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"When in Rome, do as Romans". Similarities of banks performance drivers in CESEE

Małgorzata Iwanicz-Drozdowska*, Bartosz Witkowski#, Santiago Carbó Valverde‡

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Abstract

The goal of this paper is to analyse whether the determinants of the profitability and business orientation of foreign-owned banks operating in Central, Eastern and South-Eastern Europe (CESEE) are similar to domestic-owned banks in that region and foreign parent companies. To this aim we also check if profitability of the parents predicts the profitability of their subsidiaries. We use annual bank- and country-level data from the 1995–2014 period applying feasible GLS. The empirical results suggest that statistically significant differences exist between foreign-owned banks and domestic-owned banks. Although the subsidiaries are similar to their parent banks regarding some aspects of the credit policy, the overall drivers of profitability and business orientations vary.

Keywords: performance, profitability, business orientation, subsidiaries

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* Warsaw School of Economics; e-mail: miwani@sgh.waw.pl.
# Warsaw School of Economics; e-mail: bwitko@sgh.waw.pl.
‡ Universidad de Granada; e-mail: scarbo@ugr.es.

1 Introduction

Since the beginning of 1990s, globalization and the integration of financial markets, particularly in the Eurozone, as well as the economic and political transformations in the countries of Central, Eastern and South-Eastern Europe (CESEE), has opened the door for foreign banks. This process has resulted in long-term structural consequences for banking sectors that include transitioning countries through, *inter alia*, increased competition, know-how transfer and the related strategies of multinational banking groups. As Houston, James and Marcus (1997) and Houston and James (1998) noted, an 'internal capital market' operates between the parent company and its subsidiaries. Subsidiaries may also take some time to adapt to parent policies. However, a space also exists for the transmission of shocks between parents and subsidiaries. This phenomenon was initially analysed by Peek and Rosengren (1997, 2000). Institutional arrangements of foreign bank subsidiaries should be, influenced by parent policies and idiosyncrasy to some extent. This study asks to what extent the subsidiaries become similar to their parents in terms of profitability and business orientation.

Banking sectors in the countries of CESEE focus on traditional banking activities (such as taking deposits and loan granting) and are dominated by foreign owners. The impact of foreign bank entry and ownership on performance in emerging countries has been analysed by, e.g., Claessens, Demirguc-Kunt and Huizinga (2001), Bonin et al. (2005), Lensink, Meesters and Naaborg (2008), Claeys and Vander Vennet (2008), Koutsomanoli-Filippaki et al. (2009), and Havrylchyk and Jurzyk (2011a, 2011b). Their studies compare the performance of foreign-owned banks to that of other banks operating in those countries before the outbreak of the global financial crisis (GFC). This phenomenon has also been analysed in relation to industrialized countries, such as Australia (Sturm, Williams 2008) and New Zealand (To, Tripe 2002), or both developed and emerging markets (Claessens, Demirguc-Kunt, Huizinga 2001). Moreover, Kosmidou, Pasiouras and Tsaklanganos (2007) explored the impact of Greek banks' profitability on their subsidiaries abroad. In our study, we focus on the CESEE countries – a group of emerging markets with a similar history, particularly after World War II – in the period before and after the GFC. Many of these countries eventually joined the European Union. The significant presence of foreign-owned banks has raised some concerns in the CESEE countries following the outbreak of the GFC. One of those concerns has been the potential for contagion or shock transmission (e.g., Jeon, Olivero, Wu 2013), which could affect the performance of subsidiaries.

In most of the extant literature, studies have explored the profitability of foreign-owned banks in CESEE countries from the perspective of market entrance strategy (Havrylczuk, Jurzyk 2011b) or take-over strategy (Havrylczuk, Jurzyk 2011a). Single-country studies largely focus on the impact of the parent company on the performance of subsidiaries (Kosmidou, Pasiouras, Tsaklanganos 2007) or the factors determining foreign-owned banks' performance (To, Tripe 2002; Sturm, Williams 2008). However, the channels through which parent companies affect their subsidiaries have not been not deeply explored. This is shown by differences in the determinants of banks' performance and business models. Our contribution to the existing literature is twofold. First, we analyse whether foreign-owned banks in the CESEE countries differ from their local peers (privately owned domestic banks) and their parents in terms of their profitability and business orientation. We control for a number of macroeconomic and institutional factors as well as for the heterogeneity of home countries, i.e., countries of parent companies. In comparison with previous studies, we do not focus on the question

which group of banks is more profitable, but we explore potential differences in profitability drivers and business orientation between different groups of banks. This kind of approach may help identify whether foreign-owned banks are more like their parents or like their local peers in this respect. Second, we determine whether the profitability of the parent banks predicts the profitability of their subsidiaries. We treat it as a way to identify the strength of group-wide policies. Obviously, this is only a proxy.

This paper is organized as follows. In the second section, we present a review of the relevant literature. The third section explains the data sources and methodology, while we present and discuss the empirical results in the fourth. The fifth section comprises conclusions and a summary.

2 Literature review

Earlier studies on foreign ownership have examined the determinants of performance largely through the lens of financial ratios, such as the return on assets (ROA) and the net interest margin (NIM), or through the lens of productivity analysis (Bonin et al. 2005; Lensink, Meesters, Naaborg 2008; Koutsomanoli-Filippaki et al. 2009). These cross-country studies have also been accompanied by single--country studies on banks' profitability (e.g., To, Tripe 2002; Kosmidou, Pasiouras, Tsaklanganos 2007; Sturm, Williams 2008).

In many cross-country research projects, bank ownership (state-owned, domestic private-owned, and foreign-owned) is considered one of the potential discriminating factors of banks' profitability across countries. The political economy of cross relationships between parent banks and their subsidiaries in these studies operates two ways. In many emerging countries (i.e., host countries), foreign-owned banks play an important role in the market, and their profitability could be important to entities such as the fiscal authorities in the host countries. Additionally, the parent banks in their home countries keep an eye on their subsidiaries' performance with the idea of optimizing capital allocation and the profitability of the entire bank group. Market entry is also typically preceded by an in-depth market and performance analysis.

The connection between bank profitability and foreign ownership has been scrutinized from multiple perspectives in cross-country studies with mixed results. The first discriminating issue is the economic development of the host country. Claessens, Demirguc-Kunt and Huizinga (2001) analyse bank profitability using a sample of 80 countries (including 7 economies in transition) from 1988 to 1995. They find that foreign-owned banks were more profitable in emerging countries and less profitable in developed ones. The authors also revealed that the larger the share of foreign banks is in a market, the lower the profitability and margins of the domestic banks will be in those countries (they use 5 performance measures, including pre-tax ROA and NIM). However, the Claessens, Demirguc-Kunt and Huizinga (2001) study covers a time period during which the CESEE countries were in the initial stages of reforms with regulatory and economic conditions that were usually unstable. Dietrich and Wanzenried (2014) conduct an analysis of the determinants of banks' profitability (ROE, ROA and NIM) over the period from 1998 to 2012 for more than 10,000 banks from 118 countries. The countries were divided into three groups based on their income criterion (low, middle- and high--income). This analysis reveals that the level of income affects the significance of the determinants of bank profitability. Banks in high-income countries are found to be less profitable than those in lower income economies, and disparities in competition are one of the main discriminating factors

behind these differences.[1] In low-income countries, privately owned banks have demonstrated more profitability than state-owned ones. Macroeconomic factors have been proven to explain a large degree of the profitability of banks from low-income countries.

Another discriminating factor in cross-country studies is the strategy that banks follow when entering a market. A number of studies focus on M&A processes. Havrylchyk and Jurzyk (2011a) reveal that foreign banks focus on the acquisition of large domestically owned banks that were less profitable and better capitalized than their peers. That study covers 11 CEE countries over the period from 1993 to 2005, which was marked by economic reforms, extensive privatization and preparation for EU accession in many countries. One year after the acquisition, profitability is found to have increased due to cost cutting and lower provisions. Additionally, two years after the acquisition, the market share of the merged institution increases.

Claeys and Vander Vennet (2008) explore the determinants of NIM, including the market structure and efficiency as regressors. Their sample includes banks from CEE (13 countries) and Western Europe (31 countries) over the period of 1994–2001. They find that the presence of foreign banks had a negative impact on the margins of banks in CEE. In both groups of countries, higher operational efficiency was linked to lower net interest margins (NIMs). The researchers also suggest interest margins were not determined by the market structure but by operational efficiency and capitalization.

The parent-subsidiary nexus has also been explored. Havrylchyk and Jurzyk (2011b) covered 418 banks from 11 CEE countries for the period of 1993 to 2004. Foreign-owned banks were divided into 'greenfields' and takeovers. The authors analysed the impact of the entry mode, the parent company and the home country characteristics. In general, foreign banks were not found to have achieved a higher profitability than domestic banks. However, greenfield banks revealed a higher ROA due to lower costs. 'Greenfield' banks were sensitive to home country interest rates and the standing of the parent company.

Additionally, some researchers have also claimed that institutional factors have contributed to the profitability issues related to cross-border ownership. Chen and Liao (2011) analyse banks from 70 countries over the period from 1992 to 2006 to investigate joint home and host country effects on foreign-owned bank margins. The analysis concentrates on the market structure, macroeconomic conditions, governance and banking supervision. Their findings suggest that foreign-owned banks were more profitable than domestic-owned ones when they operated in a less competitive host country. As to the significance of trends in supervision, restrictiveness increasing in the home country corresponded with the growing margins of foreign-owned banks (see also, e.g., Ongena, Popov, Udell 2013). Moreover, when the host country became compliant with the Basel regulations, foreign-owned banks also increased their margins.[2]

One of the questions arising from profitability-related studies is the extent to which foreign and domestic banks converge or diverge in both the short and the long run. In extant the literature, the question of convergence in performance has been raised with mixed results. Dahl, Shrieves and Spivey (2008) analysed 6 'old' EU countries and Switzerland from 1994 to 2002 to determine whether the product line and the financial structure have converged. They used four ratios as proxies: customer

[1] According to the World Bank data, foreign owners of the CESEE banks represent high-income countries, while the CESEE countries themselves reveal certain differences. The prevailing portion of the CESEE nations is classified as middle-income with 5 countries representing the high income group (however, their income is far lower than in advanced economies).

[2] In our study, we analyse countries with similar regulatory settings as part of the requirements for the EU accession process. Therefore, we do not cover any control or regulation/supervision differences.

loans to assets, securities to assets, customer deposits to assets, and equity to assets. Their results suggest that the European financial integration did not increase the convergence of banks' activities, especially in the case of small banks. Following Philips and Sul's (2007) approach called 'convergence clubs', Matousek et al. (2015) test whether convergence in efficiency occurred among the EU-15 banks between 2006 and 2012. Although efficiency dropped due to the GFC, no convergence in efficiency was observed among banks from EU-15, the Eurozone or the biggest European banks (TOP-10). The authors explain the absence of convergence as a consequence of the GFC. In this study, we do not analyse convergence; however, we do explore the differences between parent companies and their subsidiaries, controlling for a number of macroeconomic and institutional factors.

3 Data and methodology

Following the previous studies, we select a set of macro- and microeconomic variables as potential regressors (Table 1 and Table 2). We model two performance indicators: bank's return on equity (ROE, defined as after tax profit to equity capital) and net interest margin (NIM, defined as net interest income to total assets), and we use the ratio of loans to customers to total assets (S_Loans) as a proxy for business orientation. Banks with a traditional business orientation demonstrate a higher ratio of loans to customers to total assets. Although ROA has been frequently used as an aggregate measure of performance, we use ROE for two - reasons. First, many of the banks' operations are off-balance--sheet rather than on-balance-sheet (e.g., Athanasoglou, Brissimis, Delis 2008); therefore, the return is stimulated not only by assets but also by a wide range of the other exposures. Then, as a result of the GFC, banks were forced by regulators to improve their capital positions and to deleverage. Thus, the return on equity dropped significantly. Second, ROE is the main external reference of profitability, and it is related to capital management in banking groups. Data availability prohibits the use of measures such as the return on risk-adjusted capital (RORAC) or risk-adjusted return on capital (RAROC).

The data have been collected from Bankscope (bank-level data[3]), the World Bank and IMF databases as well as from central banks and banks in the CESEE countries (macroeconomic data). Bankscope data have been supplemented by hand-collected data on bank ownership. The information has been obtained from the banks' annual statements and the shareholder information available on their websites. The sample period is 1995–2014. The sample covers 19 countries: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Kosovo, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia and Ukraine. There are 6,840 bank-year observations for banks operating in CESEE countries and 1,079 bank-year observations for the parent companies of foreign-owned banks in that region; however, the number of observations used to estimate particular models differs.[4] We distinguish two types of banks that are numerous in the

[3] Bank-level financial data are mostly consolidated, however for host banks – in single cases – stand-alone data were used due to unavailability of consolidated statements.

[4] The key reason why the number observations is not constant across the models is the different set of regressors, some of which may be missing in the data set for certain banks. That is why we provide the number of observations effectively used to estimate each and every model.

region, i.e. domestic private-owned (2,538 obs.) and foreign-owned (3,483 obs.).[5] The main descriptive statistics of the variables are shown in the Appendix.

Our set of explanatory variables is similar to other cross-country studies by, e.g., Havrylchyk and Jurzyk (2011b), Claeys and Vander Vennet (2008), and Chen and Liao (2011). We control for the following macroeconomic factors in the ROE and NIM equations: change of GDP (in real terms), inflation rate (INF), and real interest rate. These are key macroeconomic variables representing market conditions for business both in the real sector and in the financial industry. Needless to say, business activity, including banking, is procyclical. Moreover, in order to control for the market structure, we use the concentration ratio of banks' assets (CR5), which is a common measure in research. Bank-level explanatory variables in ROE and NIM equations are the following:

– loans to customers to total assets (S_Loans) – this ratio explains how loan specialization impacts bank profitability and risk,

– customer deposits to loans to customers (D_L) – this ratio reveals the bank's funding structure and leverage; if customer deposits are larger than customer loans, stable (customer) funding is expected to dominate over interbank funding,

– equity capital to total assets (CAP) – this ratio is a proxy for capital adequacy,

– credit growth (in real terms, CRED_GROWTH) – this variable shows business growth,

– equity growth (in real terms, CAP_GROWTH) – this variable reveals the capacity of the bank to increase its own funds,

– liquid assets to deposits and short-term funding (LIQ_A) – this is a ratio of the bank's liquidity,

– impairment charges to total assets (IMPAIR) – this is a ratio showing the deterioration of the bank's assets,

– the size is measured by a natural logarithm of total assets.

The selection of bank-level explanatory variables was based on an extensive review of literature. They represent CAMEL-based[6] approach, without management variable (M) that is a result of a subjective assessment during on-site inspections and earnings variables (E), that are our dependent variables. Moreover we control for bank's growth that can either reduce or expand bank's NIM and ROE and for bank size that is often treated as common control variable.

In the case of the S_Loans model, we also control for macroeconomic and market structure variables as in the ROE and NIM models. However, the following new country-level variables have been added:

– GDP per capita (GDP_pc) – this ratio is a proxy for a country's economic development,

– stock market capitalization to GDP (Stock_GDP) – this ratio demonstrates the role of the capital market in a given economy,

– deposit money bank assets to GDP (Assets_GDP) – this ratio is a proxy for the size of the banking sector.

Bank-level variables include CAP, D_L, SIZE, as in the previous models, and the following:

– bank deposits to bank loans – this ratio reflects the bank's activities on the interbank market; reliance on the interbank market is less expensive than customer deposits but is also less stable,

– NIM – this ratio is a proxy for the overall credit and funding performance before any provisions.

[5] The other banks include state-owned (679 obs.) and owned by development banks, e.g., EBRD (140 obs.). Data of these banks is used in all-bank model only.

[6] CAMEL is an acronym for methodology of supervisory bank evaluation that includes: bank's capital adequacy (C), asset quality (A), management (M), earnings (E) and liquidity (L).

The selection of explanatory variables was based on an extensive review of literature. Except for the same macroeconomic variables that were used in NIM and ROE models, we also control for the size of the stock exchange and the size of the banking sector as well as economic development in a given country, measured by GDP per capita. The motivation to choose these variables is based on the observation that on more developed markets bank loans may be substituted by market financing (via stock exchange), therefore it is necessary to account for this phenomenon as it may have an effect on the role of loans provided by banks. We assumed, macroeconomic environment shapes banks' business orientation. In the case of bank-level variables, their number is limited and focus on the activity on interbank market (we assumed the more bank is active on interbank market, the more funding for credit activity it can attract) and on profitability of traditional activities, measured by NIM.

Bank-level data have been used to estimate a series of panel data regressions. We estimate

$$y_{it} = x'_{it}\,\beta + \varepsilon_{it} \tag{1}$$

where y_{it}, the dependent variable, is the bank's financial indicator (ROE, NIM or loans to assets ratio) for the i-th bank in period t, x'_{it} is the vector of independent variables, β is the vector of parameters, and ε_{it} is the error term.

However, we do not assume it is spherical. First, autocorrelation tests and previous research suggest the presence of an autocorrelation in the series. Further, given the notable heterogeneity of banks' population, we allow for the first order autocorrelation with different coefficients across the sample. Notably, we also allow for cross-bank dependence in the error term, which makes our approach similar to Zellner's seemingly unrelated regressions. This is primarily because one of the components of the error term is essentially the market situation, which includes potential crises that could affect banks' behaviour. However, individual banks do not operate in separate, independent economies. In contrast, the considered banks operate in strongly related economies, and as a result, we believe that the distribution of the error term for each of the banks in a given period should not be treated as independent.

This type of approach requires the model to be estimated using a feasible generalized least squares method. The need to estimate the elements of the covariance matrix is always a threat in feasible GLS. However, the sample size is big enough to draw trustworthy conclusions given the estimator's asymptotic properties.

The considered models have been estimated separately for each of the banks' different ownership types as well as on the basis of a complete sample of the considered banks and using the data of the banks' parents. One of the questions of interest is whether statistically significant differences exist between the influence of particular regressors on the dependent variable for different banks (in terms of their ownership structure). This question is answered using a model estimated on data from two different ownership groups in each case. A dummy variable that distinguishes between the different ownership groups is introduced, and the significance tests of its interaction terms with regressors can be used to draw conclusions regarding the statistical significance of the differences between the two considered ownership groups.

4 Empirical results and discussion

In this section, we present the empirical results for banks' profitability (4.1) and business orientation (4.2). For each dependent variable, we estimate 4 bank models: all those in CESEE (Model 1) for reference, domestic private-owned (Model 2), foreign-owned (Model 3), and parent companies (Model 4). For profitability, we also use the parent's ROE and NIM in foreign-owned banks models (Model 5 and Model 6 with a one-year lag) in order to find out if parent's profitability predicts subsidiary's profitability. This is important to analyse if there is a strong link between parent company and subsidiaries due to a group-wide policy.

4.1 Performance

The estimates of the ROE and NIM equations are given in Tables 3 and 4, respectively.

One of our goals is to compare the sets of significant determinants of ROE in different groups of banks. In the case of the ROE equation, it is confirmed that five variables are statistically significant with a positive sign in all models: GDP growth, real interest rate, share of loans in total assets, liquid assets to total assets and the growth of equity capital. These shows a positive role of economic growth for banks' profitability and an important role of positive real interest rates, which are one of factors in a decision-making process regardless the type of the owner and country of origin. It is worth adding, foreign-owned banks typically intend to expand during economic downturns in their host countries to strengthen their market positions (e.g., Allen et al. 2017). CESEE countries suffered from an economic downturn in the mid-1990s and around 2009, but in the latter case, the downturn was only moderate in comparison with most home countries after the outbreak of the GFC. In the case of share of loans in total assets, its positive role should be attributed to potentially higher profitability of credit portfolio than e.g. profits on debt securities portfolio. Loans also absorb more capital according to capital regulations than Treasury bonds or bills. The structure of balance sheet in term of higher liquidity supports ROE achieved by banks, because of probably no need to find "emergency" funding in due course of business. The growth of equity capital allows to expand on the market and fulfil regulatory requirements. It is found to be no obstacle to increase ROE and it may be interpreted as a sign of proper capital management.

The rate of inflation and the market concentration (measured by CR5) are statistically significant for banks only in host countries with a positive sign. These differences may be attributed to the various levels of inflation in host and home countries and considerably changing market concentration and its structure in host countries after the start of economic transition. For inflation rates, our findings are contrary to Clayes and Vander Vennet (2008); however, their analysis covered the period of 1994 to 2001. The inflation rates are higher across CESEE countries than they are in the home countries. Therefore, reference interest rates and margins also tend to be higher. In the home countries, the rates of inflation were low from 1995 to 2014, which led to lower margins on traditional banking. Thus, parent banks were seeking other investment opportunities, some of which generated losses after the outbreak of the GFC.

We identify further differences between banks operating in host countries and parent banks. The size shows a positive effect on the profitability of banks from the CESEE countries and a negative one on the profitability of the parents. In the case of the size, its different role should be explained

by the fact that most of the parent companies are 'too big to fail' and have undergone supervisory scrutiny following the GFC, which resulted in deleveraging. Another difference is spotted in the case of impairment charges which show a negative sign in hosts' banks models and a positive sign in parents' model. This difference may be explained by higher credit risk and sovereign risk on the CESEE markets and therefore higher burden caused by credit portfolio. Moreover, banks in host countries usually apply less sophisticated methods for credit risk evaluation and calculation of the cost of risk.

The growth of credit plays a positive role in all bank models and for the sample of domestic-owned banks. On the other hand, its negative impact for the sample of foreign-owned banks may reflect a more aggressive credit policy in order to increase the market share or offer lower margins. More aggressive credit policy of foreign-owned banks may be also evidenced by the lower mean NIM and higher share of loans to assets. In the case of parent companies, the negative sign of the growth of credit may be explained by significantly lower margins and a greater focus on other sources of profits (e.g., financial assets held for trading).

As for the NIM equations, four factors exhibit the same role across all models as in ROE equations. These are: GDP growth, real interest rates, share of loans in total assets and liquid assets to total assets. In the case of inflation rate, its positive role for NIM has been identified also for parent banks. This may be explained by the fact that the inflation should have an impact on the level of nominal interest rates which are reflected in turn in the level of interest rates on loans and deposits. We claim, market participants in home countries react quicker to changes in inflation level. Higher concentration on local market increased NIM of both domestic- and foreign-owned banks, but decreased margins of parent banks. On average, concentration on host markets was higher (about 10 percentage points) than concentration on home markets. Needless to say, advanced economies are "overbanked" in term of assets to GDP and the market probably is overfilled with traditional services. Therefore, increased concentration in advanced economies do not necessarily leads to increased NIMs. Deposits to loans ratio, which is a proxy of stable funding, is found significant for domestic-owned and parent banks. Moreover, its statistical significance for parent banks has been also confirmed in ROE equation. This shows that profitability of parent banks is supported by stable funding which was in general lower than in host banks since parents relied on wholesale market to a larger extend. Stable funding is also important for private domestic-owned banks that need to balance their profitability and stability of funding because they have no parent bank to provide helpful hand in the case of deposits withdrawal above the expected/forecasted level. Our results reveal different impact of growth of equity capital across groups of banks. From ROE models we concluded, there is a proper capital management policy in all groups of banks. In the case of NIM, the role of growth of equity capital ratio is confirmed for domestic-private (with a positive sign) and parent banks (with a negative sign). We suppose, domestic--owned banks are more flexible in their credit policy and may select more attractive (or more risky) market segments to allocate their equity capital. This factor plays no role for foreign-owned banks since centralized capital management on group-wide basis. As for parent banks, a negative role of capital growth for NIM maybe associated with overall deleveraging process after the outbreak GFC. Therefore, growth of equity capital has not been used to expand credit portfolio, but to fulfil regulatory requirements.

High ratio of equity capital to total assets, growth of credit and impairment charges have confirmed their positive role for NIM in all analysed groups of banks. This means that better capitalized banks are able to optimize management of their interest-generating assets and liabilities. The co-occurrence

of positive signs of credit growth and impairment charges may be treated as a proof that credit risk pricing policy has been properly designed. This pricing policy is a part of credit risk policy and an important part in credit risk management. In the case of size variable, it shows negative role for all groups of banks. This may be explained by higher potential diversification of credit portfolio. Small banks do not provide financing to large companies, but to retail customers, micro-firms or small and medium-sized enterprises. Margins achieved on relations with large companies are on average lower than achieved in other customer segments.

We perform additional statistical checks to determine whether the differences identified are statistically significant. The results of these tests are shown in Table 5 for the pair of foreign-owned and domestic private-owned banks.

In the case of ROE, statistically significant differences exist between foreign-owned and domestic--owned banks in almost all variables except size. The NIM models also reveal statistically significant differences between foreign- and domestic-owned banks (except for the share of loans, liquid assets and impairment charges). This shows, that although the set of significant determinants is similar, still domestic- and foreign-owned banks may react to them to a different extent.

Another question we raise is whether parents' profitability may predict subsidiaries' profitability. These results are presented in Table 6. Parents' ROE is not statistically significant for the ROE of their subsidiaries; however, the opposite is true in the case of NIM for both current and lagged parents' NIMs. This may be explained by the closely coordinated credit policy within the group, which is reflected in the similar drivers of NIM, the role of the parent's NIM in the predictability of the subsidiary's NIM and in the statistically significant differences between foreign-owned and domestic-owned banks. Moreover, the results of a survey conducted among bank managers by De Haas and Naaborg (2012) revealed that subsidiaries were strongly integrated with parents in the case of capital allocation and credit steering, so the managerial impact of the parent company was high. Parent banks, however, exhibit different asset structures, including non-traditional banking, than their subsidiaries; therefore, the sources of profits for their ROEs are not only linked to credit activity.

4.2 Business orientation

Table 7 shows the results for the equations in which the loans to assets ratio is a dependent variable.

Three variables – the ratio of banking sector assets to GDP (positive), deposits to loans (negative) and deposits from interbank market to interbank loans (positive) – show the same role for different groups of banks. While interpreting the negative role of the deposits to loans ratio, one should take into account the mean value of the ratios. For banks operating in CESEE countries, regardless of their ownership, the mean values are considerably above 1, suggesting a cautious funding policy. Although banks from CESEE show higher level of these ratios, they do not expand their credit volume. For parent companies, the mean value of the ratio is below 1, exhibiting their different funding policy with more reliance on the wholesale market. However, the impact of this variable does not differ between the two groups. An excess of interbank deposits over interbank loans helps increase the share of loans as an additional source of liquidity, which helps manage assets and liabilities structure as well as to meet regulatory requirements. The supportive impact of the size of the banking sector may be explained by overall development of the banking market and the demand for credit in a given country.

The other variables confirmed in most of the cases their statistical significance, but with different signs, which underlines the differences. Economic growth and economic development support size of loans in total assets for foreign-owned banks, while for their parents both variables decrease the relative size of loans. This pattern shows that after achieving certain level of economic development, it does not translate into more significant role of credit in home countries of parents, which are more advanced than host countries. They use however advantages of developing markets in host countries. For domestic-owned banks GDP growth supported relative size of loans, while growing GDP per capita decreased it. One of the potential explanations is that individuals, when they enjoy higher personal income, may resign to apply for loans. The same may be observed for micro-firms and SMEs, because many businesses like that are self-financing. In profitability equations increasing market concentration was positive for ROE and NIM of host banks. This is not the case however for the measure of the business orientation of host banks, but it is true for parent banks. Higher concentration reduces host banks capabilities to increase credit volume because banks guard their market position. In home countries however, where financial markets in general are better developed, increasing market concentration may stimulate banks to enter new areas, outside credit activity. Therefore, they will become more specialized.

Two other macroeconomic variables, i.e., the rate of inflation and real interest rate, show different role for the share of loans between domestic-owned banks and both foreign-owned banks with their parents. For domestic-owned signs of both variables are positive, while negative in other groups. This differs from our findings for profitability equations. We claim, these differences are a sign of various credit policies. Domestic-owned banks prefer to expand the role of credit portfolio in their assets in the environment of growing inflation and interest rates in order to achieve higher profitability. Foreign--owned banks and their parents tend to reduce the relative volume of credit portfolio in times of growing inflation and interest rates, because they are aware of increasing credit risk when interest rates go up. This happens because creditworthiness of the debtor is reduced by higher interest rates. In our opinion, this pattern confirms that the credit policy of parents and subsidiaries is coordinated to a large extent.

Two bank-level control variables, i.e., equity capital to assets ratio and the size, confirmed their significance for parent banks with a negative sign. In the case of capital ratio this result should be associated with deleveraging process. These have not been confirmed for all host banks, however capital ratio for domestic-owned banks has a negative sign, showing that their capital management may be similar to foreign, international banks.

Additional checks of statistical significance of differences are presented in Table 9.

Four variables reveal unrecognizable differences. These are GDP, stock market capitalization, interbank deposits and loans ratio and size. All in all, the differences between foreign-owned banks and their peers operating in the host market are significant. This shows the influence of the parent company and group-wide integration.

4.3 Robustness checks

To confirm the stability of the estimates, we have carried out a number of robustness check procedures. These included estimating considered models on the pre- and post-crisis subsamples of data on EU- and non-EU-located banks as well as eliminating some of the control-type regressors from the models.

In the paper, we present two types of robustness-check estimates.[7] Tables 9, 11, 13 and 15, correspond to Tables 3, 4, 6 and 7, respectively, and present the estimates of the models with the inclusion of additional time dummies. Those have been added for each of the annual time periods used in the analysis. This eliminates time-specific effects from the regressors; as a result, the estimates reflect the effect of bank--specific characteristics on the dependent variable, while the effects of economic cycles or crises are vastly reflected by the time dummies themselves. Similarly, Tables 10, 12, 14 and 16, corresponding to the same baseline tables, present the estimates of the particular models without the SIZE variable in order to observe if its exclusion implies significantly different impact of other variables.

As observed in the corresponding tables, a comparison of the particular models in the baseline table and the robustness-check tables reveals no differences in the direction of influence of particular regressors (as the signs of the parameters stay the same for all three compared models, and the few differences can be spotted only if a variable is significant in one of the models and insignificant in another). Additionally, it reveals usually minor differences regarding the size of the parameters. This is particularly important in the case of models with the inclusion of time dummies as it makes the results trustworthy and robust to changes in the banking sector and in the market.

5 Final remarks

The goal of the study was to investigate if subsidiaries are similar to their parents and/or to their local peers in terms of profitability and business orientation. To achieve this goal, we analyse parent banks and their subsidiaries, as well as domestic-owned banks in host countries, over the 1995–2014 period. Our analysis covers bank performance using three measures: return on equity (ROE), net interest margin (NIM) and the share of loans in the balance sheet total for banks operating in host countries and the parents of foreign-owned banks. We identify significant differences between foreign--owned banks and other banks operating in host countries for all three measures. This underlines their dissimilarity, but the determinants of their profitability or business orientation are – to a larger extent – consistent with domestic-owned banks. Moreover, the equity capital for foreign-owned banks plays a slightly different role since they rely on their parents and an 'internal capital market'.

Referring to similarities between foreign-owned banks and their parents, we identify that these two types of banks are similar in what refers to the determinants of the NIM, which suggests consistent credit, including pricing policies on a group-wide basis. The impact of parent's NIM is also a predictor. We treat this as a sign of co-ordinated risk management and pricing framework. Moreover, foreign-owned banks and their parents react in the same way to increasing inflation and real interest rates, which is due to higher risk awareness. Foreign-owned banks are less similar (i.e., more variables with different impacts) in ROEs because their subsidiaries focus more on traditional banking (collection of deposits and granting of credit), while the parents run a wider scope of operations, including investment banking activities. Therefore, the parents do not rely that much on traditional banking, on which they generate significantly lower margins. As far as the business orientation is concerned, we find considerable differences between parents and subsidiaries. Our results suggest that this is due to parents' non-traditional activities and international presence, which generates a wider scope of opportunities for their business orientation.

[7] A full set is available on request from the authors.

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Appendix

Table 1
Regressors for ROE and NIM equations

Notation	Definition	Examples of use	Expected sign
Macroeconomic and market structure variables			
GDP	Change of GDP in real terms	Claessens, Demirguc-Kunt, Huizinga (2001); Havrylchyk, Jurzyk (2011b); Claeys, Vander Vennet (2008)	+
INF	Inflation rate (CPI)	Chen, Liao (2011); Claessens, Demirguc--Kunt, Huizinga (2001); Claeys, Vander Vennet (2008); Athanasoglou, Brissimis, Delis (2008)	+
IR	Real interest rate (official central bank's rate less inflation)	Claeys, Vander Vennet (2008); Chen, Liao (2011)	+/–
CR5	Concentration ratio; the share of five biggest banks in total assets of the banking sector in a country	CR3– Claeys, Vander Vennet (2008); CR4 – Chen, Liao (2011); CR5 – Kosmidou, Pasiouras, Tsaklanganos (2007)	+
Bank-level variables			
S_LOANS	Loans to customers to total assets (TA)	Claeys, Vander Vennet (2008); Maudos, Guevarra (2004)	+
D_L	Customer deposits to loans to customers	Similar to Chen, Liao (2011)	–
CAP	Equity capital to total assets	Claessens, Demirguc-Kunt, Huizinga (2001); Claeys, Vander Vennet (2008); Cull, Martinez-Peria (2013); Havrylchyk, Jurzyk (2011b); Athanasoglou, Brissimis, Delis (2008); Maudos, Guevarra (2004)	–
CRED_ GROWTH	Credit growth t/(t – 1) in real terms	Cull, Martínez Pería (2013) and Allen et al. (2017) modeled this variable. In practice, the credit growth allows to expect higher return, however is procyclical	+
CAP_ GROWTH	Equity capital growth t/(t –1) in real terms	Capital growth is important to both credit growth and the level of ROE	–
LIQ_A	Liquid assets (cash, short term assets and) to deposits and short term funding	Similar to: Martinez-Peria et al. (2004); Chen, Liao (2011); Cull, Martinez-Peria (2013)	–

Table 1, cont'd

Notation	Definition	Examples of use	Expected sign
IMPAIR	Impairment charges to total assets	The substitute of NPL due to limited number of observations; proxy of credit risk; NPL – Martinez-Peria et al. (2004); credit risk proxy – Chen, Liao (2011); LLP – Maudos, Guevarra (2004); Havrylchyk, Jurzyk (2011b); Athanasoglou, Brissimis, Delis (2008)	–
SIZE	ln TA (ln of TA in million EUR)	Chen, Liao (2011)	+/–

Table 2
Regressors for loans to total assets equations

Notation	Definition	Examples of the application or justification	Expected sign
Macroeconomic and market structure variables			
GDP	Change of GDP in real terms	Claessens, Demirguc-Kunt, Huizinga (2001); Havrylchyk, Jurzyk (2011b)	+
GDP_pc	GDP per capita (in EUR)	Havrylchyk, Jurzyk (2011b); Dietrich, Wanzenried (2014)	+
Stock_GDP	Stock market capitalization to GDP	Dietrich, Wanzenried (2014); this variable is a proxy of capital market development	–
ASSETS_GDP	Deposit money bank assets to GDP	This variable is a proxy of banking market development; shows its overall size	+/–
CR5	Concentration ratio, the share of five biggest banks in total assets of the banking sector in a country	CR3 – Claeys, Vander Vennet (2008); CR4 – Chen, Liao (2011); CR5 – Kosmidou, Pasiouras, Tsaklanganos (2007)	+
INF	Inflation rate (CPI)	Chen, Liao (2011); Claessens, Demirguc-Kunt, Huizinga (2001); Claeys, Vander Vennet (2008); Athanasoglou, Brissimis, Delis (2008)	+
IR	Real interest rate (official central bank's rate less inflation)	Claeys, Vander Vennet (2008); Chen and Liao 2011	+/–
Bank-level variables			
CAP	Equity capital to total assets	Claessens, Demirguc-Kunt, Huizinga (2001); Claeys, Vander Vennet (2008); Cull, Martinez--Peria (2013); Havrylchyk, Jurzyk (2011b); Athanasoglou, Brissimis, Delis (2008); Maudos, Guevarra (2004)	–
D_L	Deposits of customers to loans to customers	Similar to Chen, Liao (2011)	+
Bank_D_L	Bank deposits to bank loans	Similar to Dahl et. al (2008)	+
SIZE	ln TA (ln of TA in million EUR)	Chen, Liao (2011)	+/–

Table 3
The GLS estimates of the ROE model (equation 1)

Variable	ROE Model 1.1 – all banks	ROE Model 2.1 – domestic private	ROE Model 3.1 – foreign-owned	ROE Model 4.1 – parents
GDP	0.7309*** (0.0227)	0.6133*** (0.0337)	0.6668*** (0.0342)	3.8749*** (0.1546)
INF	0.1762*** (0.0073)	0.1974*** (0.0277)	0.2753*** (0.0210)	-0.0800 (0.1340)
IR	0.2293*** (0.0100)	0.2360*** (0.0215)	0.3147*** (0.0258)	0.2901*** (0.1002)
CR5	0.0779*** (0.0046)	0.1374*** (0.0110)	0.1533*** (0.0010)	0.0022 (0.0187)
S_LOANS	0.0448*** (0.0049)	0.0682*** (0.0170)	0.1278*** (0.0156)	0.1869*** (0.0330)
D_L	0.0006* (0.0003)	0.0050 (0.0038)	0.0007 (0.0007)	0.0299** (0.0117)
CAP	-0.2048*** (0.0094)	0.0895*** (0.0172)	-0.2865*** (0.0273)	-0.2841*** (0.1042)
CRED_GROWTH	0.0019*** (0.0004)	0.0067*** (0.0016)	-0.0027** (0.0012)	-0.0910*** (0.0116)
CAP_GROWTH	0.0281*** (0.0016)	0.0211*** (0.0032)	0.0392*** (0.0017)	0.0609*** (0.0044)
LIQ_A	0.0452*** (0.0036)	0.0591*** (0.0076)	0.0999*** (0.0105)	0.2372*** (0.0100)
IMPAIR	-1.2276*** (0.0312)	-2.0934*** (0.0755)	-1.2466*** (0.1073)	1.1768* (0.4514)
SIZE	0.0122*** (0.0007)	0.0208*** (0.0020)	0.0197*** (0.0014)	-0.0003 (0.0023)
constant	-0.1509*** (0.0078)	-0.2823*** (0.0213)	-0.3144*** (0.0194)	-0.1716*** (0.0438)
N	4,284	1,322	2,440	657

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 4
The GLS estimates of the NIM model (equation 1)

Variable	NIM Model 1.1 – all banks	NIM Model 2.1 – domestic private	NIM Model 3.1 – foreign-owned	NIM Model 4.1 – parents
GDP	0.0149*** (0.0024)	0.0108* (0.0058)	0.0269*** (0.0028)	0.0219*** (0.0025)
INF	0.1392*** (0.0024)	0.2464*** (0.0062)	0.1341*** (0.0015)	0.1017*** (0.0051)
IR	0.1392*** (0.0024)	0.1118*** (0.0061)	0.0715*** (0.0016)	0.0375*** (0.0027)
CR5	-0.0037** (0.0012)	0.0253*** (0.0008)	0.0038*** (0.0012)	-0.0049*** (0.0008)
S_LOANS	0.02287*** (0.0009)	0.0214*** (0.0024)	0.0248*** (0.0016)	0.0326*** (0.0019)
D_L	0.00002 (0.00002)	0.0007* (0.0004)	6.33e-07 (0.0000)	0.0035*** (0.0004)
CAP	0.0965*** (0.0020)	0.1301*** (0.0050)	0.1042*** (0.0019)	0.1964*** (0.0084)
CRED_GROWTH	0.0002** (0.0001)	0.0018** (0.0005)	0.0003*** (0.0001)	0.0017*** (0.0004)
CAP_GROWTH	-0.0003 (0.0002)	0.0009* (0.0005)	-0.0003 (0.0002)	-0.0006** (0.0002)
LIQ_A	0.0009** (0.0004)	0.0026* (0.0009)	0.0033** (0.0010)	0.0023*** (0.0006)
IMPAIR	0.0559*** (0.0049)	0.1010*** (0.0119)	0.0955*** (0.0051)	0.3703*** (0.0204)
SIZE	-0.0040*** (0.0001)	-0.0015*** (0.0002)	-0.0038*** (0.0002)	-0.0010*** (0.0001)
constant	0.03891*** (0.0012)	-0.0118*** (0.0027)	0.0315*** (0.0022)	-0.0043 (0.0026)
N	4,288	1,323	2,442	659

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 5
Statistical significance of differences between foreign-owned and domestic-owned banks

Variable	**ROE p-values**	**NIM p-values**
GDP	0.096	0.058
INF	0.000	0.000
IR	0.000	0.001
CR5	0.000	0.000
S_LOANS	0.013	0.629
D_L	0.076	0.094
CAP	0.000	0.002
CRED_GROWTH	0.040	0.037
CAP_GROWTH	0.000	0.023
LIQ_A	0.000	0.717
IMPAIR	0.000	0.685
SIZE	0.769	0.000

Note: based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.

Table 6
The GLS estimates of the ROE and NIM models (equation 1) with the inclusion of parent characteristics

Variable	ROE Model 5.1	ROE Model 6.1	NIM Model 5.1	NIM Model 6.1
GDP	0.2063*** (0.0300)	0.0160 (0.0231)	0.0174*** (0.0031)	0.0225*** (0.0032)
INF	0.4366*** (0.0181)	0.4633*** (0.0208)	0.1112*** (0.0041)	0.1239*** (0.0047)
IR	0.3254*** (0.0228)	0.3641*** (0.0237)	0.0726*** (0.0045)	0.0840*** (0.0050)
CR5	0.0990*** (0.0054)	0.1032*** (0.0107)	-0.0072*** (0.0017)	-0.0075*** (0.0019)
S_LOANS	0.1392*** (0.0123)	0.1401*** (0.0092)	0.0193*** (0.0016)	0.0186*** (0.0017)
D_L	0.0015* (0.0008)	-0.0002 (0.0009)	1.11e-06 (0.00002)	9.64e-07 (0.00003)
CAP	-0.0134 (0.0126)	-0.0979*** (0.0159)	0.0857*** (0.0042)	0.0934*** (0.0044)
CRED_GROWTH	-0.0040*** (0.0010)	-0.0043*** (0.0009)	0.00033*** (0.0001)	0.0003* (0.0001)
CAP_GROWTH	0.0472*** (0.0031)	0.0562*** (0.0021)	-0.0003 (0.0002)	-0.0002 (0.0002)
LIQ_A	0.0603*** (0.0085)	0.0603*** (0.0052)	0.0007 (0.0011)	-0.0003 (0.0011)
IMPAIR	-5.0841*** (0.0973)	-5.6041*** (0.0871)	0.0712*** (0.0104)	0.1051*** (0.0104)
SIZE	0.0216*** (0.0011)	0.0194*** (0.0010)	-0.0026*** (0.0002)	-0.0021*** (0.0002)
ROE_Parent	0.0027 (0.0022)		–	–
ROE_Parent_lagged	–	0.0001 (0.0025)	–	–
NIM_Parent	–	–	0.1776*** (0.0144)	–
NIM_Parent_lagged	–	–	–	0.1506*** (0.0140)
constant	-0.2902 (0.0153)	-0.2681 (0.0144)	0.0307 (0.0025)	0.0266 (0.0025)
N	2,108	2,011	2,114	2,016

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied. All models based on foreign-owned banks data only; standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 7
The GLS estimates of the loans to total assets model (equation 1)

Variable	S_Loans Model 1.1 – all banks	S_Loans Model 2.1 – domestic private	S_Loans Model 3.1 – foreign-owned	S_Loans Model 4.1 – parents
GDP	0.1114*** (0.0204)	0.1742*** (0.0260)	0.1306*** (0.0246)	-0.0653*** (0.0245)
GDP_pc	7.63e-07*** (2.70e-07)	-6.58e-07 (4.84e-07)	3.47e-06*** (5.87e-07)	-2.46e-06*** (1.18e-07)
Stock_GDP	0.0391*** (0.0065)	0.0449*** (0.0081)	0.0508*** (0.0078)	-0.0012 (0.0027)
ASSETS_GDP	0.2028*** (0.0056)	0.1420*** (0.0075)	0.2370*** (0.0099)	0.0552*** (0.0018)
CR5	-0.0929*** (0.0110)	-0.0528*** (0.0115)	-0.1121*** (0.013)	0.0638*** (0.0039)
INF	-0.0173 (0.0237)	0.0956** (0.0296)	-0.1026** (0.0336)	-0.2314*** (0.0408)
IR	-0.0818*** (0.0227)	0.1109*** (0.0264)	-0.2921*** (0.0337)	-0.0669** (0.0298)
CAP	0.0250 (0.0154)	-0.0911*** (0.0140)	0.0308 (0.0217)	-0.1037*** (0.0279)
D_L	-0.0130*** (0.0008)	-0.0913*** (0.0020)	-0.0087*** (0.0007)	-0.2064*** (0.0019)
Bank_D_L	0.0002*** (0.00003)	0.0003** (0.0001)	0.0002*** (0.00003)	0.0029*** (0.0003)
SIZE	0.0107*** (0.0009)	-0.0004 (0.0013)	0.0021* (0.0012)	-0.0379*** (0.0007)
constant	0.4348 (0.0104)	0.5889 (0.0132)	0.5021 (0.0132)	1.1196 (0.0105)
N	3,748	1,229	2,085	770

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; standard errors are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 8
Loans to total assets – statistical significance of differences

Variable	**Foreign-owned banks and domestic private banks p-values**
GDP	0.287
GDP_pc	0.000
Stock_GDP	0.764
ASSETS_GDP	0.000
CR5	0.037
INF	0.000
IR	0.000
CAP	0.000
D_L	0.000
Bank_D_L	0.454
SIZE	0.469

Note: based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.

Table 9
The GLS estimates of the ROE model (equation 1) with time dummies

Variable	ROE Model 1.2 – all banks	ROE Model 2.2 – domestic private	ROE Model 3.2 – foreign-owned	ROE Model 4.2 – parents
GDP	0.7590*** (27.22)	0.4750*** (7.08)	0.3000*** (5.33)	4.4880*** (19.71)
INF	0.1500*** (13.71)	0.1900*** (4.71)	0.1560*** (6.17)	0.7480*** (4.74)
IR	0.1910*** (15.22)	0.2070*** (6.58)	0.1230** (3.18)	-0.3940*** (-3.34)
CR5	0.1190*** (52.21)	0.1290*** (9.39)	0.1510*** (10.99)	0.0327** (2.63)
S_LOANS	0.0529*** (9.49)	0.0922*** (4.43)	0.1050*** (6.62)	0.2680*** (7.25)
D_L	0.0003 (0.99)	0.0110** (2.61)	0.0004 (0.47)	0.0333*** (3.60)
CAP	-0.2340*** (-73.20)	0.1130*** (4.54)	-0.1780*** (-6.67)	-0.6210*** (-6.17)
CRED_GROWTH	0.0011* (2.07)	0.0014 (0.51)	-0.0033*** (-3.32)	-0.0794*** (-5.77)
CAP_GROWTH	0.0240*** (17.36)	0.0220*** (5.13)	0.0434*** (15.77)	0.0465*** (6.08)
LIQ_A	0.0456*** (14.11)	0.0342** (3.27)	0.0670*** (5.98)	0.2060*** (12.13)
IMPAIR	-1.4290*** (-32.57)	-2.1900*** (-21.45)	-1.0190*** (-9.15)	1.0420 (1.89)
SIZE	0.0173*** (38.47)	0.0325*** (16.15)	0.0238*** (15.24)	0.0079*** (3.71)
constant	-0.1450*** (-23.91)	-0.3200*** (-14.37)	-0.1400*** (-6.10)	-0.1730** (-2.76)
N	4,284	1,322	2,440	657

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 10
The GLS estimates of the ROE model (equation 1) without SIZE variable

Variable	ROE Model 1.3 – all banks	ROE Model 2.3 – domestic private	ROE Model 3.3 – foreign-owned	ROE Model 4.3 – parents
GDP	0.8830*** (50.37)	0.4990*** (15.03)	0.5900*** (16.22)	3.9930*** (26.77)
INF	0.1650*** (20.15)	0.1690*** (5.62)	0.2110*** (8.89)	-0.1440 (-1.29)
IR	0.2220*** (19.84)	0.1510*** (6.09)	0.2560*** (8.81)	0.3130** (2.83)
CR5	0.0856*** (26.80)	0.0257* (2.32)	0.1100*** (9.97)	-0.0245 (-1.82)
S_LOANS	0.0441*** (9.78)	0.0399* (2.50)	0.1320*** (8.37)	0.1710*** (8.17)
D_L	-0.0005 (-1.11)	-0.0044 (-1.54)	0.0010 (1.79)	0.03190** (2.83)
CAP	-0.3520*** (-40.84)	-0.0900*** (-6.51)	-0.3600*** (-12.25)	-0.3320*** (-3.36)
CRED_GROWTH	0.0006 (1.03)	0.0028 (1.67)	-0.0041*** (-3.81)	-0.0894*** (-15.09)
CAP_GROWTH	0.0345*** (25.61)	0.0276*** (9.15)	0.0420*** (25.87)	0.0568*** (13.31)
LIQ_A	0.0501*** (26.01)	0.0488*** (6.10)	0.0855*** (8.14)	0.2310*** (29.23)
IMPAIR	-1.1570*** (-38.93)	-2.0840*** (-28.22)	-1.4470*** (-12.82)	1.1150** (2.97)
constant	-0.0718*** (-8.16)	-0.4640*** (-24.24)	-0.1330*** (-9.51)	-0.1520*** (-9.15)
N	4,284	688	2,440	657

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 11
The GLS estimates of the NIM model (equation 1) with time dummies

Variable	NIM Model 1.2 – all banks	NIM Model 2.2 – domestic private	NIM Model 3.2 – foreign-owned	NIM Model 4.2 – parents
GDP	0.0069 (1.81)	0.0288** (3.06)	0.0217*** (4.54)	0.0080 (1.27)
INF	0.1380*** (45.40)	0.2550*** (33.93)	0.1450*** (39.11)	0.1120*** (11.55)
IR	0.0926*** (26.06)	0.0743*** (10.43)	0.0760*** (16.42)	0.0417*** (9.38)
CR5	-0.0040** (-3.17)	0.0269*** (12.21)	-0.0035* (-2.34)	-0.0037*** (-4.40)
S_LOANS	0.0194*** (17.02)	0.0237*** (8.65)	0.0244*** (14.64)	0.0376*** (20.49)
D_L	0.000007 (0.39)	0.0007 (1.72)	0.00001 (0.46)	0.0053*** (8.66)
CAP	0.0997*** (54.43)	0.139*** (29.33)	0.102*** (47.70)	0.181*** (17.37)
CRED_GROWTH	0.0002* (1.98)	0.0022*** (3.95)	0.00034* (2.79)	0.0007 (1.94)
CAP_GROWTH	-0.0003* (-2.05)	-0.00003 (-0.05)	-0.0004* (-2.14)	-0.0004* (-2.49)
LIQ_A	0.0003 (0.82)	0.0023* (2.40)	0.0032** (3.03)	0.0040*** (13.14)
IMPAIR	0.0497*** (9.83)	0.0751*** (6.54)	0.0917*** (18.24)	0.3740*** (13.79)
SIZE	-0.0038*** (-31.47)	-0.0011*** (-3.45)	-0.0035*** (-23.79)	-0.0001 (-0.79)
constant	0.0368*** (21.35)	-0.0134*** (-3.30)	0.0170*** (8.31)	-0.0060 (-0.94)
N	4,288	1,323	2,442	659

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 12
The GLS estimates of the NIM model (equation 1) without SIZE variable

Variable	**NIM Model 1.3 – all banks**	**NIM Model 2.3 – domestic private**	**NIM Model 3.3 – foreign-owned**	**NIM Model 4.3 – parents**
GDP	0.0186*** (10.08)	0.0159** (2.61)	0.0301*** (9.90)	0.0310*** (13.89)
INF	0.1490*** (60.22)	0.2720*** (59.75)	0.1550*** (42.82)	0.0965*** (20.32)
IR	0.1080*** (37.01)	0.1210*** (19.41)	0.0920*** (21.44)	0.0461*** (17.26)
CR5	0.0034*** (3.38)	0.0325*** (24.64)	0.0074*** (4.90)	-0.0065*** (-15.68)
S_LOANS	0.0198*** (26.46)	0.0138*** (6.34)	0.0277*** (16.75)	0.0407*** (36.89)
D_L	0.000004 (0.29)	0.00001 (0.03)	0.0000007 (0.03)	0.0030*** (9.37)
CAP	0.1220*** (122.65)	0.1480*** (36.35)	0.1260*** (47.14)	0.2120*** (35.65)
CRED_GROWTH	0.0003** (2.82)	0.0027*** (5.36)	0.0004* (2.54)	0.0016*** (5.45)
CAP_GROWTH	-0.0008*** (-5.37)	0.0001 (0.23)	-0.0004* (-2.00)	-0.0005** (-3.06)
LIQ_A	0.0011* (2.53)	0.0038*** (4.08)	0.0070*** (6.41)	0.0013 (1.86)
IMPAIR	0.0727*** (14.61)	0.1010*** (8.52)	0.1200*** (22.36)	0.4460*** (23.18)
constant	0.0066*** (7.28)	-0.0239*** (-10.27)	-0.0044** (-3.07)	-0.0193*** (-19.10)
N	4,288	1,323	2,442	659

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 13
The GLS estimates of the ROE and NIM models (equation 1) with the inclusion of parent characteristics with time dummies

Variable	ROE Model 6.2	ROE Model 7.2	NIM Model 6.2	NIM Model 7.2
GDP	-0.0099 (-0.20)	-0.0409 (-0.86)	0.0177*** (3.35)	0.0237*** (4.85)
INF	0.3520*** (10.32)	0.3700*** (11.04)	0.1240*** (21.62)	0.1300*** (28.75)
IR	0.1360** (3.11)	0.1770*** (4.66)	0.0784*** (13.59)	0.0784*** (13.97)
CR5	0.0823*** (5.79)	0.0943*** (8.10)	-0.0104*** (-5.35)	-0.0115*** (-7.50)
S_LOANS	0.1160*** (8.71)	0.1260*** (11.48)	0.0187*** (11.64)	0.0195*** (12.66)
D_L	0.0014 (1.51)	0.0012 (1.30)	0.00001 (0.46)	0.00001 (0.47)
CAP	0.0664* (2.20)	0.0115 (0.51)	0.0894*** (20.65)	0.0972*** (23.71)
CRED_GROWTH	-0.0049*** (-4.19)	-0.0069*** (-6.73)	0.0003* (2.29)	0.0003* (2.30)
CAP_GROWTH	0.0510*** (15.76)	0.0623*** (33.50)	-0.0003 (-1.95)	-0.00007 (-0.35)
LIQ_A	0.0218* (2.17)	0.0138 (1.74)	0.0005 (0.49)	-0.0004 (-0.33)
IMPAIR	-5.1020*** (-46.01)	-5.1970*** (-54.15)	0.0740*** (7.04)	0.1180*** (12.29)
SIZE	0.0258*** (19.04)	0.0265*** (22.61)	-0.0023*** (-14.35)	-0.0019*** (-13.64)
ROE_Parent	0.0008 (0.36)	–	–	–
ROE_Parent_lagged	–	0.0001 (0.06)	–	–
NIM_Parent	–	–	0.1800*** (11.88)	–
NIM_Parent_lagged	–	–	–	0.1470*** (10.26)
constant	-0.2080*** (-6.90)	-0.1730** (-3.14)	0.0182*** (7.71)	0.0123** (2.90)
N	2,108	2,011	2,114	2,016

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied.
All models based on foreign-owned banks data only *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 14
The GLS estimates of the ROE and NIM models (equation 1) with the inclusion of parent characteristics without SIZE variable

Variable	**ROE Model 6.3**	**ROE Model 7.3**	**NIM Model 6.3**	**NIM Model 7.3**
GDP	0.1430*** (4.55)	0.1090*** (3.66)	0.0188*** (5.84)	0.0226*** (6.97)
INF	0.3310*** (11.69)	0.3640*** (16.20)	0.1270*** (28.06)	0.1340*** (30.15)
IR	0.2180*** (6.17)	0.2550*** (8.14)	0.0884*** (17.38)	0.0928*** (17.95)
CR5	0.0544*** (4.23)	0.0645*** (7.42)	-0.0061** (-3.15)	-0.0071*** (-3.74)
S_LOANS	0.1290*** (8.94)	0.1300*** (12.66)	0.0216*** (12.22)	0.0192*** (11.42)
D_L	0.0012 (1.23)	0.0010 (1.00)	0.000004 (0.15)	0.000005 (0.19)
CAP	-0.1670*** (-7.10)	-0.2020*** (-14.70)	0.0974*** (22.25)	0.1070*** (28.19)
CRED_GROWTH	-0.0049*** (-5.69)	-0.0059*** (-7.55)	0.0004** (2.77)	0.0004** (2.80)
CAP_GROWTH	0.0530*** (16.53)	0.0613*** (22.05)	-0.0003 (-1.73)	-0.0002 (-0.77)
LIQ_A	0.0408*** (4.57)	0.0329*** (4.63)	0.0040*** (3.30)	0.0023* (2.00)
IMPAIR	-5.1930*** (-49.17)	-5.3240*** (-54.32)	0.0830*** (7.81)	0.1090*** (10.21)
ROE_Parent	0.0051* (2.45)	–	–	–
ROE_Parent_lagged	–	0.0017 (0.76)	–	–
NIM_Parent	–	–	0.1860*** (12.54)	–
NIM_Parent_lagged	–	–	–	0.1510*** (10.84)
constant	-0.0747*** (-5.08)	-0.0795*** (-7.13)	0.0061*** (3.34)	0.0069*** (3.93)
N	2,108	2,011	2,114	2,016

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.
A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied.
All models based on foreign-owned banks data only *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 15
The GLS estimates of the loans to total assets model (equation 1) with time dummies

Variable	S_Loans Model 1.2 – all banks	S_Loans Model 2.2 – domestic private	S_Loans Model 3.2 – foreign-owned	S_Loans Model 4.2 – parents
GDP	0.1800*** (5.77)	0.2820*** (5.51)	0.1260** (2.92)	0.0892* (2.09)
GDP_pc	-0.0000006 (-1.40)	-0.000003*** (-4.38)	0.000002** (2.93)	-0.000004*** (-18.74)
Stock_GDP	0.0432*** (5.24)	0.0675*** (4.84)	0.0332*** (3.50)	0.0180*** (3.65)
ASSETS_GDP	0.0994*** (15.53)	0.1160*** (9.32)	0.1710*** (16.33)	0.0502*** (12.16)
CR5	-0.0741*** (-9.00)	-0.0281* (-1.97)	-0.0462*** (-3.49)	0.0363*** (5.83)
INF	-0.0769*** (-3.54)	0.0426 (1.25)	-0.0480 (-1.51)	-0.1470** (-2.82)
IR	0.0176 (0.65)	0.1190*** (3.91)	-0.1440*** (-4.00)	0.2050*** (12.01)
CAP	-0.0061 (-0.38)	-0.1520*** (-8.89)	-0.0251 (-1.41)	-0.1520** (-3.21)
D_L	-0.0095*** (-14.11)	-0.0923*** (-44.23)	-0.0065*** (-13.91)	-0.1980*** (-54.63)
Bank_D_L	0.0001*** (5.09)	0.0002 (1.36)	0.0001*** (4.74)	0.0025*** (7.49)
SIZE	0.0077*** (11.13)	-0.0032* (-2.17)	0.0011 (0.92)	-0.0368*** (-41.07)
constant	0.4030*** (33.64)	0.5570*** (36.62)	0.3960*** (19.19)	1.001*** (69.34)
N	3,748	1,229	2,085	770

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Table 16
The GLS estimates of the loans to total assets model (equation 1) without SIZE variable

Variable	**S_Loans Model 1.3 – all banks**	**S_Loans Model 2.3 – domestic private**	**S_Loans Model 3.3 – foreign-owned**	**S_Loans Model 4.3 – parents**
GDP	0.1220*** (6.28)	0.2010*** (8.47)	0.1270*** (4.85)	0.0597** (2.88)
GDP_pc	0.000002*** (6.78)	-0.0000003 (-0.71)	0.000004*** (7.72)	-0.000004*** (-71.97)
Stock_GDP	0.0532*** (8.87)	0.0469*** (5.71)	0.0725*** (11.51)	-0.0673*** (-36.67)
ASSETS_GDP	0.1920*** (40.94)	0.1470*** (18.83)	0.2210*** (28.61)	0.0336*** (43.07)
CR5	-0.1660*** (-42.10)	-0.0648*** (-6.40)	-0.1060*** (-14.34)	0.0873*** (38.05)
INF	-0.0582*** (-4.26)	0.1210*** (4.25)	-0.1150*** (-4.72)	-0.2670*** (-8.39)
IR	-0.0352** (-2.80)	0.1310*** (5.33)	-0.2690*** (-10.42)	0.0172 (0.76)
CAP	-0.0196* (-2.16)	-0.0759*** (-9.04)	0.0144 (0.70)	0.5720*** (23.84)
D_L	-0.0112*** (-15.48)	-0.0896*** (-50.27)	-0.0061*** (-10.24)	-0.2010*** (-195.88)
Bank_D_L	0.0002*** (6.64)	0.0003* (2.09)	0.0002*** (6.04)	0.0035*** (11.37)
constant	0.539-*** (109.50)	0.5800*** (69.28)	0.5120*** (87.65)	0.7300*** (221.12)
N	3,748	1,229	2,085	770

Notes:
Based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data. A version of GLS with allowance for 1st order autocorrelation with different autocorrelation coefficients across banks and cross-correlation of the error terms is applied; *t* statistics are in parentheses.
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

ROE – descriptive statistics

Variable	ROE Model 1 – all banks					ROE Model 2 – domestic private				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
ROE	6,793	0.0532	0.4776	-9.6279	9	2,519	0.0503	0.4014	-6.5324	8.2206
GDP	6,840	0.0278	0.0424	-0.1435	0.89	2,538	0.0266	0.0445	-0.1435	0.3439
INF	6,840	0.0950	0.3793	-0.021	10.612	2,538	0.0817	0.2746	-0.021	10.612
IR	6,806	0.0270	0.3099	-8.3914	1.8	2,513	0.0518	0.2317	-8.3914	1.8
CR5	5,533	0.6105	0.1433	0	1	1,830	0.6150	0.1382	0.1944	1
S_LOANS	6,718	0.5469	0.1936	0	0.9944	2,451	0.5186	0.1797	0	0.991
D_L	6,560	1.7131	10.2075	0	435.6667	2,461	1.4860	3.0510	0	138
CAP	6,837	0.1591	0.1584	-4.4621	1	2,536	0.1718	0.1510	-2.0631	1
CRED_GROWTH	5,811	1.3808	10.8982	0	825.6837	2,046	1.6229	18.2432	0	825.6837
CAP_GROWTH	5,859	1.0887	0.8102	-28.5379	19.1118	2,055	1.0771	0.6324	-9.9264	8.7859
LIQ_A	6,682	0.4421	0.5805	-0.0658	9.8944	2,443	0.4617	0.5271	0.0006	8.6829
IMPAIR	5,903	0.0147	0.0483	-0.225	2.3056	1,961	0.0147	0.0348	-0.2	0.4621
SIZE	6,834	5.9716	1.8069	0	10.9752	2,535	5.2733	1.6692	0	10.4914

ROE – descriptive statistics, cont'd

Variable	ROE Model 3 – foreign-owned					ROE Model 5 – parents				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
ROE	3,471	0.0625	0.4337	-3.8795	9	1,075	0.0713	0.4348	-9.9229	5.2216
GDP	3,483	0.0276	0.0389	-0.1435	0.2697	1,110	0.0184	0.0317	-0.1422	0.1354
INF	3,483	0.0786	0.3394	-0.021	10.612	1,116	0.0356	0.0667	-0.22	0.9264
IR	3,483	0.0223	0.2736	-8.3914	1.8	1,091	0.0223	0.0555	-0.5396	0.4435
CR5	3,036	0.6042	0.1399	0	1	993	0.5046	0.1974	0.1668	0.99
S_LOANS	3,458	0.5868	0.1931	0	0.9944	1,079	0.5420	0.1743	0.0026	0.9604
D_L	3,344	1.9457	13.9743	0	435.6667	1,027	0.9551	0.6837	0	8.3043
CAP	3,483	0.1412	0.1511	-4.4621	0.989	1,079	0.0751	0.0675	-0.3907	0.9164
CRED_GROWTH	3,066	1.2553	1.2362	0	42.2553	888	3.5343	71.9439	0.0065	2144.914
CAP_GROWTH	3,095	1.1175	0.6754	-6.3771	18.0422	888	1.1710	1.5025	-6.9681	35.2899
LIQ_A	3,464	0.3741	0.4002	-0.0658	8.4073	1,077	0.3567	0.2940	0.0144	3.8259
IMPAIR	3,180	0.0134	0.0520	-0.0828	2.3056	1,058	0.0074	0.0166	-0.0191	0.3465
SIZE	3,481	6.3629	1.7567	0	10.5807	1,079	11.0154	2.1850	3.5835	14.6050

Note: based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.

NIM – descriptive statistics

Variable	NIM Model 1 – all banks					NIM Model 2 – domestic private				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
NIM	6,773	0.058	0.1118	-1.1633	6.4688	2,504	0.0615	0.1385	-0.8052	6.4688
GDP	6,840	0.0278	0.0424	-0.1435	0.89	2,538	0.0266	0.0445	-0.1435	0.3439
INF	6,840	0.095	0.3793	-0.021	10.612	2,538	0.0817	0.2746	-0.021	10.612
IR	6,806	0.027	0.3099	-8.3914	1.8	2,513	0.0518	0.2317	-8.3914	1.8
CR5	5,533	0.6105	0.1433	0	1	1,830	0.615	0.1382	0.1944	1
S_LOANS	6,718	0.5469	0.1936	0	0.9944	2,451	0.5186	0.1797	0	0.991
D_L	6,560	1.7131	10.2075	0	435.6667	2,461	1.486	3.051	0	138
CAP	6,837	0.1591	0.1584	-4.4621	1	2,536	0.1718	0.151	-2.0631	1
CRED_GROWTH	5,811	1.3808	10.8982	0	825.6837	2,046	1.6229	18.2432	0	825.6837
CAP_GROWTH	5,859	1.0887	0.8102	-28.5379	19.1118	2,055	1.0771	0.6324	-9.9264	8.7859
LIQ_A	6,682	0.4421	0.5805	-0.0658	9.8944	2,443	0.4617	0.5271	0.0006	8.6829
IMPAIR	5,903	0.0147	0.0483	-0.225	2.3056	1,961	0.0147	0.0348	-0.2	0.4621
SIZE	6,834	5.9716	1.8069	0	10.9752	2,535	5.2733	1.6692	0	10.4914

NIM – descriptive statistics, cont'd

Variable	NIM Model 3 – foreign-owned					NIM Model 5 – parents				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
NIM	3,463	0.0553	0.0999	-1.1633	3.703	1,077	0.0291	0.0312	-0.0442	0.3081
GDP	3,483	0.0276	0.0389	-0.1435	0.2697	1,110	0.0184	0.0317	-0.1422	0.1354
INF	3,483	0.0786	0.3394	-0.021	10.612	1,116	0.0356	0.0666	-0.22	0.9264
IR	3,483	0.0223	0.2736	-8.3914	1.8	1,091	0.0223	0.0555	-0.5396	0.4435
CR5	3,036	0.6042	0.1399	0	1	0,993	0.5046	0.1974	0.1668	0.99
S_LOANS	3,458	0.5868	0.1932	0	0.9944	1,079	0.542	0.1743	0.0026	0.9604
D_L	3,344	1.9457	13.9743	0	435.6667	1,027	0.9551	0.6837	0	8.3043
CAP	3,483	0.1412	0.1511	-4.4621	0.989	1,079	0.0751	0.0675	-0.3907	0.9164
CRED_GROWTH	3,066	1.2553	1.2362	0	42.2553	888	3.5343	71.9439	0.0065	2144.914
CAP_GROWTH	3,095	1.1175	0.6754	-6.3771	18.0422	888	1.171	1.5025	-6.9681	35.2899
LIQ_A	3,464	0.3741	0.4002	-0.0658	8.4073	1,077	0.3567	0.294	0.0144	3.8259
IMPAIR	3,180	0.0134	0.052	-0.0828	2.3056	1,058	0.0074	0.0166	-0.0191	0.3465
SIZE	3,481	6.3629	1.7567	0.0000	10.5807	1,079	11.0154	2.185	3.5835	14.6051

Note: based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.

Loans to total assets – descriptive statistics

Variable	Loans to total assets Model 1 – all banks					Loans to total assets Model 2 – domestic private				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
S_LOANS	6,718	0.5469	0.1936	0.0000	0.9944	2,451	0.5186	0.1797	0.0000	0.9910
GDP	6,840	0.0278	0.0424	-0.1435	0.8900	2,538	0.0266	0.0445	-0.1435	0.3439
GDP_pc	6,840	5888.601	4140.456	311.6765	19856.91	2,538	5339.459	4085.955	311.6765	19856.91
Stock_GDP	5,137	0.2032	0.1688	0.0002	1.0981	1,872	0.1924	0.1763	0.0002	1.0981
ASSETS_GDP	6,679	0.5462	0.2341	0.0741	1.2888	2,464	0.5641	0.2598	0.0741	1.2888
CR5	5,533	0.6105	0.1433	0.0000	1.0000	1,830	0.6150	0.1382	0.1944	1.0000
INF	6,840	0.0950	0.3793	-0.0210	10.6120	2,538	0.0817	0.2746	-0.0210	10.6120
IR	6,806	0.0270	0.3100	-8.3914	1.8000	2,513	0.0518	0.2317	-8.3914	1.8000
CAP	6,837	0.1591	0.1584	-4.4621	1.0000	2,536	0.1718	0.1510	-2.0631	1.0000
D_L	6,560	1.7131	10.2074	0.0000	435.6667	2,461	1.4860	3.0510	0.0000	138.0000
Bank_D_L	5,673	8.2221	55.8726	-2.0000	1817.000	1,992	3.1170	14.2670	-2.0000	385.0000
SIZE	6,834	5.9716	1.8069	0.0000	10.9752	2,535	5.2733	1.6692	0.0000	10.4914

Loans to total assets – descriptive statistics, cont'd

Variable	Loans to total assets Model 3 – foreign-owned					Loans to total assets Model 5 – parents				
	Obs	Mean	Std. dev.	Min	Max	Obs	Mean	Std. dev.	Min	Max
S_LOANS	3,458	0.5868	0.1932	0.0000	0.9944	1,079	0.5420	0.1743	0.0026	0.9604
GDP	3,483	0.0276	0.0389	-0.1435	0.2697	1,110	0.0184	0.0317	-0.1422	0.1354
GDP_pc	3,483	6344.685	4050.497	311.6765	19856.91	1,107	24185.14	11908.14	852.4573	78518.62
Stock_GDP	2,690	0.2172	0.1674	0.0002	1.0981	1,082	0.5322	0.3484	0.0349	2.3390
ASSETS_GDP	3,418	0.5509	0.2100	0.0741	1.2888	1,062	1.2596	0.6004	0.2081	3.8034
CR5	3,036	0.6042	0.1399	0.0000	1.0000	993	0.5046	0.1974	0.1668	0.9900
INF	3,483	0.0786	0.3394	-0.0210	10.6120	1,116	0.0356	0.0666	-0.2200	0.9264
IR	3,483	0.0223	0.2736	-8.3914	1.8000	1,091	0.0223	0.0555	-0.5396	0.4435
CAP	3,483	0.1412	0.1511	-4.4621	0.9890	1,079	0.0751	0.0675	-0.3907	0.9164
D_L	3,344	1.9457	13.9743	0.0000	435.6667	1,027	0.9551	0.6837	0.0000	8.3043
Bank_D_L	2,965	12.6166	75.4453	0.0000	1817.000	1,032	2.6271	6.5696	0.0143	110.4328
SIZE	3,481	6.3629	1.7567	0.0000	10.5807	1,079	11.0154	2.1850	3.5835	14.6051

Note: based on the WB and IMF database, Bankscope, central bank websites, banks annual statements and hand-collected data.

„Co kraj, to obyczaj". Podobieństwa w czynnikach stymulujących wyniki finansowe banków w krajach Europy Środkowo-Wschodniej

Udział banków będących własnością kapitału zagranicznego w krajach Europy Środkowo-Wschodniej i Europy Południowo-Wschodniej stał się znaczący podczas ich transformacji gospodarczej i politycznej. Celem niniejszego artykułu jest analiza determinant rentowności (mierzonej ROA, ROE i marżą odsetkową – NIM) oraz orientacji biznesowej (mierzonej udziałem kredytów udzielonych klientom w sumie bilansowej) banków działających w tym regionie Europy. Analizie poddano banki będące własnością krajowego kapitału prywatnego oraz spółki córki banków zagranicznych wraz z ich spółkami matkami. W porównaniu z poprzednimi pracami badawczymi nie analizuje się, która grupa banków jest bardziej rentowna, ale bada się potencjalne różnice w czynnikach rentowności i orientacji biznesowej między tymi grupami banków. Takie podejście pozwoli znaleźć odpowiedź na pytanie, czy banki będące własnością kapitału zagranicznego są bardziej podobne do swoich spółek matek czy też do innych banków krajowych. Dodatkowo analizuje się, czy rentowność banków matek umożliwia prognozowanie rentowności ich spółek zależnych. Daje to, w ocenie autorów, możliwość wypowiedzenia się co do stopnia integracji polityk wewnątrzgrupowych. W badaniu wykorzystano zmienne opisujące sytuację banków, mieszczące się w metodyce CAMEL, jak również zmienne makroekonomiczne z lat 1995–2014. Zebrane dane tworzą tym samym panel, w którym podstawową jednostką jest pojedynczy bank. W badaniu oszacowano, z wykorzystaniem estymatora GLS, model typu *pooled* z niesferycznym składnikiem losowym, w szczególności dopuszczając występowanie zróżnicowanej co do parametru autokorelacji składnika losowego oraz korelacji składników losowych między poszczególnymi jednostkami, co wydaje się istotne, biorąc pod uwagę, że wspólne dla większych grup banków (przynajmniej na poziomie kraju) uwarunkowania zewnętrzne z dużym prawdopodobieństwem przełożą się na związek między nimi. Jednocześnie duża liczba obserwacji umożliwia estymację tej klasy modelu. Do wnioskowania w zakresie różnic między poszczególnymi prywatnymi bankami krajowymi a bankami należącymi do kapitału zagranicznego wykorzystano grupę interakcji rozpatrywanych czynników ze zmienną binarną różnicującą między typami własności. Mimo iż stwierdzono, że istnieją statystycznie istotne różnice pomiędzy bankami będącymi własnością kapitału zagranicznego i krajowego, to determinanty ich rentowności i orientacji biznesowej są – w dużym stopniu – podobne. Spółki zależne są podobne do banków matek pod względem niektórych aspektów polityki kredytowej, jednak czynniki wpływające na ich rentowność i orientację biznesową są różne, co skłania do stwierdzenia, że „co kraj, to obyczaj".

Słowa kluczowe: wyniki działalności, rentowność, profil działalności, spółki zależne