WORKING PAPER SERIES

2022-ACF-02

Effect of operating multiple affiliates on the performance of subsidiaries in the same host country

Oskar Kowalewski

Institute of Economics, Polish Academy of Sciences, Poland
IESEG School of Management, UMR 9221 - LEM - Lille ´Economie Management, France
Univ. Lille, UMR 9221 - LEM - Lille ´Economie Management, France
CNRS, UMR 9221 - LEM - Lille ´Economie Management, France

Effect of operating multiple affiliates on the performance of subsidiaries in the same host country[⋆]

Oskar Kowalewski[*]

Institute of Economics, Polish Academy of Sciences, Poland

IESEG School of Management, UMR 9221 - LEM - Lille Économie Management, France

Univ. Lille, UMR 9221 - LEM - Lille Économie Management, France

CNRS, UMR 9221 - LEM - Lille Économie Management, France

Abstract

Little has been reported on the effect of affiliates on their foreign subsidiary performance. In the context of multinational banks (MNBs), we empirically investigate how the establishment of multiple affiliate forms affects the performance of their subsidiaries in the same host country. We also examine the factors influencing and effective entry mode choices. Based on the transaction cost theory, we hypothesize that MNBs can benefit foreign subsidiaries using entry modes based on cost minimization and value maximization. For the period 2005–2015, we test this hypothesis on a sample of 897 subsidiaries established by 98 MNBs across 147 countries. The results show that the simultaneous operation of multiple affiliate forms positively influences their foreign subsidiary's performance. The transaction costs determine MNBs' entry choices. MNBs can enhance their subsidiary's performance using entry modes considering institutional and cultural contexts and achieving cost and value targets in the host country. This study has policy implications in that it calls for collaboration between host and home countries to develop effective supervision and resolution regimes for MNBs operating multiple affiliate forms in host countries.

Keywords: multinational banks, transaction cost theory, entry mode choice, cultural and institutional proximity

JEL: G01, G21, G28

---

[*]IÉSEG School of Management, Socle de la Grande Arche, 1 Parvis de La Défense - F-92044 Paris La Défense cedex, France, Tel. +33 (0)1 559 110 10, Email: o.kowalewski@ieseg.fr

1. Introduction

Since the 1990s, there has been a substantial scaling-up of the worldwide operations of multinational banks (MNBs). Claessens and Van Horen (2014, 2015) document a significant increase in the relative importance of foreign banks and an increase in the share of the host banking system from 19% in 1995 to 34% in 2013. This trend reflects an increase in financial integration and services, both at the regional and global levels, where MNBs a key role.

MNBs have numerous advantages over regional banks. These banks can achieve scale and efficiency gains, as they serve clients in multiple countries. Given that MNBs are larger than the domestic banks on average, the scale advantages of MNBs enables them to develop sophisticated information technology, which, in turn, enhances their productivity and risk management skills. Despite several studies on the performance of MNBs' subsidiaries, the existing literature has paid little attention to their modes of operation and performance. However, the international business literature has shown that these modes play a crucial role in international strategic decision-making and influence the performance of foreign entities (Miller and Parkhe, 1998).

In general, an MNB can use one of the following four organizational forms for its foreign expansion: representative offices, agencies, branches, and subsidiaries. These forms are representative of the incremental forms of qualitative integration with a local market and present different engagement and costs for the MNBs (Liang et al., 2013). A representative office, agency, and branch are legally affiliated to the parent bank, and their management is centralized to maximize returns at the consolidated level. However, a subsidiary inherits its legal entity independent of the parent, and it is supervised by host regulators. The subsidiary is operationally self-sufficient. Given that the MNB parent holds no obligation to support the subsidiary, it limits the risk of the MNB but increases the operational costs of the subsidiary.

In this context, the literature primarily evaluates why an MNB chooses a branch vis-à-vis a subsidiary foreign expansion strategy (Miller and Parkhe, 1998). Although these two forms share a complementary relationship, they are managed and supervised by different standards and authorities, respectively. This variance may explain the research motivation. Few studies have examined representative offices and agencies. The existing literature focuses more on the form of entry decision than on the effect of such a choice on the performance of the MNB and its other foreign organizational forms. This focus can be attributed to the limited availability of data, given

that only subsidiaries are obliged to disclose information as a separate legal entity.

In the given context, this study shows that the MNBs often operate more than one form of organization in a host country, and investigates how other affiliates determine the performance of a subsidiary in the same host country. As the other affiliates are part of the MNB, the parent may cherry-pick the best customers for the affiliates, while leaving the riskier customers for the subsidiary, given that the parent is protected from economic risk owing to limited affiliate liability in the latter. It must also be noted that the presence of a large number of parent affiliates in the host country may have a positive effect on the subsidiary's performance. The MNBs operating multiple organizational forms obliged to the home market may attract new customers for both the subsidiary and its other organizational forms. Hence, the subsidiary may benefit from the existence of multiple organizational forms in the same host country. This expansion strategy can help the subsidiary achieve a greater profitability than that of the bank subsidiaries without affiliates in the host country.

This study seeks to ascertain whether establishing an additional organization form in the same host country as that of the subsidiary determines the latter's performance. The additional organizational forms can vary across countries, and exert varied effects on the performance of subsidiaries in these countries. We control for the different organizational forms using unique data, hand-collected from 2005 to 2015, on the different types of affiliates established by 98 MNBs across 147 countries. Controlling for the host country characteristics, we find that the other types of foreign affiliates positively influence the profitability of a subsidiary. We also show that an agency exerts the greatest effect on subsidiaries' profitability. Finally, we show that multiple organizational forms of the MNBs positively influence the performance of their subsidiary in the same country.

We make the following contributions to the literature. First, to our knowledge, this is the first study to show that MNBs' can operate multiple types of affiliates in the host country, which, influences the performance of their subsidiaries in the same country. Hence, this study extends the international business studies providing a link between MNBs' entry mode choices and performance. Brouthers (2013) argues that most studies have ignored either the performance issue related to the entry mode choice or the problem of endogeneity arising from the firm-specific and country specific factors determining the entry mode choice. We address these problems by

investigating the performance of the already operational foreign bank subsidiaries using different organizational combinations. Unlike existing studies, we do not focus on the entry but on the existing operational modes. Considering the bank- and host country-specific factors, we assume that these modes reflect the best entry mode choice for the MNBs.

Second, this study combines insights from the transaction cost theory with those of the theories of institutional and culture distance. In line with Brouthers (2002), we use legal restrictions as a measure of institutional distance, which is relevant to the study of different organizational modes in the banking sector. Although the operational modes and banking activities are heavily regulated, these regulations differ across the countries. We investigate whether the varying regulations across countries determine the operational mode choices and a subsidiary's performance. We also investigate the influence of cultural difference on the choice of foreign affiliates' operational modes. This study further supplements the finding of Brouthers (2002, 2013) on the transaction cost model, by showing that other factors, as host country institutions and culture, may determine the adoption of an entry mode based on the transaction cost model.

Finally, we extend the literature on the entry mode choices of banks. Studies investigating the entry modes focus mainly on branches versus subsidiaries (Ball and Tschoegl, 1982; Cerutti et al., 2007); regions (Cerutti et al., 2007); or countries such as the United States (Heinkel and Levi, 1992), Japan (Ursacki and Vertinsky, 1992), or Spain (García Blandón, 1998). These studies were conducted before the 2008 financial crisis. However, recent studies show that the entry dynamics of MNBs changed after the 2008 crisis (Claessens and Van Horen, 2015). Curi et al. (2015), analyze the business models adopted by MNBs in financial centers and report that, before the 2008 crisis, branches benefited more from foreign bank efficiency than that of the subsidiaries. However, in the current scenario, the subsidiary banks resist the deterioration in efficiency better than branches during the crisis.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature and builds the hypotheses. Section 3 describes the data and research method. Section 4 discusses the empirical results, and section 5 concludes the study.

2. Literature Review and Hypotheses Development

2.1. Literature Review

Our study builds a bridge between the following two strands of the literature on banks' international expansion. The first strand of the literature deals with the decision to enter a foreign market and the entry mode choice. As per the classical hypothesis of Aliber (1984), banks follow their customers abroad. The decision to follow them could be driven by the poor service of domestic banks abroad, which are not equipped to serve multinational clients. However, a more likely explanation is that MNBs decide to expand to avert the risk of losing clientele to the domestic parents controlling the foreign subsidiaries (Grubel, 1977). Mutinelli and Piscitello (2001)examine Italian banks' internationalization strategy and show that these banks establish branch offices abroad to retain their clients in the foreign markets.

An alternative explanation for banks' international expansion is related to the possible market opportunities abroad. Focarelli and Pozzolo (2005) argue that profit opportunities are probably the most critical determinants of the banks' internationalization pattern. The economies of scale and scope resulting from the internationalization strategy allow banks to move toward a more efficient structure. The geographic diversification allows for the diversification of risk, thus reducing the variation in banks' earnings (Goetz et al., 2016). Regarding size, Buch and Lipponer (2007) show that the highly diversified activities of larger banks drive them to expand more than the smaller ones. However, the literature also shows that smaller banks follow larger ones into new markets.

Furthermore, Miller and Parkhe (1998) analyze the expansion strategies of the U.S. banks and show that host countries can influence the entry mode choices of the MNBs. They show that the number of subsidiaries is higher than that of branches in countries permitting universal banking owing to the inability of the latter to take advantage of all opportunities available in the host country. They also document that the barriers to the creation of subsidiaries and the high tax rates reduce the number of subsidiaries in the host country. These findings are similar to those of Cerutti et al. (2007), who analyze the use of branch versus subsidiary as an entry mode in South America and Eastern Europe. They argue that an MNB's business model significantly influences the choice of organizational form. However, they also show that high taxes and political risks in the host country increase the probability of MNBs adopting a branch model. Similarly, Kahn and Winton (2004) indicate that, if the host country is considered riskier than the home country,

the bipartite subsidiary structure insulates the parent bank from the host country's risk. Harr and Rønde (2003)develop a theoretical explanation for banks' expansion choice and show that risk-averse MNBs choose a branch structure, whereas risk-seeking MNBs choose a subsidiary structure. Fiechter et al. (2011) analyze the choice of using subsidiaries and branches based on the parent bank's strategy and regulators. They conclude that neither the branch nor the subsidiary structure is preferable, given the diversity of bank strategies and the different stages and diversity of economic development in the host countries. They argue, however, that retail banks may prefer subsidiarization, as they benefit from local management and can easily adapt to local needs. Contrarily, universal and investment banks may prefer branching as they serve large corporate clients focusing on liquidity management.

The second strand of literature focuses on the performance of foreign banks. Based on a survey of the literature on foreign bank performance, Claessens and Van Horen (2012) show that the empirical evidence presents mixed results. The ambiguous results can be partially explained by the data coverage and the methodologies. Controlling for several factors, they show that foreign banks tend to perform better in high income and weakly regulated host countries. They also report that larger banks with a bigger market share exhibit better performance in these countries. Finally, they show that cultural proximity between the host and home countries positively influences the foreign bank's performance. However, they find that geographical closeness does not improve performance.

While the literature on foreign bank performance is redundant, few studies analyze the impact of different organizational forms on performance. Liang et al. (2013) analyze the effect of the organizational forms of foreign affiliates on its parent's performance. They show that, in case of foreign expansion, a branch positively influences its parent bank's return on assets (ROA). However, they obtain mixed results in case of the return on equity (ROE) and Tobin's Q. They reveal the weak effect of the representative office mode on parent banks' ROA. Troudart and Lamarque (2017) provide evidence that the choice of the form of establishment is paramount when a bank decides to establish itself overseas. In the context of European banks, they show that the adoption of the subsidiary mode does not improve parent banks' profitability, whereas cross-border partnerships improve the profitability. Similarly, Nyola et al. (2021) report that MNBs with foreign subsidiaries and branches experience more stability but less profitability than banks

operating only one form abroad. They also show that MNBs operating abroad exclusively with branches are more stable than banks operating only with foreign subsidiaries.

Overall, the literature shows that profit maximization is the main motivation of MNBs to expand abroad. However, Parada et al. (2009) present two key observations on the high geographic diversification of banks before the 2008 crisis. First, while bank's internationalization strategies are not driven by common patterns, the decision to enter a market and the entry mode choice are driven primarily by opportunism. Second, the expansion strategy did not guarantee superior financial performance even before the 2008 crisis. However, few studies provide an understanding of the relationship between organizational forms, banks' expansion strategies, and performance. Moreover, one of the shortcomings of the studies is that they limit themselves to two organizational forms—mainly subsidiaries versus branches—while ignoring the other operational forms. These studies fail to consider that MNBs can simultaneously operate multiple foreign affiliates that are complementary to each other. We fill this gap by investigating the performance of MNB subsidiaries, considering the different types of affiliates in a particular country.

2.2. Hypotheses Development

We build the hypotheses based on the transaction cost (TC) theory. It has been widely used in entry mode research to explain why companies use different international expansion modes. According to Williamson (1985), exchange attributes—including information asymmetry and complexity—determine whether transactions will be organized into markets or hierarchies in ways that minimize TC and maximize performance.

In the international business literature, the TC theory has been used extensively to examine the entry mode choices of large firms (Contractor, 1990; Denekamp, 1995), small and medium-sized enterprises (Brouthers and Nakos, 2004), and new ventures (Shrader, 2001). However, the empirical studies have focused mainly on the choice between a joint venture and a wholly-owned subsidiary (Makino and Neupert, 2000; Brouthers, 2002). These studies show that parent firms are more likely to choose joint venture over subsidiaries when they seek collaboration to gain access to industry-specific and market knowledge, distribution network, and natural resources. This is because these resources are subject to high market transaction costs. However, an increase in these transaction costs drives parents to adopt more hierarchical modes, such as subsidiaries. Concerning performance, a few studies have linked the choice of operation mode with

performance abroad (Brouthers, 2013). Brouthers (2002) documents that firms whose entry mode choice is based on the transaction cost model performed significantly better. However, he limits the investigation to only two organizational forms.

In our setting, the MNBs have a fully operational foreign subsidiary. However, they may adopt another organizational form that is centralized and relies on the parent bank's resources, particularly its capital. While the simultaneous operation of multiple affiliates can increase the transaction costs of MNB, it can maximize the value creation. We expect that the MNBs will select an organizational mode that achieves a balance between cost minimization and value maximization, given that less efficient mode choices are driven out of business by the competition (Roberts and Greenwood, 1997). Based on this review, we present the following hypothesis:

Hypothesis 1: *MNBs choose an organizational design aimed at maximizing the profitability of the subsidiary.*

Concerning the TC-based mode, the empirical results indicate that decisions regarding the governance of a firm's activities are strongly influenced by the TC perspective that may lead to better performance in the home (Poppo and Zenger, 1998; Leiblein and Miller, 2003) and host markets (Shrader, 2001). Some scholars, however, argue that TC-based mode choices may not lead to the best performing mode. Dyer (1997) suggests that decisions based on the TC-based mode choice may not provide the best performing mode choice because it focuses on cost minimization, while ignoring value enhancement.

Hypothesis 2: *MNBs choose an organizational design aimed at minimizing the operational costs of the foreign subsidiary.*

Despite the extensive evidence supporting the TC-based entry mode choice abroad, some studies have criticized this mode on the basis of its inability to explain fully the entry mode choices for international expansion. In this regard, Davis et al. (2000) document that parental and external institutional norms influence the entry and expansion at the business-unit level. Delios and Beamish (1999) argue that other non-TC factors such as host government restrictions may determine the choice of organizational forms. They show that factors pertaining to international experience and institutional factors affect the ownership levels of MNBs abroad, while the transactional factors play a less important role. Thus, in some countries, the institutional structure may invalidate the

entry mode choice based on the TC.

Roberts and Greenwood (1997) suggest that firms may adopt organizational designs most effective under cognitive and institutional constraints. The host country's institutional structure may limit the products and services a subsidiary can offer to its customers. This may put the subsidiary at a disadvantage to other organizational forms operating in the same host country. Therefore, when the regulations in a host country are unfavorable, in relation to the home country's regulations, multinational banks may find it more beneficial to establish an affiliate in addition to a subsidiary in the same host country (Danisewicz et al., 2017). The use of these two organizational forms will help the MNB to offer a wider range of services to its customers. Given the potential of these organizations to provide complementary services, they would benefit the host country.

Hypothesis 3: *MNBs' choice an organizational design is influenced by the institutional structure in the host country.*

The existing literature shows that the cultural distance co-determines the degree to which two parties can successfully cooperate, integrate activities, communicate, and implement common policies. In this regard, the banking literature shows that cultural differences may make it expensive for banks to gather and process local relationship-based information about the customers. Berger et al. (2001) document that distant parent banks or those with wider disparities in language, culture, and supervisory/regulatory structures are likely to pose greater barriers to foreign subsidiaries making relationship-based loans to small businesses.

Hennart and Larimo (1998) use the degree of cultural distance as a proxy for the degree of difficulty encountered in acquiring local knowledge of the host country; they treat this factor as the key transaction cost variable. They argue that an increase in the degree of cultural distance makes it more difficult and costly for a firm to acquire local knowledge through local experience. In this context, Makino and Neupert (2000) show that the entry mode choice differs between the United States and Japan. They confirm that TC factors are strong predictors of the choice of affiliation, irrespective of the nationality of the investing firms. Thus, the results suggest that a consideration to both the cultural context and TC can lead to better performing organizational modes.

Hypothesis 4: *MNBs' choice of an organizational design is influenced by the cultural proximity to the host country.*

Based on the aforementioned hypotheses, we propose a model for choosing an international entry mode that balances cost minimization and value enhancement. We suggest that MNBs must select their mode of operation based on transaction costs, institutional regimes, and cultural context variables. MNBs considering these factors can achieve greater mode performance than MNBs that do not consider these variables when selecting entry modes.

3. Data and empirical methodology

We assemble a unique database on the operation of the world's 98 largest MNBs by assets in their home regions. We focus on banks operating in more than one country and use different international entry modes. However, we reduce the sample as we were unable to retrieve the financial data for some of the subsidiaries. Overall, our sample comprises 897 subsidiaries from 147 countries. Appendix Table A1, presents a list of the sampled MNBs with information on countries with a subsidiary.

For each of the MNBs, we collect information on whether the bank operated a foreign agency, representative office, branch, or subsidiary from 2005 to 2015. The information is retrieved from annual reports and publicly available disclosures about foreign operations, as required by the US Patriot Act. This Act obligates a financial institution to disclose its operations abroad.

It is simple and less costly for foreign banks to establish a representative office, given that the function of a representative office is to allow the MNBs' representatives to make contacts in the local market. A representative office can only gather information and promote the services of the MNB or its affiliates, including a subsidiary. It can also act as a liaison between the clients and the other offices of the MNB. Therefore, even with limited activity, it may influence the subsidiary's performance in the host country.

An agency is a more advanced organizational form of the foreign bank, given its function to accept foreign, and not domestic, deposits. Agencies can provide commercial and industry loans, but they cannot provide consumer loans. However, they have more flexibility than branches or subsidiaries as they are not subject to the reserve requirements or loan limits for a single borrower. Moreover, in general, agencies are less costly to setup and operate than branches, as they are

10

bound by fewer regulations in the host country.

A foreign bank branch and a subsidiary can conduct all the banking activities. However, they differ in terms of the legal form and regulatory supervision. Branches and agencies constitute an inseparable part of the parent organization, which are regulated and supervised by the home authority. The advantage of a branch over a subsidiary is that it may engage in activities not allowed by host regulations. Moreover, an agency or a branch enables the parent bank to maintain its capital at home and often avoids the constraints imposed by foreign regulators. These entities, unlike subsidiaries, can also help MNBs collect capital in countries where it is the least expensive and lend it on a larger scale where it earns the highest return. In terms of business model considerations, MNBs focusing mainly on wholesale operations may prefer to operate in the host country under a branch structure (Danisewicz et al., 2017). However, a subsidiary, as a separate legal entity, has its own board of directors, and its activities are supervised by host authorities. Unlike the branches, subsidiaries are separately capitalized and subject to large exposure regulations, which limits the amount they can lend to clients. Therefore, MNBs are more likely to open subsidiaries to establish banking relationships in the host market and to raise deposits from host retail customers and lend to the host economy. Although the different modes differ legally, their business models, particularly the branch and subsidiary models, can overlap in practice (Hoggarth et al., 2013).

Each organizational form requires approval from the local authorities prior to being established in the host country. The most popular entry mode choice of MNBs is subsidiary, followed by branches, representative offices, and agencies (Kowalewski, 2021). In practice, subsidiaries are costlier but often easier to establish, given that host countries sometimes place restrictions on opening branches. In this regard, it must be noted that the representative offices and agencies may be difficult to set up or economically unjustified, when entering the host country through subsidiaries at the stage of foreign expansion.

This study considers a situation in which an MNB establishes an organizational form, namely, representative office, agency, and/or branch, in a host country and operates it along with an operational subsidiary in the same country. Given that a subsidiary is a separate legal entity, we investigate the effect of other organizational forms on the subsidiary's performance. The other affiliates constitute an integral part of the MNB, and it is difficult to distinguish the effect of the

subsidiary on the other modes as they are financially consolidated with the parent bank.

In our sample, the MNBs operate at least one additional organizational form, besides the subsidiaries in 2,353 bank-year observations, which represents almost one-third of the sample. We encode the organizational forms using dummy variables. The variable *Agency* takes the value 1 if MNBs operate an agency along with a subsidiary in the host country, and zero otherwise. Similarly, we construct the variables *Representative* and *Branch*. The agency and representative office are less likely to be used simultaneously by the MNB. In our sample, the agency and the representative office account for 1% and 4% of the bank-year observations, respectively.

However, we found that the MNB simultaneously operates a subsidiary and a branch in almost 23% of the observations. We also find that the MNBs, in some cases, operated more than two forms simultaneously, apart from the subsidiary. Further, we encode multiple organizational forms using dummy variables. The variable *Multiple* takes the value of 1 if the MNB operates two or more additional organizational forms, besides the subsidiary in the host country. In the sample, we encounter MNBs operating two organizational forms; they represent 0.5% of the total observations. MNBs that operate all the four modes in the host country represent only 0.5% of the observations in our sample.

We match the organization data with subsidiaries' bank-level data retrieved from Bankscope. Additional country-specific data were drawn from the World Bank's and the CEPII databases. In some cases, we are unable to retrieve a bank's financial data, while, in some other case, the country-level information is missing. Thus, we have an unbalanced panel dataset with 7,603 bank-year observations.

3.1. Bank Performance and Characteristics

The literature presents several dimensions when investigating foreign banks' performance. We follow Claessens and Van Horen (2012) and employ a straightforward one, namely, (*ROA*). It considers the profit before taxes and divides it by the total assets of a subsidiary. In line with Hypothesis 1, we expect that MNB will employ a combination of organizational forms that will maximize the profitability of its subsidiary. We further expect that the organizational design can be determined by the host country's institutions and culture. Conversely, Hypothesis 2 assumes that MNBs' mode will minimize the costs of the subsidiary. Henceforth, as a second performance measure, we employ the cost to income ratio (*C/I*). It is calculated as the subsidiaries' overhead

costs divided by their total income before provisions. Unlike Liang et al. (2013), we employ only accounting measures as they are available for all the sampled banks. This can also be attributed to the fact that most subsidiaries are not listed abroad. In addition, market measures may be biased, particularly in emerging markets, where capital markets are shallow and inefficient.

We follow Claessens and Van Horen (2012) and employ bank-level variables that proxy for the degree of specialization and the market power of the bank. We measure the development of subsidiaries using the share of *Loans* in total assets, and the subsidiaries' funding structure using the share of *Deposits* in total liabilities. We assume that the share of loans and deposits is positively related to subsidiaries profitability. We control for subsidiaries' risk using the variable *Solvency*, which is defined as equity divided by assets. We also control for *Loan growth* and ROA volatility (*SD ROA*), which are good proxies for bank risk. Claessens and Van Horen (2012) argue that higher risks can lead to higher measured rates of profitability in the short term, while better long-term performance of sustainable subsidiaries can reflect higher profitability. Finally, we control for subsidiaries' *Size* by the log of its assets and its market *Share* or divide the monopoly power by its assets divided by the total assets in the local banking system.

All bank variables based on the financial statements are winsorized at the 1% and 99% levels to limit the influence of outliers and extreme values.

3.2. Host Countries Characteristics

We control for the institutional environment using two variables that represent indices constructed by Barth et al. (2004). The first variable *Activity* is an index assessing the ability of a bank to engage in activities pertaining to securities, insurance, real estate, and non-financial businesses, except businesses that are auxiliary to banking business. The index ranges from the lowest stringency at 1 to the highest at 16, when the limitations of banking operations are extremely stringent. Clarke et al. (2003) highlight that the subsidiaries offer a wider range of activities than branches. Hence, we expect a higher value of this index to be associated with a higher occurrence of standalone subsidiaries. Conversely, stricter regulations in the host country may encourage the opening of branches or agencies, which may also benefit from the home country regulations.

The second variable is *Entry*, which is an index that takes values from 0 to 4, assessing whether foreign banks may enter a country's banking industry using different entry forms. Restrictive entry regulations will limit competition and favor the entry of subsidiaries over branches (Cerutti

et al., 2007). Thus, highly restrictive entry regulations may limit the choice of optimal organizational forms and may force MNBs to operate only representative offices or agency simultaneously in the host country.

Several studies suggest that home and host country characteristics play a a significant role in explaining foreign bank performance. Buch and DeLong (2004) argue that geographical and cultural distance represent the cultural aspect of information costs, while Mian (2006) reveals the importance of institutional factors. Claessens and Van Horen (2012) show that the relative performance of foreign banks is better when the geographical, cultural, and institutional distance is small. Conversely, they show that foreign banks perform better when the economic distance is large—when the parent's home country has a higher level of development than that of the host country.

We control for cultural proximity using a dummy variable *Language* that equals 1 if the official language is the same in the home and host countries. We control for the institutional proximity using a binary variable *Colony*, which equals 1 if the home and host countries were a part of a colony in the past. We control for geographical *Distance* using a variable measuring the distance in log of km between the capitals of the home and host countries.

Finally, we control for the host country's level of development by employing the log of GDP per capita (*GDPpc*) and real economic growth (*Growth*).

3.3. Empirical Methodology

To empirically test the effect of the presence of other forms of affiliates on subsidiary performance, we use the following equation:

$$P_{ict} = \alpha_0 + \beta_1 Bank_{i,c,t} + \beta_2 Host_{c,t} + \iota_{i,c,t} + \gamma + \delta + \epsilon_{i,c,t}$$

where *P* is one of the two performance measures (ROA and C/I) of subsidiaries *i* in host country *c* at year *t*. $Bank_{i,c,t}$ represents a vector of bank-level variables, while $Host_{c,t}$ represents variables controlling for the host country characteristics and distance. We control for unobserved multinational bank-specific by including group bank-fixed effects (ι). Additionally, we add country (γ) and year(δ) -fixed effects, which allowed us to control for unobserved country characteristics that vary over time. We estimate the model using pooled ordinary least squares (OLS); robust standard errors are robust and allow clustering at the host country level.

We limit our sample to foreign subsidiaries of MNBs operating at least one subsidiary abroad. This facilitates the exploitation of heterogeneities in the performance resulting from the simultaneous operation of other affiliates in the host county. We report the summary statistics of all variables employed in the empirical specifications in Table 1. We provide a complete description of all variables in the Appendix Table A2.

Most empirical international business researchers acknowledge the problem of endogeneity in studies on entry mode choices. The problem arises from the possibility that entry modes are a function of past country characteristics or firm performance. Neglecting this source of endogeneity can have serious consequences for inference. We address the issue by using already operating subsidiaries and other affiliates in the host country. We assume that the existing organizational design is formed because of the present strategy of the MNB and the host country environment. However, we are aware that other sources of endogeneity are possible, which we do not address in this study.

Table 1

4. Results

Table 2 presents the results of the regression models using ROA. Column (1) shows the determinants of subsidiary performance, where we do not control for other organizational forms of the MNB in the host countries. In columns (2)–(4), we control whether the MNB simultaneously operates one of the three other modes, in addition to the subsidiary. In column (5), we control for the situation where the MNB operates in addition more than one other affiliate in the host country..

The results indicate that the simultaneous operation of an agency and a subsidiary positively influences the profitability of the subsidiary in the host country. The coefficient for the dummy agency is positive and statistically significant. The results support the Hypothesis 1 stating that an MNB will employ the most efficient organizational form to enter the host market. In general, subsidiaries are small by assets and equity, in relation to the large domestic competitors in the host countries. Henceforth, they are constrained in providing all the financial services, particularly large loans, which puts them at a disadvantage to the domestic banks or foreign bank branches.

The simultaneous operation of a subsidiary and an agency may mitigate this problem by allowing the subsidiary to fall back on the MNB should its size or domestic regulation restrict it from providing services to its clients. The capability of the subsidiary in providing a wider range of services can provide a competitive advantage and may attract both foreign and domestic customers. This aspect explains its higher profitability than that of the other organization forms.

Regarding other forms, Liang et al. (2013) investigate the effect of the number and concentration of branches and representative offices in foreign countries on the performance of the parent bank. Their findings suggest that a branching strategy is more effective in enhancing the parent bank's profitability, whereas a representative office strategy is more cost effective. In general, an agency is smaller and less formalized than a foreign bank branch, and hence it can be operated in a cost-effective manner abroad. Given this, an MNB is more likely to choose an agency, in addition to a subsidiary. Interestingly, we find that having multiple organization forms is positively related to subsidiaries' performance. It is also worth noting that the coefficients for representative office and branches are positive, but they are not statistically significant.

The coefficients for the bank level and host country control variables do not change their sign or significance when we add the dummy variables, successively, for the different affiliates in the host country. We find that the share of deposits is positively and significantly related to subsidiaries' profitability. It means that access to local deposits is important for a subsidiary's profitability. We find that the coefficient for the variable solvency and share are positive and statistically significant at 1% level. The coefficient for assets is also positive and statistically significant. The results confirm that larger and well capitalized foreign subsidiaries, probably those with a large network and those well-integrated into the domestic market, outperform their peers. At the same time, we find that subsidiaries that perform better show a low level of variability of ROA. The coefficient for SD ROA is negative and highly significant. The coefficient for the second measure of risk-taking (i.e., loan growth) is positive but statistically insignificant. Hence, the results indicate that better performing subsidiaries are engaged strongly in lending. However, they do not take too much risk in the host country.

Analyzing host country characteristics, we find evidence that restrictive activities are positively related to subsidiaries' performance. The coefficient for activity is positive, indicating more restrictive regulations for banks in the host country; it is also statistically significant at 1% level.

One explanation for the results is that foreign bank subsidiaries have the possibility to use other organizational forms, particularly, as the results shows, agencies, to offer products and services that are limited in the host country. This provides the subsidiaries with a competitive advantage. We find that the entry restrictions are positively related to foreign bank subsidiaries' performance. The coefficient for entry is negative, indicating greater stringency; it is also statistically significant at 1% level. Claessens and Laeven (2004) find that the banking sector has become less competitive owing to greater foreign bank entry and activity restrictions. Hence, we assume that the operating banks in the host country, particularly the foreign bank subsidiaries, benefit from lower competition and report higher profitability.

The control variables for culture and distance confirm that the proximity between the host and home markets determines the performance of the subsidiaries. The coefficient for common language is positive and statistically significant at least 5% level. The results confirm that cultural proximity—language, in particular—helps overcome the asymmetry of information between the host and home markets. Interestingly, however, the coefficient for similar colony history is negative and statistically insignificant.

We find that the closeness of the MNB to its subsidiaries does not have the same effect as that of cultural proximity. The results show that the coefficient for distance is positive and highly significant. It means that foreign bank subsidiaries that are further away from the home market perform better. Danisewicz et al. (2017) show that MNBs are more likely to delegate more autonomy to boards of distant foreign subsidiaries. Hence, they respond to a lower extent to the changes in regulation than that of the other affiliates, in particular branches. Normally, these entities respond to the tightening of regulations in the home market. Cull and Peria (2013) find that distant subsidiaries performed better during the global crisis of 2007, which they attributed to subsidiaries' greater autonomy from MNB.

A further analysis of the home country characteristics shows that the level of development of the host country is positively related to the performance of foreign subsidiaries, given that the coefficient for GDPpc is positive and strongly significant. We also find that the profitability of subsidiaries is positively related to economic growth. The coefficient for growth is positive and highly significant. Overall, the results show that foreign bank subsidiaries perform better in more developed countries witnessing economic expansion.

Table 2

Next, we analyze Hypothesis 2, which assumes that MNBs will decide to use the most cost-effective organizational design. Table 3 presents the results of the regression models, using C/I as a subsidiaries' performance measure. In all the specifications, the coefficients for the variables identifying additional organization forms are positive, which confirms that operating multiple organizational forms is costlier for the subsidiary. The coefficients are, however, only statistically significant for agencies and multiple organizational forms. Hence, the results indicate that having an agency or multiple organizational forms positively determines the profitability of the subsidiary. However, it is also related to higher overhead costs at the same time. An explanation for the results can be that the costs of operating an agency or multiple organizational forms are shared by the MNB with the subsidiary in the host country. Moreover, as agencies can provide only loans and deposits to their customers in the host country, the subsidiary can be obliged to offer other services to its clients at lower costs. Nevertheless, the results show that that MNBs choose organizational designs that are enhance value more than minimizing costs. Hence, we do not find support for Hypothesis 2.

As expected, we find that higher costs are positively and significantly related to the deposit share. The coefficient for deposits is positive and statistically significant. The higher operating costs can be attributed to the need of operating a network, which is essential for the retail activity. Peek et al. (1999) show that access to deposits is one of the problems for foreign banks abroad. However, we also find that banks with higher operating costs have lower share in loans. The coefficients for loans and loan growth are negative and statistically significant. It could indicate that subsidiaries incurring higher costs do not benefit from the effect of scale in the traditional banking business. The assumption is further supported by the fact that the coefficient for assets is also negative and highly significant. The coefficient for solvency ratio is also negatively related to the cost to income ratio and highly significant, which further indicates the relationship between small scale and higher costs.

Unlike the previous results, we find that that the coefficient presenting the distance between the host and home countries is negative and statistically significant at 1% level. We associate the results with the fact that the closer the subsidiary is to the home market, the lower are the MNB's monitoring costs. The results confirm that distance may help overcome information asymmetry

and result in better communication with the MNB, which, in turn, means lower transaction costs. We find that none of the other variables representing the host country is statistically significant.

Table 3

The previous results show that MNBs choose an organization design that increases their subsidiaries' performance. The choice of the operation mode can also be influenced by the regulation in the host country (Hypothesis 3). The banking sector is one of the most regulated industries, and Barth et al. (2004) document that countries differ strongly in their banking regulations. Danisewicz et al. (2017) further show that branches and subsidiaries of the same MNB react differently in the host country to the changes in the macroprudential regulation in the home country. They document that MNBs' branches respond to tighter capital requirements in their home countries by contracting their lending more than that of their subsidiaries. This result confirms that simultaneous operation of affiliates and subsidiaries in the same host country can provide regulatory advantages, given that these entities are exposed to different regulations, namely, in the home and host country.

In Table 4, we control for the effect of host countries institutions using and an interaction term between the different organizational forms and the activities index. In line with the previous results, the coefficient for activity is positive and statistically significant. Thus, the results confirm that foreign subsidiaries are more profitable in more restrictive host countries. We attribute this finding to the possibility of MNBs to employ additional modes to offer a wider range of services to customers in the host country.

Unlike the previous results, we find that the coefficients for representative office and agency are negative, while the coefficients for the interaction terms are positive. The coefficients are, however, only significant for the representative office and the interaction term at 1% level. Conversely, the coefficient for branch is negative, while its interaction term positive. Both coefficients are statistically significant at least at 10% level.

The results reveal that the simultaneous operation of a representative office and a subsidiary in a host country with high restrictions on bank activities is positively related to the subsidiary's performance. However, an operation of branch is negatively related to the subsidiary's performance. In more restrictive countries, the MNB is more likely to choose a branch over an agency,

given that a branch can offer a wider range of financial services abroad. At the same time, a branch is more likely take away a significant share of customers from the subsidiaries in the host country. This explains the underperformance of its peers. Conversely, a representative office does not compete with the subsidiary as it markets only the services of the MNB in the home country. Consequently, it positively influences the performance of the subsidiary in the host country. Overall, the results confirm that host country regulations influence the organizational design of MNBs abroad. and thereby confirm Hypothesis 3.

Table 4

Hypothesis 4 assumes that culture may also influence the organization design of MNB abroad. To investigate the effect of culture proximity on organization choice, we make the variable language, which we use as a proxy for culture similarity between host and home country, interact with the variables presenting the organizational choices of the MNB.

In Table 4, we show that the coefficient for common language and distance is positively and significantly related to subsidiaries' performance abroad. The coefficient for colony heritage remains negative and statistically insignificant. Moreover, the coefficients for agencies and multiple organizational forms are positive and statistically significant, which is in line with our previous results.

We find, however, that the coefficient for the interaction term between the agency and the language is negative and statistically significant at 5% level. Similarly, the coefficient for the interaction term between multiple organizational forms and language is negatively and statistically related to subsidiaries' performance in the host country. Conversely, the coefficient for the interaction term between the branch and the language is positive and significant at 10% level. In other words, the results show that operating agencies or multiple affiliations in a country culturally close to the MNB is negatively related to the subsidiary's performance in the host country. Conversely, the subsidiary's performance increases when a branch is operated simultaneously in a host country culturally close to the home country.

One advantage of agencies is their low costs. However, they can provide limited services in the host country. A branch is riskier for MNBs than any other mode as its size of activities can be comparable to a subsidiary. An MNB is not insulated from the risk of a branch, unlike risks from a

subsidiary. Hence, any potential problem from the host country will be transferred directly to the MNB. The use of a common language allows better monitoring and decreases the risk of operating a branch for the MNB. The common language can also decrease the costs of operating a branch, which can make the agency less attractive for the MNB. Hence, an MNB is more likely to operate a branch in the host country using a common language, which, in turn, can positively influence the subsidiary performance. Subsidiaries and branches benefit from being complementary, while the common language allows them to provide much wider services than usually to clients in the cost country. Overall, the results provide support for Hypothesis 4.

Table 5

5. Conclusions

The deregulation and globalization of financial systems lead to the intensive development of MNBs, which can use different organizational designs to operate in foreign markets. Branches and subsidiaries are the most advanced and popular modes in host countries. Conversely, representative offices and agencies are easier and less costly to establish abroad. However, they are less popular, as their activities are more restricted. Organizational forms play a vital role in determining the constraints in terms of legal responsibility and financial support for expanding MNBs.

Our study shows that MNBs often decide to operate multiple organizational forms in a host country. We use this situation to test the normative value of using transaction cost–derived mode choices, to enhance the understanding of the relationship between transaction cost–based decisions and MNBs' organizational performance. Using a unique dataset, we find that having more organizational forms has a positive effect on the subsidiary's performance in terms of its profitability in the host market. Moreover, we document that the simultaneous operation of an agency and a subsidiary exerts the largest positive effect on the subsidiary's performance, which presents an organizational form between the representative office and the branch. Further, operating multiple organizational forms simultaneously has a positive effect on the subsidiary's performance. We attribute this effect to economies of scale and better recognition in the host market, as diverse affiliates can offer their services through different channels. Overall, the results confirm that TC is an important determinant of the choice of the organizational design abroad.

However, we find that operating multiple affiliates is associated with a higher cost-to-income ratio of the subsidiary. We assume that some of the costs of the other organizational forms are covered by the subsidiary. The results, however, indicate that the advantage of having multiple affiliates outweighs the disadvantage of higher costs. Consequently, we confirm that the MNBs using an optimal organizational design aim at value enhancement. Our results show that the choice of organizational forms and performance is influenced by the institutions and culture of the host country. Thus, a country's institutional structure and culture proximity invalidate the TC-based mode. However, as we show, MNBs that can adopt operation modes based on institutional and cultural considerations as well as TC efficiencies perform better than other subsidiaries in the host market.

In conclusion, we document that the strategy of operating multiple organizational forms simultaneously in a host country may be beneficial for MNBs. However, our study analyzes only the effects of other organizational forms on a subsidiary's performance in a host country. We ignore the effect of multiple organizational forms on the MNBs' performance. Indeed, the existing empirical results analyzing the performance of MNBs operating representative offices and branches abroad present ambiguous results (Liang et al., 2013). This can be attributed to the fact that previous studies fail to consider the effect of the simultaneous operation of multiple affiliates on the performance of the parent bank and its affiliates.

Our results have important policy implications. To our knowledge, this is the first study to document the effect of operating multiple organizational forms on the performance of subsidiaries in the same host country. We show that this strategy can have a positive effect on the profitability of the subsidiary, which is a concern of the host countries' supervisory authorities. Furthermore, the simultaneous operation of multiple organizational forms in the host country can be affected by different legal regimes and supervisory authorities in the country. Hence, we document that strong coordination between host and home country authorities. These authorities must implement coordinated efforts to facilitate effective information-sharing, home/host supervision, resolution regimes. Such mechanisms are important, given that banks using different channels may have a strong effect on the stability of the host/home banking sector in crisis periods. However, we are aware of the need for research to understand the profit and risk associated with the diverse strategies of MNBs across countries having different legal and economic regimes.

References

Aliber, R. Z. (1984), 'International banking: a survey', *Journal of Money, Credit and Banking* **16**(4), 661–678.

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), 411–424.

Barth, J. R., Caprio Jr, G. and Levine, R. (2004), 'Bank regulation and supervision: what works best?', *Journal of Financial Intermediation* **13**(2), 205–248.

Berger, A. N., Klapper, L. F. and Udell, G. F. (2001), 'The ability of banks to lend to informationally opaque small businesses', *Journal of Banking & Finance* **25**(12), 2127–2167.

Brouthers, K. D. (2002), 'Institutional, cultural and transaction cost influences on entry mode choice and performance', *Journal of International Business Studies* **33**(2), 203–221.

Brouthers, K. D. (2013), 'A retrospective on: Institutional, cultural and transaction cost influences on entry mode choice and performance', *Journal of International Business Studies* **44**(1), 14–22.

Brouthers, K. D. and Nakos, G. (2004), 'Sme entry mode choice and performance: A transaction cost perspective', *Entrepreneurship theory and practice* **28**(3), 229–247.

Buch, C. M. and DeLong, G. (2004), 'Cross-border bank mergers: What lures the rare animal?', *Journal of Banking & Finance* **28**(9), 2077–2102.

Buch, C. M. and Lipponer, A. (2007), 'Fdi versus exports: Evidence from german banks', *Journal of Banking & Finance* **31**(3), 805–826.

Cerutti, E., Dell'Ariccia, G. and Peria, M. S. M. (2007), 'How banks go abroad: Branches or subsidiaries?', *Journal of Banking & Finance* **31**(6), 1669–1692.

Claessens, S. and Laeven, L. (2004), 'What drives bank competition? some international evidence', *Journal of Money, Credit and Banking* pp. 563–583.

Claessens, S. and Van Horen, N. (2012), 'Being a foreigner among domestic banks: Asset or liability?', *Journal of Banking & Finance* **36**(5), 1276–1290.

Claessens, S. and Van Horen, N. (2014), 'Foreign banks: Trends and impact', *Journal of Money, Credit and Banking* **46**(s1), 295–326.

Claessens, S. and Van Horen, N. (2015), 'The impact of the global financial crisis on banking globalization', *IMF Economic Review* **63**(4), 868–918.

Clarke, G., Cull, R., Peria, M. S. M. and Sánchez, S. M. (2003), 'Foreign bank entry: Experience, implications for developing economies, and agenda for further research', *The World Bank Research Observer* pp. 25–59.

Contractor, F. J. (1990), 'Ownership patterns of us joint ventures abroad and the liberalization of foreign government regulations in the 1980s: Evidence from the benchmark surveys', *Journal of International Business Studies* **21**(1), 55–73.

Cull, R. and Peria, M. S. M. (2013), 'Bank ownership and lending patterns during the 2008–2009 financial crisis: Evidence from latin america and eastern europe', *Journal of Banking & Finance* **37**(12), 4861–4878.

Curi, C., Lozano-Vivas, A. and Zelenyuk, V. (2015), 'Foreign bank diversification and efficiency prior to and during the financial crisis: Does one business model fit all?', *Journal of Banking & Finance* **61**, S22–S35.

Danisewicz, P., Reinhardt, D. and Sowerbutts, R. (2017), 'On a tight leash: Does bank organizational structure matter for macroprudential spillovers?', *Journal of International Economics* **109**, 174–194.

Davis, P. S., Desai, A. B. and Francis, J. D. (2000), 'Mode of international entry: An isomorphism perspective', *Journal of International Business Studies* **31**(2), 239–258.

Delios, A. and Beamish, P. W. (1999), 'Ownership strategy of japanese firms: Transactional, institutional, and experience influences', *Strategic Management Journal* **20**(10), 915–933.

Denekamp, J. G. (1995), 'Intangible assets, internationalization and foreign direct investment in manufacturing', *Journal of International Business Studies* **26**(3), 493–504.

Dyer, J. H. (1997), 'Effective interim collaboration: how firms minimize transaction costs and maximise transaction value', *Strategic Management Journal* **18**(7), 535–556.

Fiechter, J., Ötker-Robe, İ., Ilyina, A., Hsu, M., Santos, A. and Surti, J. (2011), 'Subsidiaries or branches: Does one size fit all?', *Staff Discussion Notes* **2011**(004).

Focarelli, D. and Pozzolo, A. F. (2005), 'Where do banks expand abroad? an empirical analysis', *Journal of Business* **78**(6), 2435–2464.

García Blandón, J. (1998), 'The choice of the form of representation in multinational banking: evidence from spain', *Economics Working Paper* **271**.

Goetz, M. R., Laeven, L. and Levine, R. (2016), 'Does the geographic expansion of banks reduce risk?', *Journal of Financial Economics* **120**(2), 346–362.

Grubel, H. G. (1977), 'A theory of multinational banking', *PSL Quarterly Review* **30**(123).

Harr, T. and Rønde, T. (2003), 'Branch or subsidiary? capital regulation of multinational banks', *University of Copenhagen, mimeo* pp. 1–39.

Heinkel, R. L. and Levi, M. D. (1992), 'The structure of international banking', *Journal of International Money and Finance* **11**(3), 251–272.

Hennart, J.-F. and Larimo, J. (1998), 'The impact of culture on the strategy of multinational enterprises: does national origin affect ownership decisions?', *Journal of International Business Studies* **29**(3), 515–538.

Hoggarth, G., Hooley, J. and Korniyenko, Y. (2013), 'Which way do foreign branches sway? evidence from the recent uk domestic credit cycle', *Evidence from the Recent UK Domestic Credit Cycle (June 14, 2013). Bank of England Financial Stability Paper* (22).

Kahn, C. and Winton, A. (2004), 'Moral hazard and optimal subsidiary structure for financial institutions', *Journal of Finance* **59**(6), 2531–2575.

Leiblein, M. J. and Miller, D. J. (2003), 'An empirical examination of transaction-and firm-level influences on the vertical boundaries of the firm', *Strategic Management Journal* **24**(9), 839–859.

Liang, H.-Y., Ching, Y. P. and Chan, K. C. (2013), 'Enhancing bank performance through branches or representative offices? evidence from european banks', *International Business Review* **22**(3), 495–508.

Makino, S. and Neupert, K. E. (2000), 'National culture, transaction costs, and the choice between joint venture and wholly owned subsidiary', *Journal of International Business Studies* **31**(4), 705–713.

Mian, A. (2006), 'Distance constraints: The limits of foreign lending in poor economies', *Journal of Finance* **61**(3), 1465–1505.

Miller, S. R. and Parkhe, A. (1998), 'Patterns in the expansion of us banks' foreign operations', *Journal of International Business Studies* **29**(2), 359–388.

Mutinelli, M. and Piscitello, L. (2001), 'Foreign direct investment in the banking sector: the case of italian banks in the'90s', *International Business Review* **10**(6), 661–685.

Nyola, A. P., Sauviat, A., Tarazi, A. and Danisman, G. O. (2021), 'How organizational and geographic complexity influence performance: Evidence from european banks', *Journal of Financial Stability* p. 100894.

Parada, P., Alemany, L. and Planellas, M. (2009), 'The internationalisation of retail banking: Banco santander's journey towards globalisation', *Long Range Planning* **42**(5-6), 654–677.

Peek, J., Rosengren, E. S. and Kasirye, F. (1999), 'The poor performance of foreign bank subsidiaries: were the problems acquired or created?', *Journal of Banking & Finance* **23**(2-4), 579–604.

Poppo, L. and Zenger, T. (1998), 'Testing alternative theories of the firm: transaction cost, knowledge-based, and measurement explanations for make-or-buy decisions in information services', *Strategic Management Journal* **19**(9), 853–877.

Roberts, P. W. and Greenwood, R. (1997), 'Integrating transaction cost and institutional theories: Toward a constrained-efficiency framework for understanding organizational design adoption', *Academy of Management Review* **22**(2), 346–373.

Shrader, R. C. (2001), 'Collaboration and performance in foreign markets: The case of young high-technology manufacturing firms', *Academy of Management Journal* **44**(1), 45–60.

Troudart, J. and Lamarque, E. (2017), 'The cross-border strategies of european banks: Effects on performance 2004-12', *Bankers Markets & Investors: An Academic & Professional Review* .

Ursacki, T. and Vertinsky, I. (1992), 'Choice of entry timing and scale by foreign banks in japan and korea', *Journal of Banking & Finance* **16**(2), 405–421.

Williamson, O. (1985), *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting*, Free Press.

Table 1: Descriptive statistics

The table provides descriptive statistics of the variables employed in the empirical specifications. The summary statistics for the bank- and country-level variables are based on the full sample for of the period 2005–2015. The variables' definition and their sources are presented in Table A3.

	Mean	Median	Std. Dev.	Obs.
Foreign bank organization forms				
Representative	0.037	0.000	0.188	8,015
Agency	0.009	0.000	0.092	8,015
Branch	0.228	0.000	0.420	8,015
Multiple	0.020	0.000	0.140	8015
Performance measures				
ROA	0.014	0.011	0.018	8,015
C/I	0.623	0.599	0.229	8,015
Bank-level characteristics				
Loans	0.499	0.528	0.217	7,968
Deposits	0.556	0.613	0.247	8,015
Solvency	0.139	0.109	0.111	8,015
Loan growth	0.138	0.095	0.200	8,015
SD ROA	0.049	0.043	0.034	8,015
Assets	7.686	7.627	1.948	8,015
Share	0.167	0.066	0.236	8,015
Host countries characteristics				
Activity	7.033	7.000	2.095	7,695
Entry	3.793	4.000	0.476	7,501
Language	0.346	0.000	0.476	7,723
Distance	7.819	7.904	1.209	7,723
Colony	0.202	0.000	0.402	7,723
GDPpc	9.438	9.451	1.336	7,898
Growth	0.032	0.032	0.038	7,877

Table 2: Impact of multiple organizational forms on a subsidiaries' ROA

The table shows the coefficients estimated employing the sample of foreign subsidiaries for the period 2005–2015. The dependent variable is ROA, and the independent variables are defined in Appendix Table A3. The regressions include constant, group, country, and year fixed effects. P values are in parentheses.

	(1)	(2)	(3)	(4)	(5)
Representative		0.001			
		(0.257)			
Agency			0.003		
			(0.081)		
Branch				0.000	
				(0.575)	
Multiple					0.003
					(0.008)
Loans	0.001	0.001	0.001	0.001	0.001
	(0.243)	(0.253)	(0.244)	(0.244)	(0.250)
Deposits	0.006	0.006	0.006	0.006	0.006
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Solvency	0.052	0.052	0.052	0.052	0.052
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loan growth	0.002	0.002	0.002	0.002	0.002
	(0.160)	(0.157)	(0.155)	(0.160)	(0.143)
SD ROA	−0.726	−0.755	−0.726	−0.731	−0.723
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Assets	0.001	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Share	0.005	0.005	0.005	0.005	0.005
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
Activity	0.001	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Entry	−0.003	−0.003	−0.003	−0.003	−0.003
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Language	0.002	0.002	0.002	0.002	0.002
	(0.003)	(0.004)	(0.005)	(0.003)	(0.003)
Distance	0.001	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Colony	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.138)	(0.149)	(0.190)	(0.133)	(0.166)
GDPpc	0.005	0.005	0.005	0.005	0.005
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Growth	0.019	0.019	0.019	0.019	0.020
	(0.014)	(0.015)	(0.014)	(0.015)	(0.014)
Group FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	7.232	7.232	7.232	7.232	7.232
R^2	0.400	0.400	0.400	0.400	0.400
Adj. R^2	0.380	0.380	0.380	0.380	0.380

Table 3: Impact of multiple organizational forms on a subsidiaries' cost-to-income ratio
The table shows the coefficients estimated employing the sample of foreign subsidiaries for the period 2005–2015.
The dependent variable is cost to income ratio, and the independent variables are defined in Appendix Table A2.
The regressions include constant, group, country, and year fixed effects. P values are in parentheses.

	(1)	(2)	(3)	(4)	(5)
Representative		0.016			
		(0.256)			
Agency			0.078		
			(0.002)		
Branch				0.000	
				(0.957)	
Multiple					0.052
					(0.003)
Loans	−0.098	−0.099	−0.098	−0.098	−0.099
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Deposits	0.043	0.042	0.042	0.043	0.042
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Solvency	−0.227	−0.227	−0.230	−0.227	−0.225
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Loan growth	−0.032	−0.032	−0.032	−0.032	−0.031
	(0.034)	(0.035)	(0.036)	(0.034)	(0.041)
SD ROA	−0.063	−0.467	−0.048	−0.069	−0.009
	(0.982)	(0.872)	(0.987)	(0.981)	(0.998)
Assets	−0.034	−0.034	−0.035	−0.034	−0.034
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Share	−0.002	−0.002	0.000	−0.002	−0.000
	(0.920)	(0.921)	(0.989)	(0.920)	(0.988)
Activity	0.001	0.001	0.001	0.001	0.001
	(0.548)	(0.553)	(0.536)	(0.548)	(0.566)
Entry	0.005	0.005	0.005	0.005	0.005
	(0.628)	(0.634)	(0.624)	(0.628)	(0.617)
Language	0.006	0.006	0.005	0.006	0.007
	(0.521)	(0.533)	(0.601)	(0.520)	(0.508)
Distance	−0.019	−0.019	−0.019	−0.019	−0.018
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Colony	−0.012	−0.012	−0.010	−0.012	−0.011
	(0.219)	(0.234)	(0.336)	(0.219)	(0.268)
GDPpc	−0.018	−0.018	−0.017	−0.018	−0.018
	(0.315)	(0.306)	(0.340)	(0.317)	(0.302)
Growth	0.061	0.060	0.061	0.061	0.062
	(0.519)	(0.531)	(0.519)	(0.520)	(0.511)
Group FE	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	7.232	7.232	7.232	7.232	7.232
R^2	0.334	0.334	0.334	0.334	0.334
Adj. R^2	0.312	0.312	0.312	0.311	0.312

Table 4: Impact of institutions on the choice of organizational forms and subsidiaries' ROA

The table shows the coefficients estimated employing the sample of foreign subsidiaries for the period 2005–2015. The dependent variable is ROA and the variable of interest is activity, which is an index of restrictions on bank activities. All independent variables are defined in Appendix Table A3. The regressions include bank-level and country controls as in Table 2 as well constant, group, country, and year fixed effects. P values are in parentheses.

	(1)	(2)	(3)	(4)
Representative	−0.006			
	(0.068)			
Agency		−0.002		
		(0.917)		
Branch			0.003	
			(0.054)	
Multiple				−0.003
				(0.478)
Representative x Activity	0.001			
	(0.011)			
Agency x Activity		0.001		
		(0.726)		
Branch x Activity			−0.000	
			(0.068)	
Multiple x Activity				0.001
				(0.138)
Activity	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Entry	−0.003	−0.003	−0.003	−0.003
	(0.001)	(0.001)	(0.001)	(0.001)
Bank controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
Group FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7.232	7.232	7.232	7.232
R^2	0.400	0.400	0.400	0.400
Adj. R^2	0.380	0.380	0.380	0.380

Table 5: Impact of culture on the choice of multiple organizational forms and subsidiaries' ROA
This table shows the coefficients estimated employing the sample of foreign subsidiaries for the period 2005–2015. The dependent variable is ROA and the variable of interest is common language between the host and home countries. All independent variables are defined in Appendix Table A3. The regressions include bank-level and country controls, as in Table 2 as well constant, group, country, and year fixed effects. P values are in parentheses.

	(1)	(2)	(3)	(4)
Representative	0.001			
	(0.557)			
Agency		0.006		
		(0.023)		
Branch			−0.000	
			(0.634)	
Multiple				0.004
				(0.002)
Representative x Language	0.001			
	(0.501)			
Agency x Language		−0.007		
		(0.041)		
Branch x Language			0.002	
			(0.056)	
Multiplex Language				−0.005
				(0.011)
Language	0.002	0.002	0.002	0.002
	(0.005)	(0.003)	(0.037)	(0.002)
Distance	0.001	0.001	0.001	0.001
	(0.000)	(0.000)	(0.000)	(0.000)
Colony	−0.001	−0.001	−0.001	−0.001
	(0.157)	(0.159)	(0.116)	(0.138)
Bank controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
Group FE	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	7.232	7.232	7.232	7.232
R^2	0.400	0.400	0.400	0.400
Adj. R^2	0.380	0.380	0.380	0.380

Table A1: Multinational banks in the sample

Multinational bank	Home country	Obs.	Countries
Lloyds Banking Group	United Kingdom	17	4
Société Générale	France	353	35
Banco Santander	Spain	255	20
Citigroup	United States of America	432	52
BNP Paribas	France	383	41
Commerzbank	Germany	61	5
Credit Agricole	France	206	19
Danske Bank	Denmark	44	8
Eurobank Ergasias	Greece	41	4
Deutsche Bank	Germany	217	25
Dresdner Bank	Germany	43	7
ING Groep	Netherlands	139	16
National Bank of Greece	Greece	53	7
Nedbank Limited	South Africa	11	2
Rabobank Nederland	Netherlands	46	6
Raiffeisen Bank International	Austria	240	16
Royal Bank of Scotland	United Kingdom	93	12
Standard Chartered	United Kingdom	209	29
UniCredit Italiano	Italy	243	19
Svenska Handelsbanken	Sweden	17	3
HSBC	United Kingdom	428	41
Banco Bilbao Vizcaya Argentaria	Spain	156	13
UBS Group	Switzerland	113	14
Credit Suisse	Switzerland	89	12
Intesa Sanpaolo	Italy	137	13
Erste Bank	Austria	101	9
Standard Bank	South Africa	190	20
Barclays	United Kingdom	188	21
Mizuho Financial Group	Japan	95	11
Mitsubishi UFJ Financial Group	Japan	167	17
DnB	Norway	60	9
Australia and New Zealand Banking Group	Australia	72	11
Sumitomo Mitsui Financial Group	Japan	85	10

Table A1: Multinational banks in the sample

Multinational bank	Home country	Obs.	Countries
Bank of Nova Scotia	Canada	201	17
JP Morgan Chase	United States of America	129	17
Alpha Bank	Greece	52	7
Itau Unibanco Holdings	Brazil	93	11
Skandinaviska Enskilda Banken	Sweden	77	9
Allianz	Germany	45	6
Swedbank	Sweden	47	6
Industrial Commercial Bank of China	China	96	13
Banco BTG Pactual	Brazil	15	3
Banco de la Nacion Argentina	Argentina	51	6
Banco do Brasil	Brazil	84	7
Westpac Banking Corporation	Australia	25	4
Millennium BCP	Portugal	38	6
Bank One	United States of America	4	1
Bank of New York Mellon	United States of America	10	3
Piraeus Bank	Greece	61	8
Kookmin Bank	Republic of Korea	23	4
Banco Espirito Santo	Portugal	32	5
Banco Popular Espanol	Spain	19	2
Bancolombia	Colombia	59	5
Bank Leumi le Israel	Israel	47	4
Bank of Baroda	India	39	6
Bank of China	China	105	16
Bank of India	India	18	5
Bank of Montreal	Canada	20	3
Caixa Geral De Depositos	Portugal	63	6
Canadian Imperial Bank of Commerce	Canada	51	8
China Construction Bank Corporation	China	31	8
Denizbank	Turkey	9	1
Jyske Bank	Denmark	10	1
Woori Bank	South Korea	43	4
Hana Financial	South Korea	56	7
Malayan Banking Berhad - Maybank	Malaysia	30	4

Table A1: Multinational banks in the sample

Multinational bank	Home country	Obs.	Countries
National Australia Bank	Australia	20	2
Nordea Bank	Finland	73	6
OTP Bank	Hungary	72	7
Royal Bank of Canada	Canada	105	8
Sberbank of Russia	Russia	123	12
Shinhan Financial Group	Republic of Korea	59	10
T.C. Ziraat Bankasi	Turkey	44	6
Toronto Dominion Bank	Canada	22	1
Turkiye Garanti Bankasi	Turkey	42	6
Turkiye Is Bankasi	Turkey	17	2
United Overseas Bank	Singapore	53	6
Commonwealth Bank of Australia	Australia	9	1
KBC Bank	Belgium	81	7
Banco Popolare	Italy	31	4
Unione di Banche Italiane	Italy	11	1
Wells Fargo	United States of America	12	2
Alfa Bank	Russia	63	5
Icici Bank Limited	India	19	2
Banco Davivienda	Columbia	18	4
Nedbank	South Africa	51	7
VTB Bank	Russia	100	12
Axa	France	22	3
Nova Ljubljanska Banka D.D.	Slovenia	62	6
Arab Banking Corporation BSC	Bahrain	61	6
Julius Baer Group	Switzerland	28	3
National Bank of Abu Dhabi	United Arab Emirates	13	3
National Bank of Kuwait	Kuwait	28	4
Banco de Sabadell	Spain	26	3
ABN Amro Bank	Netherlands	46	9
Veneto Banca	Italy	34	4
Diamond Bank	Nigeria	3	1
Total		8,015	897

Table A2: Host countries in the sample

Country	Obs.	Sub.	Country	Obs.	Sub.
Albania	60	8	Latvia	32	4
Algeria	30	4	Lebanon	6	3
Andorra	10	1	Lesotho	17	2
Angola	31	4	Liechtenstein	10	1
Argentina	136	13	Lithuania	49	5
Armenia	22	2	Luxembourg	338	32
Aruba	3	1	Macao	43	5
Australia	48	8	Macedonia	41	5
Austria	109	9	Madagascar	2	1
Azerbaijan	1	1	Malawi	19	2
Bahamas	22	3	Malaysia	120	15
Bangladesh	14	2	Malta	11	1
Barbados	12	2	Mauritius	38	5
Belarus	44	4	Mexico	144	11
Belgium	85	10	Monaco	50	6
Belize	9	1	Montenegro	40	4
Benin	3	1	Morocco	37	4
Bermuda	11	1	Mozambique	51	6
Bolivia	27	3	Namibia	23	2
Bosnia and Herzegovina	89	6	Nepal	11	1
Botswana	37	5	Netherlands	73	11
Brazil	245	25	New Zealand	73	12
Bulgaria	111	15	Nicaragua	1	1
Burkina Faso	8	2	Nigeria	37	3
Cambodia	18	4	Norway	34	3
Cameroon	18	3	Oman	11	1
Canada	102	13	Pakistan	14	2
Cape Verde	18	1	Panama	63	9
Cayman Islands	12	6	Papua New Guinea	12	3
Chile	119	13	Paraguay	64	8
China	135	19	Peru	68	8
Colombia	62	7	Philippines	13	2
Comoros	1	1	Poland	195	18
Costa Rica	44	4	Portugal	63	6
Cote D'Ivoire	24	4	Qatar	2	1
Croatia	96	9	Rep. of Korea	20	2
Curacao	7	2	Rep. of Moldova	28	3
Cyprus	43	5	Romania	9	4

Table A2: Host countries in the sample

Country	Obs.	Sub.	Country	Obs.	Sub.
Czech Rep.	109	6	Russian Federation	292	34
Dem. Rep. Of Congo	1	1	Rwanda	3	1
Denmark	23	4	Samoa	9	2
Dominican Rep.	31	4	Senegal	17	2
Ecuador	17	2	Serbia	161	16
Egypt	84	8	Seychelles	7	1
El Salvador	43	5	Sierra Leone	5	1
Equatorial Guinea	1	1	Singapore	19	5
Estonia	35	5	Slovakia	91	8
Finland	21	2	Slovenia	49	5
France	98	11	South Africa	30	3
Gabon	1	1	Spain	51	11
Gambia	15	2	Sri Lanka	9	3
Georgia	21	2	Swaziland	20	2
Germany	330	25	Sweden	10	1
Ghana	45	4	Switzerland	233	26
Grenada	6	1	Taiwan	35	8
Guatemala	18	1	Thailand	60	7
Guinea	3	1	Tonga	5	1
Haiti	10	1	Trinidad And Tobago	38	4
Honduras	19	3	Tunisia	30	3
Hong Kong	49	10	Turkey	64	8
Hungary	124	16	Uganda	38	5
India	62	8	Ukraine	149	18
Indonesia	198	17	United Arab Emirates	1	1
Ireland	44	8	United Kingdom	306	30
Italy	61	7	United Rep. of Tanzania	54	6
Jamaica	25	2	USA	591	36
Japan	22	5	Uruguay	108	11
Jordan	11	1	Uzbekistan	2	1
Kazakhstan	73	9	Vanuatu	10	1
Kenya	48	6	Venezuela	38	5
Kiribati	1	1	Vietnam	20	4
Kosovo	20	3	Zambia	33	5
Kyrgyzstan	10	1	Zimbabwe	17	3
Lao	3	1	Total	8,015	897

Table A3: Variable definitions and sources.

Variable	Description	Source
Bank performance measures		
ROA	Ratio of profits before taxes to total assets	Bankscope
C/I	Cost-to-income ratio	Bankscope
Bank level controls		
Loans	Share of total loans to total assets	Bankscope
Deposits	Share of total deposits to total assets	Bankscope
Solvency	Equity to total assets	Bankscope
SD ROA	Standard deviation of ROA of the bank (2005–2015)	Bankscope
Loan growth	Average year growth of loan volume of the bank (2005-2015)	Bankscope
Size	Log of total banks assets	Bankscope
Share	Share of assets of a bank in the total assets of the banking sector in the host country	Bankscope
Country control variables		
Growth	Real rate of growth of GDP	World Bank
GDPpc	Logarithm of real GDP per capita	World Bank
Activity	Index of restrictions on participation in activities pertaining to securities, insurance, real estate, and ownership in nonfinancial firms; ranges from 0 to 12, with higher values indicating more restrictive regulations.	Barth et al. (2004)
Entry	Index presenting the restriction of whether foreign banks may own domestic banks and enter a country's banking industry; ranges from 0 to 4, with lower values indicating greater stringency.	Barth et al. (2004)
Language	Dummy variable equal to 1 if countries share a common language. spoken by at least 9% of the population, and 0 otherwise	CEPII
Colony	Dummy variable takes the value 1 if pair was in a colonial or dependent relationship in the past.	CEPII
Distance	Logarithm of distance between most populated city of each country (in km).	CEPII