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THE IMPACT OF FOREIGN OWNERSHIP ON EMERGING MARKETS' BANKING SYSTEM: A CASE OF BRICS

BY

Sibusiso Vusi **MAGAGULA**

Doctoral thesis submitted in fulfilment of the requirements for the award of Doctor of Philosophy (PhD) in Finance (Specialisation: Banking theory)

Wits Business School

Faculty of Commerce, Law and Management

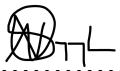
University of Witwatersrand

Supervisor: Prof. Thabang **MOKOALELI-MOKOTELI**

@Sibusiso V. Magagula – MARCH 2022

DECLARATION

This PhD thesis is my work except, as indicated in the references and acknowledges, under the supervision of Professor Thabang Mokoaleli-Mokoteli. It has not been presented before for a degree in this or any other University.



……

09th of March 2022

DEDICATION

This research work is dedicated to my late-paternal aunt, Mavis Phola Magagula, her late-daughter Verah Thabisile Mokhoanasti, my late-father Vusi Andrew Magagula, my mother Thandeka (Ma'Thyopho) Magagula, brother Siyabonga Magagula, entire extended-Magagula clan and my daughter Busisiwe Phola Magagula.

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I cannot leave out my fellow PhD class of 2015 and 2016 who are doctors now for availing themselves to discuss how to write a literature review that is impactful to readers, how to incorporate the economic overlay on attained statistical results and polishing my research proposal prior presenting to the research Wits panel. Dr Godspower-Akpomiemie, Dr Quaye, Dr Totowa, and Dr Oro. Moreover, I would like to thank BANKSETA for financing this PhD project.

Although attaining PhD qualification was supposed to be my happiest and most remarkable achievement. However, the opportunity cost was the dissolution of marriage to Nancy S. Magagula, a wife of 12 years, who saw best to end our union due to time spent on the PhD project. I would still like to thank her for her words of encouragement and proofreading my research proposal in the initial stages of the project and my daughter Busisiwe Phola Magagula for scarifying her time with me while completing this PhD qualification. My brother, Siyabonga Magagula, also played a critical role in raising my self-esteem when it was down and allowing me to bounce ideas on how to rephrase some of the wording in my research.

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LIST OF ACRONYMS

2SLS	Two-stage least square
ARDL	Autoregressive distributed lag
CEE	Central and Eastern European
EMEs	Emerging Market Economies
FSIs	Foreign Strategic Investors
GDP	Gross Domestic Product
MENA	The Middle East and North Africa

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ABSTRACT

The current research examines foreign bank ownership's impact on the financial soundness and benefits observable within-host banking markets and banks' risk-taking behaviour in the BRICS. Also, this research examines the effects of foreign ownership on both fiscal and monetary policies' transmission via the bank lending channel. Thus, the rationale to focus on the impact of foreign ownership on BRICS member countries' banking markets is because post-global financial crisis, these economies stimulated their economy via banking. Moreover, the effects of the global financial crisis of 2008 did not lead to deglobalisation in their banking markets because, generally, the BRICS bloc is found to have recovered quickly from the situation without their banks changing their privatisation strategy concerning foreign ownership. The CAMELS rating analysis, two-stage least square and two-way random effect panel models are the primary study tools in the current research, and the biasness testing was incorporated as a robustness check.

The results show that the foreign-owned banks contribute procyclically to the bloc's financial soundness, indicating that their presence introduces some asymmetries into their banking systems. Furthermore, foreign banks in BRICS lead to benefits that outweigh risks. However, some risk elements need to be minimised to insulate the bloc from a future globally induced crisis. These risks include systemic risk of foreign-owned banks, lowering tier II capital as required by Basel III for all banks, the ineffectiveness of fiscal and monetary policy in regulating lending risk, and excessive leveraging of domestic banks. Despite the risks associated with foreign banks' presence in BRICS, foreign bank ownership increases the performance and efficiency of all banks, with domestic banks becoming risk-averse, which may explain the quick recovery of the BRICS banking sector post-2008 global financial crisis. The policy implications from the results highlight the need for local policymakers to strategies on ways to encourage banks to lend in domestic currency to regain control over lending risks post-acquisition of their host banks by global investors. Also, host regulators need to closely monitor the extent of systemic risk from foreign-owned banks to limit the chance of a banking crisis in the future.

Chapter I

1.1 Introduction

This chapter introduces the thesis and highlights the research objectives and the rationale for studying the economic, financial, and regulatory impact of foreign bank ownership in the BRICS economic bloc's banking system. The remaining sections in the chapter consist of nine sections: section 1.2 presents the study's background; sections 1.3 discusses research problems; section 1.4 outlines research objectives; section 1.5 briefly describes the research design, including test-statistics, that need to be considered per model design; section 1.6 summarises the main results of the thesis; section 1.7 discusses the theoretical and empirical contribution of the thesis; section 1.8 outlines the benefits of the research, while Section 1.9 outlines the policy implications derivable from attained results. Section 1.10 provides a brief structure of the thesis. The summary chapter concludes this chapter.

1.2 Background of the study

Marques et al. (2017) document a risk shift in the global economy because the economic power moves from developed to emerging market economies (EMEs), especially post-last 1980s, as these economies implemented deregulatory reforms to revive their ineffective banking systems. Moreover, as a result, it has led to the global wealth management industry like banking and financial power shifting from G7 developed countries[1] to the BRICS and next-11 emerging countries[2]. Based on economic theory, given that the 2008 global financial crisis (GFC) affected critical financial markets in the global economy, the expectation was that BRICS' banking system, given its ranking, was supposed to be among those financial systems that took a long to recover from the economic consequences of GFC.

1 G-7 bloc include developed countries such as Canada, France, Germany, Italy, Japan, the United Kingdom, the United States, and the European Union.

2 Next-11 emerging bloc constitutes of Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, South Korea, and Vietnam.

On the contrary, the empirical evidence from Zhang et al., (2013) counter-argued this view since their paper show that BRIC (i.e., excluding South Africa) recovery was speedily post-2008 GFC episode, but there were inefficiencies observed, for example, the quiet life hypothesis holds for BRIC banks. Thus, this quiet life hypothesis implies that BRIC banks prioritise efficiency over long-run profitability, which in theory means that these financial institutions have limited insulation against unexpected financial losses. Zhang et al., (2013) continue by further emphasising that it is pertinent to investigate banking systems from the BRICS bloc because little information about this system is minimal despite its importance on the aggregated global economic ecosystem. Therefore, in theory, such an enquiry would be beneficial not only to its financial institutions' management but academics and policymakers if a depth-fundamental review is done on the bloc's banking system. Thus, this enquiry intends to understand it further given that when this paper was published, limited or close to zero remains known about the BRICS banking system.

Zhang et al., (2013) highlight the importance of understanding their banking systems may indicate that the bank market development in the region explains why the BRICS bloc's rankability in the global economy is at the level it is. Allen & Gale (2000) and Levine (2005) further emphasise that the development of a sound banking system is critical to an economy's stability and long-term growth, thus explaining why Zhang et al., (2013) stated that given the BRICS bloc's importance in the global economy to understand the economic dynamics begin with understanding their banking systems. Empirical literature (e.g., Havrylchyk & Jurzyk, 2011[3]; Bonin & Louie, 2017[4]) found to argue that the EMEs (Emerging Market Economies) developed their banking systems through merging with other financial institutions outside the border (foreign bank entry) or allowing established banks with head offices outside the host country (referred to as greenfield investment). The EMEs' regulators post-1982 debt crisis realised that

3 Havrylchyk & Jurzyk (2011) found that in the case of the Central and Eastern European (CEE) countries, they developed their banking markets by allowing foreign banks to acquire their host banks and as result the foreign banks in sample constitute well over 50% of all banks.

4 Bonin & Louie (2017) found that the allowance of greenfield investments in emerging markets stabilised lending particularly post-host economic crisis because these foreign financial institutions have different business models to their indigenous host banks.

restricting bank ownership to locally owned investors increased inefficiency, particularly in the dispersing of financial resources that are needed by its economies with intentions to minimise these inequalities (Kaminsky & Pereira, 1996; Gormley, 2010; Pomfret, 2010; Bonin & Louie, 2017). As a result, the number of foreign-owned banks as a ratio of total banks operating in EMEs' banking systems increased substantially. For example, in Latin America and sub-Saharan Africa found dominated by foreign-owned banks, while in Central and Eastern European (CEE) countries, these foreign banks constituted well over 50% of the total banks operating in the region (Havrylchyk & Jurzyk, 2011). However, interestingly during the 2008-global financial crisis, the number of foreign-owned banks operating within certain host economies increased while in other it reduced, mainly where foreign bank ownership degree was previously high before the crisis. For example, the Latin American bloc reduced from 43% in 2000 to 38% in 2014, while in the Asian bloc, the statistic was 12% in 2000 to 24% in 2014 (Wu et al., 2017). Despite these fluctuations, recent literature (e.g., Chen et al., 2017; Wu et al., 2017; Natsir et al., 2019) still shows that foreign bank ownership in EMEs plays a significant role in their banking systems development and performance. In sharp contrast, when using foreign bank ownership stats reported by Chen et al., (2017), the number of foreign banks over the number of total banks in BRICS member countries is invariably low. Moreover, the results reported by Zhang et al., (2013) suggest that the rankability of this bloc's banking systems to the global economy is relatively high compared to others, raising an essential economic paradox not presently researched in the context of BRICS.

This economic paradox is how the BRICS bloc's banking system amplify position in the global economy with a low foreign bank acquisition rate when measured as the number of foreign-owned banks over total banks? This question involves investigating the impact of foreign bank ownership on overall financial stability (soundness), balance sheets' parameter movements in terms of efficiency, profitability and risk measures and effect on fiscal and monetary policy transmissions because despite numerous empirical studies done in this area, still, scholars fail to reach consensus.

First, concerning the empirical studies examining the impact of foreign bank ownership on the overall host banking system's financial soundness, the statistical instrument of choice used was the CAMEL analysis which extrapolates the contribution of foreign-owned banks versus domestic counterparts on host financial soundness using various financial ratios evaluating capital adequacy, asset quality, managerial efficiency, earnings and liquidity in a mean-difference hypothesis testing model design (Roman & Sargu, 2013). The first strand of the empirical studies under the CAMEL analysis argued that foreign-owned banks in host EMEs' banking systems are significant contributors to Latin American and CEE banking systems' financial soundness. Unlike their domestic counterparts, they have risk-robust loan portfolios throughout their business cycle. Moreover, these foreign-owned banks indirectly promote financial stability because host regulatory stability increases (see Crystal et al., 2002; Dash & Das, 2013; Dolgikh & Äijö, 2013). Theoretically, the efficient hypothesis developed by Demsetz (1973) explains the rationale as to why foreign-owned banks are significant contributors to the host banking system's financial soundness. Thus, the cause that acted as an incentive for these financial institutions to be present in the bloc because their presence meant that these banks could operate in multiple cross-border banking markets tends to enable them to earn higher profit margin than their peers to counteract the effect of competition (Havrylchyk & Jurzyk, 2011). This literature strand's importance is that it supports the narration that cross-border banking operations benefit foreign banks and the host countries' financial systems, thus explaining why evidence of bank deregulatory reforms increased.

On the other hand, the second strand of the CAMEL empirical studies argue that in the case of Indian and Turkish banking systems, foreign-owned banks were the minor contributor to their host banking systems' financial soundness. Moreover, in these regions, these financial institutions introduced instability, with their government-owned banks being the counter-hedger against risks taken by these banks. The adverse selection, financial fragility crowding-out and lack of loyalty hypotheses developed by studies from Stiglitz & Weiss (1981), Diamond & Rajan (2000) and Weill (2003), respectively based on this second strand allude that foreign-owned banks in India and

Turkey take risks and are inefficient than domestic counterparts. Based on these hypotheses, the foreign-owned banks in India and Turkey are the minor contributors to these host banking systems' financial soundness because operational difficulties faced by these foreign-owned banks tend to charge high lending rates in the host. In theory, charging relatively higher lending rates than domestic banks as per the adverse selection hypothesis tends to attract risky customers into their balance sheets, increasing their credit risks, thus explaining why these financial institutions contribute to hosting banking systems' economic instability.

Second, other inconsistencies are the impact of foreign bank ownership on host banking systems' internal management practise. Some of the empirical studies on the subject found that the rise in foreign bank ownership for certain emerging market blocs tend to improve host banking systems' efficiency because newly acquired foreign-owned banks enhance the acquired banks' financial positions by cutting non-essential costs (Claessens et al., 2001; Clarke et al., 2006; Havrylchyk & Jurzyk, 2011). Furthermore, the gained efficiency of the acquired banks tends to induce their domestic counterparts to reduce their short-term profitability to match the cross-border financial institutions (Claessens et al., 2001; Clarke et al., 2006; Havrylchyk & Jurzyk, 2011). At the same time, other empirical studies found that foreign bank ownership not only benefits host banking systems by increasing efficiency; however, bank-specific competition increases, which catalyse regional firms' ability to attain credit from banks (Lee et al., 2016; Chen & Zhu, 2019; Léon & Zins, 2020). Under this strand of the empirical literature (e.g., Claessens et al., 2001; Clarke et al., 2006; Havrylchyk & Jurzyk, 2011; Lee et al., 2016; Chen & Zhu, 2019; Léon & Zins, 2020), the presence of foreign bank ownership within the host EMEs' banking systems increase risk-averse behaviour in those regions.

From a theoretical perspective, the presence of foreign bank ownership within-host EMEs' banking systems promotion of risk-averse behaviour in those regions is explainable using the comparative-advantage theory of competition introduced by Dickson (1996) and the trade-off hypothesis by Matutes & Vives (2000). Thus, according to the trade-off hypothesis, foreign bank ownership in host EMEs' banking systems

encourages risk-neutrality operations among banks in the host economies. However, the comparative advantage theory of competition suggests that implementing deregulatory reforms in host EMEs' banking systems promote a heterogeneity competition behaviour counteracting existing inefficiencies in the region. These foreign-controlled banks tend to have better economies of scale due to, among other things, cherry-picking, compared to their domestic bank counterparts. Moreover, this type of bank competition between foreign and host markets increased EME banks' intermediation role stimulating economic growth and banking stability during boom periods. However, during the externally induced crisis, the incremental increase in bank competition from foreign banks turned into risk. This happened because foreign banks' presence in host emerging economies led to the dollarisation of their banking sectors' balance sheets, which subjected their financial positions to a currency mismatch. This, in turn, leads to currency crises and subsequent host-banking meltdowns (Eichengreen & Hausmann, 1999; Calvo, 2002; Choi & Cook, 2004; Bordo et al., 2010; Ahrend & Goujard, 2013; Mora et al., 2013).

Despite numerous empirical works of literature advocating that deregulation in host EMEs' banking sectors might encourage risk-averse behaviour, however, the increase in emerging market-specific crises as a result of their integration with the global economy sparked the interest in policymakers, banks, regulators, and academics, among others to investigate the dark side of foreign bank ownership. The impact of foreign banks' presence on risk is also widely documented. Serrano (2016) and Wu et al. (2017) document that the entry of foreign banks into host emerging economies increases the risk-taking behaviours of domestic banks, which, in turn, increases earnings and non-performing loan risks in those economies. Furthermore, foreign banks take more risks in host emerging economies where the information asymmetry problem is excessive (Chen et al., 2017). Their increased risk-taking tends to have the same effect as Serrano (2016) and Wu et al. (2017) in domestic banks. Also, foreign banks' presence pre-exposes host emerging markets foreign-owned banks to their parents' balance sheets (Anginer et al., 2017). Besides, foreign ownership of host banking markets increased the rate of systemic bank crises in emerging markets (see, Laeven & Valencia, 2018).

Numerous hypotheses explain the financial risks brought by foreign banks' presence in emerging markets. The dark side of foreign bank ownership in host EMEs' banking systems is explainable through these hypotheses' lens, namely, adverse selection, lack of loyalty, liquidity spiral hypotheses and the agency theory. First, from an adverse selection hypothesis perspective, as defined by Stiglitz and Weiss (1981), foreign banks' presence increases the booking of risky borrowers within-host banking sectors, which, at an aggregated level, expose these financial systems to high levels of non-performing loans. Second, concerning the lack of a loyalty hypothesis (Weill, 2003), the presence of foreign-controlled banks on host banking markets exposes these economies to divestment risks because these financial institutions tend to serve their interests, especially during global crises, which may not be in the interest of host markets. Third, the agency theory argues that foreign ownership in host markets fosters EMEs' banks to take more risks while host regulators attempt to reduce risks using bank regulations (Lassoued et al., 2016). The push-pull scenario between EMEs' banks and host regulators generates conflict in the banking systems, leading to inefficiencies. Fourth, according to the liquidity spiral hypothesis defined by Chen et al., (2015), the risks due to the presence of foreign banks in host markets come from the fact that their existence fuelled bank competition in those economies, which in turn raises excessive lending because costs associated with raising capital used for lending are substantially low post-deregulation. However, this scenario is not sustainable in the long run as it is subjected to external economic shocks, which result in the none-prioritisation of holding excessive liquidity by banks. This explains why, during and after the global financial crisis, emerging economies with excessive foreign bank presence experienced a banking crisis resulting from globally induced liquidity (Cao et al., 2018).

The results from empirical studies investigating the impact of foreign ownership in host EMEs' banking systems as outlined above raise essential questions to policymakers on the effectiveness of the fiscal and monetary policy transmission via bank lending channel when considering foreign ownership and banking sector competition as factors in the empirical analysis? Wu et al., (2011) and Joen & Wu (2014) conducted an empirical study on the Asian banking system to answer the question above, and their findings state

that foreign bank ownership weakened the policy transmission via the bank lending channel. The reason for the weakened lending channel is that foreign banks' presence lowers the cost of market-based funding, which reduces the ability of monetary policy to regulate bank lending by hiking interest rates. This is counter-intuitive to the bank lending theory described by Bernanke & Blinder (1988). Furthermore, foreign banks' presence in the host market-led these economies to gravitate towards more market-determined exchange rate regimes (Gopalan & Rajan, 2017), which led to banks' pro-cyclical compliance to host's monetary policy.

The introduction of the Basel III accord in 2010 indicates that the predecessor accord was not adequate. Moreover, the presence of foreign banks provides liquidity and risk-sharing opportunities to the host markets (Cetorelli & Goldberg, 2009), which results in foreign and domestic banks' balance sheets becoming interlinked, increasing compliance risks to adopted Basel accord. This implies that the Basel II accord may not limit the risks taken by these banks after new liquidity was gained (King, 2013; Figuet et al., 2015). Moreover, host emerging market regulators could not gain insights into these banks' risk-taking behaviours through risks reported by their regulatory capital models (Danielsson et al., 2016). In general, it could be argued that globalising EMEs' banking systems weakened the bank regulation channel for their central banks to limit risks from foreign banks' presence effectively.

It should be noted that the presence of foreign banks increased agency problems between foreign banks and host regulators (Lassoued et al., 2016). This is because when Basel II was enforced, the risk from bank activities in the short-term funding markets could not be picked up by most regulators, especially before the default of Lehman's Brothers in 2008. The regulatory uncertainties due to foreign banks' presence sparked interest in research that re-examined the nexus between regulation and foreign banks (e.g., Figuet et al., 2015). However, little is known about the impact of foreign ownership on host fiscal policy except for that when bank regulation and monetary policy within-host emerging markets are unable to reduce risk; the economic growth is negatively affected, leading to

the adoption of expansionary fiscal policy within those countries (Reinhart & Rogoff, 2013; Pastor & Wise, 2015).

Furthermore, another concern is on the expansionary fiscal policy mandate, especially after major financial crises, is that it can contribute to deficit bias and build-up in fiscal imbalances within the economy (Tagkalakis, 2013). The previous literature (e.g., Reinhart & Rogoff, 2013; Tagkalakis, 2013; Pastor & Wise, 2015) suggests that globally integrating financial markets are responsible for fiscal imbalances within economies; however, it is still unclear whether foreign banks exacerbate this problem. Fiscal imbalances within an economy are critical, and if not managed efficiently, they can adversely affect the institutional quality and result in political unrest. The political turmoil arises from fiscal burdens suffered by the government transfers to citizens through rising taxes as observed in PIIGS member countries during the European Debt crisis post-2010, which weakened their countries' solvency and induced banking crises as well (Grupple & Lange, 2014; Moro, 2014).

Therefore, emerging markets as the BRICS bloc as per theoretical definition are defined as a dynamic set of countries grouped based on their shared characteristics of rapid economic growth and liberalisation, comparatively high levels of uncertainty and volatility, weak formal institutions, and a reliance on informal institutions. Emerging markets often exhibit differing values profiles from developed markets, emphasising hierarchy, social relationships, and uncertainty avoidance (Corner et al., 2013). Also, since the empirical results from Zhang et al., (2013) highlighted that the BRICS bloc has become a significant contributor to the global economy post-bank deregulation may imply that the global economy is in danger of market volatility from BRICS. While from the BRICS perspective, their dependency on the cross-border capital markets via the foreign bank ownership channels may introduce conflicting elements to the effect of financial policy transmission designated to regulating macroeconomic and financial stability. Therefore, the overarching purpose of this research is to examine the impact of foreign bank ownership on EMEs, specifically on BRICS' banking system in terms of financial soundness, benefits, risks, monetary- and- fiscal-policy transmissions.

BRICS is a natural laboratory for this research because it plays a crucial role in the world economy, contributing about 20% of the world's GDP with foreign reserves circulating within member countries estimated at being over US$ five trillion (Nasir et al., 2018). About 46% of the world's population resides within this bloc (Nasir et al., 2018). Moreover, as a collective, the BRICS economic bloc was identified as the most advanced emerging bloc in economic growth and stock market development in recent decades (Chkili & Nguyen, 2014). It is, therefore, interesting to assess the role of foreign banks in this achievement. What is even more captivating is the fact that BRIC member countries suffered minimally from the global financial crisis in 2007–2009 as there were few bank failures and their banking systems appeared to recover quickly from this aftermath (Zhang et al., 2013), but to date, little is known about the banking systems from BRICS as a collective (Zhang et al., 2013) especially the impact from foreign bank ownership.

Empirical studies (e.g., Chen et al., 2017; Wu et al., 2017) reported that in some BRICS member countries, including Brazil, India, and China, the ratio of foreign banks over total banks is approximately below 30% on average from 2000 to 2012 which is way lower than in other emerging markets such as CEE and East Asia. However, it is still not apparent how this low percentage of foreign-owned banks impact these countries. In these uncertain times, it is critical to understand foreign ownership's impact on the country's macroeconomic stability because post-deregulation has become difficult to maintain financial stability in the long run.

1.3 Research problems

The objective of deregulation in host EMEs' banking markets is to minimise operational costs' inefficiencies and optimise internal risk management of their banks without rendering control to international capital markets, especially post-1982 debt crisis where risks are concentrated in banks. However, deregulation leads to competition between domestic banks and the existing and newly formed foreign-controlled, and domestic banks compete effectively; they turn to dollarise their balance sheet. The costs of dollarisation of bank balance sheets weakened their resilience against external, especially global-related shocks (Bordo et al. 2010; Ahrend & Goujard 2013).

Banks, especially in EMEs' banking markets, play an instrumental and oversized role within these economies because their capital markets are underdeveloped with numerous unlisted firms (Gwatidzo & Ojah, 2014). The banks' functions include providing liquidity by financing long-term but illiquid assets with short-dated liquid liabilities from mainly deposit and short-term funding markets (Lei & Song, 2013). Second, banks increase market efficiency, which helps lower the economy's cost of debt and stimulates economic growth (Fase & Abma, 2003). Third, foreign banks' presence fast-tracked banks' intermediation function within their respective economies (e.g., Albertazzi & Boterro 2014).

The general sentiment in the literature (e.g., Dash & Das, 2013; Dolgikh & Äijö, 2013) is that foreign-controlled banks are an essential puzzle to the financial soundness within-host EMEs' banking markets, especially in CEE countries and India. However, this aspect remains untested (to the best of our knowledge) for BRICS banking markets. The prioritisation to comprehend the BRICS banking markets is that these financial markets are critical to the global economy (see Nasir et al., 2018) despite a low percentage of foreign ownership in those banking markets than other emerging markets. Furthermore, given that these banks play a pivotal role in the economy, it is pertinent to establish how foreign-owned banks impact them in terms of stability, risk, and benefits.

Furthermore, given the sluggish global economic growth due to the 2008 global financial crisis and empirical literature (e.g., Cull & Pería, 2013) showing a marginal decline in the bank lending of host banking sectors in the CEE bloc as compared to the Latin American bloc when including foreign bank ownership as part of the empirical modelling. In theory, host fiscal- or- monetary policy transmissions must limit their cross-border risks arising from foreign bank ownership. The expected outcome is that the host EMEs' monetary policy transmissions need to regulate the risk by adjusting the money supply curve in those economies. In contrast, from the fiscal policy's perspective, they achieve this by discouraging consumption and investments through adjusting the government expenditures and tax levers. In their seminal paper, Bernanke & Blinder (1988) argued that monetary policy transmission's effect from an empirical perspective

could be witnessed through banks' loan market supply adjustment. Thus, according to this bank lending theory, monetary policy transmission, depending on whether the adjustment is positive or negative, influences their real loan rate, which would foster banks to either increase (decrease) their lending capacity or increase (decrease) lending risks in the economy. Furthermore, Joen & Wu (2014) applied the bank lending theory developed by Bernanke & Blinder (1988) in testing whether in the Asian banking system did foreign bank ownership negate the effect of their monetary policy via the bank lending channel. Their verdict was that foreign bank ownership hampers the impact of Asian monetary policy transmission via the lending port, which explains why there was a delay in neutralising the adverse effects from the 1998 Asian crisis and why an external stimulus was required.

However, the inferable outcome in the BRICS bloc, given that empirical evidence alluded that this bloc was not affected by the 2008 global financial crisis, may indicate that foreign bank ownership did not impair the effectiveness of their domestic monetary policy transmission via this channel despite effects from deregulation. Understanding the impact of monetary policy via the lending channel is crucial from an academic perspective because it aid to comprehend the effect or transmission of cross-border lending risks in host economies. While from policymakers' viewpoint, this inquiry enables them to understand the regulatory power of local monetarists post-foreign bank entry, which may advise the global policymakers' community on the extent of cross-border lending risks and the effectiveness of their cross-border currency's levels as a hedging mechanism in influencing the cross-border money supply. Finally, from a global investors' perspective, such testing may enable them to gauge the policy risks post-deregulation, thus enabling them to decide whether equity investments within-host banks in EMEs should be short-run/ long-run? Or should their business model enforce on the host banks promote or discourage risk-aversion behaviour in the host economy? The empirical paradox is that studies investigating this economic question are thinly researched with visible outcomes focusing on the Asian banking markets. It is important to note that the empirical studies revealed that the emerging Asia approach to global financial risks was fundamentally different to that of the BRIC bloc. Thus, Fidrmuc & Korhonen (2010) argued that the

emerging Asia markets were riding on the 2008 subprime Crisis' financial bubble because the current financial crisis had a significant effect on economic developments in emerging Asian economies. Zhang et al. (2013) found the opposite, implying that foreign bank ownership impacts domestic monetary policy transmission via this lending channel (Joen & Wu, 2014). However, emerging Asia is fundamentally different from the BRIC bloc due to the global risk appetite of foreign-owned banks in the host economy. Therefore, this research will augment existing empirical literature by testing the impact of foreign bank ownership on BRICS' monetary policy transmission via the bank lending channel.

Also, recent literature on monetary policy transmission, mainly posts the 2008 global financial crisis, began to investigate the relationship between banking sector-specific competition and monetary policy transmission through the bank lending channel, however for the ASEAN bloc[5] (See Khan et al., 2016). Thus, Khan et al., (2016) argued that the literature on market structure-monetary policy transmission is limited in research scope and context due to: (i) there is a lack of consensus among researchers concerning competition measures; (ii) the evidence on the weakening/strengthening role of the banking structure in monetary policy transmission is inconclusive. Furthermore, the empirical findings from Khan et al. (2016) imply that a lower level of competition in the banking industry undermines monetary policy transmission through banks' credit channels. Given that is the aspect concerning the application of bank lending theory remains thinly researched. To our knowledge, the impact of foreign bank ownership on the relationship between the banking sector-specific competition and monetary policy transmission through the bank lending channel is not researched. The rationale for testing this problem in the current study is that empirical evidence (e.g., Kraft, 2004; Schmidt, 2008; Gormley, 2010; Lee et al., 2016; Chen & Zhu, 2019) shows that banking sector-specific competition became a vital model lever to consider because of the presence of foreign bank ownership within-host EMEs' banking systems. Thus, despite most empirical literature (Lee et al., 2019) promoting bank competition, these studies are empirically

5 In Khan et al., (2016), the ASEAN countries included are namely Malaysia, Indonesia, Singapore, Philippines & Thailand.

failing to reach a consensus on whether the change in banking sector-specific competition reduces or increases stability.

Thus, the empirical literature (e.g., Kraft, 2004; Schmidt, 2008; Gormley, 2010; Lee et al., 2016; Chen & Zhu, 2019) did not reach a consensus on the impact of foreign ownership in host EMEs' banking systems on efficiency, profitability and risks when including competition make it challenging to infer whether competition due to foreign bank ownership would influence monetary policy transmission via the lending channel. This situation is critical to examine because, with the ongoing COVID-19 pandemic and economic lockdowns pushing for regulation regime across significant economies, including the BRICS bloc as supposed to the deregulatory reforms applied previously, such inquiries will provide insights on whether the trajectory signalled by major global stakeholders is valid. As a supplementary problem, this current research examines the impact of foreign bank ownership and banking sector-specific competition on the effect of BRICS' monetary policy transmission via the bank lending channel. Unpacking this practical problem will benefit policymakers to gauge whether competition controls need to be fostered in the development plan of EMEs' banking systems when foreign-owned banks are present.

Interestingly, empirical historical economic studies (e.g., Sabaté et al., 2006) argued that in the case of the Spanish's budget deficits between 1874 and 1935, it was found that the dominance of their fiscal policy for the period and, therefore, provide empirical support to the idea that the problems of the Treasury were behind Spain's renouncement of gold. This finding implies that fiscal policy influences the monetary policy in the case of Spain. Given that this current research examines the impact of foreign bank ownership on domestic monetary policy in host economies and the empirical evidence of Sabaté et al., (2006), it would be beneficial to test the channels mentioned above under the fiscal policy transmission's perspective. Yang & Shao (2016) further found that in the case of the Chinese banking sector is that as this sector becomes more competitive and globalised, their government played an important through using the fiscal policy instruments as an alternative to manage risks arising from their business cycle interacting

with cross-border capital markets. China is one of the countries included in the current research sample, so it makes theoretical sense to test the fiscal policy transmission via the examined channels.

Another pertinent issue to investigate the fiscal policy transmission is that with the prominence of deregulatory reforms among EMEs' banking systems is that empirical studies (e.g., Gavin et al., 1996; Kaminsky et al., 2005; Talvi & Végh, 2005; Kraay & Servén, 2008; Boiciuc, 2015) are revealing an essential concern of their fiscal policy transmission or its effectiveness instead being procyclical. However, because of deregulation over the last three decades, it remains unclear whether the experienced challenges from the pro-cyclical fiscal policy in EMEs are due to foreign ownership. There is a need to understand the implications of foreign bank ownership on fiscal policy transmission because post-2008 global financial crisis, most emerging market blocs operating in the cross-border capital markets suffered but with the BRIC bloc being the exception (see Zhang et al., 2013). Therefore, such inquiries will enable scholars, policymakers and other stakeholders operating in the emerging market bloc to understand whether did their fiscal policy played an essential role in insulating the BRICS banking systems from the negative consequences of the 2008 global financial crisis. Therefore, to resolve these gaps, the current study investigates the impact of foreign bank ownership on BRICS' fiscal policy transmission via the bank lending channel.

1.4 Research objectives

The current study examines the impact of foreign bank ownership in BRICS banking markets. The objectives of this study are stated as follows:

- To determine the differential influence of foreign-owned and domestic banks on the BRICS banking systems' financial soundness at both aggregated and economic cycle-partitioned periods using the CAMELS rating framework.
- Investigate using risk and benefit financial factors to understand whether BRICS financial markets' pliability against external economic shocks due to foreign bank ownership.

- Examine the impact of foreign bank ownership on domestic fiscal and monetary policy transmission via the bank lending channel.
- Investigate the impact of foreign bank ownership and banking sector-specific competition on domestic monetary policy transmission through the bank lending channel since data used for the fiscal policy was insufficient to compute the residual in the modelling process.

1.5 Overview of research design

The current research adopted a descriptive-explanatory mixed-method approach. The first step in the research design uses CAMELS analytic framework to determine BRICS banking systems' soundness in the presence of foreign-controlled banks. The t-test is used to assess the mean difference between domestic and foreign banks. The second part of the research design uses 2SLS and two-way random-effect panel models to investigate foreign banks' impact on benefits and risks and monetary- and- fiscal-policy transmissions. Hausmann and Wald chi-squared test-statistics were used for 2SLS random effect panel model designs, Hausmann and Wald chi-squared test-statistics, including the R-squared, to test the hypotheses. In most of these 2SLS random effect panel model designs, the current study adds an extra layer of validity by including and excluding omitted variables and, after that, computing a biasness t-statistic as developed by Clogg et al. (1995). Further, the two-way random-effect model design, unlike the 2SLS approach, uses R-squared and the Wald test-statistic as principal diagnostic measures to assess model fit.

1.6 Main findings from the implemented research design

The results regarding the impact of foreign ownership on BRICS banking markets' financial soundness using CAMELS analysis show that foreign banks' presence promotes financial stability in a pro-cyclical manner. During the economic boom, these institutions took excessive risks compared to their domestic counterparts. However, given that their balance sheet is sensitive to market and liquidity risk, post-global financial crisis, this risk-

taking level could not be sustained, which reduced their contribution to financial soundness in host banking markets. This finding's theoretical implications are that foreign-controlled banks' behaviour in BRICS banking markets supports the lack of loyalty, trade-off, and quiet-life hypotheses.

The risk-benefit analysis adds to the findings of CAMELS analysis by showing that foreign ownership increases tier-I capital levels of acquired BRICS banks without dampening their efficiency and performance compared to their domestic counterparts, supporting the efficient structure hypothesis and eclectic theory. Furthermore, BRICS countries derive benefits (increase in bank's competition as measured by Lerner's index and financial stability as measured by Z-score). However, these benefits come with an increase in risk, including increasing non-performing loans and earnings risks. The benefits and dangers observed tend to be in all banks (foreign and domestic). The simultaneous increase in benefits and risks supports the trade-off hypothesis.

Further, the policy analysis shows that foreign bank ownership deteriorates the effectiveness of fiscal and monetary policy transmission via the bank lending channel, which supports earlier findings from the risk-benefit research, which reveals that foreign bank ownership improves credit intermediation for all BRICS banks. Other results show that banking sector competition remains an essential lever behind the deterioration of monetary policy transmission's effectiveness via the bank lending channel despite foreign bank ownership.

1.7 Contribution of the study

1.7.1 The theoretical contribution of the study

Various theories and hypotheses underpin the current research. Agency theory is the most widely contested literature and is very important in a recent study. Galias & Masulis (1976) and Jensen & Meckling (1976) found that bank shareholders with a diversified portfolio take more risks, while bank managers in the same circumstance due to higher expected profit tend to be risk-averse, thus, creating the agency problem. Other empirical literature (e.g., Lassoued et al., 2016) shows that agency problems arise in host

EMEs' banking systems with concentrated bank ownership because the host regulator aims to reduce systemic risk while shareholders prefer the increase in systemic risk. The current study extends agency theory by assessing the host regulator's ability to manage systemic risk when foreign banks are present, and banks in the host emerging markets are listed and therefore subjected to market discipline, such as in the case of BRICS.

Bank lending theory states that bank lending rates impact the deposit held by banks either positively or negatively, affecting their lending capacity (Bernanke & Blinder, 1988). Furthermore, after the 2008 global financial crisis, there have been numerous attempts to understand bank-lending theory in the context of new changes observed in emerging markets, especially after deregulation. On the one hand, Wu et al. (2011) and Joen & Wu (2014) find that the presence of foreign banks in host EMEs' banking systems dampens the effectiveness of the bank-lending channel as a monetary policy transmission, which implies that deregulation has encouraged banks to use foreign market-based funding to finance their balance sheets' lending activities. On the other hand, Lee et al., 2016; Chen & Zhu, 2019 posit that foreign banks' presence increases competition in host EMEs' banking systems. However, the literature does not explain the policy lever responsible for ineffective bank lending channel. Thus, is the competition brought by foreign banks a reason for weak bank lending channel?

The previous literature shows that there is an interlink between monetary and fiscal policies through non-distortionary fiscal instruments (e.g., level of tax distortions) which result in inconsistency of optimal monetary policy (Alesina & Tabellini, 1987) and through output shocks in an economy that synchronise the fiscal and monetary policies (Muscatelli et al., 2004). The synchronisation between fiscal and monetary policies is crucial, and adverse financial shocks require mixed policy actions to stabilise the economy (Cui 2016).

The extant literature also used various hypotheses to explain the behaviour of foreign-controlled banks in host banking markets. One adverse selection hypothesis state that information asymmetry creates an adverse selection issue in the loan markets because high-interest rates attract risky borrowers (Stiglitz & Weiss, 1981). Therefore, banks avoid increasing their lending rates and ration credit to circumvent loan defaults by

riskier borrowers (Matemilola et al., 2015). In the context of foreign bank entry, recent empirical literature (e.g., Chen et al., 2017) reveals that in host EMEs' banking markets with information asymmetry, foreign banks were found to comply with the adverse selection hypothesis more than their domestic counterparts. The current study investigates the adverse selection hypothesis in BRICS, a market characterised by low foreign bank presence and a strong market discipline presence.

The financial fragility crowding-out hypothesis states an inverse relationship between banks' regulatory capital and the risk to deposit runs and liquidity exist (Diamond & Rajan, 2001; Gorton & Rajan, 2001). Previous literature (e.g., Lei & Song, 2013; Umar & Sun, 2016; Umar et al., 2017; Umar et al., 2018) provide strong evidence that the financial fragility crowding-out hypothesis holds in BRICS banking markets, meaning that BRICS banks that are highly capitalised have a low probability of deposit runs and liquidity. However, the aspect of bank ownership has not yet been investigated when testing this hypothesis. The current study contributed to this hypothesis by testing whether foreign ownership affects this theory. The quiet-life hypothesis (Hick, 1935) states that monopolistic banks within banking markets experience inefficiencies. The current study tests this hypothesis in BRICS when foreign ownership is present.

The efficient structure hypothesis argues that efficient firms within a specific industry grow their financial position and market share to counteract the competition's adverse effects, earning a higher profit margin than their peers (Demsetz, 1973). Havrylchyk & Jurzyk (2011) established that acquisition of domestic banks by foreign investors is strategic as it focuses on those banks with leading market power in host EMEs banking markets because such actions tend to result in the newly established foreign-owned banks having higher efficiencies compared to domestic counterparts. This study contributes to this hypothesis by testing the extent to which foreign banks strategically acquire banks in BRICS to increase their competitive strategy. This is important because foreign banks' penetration is low in BRICS compared to other emerging markets like the CEE.

Last, the trade-off hypothesis (e.g., Matutes & Vives, 2000) argues that an increase in bank competition leads to the erosion of financial stability. However, existing literature does not investigate the pro-cyclicality and bank ownership effects on the decay of financial stability due to increased bank competition due to foreign banks' presence.

1.7.2 Empirical contribution of the study

The financial deregulation and liberalisation in emerging market economic blocs have witnessed a significant restructuring in their banking sector over time, which led to a considerably higher presence of foreign banks. In CEE (e.g., de Haas & van Lelyveld, 2006; Cull & Pería, 2013; Drakos et al., 2016), East Asia (e.g., Chen et al., 2017; Wu et al., 2017), Latin America (e.g., Cull & Pería, 2013; Chen et al., 2017; Wu et al., 2017) and MENA (e.g., Lassoued et al., 2016) a change in the ratio of foreign banks over total banks it was found to be responsible for economic and financial changes observed. For instance, as foreign banks increased in these economies, the host banking sector became efficient and profitable due to improved risk management and reduced costs. On the contrary, foreign banks are concentrated in these economies; foreign capital reversals tend to undo previously derived benefits due to external economic shocks. The current study contributes empirically by assessing whether foreign banks' presence can explain the change (e.g., competition and efficiencies) in BRICS countries characterised by a low percentage of foreign banks.

Furthermore, in emerging market blocs (e.g., CEE and Latin America), banking systems in which foreign banks are well over 50% of total banks show that foreign banks are behind those blocs' improved financial soundness because of their risk-robust loan portfolio (Crystal et al., 2002; Dolgikh & Äijö, 2013). Within emerging market blocs such as BRICS, where foreign banks' level to total banks is low, additional research is required to determine whether their low penetration influences their risk-aversion.

1.8 Benefits of the study

This study may benefit various parties in the financial sector within emerging markets, especially in BRICS countries. First, the study shows that foreign banks'

presence in the BRICS bloc introduces earnings risks and non-performing loans in foreign and domestic banks. This implies that banks participating in interbank markets need to be extra vigilant on earnings' risks and non-performing loans before lending to other banks to minimise the chances of systemic risk. Second, the presence of foreign banks in BRICS' banking sectors increases competition. Through this study, regulators will be aware of the extent to which they need to monitor this competition so that it does not negatively affect these banking sectors' overall soundness and the banking channel as the transmission of monetary policy.

1.9 Policy implications of the research

This section briefly outlines the policy implication of the results summarised in Section 1.6. First, foreign bank ownership in the BRICS banking system has favourable and unfavourable consequences to its aggregated financial soundness. This implies a positive correlation between banks' risk taking and foreign bank ownership. This means that BRICS policymakers need to closely monitor this relationship to prevent excessive regulatory, idiosyncratic, and systemic risks. Second, foreign bank ownership, especially considering bank competition, accelerates the BRICS bank's lending portfolios to become dollarised. The policy implication of this finding is that the national policymakers such as central banks in BRICS should encourage their banks to lend in their currency primarily to regain control in managing lending risk. Finally, foreign bank ownership encouraged domestic banks to maintain their economic positions through leveraging. Investors in the bloc's banking system need to be aware of the implication of leveraging on credit risk repayments. BRICS policymakers need to control leveraging behaviour of domestic banks.

1.10 Structure of the thesis

This thesis comprises eight chapters, including Chapter 1. The subsequent chapter (Chapter 2) provides a theoretical research framework, including various theories and hypotheses related to the current research. Chapter 3 (empirical literature) outlines empirical findings from the previous literature and identifies the research gaps. Chapter 4 (research methodology) explains the data, methodology, and practical strategies

utilised in this study. Chapter 5 (CAMEL/(s) analysis) presents the results of foreign banks' impact on host banking markets' soundness in BRICS countries. Chapter 6 (risk-benefit analysis) shows the results on both risk and benefits derived from the presence of foreign ownership in BRICS, and Chapter 7 (policy-based analysis) outline the results on foreign banks' implications on the policies (i.e., monetary & fiscal). Chapter 8 discusses the results and concludes this thesis.

Chapter summary

This chapter provides a descriptive overview of the thesis, including the research problem, research objectives, description of the methodology, and the study's significance. The next chapter presents the theoretical literature underpinning this research.

Chapter II – Theoretical literature

2.1 Introduction

The current chapter reviews and outlines the related hypotheses and theories in the literature explaining foreign ownership's impact within emerging markets banking systems. The remaining sections in this chapter are arranged as follows: Section 2.2 discusses the inferences, including the adverse selection and efficient structure hypotheses. Section 2.3 presents theories, including the agency and bank lending theories. Chapter summary concludes the chapter.

2.2 Hypotheses drew from the literature

Extant literature tests and proves various hypotheses related to bank behaviour, including foreign ownership impact on emerging markets' banking systems. These hypotheses are presented and discussed below.

2.2.1 Adverse selection hypothesis

The adverse selection hypothesis states that information asymmetry creates an adverse selection problem in the loan markets because high-interest rates attract risky borrowers (Stiglitz & Weiss, 1981). Therefore, banks avoid increasing their lending rates and ration credit to circumvent loan default by riskier borrowers (Matemilola et al., 2015). Dell'Ariccia et al., (1999) also indicate that the banks offering credit to borrowers face uncertainty about their customers' creditworthiness. If banks obtain information about their borrowers after lending to them, they can reject riskier borrowers when refinancing. Potential entrant banks face an adverse selection problem stemming from their inability to distinguish new borrowers from old borrowers rejected by their previous banks.

In South Africa, Matemilola et al., (2015) observe that their commercial banks are rigid to adjust their lending rates upward, supporting the adverse selection hypothesis. Concerning foreign banks, Chen et al., (2017) argue that foreign banks' risk emanates from informational disadvantages, among others, which may lead them to provide loans to risky borrowers. Because of adverse selection through the information channel, foreign-controlled banks in emerging markets appear to take more risks than their

domestic counterparts. The current study investigates the adverse selection hypothesis in BRICS - a market characterised by low foreign bank presence and strong market discipline.

2.2.2 Efficient structure hypothesis

The efficient structure hypothesis argues that efficient firms within a specific industry grow their financial position and market share, earning a higher profit margin than their peers to counteract the competition's effect (Demsetz, 1973). This study contributes to this hypothesis by testing the extent to which foreign banks strategically acquire banks in BRICS to increase their competitive strategy. Havrylchyk & Jurzyk (2011) find that foreign banks prefer to acquire large banks in CEE countries because it is time-consuming and expensive to gain market power through natural portfolio growth. Moreover, acquired banks were less profitable but better capitalised than locally-owned institutions. Karas et al., (2010) find that foreign-owned banks are more efficient than domestic private-owned banks in Russia. However, domestic private banks are not efficient as domestic public banks, implying that both foreign and government acquire efficient banks. This is important because foreign banks' penetration is lower in BRICS than in other emerging markets like the CEE.

2.2.3 Financial fragility crowding out hypothesis

The 'financial fragility crowding out' hypothesis test the relationship between bank capital and its ability to create liquidity (Umar & Sun, 2016). Diamond & Rajan (2000) and Gorton & Winton (2017) show that two channels can describe this hypothesis. Diamond & Rajan (2000) state that higher capital means less monitoring than low capital and less liquidity creation. On the other hand, Gorton & Winton (2017) argue that a higher capital ratio may crowd out deposits resulting in less liquidity creation.

Previous research (Lei & Song, 2013; Umar & Sun, 2016; Umar et al., 2017; Umar et al., 2018) on the financial fragility crowding-out hypothesis in BRICS countries confirm the existence of this hypothesis, implying that upward adjustments of bank capital regulatory requirements tend to weaken the banks in BRICS' ability to create liquidity

which increases their probability to fail. However, these studies do not indicate the part played by foreign-controlled banks in the financial fragility's existence, crowding out a hypothesis for BRICS' banking systems.

2.2.4 Follower relationship hypothesis

The follower relationship hypothesis argues that banks follow their customers from home countries as they are afraid of losing them once they have established relationships with banks operating in foreign countries (Grubel, 1977). Empirical evidence from the Italian banking system confirms that the follower relationship hypothesis holds (Magri et al., 2005), highlighting the significance of comprehending local market opportunities.

2.2.5 Lack of loyalty hypothesis

The lack of loyalty hypothesis occurs when foreign-owned banks pull back on lending during economic difficulties in host countries (Weill, 2003). Furthermore, foreign banks might be less sensitive to the host country's microenvironment as they benefit from parental support, making their lending more stable over time (Haselmann, 2006). De Haas & Van Lelyveld (2006) found that foreign bank behaviour is more pro-cyclical, in line with the lack of loyalty hypothesis. Fungáčová et al., (2013) also confirm Russia's lack of loyalty hypothesis by indicating that foreign banks are prone to a more substantial lending reduction than domestic banks during the crisis.

However, Peek & Rosengren (2000) and Dages et al., (2000) do not find evidence of a lack of loyalty and argue that these financial institutions have similar lending behaviour during the crisis period. Cull & Pería (2013) found that foreign bank total loan growth in Eastern Europe fell more than domestic private bank credit growth during the crisis because of reductions in corporate lending. Besides, government-owned banks' lending growth in Eastern Europe did not differ significantly from domestic private banks, as government banks could not mitigate the impact of the crisis on credit because their actions were not countercyclical to the lending crisis. The opposite is true in Latin America, where government-owned banks' lending growth during crisis exceeded domestic and foreign banks. However, these studies do not explain foreign banks' lending

attrition in host EMEs' banking markets where cross-border equity acquisition remains low throughout the deregulation period, such as in BRICS.

2.2.6 Liquidity spiral hypothesis

The liquidity spiral hypothesis is defined as a situation where excessive bank lending aggravates liquidity maturity mismatch. When a bank has many bad loans, its cash inflow decreases, creating liquidity risk due to unfulfilled depositors' demand (Chen et al., 2015). Chen et al., (2015) find that the liquidity spiral hypothesis holds for state-owned banks in China, supporting the argument that policymakers primarily influence state-owned banks and warn potential liquidity threats to the Chinese banking system. Acharya & Viswanathan (2011) also confirm a positive relationship between excessive lending and liquidity risk through leverage channels in banking. However, this hypothesis among all hypotheses discussed is not extensively researched. The current study investigates this hypothesis for BRICS countries.

2.2.7 Trade-off hypothesis

The trade-off hypothesis tests the relationship between competition and financial stability in the banking system. In a traditional view, bank competition is perceived as detrimental to financial stability (Matutes & Vives, 2000) because competition erodes bank profit and franchise value. The competition-stability trade-off may also be explained by a higher ability to monitor borrowers when banks earn rents (Allen & Gale, 2001), greater diversification (Beck, 2008), and better regulator monitoring in concentrated markets (Leroy & Lucotte, 2017). Keeley (1990) found that banking competition led to a decline in the franchise and increased risk in the USA. Other studies, including Ariss (2010), and Jiménez et al., (2013), also observe the existence of a trade-off between competition and stability.

Leroy & Lucotte (2017) find that competition enhances financial stability by decreasing systemic risk. This could be because weak competition tends to increase the correlation in banks' risk-taking behaviour. Boyd & De Nicolo (2005) argue that there is a positive relationship between competition and stability, implying that less competition

leads to a higher interest rate for loans, increasing the default possibility due to borrowers' moral hazard. Kasman & Kasman (2015) find a negative correlation between competition and stability in Turkey because of high market power and less competition among banks, causing a decline in banking risk, implying that high concentration due to competition increases risk. However, existing literature does not investigate the pro-cyclicality and bank ownership effects on the erosion of financial stability due to increased bank competition due to foreign banks' presence.

2.2.8 Relative-market power hypothesis

The relative-market power hypothesis argues that gained market power through merger and acquisition strengthens the acquired bank's performance and financial positions (Shepherd, 1983). Hick (1935), Berger & Hannan (1998), and Maudos & de Guevara (2007) argue that the quiet life hypothesis is a particular case of the market power hypothesis and postulates that the higher market power lowers the effort of managers to maximise operational efficiency.

In analysing the relationship between market concentration, bank competition, and bank efficiency, Phan et al., (2016) found that in emerging Asian countries, the market concentration is significantly positive to X-efficiency, which rejects the quiet life hypothesis. This finding suggests that within emerging Asian countries, there is no market power in the banking system that exonerates banks from competition effect and the creation of a monopoly. However, the quiet life hypothesis testing for the foreign-controlled banks acquired by cross-border institutional investors remains substantially understudied. This current study tests the quiet life hypothesis in BRICS.

2.2.9 Customer reaction hypothesis

In economic theory, banks with insulated lending patterns do not adhere to an upward monetary policy rate since these financial entities can downwardly adjust their lending rates, and this inference is known as the customer reaction hypothesis (Zhang et al., 2017). The implication of this finding suggests that banks negate the effects of monetary policy transmission via the bank lending channel if the customer reaction

hypothesis is not rejected. Given that empirical studies (e.g., Wu et al., 2011; Joen & Wu, 2014) for the Asian banking system shows that foreign bank ownership minimises the effect of monetary policy transmission via the bank lending channel. As per Chen et al., (2017) and Wu et al., (2017), the BRICS and emerging Asian blocs have a different profile when looking at the ratio of foreign banks over total banks and given this difference, the expectation is that the customer reaction hypothesis would be rejected if the number of foreign banks is a better proxy for dollarisation. This inference, to our knowledge, has been tested for the BRICS context, and through assessing the impact of foreign bank ownership and banking sector competition on the effect of monetary policy transmission via the bank lending channel, this hypothesis would be tested for the BRICS bloc context.

2.3 Underpinning theories

Prior literature utilised numerous theories to explain how foreign-owned banks impact the host banking systems in emerging markets. These theories are discussed below.

2.3.1 Agency theory

Agency theory assumes that the first source of conflict between managers and shareholders is their different risk perceptions. Shareholders with diversified portfolios seem to take more risk for a higher expected profit, but managers, on the other hand, are risk-averse because of saving their position and personal benefit and keeping their acquired human capital (Galais & Masulis, 1976; Jensen & Meckling, 1976).

The agency problem manifests itself in different ways where banks and foreign ownership are concerned. First, conflict arises between banks and depositors when banks are incentivised to take more risks while relying on funds from depositors who expect banks to take a low risk with their deposits. Second, the conflict arises between the central bank as a lender of last resort and banks when high information asymmetry (because banks do not share internal information concerning their loans) complicates the monitoring of bank managers' decisions by the regulator. Third, the conflict arises between the central bank and shareholders when its objective is to limit systemic risk

while shareholders aim to increase systemic risk as it guarantees bail-out should the bank fails (Lassoued et al., 2016).

Saunders et al., (1990) found that bank ownership structure impacts risk-taking behaviours. Banks controlled by shareholders take more risk than banks controlled by managers. García-Marco & Robles-Fernandez (2008) confirmed that ownership concentration negatively affects banks' risk-taking. Haw et al., (2010) found that banks with high concentrated ownership exhibited higher risk as measured by return volatility and insolvency risk. Chun et al., (2011) found that managerial ownership alone does not affect Korea's risk level but increases risk in Japan. Lassoued et al., (2016) saw that government-controlled banks take more risk, while foreign-owned banks reduce risk-taking tendencies.

Chen et al., (2017) explain that emerging market economies depend severely on foreign ownership's capital flows brought into their banking systems. However, the existing information asymmetry problems foster these foreign-controlled banks to take excessive risks but do not bear the downside risks as their parent can divert the funds whenever necessary. The agency problem arises because emerging economies' mandate is to stabilise their economies by tapping into the international capital markets. However, foreign banks' ability to divert funds as they wish negatively affects these markets' stability and financial soundness, especially during the global financial crisis.

These preceding discussions suggest that agency problem between foreign-controlled banks and emerging markets or their regulators subject their financial soundness to globally induced external shocks. The current study extends agency theory by investigating whether information asymmetry is a problem in an environment where the number of foreign-controlled banks over total banks is 25%, such as in the BRICS.

2.3.2 Bank lending theory

Monetary policy is transmitted through different channels, of which the lending channel is deemed one of the most important. The bank lending theory addresses how the changes (i.e., tightening or relaxing) in monetary policy affect the deposit side

(liabilities) of banks' balance sheets negatively or positively, causing banks to substitute deposits with expensive market-based funding, which reduces lending[6] or increases deposits, which fuel lending[7] (Bernanke & Blinder 1988). Disyatat (2011) argues that the traditional banking lending theory presented by Bernanke & Blinder (1988) got flawed when financial systems were liberated, and direct financing of bank balance sheets extended beyond deposits as banks accessed other funding markets are non-deposit. Disyatat (2011) explained that bank lending theory within the modernised banking systems where financial markets are liberated would work if the monetary policy targets the cost of funding, which will cause banks that depend on market-oriented funding to be sensitive to such changes.

The current study evaluates whether the bank lending theory holds for the BRICS bloc and its economies when foreign banks are present. In China (i.e., all banks) and smaller European countries (i.e., undercapitalised and small banks), the bank lending theory as a channel holds (Nguyen & Boateng, 2013; Altunbaş et al., 2017). While in France, Germany, Italy, and Spain, there is little evidence that the bank lending theory as a channel exists (Altunbaş et al., 2017). Other studies (Olivero et al., 2011; Khan et al., 2016) established that the bank lending channel is ineffective when bank concentration (a sign of competition) increases, leading to monetary policy becoming less effective in controlling credit risk exposures with banks in their economy. Moreover, in emerging markets, the presence of foreign ownership in their banking systems increase competition (e.g., Kraft, 2004; Gunji et al., 2009; Amidu & Wolfe, 2013), which implies that the presence of foreign-controlled banks reduces the effectiveness of monetary policy through the bank lending channel.

2.3.3 Comparative-advantage theory of competition

There are two theories of competition: neoclassical and comparative advantage theories. Neoclassical is a perfect competition theory where each firm in the industry adjusts its product quantity produced in the short run due to changes in the market price

6 i.e. during monetary policy tightening

7 i.e. during monetary policy relaxation

of its product and the costs of its resources and other inputs. Although, in the long run, they adjust the scale of their operations. The firm's environment strictly determines its conduct (Hunt & Morgan, 1995). The comparative advantage theory of banking views industry demand as significantly heterogeneous and dynamic (Dickson, 1996). Consumers have imperfect information concerning a product that might match their tastes and preferences, and obtaining such information is often costly (Hunt & Morgan, 1995). In comparing neoclassical and comparative advantage theories, Hunt & Morgan (1995) argue that comparative advantage theory better explains macro and micro phenomena previously rationalised by neoclassical theory and that market orientation is a potential resource for comparative advantage.

Multinational banks aim to exploit their comparative advantage and minimise opportunity costs (Kosmidou et al., 2007). These global firms can be subjected to home nation effect, parent bank effect, and host nation effect, and each of these effects provide a mix of advantages, opportunity costs, and barriers to entry (Sturm & Williams, 2008). Sturm & Williams (2010) found that following clients minimise profit creation efficiency, while incumbent banks' market share acts as a barrier to entry. On the other hand, parent bank profits do not improve host nation efficiency.

However, from a comparative-advantage theory of competition perspective, the findings from the empirical literature (e.g., Olivero et al., 2011; Chen & Zhu, 2019) suggest that foreign-controlled banks in emerging markets have a comparative advantage over their locally owned counterparts if existing foreign ownership in their banking systems is through the Greenfield investment channel. However, the literature explains the benefits of foreign ownership through acquisition (e.g., Havrylchyk and Jurzyk (2011), it does not explain whether the same holds in Emerging markets with characteristics different from those CEE. The current study aims to extend the comparative advantage theory of competition and its applicability in the banking systems.

2.3.4 Eclectic theory

The eclectic theory is defined as a theoretical framework that underpins factors driving the foreign investors' decisions to enter new markets through the acquisition

channel. These factors include internalisation, location, and ownership. This eclectic theory combines industrial organisation, internationalisation, and location theories[8] (Williams, 1997). Dunning (1988) argues that investment decisions, particularly concerning cross-border investors, are driven by four major factors: regulation, country, industry, and institution. Other literature (e.g., Miller & Parkhe, 1998; Peek & Rosengren, 2000; Claessens & van Horen, 2009) argued that foreign investors consider specific factors[9] before entering new markets.

Other studies (e.g., Hryckiewicz & Kowalewski, 2010; Kodongo et al., 2015) add that host and foreign ownership country's macroeconomic and institutional factors remain central for existing foreign-owned banks to expand their operation while for potential foreign-owned banks, these factors are critical in deciding on whether or not to enter the host country. The current study implicitly examines whether the factors (location, ownership, and institutions) identified in the eclectic theory may have influenced foreign investors to enter BRICS countries.

2.3.5 Financial intermediation theory of banking

The financial intermediation theory of banking states that banks collect deposits and then lend them out. However, this function is not exclusive to banks and can be done by other financial intermediaries. This means that banks act as intermediaries, channelling money from thousands of depositors and other investors to their loan clients (Krugman, 1988). As there is no clear distinction of banks from non-banks, economists see no reason to single out banks in macroeconomic theories and models (Werner, 2016). Werner (2016) rejects the financial intermediation theory of banking, implying that banks play a specialised role in the economy and have to be regulated effectively as failure to do so could bring about catastrophes such as the 2008 financial crisis. Besides, Chen et al., (2015) argued that liquidity creation is a crucial function of banks. Banks create liquidity by funding long-term illiquid assets with short-term liquid liabilities.

8 Isard & Kuenne (1953) define the location theoretical framework as a theory concern with geographical expansion of economic activity.

9 These factors are banking market's size, competitive landscape, cost efficiency returns, entry restrictions, regulatory climate and the institutional structures including the frequency of financial crisis that are subsets of the factors outlined in the eclectic theory.

Furthermore, liquidity creation may be exclusive to banks, but the role of lending is instead not unique to banks.

Banks have a significant role in emerging markets, and their governments may be heavily involved in their banking systems (Davydov et al., 2018). This implies that the financial intermediation theory may not necessarily hold in these environments because banks play an important role than other lenders due to substandard institutional quality, as indicated (Gwatidzo & Ojah, 2014).

2.3.6 Leon Walras' Theory of Money

Leon Walras' theory states that for excess supply to exist in one market, there must be a matching excess demand in another so that both factors cancel out (equilibrium). Although Leon Walras' theory of money may have serious flaws[10] (See Cirillo, 1986), it provides crucial insights into its ability to detect significant deficiencies in the quantity theory of money. Thus, the theory can detect drastic changes in money supply, better explaining the irrational policy phenomena discussed by Cirillo (1986). The paradigm set by Leon Walras' theory may help explain the irrationality of fiscal and monetary policy transmissions caused by foreign ownership within-host EMEs' banking markets, as witnessed within the works of Wu et al., (2011) and Joen & Wu (2014). The current study tests this theory regarding the challenges experienced in fiscal and monetary policy to regulate economic equilibrium, especially when foreign ownership in host EMEs' banking markets.

Chapter summary

This chapter reviewed various hypotheses and theories underpinning the current research and highlighted how it would contribute to or extend them. The next chapter presents the empirical literature review.

10 The flaws come from its assumptions as it assumes that strong public policy is necessary to regulate the money supply in order to ensure the preservation of economic equilibrium.

Chapter III – Empirical literature review

3.1 Introduction

The current chapter reviews the empirical literature related to foreign ownership in emerging markets, including the risks and benefits to the host's financial sector. The chapter is organised as follows: Section 3.2 reviews banks' role in the economy, particularly in emerging markets. Section 3.3 discusses the measurement of banks' soundness through the CAMELS rating framework. Section 3.4 presents deregulation and its effects. Section 3.5 outlines briefly the challenge facing banks, which led to noncompliance with the Basel accord framework in the past. Section 3.6 discusses the benefits of foreign ownership in host countries. Section 3.7 presents the risks of foreign ownership. Section 3.8 offers the impact of foreign ownership on monetary- and- fiscal-policy transmissions, respectively. While Section 3.9 outlines and discusses the theoretical research framework. Chapter summary concludes the chapter.

3.2 Role of banks in the economy

Banks play an essential intermediary and extensive role in the economy by financing various economic activities (e.g., Slovin & Young, 1990; Athanasoglou et al., 2008; Bhaumik & Piesse, 2008; Allen et al., 2012). Their intermediary role includes accepting savings from depositors with various maturities, mainly short-term in nature. Banks then lend these funds to borrowers at a long-term duration through the maturity transformation process (Booth & Booth, 2004). Moreover, by matching deposits and loans, banks can also create liquidity in the economy. Creating liquidity is particularly essential during financial distress when banks experience bank runs. The banks' ability to create liquidity enables them to meet the deposit demands while extending credit (Diamond & Dybvig, 1983). Banks create liquidity by transforming illiquid assets into liquid liabilities (Lei & Song, 2013). Before the global financial crisis of 2007-2009, liquidity creation observed was in the form of securitization where banks and other institutions re-sold issued subprime mortgages in a secondary market to other counterparts (e.g., Ackermann, 2008; Hildebrand, 2008). Banks also increase market efficiency, which helps lower the economy's cost of debt and stimulate economic growth (e.g., Fase & Abma,

2003). Despite a good understanding of banks' function, there is still a need to have a comprehensive account of whether foreign banks' presence has any impact, especially in BRICS.

Some emerging economies like South Africa are experiencing low economic growth, high unemployment, and many other economic ills, and the current study sought to establish whether the entry of foreign banks improves or worsens macroeconomic factors. Banks' role is even more critical in emerging markets because they are characterized by illiquid, non-bank debt markets, forcing firms (mainly unlisted ones) to depend entirely on banks for financing (Bekaert & Harvey, 2003; Gwatidzo & Ojah, 2014). Banks in emerging markets also finance government activities by purchasing more government bonds in their balance sheet and connecting their balance sheet to that of the government (IMF, 2010), which improves the economy's liquidity. This connectedness between banks' balance sheet and the economy benefits a country by enhancing the real macroeconomic factors such as employment, interest rates, foreign reserves, and domestic money supply (Komulainen & Lukkarila, 2003; Reinhart & Rogoff, 2013; Hamdi & Jlassi, 2014) especially if a country's banking system is efficient.

3.3 Measuring the soundness of banks

Traditionally in the accounting taxonomy, a bank or banking system is regarded as sound if assets minus its liabilities (core and non-core) remain positive and progressive over their lifespan. Earlier pioneers of the banking theory (e.g., Diamond & Dybvig, 1983) argued that deposit insurance instruments might guarantee banks or banking systems' soundness when the net difference between assets and liabilities appears to be depressed at both institutional and system levels. Over time, the extensive use of a battery of financial ratios to measure banks' soundness has gained traction. The lessons learned from previous major crises such as the Mexican peso crisis (1994 – 1995), East Asian crisis (1997 – 1998), and global financial crisis (2007 – 2009) show that having a saver or lender of last resort in the form of deposit insurance or regulatory capital adequacy is insufficient to guarantee the soundness of banks. Moreover, regulatory channels such as the deposit insurance or regulatory capital adequacy setting have an

inter-linked system due to mispriced observed and latent risks, including regulatory arbitrage issues, as observed previously (Mishkin, 1999; Moshirian, 2012).

The CAMEL analysis is one non-evasive but informative method commonly used to measure banks' soundness, and it uses financial ratios to achieve its purpose (Crystal et al., 2002). USA regulatory agencies initially introduced the CAMEL analysis in 1979 (Roman & Sargu, 2013). This CAMEL analysis method's limitation is that its descriptive, implying that the derived outcomes are not generalizable. CAMEL analysis method measures banks' soundness in five categories: capital adequacy, asset quality, management, earnings, and liquidity. Crystal et al., (2001) extend the conventional CAMEL analytical framework to CAMELS by including the five categories' reactions during and after a crisis and CAMELOT by including the operational and efficiency measures to the analysis. The traditional CAMEL analytical framework works by computing the averages of the proxies of the previously mentioned five sub-categories per group or individual banks.

CAMEL analysis was previously performed in emerging markets such as Latin American and Central and Eastern European (CEE) blocs, including the Bank Dhofar in Sultanate of Oman, India, and Romania (Crystal et al., 2002; Dolgikh & Äijö, 2013; Dash & Das, 2013; Roman & Sargu, 2013; Mohammed et al., 2019). In Latin America, CAMEL analysis revealed that although foreign banks do not differ significantly from domestic banks, they tend to have more risk-robust loan growth trajectory, strengthening the financial stability of their host countries (Crystal et al., 2002). In the case of the CEE bloc, CAMEL analysis showed that foreign-owned banks have higher credit growth than their domestic counterparts, and this difference in credit growth across the foreign-owned versus locally owned before and during crisis appears driven by their balance sheet indicators (Dolgikh & Äijö, 2013). In the Indian banking system, the CAMEL analysis confirmed that private/foreign banks fared better than government-owned banks when using the CAMELS analytical framework (Dash & Das, 2013). On the other hand, in Turkey's case, the CAMELS rating analytical framework showed that their government-owned banks performed better than foreign-controlled banks during the global financial

crisis because their bank balance sheets were risk-averse before the crisis (Dincer et al., 2011).

CAMEL analysis was performed on one of the BRICS countries – India; the soundness of banks in BRICS as a bloc is yet to be established. For the Romanian banking system, the CAMEL analysis was conducted at an institutional level using a sample of 15 commercial banks, and the results showed an underlying need to strengthen the banks' soundness (Roman & Sargu, 2013). Finally, in the case of Bank Dhofar, the CAMEL analysis revealed that the capital adequacy levels of this bank require improvement while their net non-performing assets appear reduced, suggesting that the bank is in a better position despite lacking capital adequacy (Mohammed et al., 2019).

Another CAMEL framework application was on three banks in the Philippines (Banco Filipino Savings, Mortgage Bank, and Urban bank, including the Orient bank), and the findings showed that the earnings component of CAMEL was a helpful indicator to predict bank failures (De Claro, 2013). Indriastuti and Ifada (2016) corroborated the findings of De Claro (2013) by establishing that the net profit margin helped predict troubled banks. Generally, CAMEL analysis is powerful and versatile, but its limitation is that it cannot be generalised, unlike regression modelling analysis.

Despite the limitation that CAMEL or CAMELS rating system cannot be generalized, its indicators have significant ability to detect financial distress, meaning that this information is pivotal to proxy financial soundness (e.g., Männasoo & Mayes, 2009). Hence, numerous studies have been developing regressions based on CAMELS factors as inputs in the recent past. First, Rashid & Jabeen (2016) constructed the financial performance index using CAMELS indicators to proxy bank performance in a regression analysis. Besides, Lee & Lee (2019) and Keffala (2020) used the raw CAMEL/CAMELS indicators to proxy bank performance in their regression analyses. Second, some studies (e.g., Shaddady & Moore, 2019) used these CAMELS indicators in a data envelopment approach (DEA) to construct a robust bank stability measure than the conventional Z-score. Unlike the empirical evidence from the traditional CAMEL/CAMELS rating system, the CAMELS-based regression results are generalizable and comparable across studies.

3.4 Financial deregulation and its effects

Most economies financed their functions mainly through commercial banks' debt markets before-deregulation. Pomfret (2010) explained that excess capital flows from developed oil market economies entered emerging markets through their commercial banking systems as these banks borrowed the funds, which were then subsequently used to finance emerging markets and maintain their stability. This means that emerging markets became highly leveraged and exposed to external economic shocks. In the late-1970s, when oil markets from developed economies encountered financial distress, emerging markets' banks were unable to procure new funding, and the existing debt exposures within their balance sheets appreciated pushing them to roll over their debt. Furthermore, financial institutions could not generate liquidity, which led to a capital flow drought. The emerging markets' inability to counteract effects from the capital flow drought resulted in the 1982-debt crisis (Kaminsky & Pereira, 1996).

Notably, emerging markets struggled to recover from the 1982-debt crisis because their banks defaulted simultaneously with the decline in economic growth, resulting in debt overhang, where these economies experienced systemic risk in a banking system affecting the economic growth negatively. After all, their commercial banks financed the past and current economic growth trajectories simultaneously. Most emerging markets economies embarked on the deregulation process to minimize the debt overhang and stimulate economic growth.

Most economies with nationalised banking systems adopted bank deregulatory reforms to monitor unrealised risks and recapitalisation (Maudos & Solís, 2011). The deregulation process is defined as a central strategy where governments, including regulators, privatize a previously nationalised sector or restrict foreign capital entry by deploying stringent capital controls (Oetzel & Banerjee, 2008). Deregulation resulted in foreign investors and banks entering emerging markets banking systems. In emerging economic blocs such as Central European Economies (CEE), foreign-owned banks become dominant players in their financial sector.

Deregulation was observed mainly through foreign banks' entry into emerging markets. There were different methods that foreign owners used to enter emerging markets. In the earlier years, the twinning arrangements were encouraged by World Bank to catalyse change and better prepare the banks for eventual privatization. In this arrangement, foreign banks took only a minority ownership position or no ownership role and were assumed to function as insider advisors to the privatization process (Ábel & Siklos, 2004). Countries such as Hungary adopted a strategic partnership arrangement where a foreign strategic investor took over emerging market banks by either acquiring a majority stake or buying a minority stake with the option of taking the majority stake later (Ábel & Siklos, 2004). Ábel & Siklos (2004) argue that the method of entry would determine foreign banks' risk and return.

Although a full review of the risk and benefits of foreign banks' entry into host countries' deregulation is outlined below, it suffices to point out that deregulation had mixed results. For example, in Taiwan, Korea, Norway, Portugal, Thailand, and Spain, deregulation reduced the efficiency of the banking system, while in India, it had an opposite effect (See, Berg et al., 1992; Zaim, 1995; Grifell-Tatjé & Lovell, 1996; Bhattacharyya et al., 1997; Gilbert & Wilson, 1998). Furthermore, the deregulation resulted in most emerging markets becoming vulnerable to a sudden high volume of capital outflows, which were evident during the East Asian crisis (1997 – 1998) and dollarisation of the balance sheet (Mishkin, 1999; Komulainen & Lukkarila, 2003; Choi & Cook, 2004). Also, deregulation results in a boom-bust cycle in the banking sector that is inherently attributed to a build-up of economic bubbles and subsequent bursts that create a financial crisis (Roy & Kemme, 2012).

To some extent, deregulatory reforms amplified difficulties in monitoring the role and impact of qualified foreign institutional investors in the system (Chen et al., 2018). Therefore, it is essential to clearly articulate the impact of deregulation in the context of the BRICS economic bloc. Understanding the effects of deregulation in BRICS is even more critical now that the cost-benefit analysis of adopting deregulatory in emerging markets is shifting towards the opposing side.

Various factors influence the foreign ownership choice of a host country to enter. For instance, multinational banks enter foreign markets primarily to increase their profitability within an acceptable risk profile (Hryckiewicz & Kowalewski, 2010). Focarelli & Pozzolo (2005) elaborates that those banks prefer to have their subsidiaries in countries where expected profits are more significant because of the expected higher economic growth and potential benefit from local banks' inefficiencies. Dunning (1988), using eclectic theory, argued that foreign entrants' factors could be categorised into three groups: regulation, location, and ownership. Other research finds that the level of domestic country trade in the cross-border economies, exchange rates, regulations of destination markets, information costs, level of local deposits and home country FDIs, size of banks and country of origin including effective lending rate differentials and size of host banking markets played a pivotal role in attracting foreign investors into emerging markets (Goldberg & Saunders, 1981; Cho, 1986; Goldberg & Johnson, 1990; Fisher & Molyneux, 1996; Merrett, 2002; Buch, 2003; Herrero & Pería, 2007).

In some cases, the foreign banks/investors enter host countries to serve their domestic clients that have internationalized (Dahl & Shrieves, 1999; Konopielko, 1999), which relates to the follower relationship hypothesis discussed in Chapter 2 and the dollarisation construct outlined in Section 3.6 below. More recent literature (e.g., Kodongo et al., 2015) adds that the level of institutional quality in host countries, especially in East Africa, is attributed to the foreign expansion in their banking systems.

3.5 Capital adequacy levels and the Basel accord framework

From its inception in 1988 to the current, the Basel accord framework has attracted debate as it does not fully mitigate the possibilities of banking crises, especially in emerging markets. Earlier studies (e.g., Banerjee, 2012) indicate that Basel I and II accord frameworks affected banks differently depending on bank ownership. For example, in the case of private and foreign-owned, the framework's effect was much more on its lending risk, while for public banks, it was mainly on their earning assets' healthiness. However, despite these focuses, banks, especially in emerging markets,

found ways to utilize the framework for their benefits, which did not necessarily translate into those economies' regulatory stability. This led to the introduction of Basel III in 2010.

Interestingly, the application of BASEL III came with its challenges. For instance, the requirement to hold a net stable funding ratio (NSFR) fostered banks to reduce assets and, by doing so, affected net interest margins (NIMs) adversely (King, 2013). Besides, the Basel III accord framework's adoption reduced the level of cross-border banking activities in emerging markets by 20% (Figuet et al., 2015). These studies (e.g., Banerjee, 2012; King, 2013; Figuet et al., 2015) discussed above argue that implementation of the Basel accord framework, including the Basel III affects banks' profits and efficiency negatively, which encourages noncompliance to capital adequacy thresholds, but in the case of BRICS, these noncompliance challenges have not been comprehensively investigated.

3.6 Benefits of foreign-owned banks within-host banking systems

The extant literature outlines various benefits of having foreign banks in host countries (Bonin et al., 2005; Brown et al., 2009; Koutsomanoli-Filippaki et al., 2009). For example, foreign banks' presence lowers the probability that a host country will experience a banking crisis (Demirgüç-Kunt et al., 1998). Furthermore, Berger et al. (2005) suggest that foreign ownership is associated with low-profit efficiency than domestic ownership (static effect) and further showed that acquired banks do not differ significantly from those that have remained domestic except for higher costs (selection effect), however, there was some improvement on bank performance after acquisition (dynamic effect).

Kraft (2004) shows that entry of foreign ownership increases competition, technology, product innovation, and internal restructuring. Sturm & Williams (2004) support Kraft (2004) by showing that Australian banking sector productivity improved post-deregulation due to technological efficiency changes induced by foreign-owned banks post entry. Also, foreign ownership increased domestic banks' operational efficiency by forcing locally controlled banks to reduce their profitability and interest margins (Claessens et al., 2001; Sturm & Williams, 2004; Clarke et al., 2006; Havrylchyk

and Jurzyk, 2011). Other benefits include an improvement to credit availability for both small and large firms (Clarke et al., 2001), reducing the likelihood of crisis (Levine, 1996), and assisting in stabilising the banking system during times of economic turmoil (Detragiache & Gupta, 2006). Havrylchyk & Jurzyk (2011) also showed that domestic banks became more profitable after the takeover because of cost minimization and better risk management. The other benefits include the fact that foreign-controlled banks improve the banking stability in emerging markets banking systems when the credit market deteriorate due to endogenous shocks (Althammer & Haselmann, 2011) and that the presence of foreign-controlled banks increased the host countries' business regulatory situation (Kouretas & Tsoumas, 2016).

Most less–developed countries are characterized by inefficient domestic banks and lack of competition among lenders resulting in high borrowing costs and limited financial access; hence, foreign-controlled banks enhance credit access to all firms in emerging markets indirectly by stimulating the overall banking competition (Giannetti & Ongena, 2012) and improve efficiency (Kraft 2004). Lee et al. (2016); Chen & Zhu (2019) endorse that foreign-controlled banks' presence improves their banking competition within-host emerging markets post-entry. Specifically, in Africa, Léon & Zins (2020) also found that regional foreign-controlled banks increase firms' access to credit and found limited evidence that they favour the middle class's financial access by restoring confidence in banks.

Although the preliminary review highlights the benefit of competition, it is also important to note that the increase in competition may also increase information asymmetry and reduce a firm's access to credit (Peterson & Rajan, 1995). Gormley (2010) observes that foreign bank entry in India did not improve all firms' credit access, as these banks only financed profitable firms (cream-skimming) upon entry. Moreover, due to foreign-bank entry, credit access was reduced by 8%, suggesting that most firms in these economies cannot realize the benefits of foreign banks' entry and presence (Detragiache et al., 2008; Gormley, 2007). Mian (2006) supports Gormley (2010) by showing that foreign banks lend less to informationally demanding customers as these

customers may pose a problem during the recovering of defaulted loans. Furthermore, in countries where market concentration is higher than the norm, banking competition may lead to imperfect markets where banks set prices that are less favourable to consumers to earn higher profits (Berger et al., 2001).

The benefits of foreign banks in emerging markets may be affected by a mode of entry, often referred to as selection bias, whereby only more profitable and healthier banks with high market power become selected for acquisition (Havrylchyk & Jurzyk, 2011). Lanine & Vennet (2007) showed that foreign banks acquired larger banks in the CEE countries, and the acquired domestic banks benefited from foreign ownership in terms of higher market share post-acquisition. However, the impact on efficiency and profitability was insignificant, arguably because selection bias was not accounted for in this scenario. Havrylchyk & Jurzyk (2011) found that less profitable banks were likely to be acquired host banks by foreign strategic investors but profitable three years after the acquisition. Also, depreciation of the host country's currency promotes foreign bank entry through acquisition, while an appreciation of local currency encourages foreign banks' access through greenfield investments (Hryckiewicz & Kowalewski, 2010).

Although studies such as Gormley (2010) and Léon and Zins (2020) investigate the benefits of foreign ownership in emerging markets, there is still a dearth of literature analysing foreign ownership's impact on the BRICS economic bloc and member states. This analysis is overdue given the developmental mandate that some member states have and that the studies done so far are inconclusive.

3.7 Foreign bank ownership and risk

Previous research (see Table 3.1 below) documented extensive literature on the risks experienced by emerging markets post-deregulation. About 35 systemic banking crises were experienced from 1986 to 2008, during the banking systems' deregulatory phase in emerging markets. Table 3.1 below shows that between 1976 and 2008, there were 44 systemic banking crises and one economic meltdown. From Table 3.1, it is concluded that increased foreign ownership in emerging markets also heightened the frequency of systemic banking crises by almost 80%.

Table 3. 1 – Crisis dates

Country	Banking (Systemic risk crises)	Currency	Sovereign	Sovereign (Restructuring)
Albania	1994	1997	1990	1992
Algeria	1990	1988,1994		
Angola		1991, 1996, 2015	1988	1992
Argentina	1980, 1989, 1995, 2001	1975, 1984, 1987, 2002,2013	1982, 2001, 2014	2016
Bolivia	1986, 1994	1973, 1981	1980	1992
Botswana		1984		
Brazil	1990, 1994	1976, 1982, 1987, 1992, 1999, 2015	1983	1994
Bulgaria	1996	1996	1990	1994
Chile	1976, 1981	1972, 1982	1983	1990
China	1998			
Colombia	1982, 1998	1985		
Croatia	1998			
Czech Republic	1996			
Egypt	1980	1979, 1990, 2016	1984	1992
Estonia	1992			
Hungary	1991, 2008			
India	1993			
Indonesia	1997	1979, 1998	1999	2002
Kenya	1985, 1992	1993		
Korea (South)	1997	1998		
Lesotho		1985, 2015		
Lithuania	1995	1992		
Luxembourg	2008			
Malaysia	1997	1998		
Mexico	1981, 1994	1977, 1982, 1995		
Peru	1983	1976, 1981, 1988	1978	1996

Philippines	1983, 1997	1983, 1998	1983	1992
Poland	1992		1981	1994
Romania	1998	1996	1982	1987
Russia	1998, 2008	1998, 2014	1998	2000
South Africa		1984, 2015	1985	1993
Thailand	1983, 1997	1998		
Turkey	1982, 2000	1978, 1984, 1991, 1996, 2001	1978	1982
Venezuela	1994	1984, 1989, 1994, 2002, 2010	1982, 2017	1990

Notes of Table 3.1: The crisis date information extracted from Laeven & Valencia (2018) shows years when systemic banking, currency, and sovereign crises became incurred on the sampled emerging markets (that is, amounting to 34 emerging market economies).

The risk associated with foreign ownership of banks manifests itself in various ways. First, when foreign ownership occurs, all banks, including domestic banks, gain access to the international debt markets denominated in foreign currency (Eichengreen & Hausmann, 1999), leading to dollarisation of their liabilities (Calvo, 2002; Choi & Cook 2004). With a dollarised balance sheet, banks would then lend to borrowers whose income stream is in a local currency, implying that the asset's side of banks' balance sheet would be exposed to internal shocks (Mora et al., 2013). Bordo et al., (2010) point out that dollarized liabilities weaken banks' resilience against externally induced economic shocks. For instance, in the East Asian crisis of the late 1990s, the devaluation of Thailand's Baht caused banks' liabilities to appreciate while asset returns of banks depreciated, preventing banks from meeting their credit obligations and therefore defaulting. Bordo et al., (2010) found that financial exposure driven by exposure to foreign currency resulted in significant permanent output losses. Bonin & Louie (2017) argue that foreign-owned outside greenfield banks were responsible for the dollarisation of banks' balance sheets in CEE countries, which led to currency mismatch post-global financial crisis in 2008.

Foreign currency liabilities are viewed as a financial weakness in emerging markets and are widely associated with crises such as the Mexican tequila crisis (1994), the Russian rouble crisis (1998), and the East Asian crisis in the late 1990s (Eichengreen

& Hausmann, 1999). Interestingly, in the late twentieth century, several advanced economies had burdensome currency debt outstanding relative to the total external debt liabilities, but most avoided the crisis (Bordo et al., 2010). Even in emerging markets, the impact of high external debt is mixed. For instance, Bebczuk et al., (2006) found that foreign currency debt is directly associated with lower growth rates when the real exchange depreciates.

Bordo et al., (2010) found evidence that foreign currency debt increases the likelihood of currency and debt crisis, and the risk of trouble is greater when borrowing in foreign currency is rapid and significant. Arteta (2003) finds that the dollarized banking system is not significantly more prone to crisis. Ahrend & Goujard (2011) conclude that certain forms of international financial integration are found to amplify contagion shocks and increase crisis risk, such as integration through international bank lending, in particular, through short-term bank debt. Using Latin American data, Bleakley & Cowan (2008) found no evidence that the firm's investment decisions are affected by burdensome currency debt even in the face of currency depreciation. These mixed results imply that sound debt management at the macro and micro level, financial development, and sustainable fiscal positions have allowed countries to evade financial crisis even in the presence of a high percentage of debt denominated foreign currency (Bordo et al., 2010). Furthermore, these results require us to understand better foreign debt's impact in other environments such as BRICS, especially post-foreign ownership entry.

The entrance of foreign banks results in a systematic drop in domestic bank loans due to information asymmetry (Gormley, 2010). This implies that foreign banks tend to ‘cherry-pick’ the customers to lend, leaving domestic banks with opaque customers. Lending to these opaque customers would increase aggregated risk in host countries (Serrano, 2016; Wu et al., 2017). Furthermore, Schmidt (2008) argues that foreign banks harm the credit quality of local banks’ loan portfolios because of intense competition, which reduces local banks' profitability and their incentives to undertake costly efforts, leading to financial instability during an economic crisis. Foreign banks could also poach depositors and safe borrowers from domestic banks while unwilling to lend to local

entrepreneurship (Giannetti & Ongena, 2012), which stifles economic development and increases dependency on oligopolistic firms.

Besides, foreign banks tend to lend large firms with foreign owners (Berger et al., 2001; Mian, 2006). Giannetti & Ongena (2012) conclude that foreign bank presence does not benefit businesses connected to domestic banks and the government. During the crisis period, foreign banks drop the rate at which they lend (Fungáčová et al., 2013), and host countries would then depend on the ability of the government banks to stimulate lending (Cull & Pería, 2013). Also, if foreign banks were aggressive in terms of borrowing during the boom period, the government banks in host countries would, therefore, be unable to stimulate lending, and this would prolong the crisis (Cull & Pería, 2013)

Furthermore, foreign ownership is negatively associated with financial stability, suggesting a higher risk profile for foreign banks than for domestic banks because of information disadvantage, agency problems with conglomerates, the contagious effect of parent banks' financial health, and the disparity between home and host markets (Chen et al., 2017). Nicolo & Loukoianova (2007) document that foreign banks' risk profiles are significantly higher than domestic banks. Angkinand & Wihlborg (2010) and Agoraki et al., (2010) found compelling evidence for negative/positive linkage between foreign bank presence and the banking sector's overall stability in an emerging market.

The linkage between foreign-controlled banks and parent balance sheets may be a channel through which credit and liquidity risk are transmitted. Extant literature shows that host country macroeconomics and parent bank characteristics impact the subsidiaries' credit supply in host countries (Temesvary & Banai, 2017; Arakelyan, 2018). Thus, the parent bank's size and profitability negatively influence the parent's liquidity, and credit risk have a positive influence (Perić et al., 2018). Anginer et al. (2017) found a positive correlation between the parent bank and foreign subsidiary default risk during the crisis.

However, those subsidiaries with high retail deposit funding have a lower correlation in default risk coming from the parent. This finding implies the possible

transmission of shocks between parent and subsidiary operating in emerging markets. It is possible that when parent defaults' risk increases, it may transfer funds from the subsidiary so that the subsidiary can meet the regulatory requirements at home country and by so doing weakens the financial health of the subsidiary and increase their default risk to rise (Anginer et al., 2017; Cetorelli & Goldberg, 2016). Furthermore, these subsidiaries might be forced to shrink their loans, liquidate long term assets, increase intragroup loans to distressed parent banks or receive risky assets transferred from the parent (Giannetti & Laeven, 2012; Allen et al., 2013, Jeon et al., 2013).

Other studies found that parent might export their good or bad risk management practices/policies to their foreign affiliates (Berger & DeYoung, 2001). Also, financial conditions in parent countries may affect their subsidiary's financing cost, especially during shocks where parent income or assets decrease, causing the subsidiary's finance costs to increase, causing losses and possibly expanding the leverage risk (Chen et al., 2017). Peek et al. (1999) also found the poor performance of foreign banks in the USA before the acquisition, during a transition period, and long after the purchase. Various other studies (e.g., DeYoung & Nolle, 1996; Chang et al., 1998) conclude that foreign-owned institutions are less cost-effective and have lower profit efficiency.

3.8 Foreign bank ownership and fiscal- and- monetary-policy transmissions via the bank lending channel

In economic theory, understanding the transmission of monetary policy enables policymakers, academics, and other stakeholders to gauge the effectiveness of monetary policy actions on real economic activities, thus allowing them to guesstimate the riskiness of the economy and the probability of future returns. These factors drive investment and consumption appetite in the economy. This previous statement implies that understanding the transmission of monetary policy in the economy provides financial regulators and policymakers with the required information to minimise ineffectiveness in monetary-based policy decisions, which optimise economic growth in the long run. Morsink & Bayoumi (2001) state that numerous channels have been identified, including interest rate, exchange rate, and bank lending. Given that in EMEs, maintaining progressive economic

growth in the long run because of inherent high uncertainties (see Bekaert & Harvey, 2003), investigating monetary policy transmission is pertinent in these economies.

In empirical studies (e.g., Baglioni, 2007; Aleem, 2010; Mahathanaseth & Tauer, 2019) in banking theory, the preferred mechanism of examining the transmission of monetary policy based on the theoretical framework conceptualised by Bernanke & Blinder (1988). They argued that monetary policy decisions impact the real loan rates in banking systems, thus adversely or positively affecting the banks' lending capacity, which controls the lending risks. Bernanke & Blinder (1988) also note that, from a theoretical perspective, a monetary policy decision is regarded as being effective if it increases the real loan rate, thus reducing lending risks because, in this framework, economies' monetarists are assumed to be risk-averse. From a statistical perspective, the previous statement implies that the coefficient of the monetary policy proxy needs to be positively significant to the real loan rate.

Thus, the first strand of empirical literature reviewed in this section examines those levers that the scholars have found that reduce the effectiveness of monetary policy transmission via the bank lending channel. First, Baglioni (2007) showed that the banking structure (i.e., monopolistic vs oligopolistic), especially under the monopolistic scenario, impairs the effectiveness of monetary policy transmission through the bank lending channel for the dominant the opposite is witnessed for the small banks. This result is further supported by the empirical study conducted by Jimborean (2009), who found that in the case of CEE countries, small banks in those sectors do adhere to the transmission of monetary policy via the lending channel. Alternatively, Baglioni (2007) also articulated that in the case of the oligopolistic scenario, banks become insulated from the transmission of monetary policy via this channel. Sturm & Williams (2004) provided empirical results indirectly explaining the causality for banks operating in an oligopolistic banking sector to negate the effects of its monetary policy transmission is somehow linked to foreign bank ownership in that economy. Thus, this scenario's rationale is that oligopolistic banking systems, unlike other structures, provide the foreign strategic investors with a controlling banking system in the host.

Further, the empirical studies (e.g., Wu et al., 2011; Joen & Wu, 2014; Lee & Bowdler, 2019) examining the impact of foreign bank ownership on the effect of emerging Asian countries' monetary policy transmission via the bank lending channel revealed that the presence of foreign banks in the host does negate the effectiveness of this port. Moreover, the empirical evidence from Buch et al., (2019) provided insights that are useful when investigating the effect of monetary policy given that its banking sector is globalised by examining the impact of international transmission of monetary policy[11], and they show that the frictions that banks face matter; in particular, foreign currency funding and hedging considerations can be a crucial source of heterogeneity. Second, different from the literature discussion above, Hou & Wang (2013), using the Chinese banking sector as a system of interest in their research, found that banks with prominent financial positions in the Chinese banking system negate monetary policy transmission via the bank lending channel. Thus, implying that these financial institutions have a better chance to attain capital despite their local monetarists constricting their money supply. In summary, the effect of monetary policy transmission via the bank lending port in the economy is adversely impacted by banks' market capitalisation and financial position, including foreign bank ownership in the context of host EMEs' banking systems.

Another strand of literature on the effect of monetary policy transmission via the bank lending port, although its basis might be different to the empirical studies outlined in the first strand state scenario under which this channel is an effective measure to show transmission of monetary policy from a practical perspective. The case of Indian and Thailand banking systems showed that bank-based economies tend to adhere to the monetary policy transmission through the bank lending channel instead of market-based economies. However, in the case of India, it was further found that this adherence weakens the exchange rate channel of this policy transmission (i.e., referred to as the economic output channel in this research) refer to Aleem (2010) and Mahathanaseth & Tauer (2019). This finding implies that emerging markets with bank-based financial

11 The importance of investigating the international transmission of monetary policy is that with emerging markets' banking systems applying deregulatory reforms globalised their lending which insulated them from effects of local monetary policy and therefore, understanding heterogeneity in banks' response to the monetary policy shocks via the bank lending channel is instrumental because it reveals frictions faced by banks (Buch et al., 2019).

systems, their economic participants rely on primarily lending activities from banks instead of non-bank financing instruments that agree with claims made by Gwatidzo & Ojah (2014) when examining the funding of firms in Africa. This behaviour explains why monetary policy transmission via the bank lending channel in India and Thailand's banking systems is adequate.

On the other hand, using the South Africa commercial banking system, Matemilola et al., (2015) found the opposite since the customer reaction hypothesis holds suggesting that these banks were able to increase lending risks despite efforts from their local monetarists reducing money supply (i.e., imply policy ineffectiveness). Given that the present study investigates the impact of monetary policy transmission via the bank lending channel when foreign bank ownership is considered in the case of BRICS, the conflicting results between Aleem (2010) - India and Matemilola et al., (2015) – South Africa gave that these two countries are part of the sample studied in the present research raise the following question. What is the bloc net effect of monetary policy transmission via the bank lending channel especially given that as a consolidated group, empirical literature (Zhang et al., 2013) found that the BRICS bloc has undergone developments in the past few decades and, as a result, has become a pivotal contributor to the global economy?

Monetary policy transmission through the lending channel is well-established in the economics and finance literature; however, Khan et al., (2016) argued that ignoring the market structure-monetary policy transmission such as the inclusion of bank competition misspecified the problem and may limit understanding of the complexity of monetary policy transmission in the real economy, for example, through loan supply market. Gunji et al., (2009), when using disaggregated data and Fungáčová et al., (2014) focusing on the euro area, and Olivero et al., (2011), focusing on the Asian and Latin American economies, found that competition in the banking industry dampens monetary policy effects on bank lending. On the contrary, Leroy (2014), in the case of Eurozone banks, investigated the nexus between competition and the bank lending channel, and the research revealed that increased competition would enhance the effectiveness of the

ECB monetary policy. Thus, the reason for the difference concerning the impact of bank competition on the effect of monetary policy transmission via the lending channel between Fungáčová et al., (2014) and Leroy (2014) given that their sampled countries are more or less the same is because one of the incorporate lags into the modelling process while the other does not. This statement implies that the availability of banks' historical market power parameters (e.g., capitalisation, size & liquidity) flattens imperfect competition among banks, leading to risk-averse; hence, an increase in competition improves the transmission of monetary policy in the lending channel. Güntner (2011) added that bank-based competition might impede monetary policy transmission via the lending channel because such competition pressures influence the pass-through of changes in the policy rate.

In the case of BRICS, using Zhang et al., (2013), it could be argued that BRICS banks have high market power in the global banking sector, which in turn, when using Leroy (2014), is arguable that the competition among BRICS banks increases risk-averse behaviour at idiosyncratic bank-level. Thus, the risk-aversion behaviour of BRICS might infer that BRICS banks' sensitivity to risk approach improves monetary policy transmission via the lending channel. However, given that the present study focuses on the impact of bank competition due to foreign bank ownership on the effectiveness of the BRICS monetary policy transmission in limiting lending risk and as well with empirical literature (e.g., Kraft, 2004; Schmidt, 2008) failing to reach consensus on the impact of competition on host financial stability and since this study includes foreign bank ownership as part of its modelling factor. Therefore, it is pertinent to investigate the impact of foreign bank ownership and bank competition on the effect of BRICS monetary policy transmission via the bank lending channel given its importance to the global economy and also this bloc was counterintuitive to expectation during the 2008 global financial crisis (see, Zhang et al., 2013). This strand of literature is thinly researched in literature, thus in the case of the ASEAN bloc[12], Khan et al., (2016) found that banking competition in the ASEAN bloc negates the effect of monetary policy flow via its loan supply market,

12 In Khan et al., (2016), the ASEAN countries included are namely Malaysia, Indonesia, Singapore, Philippines & Thailand.

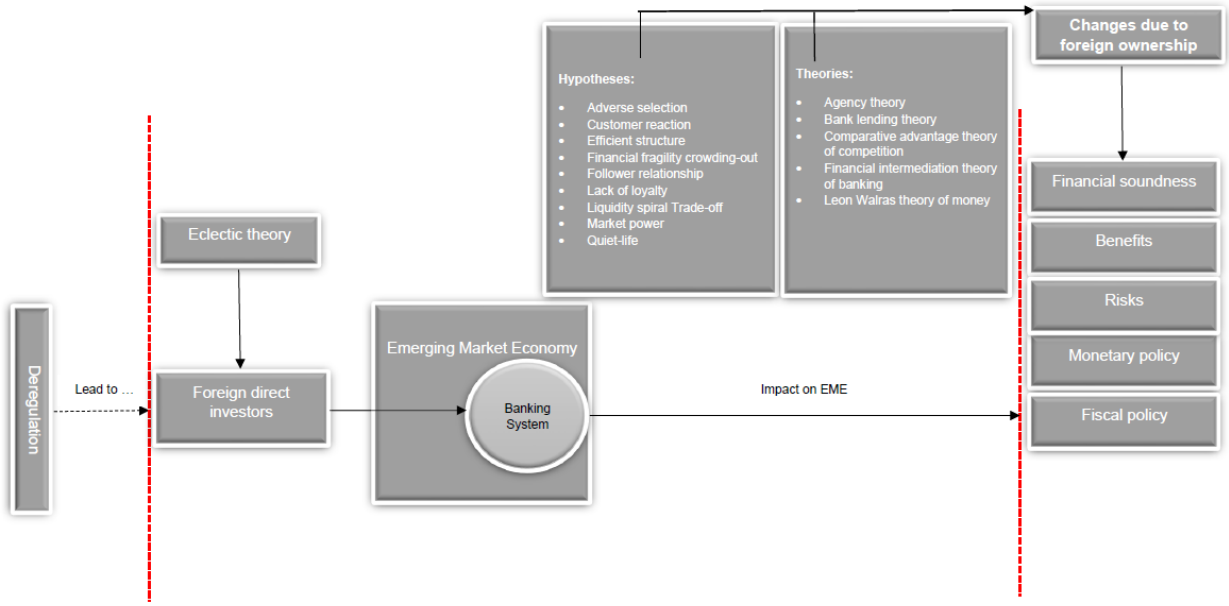
which emphasises the need of policy measures that can counter the adverse effects of changes in banking competition. Thus, when using the ratio of assets of foreign banks retrieved from Chen et al., (2017)'s Appendix B, BRICS (no results for Russia & South Africa in Chen et al., (2017)) bloc and ASEAN bloc have similar foreignness profile in their banking systems with assets owned by foreign banks in BRICS on average amount to 9.8952% while it is 10.9914%. Therefore, the expectation is that foreign bank ownership and bank competition negate the effect of BRICS monetary policy transmission through the bank lending channel as articulated by Khan et al., (2016), but this inference remains untested.

Finally, this present research examines the impact of all economic factors stated for the monetary policy discussion above on the effectiveness of fiscal policy transmission via bank lending channel because, in BRICS, changes in monetary policy shocks affect fiscal policy and the visa-versa scenario holds, see Jawadi et al., (2016). Another reason for assessing this aspect is because, as per surveyed literature, few studies is investigating this aspect, especially in the context of BRICS. Also, post-deregulation of emerging markets, empirical literature (e.g., Gavin et al., 1996; Kaminsky et al., 2005; Talvi & Végh, 2005; Kraay & Servén, 2008; Boiciuc, 2015) found that the fiscal policy has become procyclical, which may explain for the weakness observed in the past global-related financial crises, for example, the 1998 Asian and 2008 global financial crises. However, because of deregulation over the last three decades, it remains unclear whether the experienced challenges from the pro-cyclical fiscal policy in EMEs are due to foreign bank ownership. There is a need to understand the implications of foreign bank ownership on fiscal policy transmission because post-2008 global financial crisis, most emerging market blocs operating in the cross-border capital markets suffered but with the BRIC bloc being the exception (see Zhang et al., 2013). Therefore, such inquiries will enable scholars, policymakers and other stakeholders operating in the emerging market bloc to understand whether did their fiscal policy played an essential role in insulating the BRICS banking systems from the negative consequences of the 2008 global financial crisis. Therefore, to resolve these gaps, the current study investigates the impact of foreign bank ownership on BRICS' fiscal policy transmission via the bank lending channel.

3.9 Theoretical Framework

From the theories discussed in Chapter 2 and the empirical literature review in the current chapter, the theoretical research framework was developed and presented in Figure 3.1 below:

Figure 3. 1 – Foreign bank ownership entry's theoretical framework (host-specific argument)



Gormley (2010) and Havrylchyk & Jurzyk (2011) state that post-1990, the emerging markets, adopted deregulatory reforms. Besides, their banking systems mainly were affected by this change. Dunning (1988) used eclectic theory to show that factors that influence foreign direct investors to enter emerging markets' banking systems include the location of economic activity in those emerging markets, existing ownership, and institutional structures.

Various theories explain the impact of foreign ownership in emerging markets. For example, Jensen & Meckling (1976), including recent literature (e.g., Lassoued et al., 2016; Chen et al., 2017), find that the presence of foreign-controlled banks in emerging markets aggravated the agency conflicts between banks, shareholders, the regulators, and banks' management, allowing risks to accumulate in banks' balance sheets without

being adequately controlled. The consequence of uncontrollable risks in emerging markets' banking systems has contributed to these economies' frequent banking crises.

Other studies have explained the consequence of foreign banks' entry in various hypotheses, including adverse selection, efficiency structure, follower relationship, and liquidity spiral hypotheses. The general sentiment from these hypotheses confirms that foreign banks' parent entity of an emerging market bank complicates the modelling of risk, leading to specific financial threats concealed from regulators and shareholders.

The entry of foreign banks impacts emerging markets in various ways. For instance, the banking system's financial soundness tends to change for better post entry (e.g., Havrylchyk & Jurzyk, 2011). Also, there may be benefits derived from a rise in banking competition and increased financial intermediation scope (e.g., Albertazzi & Boterro, 2014), although other research found a contrary effect (Schmidt, 2008).

On the other hand, the bank lending theory from Bernanke & Blinders (1988) conceptualised the economic idea that monetary policy shocks would increase the real loan rate in banking systems fostering banks to lend less, thus reducing the lending risk exposures in the economy. Altunbaş et al., (2002) and Nguyen & Boateng (2013) argued that in economies where the premises of the bank lending theory holds, the expected outcome is a reduction in banking crisis occurrences. However, given that the number of witnessed emerging market crises increased post foreign bank entry into these economies, namely the Central Eastern European crisis (1990 – 1994), Mexican crisis (1994 – 1995), Asian crisis (1997 – 1999), Russian Ruble crisis (1998) and the subprime crisis (2007 – 2008) may suggest that foreign bank ownership within EMEs increase their policy risks because its banks became insulated from such shocks. Furthermore, this previous statement is confirmed by the works of Joen & Wu (2014) and Lee & Bowdler (2019). They found that in the case of the Asian banking systems, among others, the presence of foreign banks deteriorates the ability of EMEs' monetary policy in controlling lending risks since these financial institutions can negate the policy shocks by interacting with cross-border capital markets via the parent channel. Also, Olivero et al., (2011) and Khan et al., (2016) shows that an increase in bank competition similar to foreign bank

ownership does weaken the monetary policy transmission through the bank lending channel. Moreover, given that the presence of foreign-controlled banks in emerging markets is responsible for increasing bank competition (see Kraft, 2004; Gunji et al., 2009; Amidu & Wolfe, 2013), it is safe to argue that these foreign entrants led to the weakening of monetary policy transmission through the bank lending port. The implication of weakened monetary policy transmission through the bank lending channel may be due to the CEE bloc's banking systems' inability to curb risks, as shown by Cull & Pería (2013).

Chapter summary

This chapter analysed the empirical literature related to foreign bank ownership, including the impact on risks and returns and fiscal- and- monetary-policy transmissions. The chapter presented the research framework based on the theories/hypotheses and empirical literature. The subsequent chapter presents the research methodology.

Chapter IV – Research methodology

4.1 Introduction

The current chapter presents the methodology adopted to achieve the research objectives outlined in Chapter 1. This chapter is arranged as follows: Section 4.2 offers research data and sources. Section 4.3 outlines the research design to determine the impact of foreign ownership on benefits, risk, monetary and fiscal policy implications, and the quality of the balance sheet of BRICS banks. The chapter summary concludes this chapter.

4.2 Data and data sources

The current study examined the overall impact of foreign bank entry on BRICS, including the foreign bank entry implications for monetary policy and macroeconomic variables. The research sample constituted commercial banks operating in BRICS from 1997 to 2018. To determine those BRICS banks classified as foreign-owned financial institutions, trailed the following steps: First, check the overview of banks operating in BRICS by using the Thompson Reuters' DataStream plug-in during the designated sample period. Second, remove the duplicates to establish BRICS banks. Third, extract the top-twenty investors using the Bloomberg application because, in the extracted data, the top-twenty investors compromised 70 per cent of the total shareholders' equity issued by the bank. The collated top-twenty investors' information constituted the shareholder names, number of shares, and shareholders' country of origin. Subsequently, the top-twenty investors collected for each bank is aggregated using the following rules; if the country of origin differs from the BRICS member countries is classified as 'foreign-owned otherwise flagged as 'domestic'. Each bank in the sample has two groups compromising foreign-owned shares versus 'domestic' shares. The number of foreign-owned shares per bank is divided by the sum of foreign-owned and domestic shares per bank, giving the degree of a foreign-owned bank.

Similarly, it is done for the domestic shares per bank to determine the domestically owned proportion for each bank. Then a bank is classified as a foreign-owned BRICS

bank if and only if the degree of foreign ownership decimal is or greater than 0.50 or otherwise is classified as a domestic BRICS bank. This approach defined above was preferred to the methodology used by Chen et al., (2017) and Wu et al., (2017) of using the SDC Platinum application to flag foreign-owned banks because of a dearth of data-related resources available at the time when the study was done.

The commercial banks' balance sheet data was extracted from the DataStream. The initial bank population consisted of 94 financial institutions. All other types of financial institutions, including the Islamic, cooperatives, microfinance, savings, union banks, and other financial firms, were not included in the sample because of their peculiar ownership structure and business philosophy (e.g., Das & Ghosh, 2009). The final piece had a sample of commercial banks only. The final sample consisted of 90 commercial banks[13]. The bank type was restricted to commercial banks because the deregulatory bank reforms of the 1990s affected them primarily compared to other kinds of banks. Additional information about the 90 commercial banks, including total assets, total liability and shareholders' equity, ROA, the provision on loan losses, total loans, tier 1, and tier 2 regulatory capital, among others extracted from DataStream. Economic and institutional quality factors were extracted from DataStream. These data included GDP growth, M1 and M2-money supply, unemployment rate, inflation rate, bank concentration index (HHI), household-and-government expenditures, imports, exports, GDP at market prices, and treasury bill yield rate. The institutional quality variables included political stability, government effectiveness, regulatory quality, and law rule obtained from the economical option in DataStream.

13 The final sample consisted of 90 commercial banks where 71 of these financial institutions are domestic and the remaining classified as foreign-owned. The bulk of these BRICS banks was from India (i.e., 31 domestic and four foreign-owned banks) and China (i.e., 26 domestic and six foreign-owned banks) when averaging the number of financial institutions across the designated sample period. At the same time, the least was from Brazil (i.e., four domestic banks and one foreign-owned bank) and South Africa (i.e., two local banks and three foreign-owned banks). The remainder of the banks were from the Russian banking system.

4.3 Research design

4.3.1 Assessing the financial soundness of BRICS banks due to foreign bank ownership when using the CAMELS rating methodology

The first part of the analysis assessed the financial soundness of BRICS banks using the CAMELS rating model design. CAMELS analysis enables the computation of structural, capital, and performance differential between listed foreign-controlled and domestic BRICS banks. This analysis assists in understanding and identification of differentiating factors between ownership types. Table 4.1 below presents the elements used in the CAMELS rating model design.

Table 4.1 – The CAMELS factors and their measurement description

CAMEL Categories	Acr.	Ratios	Formula/measurements	Source
Capital adequacy	CAP	Level of capital adequacy	Gross equity/gross loans	Keffala (2020)
	RCL	Regulatory capital level	(Tier-1 + Tier-2)/gross assets	Own
Asset quality	NPL	Non-performing loans	Loan losses provision/gross loans	Keffala (2020)
Managerial efficiency	NIM	Net interest margin	Net interest/total assets	Own
	CE	Cost Efficiency	cost/gross income	Keffala (2020)
Earnings	LG	Loan growth	$(Loan_{t-1} – Loan_t)/Loan_t$, t is time	Crystal et al., (2002)
	ROE	Return on equity	Gross income/Gross Equity	Keffala (2020)
Liquidity	L	Liquidity	Liquid assets/gross assets	Keffala (2020)
	LR	Liquidity risk	Short-term assets/gross deposits	Sun et al. (2017)
Sensitivity	SMR	Sensitivity to market risk	Non-interest income/gross income	Keffala (2020)

Notes: Acr. Stands for the acronym. In the case of this current study, short-term assets are proxied by gross loans minus loan losses provisions.

The CAMELS rating model design is conducted in three steps. First, we computed the arithmetic averages of CAMELS factors of foreign and local banks over time and overall. Thus, to test whether there is a significant difference between the two categories (domestic and foreign) of banks, the mean-difference t-test hypothesis test was used by

first assuming the equality of variance hypothesis. Second, if the null hypothesis for the equality of variance hypothesis is rejected, then the variance between the two groups is unequal, and therefore Satterthwaite is used to test the significance of the mean difference between the two groups. However, if the null hypothesis for equality of variance is not rejected, then the pooled method tests the significance of the mean difference between the two groups.

The second part of the design assesses foreign ownership's impact on BRICS' banking systems regarding benefits, risk, and fiscal and monetary policy implications.

4.3.2 Benefits derived from foreign bank ownership in BRICS bloc using the direct-effect approach

Extant literature (e.g., Claessens et al., 2001) investigated foreign ownership's impact on bank performance in emerging markets. Other studies (e.g., Kraft, 2004; Giannetti & Ongena, 2012; Lee et al., 2016; Chen & Zhu, 2019) examined the impact of foreign ownership on bank competition. The current study tests foreign ownership's impact on the bank performance (measured by ROA, ROE, and NIM) and competition (measured by Lerner index). The omitted variables are also tested using t-test statistics as Clogg et al., (1995). Additional tests fit different bank ownership types' of models for various bank performance and competition indicators to establish differentials that previous studies might not have picked up. Furthermore, the current research examines the impact of foreign ownership on credit access to show whether foreign ownership increases or decreases the companies' access to credit.

4.3.2.1 Tests the impact of foreign bank ownership on BRICS banks' performance indicators

The impact of foreign ownership on the profitability/efficiency of both local and foreign-owned banks' profitability/efficiency in the BRICS bloc is investigated in two phases. In the first phase of the analysis, the omitted variables were excluded, while in the second phase, omitted variables were included. This process of including and excluding omitted variables was to check for biasness in the regression. Therefore, the regression with the least biasness is used for further analysis. The two-stage least square

(2SLS) random-effect panel model is used to test foreign ownership's impact on performance when omitted variables are included and when they are excluded. Net Interest Margin (NIM), Return on Assets (ROA), and Return on Equity (ROE) are used as dependent variables in line with Claessens et al., (2001); Claessens & Van Horen (2014); Shaban & James (2018). Equation 1 below is a general form equation excluding omitted variables:

$$Perfor_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (1)}$$

Where:

$Perfor_{jt}$ is the response variable in equation (1), which denotes efficiency and performance measures for the i^{th} bank ownership type (i.e., domestic & foreign) in the j^{th} BRICS country at time t. Unknowns in equation (1) are α_0, β_1, γ_k (where k is the variable index) and η_t denotes the random-effect factor while ε_{jt} is the error term $ForOwn_{jt}^*$ presents the estimated ratio of foreign banks over total banks. $InstiQua_{k,jt}$ represents the institutional quality factors including government effectiveness, political stability, regulatory quality & the rule of law indices in the j^{th} BRICS country at time t.

Equation (1) aims to establish a relationship between foreign ownership and bank performance or efficiency measures. However, similar previous studies (e.g., Lassoued et al., 2016) observed an endogeneity problem where the dependent variable was significantly related to the foreign bank ownership factor, causing the model's error to be associated with the variable of interest. The estimated foreign ownership vector[14]

14 Through using correlation matrix – we find that liquidity, income & funding diversification ratios as defined in the work of Lassoued et al. (2016), Chen et al. (2017) and Wu et al. (2017); GDP growth and unemployment rate as defined in the works of Claessens et al. (2001) are high correlated to foreign ownership. Also, fiscal policy (government budget deficits over GDP) and monetary policy's interest rate measures found highly correlated to foreign ownership. Therefore, these factors are used to estimate foreign ownership which is as follows:

$$\mathrm{ForOwn}_{jt} = a_{jt} + \gamma_{1ijt}(\mathrm{BankChar}_{ijt}) + \gamma_{2jt}(\mathrm{MacroChar}_{jt}) + \gamma_{3jt}(\mathrm{FiscalPolicy}_{jt}) + \gamma_{4jt}(\mathrm{MonPolicy}_{jt}) + e_{jt} \quad \textbf{Eq (1a)}$$

Where the dependent factor in Eq (1a) is the raw foreign ownership ratio (i.e., number of foreign banks over total banks) meanwhile a_{jt} and e_{jt} are intercept and error term. On the left-hand side (LHS) of Eq (1a), the bank characteristics denoted by $\mathrm{BankChar}_{ijt}$ for the i^{th} bank ownership type in the j^{th} BRICS country at time t are liquidity, funding & income diversification ratios and macroeconomic measures for j^{th} BRICS country at time t are GDP growth and unemployment rates. Other independent factors in Eq (1a) are fiscal policy measure and LN monetary policy measures such as deposit rate, inflation and lending rate.

(Denoted by $ForOwn_{jt}$* for jth BRICS country at time t) was used instead of the raw foreign ownership data to limit endogeneity.

The institutional quality factors (e.g., government effectiveness, political stability, regulatory quality, and the rule of law indices) were used as model controls. The Wald test statistic assesses the models' goodness of fit.

Thus, to detect any possible biasness issue concerning the coefficient of foreign ownership computed in the regression model, the omitted variables and their interaction with foreign ownership are included in Equation (2) below. These omitted variables are capitalization (i.e., total debt over shareholders' equity), leverage ratio (i.e., total debt over total assets), and change in banking regulation (i.e., Basel III dummy factor). These variables are expected to influence banks' financial positions (see Chitan, 2012; Moshirian, 2012; Tan, 2017). The fitted model is stated as follows:

$$Perfor_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (2)}$$

Where:

$OmiVaR_{jt}$ in equation (2) denotes the omitted bank-based characteristics, namely leverage and capitalisation for the j^{th} BRICS country at time t. The leverage ratio is measured as total debt over total assets, and capitalization is computed as total debt over shareholders' equity. On the other hand, the Basel III dummy takes 0 when Basel III was not enforced and 1. These factors are included in equation (2) as omitted variables and their interaction with foreign ownership. Furthermore, equation (2) considers the interaction between the bank-based characteristic variables and foreign ownership for completeness.

The t-statistic is used to test the biasness in the coefficient of foreign ownership (of ($ForOwn_{jt}$*) between equation (1) and Equation (2) using equation 2 (a) below as in Clogg et al., (1995):

$$t = \frac{\beta_1^* - \beta_1}{\sqrt{\left|SE(\beta_1^*)^2 - SE(\beta_1)^2\right|}} \sim t_{n-3} \quad \textbf{Eq (2a)}$$

Where:

The numerator of the t-statistic is the difference between the estimated coefficients of the foreign ownership from equations (1) and (2). At the same time, the denominator is the squared difference of these estimated coefficients' standard error.

Rule: If t-statistic has a p-value more significant than 10 per cent, the inclusion of omitted variables in the regression increases misspecification by amplifying biasness within the equation; hence equation (1) is selected in this case. On the other hand, if the p-value of the t-statistic is equal to or lesser than 10 per cent implies that excluding the omitted variables increase misspecification through the biasness channel; hence in this scenario, equation (2) becomes selected. Furthermore, given that the research design used is a panel-based regression, the n is 100 or less due to missing data in the modellable information.

Table 4.2 - Variable definitions[15]

Variable name	Variable definition	Variable measurement	Previous study
Government effectiveness	An index captures the perceptions of the quality of policy formulation and implementation and the credibility of the government's commitment to such policies.	0 to 1 scale, with one indicating high and 0 – low.	Lassoued et al., (2016)
Political Stability	An index measures the government's likelihood of destabilising or overthrowing by unconstitutional or violent means, including politically motivated violence and terrorism.	0 to 1 scale, with one indicating high and 0 – low.	Kaufmann et al., (2009)
Regulatory quality	An index measures the perceptions of the ability of the government to formulate and implement sound policies and regulations that allow for and promote private sector development	0 to 1 scale, with one indicating high and 0 – low.	Lassoued et al., (2016)
The rule of law	The rule of law refers to the public power exercised for private gain, including both petty and grand forms of corruption, as well as the capture of the state by elites and private interest	0 to 1 scale, with one indicating high and 0 – low.	Kaufmann et al., (2009)

15 The institutional quality factors used in the current research are imported from the DataStream plug-in in Reuters Thompson; the imported indices are standardised with zero indicating inefficiency and one representing efficiency.

Table 4.3 – Instrument variables' definitions

Variable name	Variable definition	Variable measurement	Previous study
Panel A – Bank characteristic factors			
Income diversification ratio	The income diversification ratio measures the various banks' income streams.	The square sum of the ratio between the square of interest income over the sum of interest income and non-interest income plus the square of non-interest income over the sum of interest income and non-interest income.	Lassoued et al., (2016)
Funding diversification ratio	The funding diversification ratio measures the various banks' funding streams.	Non-deposit short-term debt over the sum of deposits and short-term debt.	Wu et al., (2017)
Liquidity ratio	The liquidity ratio measures the extent of liquid assets in banks' financial positions.	Liquid assets (cash-and-cash equivalent plus short-term debt) over total assets.	Chen et al., (2017)
Panel B – Country-specific factors			
GDP growth rate	Measure the growth in the national output of an economy.	The WDI database publishes the GDP growth rate under the economical option of Thompson Reuters' DataStream.	Claessens et al., (2001)
Unemployment rate	The number of unemployed citizens at working age	Number of unemployed citizens over total citizens.	Current study
Panel C – Dependent factors			
NIM	NIM evaluates the banking system's revenue from their maturity transformation between deposits and issuing credit, which indicates a competitive advantage.	Difference between interest income and interest expense over total assets	Claessens et al., (2001); Shaban & James (2018)

ROA	ROA measures the management of a bank or banking system's ability to generate increasing income of performing assets on the balance sheet that, in turn, proxy managerial efficiency.	Profit after tax over total assets	Claessens et al., (2001); Shaban & James (2018)
ROE	ROE measures the ability in which the bank or banking system grows the investments placed by shareholders over time, which by design, assess possible and future growth prospects.	Net interest income over shareholders' equity	

4.3.2.2 Investigates the impact of foreign bank ownership on BRICS banks' Lerner's index, including its influences on the HHI index

Examining the impact of foreign ownership on the bank competition in BRICS countries is assessed by regressing the Lerner's index[16] (for j^{th} BRICS country at time t) as a dependent factor and the degree of foreign ownership and the institutional quality factors for the j^{th} BRICS country at time t are independent factors. The fitted model is stated as follows:

$$Comp_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (3)}$$

Where:

The estimated foreign ownership for the j^{th} BRICS country at time t as an explanatory variable in equation (3) is determined using equation (1a). While α_0, η_t, and ε_{jt} are the intercept, random-effect, and the error term in the equation. The included institutional factors as independent variables are political stability, government effectiveness, regulatory quality, and the rule of law for the jth BRICS country at time t.

$$Comp_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (4)}$$

Where:

$OmiVaR_{jt}$ in equation (4) denotes the banking-sector-specific characteristics, namely leverage and capitalization for the j^{th} BRICS country at time t. Furthermore, equation (4) also includes the interaction between the banking-sector-specific characteristic variables and foreign ownership for completeness. The leverage ratio is measured as total debt over total assets, and capitalization is computed as total debt over shareholders' equity. On the other hand, the Basel III dummy takes 0

16 The Lerner index is measured as:

$$\text{LernerIndex}_{kt} = \frac{P_{kt} - MC_{kt}}{P_{kt}}$$

Where k denotes the bank and t outlines time. Almarzoqi et al. (2015) defines P_{kt} as price of banks for the kth bank at time t and from a balance sheet perspective, this factor is computed as the sum of interest income and non-interest income over total earning assets (i.e. total assets minus provision). While MC_{kt} is the marginal cost for the kth bank at time t which is measured by sum of interest expense and non-interest expense over total assets. Thus, $LernerIndex_{kt}$ defined as the Lerner's index which reflects the banks' ability to set prices over marginal cost for the kth bank at time t. Thus, a Lerner's index of zero implies a perfect competition meanwhile one indicates a monopoly behaviour.

when Basel III was not enforced and 1. These factors are included in equation (4) as omitted variables and their interaction with foreign ownership.

The t-statistic presented in eq(2a) was also used to test regression biasness.

The second test on competition's impact used Herfindahl-Hirschman Index (HHI) to measure competition (dependent variable). The HHI index of 1 indicates a monopoly, while 0 indicates perfect competition. The models, including and excluding omitted variables, are presented below:

$$HHI_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (5)}$$

and

$$HHI_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (6)}$$

Where:

HHI (Herfindahl-Hirschman Index), which measures aggregated competition within the j^{th} BRICS country at time t in equations (5) and (6), is the dependent factor. The α_0, η_t, and ε_{jt} denote intercept, random-effect, and the error terms applied in both models. Independent factors in both models above are the estimated foreign ownership vector (variable of interest) and institutional quality factors (controls) for j^{th} BRICS country at time t. In equation (6), the omitted variables (i.e., leverage, capitalisation, and Basel III dummy factor) and their interaction with foreign ownership are included.

4.3.2.2 Investigates the impact of foreign bank ownership on BRICS banks' lending capacity

This additional analysis investigates whether foreign ownership affects the loan issuing ability of banks in BRICS countries. The following model is fitted when excluding omitted variables:

$$CreInt_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (7)}$$

Where:

The dependent variable is the credit intermediation measure, determined as total loans over total assets of the credit providing ability of banks are computed as total loans over total assets for the

ith bank ownership type in the j^{th} BRICS country at time t. At the same time, independent factors are the estimated foreign ownership measured using eq (2a), while control factors are the institutional quality factors for the jth BRICS country at time t. Also, the α_0, η_t and ε_{jt} denote the intercept term, random-effect factor, and error term in eq (7).

$$CreInt_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (8)}$$

Where:

Omitted variables are the bank characteristics: leverage ratio (total debt over total assets) and capitalization (total debt over shareholders' equity) for the bank ownership type in the jth BRICS country at time t and the Basel III dummy factor at time t. Other independent factors are these omitted factors' interaction with foreign ownership while the intercept, random effect, and error term in eq (8) are denoted by α_0, η_t, and ε_{jt}, respectively.

The t-statistic presented in eq(2a) was used to test regression biasness in the coefficient ownership in equations (7) and (8).

4.3.3 Impact of foreign ownership on risk in BRICS

This analysis investigates the impact of foreign ownership on risk in BRICS. The study draws from Lassoued et al., (2016). However, institutional quality factors were used as control variables in the current study, while Lassoued et al., (2016) used bank-and-country-specific factors as controls. The variables that Lassoued et al., (2016) used as control would not be appropriate for BRICS because they are positively correlated to the variable of interest, foreign ownership and, therefore, creating a multicollinearity problem.

4.3.3.1 Assessing the impact of foreign ownership on idiosyncratic risks

Existing literature (e.g., Chen et al., 2017) found a negative relationship between foreign ownership and financial stability (i.e., the normalized z-score measures), implying that foreign-controlled banks increased risks in the host country more than locally owned banks did. Chen et al., (2017) modelled foreign ownership relationships with financial stability, where domestic banks were acquired, mainly foreign banks. In the current study, most domestic banks are acquired by institutional investors within the financial markets, including insurance, asset management firms, and private equity firms. Apart from

normalised Z-score, other idiosyncratic risk measures used as dependent variables that measure risk in the current study include nonperforming loans ratio (NPL) and standard deviation of ROA as in Lassoued et al., (2016). The current study, therefore, presents the following models, which by design also test the biasness through using the t-statistic as mentioned in eq (2a):

$$Risk_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (9)}$$

and

$$Risk_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (10)}$$

Where:

$Risk_{jt}$ denotes the idiosyncratic risk measures that are the normalised z-score, the standard deviation of ROA, and nonperforming loans for the j^{th} BRICS country at time t as dependent factors in models (9) and (10). At the same time, the institutional quality factors are government effectiveness, political stability, regulatory quality, and the rule of law for the j^{th} BRICS country at time t as controls in both equations (9) and (10). The omitted variables are bank characteristics, which are leverage ratio (debt over assets) and capitalisation (debt over shareholder's equity) for the ith bank ownership in the jth BRICS country at time t and Basel III as dummy factor for time t included as omitted variables and their interaction with foreign ownership incorporated in equation (10).

4.3.3.2 Assessing the impact of foreign ownership on systemic risks

This section examines the impact of foreign ownership on systemic risk (measured by delta-CoVaR[17]). The 2SLS random-effect panel model design is fitted where estimated

17Adrian and Brunnermeier (2016) defined systemic risk in banking as the risk contribution of a financial institution to the banking system or network by using the delta-CoVaR factor is measured as follows:

$$\Delta\mathrm{CoVaR}^{j|i} = \mathrm{COVaR}^{j|X^i=\mathrm{VaR}^i_{0.99}}_{0.99} - \mathrm{COVaR}^{j|X^i=\mathrm{VaR}^i_{0.50}}_{0.50}$$

Where: j, i and q denote banking system, bank, and quantile, respectively. Thus, to compute each component of the delta-CoVaR defined above is determined by using the quantile-based regression model. Thus, the used quantile-based regression model (that is, using a model similarly styled as in the work of Koenker (2004) is as follows:

$$\mathrm{ZScore}^{it}_q = \alpha_q + \beta^{1i,t-1}_q\left(\mathrm{Liquidity}^{i,t-1}_q\right) + \beta^{2i,t-1}_q\left(\mathrm{Leverage}^{i,t-1}_q\right) + \beta^{3i,t-1}_q\left(\mathrm{ROA}^{i,t-1}_q\right) + \beta^{4i,t-1}_q\left(\left[\frac{\mathrm{Tier1Capital}}{\mathrm{TotalAssets}}\right]^{i,t-1}_q\right) + \varepsilon^{it}_q.$$

foreign ownership data is determined by fitting the panel model outlined in eq (1a), part of the 2SLS random-effect panel model. Other independent factors used are institutional quality variables for the j^{th} BRICS country at time t. The primary and omitted variables models and their interaction terms are included in eq (12). The t-statistic, as defined in eq (2a), is used to test the significance of the unbiased impact of foreign ownership on systemic risk.

$$CoVaR_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (11)}$$

and

$$CoVaR_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (12)}$$

Where:

Models (11) and (12) – α_0, η_t, and ε_{jt} denote the intercept term, random-effect factor, and the error terms but for j^{th} BRICS country in time t.

4.3.4 Additional test – Impact of foreign ownership on BRICS banks' regulatory parameters

This additional test investigates the impact of foreign ownership on bank regulation (measured by tier I and tier II capital scaled by total assets) in the BRICS bloc by fitting the following model:

$$Reg_{jt} = \alpha_0 + \beta_1(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (13)}$$

and

The equation described above is computed for the 50 percentile and the 99 percentiles. Subsequently, the estimated unknowns for the percentile of interest and then plugged into the data to get the arrays of CoVaR parameter for the designated percentiles. The institutional-CoVaR computed is then aggregated to country-level data using the year and country fields and used those parameters to consolidate the data to that level.

$$Reg_{jt} = \alpha_0^* + \beta_1^*(ForOwn_{jt}^*) + \gamma_k(InstiQua_{k,jt}) + \theta_{k,jt}(OmiVaR_{jt}) + \phi_{k,jt}(OmiVaR_{jt} \times ForOwn_{jt}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq. (14)}$$

Where:

Reg_{jt} is the dependent factor denoting the regulatory proxy in models (13) and (14) for the j^{th} BRICS country at time t. These regulatory proxies are computed as tier I capital over total assets and tier-II capital over total assets. Equation (13) model exclude omitted factors, and its independent factors are estimated foreign ownership and institutional quality factors. In contrast, equation (14) includes omitted variables: leverage ratio, capitalisation, and Basel III dummy factors with their interaction with foreign ownership.

4.3.5 Impact of foreign bank ownership on the domestic fiscal and monetary policy transmissions via bank lending channel

Like other emerging markets, as documented by Zhang et al., (2013), the BRICS banking system was not immune to significant structural changes and global integration. Empirical literature (Wu et al., 2011; Joen & Wu, 2014) demonstrated that in the Asian economies, these structural changes led domestic banks to become more consolidated due to economic pressures brought by the newly acquired host banks' foreign strategic investors. Moreover, the gained capital mobility due to their improved access to global capital markets caused reckless lending practises, which in the long run negated the local monetary policy transmission via the bank lending channel. Furthermore, it is imperative to investigate the impact of foreign bank ownership on its local policymakers' ability in regulating the risks emerging from their bank lending activities because such insights provide invaluable information to national policymakers to navigate themselves in the newly globalised financial work. The emerging Asian markets studied by Wu et al. (2011) and Joen & Wu (2014) are fundamentally different from the bloc of interest in this current study, which means we cannot leverage from these studies. Also, given that the general empirical literature's (e.g., Zhang et al., 2013) sentiment is aimed at understanding the BRICS banking system as a channel to curb global risks that come with the development of EMEs' financial markets.

Thus, to augment this gap, the current study examines the impact of foreign bank ownership on the domestic monetary policy transmission via the bank lending channel for

the BRICS bloc from 1997 to 2018. Broad money is defined as the currency in circulation, and close substitutes, such as bank deposits, where the natural logarithm function of broad money is used as a proxy of monetary policy in the current study and this research gap is modelled as follows:

$$Lending_{jt} = \beta_1(ForOwn_{jt}) + \beta_2(MP_{jt}) + \beta_3(ForOwn_{jt} \times MP_{jt}) + \beta_{4,(k)}(BankCon_{jt,(k)}) + \beta_{5,(m)}(CountryCon_{jt,(m)}) + \beta_{6,(n)}(BankSec_{jt,(n)}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq (15)}$$

Where: The indices j and t represent the BRICS member countries and time in years, respectively, while k, m and n are variable indices for the bank- and- country-specific control variables and banking sector factors. The response variable is $Lending_{jt}$ which denote a change in bank lending measured as the $LN(TotalLoan_{jt})$ for the j^{th} BRICS member countries at time t. The variables of interest are $ForOwn_{jt}$, MP_{jt} and ($ForOwn_{jt}$ x MP_{jt}), representing the degree of foreign ownership computed as the number of foreign banks over total banks, MP_{jt} is the monetary policy proxy measure as the growth in broad money and the interaction between foreign bank ownership and monetary policy for the j^{th} BRICS member country at time t. The three control groups are included in equation (1): bank- and country-specific control variables and the environmental factors of the banking sector. Thus, the vector of bank-specific control factors includes size ($LN(TotalAssets_{jt})$) and leverage ($totaldebt_{jt}$ over $totalassets_{jt}$) and ROA (i.e., profit after tax_{jt} over $totalassets_{jt}$. At the same time, country-specific control factors compromise GDP growth and unemployment rate for the j^{th} BRICS country at time t. The banking sector's environmental factors are proxied by regulatory capital and bank-systemic risk measured by the delta CoVaR methodology presented by Adrian and Brunnermeier (2016).

Another emerging interest in the empirical literature (e.g., Khan et al., 2016) studying the effectiveness of monetary policy transmission via the lending channel included bank competition. Given that Kraft (2004), among others in other strands in the banking theory, found that foreign bank ownership catalyses the bank competition, particularly in EMEs such as the BRICS bloc studied in this research. Although the work of Khan et al., (2016) focused on the ASEAN bloc, the present study aims to augment their work by testing whether incorporating foreign bank ownership and bank competition influence the monetary policy transmission via the bank lending channel and the following econometric model became used:

$$Lending_{jt} = \beta_1(ForOwn_{jt}) + \beta_2(MP_{jt}) + \beta_3(Comp_{jt}) + \beta_4(Crisis) + \beta_5(Comp_{jt} \times MP_{jt}) + \beta_6(Crisis \times MP_{jt}) + \beta_7(Comp_{jt} \times ForOwn_{jt} \times MP_{jt}) + \beta_8(Comp_{jt} \times ForOwn_{jt} \times MP_{jt} \times Crisis) + + \beta_{9,(k)}(BankCon_{jt,(k)}) + \beta_{10,(m)}(CountryCon_{jt,(m)}) + \beta_{11,(n)}(BankSec_{jt,(n)}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq (16)}$$

Where: $Comp_{jt}$ denotes that bank competition is measured by Lerner's index for the j^{th} BRICS country at time t. The $Comp_{jt}$ x $ForOwn_{jt}$ x MP_{jt} and $Comp_{jt}$ x $ForOwn_{jt}$ x MP_{jt} x Crisis are the three-ways- and four-way interactions that measure the impact of bank competition on monetary policy transmission when considering foreign bank ownership for non-crisis and crisis periods, respectively. At the same time, $Comp_{jt}$ x MP_{jt} and Crisis x MP_{jt} are the two-way interaction term denoting the impact of bank competition and crisis respectively on the monetary policy transmission. Last, the crisis dummy variable is one during the Asian and 2008 global financial crisis and otherwise is 0.

Other developments in the subject, which was conceptualised by Bird et al., (2019), began to evaluate the credit channel of fiscal policy; thus, the theoretical motive to investigate this channel is because recent changes in the fiscal policy shocks influenced firms' lending, lending capacity of firms' lenders and general firms' loan supply markets. Theoretically, this argument suggests that fiscal policy shocks impact firms' consumption which of late has attributed to the observed economic growth, especially in EMEs because empirical literature (e.g., Gormley, 2010) shows concerns with the reduction in lending to firms when foreign bank ownership is considered as a model parameter. Thus, to add to this argument, the current study examines foreign bank ownership's impact on the fiscal policy transmission via the bank lending channel over 1997 to 2018 for the BRICS bloc, and the model is as follows:

$$Lending_{jt} = \beta_1(FP_{jt}) + \beta_2(ForOwn_{jt} \text{ x } FP_{jt}) + \beta_3(ForOwn_{jt} \text{ x } FP_{jt} \text{ x Crisis}) + \beta_{4,(k)}(BankCon_{jt,(k)}) + \beta_{5,(m)}(CountryCon_{jt,(m)}) + \beta_{6,(n)}(BankSec_{jt,(n)}) + \eta_t + \varepsilon_{jt} \quad \textbf{Eq (17)}$$

Where: Equation (3) examine the impact of fiscal policy on bank lending in BRICS, thus, when including foreign bank ownership and crisis as a dummy variable where the dependent factor is the natural logarithm function of total loans for the j^{th} BRICS at time t. FP_{jt} is the proxy for fiscal policy measured using the PCA method to determine the fiscal income index and fiscal expense index because the used fiscal policy index in the current study is the difference between fiscal income and fiscal expense indices. Another variable of interest is the two-way interaction term between foreign bank ownership and the fiscal policy index denoted by the $ForOwn_{jt}$ x FP_{jt} in equation (3). At the same time, the other variable of interest is the three-way interaction term between foreign bank ownership, fiscal policy index and crisis dummy. These interaction terms gear to examine whether, during the crisis and non-crisis periods, foreign ownership in BRICS through the fiscal policy transmission regulates bank lending in any form. Similar to the monetary policy transmission model presented earlier. Equation (3) controls the bank, country and banking sector-specific variables defined previously. The η_t is the time-specific random variable to control endogeneity, and ε_{jt} is the error term.

The model assumption utilised in models 15 to 17 is that domestic policymakers (i.e., monetary & fiscal) are risk-averse, which mean the coefficients of the policy

instruments, in theory, are expected to be positively significant with a p-value equal or lesser than 10%.

The estimated fiscal policy proxy is done in two steps, with the initial stage calculating the fiscal- income- and- expense- indices using the classification field to decide which factor is used for which index calculation. At the same time, the second stage is mainly computing the fiscal policy index, which is the fiscal income index (only factors where classification = income) minus the fiscal expense index (only factors where classification = income). In addition, the fiscal policy proxy is computed using the factors outlined in Table 4.4 by employing the principal component analysis (PCA) method.

Table 4. 4 – Fiscal policy factors sourced from WorldBank database

Variable name	Classification	Computation
Expense indicator	Expense	Expense over GDP
Costs related to goods & services activities	Expense	Goods & services expense over government expense
Grant income	Income	Grants and other revenue over total government revenue
Government salaries	Expense	Compensation of employees over government expense
Interest income	Income	Interest paid to governments over their revenue
Interest expense	Expense	Interest paid by governments to its creditors over government expense
Other expense indicator	Expense	Other expense over government expense
Other expense indicator 2	Expense	Subsidies and other transfers over government expense
Other expense indicator 3	Expense	Net official development assistance (ODA) over government expense
Other tax income	Income	Other taxes over government revenue

Revenue	Income	Revenue, excluding grants over GDP
Tax export income	Income	Taxes on exports over tax revenue
Tax goods & services income	Income	Taxes on goods & services over government revenue
Tax income	Income	Tax revenue over GDP
Tax income proxy 2	Income	Taxes on income, profits, and capital gains over government income
Tax international trades' income	Income	Taxes on international trades over government income

These indices are computed as a product linear combination (i.e., product sum) between the chosen factors' component loadings and observed data extracted from the WorldBank database. In the indices' computation process under the PCA method, only those factors with an eigenvalue equal to or greater than one were included in the linear combination process. Further, this PCA method outputs a field outlining the per cent in which this factor explains the index (i.e., in this current study is called factor/component loading).

Chapter summary

The chapter describes how CAMELS analysis is used to assess banks' financial stability in BRICS when foreign banks are present. The subsequent analysis presented the econometric models employed to test foreign ownership's impact on benefits, risks, and policies (fiscal & monetary). The next chapter presents the results from CAMELS analysis.

Chapter V – The impact of foreign bank ownership on the soundness of BRICS' banks (Empirical results)

5.1 Introduction

This chapter presents the soundness of banks operating within BRICS when foreign banks are present. The study depicts the differential impact on both domestic and foreign banks. The chapter is organised as follows: Section 5.2 presents a descriptive analysis. Section 5.3 presents overall CAMELS analysis results, while Section 5.4 outlines the CAMELS analysis, considering the cyclical effect. Chapter summary concludes the chapter.

5.2 Univariate analysis

5.2.1 The change in the composition of bank overtime

Table 5.1 below presents the change in the mix of foreign and domestic banks in BRICS over time. The table reports the actual number of foreign banks in BRICS began to increase in 2006 from 1 to 4, with a maximum of 14% foreign banks in 2012. Overall, the BRICS bloc constitutes 85 commercial banks where 18 (21%) of these financial institutions throughout the sample were foreign-owned.

Table 5.1 – Mix of banks in BRICS bloc overtime

Year	Total number of banks	%	Number of domestic banks	Domestic banks as % of total banks	Number of foreign banks	Foreign banks as % of total banks
1997	4	100	3	75%	1	25%
2000	9	100	8	89%	1	11%
2003	24	100	23	96%	1	4%
2006	39	100	35	90%	4	10%
2009	60	100	52	87%	8	13%
2012	66	100	57	86%	9	14%
2015	71	100	61	86%	10	14%
2018	85	100	75	88%	10	12%
Overall	**85**	**100**	**67**	**79%**	**18**	**21%**

Figure 5.1 below presents the percentage change of foreign and domestic banks over time. The intention is to highlight the volatility of foreign ownership versus local ownership. In 1998, both foreign banks and local banks increased by 10.7%, but this increase was wiped out so that the percentage of foreign banks reduced drastically in 1999, possible due to the Asian crisis (1997-1998), which may have hit BRICS one-year later compared to East Asian countries (Mishkin, 1999). As noted previously, a similar pattern emerges when evaluating the change in foreign ownership in the BRICS post-global financial crisis (2007 – 2009). This delay of cross-border investors to sell their equities within foreign-controlled banks in BRICS may suggest that their market can provide comparable returns to those in developed economies much longer; hence divestment of such equity positions was delayed by 12 months.

Figure 5.1 – Percentage change of foreign and domestic banks from 1997 to 2018

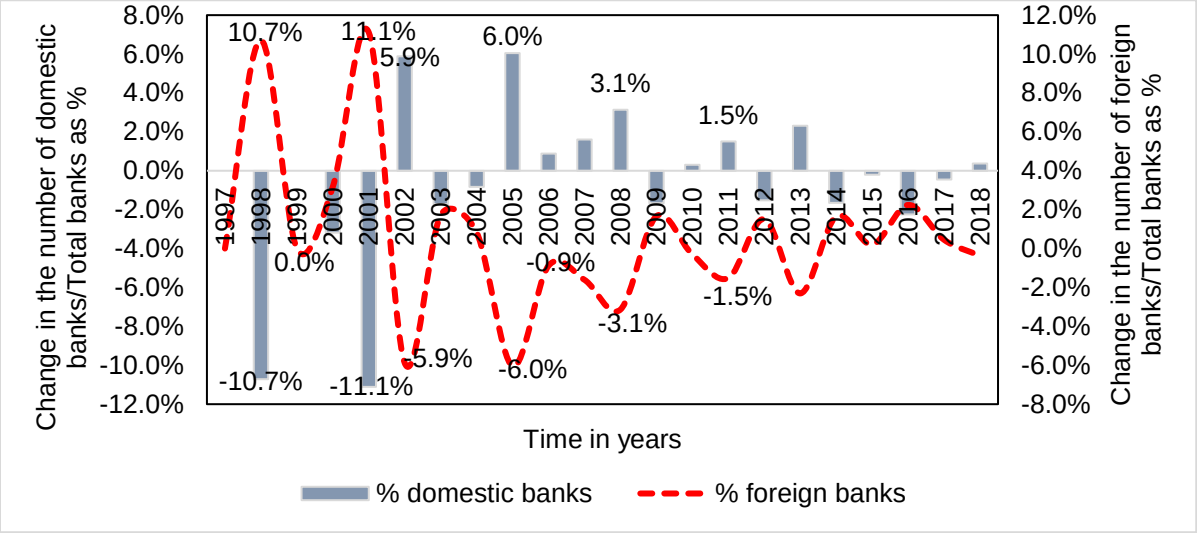


Figure 5.1 shows that there is divestment by cross border investors in foreign banks whenever there is an economic crisis. For example, the divestment in 2013 could have been due to European countries such as Greece and Cyprus experiencing financial market difficulties due to the debt crises, which may have spilt over to BRICS. Furthermore, in 2016, the percentage change of foreign-owned banks showed a decreasing trend until 2018, indicating that the depressed global economic outlook affected the number of foreign-based investors purchasing an equity stake in BRICS

banks. The domestic ownership percentage change over the same period remained less volatile than the foreign ownership percentage change.

In addition, concerning Table 5.1, the current study has a relatively smaller sample of banks because Bloomberg lists only publicly-traded banks. The reason for including only publicly listed banks was that the previous literature (e.g., Umar et al., 2018) indicates that a large percentage of banks' assets are in the hands of listed banks. The sample of banks in this study is fundamentally different from other empirical studies (e.g., Umar et al., 2018) in BRICS because their research objective was slightly different from the current study. They assessed the relationship between regulatory capital and liquidity creation and needed to use all banks. In this study, foreign banks indicator that was only available in Bloomberg and therefore the banks included in the sample were those that Bloomberg considered, which excluded some banks. Thus, as per Umar et al., (2018), Brazil has 23 banks, China has 27 banks, India has 61 banks, Russia has 54 banks, and South Africa has 14 banks. They also showed that listed banks owned 46% of Brazil's banking assets, while its 57% for China, 78% for India, 43% for Russia and 67% for South Africa, with the bloc's statistic being 58%. These results further emphasise the importance of this current study to understanding the underpinning determinants or influences brought by foreign-owned banks in the bloc.

5.2.2 The change in the composition of banks overtime per country

Table 5.2 below shows the composition of the banking sector per BRICS country.

Table 5.2 – Mix of banks in BRICS overtime per country

Year	Total number of banks	%	Number of domestic banks	Domestic banks as % of total banks	Number of foreign banks	Foreign banks as % of total banks
Panel A: Brazil						
1997	0	100	0	0%	0	0%
2000	1	100	1	100%	0	0%
2003	1	100	1	100%	0	0%
2006	3	100	2	67%	1	33%
2009	5	100	4	80%	1	20%
2012	5	100	4	80%	1	20%
2015	5	100	4	80%	1	20%
2018	5	100	4	80%	1	20%
Brazil	**5**	**100**	**4**	**80%**	**1**	**20%**
Panel B: Russia						
1997	0	100	0	0%	0	0%
2000	0	100	0	0%	0	0%
2003	0	100	0	0%	0	0%
2006	1	100	0	0%	1	100%
2009	3	100	2	67%	1	33%
2012	6	100	3	50%	3	50%
2015	6	100	3	50%	3	50%
2018	8	100	7	88%	1	13%
Russia	**8**	**100**	**4**	**50%**	**4**	**50%**
Panel C: India						
1997	0	100	0	0%	0	0%
2000	4	100	4	100%	0	0%
2003	15	100	14	93%	1	7%
2006	23	100	23	100%	0	0%
2009	33	100	30	91%	3	9%
2012	34	100	32	94%	2	6%
2015	35	100	34	97%	1	3%
2018	36	100	35	97%	1	3%
India	**35**	**100**	**31**	**89%**	**4**	**11%**
Panel D: China						

1997	0	100	0	0%	0	0%
2000	0	100	0	0%	0	0%
2003	3	100	3	100%	0	0%
2006	7	100	7	100%	0	0%
2009	14	100	14	100%	0	0%
2012	16	100	16	100%	0	0%
2015	20	100	18	90%	2	10%
2018	31	100	27	87%	4	13%
China	**32**	**100**	**26**	**81%**	**6**	**19%**
Panel E: South Africa						
1997	4	100	3	75%	1	25%
2000	4	100	3	75%	1	25%
2003	5	100	5	100%	0	0%
2006	5	100	3	60%	2	40%
2009	5	100	2	40%	3	60%
2012	5	100	2	40%	3	60%
2015	5	100	2	40%	3	60%
2018	5	100	2	40%	3	60%
South Africa	**5**	**100**	**2**	**40%**	**3**	**60%**

Table 5.2 shows that foreign banks in Brazil (Panel A) dropped from 33% of total banks in 2006 to 20% of total banks in 2009 and remained stable until 2018. The only foreign-owned bank in Brazil is the Banco Santander Brasil SA, and it became a cross-border financial institution in 2006. In 2006, the Banco Santander Brasil SA was initially owned by Grupo Empresarial Santander from Spain owning 100%. From 2007 to 2018, Sterrebeeck B.V from the Netherlands was a major shareholder, holding 56.75%.

Panel B shows the percentage change in foreign bank entry in the Russian banking system, and unlike in the Brazilian banking system, the number of foreign banks over total banks varies over the sample period. The highest foreign ownership level was observed in 2006 (at 100%), while the lowest was in 2018 (at 13%). The average foreignness for the Russian banking system from 2006 to 2018 sat at 46%.

Panel C shows that the number of foreign banks over total banks in India is relatively lower, probably because India went through two nationalization drives in the 1960s and 1980s. Thus, on average, the level of foreignness in India is 4% over the sample period. Panel D shows that foreign bank entry is also low at 4%in India. In China, unlike in India, most of the non-foreign-owned banks adopted a local privatization strategy, while in India, the banking system consists mainly of state-owned financial institutions. The analysis shows that in Brazilian, Indian, and Chinese banking systems, the level of foreignness ranged between 33% and 0% of total banks. A shallow foreign bank entry in those BRICS countries suggests that these banking systems did not follow the same route as other emerging markets seeking foreign banks to improve their soundness. Brazil and India intended to nationalize their banking systems to limit financial exclusion in their economies, and the on-and-off approach to this strategy is a clear indication that nationalization has its limitations. While the Chinese banking system follows the local privatisation strategy to improve efficiency, this approach also has potholes because it generally suffers from shadow banking problems.

Russia and South Africa followed the deregulation reform route, but the Russian banking system appears to have adopted this strategy as the number of foreign banks over total banks was 13% in 2018. Unlike the Russian banking system, the South African banking system (panel E) remains dominated by foreign-owned banks. The level of foreign-owned banks within South Africa increased from 40% in 2006 to 60% in 2009 and remained at this level until 2018.

5.2.3 Description of foreign and domestic banks using CAMELS measures

Table 5.3 below reports descriptive statistics for CAMELS measures of domestic and foreign overall (when all countries are analysed together). Domestic and foreign-controlled banks in BRICS member countries have capital adequacy of 0.13518 (Panel A) and 0.15342 (Panel B). On the other hand, domestic and foreign-owned banks, on average, have loan growth of 0.13502 (Panel A) and 0.11266 (Panel B), respectively. The preceding statistics imply that foreign-controlled banks in BRICS economic bloc have a high probability of experiencing the crowd out deposit scenario than their domestic

counterparts because these financial institutions hold a higher capital adequacy level and a weaker lending capacity than their local peers. Also, in Table 5.3, his descriptive statistics show that the percentage of NPLs for domestic and foreign-owned banks is equally the same. This negates the adverse selection hypothesis as defined by Stiglitz and Weiss (1981), who postulate that the presence of foreign banks increases the booking of risky borrowers with host banking sectors, hence exposing these banks to high levels of NPLs.

Table 5.3 – Description of foreign and domestic banks using the CAMELS measures

CAMELS Categories	CAMELS factors	Mean	Median	Std. Dev.	Min	Max
Panel A: Domestic banks						
Capital	CAP	0.13518	0.11237	0.17630	0.00000	2.61658
	RCL	0.05686	0.06711	0.05669	0.00000	0.47884
Asset quality	NPL	0.01272	0.00770	0.02007	-0.0306	0.22145
Managerial Efficiency	NIM	0.03314	0.02435	0.06156	-0.0502	0.88254
	Cost Efficiency	0.48504	0.49985	0.15479	0.00000	0.80096
Earnings	Loan growth	0.13502	0.12449	0.15818	-0.4069	1.00000
	ROE	0.40464	0.37513	0.20990	-1.0177	1.66419
Liquidity	Liquidity	0.08618	0.06995	0.07316	0.00000	1.00000
	Liquidity risk	0.81897	0.76139	0.77894	-0.0198	15.2394
Sensitivity	SMR	0.16078	0.13256	0.11709	-0.1143	0.75943
Panel B: Foreign-owned banks						
Capital	Capital adequacy	0.15342	0.13290	0.07549	0.07139	0.46651
	RCL	0.08499	0.08343	0.04782	0.00000	0.23243
Asset quality	NPL	0.01238	0.00825	0.01456	-0.0022	0.07397
Managerial Efficiency	NIM	0.03433	0.03011	0.14527	0.00556	0.07551
	Cost Efficiency	0.45326	0.46148	0.11836	0.01790	0.69110
Earnings	Loan growth	0.11266	0.09493	0.13976	-0.2247	0.84775
	ROE	0.37159	0.36257	0.10258	0.09300	0.86144
Liquidity	Liquidity	0.07284	0.05582	0.04945	0.01710	0.21999
	Liquidity risk	1.10107	1.04704	0.38035	0.57832	2.71400
Sensitivity	SMR	0.20596	0.18274	0.11390	-0.0042	0.56089

Another interesting observation from Table 5.3 is that foreign-owned banks hold lower liquidity than domestic banks and consequently experience a higher liquidity risk (1.101) than their domestic counterparts (0.819). Generally, Sibusiso should integrate his findings with empirical and theoretical literature reviews. This is lacking in his entire presentation of results. Merging research findings with literature makes the thesis more interesting to read.

Table 5.4 reports descriptive statistics of CAMEL measures per country. This table clearly shows which countries are responsible for higher capital adequacy and weaker lending capacity among domestic and foreign banks. Interestedly, in the case of Brazilian, Indian, and Russian banking markets, their foreign-controlled banks have higher capital adequacy than their domestic counterparts; however, in contrast to Table 5.3, these foreign-controlled banks have a high loan growth trajectory than their local peers. The implication of this descriptive finding may allude to the fact that the foreign-controlled banks in these countries have access to low-cost market-based funding than their domestic counterparts and, therefore, can maintain their lending despite holding high regulatory capital. On the contrary, in South Africa, their domestic banks have the same profile as foreign-controlled banks in Brazil, India, and Russia, suggesting better access to capital markets than their foreign-controlled counterparts.

Table 5. 4 – Description of foreign and domestic banks using CAMELS measures at country-specific level

Country	CAP	RCL	NPL	NIM	CE	LG	ROE	L	LR	SMR
Panel A: Domestic banks										
Brazil	0.2943	0.0544	0.0327	0.0544	0.3723	0.1055	0.6071	0.0635	0.9207	0.3455
China	0.1004	0.0737	0.0063	0.0219	0.4148	0.1288	0.3868	0.1269	0.7025	0.1194
India	0.1125	0.0387	0.0099	0.0250	0.5569	0.1425	0.3792	0.0671	0.8106	0.1393
Russia	0.1514	0.1072	0.0169	0.0372	0.4175	0.0502	0.3372	0.0908	1.0888	0.1863
South Africa	0.2906	0.1070	0.0377	0.1177	0.3234	0.1813	0.5346	0.1028	0.0486	0.3021
Panel B: Foreign-owned banks										
Brazil	0.2986	0.1240	0.0402	0.0588	0.3963	0.1349	0.4068	0.1018	1.6076	0.1800
China	0.1473	0.0820	0.0037	0.0199	0.5019	0.0944	0.3039	0.1196	0.7427	0.0953
India	0.1190	0.0547	0.0069	0.0249	0.5767	0.2000	0.3461	0.0542	0.8949	0.1501
Russia	0.1905	0.1034	0.0151	0.0464	0.4164	0.0904	0.3590	0.1156	1.2700	0.1748
South Africa	0.1087	0.0804	0.0089	0.0306	0.4026	0.0764	0.4104	0.0295	1.1034	0.3096

Domestic banks appear to be more efficient than foreign banks for other BRICS countries. Furthermore, it is observed in Table 5.3 (Panel B) that foreign-controlled banks on average are efficient because they have a more significant net interest margin (mean = 0.03433) and a lower cost-efficient ratio (mean = 0.45326) than their domestic counterparts (Panel A) as their net interest margin mean was 0.03314 and a cost-efficient ratio's mean of 0.48504. This descriptive finding is consistent with other outcomes from the extant literature (e.g., Havrylchyk & Jurzyk, 2011), which argues that post-acquisition, foreign-controlled banks get to be more cost-efficient than their domestic peers. The observed efficiency of foreign banks over their domestic banks seems to be driven solely by Russia, as shown in Table 5.4.

Besides, Table 5.3 shows that foreign-controlled banks (Panel B), on average, have high liquidity risk (mean = 1.10127) and market risk (mean = 0.20596) than their domestic counterparts (Panel A), which had a liquidity risk mean statistic of 0.81897 and market risk mean of 0.16078. Table 5.4 augment Table 5.3 by highlighting that foreign-controlled banks in all BRICS member countries, on average, take more liquidity risk than

domestic banks. Regarding market risk, it is only in South Africa where foreign-controlled banks take more market risks than domestic banks, while in other BRICS member countries (i.e., Brazil, China, India & Russia), it is domestic banks that take more market risks than their foreign-controlled counterparts.

5.3 The soundness of domestic and foreign-owned BRICS banks using the CAMELS framework

Table 5.5 reports the mean-difference on CAMELS factors of both listed domestic and foreign-controlled BRICS banks over the sample period, ranging from 1997 to 2018. Pooled or Satterthwaite are used to test the significance of the means difference between foreign and domestic banks. If the null hypothesis (equality of variance) is not rejected, the pooled approach is used to test the mean difference between the two groups; otherwise, Satterthwaite is used. Table 5.5 presents both pooled and Satterthwaite results are shown, but the result used are those in bold.

Table 5.5 reports a significant difference between foreign and domestic banks' capital adequacy, wherein foreign-controlled banks hold relatively higher capital adequacy levels than domestic banks. However, their lending capacity (proxied by LG and ROE) is lower than their domestic counterparts. This finding supports the financial fragility crowding-out hypothesis that a bank's liquidity creation abilities are adversely related to its regulatory capital levels. This hypothesis holds in the current study that foreign-owned banks in BRICS tend to have higher regulatory capital than domestic banks because of financial risks taken to ensure that they are cost-efficient to remain competitive. However, the higher capital reduced these banks' ability to create liquidity effectively in the region. This observation could explain why foreign-owned banks appeared to reduce lending (see Table 5.6) during economic crises compared to their local peers.

Table 5.5 – Difference between domestic and foreign banks using CAMELS measures

Measure	Mean Domestic banks	Mean Foreign banks	Mean Difference	Significance of mean difference	
				Equal sample variances – t-test	Unequal sample variances – Satterthwaite test
Capital adequacy					
CAP	0.1352	0.1763	-0.0182	-1.14	**-2.30****
RCL	0.0569	0.0850	-0.0281	-5.29	**-6.00***
Asset quality					
NPL	0.0127	0.0124	0.0003	0.18	**0.23**
Management Efficiency					
NIM	0.0331	0.0343	-0.0012	-0.22	**-0.49**
CE	0.4850	0.4533	0.0318	2.21**	**2.69***
Earnings					
LG	0.1350	0.1127	0.0224	1.50	**1.65**
ROE	0.4046	0.3716	0.0331	1.73***	**2.85***
Liquidity					
L	0.0862	0.0728	0.0133	1.98**	**2.64***
LR	0.8190	1.1011	-0.2821	-3.98*	**-6.57***
Sensitivity					
SMR	0.1608	0.2060	-0.0452	**-4.05***	-4.14*

Note: The conducted mean-difference t-test hypothesis testing in two steps. Initially, the equality of variances hypothesis is conducted where the significance level is 10%. If the computed p-value is found higher than 10% implies that the null hypothesis becomes rejected, thus, suggesting that the variances are equal. In such a case, the pooled method (equal sample t-test) is used to test the mean-difference hypothesis. On the contrary, if the equality of variance produces a p-value lesser or equal to 10% implies that the null hypothesis becomes acceptable, thus, suggesting that the variances are unequal. In this case, the Satterthwaite method becomes used. The used results within this analysis are highlighted in bold. =<1% (*), =<5% (**) and =<10% (***) indicate the significance levels used in this analysis.

Furthermore, CAMELS analysis reveals that foreign-controlled banks gain cost efficiency by taking more risks. This finding implies a substantial institutional difference between home and host countries, resulting in foreign-controlled banks taking additional costs compared to domestic banks, consistent with Mamonov & Vernikov (2017). Moreover, additional charges taken by foreign-owned banks caused these institutions to be susceptible to crowd-out of depositors, implying that they can only contribute positively to strengthening the BRICS financial systems member country's procyclicality during non-crisis periods. The means difference of other CAMEL measures, including NPL, NIM, and

LG between domestic and foreign banks, are insignificant, suggesting that ownership does not influence these factors.

5.4 The cyclicality analysis testing change in the soundness of domestic and foreign-owned BRICS banks across economic cycles during 1997 to 2018 using the CAMELS framework

Table 5.6 presents the mean difference between domestic and foreign-controlled banks in different economic periods (boom, crisis, and post-crisis). Both pooled and Satterthwaite results are shown, but the results' interpretation is based on the bolded values. Panel A, B, and C report the mean difference during the boom, crisis, and post-crisis periods, respectively. Panel A shows a significant mean difference between foreign and domestic banks where foreign-controlled banks have relatively higher SMR and RCL than domestic counterparts. The finding implies that the balance sheets of foreign-controlled banks tend to be sensitive to market risk, and this is a sign of extreme leveraging activities and a penalty for these banks' behaviour for holding higher tier-I and tier-II capital as a ratio of total assets. Severe leveraging of foreign-controlled banks implies these institutions accelerate their lending, supporting Albertazzi's & Boterro (2014)'s findings.

Table 5.6 – Difference between domestic and foreign banks using CAMELS measures across different economic cycles

Measure	Mean Domestic banks	Mean Foreign banks	Mean Difference	Significance of mean difference	
				Equal sample variances – t-test	Unequal sample variances – Satterthwaite test
Panel A: Economic boom period (1999 – 2006)					
Capital adequacy					
CAP	0.1739	0.1131	0.0608	0.61	**2.04***
RCL	0.0257	0.0726	-0.0469	**-3.44**	-4.28*
Asset quality					
NPL	0.0138	0.0057	0.0081	1.06	**2.83***
Management Efficiency					
NIM	0.0520	0.0274	0.0246	0.64	**2.18****
CE	0.4641	0.4835	-0.0194	-0.46	**-0.64**
Earnings					
LG	0.1610	0.1970	-0.0359	-0.72	**-0.52**
ROE	0.5212	0.3767	0.1445	**2.18****	3.08*
Liquidity					
L	0.0798	0.0453	0.0345	1.86***	**3.48***
LR	1.0096	1.2005	-0.1909	-0.40	**-1.22**
Sensitivity					
SMR	0.1821	0.2514	-0.0693	-2.00**	**-3.18***
Panel B: Economic crisis periods (1997 – 1998 & 2007 – 2009)					
Capital adequacy					
CAP	0.1288	0.1355	-0.0066	-0.20	**-0.30**
RCL	0.0430	0.0511	-0.0082	-0.60	**-0.73**
Asset quality					
NPL	0.0096	0.0098	-0.0003	-0.06	**-0.10**
Management Efficiency					
NIM	0.0329	0.0331	-0.0002	-0.02	**-0.04**
CE	0.4695	0.5093	-0.0398	-1.23	**-1.68*****
Earnings					
LG	0.1705	0.1360	0.0345	1.04	**0.87**
ROE	0.4390	0.4319	0.0071	0.15	**0.20**
Liquidity					
L	0.0907	0.0595	0.0313	**2.67***	2.95*
LR	0.7079	1.0838	-0.3759	-4.96*	**-4.12***
Sensitivity					
SMR	0.1561	0.1954	-0.0393	-1.57	**-2.04****
Panel C: Economic post-crisis period (2010 – 2018)					
Capital adequacy					
CAP	0.1262	0.1643	-0.0381	-3.98*	**-4.51***

RCL	0.0697	0.0968	-0.0272	-4.66*	**-5.27***
Asset quality					
NPL	0.0133	0.0141	-0.0007	**-0.37**	-0.39
Management Efficiency					
NIM	0.0279	0.0357	-0.0077	-3.15*	**-4.22***
CE	0.4954	0.4323	0.0631	3.62*	**4.36***
Earnings					
LG	0.1174	0.0941	0.0233	1.34	**1.95****
ROE	0.3620	0.3528	0.0091	0.46	**0.89**
Liquidity					
L	0.0866	0.0806	0.0060	0.68	**0.95**
LR	0.7981	1.0925	-0.2944	**-6.81***	-6.84*
Sensitivity					
SMR	0.1562	0.2028	-0.0466	**-3.49***	-3.27*

Note: The conducted mean-difference t-test hypothesis testing in two steps. Initially, the equality of variances hypothesis is conducted where the significance level is 10%. If the computed p-value is found higher than 10% implies that the null hypothesis becomes rejected, thus, suggesting that the variances are equal. In such a case, the pooled method (equal sample t-test) is used to test the mean-difference hypothesis. On the contrary, if the equality of variance produces a p-value lesser or equal to 10% implies that the null hypothesis becomes acceptable, thus, suggesting that the variances are unequal. In this case, the Satterthwaite method becomes used. The used results within this analysis are highlighted in bold. =<1% (*), =<5% (**) and =<10% (***) indicate the significance levels used in this analysis.

In Panel B, the mean-difference test is significant for CE and L between the two groups wherein the domestic banks have higher liquid assets than their foreign-controlled counterparts. However, in the case of the cost-efficiency ratio, the opposite is observed. This finding implies that domestic banks gain cost efficiency by maintaining higher liquid assets during a crisis. This finding supports the efficient structure hypothesis (Demsetz, 1973; Havrylchyk & Jurzyk, 2011). The LR and SMR have significant mean-difference results where foreign-controlled banks have higher LR and SMR mean measures than domestic counterparts, implying that these foreign banks became highly leveraged during an economic crisis, increasing their liquidity risk. This finding further suggests that foreign-controlled banks are too-big-to-fail. The foreign-controlled banks continued to take more risks during the crisis, and this persistent risk-taking by these institutions supports the adverse selection hypothesis (Stiglitz & Weiss, 1981; Matemilola et al., 2015). Moreover, this finding supports the liquidity spiral hypothesis (Chen et al., 2015) but not the loyalty hypothesis (Weill, 2003).

In contrast, other CAMELS factors found previously in Panel A with significant mean-difference results such as capital adequacy, asset quality, and earnings between the two groups are now insignificant during the economic crisis. This finding suggests that the financial crisis in BRICS affects all banks irrespective of their ownership status, which may imply that these banks' lending activities get exposed to the customers whose cash flows are tied to the macroeconomic state of BRICS. This finding also means that BRICS banks' lending activities are possibly impeded by the currency-mismatch problem identified earlier by Mora et al., (2013).

In Panel C, the mean-difference results for capital adequacy, managerial efficiency measures, LR, and SMR are statistically significant, wherein foreign-controlled banks' means are higher than domestic banks for the post-crisis period. This finding implies that foreign-owned banks recover their efficiency post-crisis quicker than domestic banks because of their ability to adjust leveraging swiftly and capital adequacy levels. Also, this finding suggests that foreign-controlled banks have a more exceptional ability to absorb losses because of their superior leveraging capability, which, in turn, strengthen the financial systems of BRICS member countries. Besides, the mean difference for LG is significantly higher for domestic banks than for foreign-controlled banks. However, when combining this result with the previously observed outcome in Panel C that foreign-controlled banks are more efficient than domestic counterparts, the finding may allude to the presence of the trade-off between efficiency and earnings.

Chapter summary

This chapter reports the results of CAMELS analysis in detailing the impact of foreign ownership on domestic and foreign-controlled banks' financial soundness with emphasis on change in cyclicality. The next chapter outlines empirical results on the effect of foreign bank ownership on the risk-benefit analysis in the BRICS banking system.

Chapter VI – The impact of foreign bank ownership on the risk-benefit analysis in the BRICS banking system (Empirical results)

6.1. Introduction

This chapter presents the results of the impact of foreign ownership on benefits and risks in BRICS' banking systems. The chapter is organized as follows: Section 6.2 presents a descriptive analysis. Section 6.3 presents the benefits of foreign ownership on ROA, ROE, NIM, Lerner's index, and credit intermediation (total loans over total assets). Section 6.4 presents the impact of foreign ownership on risks as measured by the standard deviation of ROA, nonperforming loans, normalized Z-score (measures of idiosyncratic risks), and delta-CoVaR (a measure of systemic risk). Section 6.5 further analyses foreign ownership's impact on Tier-I and Tier-II capitals as percentages of total assets. Chapter summary concludes the chapter.

6.2. Descriptive statistical analysis

Table 6.1 reports descriptive statistics for the entire sample, containing 90 publicly traded commercial banks (after applying specific exclusions). Total banks differ from 85 in the previous chapter because all banks that existed over the sample period were included in the analysis. On the contrary, in chapter 5, some banks may have been delisted and, therefore, not included. For bank-specific factors, the mean of income diversification (mean = 0.21390) is higher than the mean of funding diversification (mean = 0.14911). These results suggest that BRICS banks have diverse income streams compared to funding sources to finance their balance sheet activities. This may be because BRICS banks are mostly domestic do not have access to the cross-border capital compared to their foreign-controlled counterparts. Further, this finding is supported by the fact that the mean of foreign ownership as a ratio of foreign banks over total banks is 0.21072, which is much lesser compared to the CEE and Latin American bloc (see Wu et al., 2017).

Table 6.1 – Descriptive statistics

	Minimum	Maximum	Mean	Standard deviation
Bank-specific factors				
Funding diversification ratio	0.03129	0.45259	0.14911	0.10864
Income diversification ratio	0.04783	0.39672	0.21390	0.09802
Liquidity ratio	0.01856	0.16777	0.08812	0.03309
Country-specific factors				
GDP growth	-0.07800	0.14231	0.04662	0.03730
Unemployment rate	0.02420	0.33290	0.11440	0.09176
Performance/Efficiency indicators				
ROA	-0.01050	0.07740	0.03090	0.02047
ROE	0.30420	1.72840	0.76205	0.22891
NIM	0.01367	0.27045	0.07916	0.05178
Competition measures				
Lerner's index	0.03626	0.87098	0.43642	0.17641
HHI index	0.03189	0.23496	0.06692	0.11535
Risk measures				
Nonperforming loan ratio (NPL)	0.00000	0.11678	0.03305	0.02951
Normalised z-score	0.00000	2.00000	1.08479	0.50757
Standard deviation of ROA	0.00000	0.03495	0.01873	0.00982
Regulatory measures				
Tier I capital ratio	0.00000	0.27926	0.11379	0.07379
Tier II capital ratio	0.00000	0.06848	0.02600	0.01753
Other measures				
Foreign ownership	0.00000	1.00000	0.21072	0.22866
Government effectiveness	0.00000	0.76410	0.52707	0.16884
Political stability	0.00000	0.95240	0.40306	0.22347
Regulatory quality	0.00000	0.75000	0.46511	0.16453
The rule of law	0.00000	0.64420	0.41903	0.17536

In the case of country-specific factors, Table 6.1 demonstrates that the maximum unemployment statistic (max = 0.33290) remains high despite BRICS banking systems opening their banks to be acquired by foreign investors/banks. This finding implies that globalizing BRICS banking systems through adopting deregulation may not have alleviated some of the macroeconomic problems that might have existed previously. This assertion is further substantiated by low GDP growth, averaging 0.04662.

Table 6.1 further shows that foreign-owned banks' presence positively impacts performance/efficiency, competition, and regulatory measures. For instance, the mean statistics for ROE, Lerner's index, the standard deviation of ROA, and Tier-I are 0.76205,

0.43642, 0.01873, and 0.11379, respectively. These descriptives may be interpreted as showing that BRICS banking systems post-foreign acquisition allowance by regulators led to heightened bank competition, high return on equity, and low earnings risks. In contrast, Tier-I's mean adds that, on average, over 10% of kept regulatory capital by BRICS banks is of high quality, which indicates financial strength.

Table 6.2 presents the mean statistics per country. Table 6.2 shows that among the BRICS member countries, Brazil's banking system has the highest mean for funding and income diversification of 0.28882 and 0.30597, respectively. This finding alludes that Brazil may have primarily driven reported mean statistics in Table 6.1 for funding and income diversification. However, the fact that the average ratio of foreign banks over total banks is 0.14386 in Brazil implies that bank ownership may not be the source of income diversification. Tabak & Staub (2007) found that loan portfolios for Brazilian banks are, on average, moderately concentrated. This finding explains that income diversification may be coming from inherent loan structures.

Table 6.2 – Average by country

	Funding Divers.	Income Divers.	Liquidity ratio	GDP growth	Unemployment rate
Panel A					
Brazil	0.28882	0.30597	0.08012	0.02431	0.09060
China	0.18243	0.10165	0.12840	0.09229	0.03873
India	0.06225	0.14419	0.07001	0.06723	0.03122
Russia	0.17788	0.18126	0.10835	0.02385	0.07608
South Africa	0.07011	0.30187	0.07109	0.02644	0.26908
	ROA	**ROE**	**NIM**	**Lerner's index**	**HHI index**
Panel B					
Brazil	0.03904	0.91602	0.09233	0.37011	0.06969
China	0.01452	0.62027	0.03255	0.52926	0.07078
India	0.02582	0.64574	0.04455	0.33548	0.04789
Russia	0.01857	0.71357	0.08129	0.51731	0.04163
South Africa	0.04793	0.87186	0.13346	0.47471	0.05870
	NPL ratio	**Norm. Z-score**	**Standard of ROA**	**Tier I capital ratio**	**Tier II capital ratio**
Panel C					
Brazil	0.05868	1.28295	0.02370	0.10835	0.01654
China	0.00736	0.86543	0.00459	0.08436	0.02064
India	0.01466	0.86126	0.01734	0.06943	0.01985
Russia	0.02812	1.08836	0.02297	0.15265	0.04912
South Africa	0.05009	1.28447	0.02354	015929	0.03030
	Foreign own.	**Gov. Effective**	**Political Stability**	**Regulatory Quality**	**The rule of law**
Panel D					
Brazil	0.14386	0.48241	0.38005	0.51386	0.38260
China	0.04829	0.60228	0.29449	0.46229	0.38808
India	0.04171	0.49015	0.68775	0.36505	0.50622
Russia	0.46108	0.44317	0.19325	0.38160	0.23119
South Africa	0.40000	0.59577	0.35433	0.56990	0.50078

On the other hand, India has the lowest funding diversification (mean=0.06225), while China (mean=0.10165) has the lowest income diversification. The lowest funding diversification in China implies that the deregulation process limited income diversification in their bank balance sheets, which exposed them to moral hazard. In India, foreign banks' presence restricted their banking systems' funding source, which means they may be susceptible to bank runs when they withdraw funds.

The country-level information in Table 6.2, Panel (b) shows that Brazil and South Africa have the highest profitability/efficiency measures average, implying that foreign ownership presence maximized the cost-efficiency ratio, translating into overall efficiency and profitability at the aggregated level. In China, the lowest efficiency and profitability measures suggest that a foreign bank presence did not improve its banking system's efficiency. Furthermore, China's Lerner's and HHI indices are 0.52926 and 0.7078, indicating that its banking sector is the most competitive, explaining its low profitability

and efficiency. Countries where generally moderate bank competition measures, such as Brazil and South Africa, display better performance indicators.

The relatively better performance for Brazil and South Africa may be due to their stability level, where their normalized z-score was 1.28295 and 1.28447, respectively. These high z-scores imply that they earned stable earnings over the sample period. Interestingly, these two countries also incurred the highest risks in terms of the standard deviation for ROA and nonperforming loans. In addition, Table 6.2 shows that Russia have the highest foreign ownership levels (mean = 0.48108), followed by South Africa (mean = 0.4000) and Brazil (mean = 0.14386). Foreign participation is lowest in China and India.

6.3 Impact of foreign bank ownership on BRICS banks' benefit measures

6.3.1 Foreign bank ownership, profitability, and efficiency

This section examines the impact of foreign bank ownership on BRICS banking systems' efficiency or profitability using banking sector- and- country-level data for the five countries in the bloc from 1997 to 2018. In this current study, the foreign bank ownership is computed as the actual fraction of the number of host foreign-owned banks over the total number of banks in BRICS for each bank, and subsequently, this ratio is aggregated into country-specific measures using the year and country name fields. Empirical literature (e.g., Bekaert & Harvey, 2003; Havrylchyk & Jurzyk, 2011; Gwatidzo & Ojah, 2014 and Lee & Hsieh, 2014) showed that investigating the impact of foreign ownership on the emerging market economy efficiencies helps global investors, bankers, and policymakers to gauge the extent and the period it will take for them to benefit from these economies in the presence of foreign banks.

Table 6.3 (below) reports the two-stage random-effect panel models' results with instrument variables that test foreign ownership's impact on domestic and foreign-owned banks' performance. The baseline and extended model are presented in Table 6.3. A biasness t-test statistic was used to assess the level of biasness between the two models (baseline & extended models) to control the estimation model's possible misspecification

(see Lassoued et al., 2016). If the biasness t-statistic is significant, all variables, including omitted factors, need to be included in the analysis (the extended model is used to interpret the results); otherwise, the baseline model is used. Panel A shows the performance of foreign-controlled banks, while Panel B presents that of domestic banks. Table 6.3 presents only the variables of interest: foreign bank ownership and the two-way interaction terms (foreign ownership interacting with capitalization, Basel III dummy variable and leverage).

Table 6.3, Panel A, biasness t-statistic is significant, and therefore the extended model is used to interpret the results. The coefficients of all explanatory variables of interest are statistically insignificant to the ROA of foreign-owned banks in BRICS. These results imply that after being acquired by foreign strategic investors, these BRICS foreign-owned banks may increase their income through internal funding channels other than through exogenous capital markets. Hence, changes in cross border equity (measured by foreign ownership * capitalisation) and debt markets (foreign ownership * leveraging ratio), including international bank shift regulation (foreign ownership * Basel III), do not affect their ROA. These insignificant results indicate that host banks' acquisition process excludes the need for external funding to finance their performing assets, which in theory insulate their income from exogenous economic shocks. These findings support Havrylchyk & Jurzyk (2011), who found the same for the CEE bloc. However, this finding contradicts Chen et al., (2017), who found that foreign-owned banks in host Asia, CEE and Latin American countries increased risks in those banking systems due to the existing asymmetries between host and country of origin of foreign strategic investors.

Table 6.3 – Foreign bank ownership and performance (ROA) of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' ROA						
Dep. factor = ROA_{jt}	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.02040	0.00714	0.400%[a]	-0.01668	0.02138	43.600%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				0.20262	0.18443	27.200%
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.00509	0.00952	59.300%
Lev_{jt} x $ForOwn_{jt}$				-0.00910	0.05316	86.400%
Model decision testing						
t-test statistic (biasness)	-1.83997[b]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.1537			0.5362		
between	0.0632			0.8002		
overall	0.1207			0.5675		
Wald (chi-square)	14.12[b]			103.61[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' ROA						
Foreign ownership ($ForOwn_{jt}$)	0.02967	0.00686	0.000%[a]	-0.01567	0.01900	40.900%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				0.50007	0.33785	13.900%
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.00691	0.01309	59.800%
Lev_{jt} x $ForOwn_{jt}$				0.09598	0.04193	2.200%[b]
Model decision testing						
t-test statistic (biasness)	-2.55893[a]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						

(R-square) – within	0.2311	0.3548
between	0.9094	0.9798
overall	0.5565	0.6382
Wald (chi-square)	108.97[a]	140.04[a]

Notes: The dependent variable in Table 6.3 is the ROA for domestic- and- foreign banks in BRICS. Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the profitability channel for financial stability in the bloc. The controls are institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and interaction with foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. Two-sided t-test statistic, if the null hypothesis is rejected, the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

The extended model is used in Table 6.3, Panel B as well. In this panel, the coefficient of the two-way interaction term between leverage ratio and foreign bank ownership is positively significant to the domestic BRICS banks' ROA at a 5% significance level. This finding suggests that foreign ownership presence in BRICS increases the ROA of locally owned banks through the debt market because such funding becomes cheaper when foreign banks are present and dollarise local banks' balance sheets (Choi & Cook, 2004). This finding contradicts Wu et al., (2017), who found that in the case of Asia, CEE and Latin American countries, existing market asymmetries between host and country of origin of foreign owners gave foreign-owned banks' competitive edge is higher than that of their local counterparts. Hence their domestic banks' income is reduced because of their increased risk appetite.

Table 6.4 presents the impact of foreign bank ownership in BRICS banks' (i.e., foreign-owned & locally-owned) on the ROE. Table 6.4, Panel A uses the baseline model. The results show that the coefficient of foreign bank ownership is positively significant at a 1% significance level, meaning that being acquired by foreign strategic investors improved their attraction in the bank equity markets. This finding supports the follower relationship hypothesis (Grubel, 1977), which posits that banks follow their customers from home countries as they are afraid to lose established relationships with financial institutions operating in foreign countries.

Table 6.4 – Foreign bank ownership and performance (ROE) of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' ROE						
Dep. factor = ROE_{jt}	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.65037	0.09405	0.000%[a]	1.48444	0.24002	0.000%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-11.53103	2.07787	0.000%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.23914	0.10724	2.600%[b]
Lev_{jt} x $ForOwn_{jt}$				-0.64278	0.59888	28.300%
Model decision testing						
t-test statistic (biasness)	3.76039		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.3038			0.7459		
between	0.8701			0.9425		
overall	0.3735			0.7727		
Wald (chi-square)	50.26[a]			230.64[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' ROE						
Foreign ownership ($ForOwn_{jt}$)	-0.56274	0.09570	0.000%[a]	-1.32789	0.27204	0.000%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				16.56042	4.83837	0.100%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.12889	0.18743	48.200%
Lev_{jt} x $ForOwn_{jt}$				0.42806	0.25011	47.600%
Model decision testing						
t-test statistic (biasness)	-3.0047[a]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						

(R-square) – within	0.2366	0.3736
between	0.9588	0.9186
overall	0.4587	0.5362
Wald (chi-square)	84.86[a]	96.26[a]

Notes: The dependent variable in Table 6.4 is the ROE for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the investment channel for financial stability in the bloc. The controls are institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and interaction with foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

In Table 6.4, Panel B, the extended model is used. The coefficient of the foreign bank ownership is negatively significant to the domestic banks' ROE at a 1% significance level, which implies that the presence of foreign ownership introduces skewness in the BRICS' bank equity markets since foreign-owned banks' equity may be preferred over local counterparts' ones. On the contrary, the coefficient of the two-way interaction term (i.e., between capitalisation and foreign bank ownership) is positively significant at a 1% to ROE. These results imply that foreign ownership gives foreign investors access to emerging markets characterised by high risk and high return through their interaction with domestic banks. The high risk, high return scenario in BRICS may be the reason for the quick economic recovery of their banking sector post-global crisis, as observed by Zhang et al., (2013). Furthermore, the two-way interaction terms (Basel III dummy variable & foreign ownership and leverage ratio & foreign ownership) are statistically insignificant to the domestic banks' ROE when foreign banks are present. These findings allude that the presence of foreign ownership increases the adherence of the domestic banks to international banks' regulations, resulting in changes in BASEL III having no effect on their ROE.

Table 6.5 presents foreign ownership's impact on NIM, an operational efficiency measure. In panel A (baseline model), the coefficient of foreign bank ownership is positively significant to foreign-owned banks' NIM at a 1% significance level, implying that the acquisition of host BRICS banks by foreign strategic investors fosters them to

minimise interest expenses (i.e., cost-cutting behaviour) while at the same time maximising interest income. This finding supports Havrylchyk & Jurzyk (2011), who found that in the case of the CEE bloc, host banks acquired foreign banks eliminated non-essential costs, which boosted their profitability.

Table 6.5 – Foreign bank ownership and efficiency (NIM) of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' NIM						
Dep. factor = NIM_{jt}	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.06027	0.01033	0.000%[a]	0.03170	0.01942	10.300%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-0.33302	0.16748	4.700%[b]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.00684	0.00864	42.900%
Lev_{jt} x $ForOwn_{jt}$				-0.01334	0.04827	78.300%
Model decision testing						
t-test statistic (biasness)	-0.9533		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.2200			0.8194		
between	0.7754			0.9959		
overall	0.3855			0.8801		
Wald (chi-square)	56.70[a]			568.13[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' NIM						
Foreign ownership ($ForOwn_{jt}$)	0.03539	0.02401	14.000%	-0.10784	0.07273	13.800%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				1.07573	1.29353	40.600%
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.01879	0.05011	70.800%
Lev_{jt} x $ForOwn_{jt}$				0.29790	0.16053	6.300%[c]

Model decision testing		
t-test statistic (biasness)	-1.73734[b]	**Model decision-maker:** Extended model preferred
Goodness-of-fit profile		
(R-square) – within	0.1707	0.2751
between	0.8596	0.7436
overall	0.4676	0.4845
Wald (chi-square)	78.74[a]	80.32[a]

Notes: The dependent variable in Table 6.5 is the NIM for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the income efficiency channel for financial stability in the bloc. The controls are institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and interaction with foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

In Panel B, foreign bank ownership has no impact on domestic banks as no coefficient appears significant.

6.3.2 Foreign bank ownership and country- and- bank-specific competition measures

Table 6.6 presents the impact of foreign ownership on the banking competition of domestic and foreign-owned banks. Panel A (extended model is used) shows how foreign ownership impacts the competitiveness of foreign-controlled banks in BRICS using Lerner's index. The coefficient of the two-way interaction term (Basel III dummy variable & foreign bank ownership) is negatively significant to foreign-owned banks' Lerner's index at a 5% significance level. This finding implies that in the years that the Basel III framework was enforced in BRICS banking systems, foreign-owned banks' competitiveness was reduced. This finding supports King (2012) and Figuet et al., (2015),

who found that the implementation of Basel in EMEs' banking markets impairs the net interest margin (NIM) and cross-border lending.

Table 6.6 – Foreign bank ownership and bank ownership-sector specific competition of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' competitive-level						
Dep. factor = $LernerIndex_{jt}$	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.43108	0.06561	0.000%[a]	0.16027	0.15668	30.600%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				3.40814	3.85048	37.600%
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.13161	0.05966	2.700%[b]
Lev_{jt} x $ForOwn_{jt}$				-0.44250	0.39441	26.200%
Model decision testing						
t-test statistic (biasness)	-1.90334[b]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.3437			0.8546		
between	0.7770			0.9260		
overall	0.3374			0.8569		
Wald (chi-square)	52.62[a]			476.14[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' competitive-level						
Foreign ownership ($ForOwn_{jt}$)	0.08250	0.05471	13.200%	-0.27998	0.10148	0.600%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				3.25658	1.59559	4.100%[b]
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.10659	0.07387	14.900%
Lev_{jt} x $ForOwn_{jt}$				0.30205	0.28597	29.100%

Model decision testing		
t-test statistic (biasness)	-4.24105[a]	**Model decision-maker:** Extended model preferred
Goodness-of-fit profile		
(R-square) – within	0.0991	0.4081
between	0.7885	0.8154
overall	0.3364	0.5673
Wald (chi-square)	44.43[a]	99.14[a]

Notes: The dependent variable in Table 6.6 is the Lerner's index for domestic- and- foreign banks in BRICS. Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the bank-specific competition channel for financial stability in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

In Panel B (extended model is used[18]), the coefficient of the interaction term, capitalisation and foreign ownership, is positively significant at a 5% significance level to the BRICS domestic banks' Lerner's index. This finding implies that, possibly, foreign bank ownership in the bloc improves these financial institutions' access to cross-border equity markets that fuel their competitive muscle; as a result, capital mobility. In theory, foreign bank ownership in the bloc might have increased the contingent effect between its local banks' capacity and cross-border equity markets, but this market asymmetry does not require immediate policy action. Chuppe et al., (1989) found that globally induced competition encourages efficiency. Havrylchyk & Jurzyk (2011) argues that such efficiency comes from heightened bank competition minimises bank risk-taking behaviour.

[18] Used the biasness' t-test statistic rule.

Moreover, the coefficient of foreign bank ownership is negatively significant to domestic banks' Lerner's index at a 1% significance level which implies that in the case of BRICS, foreign bank ownership's presence is associated with reductions in local banks' competitive power. In economic theory, this finding suggests that the opening of BRICS banking systems elevated the position of domestic banks in the pricing of banking products. In contrast, foreign-owned banks in the host region are price takers, and this scenario reduces these financial institutions' competitiveness. This finding supports Delis et al., (2016), who found that the presence of foreign bank ownership in the host countries, however, used the spill-over method, while in the current research, we used the direct approach of determining the impact of foreign ownership on EMEs competitiveness.

Table 6.7 shows the impact of foreign ownership in the banking systems on overall competition in BRICS using country-specific HHI measures and the spill-over approach. The extended model is used because the biasness t-test statistic's p-value rejects the null hypothesis.

Table 6. 7 – Impact of foreign ownership on aggregated competition in BRICS

Dep. factor = HHI_{jt}	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	-0.05272	0.01046	0.000%[a]	-0.13628	0.04052	0.100%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				1.18426	0.35794	0.100%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.02134	0.01941	27.200%
Lev_{jt} x $ForOwn_{jt}$				0.11200	0.06707	9.500%[c]
Model decision testing						
t-test statistic (biasness)	-2.13454[b]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0435			0.0702		
between	0.8467			0.8820		
overall	0.2596			0.2990		
Wald (chi-square)	40.00[a]			46.62[a]		

Notes: The dependent variable in Table 6.7 is the country-specific competition (HHI index). Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the general competition channel for financial stability in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

The coefficients of the two-way interaction terms (capitalisation and foreign ownership; leverage and foreign ownership) are positively significant at 1% and 10% significance levels, respectively. This finding implies that foreign bank ownership in the bloc increases regional market participants' access to cross-border capital markets (i.e., debt & equity), and the abundance of bank funding drops the cost of borrowing, which, in

theory, leads to an increase in competition. Moreover, the coefficient of foreign bank ownership is negatively significant to BRICS' HHI index at a 1% significance level, which means that the presence of foreign bank ownership in the bloc increases the volume of funding available to its market participants, which may lead to inefficient allocation (risks) thus reducing competition. This finding supports Barajas et al., (2000), who argues that greater competition may result in amplified risk-taking behaviour and subsequent correction of this risk-taking behaviour then stifles competition for domestic banks.

6.3.3 Foreign bank ownership and banks' credit intermediation

Table 6.8 presents the results of the impact of foreign bank ownership on foreign-owned and local banks' credit intermediation. It is assumed that if the presence of foreign bank ownership increases risk-aversion among BRICS banks, there will be a reduction in credit intermediation (i.e., the coefficient of foreign bank ownership should be negatively significant to credit intermediation).

Table 6.8 – Foreign bank ownership and credit intermediation of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' credit intermediation						
Dep. factor = $CreInt_{jt}$	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	1.36402	0.13337	0.000%[a]	3.39883	0.42585	0.000%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-60.10739	10.46553	0.000%[a]
$BaselII_{jt}$ x $ForOwn_{jt}$				-0.43085	0.16217	0.800%[a]
Lev_{jt} x $ForOwn_{jt}$				-4.87578	1.07199	0.000%[a]
Model decision testing						
t-test statistic (biasness)	5.03135		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.4150			0.7993		
between	0.8927			0.9901		

overall	0.5311			0.8312		
Wald (chi-square)	106.18[a]			355.72[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' credit intermediation						
Foreign ownership ($ForOwn_{jt}$)	0.42480	0.09236	0.000%[a]	0.00236	0.17515	98.900%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				2.12645	0.12739	44.000%
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.39070	0.12739	0.200%[a]
Lev_{jt} x $ForOwn_{jt}$				0.72986	0.49319	13.900%
Model decision testing						
t-test statistic (biasness)	-2.83861[a]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0038			0.2114		
between	0.9498			0.9114		
overall	0.1943			0.4183		
Wald (chi-square)	28.58[a]			56.91[a]		

Notes: The dependent variable in Table 6.8 is the credit intermediation for domestic- and- foreign banks in BRICS. Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the loan supply market channel for financial stability in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel A (baseline model is used[19]) shows that the coefficient of foreign bank ownership is positively significant at a 1% significant level, implying that the acquisition of

19 Used the biasness' t-test statistic rule.

host BRICS banks by foreign strategic investors increases their capital disposal, hence their lending capacity increases. This finding corroborates Havrylchyk & Jurzyk (2011), who posits that the host banks' profitability improved post-acquisition by foreign strategic investors. This finding refutes the findings of Gormley (2010), who found that in India, the presence of foreign bank ownership adversely affected local bank lending in the region by 8% due to 'cherry-picking' behaviour.

The coefficient of the two-way interaction term (Basel III dummy variable & foreign ownership) is positively significant at a 1% significance level, implying that foreign ownership improves their compliance to international bank lending-related regulations. This finding supports Sturm & Williams (2004), who established that foreign bank entry in the Australian banking system improved the host banks' adherence to international bank regulations.

6.4 Impact of foreign bank ownership on risk measures

6.4.1 Foreign bank ownership and idiosyncratic risk measures

Table 6.9 presents foreign ownership's impact on foreign-owned and locally-owned banks' (earnings) risk. Panel A (baseline model is used), the coefficient of the foreign bank ownership is positively significant to foreign-owned banks' standard deviation of ROA. This finding suggests that the acquisition of BRICS host banks by foreign strategic investors increases information asymmetry in the lending process because of the integration with foreign bank parents. The link to foreign bank parents may improve inefficiencies and earning risks increase (Havrylchyk & Jurzyk, 2011). Moreover, foreign-owned banks charge high lending rates, increasing the uptake of risky customers into their books and increasing earning risk. This finding supports Chen et al., (2017), who found that foreign-owned banks face information asymmetry problems in the host banking system.

Table 6.9 – Foreign bank ownership and risk (std. of ROA) of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' standard deviation of ROA		
Dep. factor = $\sigma(ROA_{jt})$	**Baseline model**	**Extended model (full)**

	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.01905	0.00412	0.000%[a]	0.03752	0.01420	0.800%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-0.18291	0.12245	13.500%
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.00351	0.00632	57.900%
Lev_{jt} x $ForOwn_{jt}$				-0.08968	0.00818	56.850%
Model decision testing						
t-test statistic (biasness)	1.35917		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0256			0.2940		
between	0.9079			0.9441		
overall	0.2293			0.4794		
Wald (chi-square)	41.25[a]			83.02[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' standard deviation of ROA						
Foreign ownership ($ForOwn_{jt}$)	0.00887	0.00350	1.100%[b]	0.00236	0.17515	98.900%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-0.16608	0.17666	34.700%
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.00310	0.00684	65.000%
Lev_{jt} x $ForOwn_{jt}$				0.03053	0.02192	16.400%
Model decision testing						
t-test statistic (biasness)	-0.03718		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0009			0.0288		
between	0.9511			0.9611		
overall	0.5372			0.4183		
Wald (chi-square)	105.29[a]			123.96[a]		

Notes: The dependent variable in Table 6.9 is the standard deviation of ROA for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the income risk

channel for financial stability in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel B (baseline model is used[20]) shows that the coefficient of foreign bank ownership is positively significant to the locally owned banks' standard deviation of ROA at a 5% significance level. This finding implies that foreign bank ownership in BRICS amplify competition while undercut realised profits from competing with foreign-owned banks; hence their earnings risk increases. This finding supports Wu et al., (2017), who posits that domestic banks increase risks in emerging markets.

Table 6.10 shows foreign ownership's impact on non-performing loans of foreign and locally controlled banks in BRICS. Panel A (baseline model is used[21]) that the coefficient of foreign bank ownership is positively significant to foreign-owned banks' nonperforming loans at a 10% significance level. This finding suggests that the acquisition of banks by foreign strategic investors worsen the information asymmetry for these financial institutions as the new owners may not have a better know-how of market dynamics, thus pushing these banks to charge high lending rates, which in theory (refer to the adverse selection hypothesis in Chapter 2) attract risky customers. Which in turn increased nonperforming loans post foreign bank acquisition.

Table 6.10 – Foreign bank ownership and nonperforming loan ratio of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' nonperforming loans		
Dep. factor = NPL_{jt}	**Baseline model**	**Extended model (full)**

20 Used the biasness' t-test statistic rule.

21 Used the biasness' t-test statistic rule.

	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.01436	0.00825	8.200%[c]	-0.00169	0.02202	93.900%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-0.33914	0.18995	7.400%[c]
$BaselIII_{jt}$ x $ForOwn_{jt}$				0.01897	0.00918	5.30%[c]
Lev_{jt} x $ForOwn_{jt}$				-0.03999	0.05475	94.20%
Model decision testing						
t-test statistic (biasness)	-0.78614		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0689			0.5577		
between	0.7369			0.9804		
overall	0.2553			0.7100		
Wald (chi-square)	32.65[a]			193.37[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' nonperforming loans						
Foreign ownership ($ForOwn_{jt}$)	0.04491	0.01034	0.000%[a]	-0.03476	0.03022	25.000%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				0.74697	0.53745	16.500%
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.00110	0.02082	95.800%
Lev_{jt} x $ForOwn_{jt}$				0.12326	0.06670	6.500%[c]
Model decision testing						
t-test statistic (biasness)	-2.80568[a]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.2224			0.2612		
between	0.8284			0.9510		
overall	0.5109			0.5551		
Wald (chi-square)	90.37[a]			103.31[a]		

Notes: The dependent variable in Table 6.10 is the nonperforming loans for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the credit risk channel for

financial stability in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel B (extended model is used[22]) shows that the coefficient of the two-way interaction term (leverage & foreign ownership) is positively significant to locally-owned banks' nonperforming loans. This implies that the presence of foreign banks fosters domestic banks to lend aggressively in cross-border debt markets and to cover leveraging costs; these financial institutions hike lending rates which, as per theoretical literature (e.g., Stiglitz & Weiss, 1981), attracts risky customers hence their credit risk increased.

Table 6.11 examines foreign ownership's impact on foreign- and- locally-owned banks' normalized z-score measure (i.e., financial stability).

[22] Used the biasness' t-test statistic rule.

Table 6.11 – Foreign bank ownership and stability measure (normalised Z-score) of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' financial stability						
Dep. factor = Z-Score$_{jt}$	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership (ForOwn$_{jt}$)	1.01576	0.19589	0.000%[a]	0.59873	0.52618	25.500%
Omitted variables						
Cap$_{jt}$ x ForOwn$_{jt}$				-13.77112	4.53853	0.200%[a]
BaselIII$_{jt}$ x ForOwn$_{jt}$				0.37809	0.23425	10.700%
Lev$_{jt}$ x ForOwn$_{jt}$				2.37225	0.30809	7.000%[c]
Model decision testing						
t-test statistic (biasness)	-0.85401		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.2566			0.7069		
between	0.4995			0.7595		
overall	0.3218			0.7286		
Wald (chi-square)	46.57[a]			211.48[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' financial stability						
Foreign ownership (ForOwn$_{jt}$)	0.52059	0.16600	0.200%[a]	0.02560	0.40038	94.90%
Omitted variables						
Cap$_{jt}$ x ForOwn$_{jt}$				-8.76994	7.12081	21.80%
BaselIII$_{jt}$ x ForOwn$_{jt}$				0.69626	0.27585	1.200%[b]
Lev$_{jt}$ x ForOwn$_{jt}$				2.08378	0.88371	1.800%[b]
Model decision testing						
t-test statistic (biasness)	-1.35857[c]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0420			0.3723		

	between	0.8191	0.9490
	overall	0.1376	0.4491
Wald (chi-square)		22.00[a]	64.83[a]

Notes: The dependent variable in Table 6.11 is the Z-score for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the income/financial stability channel in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel A (baseline model is used[23]) shows that the coefficient of foreign bank ownership is positively significant to foreign-owned banks' standardised financial stability at a 1% significance level. This finding suggests that the acquired host BRICS financial institutions by foreign strategic investors grow their performing assets and capitalisation based on risk-aversion principles; hence earnings risks do not impair its financial stability. Further, this finding implies that the internal funding from their foreign-owned banks' parents insulates these banks from earnings risk. This finding supports Boulanouar et al., (2021), who found that foreign-owned banks are more stable than their domestic counterparts.

In Panel B, the coefficients of two-way interaction terms (Basel III dummy & foreign ownership and leverage & foreign ownership) are statistically significant to locally-owned banks' financial stability at a 5% significance level. This finding suggests that the presence of foreign bank ownership in BRICS banking systems increases the adherence of domestic banks to international banking regulation and as well their access to cross-border debt markets, thus, increasing these local banks' ability to negate earnings risks while growing their performing assets, hence their financial stability increases. This

23 Used the biasness' t-test statistic rule.

finding supports Bordo et al., (2010) and Ahrend et al., (2013), who found that the globalisation of EMEs' banking markets led to the dollarisation of their banks' liabilities which weakens their resilience against exogenous economic shocks

6.4.2 Impact of foreign bank ownership on systemic risk

Table 6.12 presents the impact of foreign ownership on the systemic risk of locally and foreign-controlled banks. Panel A (baseline model is used[24]), coefficient of the foreign bank ownership is positively significant to the foreign-owned banks' systemic risk figure at a 5% significance level. This finding alludes that the acquisition process of host BRICS banks increase their presence in the interbank markets, hence its rise in systemic risks post-acquisition. This finding agrees with Van Cauwenberge et al., (2019) found that the foreign direct investment channel is the port through which systemic risk became prominent in the Netherlands' economy by adding that the same holds in the case of BRICS when looking at its foreign bank ownership.

24 Used the biasness' t-test statistic rule.

Table 6.12 – Foreign bank ownership and systemic risk measure of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' systemic risk						
Dep. factor = $\Delta CoVaR_{jt}$	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.20248	0.10032	4.400%[b]	1.00570	0.35222	0.300%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-3.75706	3.03783	21.60%
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.21788	0.15679	16.500%
Lev_{jt} x $ForOwn_{jt}$				-2.49283	0.87556	0.400%[a]
Model decision testing						
t-test statistic (biasness)	-0.33763		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0527			0.3627		
between	0.8964			0.9340		
overall	0.3022			0.5327		
Wald (chi-square)	37.89[a]			94.58[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' systemic risk						
Foreign ownership ($ForOwn_{jt}$)	0.41042	0.14539	0.500%[a]	-1.47762	0.32083	0.000%[a]
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				30.80994	5.70601	0.000%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.69842	0.22104	0.2000%[a]
Lev_{jt} x $ForOwn_{jt}$				-0.25527	0.70813	71.800%
Model decision testing						
t-test statistic (biasness)	-6.60163[a]		**Model decision-maker:** Extended model preferred			
Goodness-of-fit profile						
(R-square) – within	0.0359			0.4806		

	between	0.7939	0.9838
	overall	0.2706	0.6465
Wald (chi-square)		31.49[a]	161.91[a]

Notes: The dependent variable in Table 6.12 is the CoVaR for domestic- and- foreign banks in BRICS, and its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the risk contingent channel in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel B (extended model is used[25]) shows that coefficients of foreign bank ownership and the two-way interaction term (Basel III dummy variable & foreign ownership) is negatively significant to locally-owned banks' systemic risk at a 1% significance level. This may indicate that foreign bank ownership in BRICS provides domestic banks with ample alternative funding sources, which limited their operations in the interbank markets, thereby reducing systemic risk. The other explanation for this finding could be that foreign bank ownership in BRICS banking markets fosters adherence to pertinent international bank regulation. This is why, with the implementation of the Basel III framework, its systemic risk became reduced. The coefficient of the two-way interaction term (capitalisation & foreign ownership) is positively significant to locally-owned banks' systemic risk at a 1% significance level. This finding implies that the cross-border equity market channel fuels systemic risk in the banking system for BRICS domestic banks.

6.5 Impact of foreign bank ownership on Basel-specific regulatory parameters

This additional analysis seeks to evaluate foreign ownership's impact on tier I and II capitals as the percentage of total assets of both local and foreign-controlled banks in

25 Used the biasness' t-test statistic rule.

BRICS. Table 6.13 examines how foreign ownership affects tier I capital as a percentage of total bank assets in BRICS. Panel A (baseline model is used[26]), coefficient of the foreign bank ownership is positively significant to foreign-owned banks' Tier I regulatory capital levels at a 1% significance level. This finding suggests that the acquisition of host banks by foreign strategic investors provides foreign-owned banks with the means to absorb liquidity regulatory shocks; hence their Tier-I regulatory capital levels were found to increase.

Table 6.13 – Foreign bank ownership and Tier-I capital levels of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' Tier I regulatory capital level						
Dep. factor = RegCapTier-I_{jt}	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership ($ForOwn_{jt}$)	0.11335	0.02379	0.000%[a]	0.16276	0.05572	0.300%
Omitted variables						
Cap_{jt} x $ForOwn_{jt}$				-3.61852	1.36924	0.800%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$				-0.04027	0.02122	5.800%[c]
Lev_{jt} x $ForOwn_{jt}$				-0.32926	0.14025	1.900%[a]
Model decision testing						
t-test statistic (biasness)	-0.98063		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.1978			0.8179		
between	0.2557			0.9826		
overall	0.1811			0.8307		
Wald (chi-square)	27.14[a]			376.73[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' Tier I regulatory capital level						
Foreign ownership ($ForOwn_{jt}$)	0.19111	0.02507	0.000%[a]	0.01076	0.03667	76.900%
Omitted variables						

26 Used the biasness' t-test statistic rule.

Cap_{jt} x $ForOwn_{jt}$		30.80994	5.70601	0.000%[a]
$BaselIII_{jt}$ x $ForOwn_{jt}$		-0.69842	0.22104	0.2000%[a]
Lev_{jt} x $ForOwn_{jt}$		-0.25527	0.70813	71.800%
Model decision testing				
t-test statistic (biasness)	-6.73913[a]	**Model decision-maker:** Extended model preferred		
Goodness-of-fit profile				
(R-square) – within	0.0359	0.6632		
between	0.7939	0.9880		
overall	0.2706	0.7855		
Wald (chi-square)	89.46[a]	290.24[a]		

Notes: The dependent variable in Table 6.13 is the Tier-I regulatory capital proxy for domestic- and- foreign banks in BRICS. Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the regulatory strategy enforced by these banks. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

Panel B (extended model is used[27]) shows how foreign ownership affects the tier I capital ratio over domestic banks' total assets. Coefficient of the two-way interaction term (Basel III dummy variable & foreign ownership is negatively significant to locally-owned banks' Tier I regulatory capital level at 1% significance level. This finding implies that the BRICS bank development encourages compliance of these financial institutions to the Basel III framework, resulting in a reduction in Tier-I regulatory capital in the years when the Basel III framework was implemented. The coefficient of the two-way interaction term (capitalisation & foreign ownership is positively significant to locally-owned banks'

27 Used the biasness' t-test statistic rule

Tier-I regulatory capital levels at a 1% significance level. This finding suggests that their presence improves their accessibility to the cross-border equity markets, and it is through this channel locally-owned banks increase their Tier-I regulatory capital levels.

Table 6.14 investigates foreign ownership's impact on the ratio of tier II capital over banks' total assets in BRICS. The baseline model explains how the t-statistics are insignificant in Panels A and B.

Table 6.14 – Foreign bank ownership and Tier-II capital levels of foreign-owned and domestic banks

Panel A: Impact of foreign bank ownership on BRICS foreign-owned banks' Tier II regulatory capital level						
Dep. factor = RegCapTier-II$_{jt}$	**Baseline model**			**Extended model (full)**		
	Coefficient est.	Standard Error	p-value	Coefficient est.	Standard Error	p-value
Foreign ownership (ForOwn$_{jt}$)	0.00398	0.00705	0.000%[a]	0.06164	0.02891	3.300%[b]
Omitted variables						
Cap$_{jt}$ x ForOwn$_{jt}$				0.12953	0.71043	85.500%
BaselIII$_{jt}$ x ForOwn$_{jt}$				0.00300	0.01101	78.500%
Lev$_{jt}$ x ForOwn$_{jt}$				-0.20309	0.07277	0.500%[a]
Model decision testing						
t-test statistic (biasness)	2.05655		**Model decision-maker:** Baseline model preferred			
Goodness-of-fit profile						
(R-square) – within	0.1808			0.4707		
between	0.5799			0.6479		
overall	0.1970			0.4808		
Wald (chi-square)	35.40[a]			85.91[a]		
Panel B: Impact of foreign bank ownership on BRICS domestically owned banks' Tier II regulatory capital level						
Foreign ownership (ForOwn$_{jt}$)	0.03705	0.00603	0.000%[b]	0.01076	0.03667	76.900%
Omitted variables						
Cap$_{jt}$ x ForOwn$_{jt}$				-0.31870	0.19057	9.400%[c]
BaselIII$_{jt}$ x ForOwn$_{jt}$				0.01881	0.00882	3.300%[b]

Lev_{jt} x $ForOwn_{jt}$		0.00797	0.03416	81.50%
Model decision testing				
t-test statistic (biasness)	-0.72683	**Model decision-maker:** Baseline model preferred		
Goodness-of-fit profile				
(R-square) – within	0.0390	0.1457		
between	0.9838	0.9855		
overall	0.3413	0.4562		
Wald (chi-square)	54.56[a]	72.18[a]		

Notes: The dependent variable in Table 6.14 is the Tier-II regulatory capital proxy for domestic- and- foreign banks in BRICS. Its objective is to examine the impact of foreign bank ownership on the BRICS banks' profitability margins to understand the regulatory risk in the bloc. The controls are the institutional quality factors, including government effectiveness, political stability, regulatory quality, and the rule of law, while omitted variables are capitalisation, Basel III dummy variable, leverage ratio, and its interaction with the foreign bank ownership. The two-stage (2SLS) random panel model design is used to quantify this research objective, and this minimises multicollinearity instance between foreign bank ownership and other explanatory variables because the foreign bank ownership data used in the model is derived as a function of the bank- and- country-specific factors and policy factors (i.e., the monetary- and- fiscal policy proxies). Furthermore, to assess the effectiveness of this 2SLS random panel model design in curbing endogeneity by testing the biasness degree using the coefficients of the foreign bank ownership. In the two-sided t-test statistic, if its null hypothesis is rejected, then the extended model is preferred over the baseline model, while the opposite is expected when the null hypothesis is not rejected in terms of the interpreted results in this section. Moreover, the Wald chi-squared and overall R-squared measures were used to determine whether the data fit the 2SLS random-effect panel model. The significance level used in these analyses was categorized into three groups: =<1%, =<5%, and =< 10%, denoted by a, b, and c, respectively.

In Panels A and B of Table 6.14, the foreign ownership factor is positively significant to the ratio of tier II capital over foreign-owned and domestic banks' total assets at 1%. This increment in the tier II capital of BRICS banks is possibly against the backdrop of the Basel framework's attempt in recent years to decrease tier-II capital. An increase of tier II capital due to foreign ownership may suggest that banks still hold a significant portion of tier II capital level within their balance sheets, which reduces their resilience against adverse situations such as the one experienced during the 2008 global crisis.

Chapter summary

The analysis above shows that foreign ownership presence in the BRICS banking system impacts both risks and benefits. The benefits come in the form of increased ROA, ROE, NIM, and tier I capital, while the risks were in the form of an increase in earnings risk, non-performing loans, systemic risks, and tier-II capital. Interestingly, the rise in risk

brought about increased benefits in some cases. The next chapter presents the impact of foreign ownership on monetary and fiscal policy efficiency and effectiveness.

Chapter VII – Impact of foreign bank ownership on fiscal- and-monetary-policy transmissions (Empirical results)

7.1 Introduction

This chapter presents the results of the impact of foreign bank ownership on BRICS domestic fiscal and monetary policy transmission via the lending channel. The chapter is arranged as follows: Section 7.2 reports a descriptive analysis of BRICS specific fiscal and monetary policies measures. Section 7.3 reports the factors influencing fiscal and monetary policy under the bank lending channel. Chapter summary concludes the chapter.

7.2 Understanding the impact of foreign ownership on financial policies – Descriptive analysis

Table 7.1 reports the mean statistics for the foreign bank ownership (i.e., $ForOwn_{jt}$), monetary policy (i.e., MP_{jt}) and fiscal policy (i.e., $FiscalPolicy_{jt}$) measures partitioned into BRICS member countries over the sample period ranging from 1997 to 2018.

Table 7.1: Means of foreign bank ownership flag, monetary- and- fiscal policy proxies

Country	**$ForOwn_{jt}$**	**MP_{jt}**	**$FiscalPolicy_{jt}$**
Brazil	0.14386	0.15009	0.04215
China	0.04829	0.15146	0.02745
India	0.04171	0.14927	0.05447
Russia	0.46108	0.15255	-0.01090
South Africa	0.40000	0.10854	0.00302

Note: "j" and "t" denote the BRICS member country and time in years. Foreign bank ownership (denoted: $ForOwn_{jt}$) is measured as a dummy variable, taking one if the controlling shareholders are outside the BRICS member country or otherwise is zero. Subsequently, this foreign bank ownership flag is aggregated using the country and year fields as average consolidating variables. While the monetary policy is proxied by growth in broad money and the fiscal policy index is measured as the difference between the fiscal income index and fiscal expense index determined using the principal component technique[28].

[28] Used principal component technique to summarise the variables that describe the fiscal income and expense factors. The fiscal expense index, the following variables were used such as: government expense over GDP ($GovExpGDP_{jt}$), goods- and- services' expense over total government expense ($GSEExp_{jt}$), interest payments over total government expense ($IntPayExp_{jt}$), other expense over total government expense ($OEExpGovExp_{jt}$), subsidies and other transfer over total government expense ($SubGovExp_{jt}$), net official development assistance disbursement flows over total government expense ($NetODAGovExp_{jt}$), and compensation of

Table 7.2 shows that Russia and South Africa have relatively high foreign-owned banks and have lower fiscal policy measures ($Fiscalpolicy_{jt}$ = -0.01090 and 0.00302, respectively). This observation insinuates that the increase in foreign ownership privatises the fiscal income and expense operations of governments, which in the long-run results in the haircut of the governments' net fiscal income, supporting the lack of loyalty hypothesis (Weill 2003). In the case of Brazil, China and India, the foreign ownership is low (mean =0.14386,0.04829 and 0.04171 respectively), with higher fiscal policy measures than those of Russia and South Africa. This situation allows these governments to participate directly in the capital markets, which in theory would be charged a lower borrowing rate because the government is assumed to be a risk-free entity.

employees over total government expense ($SalGovExp_{jt}$) which arranges between zero and one. Thus, the principal component result reported in Table 7A.1 (below) show that $FiscalExp_{(index)}$ = 0.4311 x ($GovExpGDP_{jt}$) + 0.2841 x ($GSEExp_{jt}$) + 0.1597 x ($IntPayExp_{jt}$).

Table 7A. **Error! Main Document Only.**: Principal component analysis of the seven proxies of government expenditures

	Eigenvalue	Difference	Proportion	Cumulative
1	3.01770	1.02894	0.4311	0.4311
2	1.98876	0.87114	0.2841	0.7152
3	1.11762	0.72871	0.1597	0.8749
4	0.38891	0.07047	0.0556	0.9304
5	0.31844	0.17329	0.0456	0.9759
6	0.14515	0.12172	0.0207	0.9967
7	0.02343		0.0033	1.0000

Note: The $GovExpGDP_{jt}$, $GSEExp_{jt}$ and $IntPayExp_{jt}$ in Table 7A.1 have eigenvalues greater than one thus suggesting these are critical factors to proxying the fiscal expense index. The linear combination of these variables' proportion figures were used in creating the index.

Similarly, the same approach is used for estimating the fiscal income index thus for this proxy the following government-related factors were considered such as grant and other revenue over total government income (denoted by $GrantInc_{jt}$), interest payments over total government income (IntPayjt), other taxes over total government income ($OTTax_{jt}$), revenue excluding grants over GDP ($RevGDP_{jt}$), tax revenue over GDP ($TaxRevGDP_{jt}$), export-based tax over tax income ($ExPTaxInc_{jt}$), goods- and- services-based over total government income ($GSInc_{jt}$), income, profits and capital gain-based taxes over total government income ($IPCInc_{jt}$), and international trade-based taxes over total government income ($IntTraInc_{jt}$). According to Table 7A.2 (below) shows that $FiscalIncome_{(index)}$ = 0.5632 x ($GrantInc_{jt}$) + 0.1825 x ($IntPay_{jt}$).

Table 7A. Error! Main Document Only.**:** Principal component analysis of the seven proxies of government income

	Eigenvalue	Difference	Proportion	Cumulative
1	4.50546	3.04532	0.5632	0.5632
2	1.46008	0.52527	0.1825	0.7457
3	0.93481	0.43809	0.1169	0.8625
4	0.49672	0.12373	0.0621	0.9246
5	0.37299	0.24131	0.0466	0.9713
6	0.13168	0.07211	0.0165	0.9877
7	0.06957	0.02084	0.0074	0.9952
8	0.03872		0.0048	1.0000

Note: The $GrantInc_{jt}$, and $IntPay_{jt}$ in Table 7A.2 have eigenvalues greater than one thus suggesting these are critical factors to proxying the fiscal expense index. The linear combination of these variables' proportion figures were used in creating the index.

Therefore, $FiscalPolicy_{jt} = FiscalIncome_{(index)jt} – FiscalExp_{(index)jt}$.

In terms of the relationship between foreign ownership and monetary policy, Table 7.1 shows that despite different levels of foreign ownership, Brazil, China, India and Russia tend to have almost equal mean (mean MP_{jt} = 0.15009, 015146, 0.14927 and 0.15255) level high foreign bank ownership levels, with South Africa being relatively lower (mean MP_{jt} =0.10854) by just a few points. This observation may indicate that the presence of foreign banks in BRICS does not influence their monetary policy, possibly because BRICS financial markets are relatively developed and do not require much capital from foreign markets to impact their money supply. In addition, this observation may also indicate high foreign currency reserves in these markets that enable them to control the negative consequences of foreign presence on the money supply.

Table 7.2 describes the BRICS economic bloc's foreign ownership, MP, and fiscal policy. The table shows that the mean statistic of the fiscal policy proxy is 0.02324, which is closer to the mean statistic for China in Table 7.1 above, implying that the Chinese fiscal policy influence the bloc's results, whereas, in the case of the monetary policy Brazil's has a significant impact on the bloc's monetary policy observations.

Table 7.2: Means for foreign bank ownership, fiscal- and- monetary-policy proxies for the BRICS bloc

Variable	Mean	Std Dev	Min	Max
$ForOwn_{jt}$	0.19358	0.10917	0.00000	0.34667
MP_{jt}	0.14238	0.07891	-0.00924	0.41098
$FiscalPolicy_{jt}$	0.02324	0.04637	-0.07896	0.17260

Note: "j" and "t" present the BRICS member country and time in years. Foreign bank ownership has a minimum statistic of zero due to missing values resulting from the data collection process.

Table 7.3, Panel A reports the impact of foreign ownership on fiscal policy during different economic cycles (crisis, boom and recovery). It is important to note up front that the fiscal policy index of 0.00000 could result from missing data from the World Bank Database. An attempt was made to resolve this problem using the principal component analysis method, which seems to have not fully resolved the issue.

Table 7.3: Mean fiscal policy and foreign bank ownership in BRICS during different economic cycles

Country	Mean $ForOwn_{jt}$ and $FiscalPolicy_{jt}$ in different economic cycles		
Panel A – Country-specific			
	Crisis	**Boom**	**Recovery**
Brazil	0.00000 (0.10000)	0.06300 (0.13333)	0.02184 (0.10000)
China	0.05267 (0.00000)	0.02305 (0.06918)	0.01545 (0.01563)
India	0.04792 (0.04546)	0.05338 (0.04385)	0.06432 (0.03008)
Russia	-0.03334 (0.29167)	0.00242 (0.24950)	-0.02839 (0.20833)
South Africa	0.00162 (0.37500)	0.00189 (0.40000)	0.00783 (0.42500)
Panel B – Bloc-specific			
BRICS	0.01377 (0.16242)	0.02874 (0.17717)	0.01609 (0.15681)

Notes: The unbracketed figures represent the fiscal policy index figures, while the bracketed figures show the foreign bank ownership as a per cent of total banks in the respective BRICS member countries.

As expected, the fiscal policy in Brazil, India, Russia, and South Africa declined during the economic crisis compared to the boom period. The same is observed in their foreign ownership measure except for Russia, where foreign ownership increases during the crisis. The increase in foreign ownership in Russia may indicate that other benefits accrue to foreign banks that are not known in this study.

Overall, Table 7.3, Panel B shows that in BRICS, the fiscal policy declined during the economic crisis and recovery periods compared to economic boom periods. This observation suggests that the pressures from the 1998 Asian and 2008 global financial crises impaired the fiscal policy in BRICS. The decline in foreign bank ownership ratio may indicate that the pressure from the economic crises may lead to divestment by foreign banks.

Table 7.4 reports averages of other factors used in the analysis policy, including foreign direct investments (FDIs) over GDP, the rule of law, regulatory quality, government effectiveness and political stability. Table 7.4 shows that Russia's fiscal policy proxy is negative and its mean for the rule of law (mean= 0.1842), regulatory quality (mean= 0.2312), and government effectiveness (mean= 0.3816) is the lowest compared to other BRICS member countries. This observation suggests that countries with a high average of foreign bank ownership and poor institutional quality tend to lead to government deficits. It can also be assumed that Russia's improvement of regulatory quality, the rule of law and government effectiveness was achieved at the expense of political stability, leading to a bloated government budget, hence the negative fiscal policy.

Table 7.4: Averages by country

Country	Policy factors		Macroeconomic factors		Institutional quality factors			
	Fiscal policy	Monetary Policy	Lending rate	FDI/GDP	The rule of law	Regulatory quality	Government effectiveness	Political stability
Brazil	0.0422	0.1501	0.52187	-0.0256	0.3826	0.5139	0.4824	0.3800
China	0.0275	0.1515	0.05725	-1.0816	0.3881	0.4623	0.6023	0.2945
India	0.0545	0.1493	0.11242	-0.0263	0.5026	0.3567	0.4782	0.6902
Russia	-0.0109	0.1526	0.15973	0.0027	0.1842	0.2312	0.3816	0.4432
South Africa	0.0030	0.1085	0.14027	-0.8118	0.5008	0.5699	0.5958	0.3543
BRICS	**0.0242**	**0.1424**	**0.19547**	**-0.4296**	**0.3978**	**0.4340**	**0.4930**	**0.3843**

In Brazil, China, India and South Africa, the regulatory quality, the rule of law and government effectiveness measures are considerably higher than those for Russia, suggesting that, on average, the countries with relatively strong institutional quality tend to limit the bloated government budgets hence their fiscal policy proxies are positive. The FDI over GDP ratio for these countries is negative, implying that in times of financial distress, their governments rely heavily on foreign direct investments as an instrument to neutralise adverse fiscal effects since these mean values are negative. The lending rate of Brazil (mean = 0.52187) may be an outlier, but from the descriptive statistical analysis, we cannot deduce whether it is an influential outlier; hence it is excluded from this analysis. Furthermore, China, India and South Africa have the lowest mean lending rates (mean = 0.05725, 0.11242 and 0.14027, respectively), suggesting that these BRICS countries with average low lending rates tend to prevent or minimise deficits in the fiscal policy. For Russia, the lending rate is the highest mean (mean= 0.15973) and has a negative fiscal policy, suggesting that lending risk may influence the bloated government budget. However, without in-depth modelling, it is not easy to establish whether this relationship is significant or not.

7.3 The impact of foreign bank ownership on fiscal and monetary policy via the bank lending channel in BRICS

In theory (e.g., Joen & Wu, 2014), the bank lending channel is the mechanism by which the financial policies' effect become transmitted by the government and regulators in their economies. This section presents the results of the impact of foreign ownership

on domestic fiscal and monetary policy transmissions via the channel. At the same time, it presents empirical evidence on the effects of foreign bank ownership on domestic monetary policy transmission through bank lending channel when bank competition is included and excluded.

7.3.1 The impact of foreign bank ownership on the effectiveness of monetary policy via the bank lending channel in BRICS

Table 7.5 reports the modelling results examining the effectiveness of financial regulators in controlling lending risks transmitted by banks when foreign bank ownership is part of the BRICS banking system. The one-way random panel research design is used because the null hypothesis of the Hausmann test is not rejected. Table 7.6 reports the estimates of critical variables only, which are MP_{jt} proxied by the growth in broad money, $ForOwn_{jt}$ measured as the number of foreign banks over the total number of BRICS' banks in BRICS and Crisis dummy variable for the j^{th} BRICS member country at time t. Model 1 is a baseline regression, including the intercept term. Model 2 presents the baseline model excluding the banking estimates for the banking sector's environmental vector of the variables are excluded while including the intercept term to the baseline model, Column (3): Bank-specific vector of variables interact with the monetary policy, and the intercept term is included to the baseline model, Column (4): Baseline regression, Column (5): Baseline regression without bank sectors' factors, Column (6): Baseline regression including the interaction between bank-specific variables and monetary policy.

Table 7.5 - The effect of foreign ownership on domestic monetary policy transmissions via lending channel

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)	(Model 6)
Intercept	0.11903 (0.1061)	0.15459 (0.1020)	0.09915 (0.1125)			
MP_{jt}	-0.34901 (0.1806)[c]	-0.41879 (0.1821)[b]	-0.03113 (0.2203)	-0.27062 (0.1674)[c]	-0.31741 (0.1711)[c]	0.05473 (0.1975)
$ForOwn_{jt}$	0.00380 (0.1424)	0.11780 (0.1327)	-0.00812 (0.1625)	0.06510 (0.1334)	0.21575 (0.1185)[c]	0.01698 (0.1606)
$ForOwn_{jt}$ x MP_{jt}	1.83596 (0.7022)[b]	1.67544 (0.7144)[b]	2.13627 (0.9825)[b]	1.59828 (0.6728)[b]	1.32946 (0.6842)[c]	2.13156 (0.9832)[b]
$ForOwn_{jt}$ x MP_{jt} x Crisis	0.24291 (0.7453)	0.07546 (0.7582)	-0.21814 (0.9825)	0.28780 (0.7481)	0.11023 (0.7658)	-0.31692 (0.8932)
$Size_{jt}$	0.98197 (0.0032)[a]	0.97980 (0.00188)[a]	0.98546 (0.00467)[a]	0.98222 (0.00320)[a]	0.98027 (0.00187)[a]	0.98660 (0.00447)[a]
$Leverage_{jt}$	-0.24422 (0.1121)[b]	-0.06843 (0.0709)	0.28596 (0.2219)	0.25754 (0.1120)[b]	-0.07064 (0.0716)	0.25328 (0.2192)
ROA_{jt}	-5.76693 (1.6820)[a]	-6.70737 (1.6764)[a]	-11.4211 (3.4251)[a]	-5.65168 (1.6809)[a]	-6.66956 (1.6896)[a]	-11.1292 (3.4106)[a]
$RegCap_{jt}$	0.94667 (0.00321)[c]		0.24612 (0.5454)	1.06121 (0.5529)[c]		0.31419 (0.5414)
$\Delta CoVaR_{jt}$	-0.25722 (0.1279)[b]		-0.18796 (0.1233)	0.27306 (0.1274)[b]		-0.19949 (0.1225)
$GDPGrowth_{jt}$	-0.30618 (0.4575)	-0.5393 (0.4562)	0.68461 (0.4696)	-0.12618 (0.4335)	-0.31888 (0.4381)	-0.52292 (0.4336)
$Unemployment_{jt}$	-0.72395 (0.5349)	-0.75733 (0.5162)	-0.78197 (0.5325)	0.26341 (0.3682)	-0.1688 (0.3635)	-0.43316 (0.3833)
$Liquidity_{jt}$ x MP_{jt}			-4.22050 (1.6786)[b]			-4.02266 (1.6654)[b]
$Size_{jt}$ x MP_{jt}			-0.01348 (0.0257)			-0.01903 (0.0250)
ROA_{jt} x MP_{jt}			44.53516 (24.2030)[c]			42.77618 (23.1437)[c]
Crisis x MP_{jt}			0.46760 (0.4028)			-0.03584 (0.0674)
Crisis			-0.05294 (0.0703)			0.41609 (0.3986)
Hausmann test statistic's p-value	0.4378	0.9989	1.0000	0.1739	0.6877	1.0000
Observations	100	100	100	100	100	100

Notes: The estimates are the unbracketed figures, while the parentheses' values are the standard error. The level of significance accepted in the models' estimates is 1%, 5% and 10%, denoted by a, b, and c. On the other hand, the one-way random panel models were fitted across Table 7.5 because the Hausmann test statistic' null hypothesis was not rejected except for Column

(5)—two-way random panel model is used. *Column (1):* baseline regression including the intercept term, *Column (2):* bank sector's environmental vector of the variables are excluded while including the intercept term to the baseline model, *Column (3):* bank-specific vector of variables interact with the monetary policy, and the intercept term is included to the baseline model, *Column (4):* baseline regression, *Column (5):* baseline regression without bank sectors' factors, *Column (6):* baseline regression including the interaction between bank-specific variables and monetary policy.

Table 7.5 shows that the coefficients of MP_{jt} in models 1 - 4 are negatively significant at 10%, 5%, 10%, 10% significance levels, respectively, to the real loan rate (a measure of a lending channel) as a dependent variable. This result suggests that monetary policy reduces real loan rates (i.e., increased lending risk)[29] when foreign bank ownership is present in the BRICS bloc. In theory, this finding implies that foreign bank ownership in BRICS banking systems hampers the effectiveness of monetary policy in controlling lending risk. In Model 1, the coefficient of MP_{jt} is -0.34901, and at the same time, the coefficient of $ForOwn_{jt}$ x MP_{jt} is 1.83596, giving an absolute difference of 1.22896. This finding further implies that an increase of 1 unit for the two-way interaction term would increase the real loan rate by 1.22896, which in theory would reduce the lending capacity of BRICS banks when foreign ownership is present in non-crisis periods. Overall, this finding implies that the effectiveness of international monetary policy adjustments to control lending risk increases when foreign bank ownership is present in BRICS banking systems in non-crisis periods. These results support Joen & Wu (2014), who argued that the presence of foreign bank ownership in Asian banking systems hampers the ability of host regulators to control their lending risk via monetary policy while increasing host BRICS banks' lending capacity adherence to cross-border monetary policy adjustments.

The coefficient of $Liquidity_{jt}$ x MP_{jt} in columns models 3 and 6 are negatively significant to the real loan rate factor at a 5% significance level in both models. Because the coefficient of foreign ownership is negative and insignificant while the coefficient of $Liquidity_{jt}$ x MP_{jt} is negatively significant may be an indication that foreign ownership does not influence the loan supply market. However, foreign ownership increased BRICS banks' access to capital markets. On the contrary, in Models 3 and 6, the coefficient of ROA_{jt} x MP_{jt} is positively significant to the real loan rates at 10% significance levels. This result suggests that foreign bank ownership in host BRICS banking systems increases

[29] Low real loan rate encourages banks to lend more thus increasing lending risks in an economy.

non-arbitrage behaviour among the banks, which grows their profitability immensely and increases lending risks in-circulation while reducing the lending risk, proving that the market self-corrects non-arbitrage behaviour.

7.3.2 The impact of foreign bank ownership on the effectiveness of monetary policy via the bank lending channel when competition is included

Models 3 and 6 in Table 7.6 show that two-way interaction terms including $Liquidity_{jt}$ x MP_{jt} (short-term interest-based liquid assets) and ROA_{jt} x MP_{jt} (short-term interest-based performing assets' return) are negatively and positively significant to the real loan rates respectively at a 1% significance level in those models. These results imply that foreign bank ownership in highly competitive BRICS banking systems provides these financial institutions with an avenue to access the cross-border capital markets; hence, their ability to attain liquidity negates the effectiveness of domestic monetary policy transmission through the lending channel. Another implication of these findings is that despite the insulation received by BRICS banks due to foreign bank ownership to escape the controlling hand of local monetary-related policy using liquidity from cross-border capital markets, its income-generating assets within their balance sheets help monetary policy via the channel in curbing the lending risks. Additionally, when comparing Tables 7.5 and 7.6 for these factors, the signs and significance did not change, but the size of these coefficients appear inflated in Table 7.6. The inflated coefficients of these two-way interaction terms may suggest that the banking sector-specific competition accelerate the effectiveness and ineffectiveness of the domestic monetary policy transmission via the bank lending channel.

This result supports Yang & Shao (2016), who discovered that bank competition reduces the effectiveness of domestic monetary policy in the Chinese banking system scenario by adding that the presence of foreign bank ownership catalysed this effect since the current study includes China, as part of its sample. This finding supports Fungáčová et al., (2014), who found that bank competition negates the effectiveness of domestic monetary policy transmission via their loan markets for the banking systems in the Euro area.

Table 7.6 - The effect of foreign ownership on domestic monetary policy transmissions via lending channel when competition is included

	(Model 1)	(Model 2)	(Model 3)	(Model 4)	(Model 5)	(Model 6)
Intercept	0.10153 (0.1199)	0.15253 (0.1191)	0.05881 (0.1135)			
$ForOwn_{jt}$	-0.01677 (0.1686)	0.03647 (0.1657)	0.19550 (0.1691)	0.01719 (0.1634)	0.09362 (0.1602)	0.21737 (0.1630)
Crisis	-0.08089 (0.0745)	-0.10516 (0.0753)	-0.04549 (0.0661)	-0.06502 (0.0719)	-0.08205 (0.0734)	-0.03650 (0.0635)
MP_{jt}	-0.39008 (0.2023)[c]	-0.42755 (0.2033)[b]	-0.03989 (0.2076)	-0.32174 (0.1852)[c]	-0.32459 (0.1874)[c]	0.00563 (0.1872)
$LernerIndex_{jt}$	-0.54603 (0.3527)	-0.44517 (0.3208)	-1.26172 (0.5189)[b]	-0.53901 (0.3520)	-0.40249 (0.3202)	-1.29509 (0.5126)[b]
$LernerIndex_{jt} \times MP_{jt}$	-0.81423 (1.5171)	-1.22918 (1.5177)	2.07117 (2.8630)	-1.04925 (1.4890)	-1.66549 (0.4845)	2.15571 (2.8456)
$Crisis \times MP_{jt}$	0.74432 (0.4091)[c]	0.88131 (0.4076)[b]	0.42025 (0.3784)	0.70024 (0.4051)[c]	0.82464 (0.4067)[b]	0.39153 (0.3726)
$LernerIndex_{jt} \times MP_{jt} \times ForOwn_{jt}$	7.12663 (3.2597)[b]	7.40127 (3.1794)[b]	4.03139 (3.1962)	6.82166 (3.2343)[b]	7.06872 (3.1805)[b]	3.85001 (3.1628)
$LernerIndex_{jt} \times MP_{jt} \times ForOwn_{jt} \times$ Crisis	-0.16331 (3.3824)	-0.38039 (3.4297)	-0.37880 (2.9744)	-0.46221 (3.3583)	-0.89244 (3.4189)	-0.54648 (2.9435)
$Size_{jt}$	0.98707 (0.00361)[a]	0.98682 (0.00329)[a]	0.99329 (0.00741)[a]	0.98750 (0.00356)[a]	0.98766 (0.0032)[a]	0.99404 (0.0072)[a]
$Leverage_{jt}$	-0.18198 (0.1146)	-0.09342 (0.0708)	0.54847 (0.2263)[b]	-0.18479 (0.1143)	-0.09786 (0.0709)	0.53933 (0.2246)[a]
ROA_{jt}	-5.7783 (1.6114)[a]	-6.34131 (1.5988)[a]	-13.7466 (3.1146)[a]	-5.68807 (1.6052)[a]	-6.25622 (1.6033)[a]	-13.6435 (3.0962)[a]
$RegCap_{jt}$	1.08347 (0.5850)[c]		0.58874 (0.2263)[b]	1.18483 (0.5717)[b]		0.63491 (0.5293)
$\Delta CoVaR_{jt}$	-0.12662 (0.1423)		0.00185 (0.1330)	-0.12558 (0.1421)		0.00333 (0.1324)
$GDPGrowth_{jt}$	0.14112 (0.5088)	-0.38236 (0.4971)	-0.36768 (0.4642)	0.03655 (0.4627)	-0.14099 (0.4617)	-0.27576 (0.4270)
$Unemployment_{jt}$	0.59668 (0.5868)	-0.76979 (0.5581)	-0.62566 (0.5388)	-0.27708 (0.4237)	-0.30496 (0.4255)	-0.43693 (0.3954)
$Liquidity_{jt} \times MP_{jt}$			-5.81244 (1.6712)[a]			-5.74182 (1.6582)[a]
$Size_{jt} \times MP_{jt}$			-0.01454 (0.0463)			-0.01792 (0.0457)
$ROA_{jt} \times MP_{jt}$			61.43500 (21.3634)[a]			61.01129 (21.2524)[a]
Hausmann test statistic's p-value	0.6219	0.1282	0.9996	0.2542	0.0148	0.9255
Observations	100	100	100	100	100	100

Notes: The estimates are the unbracketed figures, while the parentheses' values are the standard error. The level of significance accepted in the models' estimates is 1%, 5% and 10%, denoted by a, b, and c. On the other hand, the one-way random panel models were fitted across Table 7.6 because the Hausmann test statistic's null hypothesis was not rejected. *Column (1):* baseline regression including the intercept term; *Column (2):* bank sector's environmental vector of the variables are excluded while including the intercept

term to the baseline model; *Column (3):* bank-specific vector of variables interact with the monetary policy, and the intercept term is included to the baseline model; *Column (4):* baseline regression; *Column (5):* baseline regression without bank sectors' factors; *Column (6):* baseline regression including the interaction between bank-specific variables and monetary policy.

In Table 7.6, the coefficient of MP_{jt} in models 1, 2, 4 and 5 is negatively significant at 10%, 5%, 10%, and 10% significance level respectively, implying that when competition is included, foreign bank ownership increases the ability of BRICS countries to increase their loan supply market and this improvement tends to curb the effectiveness of domestic monetary shock in controlling the risk.

7.3.3 Impact of foreign bank ownership on fiscal policy transmissions via the lending channel

In Table 7.7, Models 1, 2 and 4 are negatively significant to the real loan rates at 5, 10%, 5% significance levels. This finding implies that foreign ownership in BRICS banking systems increases host macroeconomic instability (i.e., long-run GDP growth & unemployment) and amplify inequitable distribution of host loan markets among its economic participants. This finding supports Gormley (2010), who argued that foreign bank ownership in the Indian banking system increases information asymmetries in host loan markets as highly creditworthy loan seekers in the host country become preferred. On the other hand, Bird et al. (2019) contradict this empirical evidence of the current research. They found that the monetary policy transmission lending channel has an indirect spill-over as fiscal policy transmission affects the lending capacity of credit-constrained firms in the examined region.

Table 7.7 - Estimating the impact of foreign ownership on the credit channel of fiscal policy transmission

	(Model 1)	**(Model 2)**	**(Model 3)**	**(Model 4)**
$FiscalPolicy_{jt}$	-1.18312 (0.4655)[b]	-0.91931 (0.4803)[c]	12.32951 (20.9586)	-1.18862 (0.4554)[b]
$FiscalPolicy_{jt}$ x $ForOwn_{jt}$	2.75400 (2.0043)	2.54635 (2.0125)	2.89599 (8.5178)	2.51572 (1.9580)
$FiscalPolicy_{jt}$ x $ForOwn_{jt}$ x Crisis	1.63917 (4.3532)	-0.72116 (4.4739)	170.0684 (194.3)	1.99722 (4.1339)
Hausmann test-statistic's p-value	0.5345	0.2606	0.9944	0.9094
Observation	100	100	100	100

Note: The estimates in the table (above) examine the impact of BRICS' fiscal policy transmission on the bank lending channel, and the dependent variable is the LN function of $TotalLoans_{jt}$ for the j^{th} BRICS country at time t. The estimates are the unbracketed figures, while the parentheses' values are the standard error. The level of significance accepted in the models' estimates is 1%, 5% and 10%, denoted by a, b, and c. On the other hand, the one-way random panel models were fitted across Table 7.7 because the Hausmann test statistic's null hypothesis was not rejected. **Column 1**: Baseline model, **Column 2**: the baseline model excluding banking sector

variables, **Column 3**: the baseline model excluding the bank-specific variables, **Column 4**: the baseline excluding macroeconomic factors.

Chapter Summary

This chapter examines the impact of foreign bank ownership on fiscal and monetary policy transmission via the lending channel when including and excluding banking-specific competition. The findings highlight that banking-specific competition heightens the deterioration of monetary policy's effectiveness via the lending channel. On the other hand, bank ownership reduces the effect of fiscal and monetary policy transmission via the bank lending channel, which implies that foreign bank ownership in BRICS increases their banks' lending capacity.

Chapter VIII – Discussions, Conclusion and Further Research

8.1 Introduction

The current chapter discusses the results presented in chapters 5, 6, and 7. These results are further linked to the existing literature reviewed in Chapter 3. The chapter is organised as follows: Section 8.2 discusses each objective's results stated in Chapter 1. Section 8.3 concludes the thesis and outlines possible future research.

8.2 Discussion

The first objective of the current research is to determine the impact of foreign ownership on the financial soundness of BRICS banks using CAMELS analysis. The empirical results show that foreign-controlled banks, on average, have a higher and statistically significant mean than domestic banks in terms of loan growth during an economic boom period. However, domestic banks have a higher and statistically significant mean post-crisis than foreign-controlled banks. These results suggest that foreign-controlled banks' financial performance, including their contribution to BRICS banking markets, is procyclical. Furthermore, foreign-controlled banks' financial performance's procyclicality may indicate that their loan portfolio is not risk-robust. This finding contradicts Crystal et al. (2002), who found that foreign-controlled banks from Latin American countries have robust loan growth, strengthening these economies' financial systems. The non-robustness of foreign-controlled banks' loan growth suggests that their contribution to enhancing BRICS' financial systems is procyclical to exogenous factors, and host regulators need to prioritise such inquiries should their banking markets become more globalised in terms of assets.

Furthermore, the mean value for foreign-controlled banks' cost-efficiency is higher and statistically significant than domestic counterparts, while the mean value of ROE of foreign-controlled banks is smaller and significant during economic boom periods. However, in the post-crisis period, the opposite is true. This finding suggests that the foreign-controlled banks in BRICS might be inefficient compared to their domestic counterparts, and the economic crisis period put pressure on these financial institutions

to improve their efficiency. This observation suggests that the quiet-life hypothesis holds for foreign-controlled banks, supporting claims made by Hick (1935) and Maudos & de Guevara (2007).

The existence of a quiet-life hypothesis for BRICS' foreign-controlled banks further suggests a trade-off between cost-efficiency and earnings for these financial institutions. The implication of this finding indicates that foreign-controlled banks in BRICS bear additional costs to operate in those markets compared to domestic counterparts, which further implies that foreign ownership improves locally owned banks. Lin & Zhang (2009) support this finding when testing the correlation between bank ownership reform and bank performance in China. However, Wu et al., (2017) examined the impact of foreign banks on domestic counterparts for banking markets from CEE, East Asia, and Latin American countries. They found that these financial institutions' presence worsens domestic banks' performance, thus contradicting this finding.

In addition, this CAMELS rating's results show that domestic banks' cost-efficiency has a higher mean value than foreign-controlled banks with statistical significance mean-difference results during the economic crisis. These results suggest that the BRICS banking markets recover quickly from financial distress because domestic banks tend to be cost-efficient during the crisis period, while foreign-owned banks are cost-efficient during non-crisis periods. On the other hand, in the post-crisis period, the opposite is true. This finding is corroborated by Zhang et al., (2013), who found that BRIC banking systems (excluding South Africa) recovered quickly because, unlike other similar blocs, its financial institutions are not driven by fast-growing economies. Due to this characteristic, the BRIC banking systems by design became insulated from the negative effect of the global financial crisis of 2007 – 2008. On the contrary, Cull & Pería (2013) found that banks did not recover quickly after the economic crisis in the CEE bloc, possibly because foreign banks in CEE borrowed excessively before the crisis.

Lastly, the empirical results show that the mean figures of capital adequacy and regulatory capital levels for foreign-controlled banks are higher than domestic banks in that bloc with statistically significant mean-difference results. In comparison, the mean

figures of earnings proxies that are loan growth and ROE for foreign-controlled banks are smaller than their domestic counterparts with statistically significant mean-difference results. These findings collectively suggest that highly capitalised institutions that foreign banks control tend to have compromised their liquidity creation, which supports the financial fragility crowding-out hypothesis. This finding adds to the debate made by Lei & Song (2013), Umar & Sun (2016), Umar et al. (2017), and Umar et al. (2018) that the financial fragility crowding-out hypothesis holds for BRICS countries.

The second objective is to identify the impact of foreign ownership on host BRICS countries' banking sectors' risk-benefits and extrapolate whether globalisation of their financial markets increased their fragility. The first part discusses the benefits of foreign ownership, while the second part discusses the findings related to risk.

The empirical results revealed that the level of bank competition in BRICS banking markets appeared to have increased due to foreign ownership in those markets because the presence of foreign banks tends to lower the cost of acquiring debts for domestic and foreign-owned banks. This finding supports Kraft (2004) and Sturm & Williams (2008), who also established that foreign ownership presence in their banking systems increased bank competition of banking markets because unnecessary and embedded inefficiencies within these markets were eliminated. On the contrary, Peterson & Rajan (1995) and Gormley (2010) argue that foreign ownership presence in host banking markets reduces firms' access to credit and exacerbates the information asymmetry problem. Their presence serves as a deterrent to bank competition in host banking markets. These contradictory findings could be because the current study uses a sample of publicly-owned banks whose financial performance could be tracked, and therefore, it would be hard for them to hide the market inner-conducts from new entrants.

Furthermore, it was found that the spill-over of the increased bank competition within-host banking markets due to the presence of foreign ownership appeared to have increased their lending capacity (measured as credit intermediation), performance (measured by ROA & NIM), and efficiency (measured by ROE). These findings corroborate Clarke et al. (2001), Claessens et al. (2001), Sturm & Williams (2004), Clarke

et al. (2006), and Havrylchyk & Jurzyk (2011). All these prior studies confirm that the host banking sector harnesses improved operational efficiency and credit availability to small and large firms in addition to increased competition due to foreign ownership. On the other hand, the findings in the current research do not support Chen et al. (2017) as they found that in those banking markets with inherent inefficiencies, the presence of foreign ownership increases risks that tend to harm lending capacity, performance and efficiencies of host banking markets.

Other additional findings show that foreign ownership presence in BRICS banking markets increased their overall bank stability because bank performance was optimised while earnings' risks reduced far more than the increase in performance. Also, foreign ownership presence in BRICS banking markets reduced systemic risk instances for domestic banks. These findings corroborate Leroy & Lucotte (2017) for domestic banks as competition enhances their financial stability by decreasing systemic risk. However, this study's findings contradict Leroy & Lucotte (2017) for foreign banks as their systemic risk increases when their financial stability and competition increase.

Part two of the second objective measured foreign ownership's impact on the observable idiosyncratic and systemic risks in the BRICS banking markets. First, the findings show that foreign ownership in BRICS banking markets indiscriminately increased the idiosyncratic risk (measured by the standard deviation of ROA and nonperforming loans) in domestic and foreign-controlled banks. This finding supports Serrano (2016) and Wu et al. (2017) that foreign ownership presence in the form of foreign-controlled banks tends to exclude them from accessing creditworthy customers and forces them to be exposed to more risks in an attempt to grow their margins. Giannetti & Ongena (2012) also show that domestic banks may be driven to take more idiosyncratic risks onto their balance sheets because foreign banks' presence often poses depositors and safe borrowers existing in their books.

The finding that the idiosyncratic risk increases for foreign-controlled banks are supported by Temesvary & Banai (2017) and Arakelyan (2018). They state that disparity between major foreign shareholders' countries of origin the host banking markets may

result in foreign-controlled banks increasing their idiosyncratic risk-taking within their balance sheets. Furthermore, Peek et al. (1999), Cetorelli & Goldberg (2016), Anginer et al. (2017), Chen et al. (2017), among others, corroborates this finding as they show that idiosyncratic risks experienced by parent entities tend to be transmitted to foreign-controlled banks thus, increasing their bank-specific risks. In sharp contrast, the finding of Claessens et al. (2001), Sturm & Williams (2004), Clarke et al. (2006), and Havrylchyk & Jurzyk (2011) contradict the evidence in the current study that the presence of foreign ownership increases the risk-taking for both domestic and foreign-controlled banks in host banking markets.

Another finding shows that foreign ownership's presence in BRICS banking markets increased systemic risk for foreign-controlled banks operating in that bloc. This finding supports Ahrend & Goujard (2011) as their empirical results show that international financial integration enabled by foreign ownership's presence in host banking markets amplifies contagion shocks.

The third research objective examines foreign ownership's impact on the bank monetary policy's lending channel (measured by the natural log of broad money). The outcomes are as follows: One, the presence of foreign bank ownership in the case of BRICS' banking systems impaired the monetary policy transmission via the lending channel, supporting Wu et al., (2011), Hou & Wang (2013), Joen & Wu (2014) who found the same in Asian bloc and Chinese banking systems. This finding implies that, despite the rate of acquisition of host banks by foreign strategic investors in emerging market blocs, their presence tends to dollarise all banks, including unacquired banks (i.e., domestic & government banks), minimising the regulatory power of domestic regulators in curbing lending risk. Thus, this finding agrees with the customer reaction hypothesis discussed by Matemilola et al. (2015) for South Africa from a theoretical perspective. The implication of this finding suggests that the presence of foreign bank ownership in the BRICS bloc insulate their banking customers from monetary policy shocks.

The fourth research objective examines foreign ownership's impact on the bank lending channel as fiscal policy transmission (fiscal income index minus fiscal expense

index computed using the principal component analysis). The main finding shows that fiscal policy transmissions become ineffective in regulating bank lending risk when foreign ownership is present in BRICS, indicating information asymmetry in banks' lending portfolios. This finding supports Gormley (2010), who found that foreign bank ownership in the Indian banking system raised asymmetry in banks' loan supply market and led to 'cherry-picking' phenomena in the banking sector. On the other hand, this result contradicts Bird et al. (2019), who found that financial liberalisation led to fiscal policy transmission via lending channel becoming a perfect substitute to monetary policy in controlling lending risk. The rationale for the differences may be because, in the BRICS bloc, the increase of capital inflows towards banks' lending portfolios dollarise their lending offerings which, in theory, may negate the regulatory power of domestic fiscal policy shocks.

8.3 Conclusion, Policy Implication and Further Studies

In sum, foreign-owned banks contribute procyclically to the bloc's financial soundness, indicating that their presence introduces some asymmetries into their banking systems. Furthermore, foreign banks in BRICS lead to benefits that outweigh risks. However, some risk elements need to be minimised to insulate the bloc from a future globally induced crisis. These risks include systemic risk, lowering tier II capital as required by Basel III, the ineffectiveness of fiscal and monetary policy in regulating lending risk, and excessive leveraging of domestic banks. Despite the risks associated with foreign banks' presence in BRICS, foreign bank ownership increases the performance and efficiency of all banks, with domestic banks becoming risk-averse, which may explain the quick recovery of the BRICS banking sector post-2008 global financial crisis.

The findings in this research allude to the following policy implications. First, foreign bank ownership in the BRICS banking system has favourable and unfavourable consequences to its aggregated financial soundness. This implies a positive correlation between banks' risk taking and foreign bank ownership. This means that BRICS policymakers need to closely monitor this relationship to prevent excessive regulatory, idiosyncratic, and systemic risks. Second, foreign bank ownership, especially considering

bank competition, accelerates the BRICS bank's lending portfolios to become dollarised. The policy implication of this finding is that the national policymakers such as central banks in BRICS should encourage their banks to lend in their currency primarily to regain control in managing lending risk. Finally, foreign bank ownership encouraged domestic banks to maintain their economic positions through leveraging. Investors in the bloc's banking system need to be aware of the implication of leveraging on credit risk repayments. BRICS policymakers need to control leveraging behaviour of domestic banks.

Future research needs to examine the impact of foreign bank ownership on BRICS banks' credit risk management through the earnings management lens. Testing the role of the earnings management gap is critical especially post COVID-19, where numerous central banks, including those in EMEs, forced their banks to keep the bad debts to prevent further decline in their economic growth. Investigating this gap is critical because recent evidence (IMF, 2020) found that the effects of COVID-19 on banks' lending portfolios allowed these financial institutions to manage earnings, which in theory weakened their credit risk management.

References

Ábel, I., & Siklos, P. L. (2004). Secrets to the successful Hungarian bank privatization: the benefits of foreign ownership through strategic partnerships. *Economic Systems, 28*(2), 111-123. Retrieved from https://doi.org/10.1016/j.ecosys.2004.05.002

Acharya, V. V., & Viswanathan, S. (2011). Leverage, Moral Hazard, and Liquidity. *The Journal of Finance, 67*(1), 99-138. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1540-6261.2010.01627.x

Adrian, T., & Brunnermeier, M. K. (2016). CoVaR. *The American Economic Review, 106*(7), 1705-1741. doi:http://dx.doi.org/10.1257/aer.20120555

Agoraki, M.-E. K., Delis, M. D., & Pasiouras, F. (2011). Regulations, competition and bank risk-taking in transition countries. *Journal of Financial Stability, 7*(1), 38-48. doi:https://doi.org/10.1016/j.jfs.2009.08.002

Ahrend, R., & Goujard, A. (2013). Foreign bank presence: Helping or hurting when financial contagion strikes? *Economics Letters, 120*(2), 314 - 317. doi:https://doi.org/10.1016/j.econlet.2013.04.044

Albertazzi, U., & Bottero, M. (2014). Foreign bank lending: Evidence from the global financial crisis. *Journal of International Economics, 92*(Supplement 1), S22-S35. doi:https://doi.org/10.1016/j.jinteco.2014.01.002

Aleem, A. (2010). Transmission mechanism of monetary policy in India. *Journal of Asian Economics, 21*(2), 186-197. doi:https://doi.org/10.1016/j.asieco.2009.10.001

Allen, B., Chan, K. K., Milne, A., & Thomas, S. (2012). Basel III: Is the cure worse than the disease? *International Review of Financial Analysis, 25*, 159-166. doi:https://doi.org/10.1016/j.irfa.2012.08.004

Allen, F., & Gale, D. (2001). *Comparing Financial Systems.* London, England: The MIT Press.

Allen, F., Jackowicz, Krzysztof, & Kowalewski, O. (2013). The Effects of Foreign and Government Ownership on Bank Lending Behavior During a Crisis in Central and Eastern Europe. *Wharton Financial Institutions Center Working Paper No. 13-25*. doi:https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2287081

Althammer, W., & Haselmann, R. (2011). Explaining foreign bank entrance in emerging markets. *Journal of Comparative Economics, 39*(4), 486-498. doi:https://doi.org/10.1016/j.jce.2011.03.002

Altunbas, Y., Manganelli, S., & Marques_Ibanez, D. (2017). Realized bank risk during the great recession. *Journal of Financial Intermediation, 32*, 29 - 44. doi:https://doi.org/10.1016/j.jfi.2017.08.001

Amidu, M., & Wolfe, S. (2013). Does bank competition and diversification lead to greater stability? Evidence from emerging markets. *Review of Development Finance, 3*(3), 152-166. Retrieved from https://doi.org/10.1016/j.rdf.2013.08.002

Anginer, D., Cerutti, E., & Peria, M. S. (2017). Foreign bank subsidiaries' default risk during the global crisis: What factors help insulate affiliates from their parents? *Journal of Financial Intermediation, 29*, 19 - 31. doi:https://doi.org/10.1016/j.jfi.2016.05.004

Angkinand, A., & Wihlborg, C. (2010). Deposit insurance coverage, ownership, and banks' risk-taking in emerging markets. *Journal of International Money and Finance, 29*(2), 252-274. doi:https://doi.org/10.1016/j.jimonfin.2009.08.001

Arakelyan, M. (2018). Foreign banks and Credit dynamics in CESEE. *IMF Working Paper*. doi:https://books.google.co.za/books?hl=en&lr=&id=-xlHDwAAQBAJ&oi=fnd&pg=PP1&dq=Arakelyan+%2B+foreign+banks&ots=hW3eAWDDPr&sig=979FMJshC0HvBlJVYZ789VeKcSk#v=onepage&q=Arakelyan%20%2B%20foreign%20banks&f=false

Ariss, R. T. (2010). On the implications of market power in banking: Evidence from developing countries. *Journal of Banking & Finance, 34*(4), 765-775. doi:https://doi.org/10.1016/j.jbankfin.2009.09.004

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of International Financial Markets, Institutions and Money, 18*(2), 121-136. doi:https://doi.org/10.1016/j.intfin.2006.07.001

Baglioni, A. (2007). Monetary policy transmission under different banking structures: The role of capital and heterogeneity. *International Review of Economics & Finance, 16*(1), 78-100. doi:https://doi.org/10.1016/j.iref.2005.04.002

Balima, W. H. (2017). Do domestic bond markets participation help reduce financial dollarization in developing countries? *Economic Modelling, 66*, 146-155. doi:https://doi.org/10.1016/j.econmod.2017.06.008

Banerjee, S. (2012). Basel I and Basel II compliance issues for banks in India. *Macroeconomics and Finance in Emerging Market Economies, 5*(2), 228-245. doi:https://doi.org/10.1080/17520843.2012.688754

Beck, T. (2008). Bank competition and financial stability: Friends or foes? *Policy research working paper*.

doi:https://openknowledge.worldbank.org/bitstream/handle/10986/6863/wps4656.pdf

Beck, T., & Levine, R. (2005). Legal Institutions and Financial Development. In C. Menard, & M. M. Shirley, *Handbook of New Institutional Economics* (pp. 251-278). Boston, MA: Springer. doi:https://link.springer.com/chapter/10.1007/0-387-25092-1_12

Bekaert, G., & Harvey, C. R. (2003). Emerging markets finance. *Journal of Empirical Finance, 10*(1-2), 3-55. doi:https://doi.org/10.1016/S0927-5398(02)00054-3

Bencivenga, V. R., & Smith, B. D. (1991). Financial intermediation and endogenous growth. *The review of Economic Studies, 58*(2), 195-209. doi:: https://www.jstor.org/stable/2297964

Berg, S. A., Førsund, F. R., & Jansen, E. S. (1992). Malmquist Indices of Productivity Growth during the Deregulation of Norwegian Banking, 1980-89. *The Scandinavian Journal of Economics, 94*(Supplement), S211-S228. doi:http://www.jstor.com/stable/3440261

Berger, A. N., & Hannan, T. H. (1998). The efficiency cost of market power in the banking industry: A test of the "quiet life" and related hypothesis. *Working paper*. doi:https://www.mitpressjournals.org/doi/pdfplus/10.1162/003465398557555?casa_token=Sp2JRkM1sd4AAAAA:hoVDWB-DwBsKp0F24zVhYR--zJ_8agAmAnTo8fNVct5_AVm7FoWC2KsWXYUlooBVxrbEWoDr11ExRQ

Berger, A. N., Clarke, G. R., Cull, R., Klapper, L., & Udell, G. F. (2005). Corporate Governance and Bank Performance: A Joint Analysis of the Static, Selection, and Dynamic Effects of Domestic, Foreign, and State Ownership. *Working Paper/WPS3632*. doi:https://openknowledge.worldbank.org/bitstream/handle/10986/8229/wps3632.pdf%3Bjsessionid%3DE7FF2579B5F17F38E922E9858967E543?sequence%3D1

Berger, A. N., DeYoung, R., & Udell, G. F. (2001). Efficiency barriers to the consolidation of the European financial services industry. *European Financial Management, 7*(1), 117-130. doi:https://doi.org/10.1111/1468-036X.00147

Bernanke, B. S., & Blinder, A. S. (1988). Credit, Money, and Aggregate demand. *NBER Working Paper Series/ Working Paper. 2534*. doi:https://www.nber.org/papers/w2534.pdf

Bhattacharyya, A., Lovell, C. A., & Sahay, P. (1997). The impact of liberalization on the productive efficiency of Indian commercial banks. *European Journal of Operational Research, 98*(2), 332-345. doi:https://doi.org/10.1016/S0377-2217(96)00351-7

Bhaumik, S. K., & Piesse, J. (2008). Does lending behaviour of banks in emerging economies vary by ownership? Evidence from the Indian banking sector. *Economic Systems, 32*(2), 177-196. doi:https://doi.org/10.1016/j.ecosys.2007.04.004

Bleakley, H., & Cowan, K. (2008). Corporate Dollar Debt and Depreciations: Much Ado About Nothing? *The Review of Economics and Statistics, 90*(4), 612-626. doi:https://doi.org/10.1162/rest.90.4.612

Boiciuc, I. (2015). The Cyclical Behavior of Fiscal Policy in Romania. *Procedia Economics and Finance, 32*, 286-291. doi:https://doi.org/10.1016/S2212-5671(15)01393-3

Bonin, J. P., & Louie, D. (2017). Did foreign banks stay committed to emerging Europe during recent financial crises? *Journal of Comparative Economics, 45*(4), 793-808. Retrieved from https://doi.org/10.1016/j.jce.2016.08.003

Bonin, J. P., Hasan, I., & Wachtel, P. (2005). Privatization matters: Bank efficiency in transition countries. *Journal of Banking & Finance, 29*(8-9), 2155-2178. doi:https://doi.org/10.1016/j.jbankfin.2005.03.012

Booth, J. R., & Booth, L. C. (2004). Deposit insurance and specialization in commercial bank lending. *Review of Financial Economics, 13*(1-2), 165-177. doi:https://doi.org/10.1016/j.rfe.2003.09.006

Bordo, M. D., Meissner, C. M., & Stuckler, D. (2010). Foreign currency debt, financial crises and economic growth: A long-run view. *Journal of International Money and Finance, 29*(4), 642-665. doi:https://doi.org/10.1016/j.jimonfin.2010.01.002

Boulanour, Z., Alqahtani, F., & Hamdi, B. (2021). Bank ownership, institutional quality and financial stability: evidence from the GCC region. *Pacific-Basin Finance Journal, 66*, 1-15. doi:https://doi.org/10.1016/j.pacfin.2021.101510

Boyd, J. H., & Nicolo, G. D. (2005). The Theory of Bank Risk Taking and Competition Revisited. *The Journal of Finance, 60*(3), 1329-1343. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1540-6261.2005.00763

Buch, C. M. (2003). Information or Regulation: What Drives the International Activities of Commercial Banks. *Journal of Money, Credit and Banking, 35*(6), 851-869. doi:http://www.jstor.com/stable/3649861

Buch, C. M., Bussierè, Goldberg, L., & Hills, R. (2019). The international transmission of monetary policy. *Journal of International Money and Finance, 91*, 29-48. doi:https://doi.org/10.1016/j.jimonfin.2018.08.005

Calvo, G. A. (2002). On dollarization. *Economics of Transitions, 10*(2), 393-403. doi: https://doi.org/10.1111/1468-0351.00117

Cao, Y., Gregory-Smith, I., & Montagnoli, A. (2018). Transmission of liquidity shocks: Evidence on cross-border bank ownership linkages. *Journal of International Financial Markets, Institutions and Money, 53*, 158-178. doi:https://doi.org/10.1016/j.intfin.2017.09.017

Caves, R. E. (1971). International Corporations: The Industrial Economics of Foreign Investment. *Economica, 38*(149), 1-27. doi:https://www.jstor.org/stable/2551748

Cetorelli, N., & Goldberg, L. S. (2009). Globalized banks: Lending to emerging markets in. *Working Paper - Staff Report, no. 377/ Federal Reserve Bank of New York*. doi:https://www.econstor.eu/bitstream/10419/60850/1/606277129.pdf

Cetorelli, N., & Goldberg, L. S. (2016). Organizational complexity and balance sheet management in global banks. *NBER Working Papers Series*. doi:https://www.nber.org/papers/w22169.pdf

Chang, E. C., Hasan, I., & Hunter, W. C. (1998). Efficiency of multinational banks: an empirical investigation. *Applied Financial Economics, 8*(6), 689-696. doi:https://doi.org/10.1080/096031098332727

Chen, C.-L., Weng, P.-Y., & Chien, C.-Y. (2018). Qualified foreign institutional investor ownership deregulation and the restatement of financial reports - empirical findings from Taiwan. *International Review of Economics & Finance, 56*, 465-485. doi:https://doi.org/10.1016/j.iref.2017.12.005

Chen, J., & Zhu, L. (2019). Foreign penetration, competition, and financial freedom: Evidence from the banking industries in emerging markets. *Journal of Economics and Business, 102*, 26-38. Retrieved from https://doi.org/10.1016/j.jeconbus.2018.10.003

Chen, M., Wu, J., Jeon, B. N., & Wang, R. (2017). Do foreign banks take more risk? Evidence from emerging economies. *Journal of Banking & Finance, 82*, 20-39. doi:https://doi.org/10.1016/j.jbankfin.2017.05.004

Chen, T.-H., Chou, H.-H., Chang, Y., & Fang, H. (2015). The effect of excess lending on bank liquidity: Evidence from China. *International Review of Economics & Finance, 36*, 54-68. doi:https://doi.org/10.1016/j.iref.2014.11.007

Chkili, W., & Nguyen, D. K. (2014). Exchange rate movements and stock market returns in a regime-switching environment: Evidence for BRICS countries. *Research in International Business and Finance, 31*, 46-56. doi:https://doi.org/10.1016/j.ribaf.2013.11.007

Cho, K. R. (1986). Determinants of Multinational Banks. *Management International Review, 26*(1), 10-23. doi:http://www.jstor.com/stable/40227780

Choi, W. G., & Cook, D. (2004). Liability dollarization and the bank balance sheet channel. *Journal of International Economics, 64*(2), 247-275. doi:https://doi.org/10.1016/j.jinteco.2003.08.009

Chun, S. E., Nagano, M., & Lee, M. H. (2011). Ownership Structure and Risk-taking Behavior: Evidence from Banks in Korea and Japan. *Asian Economic Journal, 25*(2), 151-175. doi:https://doi.org/10.1111/j.1467-8381.2011.02056.x

Chuppe, T. M., Haworth, H. R., & Watkins, M. G. (1989). Global Finance: Causes, consequences and prospects for the future. *Global Finance Journal, 1*(1), 1-20. doi:https://doi.org/10.1016/1044-0283(89)90003-3

Ciccarelli, M., Maddaloni, A., & Peydró, J.-L. (2015). Trusting the bankers: A new look at the credit channel of monetary policy. *Review of Economic Dynamics, 18*(3), 979-1002. doi:https://doi.org/10.1016/j.red.2014.11.002

Cirillo, R. (1986). Leon Walras' Theory of Money. *The American Journal of Economics and Sociology, 45*(2), 215-221. doi:https://www.jstor.org/stable/3486926

Claessens, S., Demirgüç-Kunt, A., & Huizinga, H. (2001). How does foreign entry affect domestic banking markets? *Journal of Banking & Finance, 25*(5), 891-911. doi:https://doi.org/10.1016/S0378-4266(00)00102-3

Clarke, G. R., Cull, R., & Peria, M. S. (2001, September). *Does Foreign Bank Penetration Reduce Access to Credit in Developing Countries? Evidence from Asking Borrowers*. Retrieved from SSRN Working Paper: http://dx.doi.org/10.2139/ssrn.285767

Clarke, G. R., Cull, R., & Pería, M. S. (2006). Foreign bank participation and access to credit across firms in developing countries. *Journal of Comparative Economics, 34*(4), 774-795. doi:https://doi.org/10.1016/j.jce.2006.08.001

Corner, A. J., Liu, L. A., & Bird, A. (2013). Intercultural competencies for emerging markets: A contextualized approach. *International Business Review, 30*(3), 1-17. doi:https://doi.org/10.1016/j.ibusrev.2020.101792

Corrales, J.-S., Imam, P. A., & Yehoue, E. (2016). Dollarisation in sub-Saharan Africa. *Journal of African Economies, 25*(1), 28-54. doi:https://doi.org/10.1093/jae/ejv020

Crystal, J. S., Dages, B. G., & Goldberg, L. S. (2001). Does foreign ownership contribute to sounder banks in emerging markets? The Latin American experience. *Working paper/ Staff Report, No. 137*. doi:https://www.econstor.eu/bitstream/10419/60633/1/33980467X.pdf

Crystal, J. S., Dages, B. G., & Goldberg, L. S. (2002). Has Foreign Bank Entry led to Sounder Banks in Latin America? *Federal Reserve Bank of New York - Current Issues in Economics and Finance, 8*(1), 1-6.

doi:https://www.newyorkfed.org/research/economists/medialibrary/media/research/current_issues/ci8-1.pdf

Cull, R., & Pería, M. S. (2013). Bank ownership and lending patterns during the 2008–2009 financial crisis: Evidence from Latin America and Eastern Europe. *Journal of Banking & Finance, 37*(12), 4861-4878. doi:https://doi.org/10.1016/j.jbankfin.2013.08.017

Dages, B. G., Goldberg, L., & Kinney, D. (2000). Foreign and domestic bank participation in emerging markets: Lessons from Mexico and Argentina. *FRBNY Economic Policy Review*. doi:https://www.researchgate.net/profile/Linda_Goldberg/publication/5195686_Foreign_and_Domestic_Bank_Participation_in_Emerging_Markets_Lessons_from_Mexico_and_Argentina/links/53f656d60cf2fceacc7191c1.pdf

Dahl, D., & Shrieves, R. E. (1999). The extension of international credit by US banks: a disaggregated analysis, 1988–1994. *Journal of International Money and Finance, 18*(1), 153-167. doi:https://doi.org/10.1016/S0261-5606(98)00049-7

Danielsson, J., James, K. R., Valenzuela, M., & Zer, I. (2016). Model risk of risk models. *Journal of Financial Stability, 23*, 79-91. doi:https://doi.org/10.1016/j.jfs.2016.02.002

Dash, M., & Das, A. (2013). Performance appraisal of Indian banks using CAMELS rating. *The IUP Journal of Bank Management, 12*(2), 31-42. doi:http://web.b.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=0&sid=b905db8d-77ed-442e-a7d4-514a4e74bce5%40pdc-v-sessmgr06

Davydov, D., Fungáčová, Z., & Weill, L. (2018). Cyclicality of bank liquidity creation. *Journal of International Financial Market, Institutions and Money, 55*, 81-93. doi:https://doi.org/10.1016/j.intfin.2018.02.014

De Claro, L. L. (2013). Determining the effectiveness of the CAMELS approach towards timely prediction of bank failures. *Journal of Global Business and Economics, 6*(1), 12-17. doi:http://0-web.a.ebscohost.com.innopac.wits.ac.za/ehost/pdfviewer/pdfviewer?vid=2&sid=0e8aef93-bf9e-440a-a984-7462e5ea3ec2%40sdc-v-sessmgr02

de Haas, R., & van Lelyveld, I. (2006). Foreign banks and credit stability in Central and Eastern Europe. A panel data analysis. *Journal of Banking & Finance, 30*(7), 1927-1952. doi:https://doi.org/10.1016/j.jbankfin.2005.07.007

Delis, M. D., Kokas, S., & Ongena, S. (2016). Foreign ownership and market power in banking: Evidence from a world sample. *Journal of Money, Credit and Banking, 48*(2-3), 449-483. doi:https://doi.org/10.1111/jmcb.12306

Dell'Ariccia, G., Friedman, E., & Marquez, R. (1999). Adverse Selection as a Barrier to Entry in the Banking Industry. *The RAND Journal of Economics, 30*(3), 515-534. doi:http://www.jstor.com/stable/2556061

Demirgüç-Kunt, A., Levine, R., & Min, H.-G. (1998). Opening to foreign banks: Issues of stability, efficiency, and Growth. *Working Paper*. doi:https://pdfs.semanticscholar.org/3961/cfef8622877c897e1c81675eef6ba4352adb.pdf

Demsetz, H. (1973). Industry Structure, Market Rivalry, and Public Policy. *The Journal of Law & Economics, 16*(1), 1-9. doi: https://www.jstor.org/stable/724822

Detragiache, E., & Gupta, P. (2006). Foreign banks in emerging market crises: Evidence from Malaysia. *Journal of Financial Stability, 2*(3), 217-242. doi:https://doi.org/10.1016/j.jfs.2006.06.001

DeYoung, R., & Nolle, D. E. (1996). Foreign-Owned Banks in the United States: Earning Market Share or Buying It? *Journal of Money, Credit and Banking, 28*(4), 622-636. doi:http://www.jstor.com/stable/2078074

Diamond, D. W., & Dybvig, P. H. (1983). Bank runs, deposit insurance, and liquidity. *Journal of Political Economy, 91*(3), 401 - 419. doi: https://www.jstor.org/stable/1837095

Diamond, D. W., & Rajan, R. G. (2000). A theory of bank capital. *The Journal of Finance, 50*(6), 2431-2465. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/0022-1082.00296

Dickson, P. R. (1996). The Static and Dynamic Mechanics of Competition: A Comment on Hunt and Morgan's Comparative Advantage Theory. *Journal of Marketing, 60*(4), 102-106. doi:http://www.jstor.com/stable/1251904

Dincer, H., Gencer, G., Orhan, N., & Sahinbas, K. (2011). A Performance Evaluation of the Turkish Banking Sector after the Global Crisis via CAMELS Ratios. *Procedia - Social and Behavioural Sciences, 24*, 1530-1545. doi:https://doi.org/10.1016/j.sbspro.2011.09.051

Disyatat, P. (2011). The Bank Lending Channel Revisited. *Journal of Money, Credit and Banking, 43*(4), 711-734. doi:https://www.jstor.org/stable/20870073

Dolgikh, X., & Äijö, J. (2013). Foreign banks and credit growth in Central and Eastern Europe. Finland: University of Vaasa, Maters' Dissertation. doi:https://osuva.uwasa.fi/bitstream/handle/10024/4494/osuva_5234.pdf?sequence=1&isAllowed=y

Dunning, J. H. (1988). The Electric Paradigm Of International Production: A restatement and some possible extensions. *Journal of International Business Studies, 19*(1),

1-31. doi:https://0-www-proquest-com.innopac.wits.ac.za/docview/197149944?OpenUrlRefId=info:xri/sid:wcdiscovery&accountid=15083

Eichengreen, B., & Huasmann, R. (1999). Exchange rates and financial fragility. *NBER Working Paper Series/Working Paper 7418*. doi:http://www.nber.org/papers/w7418

Fase, M. M., & Abma, R. C. (2003). Financial environment and economic growth in selected Asian countries. *Journal of Asian Economics, 14*(1), 11-21. doi:https://doi.org/10.1016/S1049-0078(02)00237-3

Fidrmuc, J., & Korhonen, I. (2010). The impact of the global financial crisis on business cycles in Asian emerging economies. *Journal of Asian Economics, 21*(3), 293-303. doi:https://doi.org/10.1016/j.asieco.2009.07.007

Figuet, J.-M., Humblot, T., & Lahet, D. (2015). Cross-border banking claims on emerging countries: The Basel III Banking Reforms in a push and pull framework. *Journal of International Financial Markets, Institutions and Money, 34*, 294-310. doi:https://doi.org/10.1016/j.intfin.2014.11.016

Fisher, A., & Molyneux, P. (1996). A note on the determinants of foreign bank activity in London between 1980 and 1989. *Applied Financial Economics, 6*(3), 271-277. doi:https://doi.org/10.1080/096031096334295

Focarelli, D., & Pozzolo, A. F. (2005). Where Do Banks Expand Abroad? An Empirical Analysis. *The Journal of Business, 78*(6), 2435-2464. doi:https://www.jstor.org/stable/10.1086/497052

Fungáčová, Z., Herrala, R., & Weill, L. (2013). The influence of bank ownership on credit supply: Evidence from the recent financial crisis. *Emerging Markets Review, 15*, 136-147. doi:https://doi.org/10.1016/j.ememar.2013.02.002

Fungáčová, Z., Solanko, L., & Weill, L. (2014). Does competition influence the bank lending channel in the euro area? *Journal of Banking & Finance, 49*, 356-366. doi:https://doi.org/10.1016/j.jbankfin.2014.06.018

Galais, D., & Masulis, R. W. (1976). The Option Pricing Model and the Risk Factor of Stock. *Journal of Financial Economics (JFE), 3*(1/2). doi:https://ssrn.com/abstract=1483287

García-Marco, T., & Robles-Fernández, M. D. (2008). Risk-taking behaviour and ownership in the banking industry: The Spanish evidence. *Journal of Economics and Business, 60*(4), 332-354. doi:https://doi.org/10.1016/j.jeconbus.2007.04.008

Gavin, M., Hausmann, R., Perotti, R., & Talvi, E. (1996). Managing Fiscal Policy in Latin America and the Caribbean: Volatility, Procyclicality, and Limited

Creditworthiness. *Working Paper, No. 326/Inter-American Development Bank*. doi:http://hdl.handle.net/10419/87873

Gehringer, A. (2013). *Financial liberalization, financial development and*. Retrieved from ECONSTOR (Economics Discussion Papers, No. 2013-46): https://www.econstor.eu/bitstream/10419/81539/1/767753674.pdf

Giannetti, M., & Laeven, L. (2012). Flight Home, Flight Abroad, and International Credit Cycles. *The American Economic Review, 102*(3), 219-224. doi:http://www.jstor.com/stable/23245532

Giannetti, M., & Ongena, S. (2012). "Lending by example": Direct and indirect effects of foreign banks in emerging markets. *Journal of International Economics, 86*(1), 167-180. doi:https://doi.org/10.1016/j.jinteco.2011.08.005

Gilbert, R. A., & Wilson, P. W. (1998). Effects of Deregulation on the Productivity of Korean Banks. *Journal of Economics and Business, 50*(2), 133-155. doi:https://doi.org/10.1016/S0148-6195(97)00074-X

Goldberg, L. G., & Johnson, D. (1990). The determinants of US banking activity abroad. *Journal of International Money and Finance, 9*(2), 123-137. doi:https://doi.org/10.1016/0261-5606(90)90026-V

Goldberg, L. G., & Saunders, A. (1981). The Growth of Organizational Forms of Foreign Banks in the U.S.: Note. *Journal of Money, Credit and Banking, 13*(3), 365-374. doi:http://www.jstor.com/stable/1991905

Gopalan, S., & Rajan, R. S. (2017). Does foreign bank presence affect interest rate pass-through in emerging and developing economies? *Journal of Macroeconomics, 54*(Part B), 373-392. doi:https://doi.org/10.1016/j.jmacro.2017.06.010

Gormley, T. A. (2010). The impact of foreign bank entry in emerging markets: Evidence from India. *Journal of Financial Intermediation, 19*(1), 26-51. doi:https://doi.org/10.1016/j.jfi.2009.01.003

Gorton, G., & Winton, A. (2017). Liquidity provision, bank capital and the macroeconomy. *Journal of Money, Credit and Banking, 49*(1), 5-37. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/jmcb.12367

Grifell-Tatjé, E., & Lovell, C. A. (1996). Deregulation and productivity decline: the case of Spanish savings banks. *European Economic Review, 40*(6), 1281-1303. doi:https://doi.org/10.1016/0014-2921(95)00024-0

Grubel, H. G. (1977). A theory of multinational banking. *Working Paper, no. 123*. doi:https://ojs.uniroma1.it/index.php/PSLQuarterlyReview/article/view/11510

Grupple, M., & Lange, C. (2014). Spain and the European sovereign debt crisis. *European Journal of Political Economy, 34*(Supplement), S3-S8. doi:https://doi.org/10.1016/j.ejpoleco.2013.08.006

Gunji, H., Miura, K., & Yuan, Y. (2009). Bank competition and monetary policy. *Japan and the World Economy, 21*(1), 105-115. doi:https://doi.org/10.1016/j.japwor.2007.11.001

Güntner, J. H. (2011). Competition among banks and the pass-through of monetary policy. *Economic Modelling, 28*(4), 1891-1901. doi:https://doi.org/10.1016/j.econmod.2011.03.015

Gwatidzo, T., & Ojah, K. (2014). Firms' debt choice in Africa: Are institutional infrastructure and non-traditional determinants important? *International Review of Financial Analysis, 31*, 152-166. doi:https://doi.org/10.1016/j.irfa.2013.11.005

Hamdi, H., & Jlassi, N. B. (2014). Financial liberalization, disaggregated capital flows and banking crisis: Evidence from developing countries. *Economic Modelling, 41*, 124-132. doi:https://doi.org/10.1016/j.econmod.2014.05.010

Haselmann, R. (2006). Strategies of foreign banks in transition economies. *Emerging Markets Review, 7*(4), 283-299. doi:https://doi.org/10.1016/j.ememar.2006.09.002Get

Havrylchyk, O., & Jurzyk, E. (2011). Inherited or earned? Performance of foreign banks in Central and Eastern Europe. *Journal of Banking & Finance, 35*(5), 1291-1302. doi:https://doi.org/10.1016/j.jbankfin.2010.10.007

Haw, I.-M., Ho, S. S., Hu, B., & Donghui, W. (2010). Concentrated control, institutions, and banking sector: An international study. *Journal of Banking & Finance, 34*(3), 485-497. doi:https://doi.org/10.1016/j.jbankfin.2009.08.013

Herrero, A. G., & Pería, M. S. (2007). The mix of international banks' foreign claims: Determinants and implications. *Journal of Banking & Finance, 31*(6), 1613-1631. doi:https://doi.org/10.1016/j.jbankfin.2006.11.002

Hicks, J. R. (1935). Annual Survey of Economic Theory: The Theory of Monopoly. *Econometrica, 3*(1), 1-20. doi: https://www.jstor.org/stable/1907343

Hou, X., & Wang, Q. (2013). Implications of banking marketization for the lending channel of monetary policy transmission: Evidence from China. *Journal of Macroeconomics, 38*(Part B), 442-451. doi:https://doi.org/10.1016/j.jmacro.2013.07.004

Hryckiewicz, A., & Kowalewski, O. (2010). Economic determinates, financial crisis and entry modes of foreign banks into emerging markets. *Emerging Markets Review, 11*(3), 205-228. doi:https://doi.org/10.1016/j.ememar.2010.05.003

Hunt, S. D., & Morgan, R. M. (1995). The Comparative Advantage Theory of Competition. *Journal of Marketing, 59*(2), 1-15. doi:https://www.jstor.org/stable/1252069

Ibrahim, M., & Aladidede, P. (2018). Effect of financial development on economic growth in sub-Saharan Africa. *Journal of Policy Modeling, 40*(6), 1104-1125. doi:https://doi.org/10.1016/j.jpolmod.2018.08.001

IMF. (2010). Sovereigns, Funding, and Systemic Liquidity. *Global Financial Stability Report*.

IMF. (2016). *Global Financial Stability Report - International Monetary Fund*. Retrieved December 01, 2019, from https://www.imf.org/en/Publications/GFSR/Issues/2016/12/31/Fostering-Stability-in-a-Low-Growth-Low-Rate-Era

IMF. (2017). *Global Financial Stability Repost - International Monetary Fund*. Retrieved December 01, 2019, from https://www.imf.org/en/Publications/GFSR/Issues/2017/09/27/global-financial-stability-report-october-2017

IMF. (2018). *Global Financial Stability Report - International Monetary Fund*. Retrieved December 01, 2019, from https://www.imf.org/en/Publications/GFSR/Issues/2018/09/25/Global-Financial-Stability-Report-October-2018

IMF. (2019). *Global Financial Stability Report - Internal Monetary Fund*. Retrieved December 01, 2019, from https://www.imf.org/en/Publications/GFSR/Issues/2019/10/01/global-financial-stability-report-october-2019

IMF. (2020, October). *International Monetary Fund.* Retrieved January 07, 2021, from Global Financial Stability Report: https://www.imf.org/en/Publications/GFSR/Issues/2020/10/13/global-financial-stability-report-october-2020#ExecSum

Isard, W., & Kuenne, R. E. (1953). The Impact of Steel Upon the Greater New York-Philadelphia Industrial Region. *The Review of Economics and Statistics, 35*(4), 289-301. doi:http://www.jstor.com/stable/1924389

Ize, A., & Yeyati, E. L. (2003). Financial dollarization. *Journal of International Economics, 59*(2), 323-347. doi:https://doi.org/10.1016/S0022-1996(02)00017-X

Jadhav, P. (2012). Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor. *Procedia - Social and Behavioural Sciences, 37*, 5-14. doi:https://doi.org/10.1016/j.sbspro.2012.03.270

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3*(4), 305-360. doi:https://doi.org/10.1016/0304-405X(76)90026-X

Jimborean, R. (2009). The role of banks in the monetary policy transmission in the new EU member states. *Economic Systems, 33*(4), 360-375. doi:https://doi.org/10.1016/j.ecosys.2009.08.001

Jiménez, G., Ongena, S., Peydró, J.-L., & Saurina, J. (2012). Credit supply and monetary policy: Identifying the bank balance-sheet channel with loan applications. *American Economic Review, 102*(5), 2301 - 2326. doi:https://www.jstor.org/stable/41724622

Joen, B. N., & Wu, J. (2014). The role of foreign banks in monetary policy transmission: Evidence from Asia during the crisis of 2008–9. *Pacific-Basin Finance Journal, 29*, 96-120. doi:https://doi.org/10.1016/j.pacfin.2014.03.005

Joen, B. N., Olivero, M. P., & Wu, J. (2013). Multinational banking and the international transmission of financial shocks: Evidence from foreign bank subsidiaries. *Journal of Banking & Finance, 37*(3), 952-972. doi:https://doi.org/10.1016/j.jbankfin.2012.10.020

Kaminsky, G. L., & Pereira, A. (1996). The debt crisis: lessons of the 1980s for the 1990s. *Journal of Development Economics, 50*(1), 1-24. doi:https://doi.org/10.1016/0304-3878(96)00002-8

Kaminsky, G. L., Reinhart, C. M., & Vegh, C. A. (2005). When it rains, it pours: procyclical capital flows and macroeconomic policies. NBER Macroeconomics Annual 2004. MIT Press. *https://www.journals.uchicago.edu/doi/pdfplus/10.1086/ma.19.3585327*.

Karas, A., Schoors, K., & Weill, L. (2010). Are private banks more efficient than public banks? Evidence from Russia. *Economics of Transition, 18*(1), 209-244. doi: https://doi.org/10.1111/j.1468-0351.2009.00364.x

Kasman, S., & Kasman, A. (2015). Bank competition, concentration and financial stability in the Turkish banking industry. *Economic Systems, 39*(3), 502-517. doi:https://doi.org/10.1016/j.ecosys.2014.12.003

Keeley, M. C. (1990). Deposit Insurance, Risk, and Market Power in Banking. *The American Economic Review, 80*(5), 1183-1200. doi:http://www.jstor.com/stable/2006769

Keffala, M. R. (2020). How using derivative instruments and purposes affects performance of Islamic banks? Evidence from CAMELS approach. In Press. *Global Finance Journal*. doi:https://doi.org/10.1016/j.gfj.2020.100520

Khan, H. H., Ahmad, R. B., & Gee, C. S. (2016). Bank competition and monetary policy transmission through the bank lending channel: Evidence from ASEAN. *International Review of Economics & Finance, 44*, 19-39. doi:https://doi.org/10.1016/j.iref.2016.03.003

King, M. R. (2013). The Basel III Net Stable Funding Ratio and bank net interest margins. *Journal of Banking & Finance, 37*(11), 4144-4156. doi:https://doi.org/10.1016/j.jbankfin.2013.07.017

Kodongo, O., Natto, D., & Biekpe, N. (2015). Explaining cross-border bank expansion in East Africa. *Journal of International Financial Markets, Institutions and Money, 36*, 71-84. doi:https://doi.org/10.1016/j.intfin.2014.12.005

Komulainen, T., & Lukkarila, J. (2003). What drives financial crises in emerging markets? *Emerging Market Review, 4*(3), 248-272. doi:https://doi.org/10.1016/S1566-0141(03)00039-6

Konopielko, L. (1999). Foreign Banks' Entry into Central and East European Markets: Motives and Activities. *Post-Communist Economies, 11*(4), 463-485. doi:https://doi.org/10.1080/14631379995841

Kosmidou, K., Pasiouras, F., & Tsaklanganos, A. (2007). Domestic and multinational determinants of foreign bank profits: The case of Greek banks operating abroad. *Journal of Multinational Financial Management, 17*(1), 1-15. doi:https://doi.org/10.1016/j.mulfin.2006.02.002

Kouretas, G. P., & Tsoumas, C. (2016). Foreign presence and business regulations. *Journal of Financial Stability, 24*, 104-116. doi:https://doi.org/10.1016/j.jfs.2016.04.006

Koutsomanoli-Filippaki, A., Margaritis, D., & Staikouras, C. (2009). Efficiency and productivity growth in the banking industry of Central and Eastern Europe. *Journal of Banking & Finance, 33*(3), 557 - 567. doi:https://doi.org/10.1016/j.jbankfin.2008.09.009

Kraay, A., & Servén, L. (2008). Fiscal Policy Responses to the Current Financial Crisis: Issues for Developing Countries. Research Brief, World Bank. *http://go.worldbank.org/NME0S66FQ0*.

Kraft, E. (2004). Foreign Banks in Croatia: Reasons for Entry, Performance and Impacts. *Journal of Emerging Market Finance, 3*(2), 153-174. doi:https://doi.org/10.1177/097265270400300204

Krugman, P. R. (1988). Market-based debt-reduction schemes. *NBER Working Paper Series/Working Paper No. 2587*. doi:https://www.nber.org/papers/w2587.pdf

Kutner, M. H., Nachtsheim, C. J., Neter, J., & Li, W. (2005). *Applied linear statistical models* (McGraw-Hill International Edition ed.). Asia: McGraw-Hill. doi: ISBN 007-112221-4

Laeven, L., & Valencia, F. (2018). Systemic Banking Crises Revisited. *IMF Working Paper - WP/18/206*. doi:https://s3.eu-central-1.amazonaws.com/z3r2zxopa4uuqpw5a4ju/devriesinvestment/files/wp18206.pdf

Lanine, G., & Vennet, R. V. (2007). Microeconomic determinants of acquisitions of Eastern European banks by Western European banks. *Economics of Transition, 15*(2), 285-308. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1468-0351.2007.00288

Lassoued, N., Sassi, H., & Attia, M. B. (2016). The impact of state and foreign ownership on banking risk: Evidence from the MENA countries. *Research in International Business and Finance, 36*, 167-178. doi:https://doi.org/10.1016/j.ribaf.2015.09.014

Lee, C.-C., & Hsieh, M.-F. (2014). Bank reforms, foreign ownership, and financial stability. *Journal of International Money and Finance, 40*, 204 - 224. doi:https://doi.org/10.1016/j.jimonfin.2013.09.001

Lee, C.-C., & Lee, C.-C. (2019). Oil price shocks and Chinese banking performance: Do country risks matter? *Energy Economics, 77*, 46-53. doi:https://doi.org/10.1016/j.eneco.2018.01.010

Lee, C.-C., Hsieh, M.-F., & Yang, S.-J. (2016). The effects of foreign ownership on competition in the banking industry: The key role of financial reforms. *Japan and the World Economy, 37-38*, 27-46. doi:https://doi.org/10.1016/j.japwor.2016.02.002

Lee, S., & Bowdler, C. (2019). Banking sector globalization and monetary policy transmission: Evidence from Asian countries. *Journal of International Money and Finance, 93*, 101-116. doi:https://doi.org/10.1016/j.jimonfin.2018.12.011

Lei, A. C., & Song, Z. (2013). Liquidity creation and bank capital structure in China. *Global Finance Journal, 24*(3), 188-202. doi:https://doi.org/10.1016/j.gfj.2013.10.004

Léon, F., & Zins, A. (2020). Regional foreign banks and financial inclusion: Evidence from Africa. *Economic Modelling, 84*, 102-116. doi:https://doi.org/10.1016/j.econmod.2019.03.012

Leroy, A. (2014). Competition and the bank lending channel in Eurozone. *Journal of International Financial Markets, Institutions and Money, 31*, 296-314. doi:https://doi.org/10.1016/j.intfin.2014.04.003

Leroy, A., & Lucotte, Y. (2017). Is there a competition-stability trade-off in European banking? *Journal of International Financial Markets, Institutions and Money, 46*, 199-215. doi:https://doi.org/10.1016/j.intfin.2016.08.009

Levine, R. (1996). *Foreign banks, financial development, and economic growth.* Washington DC: AEI Press.

Levine, R. (2005). Chapter 12 Finance and Growth: Theory and Evidence. *Handbook of Economic Growth, 1*(Part A), 865-934. doi:https://doi.org/10.1016/S1574-0684(05)01012-9

Magri, S., Mori, A., & Rossi, P. (2005). The entry and the activity level of foreign banks in Italy: An analysis of the determinants. *Journal of Banking & Finance, 29*(5), 1295-1310. doi:https://doi.org/10.1016/j.jbankfin.2004.04.004

Mahathanaseth, I., & Tauer, L. W. (2019). Monetary policy transmission through the bank lending channel in Thailand. *Journal of Asian Economics, 60*, 14-32. doi:https://doi.org/10.1016/j.asieco.2018.10.004

Männasoo, K., & Mayes, D. G. (2009). Explaining bank distress in Eastern European transition economies. *Journal of Banking & Finance, 33*(2), 244-253. doi:https://doi.org/10.1016/j.jbankfin.2008.07.016

Marques, J. C., Lupina-Wegener, A., & Schneider, S. (2017). Internationalization strategies of emerging market banks: Challenges and opportunities. *Business Horizons, 60*(5), 715-723. doi:https://doi.org/10.1016/j.bushor.2017.05.015

Matemilola, B. T., Bany-Ariffin, A. N., & Muhtar, F. E. (2015). The impact of monetary policy on bank lending rate in South Africa. *Borsa Istanbul Review, 15*(1), 53-59. doi:https://doi.org/10.1016/j.bir.2014.09.003

Matutes, C., & Vives, X. (2000). Imperfect competition, risk taking, and regulation in banking. *European Economic Review, 44*(1), 1-34. doi:https://doi.org/10.1016/S0014-2921(98)00057-9

Maudos, J., & Guevara, J. F. (2007). The cost of market power in banking: Social welfare loss vs. cost inefficiency. *Journal of Banking & Finance, 31*(7), 2103-2125. doi:https://doi.org/10.1016/j.jbankfin.2006.10.028

Maudos, J., & Solís, L. (2011). Deregulation, liberalization and consolidation of the Mexican banking system: Effects on competition. *Journal of International Money and Finance, 30*(2), 337-353. doi:https://doi.org/10.1016/j.jimonfin.2010.07.006

Merrett, D. T. (2002). The internationalization of Australian banks. *Journal of International Financial Markets, Institutions and Money, 12*(4-5), 377-397. doi:https://doi.org/10.1016/S1042-4431(02)00020-3

Mian, A. (2006). Distance constraints: The limits of foreign lending in poor economies. *The Journal of Finance, 61*(3), 1465-1505. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1540-6261.2006.00878.x?casa_token=p-KZ--UVIWEAAAAA:_4_BS2UgtpSYnvo94WaE7N_qdvdpLmvZEdnB8rhUjpTFybjKCSYZEUb08vTJf9jVEAU1aOqMUCDSl_s

Miller, S. R., & Parkhe, A. (1998). Patterns in the expansion of U.S. banks' foreign operations. *Journal of International Business Studies, 29*(2), 359-389. doi:http://www.jstor.com/stable/155607

Mishkin, F. S. (1999). Lessons from the Asian crisis. *Journal of International Money and Finance, 18*(4), 709-723. doi:https://doi.org/10.1016/S0261-5606(99)00020-0

Mohammed, S., Sha, N., & Al Aamri, J. S. (2019). Analyzing the Financial Soundness of Bank Dhofar: A CAMEL Approach. *IUP Journal of Accounting Research & Audit Practices, 18*(4), 52-61. doi:https://search.proquest.com/docview/2322066774/fulltextPDF/CFAE1687D3794C64PQ/1?accountid=15083

Mora, N., Neaime, S., & Aintablian, S. (2013). Foreign currency borrowing by small firms in emerging markets: When domestic banks intermediate dollars. *Journal of Banking & Finance, 37*(3), 1093-1107. doi:https://doi.org/10.1016/j.jbankfin.2012.11.012

Moro, B. (2014). Lessons from the European economic and financial great crisis: A survey. *European Journal of Political Economy, 34*(Supplement), S9-S24. doi:https://doi.org/10.1016/j.ejpoleco.2013.08.005

Morsink, J., & Bayoumi, T. (2001). A peek inside the black box: The monetary transmission mechanism in Japan. *IMF Staff Papers, 48*(1), 22-57. doi:https://www.jstor.org/stable/4621659

Moshirian, F. (2012). The future and dynamics of global systemically important banks. *Journal of Banking & Finance, 36*(10), 2675-2679. doi:https://doi.org/10.1016/j.jbankfin.2012.04.008

Narayan, P. K., & Narayan, S. (2013). The short-run relationship between the financial system and economic growth: New evidence from regional panels. *International Review of Financial Analysis, 29*, 70-78. doi:https://doi.org/10.1016/j.irfa.2013.03.012

Nasir, M. A., Naidoo, L., Shahbaz, M., & Amoo, N. (2018). Implications of oil prices shocks for the major emerging economies: A comparative analysis of BRICS. *Energy Economics, 76*, 76-88. doi:https://doi.org/10.1016/j.eneco.2018.09.023

Nguyen, M., Perera, S., & Skully, M. (2016). Bank market power, ownership, regional presence and revenue diversification: Evidence from Africa. *Emerging Markets Review, 27*, 36-62. doi:https://doi.org/10.1016/j.ememar.2016.03.001

Nguyen, V. H., & Boateng, A. (2013). The impact of excess reserves beyond precautionary levels on Bank Lending Channels in China. *Journal of International Financial Markets, Institutions and Money, 26*, 358-377. doi:https://doi.org/10.1016/j.intfin.2013.07.002

Nicolo, G. D., & Loukoianova, E. (2007). Bank ownership, market structure and risk. *Working Paper*. doi:https://books.google.co.za/books?hl=en&lr=&id=_8WMdXme1kYC&oi=fnd&pg=PA3&dq=Nicolo+%2B+Loukoianova&ots=fRnzSSYk_x&sig=utVfDiF0QAl1OvmJtRzZOzCjVws#v=onepage&q=Nicolo%20%2B%20Loukoianova&f=false

Oetzel, J. M., & Banerjee, S. G. (2008). A case of the tortoise versus the hare? Deregulation process, timing, and firm performance in emerging markets. *International Business Review, 17*(1), 54-77. doi:https://doi.org/10.1016/j.ibusrev.2007.08.003

Okimoto, T. (2008). New evidence of asymmetric dependence structures in international equity markets. *Journal of Financial and Quantitative Analysis, 43*(3), 787-816. doi:https://www.jstor.org/stable/27647371

Olivero, M. P., Li, Y., & Jeon, B. N. (2011). Competition in banking and the lending channel: Evidence from bank-level data in Asia and Latin America. *Journal of Banking & Finance, 35*(3), 560-571. doi:https://doi.org/10.1016/j.jbankfin.2010.08.004

Ozili, P. K., & Outa, E. (2017). Bank loan loss provisions research: A review. *Borsa Istanbul Review, 17*(3), 144-163. doi:https://doi.org/10.1016/j.bir.2017.05.001

Pastor, M., & Wise, C. (2015). Good-Bye financial crash, hello financial eclecticism: Latin American responses to the 2008–09 global financial crisis. *Journal of International Money and Finance, 52*, 200-217. doi:https://doi.org/10.1016/j.jimonfin.2014.11.019

Pease, S., Paliwoda, S., & Slater, J. (2006). The erosion of stable shareholder practice in Japan (“Anteikabunushi Kosaku”). *International Business Review, 15*(6), 618-640. doi:https://doi.org/10.1016/j.ibusrev.2006.08.001

Peek, J., & Rosengren, E. S. (2000). Implications of the Globalization of the banking sector: The Latin American experience. *Working Paper*. doi:http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.921.2768&rep=rep1&type=pdf

Peek, J., Rosengren, E. S., & Kasirye, F. (1999). The poor performance of foreign bank subsidiaries: Were the problems acquired or created? *Journal of Banking & Finance, 23*(2-4), 579-604. doi:https://doi.org/10.1016/S0378-4266(98)00082-X

Perić, B. Š., Smiljanić, A. R., & Aljinović, Z. (2018). Credit risk of subsidiaries of foreign banks in CEE countries: Impacts of the parent bank and home country economic environment. *The North American Journal of Economics and Finance, 46*, 49-69. doi:https://doi.org/10.1016/j.najef.2018.03.009

Phan, H. T., Daly, K., & Akhter, S. (2016). Bank efficiency in emerging Asian countries. *Research in International Business and Finance, 38*, 517-530. doi:https://doi.org/10.1016/j.ribaf.2016.07.012

Pomfret, R. (2010). The financial sector and the future of capitalism. *Economic Systems, 34*(1), 22-37. doi:https://doi.org/10.1016/j.ecosys.2009.11.001

Pradhan, R. P., Arvin, M. B., Bahmani, S., Hall, J. H., & Norman, N. (2017). Finance and growth: Evidence from the ARF countries. *The Quarterly Review of Economics and Finance, 66*, 136-148. doi:https://doi.org/10.1016/j.qref.2017.01.011

Radulescu, I. G., Panait, M., & Voica, C. (2014). BRICS Countries Challenge to the World Economy New Trends. *Procedia Economics and Finance, 8*, 605-613. doi:https://doi.org/10.1016/S2212-5671(14)00135-X

Rashid, A., & Jabeen, S. (2016). Analyzing performance determinants: Conventional versus Islamic Banks in Pakistan. *Borsa Istanbul Review, 16*(2), 92-107. doi:https://doi.org/10.1016/j.bir.2016.03.002

Reinhart, C. M., & Rogoff, K. S. (2013). Banking crises: An equal opportunity menace. *Journal of Banking & Finance, 37*(11), 4557-4573. doi:https://doi.org/10.1016/j.jbankfin.2013.03.005

Roman, A., & Şargu, A. C. (2013). Analysing the Financial Soundness of the Commercial Banks in Romania: An Approach based on the Camels Framework. *Procedia Economics and Finance, 6*, 703-712. doi:https://doi.org/10.1016/S2212-5671(13)00192-5

Roy, S., & Kemme, D. M. (2012). Causes of banking crises: Deregulation, credit booms and asset bubbles, then and now. *International Review of Economics & Finance, 24*, 270-294. doi:https://doi.org/10.1016/j.iref.2012.04.001

Sabaté, M., Gadea, M. D., & Escario, R. (2006). Does fiscal policy influence monetary policy? The case of Spain, 1874–1935. *Explorations in Economic History, 43*(2), 309-331. doi:https://doi.org/10.1016/j.eeh.2005.03.003

Sadiku, L., Fetahi-Vehapi, M., Sadiku, M., & Berisha, N. (2015). The Persistence and Determinants of Current Account Deficit of FYROM: An Empirical Analysis. *Procedia Economics and Finance, 33*, 90-120. doi:https://doi.org/10.1016/S2212-5671(15)01696-2

Sandder, H., & Kleimeier, S. (2004). Convergence in euro-zone retail banking? What interest rate pass-through tells us about monetary policy transmission, competition and integration. *Journal of International Money and Finance, 23*(3), 461-492. doi:https://doi.org/10.1016/j.jimonfin.2004.02.001

Saunders, A., Strock, E., & Travlos, N. G. (1990). Ownership Structure, Deregulation, and Bank Risk Taking. *The Journal of Finance, 45*(2), 643-654. doi:http://www.jstor.com/stable/2328676

Schmidt, N. (2008). Foreign bank entry: The stability implications of greenfield entry vs acquisition. *Discussion Paper*. doi:http://fmg.lse.ac.uk

Serrano, A. (2016). Foreign banks and credit in Mexico. *Global Finance Journal, 30*, 77-93. doi:https://doi.org/10.1016/j.gfj.2016.01.002

Shaddady, A., & Moore, T. (2019). Investigation of the effects of financial regulation and supervision on bank stability: The application of CAMELS-DEA to quantile regressions. *Journal of International Financial Markets, Institutions and Money, 58*, 96-116. doi:https://doi.org/10.1016/j.intfin.2018.09.006

Slovin, M. B., & Young, J. E. (1990). Bank lending and initial public offerings. *Journal of Banking & Finance, 14*(4), 729-740. doi:https://doi.org/10.1016/0378-4266(90)90073-B

Stavrakeva, V., & Tang, J. (2018, October). *The Dollar During the Global Recession: US Monetary Policy and the Exorbitant Duty*. Retrieved from FRB of Boston Working Paper No. 18-10: https://ssrn.com/abstract=3297407

Stiglitz, J. E., & Weiss, A. (1981). Credit Rationing in Markets with Imperfect Information. *The American Economic Review, 71*(3), 393-410. doi:http://www.jstor.com/stable/1802787

Stijn, C., & Van Horen, N. (2014). Foreign Banks: Trends and Impact. *Journal of Money, Credit and Banking, 46*(1), 295-326. doi:https://doi.org/10.1111/jmcb.12092

Sturm, J.-E., & Williams, B. (2004). Foreign bank entry, deregulation and bank efficiency: Lessons from the Australian experience. *Journal of Banking & Finance, 28*(7), 1775-1799. doi:https://doi.org/10.1016/j.jbankfin.2003.06.005

Sturm, J.-E., & Williams, B. (2008). Characteristics determining the efficiency of foreign banks in Australia. *Journal of Banking & Finance, 32*(11), 2346-2360. doi:https://doi.org/10.1016/j.jbankfin.2007.12.029

Sturm, J.-E., & Williams, B. (2010). What determines differences in foreign bank efficiency? Australian evidence. *Journal of International Financial Markets, Institutions and Money, 20*(3), 284-309. doi:https://doi.org/10.1016/j.intfin.2010.03.008

Sufian, F. (2011). An exploration into the home field, global advantage and liability of unfamiliarness hypotheses in multinational banking. *IIMB Management Review, 23*(3), 163-176. doi:https://doi.org/10.1016/j.iimb.2011.06.003

Talvi, E., & Végh, C. A. (2005). Tax base variability and procyclical fiscal policy in developing countries. *Journal of Development Economics, 78*(1), 156-190. doi:https://doi.org/10.1016/j.jdeveco.2004.07.002

Temesvary, J., & Banai, A. (2017). The drivers of foreign bank lending in Central and Eastern Europe: The roles of parent, subsidiary and host market traits. *Journal of International Money and Finance, 79*, 157-173. doi:https://doi.org/10.1016/j.jimonfin.2017.08.005

Umar, M., & Sun, G. (2016). Determinants of different types of bank liquidity: evidence from BRICS countries. *China Finance Review International, 6*(4), 380-403. doi:https://www.emerald.com/insight/content/doi/10.1108/CFRI-07-2015-0113/full/pdf

Umar, M., Sun, G., & Majeed, M. A. (2017). Bank capital and liquidity creation: Evidence of relation from India. *Journal of Asia Business Studies, 11*(2), 152-166. doi:http://dx.doi.org/10.1108/JABS-12-2015-0208

Umar, M., Sun, G., Shahzad, K., & Rao, Z.-u.-R. (2018). Bank regulatory capital and liquidity creation: evidence from BRICS countries. *International Journal of Emerging Markets, 13*(1), 218-230. doi:https://www.emerald.com/insight/content/doi/10.1108/IJoEM-04-2015-0072/full/pdf

Van Cauwenberge, A., Vancauteren, M., Braekers, R., & Vandemaele, S. (2019). International trade, foreign direct investments, and firms' systemic risk: Evidence from the Netherlands. *Economic Modelling, 81*, 361-386. doi:https://doi.org/10.1016/j.econmod.2019.07.001

Wang, P.-F., & Wen, Y. (2006). Another look at sticky prices and output persistence. *Journal of Economic Dynamics and Control, 30*(12), 2533-2552. doi:https://doi.org/10.1016/j.jedc.2005.08.002

Weill, L. (2003). Banking efficiency in transition economies - The role of foreign ownership. *Economics of Transition, 11*(3), 569-592. doi:https://onlinelibrary.wiley.com/doi/pdf/10.1111/1468-0351.00155

Werner, R. A. (2016). A lost century in economics: Three theories of banking and the conclusive evidence. *International Review of Financial Analysis, 46*, 361-379. doi:https://doi.org/10.1016/j.irfa.2015.08.014

Williams, B. (1997). Positive theories of multinational banking: Eclectic theory versus internalisation theory. *Journal of Economic Surveys, 11*(1), 71-100. doi: https://doi.org/10.1111/1467-6419.00024

Wu, J., Chen, M., Joen, B., & Wang, R. (2017). Does foreign bank penetration affect the risk of domestic banks? Evidence from emerging economies. *Journal of Financial Stability, 31*, 45 - 61. doi:https://doi.org/10.1016/j.jfs.2017.06.004

Wu, J., Luca, A. C., & Jeon, B. N. (2011). Foreign bank penetration and the lending channel in emerging economies: Evidence from bank-level panel data. *Journal of International Money and Finance, 30*(6), 1128-1156. doi:https://doi.org/10.1016/j.jimonfin.2011.05.011

Wu, J.-L., Hou, H., & Cheng, S.-Y. (2010). The dynamic impacts of financial institutions on economic growth: Evidence from the European Union. *Journal of Macroeconomics, 32*(3), 879-891. doi:https://doi.org/10.1016/j.jmacro.2009.09.003

Yang, J., & Shao, H. (2016). Impact of bank competition on the bank lending channel of monetary transmission: Evidence from China. *International Review of Economics & Finance, 43*, 468 - 481. doi:https://doi.org/10.1016/j.iref.2015.12.008

Zaim, O. (1995). The effects of financial liberalization on the efficiency of Turkish commercial banks. *Applied Financial Economics, 5*(4), 257-264. doi:https://doi.org/10.1080/758536876

Zhang, J., Jiang, C., Qu, B., & Wang, P. (2013). Market concentration, risk-taking, and bank performance: Evidence from emerging economies. *International Review of Financial Analysis, 30*, 149-157. doi:https://doi.org/10.1016/j.irfa.2013.07.016

Zhang, Z., Tsai, S.-L., & Chang, T. (2017). New evidence of interest rate pass-through in Taiwan: A nonlinear Autoregressive distributed Lag Model. *Global Economic Review, 46*(2), 129-142. doi: https://doi.org/10.1080/1226508X.2017.1278710