)
Loans / Total Assets	-1.130***	-1.111***	-1.305***	-1.143***
	(0.05)	(0.06)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.071***	-0.090***	-0.026**	-0.013
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.094***	0.142***	0.013	0.185***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.473***	0.486***	0.514***	0.437***
	(0.01)	(0.01)	(0.02)	(0.03)
Common Official Language	0.195***	0.372***	0.502***	0.460***
	(0.03)	(0.04)	(0.11)	(0.11)
Distance between capitals	-0.284***	-0.189***	-1.020***	-0.487***
	(0.01)	(0.01)	(0.05)	(0.08)
Bilateral Trade ratio	0.147***	0.132***	0.180***	0.404***
	(0.01)	(0.01)	(0.03)	(0.14)
N° Observations	**134,683**	**60,634**	**31,523**	**42,526**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix K

Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Economic Freedom – Limited Government (fiscal freedom, government spending)**

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.095***	-0.059***	-0.103**	0.094
	(0.02)	(0.02)	(0.04)	(0.11)
Host_Bank Activity Restrictions	-0.002	0.007**	-0.009	0.104***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.005*	-0.001	0.029***	0.049***
	(0.00)	(0.00)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.050***	-0.074***	0.034***	0.097***
	(0.01)	(0.01)	(0.01)	(0.03)
Host_Foreign Bank Share	-0.007	-0.105**	-0.093	-0.408***
	(0.04)	(0.05)	(0.08)	(0.14)
Host_GDP per Capita (log)	-0.030***			
	(0.01)			
Host_Size (log GDP)	-0.076***	-0.115***	-0.060***	-0.090***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.099***	-0.050**	-0.051	0.207
	(0.02)	(0.02)	(0.05)	(0.16)
Cost to Income Ratio	0.203***	0.087**	0.703***	0.620***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.253***	-1.603***	1.015***	-0.313
	(0.11)	(0.13)	(0.24)	(0.41)
Net Interest Margin	0.010	0.007	-0.026*	-0.007
	(0.01)	(0.01)	(0.01)	(0.03)
Non-Interest Income to Net Income	0.007***	0.004*	0.002	-0.011
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.086***	-0.067***	-0.059***	-0.013
	(0.01)	(0.01)	(0.01)	(0.04)
N° Observations (step 1)	**134,683**	**60,634**	**31,523**	**42,526**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**3,113**	**2,389**	**543**	**181**
Wald test of indep. Eqns.	797.3	828.4	175.3	162.4
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix L

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Economic Freedom – Regulatory Efficiency (business freedom, labor freedom, monetary freedom)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.020	0.037*	-0.163**	0.436***
	(0.02)	(0.02)	(0.08)	(0.13)
Diff (Host-Home)_Bank Activity Restrictions	0.006	0.012**	0.036***	-0.059***
	(0.00)	(0.01)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.023***	0.030***	0.025***	0.029**
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.017***	-0.011	0.089***	0.065***
	(0.01)	(0.01)	(0.01)	(0.02)
Host_Bank Concentration	-0.959***	-0.906***	-0.239	-0.852***
	(0.06)	(0.08)	(0.26)	(0.23)
Host_Foreign Bank Share	0.693***	0.761***	0.531***	-0.314*
	(0.05)	(0.07)	(0.16)	(0.18)
Host_Depth of Credit Information Index	0.158***	0.170***	0.395***	-0.108***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Regulatory Efficiency Score	0.018***	0.017***	0.023***	0.001
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.032**			
	(0.01)			
Host_Size (log GDP)	-0.007	-0.007	0.215***	0.100**
	(0.01)	(0.02)	(0.04)	(0.04)
Specialization	-0.022	-0.071**	0.082	0.720***
	(0.03)	(0.03)	(0.07)	(0.13)
Cost to Income Ratio	0.339***	0.527***	-0.232*	0.413***
	(0.05)	(0.06)	(0.13)	(0.14)
Loans / Total Assets	-1.134***	-1.124***	-1.327***	-1.146***
	(0.05)	(0.06)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.068***	-0.086***	-0.022**	-0.013
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.096***	0.143***	0.011	0.185***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.471***	0.487***	0.516***	0.437***
	(0.01)	(0.01)	(0.02)	(0.03)
Common Official Language	0.185***	0.289***	0.536***	0.465***
	(0.03)	(0.04)	(0.11)	(0.11)
Distance between capitals	-0.278***	-0.202***	-1.012***	-0.476***
	(0.01)	(0.01)	(0.05)	(0.07)
Bilateral Trade ratio	0.142***	0.138***	0.178***	0.399***
	(0.00)	(0.01)	(0.03)	(0.14)
N° Observations	**134,683**	**60,634**	**31,523**	**42,526**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix M

Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Economic Freedom – Regulatory Efficiency (business freedom, labor freedom, monetary freedom)**

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.098***	-0.059***	-0.106***	0.090
	(0.02)	(0.02)	(0.04)	(0.10)
Host_Bank Activity Restrictions	-0.002	0.007*	-0.009	0.104***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.005**	-0.001	0.028***	0.048***
	(0.00)	(0.00)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.051***	-0.076***	0.037***	0.097***
	(0.01)	(0.01)	(0.01)	(0.03)
Host_Foreign Bank Share	-0.024	-0.095*	-0.090	-0.405***
	(0.04)	(0.05)	(0.08)	(0.14)
Host_GDP per Capita (log)	-0.034***			
	(0.01)			
Host_Size (log GDP)	-0.079***	-0.113***	-0.062***	-0.090***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.090***	-0.048**	-0.061	0.205
	(0.02)	(0.02)	(0.05)	(0.16)
Cost to Income Ratio	0.193***	0.083**	0.672***	0.624***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.234***	-1.573***	0.929***	-0.332
	(0.11)	(0.13)	(0.23)	(0.41)
Net Interest Margin	0.003	0.002	-0.028**	-0.007
	(0.01)	(0.01)	(0.01)	(0.03)
Non-Interest Income to Net Income	0.008***	0.004*	0.000	-0.011
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.094***	-0.064***	-0.061***	-0.020
	(0.01)	(0.01)	(0.01)	(0.04)
N° Observations (step 1)	**134,683**	**60,634**	**31,523**	**42,526**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**3,113**	**2,389**	**543**	**181**
Wald test of indep. Eqns.	818.2	829.0	176.4	161.0
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix N

Heckman estimation of the likelihood for a bank *i* to have an exclusive foreign affiliate form in the host country *k*. **Economic Freedom – Market Openness (trade freedom, investment freedom, financial freedom)**

	Foreign Host Country choice: Presence = 1 ; Absence = 0			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	0.011	0.020	-0.130*	0.462***
	(0.02)	(0.02)	(0.08)	(0.12)
Diff (Host-Home)_Bank Activity Restrictions	0.006	0.021***	0.011	-0.056***
	(0.00)	(0.01)	(0.01)	(0.02)
Diff (Host-Home)_Capital Regulatory index	0.022***	0.033***	0.015*	0.034***
	(0.00)	(0.00)	(0.01)	(0.01)
Diff (Host-Home)_Official Supervisory Power	0.018***	-0.008	0.056***	0.073***
	(0.01)	(0.01)	(0.02)	(0.02)
Host_Bank Concentration	-1.015***	-1.040***	-0.192	-1.074***
	(0.06)	(0.08)	(0.26)	(0.24)
Host_Foreign Bank Share	0.509***	0.620***	0.155	-0.422**
	(0.05)	(0.07)	(0.19)	(0.18)
Host_Depth of Credit Information Index	0.138***	0.157***	0.337***	-0.151***
	(0.01)	(0.02)	(0.05)	(0.04)
Diff (Host-Home)_Market Openness Score	0.023***	0.024***	0.017***	0.016***
	(0.00)	(0.00)	(0.00)	(0.00)
Host_GDP per Capita (log)	-0.132***			
	(0.02)			
Host_Size (log GDP)	0.022*	0.000	0.155***	0.113**
	(0.01)	(0.02)	(0.04)	(0.05)
Specialization	-0.022	-0.057*	0.025	0.732***
	(0.03)	(0.03)	(0.07)	(0.13)
Cost to Income Ratio	0.315***	0.498***	-0.229*	0.413***
	(0.05)	(0.06)	(0.12)	(0.14)
Loans / Total Assets	-1.139***	-1.137***	-1.344***	-1.155***
	(0.05)	(0.06)	(0.13)	(0.18)
Non-Interest Income to Net Income	-0.066***	-0.084***	-0.022**	-0.013
	(0.00)	(0.00)	(0.01)	(0.01)
ROAA	0.091***	0.140***	0.012	0.183***
	(0.01)	(0.01)	(0.02)	(0.03)
Bank size (logTA)	0.468***	0.484***	0.519***	0.435***
	(0.01)	(0.01)	(0.02)	(0.03)
Common Official Language	0.200***	0.290***	0.440***	0.452***
	(0.03)	(0.04)	(0.11)	(0.11)
Distance between capitals	-0.250***	-0.164***	-0.954***	-0.488***
	(0.01)	(0.01)	(0.05)	(0.07)
Bilateral Trade ratio	0.134***	0.133***	0.211***	0.410***
	(0.01)	(0.01)	(0.03)	(0.14)
N° Observations	**134,683**	**60,634**	**31,523**	**42,526**

The table presents regression results of the **1st step** of the Heckman two-step sample-selection estimation of Eq. (1): the likelihood for a bank *i* from EU country *j* to have an exclusive foreign affiliate form in the host country $k \neq j$ (Presence $Foreign_{i,j,k} = 1$), for the whole sample of countries and the three high-, middle-, and low-income groups. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.

Appendix O

Heckman estimation of the likelihood for a bank *i* to operate foreign branches only and no subsidiary in the host country *k*. **Economic Freedom – Market Openness (trade freedom, investment freedom, financial freedom)**

	Foreign Organizational Form choice: Only subsidiaries = 0 vs Only branches = 1			
	(1) Host_All countries	(2) Host_High Income	(3) Host_Middle Income	(4) Host_Low Income
Host_Entry into Banking Requirements	-0.094***	-0.060***	-0.087**	0.081
	(0.01)	(0.02)	(0.04)	(0.10)
Host_Bank Activity Restrictions	-0.002	0.008**	-0.008	0.102***
	(0.00)	(0.00)	(0.01)	(0.01)
Host_Capital Regulatory index	0.003	-0.003	0.024***	0.046***
	(0.00)	(0.00)	(0.01)	(0.02)
Host_Official Supervisory Power	-0.050***	-0.075***	0.025**	0.096***
	(0.01)	(0.01)	(0.01)	(0.03)
Host_Foreign Bank Share	-0.034	-0.105**	-0.091	-0.392***
	(0.03)	(0.05)	(0.08)	(0.14)
Host_GDP per Capita (log)	-0.037***			
	(0.01)			
Host_Size (log GDP)	-0.081***	-0.115***	-0.056***	-0.088***
	(0.01)	(0.01)	(0.02)	(0.02)
Specialization	-0.081***	-0.045**	-0.067	0.211
	(0.02)	(0.02)	(0.05)	(0.16)
Cost to Income Ratio	0.184***	0.071*	0.681***	0.638***
	(0.04)	(0.04)	(0.09)	(0.16)
Equity / Total Assets	-1.240***	-1.555***	0.847***	-0.338
	(0.10)	(0.13)	(0.23)	(0.40)
Net Interest Margin	0.006	0.002	-0.024*	-0.009
	(0.01)	(0.01)	(0.01)	(0.03)
Non-Interest Income to Net Income	0.009***	0.005**	0.002	-0.012
	(0.00)	(0.00)	(0.01)	(0.01)
Bank size (logTA)	-0.101***	-0.070***	-0.068***	-0.033
	(0.01)	(0.01)	(0.01)	(0.03)
N° Observations (step 1)	**134,683**	**60,634**	**31,523**	**42,526**
N° foreign affiliates	20,850	10,134	9,010	1,706
N° Censored (step 1 → step 2)	131,570	58,245	30,980	42,345
Uncensored (step 2)	**3,113**	**2,389**	**543**	**181**
Wald test of indep. Eqns.	847.1	834.9	159.7	156.0
Prob > chi2	0.000	0.000	0.000	0.000

The table presents regression results of the **2nd step** of the Heckman two-step sample-selection estimation of Eq. (2): the likelihood for a bank *i* from EU country *j* to operate with foreign branches only in the host country $k \neq j$ (Only branches $Affiliate_{i,j,k} = 1$) instead of with foreign subsidiaries only in the host country $k \neq j$ (Only subsidiaries $Affiliate_{i,j,k} = 0$), for the whole sample of countries and the three high-, middle-, and low-income-group. A constant is estimated but not reported. All the variables have been defined in Section 3 and the descriptive statistics can be found in Table 4-a (Country-level Bank regulation and supervision), Table 5 (Country-level Institutional) and Table 6 (Individual bank-specific characteristics). This table reports the standard errors in parentheses and the significance of p-value by * p < 0.1, ** p < 0.05, *** p < 0.01.