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LIABILITY OF FOREIGNNESS IN BANKING SALES & TRADING BUSINESS

LUIZ BUENO BEZNOS

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Trabalho aplicado apresentado à Escola de Administração de Empresas de São Paulo da Fundação Getulio Vargas, como requisito para a obtenção do título de Mestre em Gestão para a Competitividade.

Linha de pesquisa: Finanças e Controladoria

Orientador: Prof. Dr. Hsia Hua Sheng

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ABSTRACT

International management literature argues that foreign firms operate under Liability of Foreignness (LOF). Several previous studies looked at LOF in banks, with contradictory results. Our study however is focused exclusively in the business of Sales and Trading of investment banks. We hypothesize this holds true for this business of investment banks, as the disadvantages of foreignness will be greater than advantages such as access to global markets. We looked at profitability for 87 domestic and foreign investment banks in Brazil for 27 quarters, using Pooled OLS as our statistical model. We found that there is indeed liability of foreignness. Testing characteristics that might mitigate LOF, we found that the smaller psychic distance and large home country economy can have a positive effect in foreign banks profitability. Surprisingly, experience does not appear to have a mitigating effect on LOF.

Keywords: Liability of Foreignness, Sales and Trading, Investment Banks, Psychic Distance, Experience.

RESUMO

A literatura de administração internacional argumenta que empresas estrangeiras operam sob *Liability of Foreignness* (LOF). Vários estudos prévios abordaram LOF em bancos, com resultados contraditórios. Nosso estudo, entretanto foca exclusivamente na linha de negócios de *Sales and Trading* de bancos de investimento. Nossa hipótese central é de que existe LOF nesta linha de negócio dos bancos de investimento, e que as desvantagens de ser estrangeiro serão maiores que as vantagens. Nós analisamos a lucratividade de 87 bancos locais e estrangeiros no Brasil por 27 trimestres, usando Painel Empilhado como metodologia estatística. Os resultados indicam que realmente há LOF. Testando características mitigadoras deste LOF, encontramos indicativos que menor distância psíquica e maior economia no país sede podem ter um efeito positivo na lucratividade de bancos de investimento estrangeiros. Surpreendentemente, experiência não parece ter um efeito mitigador sobre LOF.

Keywords: Liability of Foreignness, Sales and Trading, Bancos de Investimento, Distância Psíquica, Experiência.

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1. INTRODUCTION

One of the most debated themes in international management theory has been the fundamental question of whether being a foreign firm is an asset or a liability in a given market. The prevailing theory has been that the inherent costs of doing business abroad result in a Liability of Foreignness (LOF). Zaheer (1995 p.341) writes “liability of foreignness' has been the fundamental assumption driving theories of the multinational enterprise”.

The main components of this performance differential will be costs and advantages: The costs foreign firms incur above those of local firms and the advantages foreign firms supposedly have to invest overseas. (Caves, 1996). On the costs, the more commonly named are the lack of knowledge of the local market, the challenge of establishing legitimacy, discriminatory attitude of local clients and employees, costs imposed by local government policy and costs related to being controlled by a parent company who may not understand local markets. The advantages are commonly associated with advanced technology, scale, greater resource options and knowhow (Nachum, 2010).

The globalization experienced in global trade in the last decades and the arise of global cities have a clear impact in the classic theory. Nachum (2003), pioneered on this subject concluding that advantages of multinationality are a source of competitive performance for foreign financial services firms in the City of London. According to the author, the ability to connect with global sources of knowledge and also access resources across the world is a key advantage of multinational companies in cosmopolitan competitive settings such as those of global cities, where costumer and employees might themselves be foreign and cosmopolitan.

While the notion that being a foreign firm is a liability is intuitively appealing, empirical support is not entirely convincing (Hennart, Sheng, Lee & Bruscatto, 2017). Several studies have aimed to investigate and explain the performance differences of foreign firms in general (Nachum, 2010; Kronborg & Thomsen, 2009; Miller & Eden, 2006; Nachum, 2003, Zaheer, 1995) but opposite outcomes are observed, indicating that the circumstances of the specific market analyzed are a relevant factor. Several studies have sought to understand the foreignness assets and liabilities specific to banks. Claessens & van Horen (2012) compiled a total of 35 studies and found that 15 studies found foreignness to be an asset, while 9 found it to be either a liability or irrelevant. The remaining studies had ambiguous results as some foreign banks performed better than locals while other performed worse. This same paper contributed with a large multi-country study using panel data methodology to look at banks general profitability and found that local banks had better profitability in 8 countries (Brazil included), foreign banks had better profitability in 14 countries and the results were statistically insignificant in 29 countries.

In this study we use a similar approach to look at LOF in the sales and trading business line of foreign and domestic investment banks¹ operating in Brazil, contributing to the literature by researching a specific business line – Sales and Trading, for a specific population – investment banks. We also add by being a country specific study that looks at the Brazilian financial market and by considering its characteristics in the results discussion.

Sales and trading performance is the result of a bank ability to trade financial products and manage its capital. Its scope is limited strictly to financial intermediation and capital management, having therefore no impact from service fees such as M&A or IPO fees;

¹ The definition of Investment bank can be controversial and legally varied among countries. In this study we consider investment bank all non-retail, non-development banks operating in Brazil. Banks were considered non-retail when the number of branches as of the third quarter of 2017 was equal to or less than twenty.

compensation, tax, rent expenses, marketing costs or any other incomes or expenses that are not directly linked to trading financial product and managing capital. This business line, unlike mergers and acquisitions, debt underwriting or private banking, is present at some degree in all banks, allowing for a larger sample. Sales and trading is a business where advantages of being a foreign multinational company, such as access to global resources, and transferrable risk management skills, are relevant. We argue that besides this, the strong competitiveness of the local market (Claessens, 2004) and client base differences between local and foreign banks results in foreigners to operate in Brazil under liability of foreignness.

Additionally, we argue that this liability of foreignness in sales and trading is stronger in banks with greater psychic distance² to Brazil and less experience in local markets, similar to the findings of Hennart, Sheng, Lee and Bruscatto (2017) study of the Brazilian factoring³ market. We additionally argue that among foreign banks sales and trading profitability those originating in countries with bigger and better developed financial markets have better performance than others.

Brazil is an ideal setting for this study for several reasons. First, Brazilian central bank subjects all banks operating in Brazil to publish financial statements following a standardized GAAP methodology called COSIF. The numbers are then grouped and central bank publishes Income Statements for each bank including the number for sales and trading results. This allow us to make sure we are comparing standard numbers for each bank, with no risk of data quality issues arising from each bank classification of what revenues constitutes sales and trading.

² The psychic distance summarizes the main source of differences between countries (Eden & Miller, 2004)

³ Factoring is a transaction where a business sells receivables to a third party called (factor) at a discount.

Second, Brazil banking industry has a very specific population. Brazilian investment banks are local firms with little to no international presence, limited to very few branches to complement the onshore business. Foreign controlled banks in Brazil are mostly multinational corporations. This allows us a better environment for the study of LOF as we really compare multinational to local firms. Nachum (2010), has found evidence that local firms that are also multinational corporations may experience LOF differently. Our specific population allows us to ignore this effect, focusing on the classic view of local versus multinational.

On market relevance and structure, Brazil is currently the 8th largest economy in the world according to the International Monetary Fund, and local banks are developed and structured enough to compete with foreigners: The largest bank by total assets in our sample, for example, is BTG Pactual, a Brazilian controlled one. According to Claessens (2004) Brazil banking industry is also very competitive, ranking third in the fifty countries population studied.

There is evidence foreign banks operating in Brazil play an important role in products that are part of sales and trading as a previous study found that foreign banks, even small ones, have a relevant share in providing foreign exchange derivatives to non-financial companies in the country (Oliveira, Schiozer & Leão, 2014).

Brazil has also experienced some regulatory restraints to the presence of foreign banks, but these were lifted in the past decades, especially after 1995. See Appendix A for a brief panorama of Brazilian banking industry.

This work adds to the literature, most importantly, by studying the unexplored subject of LOF in sales and trading - to the best of our knowledge no study has done it before. Second, the analysis of distance, experience and home country characteristics

impacts on LOF contributes to the growing literature on the factors contributing to performance difference in foreign subsidiaries.

2. LITERATURE REVIEW AND HYPOTHESYS

No study has focused on foreignness in specific business line of banks is known to the author, but a handful of studies focused on banks and financial services LOF in general.

Nachum (2010) is a study consisting of both qualitative and quantitative analysis of a large sample of financial services firms operating in the city of London. Following multinational enterprise theory, he focuses on cost and advantages experienced by foreign firms operating in the city in relation to similar British firms. It starts with a population of 765 British firms and 490 foreign firms. He chooses to use a construct methodology, leveraging the multinational enterprise theory to operationalize theoretical constructs representing costs and advantages of foreign affiliates relative to local firms, combining various measures of cost and advantage into to four compounded variables. In order to gain insight, he then proceeds to qualitative field work by conducting a series of open-ended, semi structured interviews over the course of three years with representatives of 11 firms and representatives of major government authorities overseeing the operation of financial services in London.

The next step in this methodology is to create matched samples by finding for each foreign firm a local one that resembles it in terms of major determinants for performance, namely size, growth, productivity and stability. The matching methodology used is nearest available matching. The author allowed for partial matches in order to obtain a large foreign sample, resulting in 181 and 168 foreign and local firms remaining in the sample.

Distribution test of the matching variables and propensity scores had good results. He proceeded to use a number of statistical techniques for testing hypotheses, including parametric and nonparametric test of difference of means and regressions. The selected dependent variable for the regression was ROA, and the care was taken to add to the model a Heckman correction term to account for the possible bias of only observing existing firms. The author chooses to use Herfindal index and sales growth as industry variables of control and firm level control variables were most embedded in the compound measures of cost and advantage. The author lists as main caveats of his methodology the fact that some constructs can only be measured indirectly, the fact that operation measures employed to measure for the costs and advantages may not be a perfect representation of the theoretical constructs and the static nature of the study.

The study results lead him to conclude the competitive implications of foreignness to be complex and mixed, as the study finds that foreign firms do enjoy advantages over British ones but do not incur in additional costs. The author theorizes that this may be due to London being a global city, and one of his interviewees suggest that "Global financial services are essentially open for all players". Nachum (2009, p.734) also concludes that the advantages may arise from the global networks foreign banks are connected, where they can access resources and information unavailable to local firms.

Claessens and van Horen (2012) provide an extensive literature review of studies preceding theirs. They theorize that Foreign banks can have a number of advantages compared to local ones, including cross-border efficiency gains, ability to diversify risk better, more funding options with potential lower costs, scale advantages and the supposed capabilities of developing more sophisticated models, leading to superior risk management skill. On the costs, they mention disadvantages derived from lack of information on the

specific market, possible discrimination by host country government and customers and diseconomies arising from the trouble of operating in a culturally different environment while being managed by a distant parent company.

Their study is in a multi-country setting. They start with the large Bankscope database for the period 1995-2006, which includes most developing countries. Two criteria are set to select banks included in the sample, being each bank having at least three foreign and three domestic banks operating during the entire study period, as the leads to only 33 countries, the period is limited to 1999-2006, leading to 51 countries, including ten low income countries, twenty-six lower middle-income and fifteen upper middle-income countries.

As a multi-country study, and having the literature reviewed suggesting foreignness impact to be dependent on both host and home country characteristics, the authors chose to include in the model several control variables for host and home countries, including per-capita GDP, financial development, a dummy variable to indicate banks originating from developing countries and competitiveness.

In order to capture distance between home and host countries, dummies are created for to indicate countries being of the same region and sharing a common language. Another dummy is created to account for institutional distance between home and host countries, based on the governance indicators of Kaufmann, Kraay and Mastruzzi (2008).

To treat for bank level variables, the authors focus on size, funding structure, asset structure, age and leverage. Size is considered in absolute terms by creating a dummy which is one if the bank is above the median value of the sample and zero otherwise. Relative size is measured by banks market share, funding structure by the ratio of deposits to liabilities

and asset structure by the loan to asset ratio. A cutoff of 8 years is created to control age creating groups of old and new banks.

The authors choose to use ROA as a performance indicator and dependable variable. The statistical model chosen is panel data model relating performance to bank ownership, using country-year fixed effects. This model consequently controls for both country specific characteristics impacting bank performance and time impacts in banks performance, such as macroeconomic cycles. Bank characteristics clearly play a role, as evidence of scale economies are present (Hughes & Mester, 2006). Claessens and van Horen (2012) chose to include also bank level controls of leverage, defined by equity divided by assets, a dummy to indicate a public bank and a dummy called “problembank” which is one if the bank has exited the market within four years of entry.

The diverging results found in studies so far, could reflect differences both in sample period, country coverage and econometric techniques used. Studies have also used different performance measures such as return on assets (ROA), return on equity (ROE), operational cost and other efficiency measures (Claessens & van Horen, 2012).

Studies also found links of the performance of foreign banks to whether the host country is a developed or developing economy, whether the home country is a developed or developing economy or between both home and host country development status. (Berger, DeYoung, Genay & Udell, 2000) (Micco, Panizza and Yanez, 2007) (Miller and Parkhe 2002).

Claessens and van Horen explore the hypotheses of home country impact in asset of foreignness arguing that developed home countries tend to have highly educated labor force, which can make it easier to adopt and develop better risk management techniques and technologies. They also argue that the degree of competition in the home country is

relevant, as it would affect industry efficiency in a way that banks who succeeded in a competitive environment are more capable to succeeding in a foreign country.

Coutinho and Amaral (2010), looked at foreign banks performance in the Brazilian financial market using stochastic frontier analysis to research cost efficiency. Studying a sample of seventy banks in the period of 2001-2005, their results allowed to conclude foreign banks performance was not systematically superior to that of local banks in regards to cost efficiency.

2.1 Sales and Trading Profitability

In order to correctly study liability of foreignness in Sales and Trading we need first to establish a measure of sales and trading performance. Studies focusing in studying LOF in banking sectors have often chose to use profitability ratios well-established in business literature such as Return on Equity and Return on Asset to measure banks general profitability (Claessens & van Horen, 2012).

To measure the performance of sales and trading in this study we created Sales and Trading Income on Asset – STIA.

STIA is calculated by taking what we will call Income from Sales and Trading, consisting in the total of what Brazilian Central Bank calls *Resultado de Intermediação Financeira* – literally financial intermediation results, and dividing it by Total Assets. Sales and Trading Income is obtained from Central Bank Income Statements and it is the sum of incomes and expenses related to loans, leasing, securities and derivatives trading, foreign exchange and funding. Total assets were chosen as the denominator in line with both Nachum (2010) and Claessens and van Horen (2012), who used ROA. STIA has no impact

from compensation, tax, service fees, marketing expenses and broadly from any income or expense not directly related to loans, leasing, securities and derivatives trading, foreign exchange and funding.

It can be argued the funding and lending should not be included in the scope of sales and trading, but we have several reasons to do so. Our sample includes only investment banks, where funding and lending products are not off the shelf products but negotiated on a deal by deal basis: interest rates are defined by treasury desks and marketing is commonly made by the same sales team that market foreign exchange and securities products. Liquidity tightening after 2008 crises has also made banks invest in funding management, making some Repo Desks⁴ evolve in a liquidity desk who centrally manages funding with the market and trades this funding internally with other desks. There is also the case that many banks do hedges for risks incurred in funding, like receiving fixed interest rate deposits. These hedges profit or loss would be reported under derivatives and excluding funding costs would leave it unmatched.

There is a methodological question as well: The way data is published by central banks does not allow separating funding costs related to sales and trading to funding related to loans. Profitability number would be distorted if for example a bank bought government bonds to hedge a total return swap traded with a client or if a bank invested its excess cash in government bonds; and we didn't considered the funding costs involved in both operations.

2.2 Liability of Foreignness in Sales and Trading

⁴ Repo Desks are desks who mainly trade repurchase and reverse-repurchase agreement, usually by the end of each day after all settlements are known, in order to obtain needed funding or invest excess cash with other financial institutions.

Sales and trading in practical terms can be defined by the trading of two main product groups: Foreign exchange and securities (including derivatives), and by the management of funding structure and credit operations.

Foreign exchange (FX) is the simple trade of exchanging one currency for another. In Brazil foreign exchange operations are restricted and can only be done by financial institutions authorized by central bank. Clients of foreign exchange are generally categorized between those who bring foreign capital to the country, notably exporters and foreign investor and those who send capital abroad, especially importers and foreign companies sending dividends and profits. (Fortuna, 2008)

The most common and simple FX trade is an FX spot trade, where a client exchange X reais for Y foreign currency with the bank for settlement in 2 business days. The larger the spread between what the bank paying for the currency it is buying and the value it has agreed to sell it to the client the better the profit.

This poses a great advantage for banks that have the flows to match both sides of the operation. Suppose USDBRL is quoted at 3.3000 sell and 3.2900 buy in the interbank market, and the bank charges a 0.2% spread to its clients. If the bank has one client who wants to buy 100m USD and the bank manages to buy USD at 3.3000, it will sell it for 3.3066, for a total profit of 660,000 BRL. Now suppose this same bank has also a client who wants to sell 100m USD. Considering the 0.02% spread it would buy 100m USD at 3.2834 and sell it for 3.3066, for a total profit of 2,318,000 BRL. As a result, one can assume banks with a larger client base tend to have advantages in this trade. A large chunk of FX business profits is done by local mid-sized importers and exporters, tending to have less leverage on spread negotiations with the banks due to the size of its operation, and who on the sake of

simplicity we hypothesize tend to trade FX with the same local banks used for day to day cash management and operations. Foreign banks might leverage relationships with foreign investors and multinational companies, but these are larger trades with tougher negotiators prone to quoting a large number of banks, resulting in spreads tending to be much tighter, leading to a profitability advantage for local banks.

Securities are in the broader definition any kind of financial asset that can be traded. The specific definition is controversial, while the United States Securities Exchange Act of 1934 has a very broad definition including derivatives; Brazilian securities law (Law 6.385) excludes Brazilian government bonds. For the purpose of these examples we will consider securities as tradable financial instruments, such as bonds, government bonds, commercial papers, equity, debentures, warrants, securitized receivables, derivatives.

Government bonds are one of most common securities traded with close to three and a half trillion reais outstanding value. Only twelve per cent held by foreigners, indicating foreign banks haven't succeeded well in using global relationships to sell Brazilian bonds to foreign investor, besides Brazil's high interest rate. This can be an advantage for local banks, as for local clients of all sizes government bonds are a popular investment, and can also be used as collateral to loans, derivatives, futures and other securities.

Equities market is also relevant, with local B3 exchange listed companies market capitalization over two trillion reais. Unlike government bonds, foreigners have a remarkable presence in equities trading business in Brazil. According to exchange data, foreign investors account for about half of trades as of 2018.

Derivatives are financial instruments whose price is dependent on other variables. (Bessada, Barbedo & Araujo, 2013). These other variables can practically be anything, the most common being currency exchange rates, macroeconomic indicators like inflation and

interest rates, agricultural or mineral commodities, and other financial instruments like equities and bonds. Derivatives clients are usually categorized among hedgers, who seek to mitigate risk associated with price variation, speculators who seek to profit on price variations and arbitrageurs who seek to profit on market price inefficiencies. Derivatives itself are categorized as exchange traded (Listed) or traded over the counter (OTC).

Listed derivatives are traded at exchange and the most common types are futures and options. OTC derivatives are made to measure by banks to satisfy a client specific need of hedge or risk exposure. Listed derivatives are usually the primary source of hedge for the bank own risk exposures, especially futures. Clients have more specific needs, so they go to banks and ask for OTC derivatives that suit their exact requirements. Here, the banks creativity and ability to create attractive derivatives for its clients at a fair price is a key advantage. Banks will make a profit in derivatives trading on the buy and sell pricing differential. On OTC derivatives the profit is made between the price the bank charged the client and the cost the bank incurred to hedge the risk this OTC derivative created using other financial instruments. On a very simple example, a local client needs to hedge a payment it needs to make of 1m USD by the end of the month. The dollar futures contract fixing on the last day of the month is quoted at 3.3080, but the company does not want to incur in the transaction cost of trading dollar futures at the exchange, like commissions and margin deposits. This client can ask its bank to hedge this risk, as the bank will issue a OTC derivative in the form of an USD forward, and charge the client with a spread that will cover its costs and leave a profit. Assuming a 1% spread, the bank would sell the forward to the client at 3.3410, having a gross profit of 0.0330 per USD of 33,000 BRL for the total operation.

Similar to FX trading, we argue local banks have better access to mid-market clients, where they can make larger profits by imposing larger spreads. Like in foreign exchange, foreign investment banks can leverage connections to be quoted in large derivative operations from multinational companies, but besides large nationals, we reason spreads and profitability of these trades tend to be smaller.

Funding is the trade of sourcing money so that the bank can perform its operation. A bank has several sources of funding and the funding structure choices will impact on its costs, directly impacting on its performance.

The first source of funding will of course be its capital, followed by term interest paying deposits, non-interest deposits, repurchase and reverse-repurchase agreements, and in the case of foreign banks, intercompany loans.

Lending can be done in several forms, as a regular loan or leasing for the acquisition of real state, machinery and overall investments, or as part of a large structures finance or investment banking project where banks might provide the company with a bridge-loan. Lending is strictly related to funding, as banks with a better managed funding structure will have lower funding costs, allowing them to provide the clients with cheaper interest rate loans.

Both in funding and lending, access to mid-market clients might be an advantage, as interest rates demanded by for deposits tend to be smaller and interest rates payed in loans tend to be bigger, when compared to large corporate clients. Foreign banks might enjoy better reputation and credit scores that may result in cheaper funding.

All these arguments result in the following hypothesis:

(H1) – Foreign banks in Brazil are subject to significant liability of foreignness

2.2.1 Impact of psychic distance in the performance of foreign banks

There is evidence in the literature that distance in its various dimensions play a role in the performance of foreign banks affiliates. Berger, Klapper and Udell (2001) find that banks with parent companies in Latin America are more likely to lend to small opaque Argentinean business than banks with headquarters elsewhere. Claessens and Van Horen (2012), find that

“Of the measures of cultural distance, [...] one does appear to impact the performance of foreign banks. When proxied by the home and host country sharing the same language, foreign banks that are cultural close have on average a higher profitability than foreign banks that are cultural distant.”

Hennart, Sheng, Lee & Bruscato (2017), studying factoring LOF in Brazil, find that foreign affiliates with greater psychic distance tend to use more factoring to manage receivables, increasing its LOF. Ramirez and Tadesse (2009), find that firms in countries with greater uncertainty avoidance tend to hold higher levels of cash taking capital decisions that are less risky.

The Psychic Distance Index (PDI) is calculated using several dimensions of distance: geographic, language, religion, cultural, educational, managerial, economic development and industrial development. For that reason, we argue that is an appropriate measure for distance in this study and

(H2) – The greater the PDI, the smaller the profitability of sales and trading for Foreign Banks

2.2.2 Experience

According to Nachum (2010), “costs arise from lack of knowledge and the challenge of establishing legitimacy in foreign countries” (p.717).

Business literature has indications that foreign firms can reduce its liability of foreignness through learning, Petersen & Pedersen, 2002 argue that learning is a key factor for foreign firms to overcome LOF. It is intuitive that if one of the determinants of liability of foreignness is lack of local market knowledge, foreign firms that survive tend to acquire more market knowledge each year, overcoming this factor of LOF.

Nonetheless, business literature is not short of examples of newcomers being more profitable than experienced and well-established firms, as they can focus on more profitable niches of business and try to design more efficient operations than the experienced competition. This is more usual in highly competitive markets with few barriers to entry such as the one studied.

We formalize:

(H3) – The more experience a foreign bank has in Brazilian market, the more profitable its sales and trading business

2.2.3 Home Country Economy Size

As conclude by Berger, DeYoung, Genay and Udell (2000) in their study “[...] results suggest that domestic banks may be more efficient than foreign banks from most foreign countries; may be about equally efficient with foreign banks from some countries; but may be less efficient than foreign banks from one (the U.S.) of foreign countries” (p.64). Their results also suggest that specific market and regulatory conditions from home country may give rise to competitive advantage to its banks when operating abroad.

Claessens and Van Horen (2012) explore the subject, they claim that developed countries tend to have more educated labor force, making it easier to adopt new risk management technics and financial instruments, and that developed countries usually have more developed regulatory systems and safety nets, allowing its banks to take higher risk ventures. Their study states “we find that the level of development of the country in which the parent company is located influences the performance of foreign banks” (p.1284).

We believe that using a development indicator such as *per-capita* GDP or the World Bank’s high-income classification has its caveats as countries with large economy and lower development indicator can have developed and large financial markets and benefit from developed regulatory systems, safety nets and even education, as niches of excellency in their educational systems have quality compared to developed countries education. Two relevant examples of this case for our study are the host country – Brazil, and China, the home country of ten per cent or our foreign bank population. We chose in this study to focus on the nominal size of home country economy as the best available proxy for financial market development and size. We do so by considering the total GDP for each home country, in trillion dollars, as published by International Monetary Fund in 2017. This approach has its own caveats for home countries where economy is small but financial markets are a large and traditional part of the economy and are therefore developed, like

Luxembourg. We are still confident this is the best approach as there is only one bank in our sample that we feel could be argued that it's home country – Andorra, falls under this category.

Finally, I argue that the same determinants of regulatory, market conditions and work force educational background the apply to banks profitability in general can apply to sales and trading performance, formulating our fourth hypothesis:

(H4) – Foreign banks from countries with bigger economies have higher sales and trading profitability

3. RESEARCH DESIGN

3.1 Methodology and Data

Our dependent variable is numerical and represents sales and trading profitability. The statistic model is very similar to Claessens and van Horen (2012) without the host country controls. Instead of using fixed effects for time, we chose Pooled OLS methodology as the small within-variation of our dependent variables, especially Foreign and PDI, is too small for us to use fixed effects with good results. We created a panel using Bank as cross-section and Quarter as the date series.

In Brazil all banks are subject to a specific accounting standard called COSIF for mandatory local GAAP reporting. The rules were published by Central Bank in resolution

1.273 and are updated as needed. All banks must submit the information on a quarterly basis.

Additionally, banks are also required to provide additional information such as origin of controlling capital, if national private or foreign private; number of branches; location of the main office, name of the statutory directors, among others.

The COSIF standard database provides a unique opportunity to compare bank revenues and returns per business line, as central bank requires specific information for several specific COSIF accounts, and then consolidates the information on aggregate accounts which represent the different components of a banks revenue mix. Data is available to the public in a system called “IF.data”.

We used data from 27 quarters, starting with the first quarter of 2011 and finishing with the third quarter of 2017, the last available at time of writing. I started by setting the sample using the Summary report for the third quarter of 2017 and selecting all financial institutions categorized by Brazilian Central Bank as “b1” or “b2”, meaning commercial banks or investment banks. I chose to exclude the Federal Savings Bank, banks owned by auto and machinery makers with the main purpose of providing finance to the purchase of its products and co-operative banks. To exclude retail banks, we removed all banks that had more than 20 branches as of the third quarter of 2017. The remaining sample had 87 banks, 45 local and 42 foreign, see Table 1. To account for foreignness, we used central bank own methodology of considering a foreign bank as one with over 50% of capital in the hands of foreign individuals or companies. Banks that started the study as Brazilian controlled and were sold to foreign banks during the period, these we considered as Brazilian for the quarters before the sell took place and foreign after.

Local Banks 3Q2017	Foreign Banks 3Q2017	Foreign Bank Nationality
BTG PACTUAL	BNP PARIBAS	France
PAN	CREDIT SUISSE	Switzerland
BANCO CLASSICO SA	JP MORGAN CHASE	USA
PINE	ABC-BRASIL	Bahrain
ORIGINAL	ING	Netherlands
BANCO FIBRA SA	SOCIETE GENERALE	France
PARANÁ BANCO	BANCO RABOBANK	Netherlands
CREFISA	BANCO DE TOKYO-MITSUBISHI UFJ	Japan
SOFISA	BOFA MERRILL LYNCH	USA
INDUSVAL	CREDIT AGRICOLE	France
MODAL	GOLDMAN SACHS	USA
INDUSTRIAL DO BRASIL	MORGAN STANLEY	USA
SOCOPA	DEUTSCHE BANK AS	Germany
BANCO BONSUCESSO SA	HAITONG	China
OMNI	BANCO SUMITOMO MITSUI	Japan
BANCO TRIANGULO SA	BANCO DE LAGE LANDEN	Netherlands
RENDIMENTO	BOCOM	China
BANCO CBSS SA	MIZUHO	Japan
MÁXIMA	SCOTIABANK SA	Canada
BANCO LUSO BRASILEIRO SA	STANDARD CHARTERED BANK	UK
BANCO GUANABARA SA	CAIXA GERAL	Portugal
BRASIL PLURAL	BANCO ABN AMRO SA	Netherlands
AGIPLAN	HSBC BRASIL SA	UK
FATOR	BANCO KDB DO BRASIL SA	South Korea
BANCO SEMEAR SA	ICBC	China
OURINVEST	BANCO DA CHINA	China
BANCO TRICURY SA	UBS	Switzerland
BANCO RIBEIRAO PRETO SA	INTESA SANPAOLO	Italy
BANCO TOPÁZIO SA	BANIF	Portugal
BR PARTNERS	BANCO KEB HANA	South Korea
CONFIDENCE	BANCO WOORI BANK	South Korea
BANCO NEON SA	BNY MELLON	USA
BANCO ARBI SA	COMMERZBANK	Germany
BEXS	NOVO BANCO CONTINENTAL	Paraguay
BANCO CEDULA SA	BANCO DE LA PROVINCIA DE BUENOS AIRES	Argentina
MS BANK SA	WESTERN UNION	USA
BANCO FICSA SA	NATIXIS	France
FINAXIS	BANCO DE LA NACION ARGENTINA	Argentina
BANCO MAXINVEST SA	ANDBANK	Andorra
BANCO CAPITAL SA	BBVA	Spain
BANCO PORTO REAL	BANCO INBURSA	Mexico
BANCO INDUSCRED	BANCO DE LA REPUBLICA ORIENTAL DEL URUGUAY	Uruguay
BANCO VIPAL SA		
Table 1 - Banks in the Sample		

Table 2 lists all banks and country of origin of foreign banks, the methodology lead to a sample of 42 foreign controlled banks as of the third quarter of 2017. USA is the home country with more foreign banks in the sample – 6 banks, followed by China, France and Netherlands with 4 each, Japan and South Korea with 3 banks each while UK, Portugal,

Germany, Argentina and Switzerland had 2 banks each. The remaining 8 banks are the sole representatives of their home countries in our sample. Data for the start of operations date and date of the sale of control to foreigner was obtained at the Banco Data database or in the bank website.

Country	Number of Banks	% of Total Foreign Banks
USA	6	14%
China	4	10%
France	4	10%
Netherlands	4	10%
Japan	3	7%
South Korea	3	7%
Argentina	2	5%
Germany	2	5%
Portugal	2	5%
Switzerland	2	5%
UK	2	5%
Andorra	1	2%
Bahrain	1	2%
Canada	1	2%
Italy	1	2%
Mexico	1	2%
Paraguay	1	2%
Spain	1	2%
Uruguay	1	2%
Total	42	100%
Table 2 - Foreign Banks Home Country		

3.2 Determinants of STIA

Claessens and van Horen (2012) results show that foreign banks should not be studied as a homogeneous group. The authors deal with this heterogeneity by selecting a

large set of controls for both bank characteristics as well as home and host countries characteristics.

banks entering countries with limited competition can enjoy some advantages. The authors also highlight the relevance of host country competitiveness impact in foreign bank profitability.

We also chose to use a similar set of control variables as used by the study. Funding structure was controlled by using deposits, including also repos and interest-bearing deposits, divided by total liabilities and we also controlled lending structure by using lending divided by assets. In Claessens and van Horen (2012) it is shown that a higher deposit to liability ratio tends to have positive effects on profitability. For our study however, this might not hold true as retails banks rely on non-interest-bearing deposits for cheap funding, while this is uncommon for the investment banks, our sample, where deposits are mostly interest bearing.

On the size controls, we chose to control relative size and use the share of each investment bank, defined by total assets of the bank divided by total assets of the sample for each quarter.

A similar approach for leverage is also used, considering assets divided by equity. As a result, only three control variables used by Claessens and van Horen (2012) are left out of our model, namely public, as there is no public bank in the sample; problem bank, as it does not exist in our sample; and finally, age, as we indirectly treat it as the variable of interest experience and not as a control variable.

3.3 Measuring Performance and Dependent Variable

The dependent variable will be STIA.

STIA is calculated by taking column “Income from Sales and Trading” (Column “C” – *Resultado de Intermediação Financeira* in the COSIF) in the Income Statement report in IF.data system and dividing it by “Total Assets” informed in the Summary report available in the same system for the respective quarter.

We excluded from the sample observations where STIA equals zero, as this suggests the bank is not operational at that quarter.

3.4 Independent Variables

Foreign Bank (FOREIGN). This is a dummy set to one if the bank is controlled by a foreigner. Zero otherwise. Data on ownership is obtained from central bank Summary report for each quarter of the analysis. If a bank’s status changes, we consider the appropriate status for each quarter.

Psychic Distance Index (PDI). PDI between Brazil and home country obtained from Sertã Rezende (2013). Two countries in the sample had no data available in the same literature so we used a geographically, linguistically and religiously close country as a proxy. Namely UAE was used as a proxy for Bahrein, Spain for Andorra and Argentina as a proxy for Paraguay.

Experience (EXPER). The square root of the number of years since starting operations in Brazil, obtained either in Central Bank website, in Banco Data database or in each bank

website . Some studies suggest using the years since start of operations, but Claessens and Van Horen (2012) set a cutoff of 8 years to define old and new categories when using age as a control variable in their liability of foreignness study. We argue that both methodologies have caveats since years of operation do not have a linear relationship with experience - it is very hard to make the argument that the a bank operating for one hundred years has twice the experience of one operating for fifty years. We believe setting a cutoff is arbitrary.

The experience gains of a newcomer are steeper in the first few years, and tends to plateau, similar to the relationship of experience and income for individuals: the larger income raises come in the beginning of the career, once a high-level position is obtained raises tend to be marginal. We consider our square root transformation of the years of operation a suitable approach for the relationship between experience and STIA, as the impact of the independent variable (Exper) on the dependent one (STIA) is expected to increase at a decreasing rate as the independent variable grows.

GDP. Measures home country economy size. Nominal GDP in trillions of dollars as published by IMF, 2017. Andorra number is not calculated by IMF so World Bank 2016 number was used instead.

3.5 Control Variables

Funding Structure (Deposit). The ratio of deposits to liabilities, indicates how much of the bank funding is done via deposits versus debt or capital.

Share. The ratio of banks assets to total assets in the population, for the respective quarter. Indicates market share which could lead to scale economies.

Loan. The ratio of banks credit portfolio to total assets. As Total Assets plays an important role in the model, being used in STIA, Share and Leverage, we chose to use the same approach as Claessens and Van Horen (2012) and control its structure by using the control variable Loan, indicating how much of its balance sheet is effectively used for credit instead of sitting idle.

Leverage. Defined by the ratio of Total Assets to Equity Capital, indicating bank leverage.

4. RESULTS AND DISCUSSION

The results of the regression showed a good model fit, with the F-Statistic under 0.001. The variables are described in Table 3, and descriptive statistics for the numerical variables can be found in Table 4 both for the complete sample and for local and foreign samples separately.

The correlation matrix in Table 5 shows a moderate correlation of 0.60 between loan and deposit, and 0.42 between GDP and PDI, as expected.

Type of Variable	Variables	Description	Scale	Expected Sign	Main Literature
Dependent	STIA	Profitability set by Sales and Trading income to total assets	%		
Independent	FOREIGN	H1 - Foreignness impacts profitability. Firm is foreign owned	0=National 1=Foreign	-	Claessens and van Horen (2012)
	PDI	(H2) Psychich index between Brazil and home country	0.238 to 0.690	-	Hennart, Sheng, Lee and Bruscato (2017)
	EXPER	(H3) Square root of the years since bank started operations in Brazil	0 to 3.9318	+	Claessens and van Horen (2012)
	GDP	(H4) Nominal home country GDP IMF 2017	0.02 to 19.39	+	Claessens and van Horen (2012)
Control	DEPOSIT	Ratio of deposits to liabilities	0 to 0.99	+	Claessens and van Horen (2012)
	SHARE	Ratio of bank assets to total assets in the quarter	0.000015 to 0.3583	+	Claessens and van Horen (2012)
	Loan	Loans to Assets	0 to 2.53	+	Claessens and van Horen (2012)
	LEVERAGE	Ratio of assets to equity capital	0.4 to 36	-	Claessens and van Horen (2012)

Table 3 - Variables

A l l B a n k s		STIA	DEPOSIT	LOAN	SHARE	LEVERAGE	PDI	EXPER	GDP
	Mean	0.0244	0.674	0.319	0.013	6.001	0.240	5.081	3.575
	Median	0.0127	0.793	0.289	0.003	5.346	0.000	5.568	2.055
	Maximum	1.2141	0.995	1.162	0.358	46.666	0.690	7.141	19.391
	Minimum	-0.3265	0.000	0.000	0.000	0.352	0.000	0.000	0.029
	Std. Dev.	0.0681	0.298	0.265	0.032	4.423	0.275	1.765	4.950
	Sum	51.5	1424.7	673.7	27.0	12679.5	507.1	10807.8	7553.3
	Sum Sq. Dev.	9.8	188.0	148.0	2.2	41323.6	159.3	6625.6	51751.6
L o c a l	Mean	0.0340	0.731	0.397	0.011	5.604	0.000	5.258	2.055
	Median	0.0158	0.848	0.422	0.002	5.332	0.000	5.657	2.055
	Maximum	1.2141	0.995	1.162	0.358	36.048	0.000	7.141	2.055
	Minimum	-0.3265	0.000	0.000	0.000	0.404	0.000	0.000	2.055
	Std. Dev.	0.0866	0.289	0.265	0.039	3.646	0.000	1.670	0.000
	Sum	38.1	819.8	445.3	12.5	6287.1	0.0	5920.7	2305.7
	Sum Sq. Dev.	8.4	93.9	78.7	1.7	14897.9	0.0	3137.3	0.0
F o r e i g n	Mean	0.0135	0.610	0.230	0.015	6.450	0.512	4.882	5.295
	Median	0.0100	0.687	0.175	0.004	5.348	0.555	5.477	1.938
	Maximum	0.3144	0.995	0.958	0.104	46.666	0.690	7.141	19.391
	Minimum	-0.3074	0.000	0.000	0.000	0.352	0.238	0.000	0.029
	Std. Dev.	0.0342	0.296	0.235	0.022	5.129	0.147	1.848	6.833
	Sum	13.4	604.9	228.4	14.5	6392.4	507.1	4887.1	5247.6
	Sum Sq. Dev.	1.2	86.5	54.8	0.5	26048.2	21.5	3413.5	46226.5

Table 4 - Descriptive statistics

	STIA	DEPOSIT	LOAN	SHARE	LEVERAGE	PDI	GDP	EXPER	FOREIGN
STIA	1.00	-0.27	-0.12	-0.11	-0.14	-0.15	0.00	-0.23	-0.15
DEPOSIT	-0.27	1.00	0.60	-0.05	0.03	-0.17	-0.24	0.22	-0.20
LOAN	-0.12	0.60	1.00	-0.09	0.04	-0.30	-0.33	0.17	-0.31
SHARE	-0.11	-0.05	-0.09	1.00	0.37	0.09	0.07	0.17	0.05
LEVERAGE	-0.14	0.03	0.04	0.37	1.00	0.16	0.02	0.23	0.09
PDI	-0.15	-0.17	-0.30	0.09	0.16	1.00	0.42	-0.15	0.93
GDP	0.00	-0.24	-0.33	0.07	0.02	0.42	1.00	-0.07	0.33
EXPER	-0.23	0.22	0.17	0.17	0.23	-0.15	-0.07	1.00	-0.11
FOREIGN	-0.15	-0.20	-0.31	0.05	0.09	0.93	0.33	-0.11	1.00

Table 5 - Correlation Matrix

Regression results are found in Table 6. Model 1 is the base model and includes our dependent variable with all control variables but none of the variables of interest; sample is

all banks in the study. All variables are significant at the one percent level. Leverage and Loan take the predicted signs, in line with the findings of Claessens and van Horen (2012), Deposit and Share however, take signs different than expected.

The negative sign taken by Deposit indicates that banks that have a funding structures less reliant on deposits have better profitability in sales and trading. As our study does not include retail banks, who can usually get funding through non-interest paying deposits, we understand the negative sign is related to the costs of paying interest on deposits, which can be higher than cost of funding using capital, debt, or intercompany loans.

	Model 1		Model 2		Model 3		Model 4	
Variable	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error	Coefficient	Std. Error
FOREIGN H1			-0.0177*	0.00484				
PDI H2			-0.0243*	0.00636			-0.0197*	0.006077
EXPER H3			-0.0068*	0.00090			-0.0022*	0.000473
GDP H4			0.00016	0.00017			0.00052*	0.000179
CONSTANT	0.07853*	0.00996	0.1204*	0.01466	0.04571*	0.00510	0.05912*	0.00548
DEPOSIT	-0.0698*	0.00984	-0.0624*	0.00941	-0.0283*	0.00384	-0.0253*	0.00351
LOAN	0.01511*	0.00337	0.00041	0.00292	-0.0043	0.00445	0.00000	0.00482
SHARE	-0.1656*	0.02082	-0.1295*	0.01817	0.06674***	0.04044	0.08861*	0.03283
LEVERAGE	-0.0016*	0.00033	-0.0006**	0.00027	-0.0023**	0.00039	-0.0020*	0.00036
Sample Size	87		87		42		42	
Adjusted R2	0.1000		0.1614		0.1683		0.1849	

Note: * p< 0.01, ** p<0.05 and *** p<0.10

Table 6 - Regression Results

This assumption is corroborated by a look of the interest paid for time deposits offered for individual investors through a brokerage, XP Investimentos, as of May 2018, see Table 7. Considering only banks present in our sample, the average interest paid is 111% of the Brazilian risk-free interest rate, CDI; leading us to believe other sources of funding, such as equity, debt or intercompany loans (for foreigners), might be a better funding choice than deposits for investment banks operating in Brazil, as it could possibly be remunerated at a cheaper interest rate.

Bank	Maturity	Interest as % of Risk Free (CDI)	Bank	Maturity	Interest as % of Risk Free (CDI)
BMG	OCT-2020	115%	Banco Topázio	MAY-2020	119%
OMNI	MAY-2021	119%	BMG	MAY-2021	117%
Banco Topázio	MAY-2021	120%	Modal	MAY-2019	107%
Banco Indusval	MAY-2021	119%	BMG	NOV-2018	104%
Banco ABN	APR-2019	97%	Fibra	MAY-2022	118%
Haitong	MAY-2020	107%	Banco Indusval	OCT-2020	120%
Pine	MAY-2021	123%	Original	MAY-2019	108%
Fibra	MAY-2019	107%	Haitong	MAY-2019	105.5%
Pan	MAY-2022	121%	OMNI	MAY-2020	118%
Fibra	OCT-2020	116.4%	Fibra	MAY-2021	122%
BR Partners	MAY-2019	102.5%	Mizuho	MAY-2020	96.5%
Pan	MAY-2020	116%	PARANÁ	MAY-2020	109%
Sofisa	OCT-2019	109%	Pan	MAY-2019	100%
Original	MAY-2020	117%	BS2	MAY-2019	106%
Sofisa	MAY-2020	110%	Pan	MAY-2021	119%
Banco Indusval	MAY-2019	109%	Banco Topázio	APR-2021	104%
Original	OCT-2020	119%	Banco Indusval	NOV-2018	104%
Banco Indusval	MAY-2020	117%	AGIBANK	MAR-2021	120%
Fibra	MAY-2020	100%	Banco ABN	MAY-2020	100.5%
Semear	MAY-2019	115%	Fibra	MAY-2020	119%
BNP Paribas	MAY-2019	96.5%	Pan	OCT-2019	113%
Banco ABC	MAY-2019	100.5%	Caixa Geral	MAY-2020	106%
Banco Topázio	MAY-2019	111%	Fibra	MAY-2023	119%
BS2	MAY-2020	110%	Average		11%

Table 7 – Interest Paid on Time deposits

The negative sign in share was more surprising, and we theorize it might be related to larger local investment banks been forced to compete at times with the large retail banks who may offer similar products to the same clients. Brazilian retail bank market is concentrated with 5 banks amounting to 83% of the financial system assets, leading to size and scale to provide aggressive prices when necessary to compete with investment banks.

In Model 2 we include the dummy variable from our first hypotheses (H1) FOREIGN, indicating banks that are controlled by foreign individuals or companies. We also add the remaining variables PDI, Exper and GDP. Our model keeps the good F-statistic, under 0.001. Its explanatory power increases by 61% as adjusted R2 increases from 0.0999 to 0.1613. Schwarz Criterion numbers support that Model 2 is preferable to Model 1, a conclusion also supported by Akaike Criterion numbers. The control variables all keep the same signs. Loan loses significance, probably driven by its correlation to foreignness. This correlation is 0.31

and we can also notice loan average is 0.40 for locals but much smaller for foreigners, at 0.23.

The FOREIGN variable is significant at the one percent level and its coefficient is negative, consequently supporting our first hypothesis. Sales and trading business of foreign investment banks operating in Brazil are subject to liability of foreignness, which has a negative impact at sales and trading profitability. The negative impact in STIA is quite relevant as shown by the coefficient of -0,0177.

We theorize that besides the Sales and Trading business being one where expertise, know how and access to global resources play a large role, which could lead to an advantage to foreign banks, the competitiveness level of the Brazilian banking industry plays a relevant role in establishing liability of foreignness for the Sales and Trading business of investment banks operating in Brazil. While there is no data specific to investment banks, there is evidence to support this statement. Claessens (2004) studies competitiveness of the banking industry in fifty countries and finds Brazil to be the third more competitive. Claessens and Van Horen (2009) state that “competition in the host country does have an impact” (p.14) "and give us this interesting example:

“A foreign bank from a high income country investing in the host country with lowest competition (Turkey) earns on average a profit before tax of 0.72 higher than a domestic bank. This is equal to 44 percent of the mean profitability. Similarly, this same bank in a country with strongest competition (Costa Rica) earns on average a profit before tax of 0.70 less than a domestic bank”.(p.15)

Differences in client base should also play a relevant role, as most foreign banks focus on large corporate clients who have more leverage to impose tight spreads in large

trades, while a significant share of local banks focus in smaller, mid-market clients who are less equipped to impose good spreads.

Model 3 is similar to Model 1 but the sample is reduced to foreign banks only, to be used as a base model as we proceed to testing our remaining hypothesis among this sample. Loan is not significant using this sample, in accordance with our view that foreign banks are less reliant on credit operations. For this population and with these variables Share only significant at the ten percent level, and contrary to Model 1 has a positive sign, indicating that among foreign banks it is positive to the profitability to be a relatively larger bank. It is interesting to notice Deposit coefficient, while still negative, is significantly less negative than using the sample including all banks. We believe this fact is related to a few foreign banks being able to leverage its reputation and global size to pay interests smaller than Brazil risk-free rate on deposits, evidenced and by BNP Paribas and Mizuho paying 96.5% and ABN paying 97% of risk-free rate in Table 7. Other banks such as Haitong and Caixa Geral pay more than 100%, in what looks to be the more common situation from our still negative coefficients. It is also relevant to notice adjusted R2 climbed to 0.1682, 68% higher than the one of the comparable Model 1 with the full sample.

We add PDI, EXPER and GDP to model 4. The three variables added are significant at the one percent level, and share becomes significant at the one percent level as well. Loan remains not significant. Adjusted R2 increases to 0.1848, a 9.8 percent increase, and Schwartz Criterion supports the choice of Model 4 over Model 3.

PDI takes a negative sign, indicating that greater the psychic distance has a negative impact on profitability, in line with Hennart, Sheng, Lee and Bruscato (2017) findings. Hence, we do have grounds to support hypothesis two (H2).

It is interesting to notice psychic distance negative impact holds considering most of the countries in the sample with smaller psychic distance to Brazil have smaller and less developed financial industries than countries with large distance represented in the sample. Argentina, Uruguay and Portugal, for example, are the countries with the smaller distance in the sample and have no banks in the world one hundred largest banks list compiled by S&P Global Market Intelligence in 2016. China and Japan, nevertheless, are the countries with the largest psychic distance in our the sample and have 18 and 8 banks at the list, respectively.

EXPER takes a sign different than predicted. As a consequence, hypothesis 3 (H3) is rejected. We conjecture this might be related to newcomers being able to select to start operations in more profitable niches of sales and trading, while bank operating for longer tend broader operations including niches with lower profitability as they incur in financial and reputational costs in ceasing these operations.

This statement is supported by recent moves of experience foreign banks to make their Brazilian business more focused in more profitable niches. EXAME (2017) magazine, a prominent business magazine in Brazil, informed on its blog that Deutsche Bank, present in Brazil since 1969 and who used to offer a wide range of products, was transferring its structured finance area to the New York branch, similar to what it had already done to Equities Trading area earlier that year, effectively eliminating those business of the Brazilian branch. On a comment to EXAME (2018), this time about firing investment bankers, Deutsche Bank said: “We are committed to Brazil and we are improving our focus in the country”.

EXAME (2017) also informed Crédit Suisse had put on sale a one billion dollars credit portfolio, after a restructuring of its fixed income and structured finance area resulted in

nine employees fired. Société Générale closing of its consumer credit unit, informed by O Globo (2015), and Goldman Sachs significantly reducing its private banking team as it stopped offering local products, informed by Estadão (2015), although not related to Sales and Trading business, are also representative of foreign banks effort to have Brazilian operations more specialized and focused in lucrative niches.

Newcomers operations are usually more focused. Natixis, who started its operations in 2008, offers trade finance and commodities products only, according to its website. Standard Chartered, who started operations in the second quarter of 2010, says in its website that it focus only in FX and interest rates securities and derivatives and in trade finance.

GDP takes a positive sign as predicted, supporting hypothesis four (H4). This result is aligned with Claessens and van Horen (2012) findings, and indicates banks are able to leverage home country regulation, market practices, expertise and higher overall educational levels to develop more profitable operations in Brazil. It is important to notice however that the positive coefficient is quite small, 0.0005. Especially considering GDP is measured at trillions of dollars in our model, the impact of a larger economy is very small.

5. CONCLUSION

In this study we pioneered in studying liability of foreignness in the sales and trading of investment banks operating in Brazil. We took a sample of Brazilian and foreign investment banks operating in Brazil and we see if their sales and trading profitability is impacted by liability of foreignness. As predicted the results support that foreignness is a negative determinant of sales and trading profitability, which we suspect might be linked to the competitiveness level of Brazil banking industry, ranked third in Claessens (2004) study of fifty countries. This is supported by Claessens and van Horen (2012) view that host country competitiveness plays a key factor in foreign banks profitability.

Sales and trading is a good subject for the study of asset of foreignness as expertise in trading desks should be an easier to transfer skill than other banking business as investment banking which relies on local connections and networking and Brazil is a good setting as it provides a large sample with standardized data, as well as a matured financial market.

In line with our expectations, larger psychic distance resulted in worse performance, similar of other study findings in different industries in Brazil. Home country GDP had a positive impact as expected, as we understand foreign banks leverage know how from home countries developed financial markets and regulatory environments. Experience had however a negative impact, contrary to our expectations. We theorize this might be due to newcomers operating in more lucrative niches while banks with older operations usually tried to set up one stop shop solutions over the years, bearing the costs of offering less lucrative products.

In aggregate, our results indicate that although foreign investment banks do operate under liability of foreignness, it can be mitigated if the bank is from a home country with small psychic distance to host country. Experience does not mitigate LOF, a fact we theorize is due to newcomers choosing to operate in specialized lucrative niches other than offering a broad range of products. Being from a home country with a large economy has a positive but very small impact in profitability.

Finally, our finding may be specific to the industry chosen and to Brazil. Multi-country studies about LOF in banks total profitability found that host country characteristics play a large role in the existence of LOF, and we suppose this might hold true to the analysis of LOF in Sales and Trading, so we encourage researchers to replicate our findings for other host countries, especially ones with less competitive banking industries.

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APPENDIX A - Brazilian Banking Industry Panorama

Brazilian financial market has a unique background of development and consolidation. Understanding it is crucial in designing a study to investigate foreignness in it. In the past 80 years several government policies succeeded with conflicting agendas. Legislation was passed to both incentivize and curb foreign presence, and measures were taken both to concentrate and to fragment the industry.

The first distinction between national and foreign financial institutions in Brazilian law appeared in 1934 constitution, restrictions were tightened up in 1937 constitution which determined the nationalization of bank with foreign control. With some government concessions, foreign presence remained remarkably small, close to 1929 numbers (Carvalho & Vidotto, 2007).

Changes in the 1945 constitution and law 4.131 in 1962 allow for foreign financial institutions on the same terms Brazilian ones would be allowed in their home country, a reciprocity policy. However, regulatory restrictions still barred foreigners to control institutions with a full banking license.

In 1967 the government designed a reform to straighten the industry and chose to do so by stimulating market concentration. The theory behind it was that there were scale gains in the banking sector, that being the case concentration would not only lead to stronger banks but also would reduce credit spread, lowering borrowing costs. The strategy was executed by requiring and controlling letter patent and increasing minimum capital requirements. The policy succeeded at least in concentrating the market, from the 403 banks active in 1956, only 110 were active in 1981. (Tavares, 1985).

The late 80's was marked by de-regulation with resolutions 1.524 and 1.525, extinguishing the requirement of letters patent, which increased the active banks from 124 in 1988 to 253 in 1993. Most new banks however were small and medium institutions, and foreign capital was restricted by 1988 constitution which forbid foreign control of commercial banks, with three exceptions: When authorized in international agreements, as an act of reciprocity, or in cases the federal government declared it to be of national interest to allow foreign control. (Carvalho & Vidotto, 2007).

During the 80's and early 90's before Real Plan, a large part of Brazilian financial sector, especially the commercial banks who kept deposits, thrived in the hyperinflation scenario using an operation called Float: Money from non-interest paying deposits was invested in a way to gain interest to the bank. "The gain was the same for all and didn't required effort or ability. It was enough to have deposits" (Fortuna, 2008, p.5)

Shortly after Real plan created the new currency and finally won the war on hyperinflation, the country was on the verge of a bank crisis. The loss of float gains and impacts from the Mexican crises hit hard the banking industry, to which the government reacted by three measures: Created the PROER, a restructuring and straightening program for Brazilian banks; created the FGC, a fund to guarantee deposits to a limit, similar to United States FDIC; and finally the Finance Minister recommended the president to authorize the increase of foreign capital and the entry of foreign capital in both existing and new banks, including to have management control of any kind of financial institutions, which has been done on a rather fluid way since. (Paula & Marques, 2006).

With PROER and also PROES, a government program to sell, merge or liquidate the problematic banks controlled by Brazilian states, a strong market concentration trend initiated. 38 banks, the majority Brazilian controlled private and public, became after a

series of merges and acquisitions the big four Brazilian banks as of 2018: The government-controlled Banco do Brasil and the private controlled Itaú, Bradesco and Santander, this last one the only foreign in the group.

Also in 1995, the Dutch bank Rabobank was the first foreign bank to take advantage of the new rules and open a branch in Brazil. Others, like HSBC and Banco Bilbao Vizcaya Argentaria, preferred to acquire Brazilian banks in financial trouble. In late 2000 Spanish bank Santander acquired BANESPA, a large public bank previously owned by São Paulo state. The US\$ 3.7 billion transaction was the largest acquisition of a Brazilian bank by a foreign one to date, and consolidated Santander position among Brazil largest banks.

As of 2016, the last date available in Brazilian Central Bank report on evolution of the financial system, Brazil had 154 banks, considering both commercial and multi-purpose banks. Of these, 9 are public banks and 145 are private, of which 63 are controlled by Brazilian capital alone, 17 are controlled by Brazilian capital but have between 10% and 40% of its voting shares controlled by Foreigners and 65 are controlled by foreigners.