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Foreign banks entry and financial inclusion: insights from MENA region

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Abstract

Purpose – This study aims to examine the impact of foreign bank entry (FBE) on financial inclusion in the MENA region, using a panel regression model with data from 21 countries over the period 2000–2021. It investigates whether this impact is conditional to the level of financial development and institutional quality. Specifically, the framework uses modernization theory to hypothesize that FBE enhances financial services access and usage through efficiency gains and improved banking practices. In contrast, neo-institutional theory is operationalized to analyze the moderating effects of institutional quality on these relationships, positing that weak institutions can restrict access by encouraging foreign banks to engage in "cherry-picking" of clients. Despite the increasing presence of foreign banks in the MENA region, empirical studies that examine how this presence directly impacts financial inclusion – specifically in terms of access and usage – are limited.

Design/methodology/approach – This study uses panel-corrected standard errors, feasible generalized least squares and generalized method of moments (GMM) Quantile estimation techniques. Key variables include foreign bank presence, financial inclusion (both access and usage of financial services) and determinants such as institutional quality, deposit interest rate, private sector credit, population growth and urbanization rates. Furthermore, the study constructs the theoretical model that demarcates how FBE affects financial inclusion, essentially showing the interaction of foreign bank efficiency, information asymmetry and institutional effectiveness.

Findings – The results show that foreign bank presence negatively affects financial access (e.g. ATMs and branches) but positively influences financial usage (e.g. deposit accounts), with institutional quality significantly moderating these relationships. Importantly, the model indicates that weaker institutional quality amplifies negative effects on access but strengthens positive effects on usage. The model also hypothesizes that low financial development exacerbates the negative impact of foreign banks on financial inclusion. The quantile GMM analysis confirms that these effects vary across the distribution of financial inclusion, underscoring the importance of country-specific contextual factors. These findings imply that a false generalization regarding the effect of foreign banks on financial inclusion is misleading because of the influence exerted upon it by the financial infrastructure and the quality of governance in the host country. Therefore, customizing policies in accordance with local contexts is an inevitable requirement.

Practical implications – The study underscores the importance of improving institutional quality and financial development to mitigate the potentially negative impact of FBE on access to financial services and to amplify its positive effects on enhancing the use of financial services by the population. These findings offer valuable insights for policymakers seeking to promote financial inclusion and economic development in the MENA region.

JEL classification – G12, O16

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Originality/value – This study is one of the pioneering studies that examine whether the impact of FBE on financial inclusion is conditional on the level of financial development and institutional quality. Thus, it reconstructs a far richer understanding of the nuances behind foreign banks *vis-a-vis* sustainable development, while questioning the overly simplistic view of foreign banks being beneficial and raising critical issues for future research and policy-making.

Keywords Foreign banks, Financial inclusion, Institutional quality, Financial development, MENA Region, Foreign bank entry

Paper type Research paper

Introduction

The promotion of an inclusive financial system is paramount for attaining comprehensive, steady and sustainable economic progress. Theoretical frameworks like modernization theory suggest that bringing in foreign banks can boost financial services and promote greater economic fairness. This aligns with our belief that the entry of foreign banks will enhance financial inclusion metrics. On the other hand, neo-institutional theory highlights how crucial the local institutional context is in shaping outcomes. It implies that foreign banks might not be as effective in areas with weaker governance, which could end up reinforcing existing inequalities. By looking through this dual theoretical lens, we can better understand how foreign banks operate in the MENA region and lay the groundwork for our empirical testing of these competing frameworks.

Financial inclusion, acknowledged as a pivotal element in fostering societal advancement, contributes to the realization of the sustainable development goals (SDGs) by diminishing poverty, advancing equal opportunities and achieving human development (Kim, 2016; Omar and Inaba, 2020; Van *et al.*, 2021; Sharma and Changkakati, 2022). An all-inclusive financial system is crucial for facilitating access to savings, payment facilities and risk management services. When individuals with limited resources rely exclusively on their restricted incomes due to the non-inclusiveness of the financial system, income inequality remains entrenched, impeding economic growth (Demirgüç-Kunt and Klapper, 2012; Polloni-Silva *et al.*, 2021; Chowdhury and Chowdhury, 2023). Expanded financial inclusion allows excluded individuals to invest in education, save money and start businesses, thereby reducing poverty and fostering economic development (Azmeh, 2025a, 2025b; Azmeh and Al-Raeei, 2024, 2025; Demirgüç-Kunt and Singer, 2017; Koomson *et al.*, 2020).

The importance of financial inclusion in realizing the SDGs and reducing inequality is acknowledged within the UN 2030 Agenda. Developing and emerging countries are striving to achieve universal financial inclusion, recognizing its critical role in ensuring financial stability and promoting national development (Ahamed and Mallick, 2019; Barajas *et al.*, 2020; Khan *et al.*, 2022). Despite some progress, data from the Global Findex Database indicates that 1.7 billion adults still lack access to formal financial services. Additionally, approximately 760,000 individuals have access but do not use these services (Demirguc-Kunt *et al.*, 2018; Demir *et al.*, 2022; Anakpo *et al.*, 2023). Furthermore, despite recent banking reforms, the MENA region's financial inclusion performance remains below that of other developing regions (Azmeh, 2018a, 2019). The region exhibits the lowest level of financial account penetration, as evidenced by a mere 18% of adults who possess a formal account (Demirgüç-Kunt and Klapper, 2012). Fouejieu *et al.* (2020) also found that the MENA region performed one of the lowest level in financial inclusion (number of ATM and bank branches) between 2011 and 2014, trailing behind regions such as Central Asia and Latin America.

Despite the widespread recognition of the significance of financial inclusion, there remains a paucity of research investigating its relationship with foreign banks entry within the context of escalating financial globalization. It is imperative to explore the impact of foreign bank presence on financial inclusion. Theoretical literature suggests that foreign banks may enhance financial inclusion in host countries due to their superior performance, efficiency and portfolio compared to domestic banks (Bonin *et al.*, 2005; Degryse *et al.*, 2012; Kallel and Triki, 2024). Considering our theoretical model, we assume that the positive impact of foreign banks is mediated through increased competition, better banking practices and access to superior financial products. On the other hand, research suggests that foreign banks reduce financial inclusion by "cherry-picking," also known as selecting creditworthy customers and excluding those with limited credit histories, which in turn leads to broader systemic inequities (Gormley, 2010). Foreign banks require a period of adjustment to address the informational discrepancies stemming from geographical and cultural disparities. This adjustment is necessary to extend their lending activities to soft information borrowers and to actualize the anticipated favorable impact of their market entry on financial development and financial inclusion (Azmeh, 2018b). Recent studies show that while foreign bank participation often boosts financial inclusion in sub-Saharan Africa, weak information-sharing mechanisms can lead to reduced access to credit, pushing individuals toward informal lenders (Fiador and Okyere, 2024; Williams, 2024). Conversely, foreign banks can enhance market competition, improving credit access for various sectors, including small and medium enterprises (Ali *et al.*, 2024). However, the prevailing uncertainties regarding the influence of FBE on financial inclusion underscore the need for a more comprehensive examination of how domestic financial development and institutional quality respond in relation to this effect.

The motivation for this study arises from the evident uncertainty surrounding the impact of FBE on financial inclusion in the MENA region, particularly when considering the varying levels of financial development and institutional quality. While theoretical models suggest possible beneficial effects, there is a lack of empirical evidence exploring this complex relationship. Our overarching research question seeks to address: How does FBE affect financial inclusion in the MENA region, and is this relationship conditioned by financial development and institutional quality? This query is based on our theoretical model, which succinctly identifies how these factors interact and influence financial inclusion outcomes.

To this end, the objectives of this study are twofold: first, to investigate the direct effects of FBE on multiple dimensions of financial inclusion, specifically access and usage, while analyzing the moderating roles of institutional quality and financial development. Second, to develop a theoretical framework that elucidates the mechanisms through which foreign bank presence influences financial inclusion, ultimately advancing our understanding of the interplay between foreign banking practices, financial development and institutional quality.

This study sets forth several hypotheses:

H1. FBE negatively impacts financial access (proxied by the number of ATMs and branches).

H2. FBE positively influences financial usage (measured by the number of deposit accounts).

H3. The negative effects on FBE are exacerbated in contexts with lower institutional quality.

H4. Financial development moderates the relationship thereby amplifying the adverse effects of foreign bank presence on financial inclusion.

As such, this research contributes to the existing literature by offering a nuanced understanding of the FBE-financial inclusion nexus, particularly in the MENA context. It challenges the overly simplistic narrative that foreign banks universally benefit financial inclusion and highlights the critical importance of financial infrastructure and governance quality in mediating these effects.

This study uses panel data from 21 MENA countries over the period 2000–2020 to investigate the impact of foreign bank presence on multidimensional financial inclusion. A Panel-Corrected Standard Errors (PCSE), Feasible Generalized Least Square (FGLS) and along with Quantile generalized method of moments (GMM) regression methods are used to analyze the data. The significance of this study is underscored by its potential policy implications, providing valuable insights for policymakers on how to develop context-specific policy interventions that enhance financial inclusion and promote economic development in the MENA region. In considering the interaction between FBE, financial development and the quality of institutions. In case of Complementarity, policymakers are advised to pursue policies that enhance both facets in tandem for their mutual benefits. In contrast, a substitutability perspective would advocate for prioritizing either FBE or (financial development – institutional quality) based on their individual significance and potential impact. Thus, a nuanced understanding of the complementarity or substitutability between these factors is essential for crafting effective policy interventions.

The subsequent sections of this paper are structured as follows: Section 2 provides an overview of the pertinent empirical studies pertaining to foreign banks entry and its impact on financial inclusion. Section 3 outlines the data sources and analytical methods used in this study. The results of our analysis are presented in Section 4, followed by a comprehensive discussion and concluding remarks in Section 5.

Literature review

Theoretical review

This study is strongly embedded in the modernization and neo-institutional theories, while also dealing with critical elements of information asymmetry and dependency theory to elucidate FBE dynamics in the MENA region. Modernization theory posits that FBE can promote financial inclusion and reduce income inequality by increasing access to superior financial services, facilitating employment opportunities and enhancing economic growth (Bernstein, 1971; Clarke *et al.*, 2003; Cull and Peria, 2007). These correspond to our analysis of how FBE can facilitate enhanced financial inclusion by promoting access to finance in the presence of differential financial development and institutional quality within the MENA countries themselves, a premise supported by (North, 1990; Pan-Long, 1995). Our theoretical model further captures elements of information asymmetry. Here, the presence of foreign banks has the potential to alleviate obstacles to credit access by disadvantaged groups, assuming that financial stability is ensured through appropriate regulatory mechanisms of control, as supported by (Akerlof, 1978; Stiglitz and Weiss, 1981). These theories combined in our study provide new contributions to extant literature by postulating that financial development and institutional quality play a moderating influence in augmenting the positive effects of FBE on financial inclusion; this leaves the underlying relationships contextual in nature and presents a nuanced understanding of how foreign banks can help achieve financial inclusion in the MENA region (Kusi *et al.*, 2022). Thus, this comprehensive model enhances the discussion on foreign bank participation and financial

inclusion by highlighting the conditional aspects of their interactions and emphasizing the importance of strong institutional frameworks for equitable access.

Empirical review

There has been a growing discussion surrounding the causes and implications of foreign bank penetration. Particularly, scholars have delved into inquiries regarding the impact of foreign bank presence on the broader development of the financial sector. Several scholars propose that foreign banks play a significant role in advancing financial sector development. Their research indicates that the entry of foreign banks fosters competition, enhances the adoption of advanced banking practices and technologies and promotes financial intermediation within the financial sector. As competition intensifies in the domestic market, there is a corresponding increase in the availability of financial services and credit extension, ultimately contributing to the overall development of the financial sector (Wu *et al.*, 2010; Bonin and Louie, 2017; Azmeh, 2018b; Yin, 2021; Boamah *et al.*, 2022). Contrastingly, other scholars posit that foreign banks impede financial development by disproportionately extending credit to large corporations, thereby neglecting the needs of small and medium-sized enterprises. This phenomenon arises when the presence of foreign banks results in heightened market concentration, compelling these banks to curtail lending to borrowers with well-established credit information (hard information borrowers), while simultaneously expanding credit provision to borrowers with less verifiable credit histories (soft information borrowers) within the private sector (Saleh, 2015; Kleymenova *et al.*, 2016; Azmeh *et al.*, 2017; Beck *et al.*, 2018; Azmeh, 2018b).

Empirical investigations have consistently demonstrated that the presence of foreign banks augments competitive dynamics within the banking sector. This enhancement is attributed to the adoption of contemporary banking methodologies, bolstered capitalization and elevated expertise levels. Consequently, this virtuous cycle yields increased operational efficiency, cost reduction and heightened profitability for banks operating in the host country. Boamah *et al.* (2022) underscore the salutary impact of foreign bank presence on the host country's banking sector. Nguyen (2022) further reveals that an augmented influx of foreign banks correlates positively with Vietnamese domestic banks' profitability. Similarly, Ofori-Sasu *et al.* (2019) posit that foreign banks initially engage in competitive dynamics with existing banks in emerging markets, thereby fostering efficiency gains. Hartwell (2018) contributes by demonstrating a significantly positive association between foreign bank presence and key business environment indicators. These indicators encompass competitiveness rankings, investor assessments, ease of business initiation, export-import timelines, macroeconomic factors and transaction costs.

Heightened attention has been directed toward exploring additional facets of financial development, specifically the size and activity of the financial sector. Notably, Detragiache *et al.* (2008), Claessens and Van Horen (2014), and Azmeh *et al.* (2017) reveal a significant and adverse impact of FBE on private credit availability in developing countries. Their findings underscore the phenomenon of "cherry picking" by foreign banks within these contexts. Conversely, Al Samman and Azmeh (2016) do not identify any discernible effect stemming from the level of financial liberalization commitments made by developing countries under the General Agreement on Trade in Services with respect to overall financial development. However, few theoretical frameworks clearly outline the specific conduiting pathways through which foreign banks affect both the supply and demand sides of financial services. In our theoretical model, we delineate these pathways and propose that financial development and institutional quality are the twin forces that greatly moderate how foreign bank operations would achieve financial inclusion.

Several empirical studies examined the impact of FBE on financial development in the MENA region. Lee (2002) pioneered the examination of FBE's role in financial development within MENA countries. His findings highlight positive effects on domestic banks' efficiency. Subsequent research by Hassan *et al.* (2012) also underscores the favorable impact of FBE on overall financial sector efficiency in the MENA region. Kobeissi and Sun (2010) provide evidence linking greater foreign bank presence to improved profit efficiency across 17 MENA countries during the period 2000–2007. Azmeh (2018b) reveals a sustained and statistically significant impact of FBE on the overall size and activity of the financial sector within MENA countries. He gave evidence that foreign banks require time to surmount informational disadvantages arising from geographical and cultural distances, to extend credit to soft information borrowers and ultimately realize the anticipated positive impact of their entry on financial development.

The impact of foreign bank penetration on financial inclusion has been examined in few studies, but these investigations are generally constrained in scope and do not yield definitive conclusions. ÖzŞuca (2019) concludes that foreign banks' presence in (27) transition economies is linked to increased accessibility of banking services, but it does not significantly affect the utilization of financial services by individuals in terms of borrowing per capita. Iddrisu *et al.* (2022) using a quantile regression approach to investigate the relationship between financial technology (Fintech) and inclusive finance in Africa. The results of their study reveal that while foreign bank presence does not directly impact inclusive finance, it enhances the connection between Fintech and inclusive finance. Kebede *et al.* (2021) reveal that when foreign bank presence is high, it tends to reduce financial inclusion in African countries. However, this effect depends on institutional quality, with its impact turning from negative to positive as institutional quality improves. Léon and Zins (2020) investigate the impact of Pan-African banks (regional foreign banks) on financial inclusion in developing and emerging countries. Their findings reveal that Pan-African banks increase firms' access to credit and show limited evidence of favoring financial access for the middle class by restoring confidence in banks. Gopalan and Rajan (2018) give evidence that foreign banks significantly enhance financial inclusion in emerging and developing economies, but their impact on the usage aspect of financial inclusion remains somewhat limited.

More recently, several empirical studies investigated the impact of FBE on financial inclusion and their implications on income inequality. Delis *et al.* (2020), Azmeh (2025a), and Iddrisu *et al.* (2024) indicate that foreign bank presence can have a rather ambiguous relationship with income inequality, noticing possible increases in disparity caused by channeling credit to wealthier customers; at the same time, enhancing market efficiency. According to Koudalo and Wu (2022), financial liberalization exacerbate greater inequality because foreign banks will focus on wealthy customers and exclude marginalized groups. Ashenafi and Dong (2024) raise the complicated interaction that exists between financial openness and development outcomes, where specific policies can favor financial development and inclusion. According to Ullah *et al.* (2024), while ownership of foreign banks may worsen income inequality, strategic capital account liberalization offers some benefits. By contrast, Iddrisu (2024a, 2024b) demonstrates that foreign bank presence may decreases income inequality, particularly in a stable environment. She also gave evidence of a threshold effect, indicating that although FBE reduces income inequality, but if it surpasses 52%, it could contribute to it.

Our theoretical contribution is to explicitly connect these findings to financial inclusion outcomes by positing that the degree to which foreign banks facilitate access and use of

financial services is basically modulated by institutional and developmental contexts in which they operate.

Data and methodology

This study examines FBE's impact on financial inclusion in 21 MENA countries[1] (2000–2021) using panel regression (PCSE and FGLS). The period aligns with World Bank GFD data availability (2021 being the latest), significant institutional, technological and economic shifts, and rising foreign bank presence amid financial liberalization and SDGs. Excluding pre-2000 data due to institutional quality metrics, the analysis focuses on long-term dynamics between foreign banks, institutional quality, financial development and inclusion – critical for policy in a region marked by low inclusion, heterogeneous institutions and growing foreign bank activity.

Data collection and variable specification

The data set encompasses key variables such as FBE, financial inclusion (access and use) and various determinants of financial inclusion. FBE is proxied by the percentage of the number of foreign owned banks to the number of the total banks in an Economy[2]. Financial inclusion is proxied, in terms of access and use. The number of ATMs and the number of commercial bank branches per 100,000 adults are proxies for financial inclusion in term of access. Number of depositors with commercial banks per 1,000 adults is used to gauge the level of financial inclusion in term of use. The study relies on the World Governance Indicators to evaluate institutional quality. It creates a unique variable to serve as a proxy for the level of institutional quality by calculating the average of the six institutional indicators: rule of law, government effectiveness, political stability, regulatory quality, control of corruption and voice and accountability. Additional determinants of financial inclusion are sourced from the World Bank database[3] including deposit interest rate, domestic credit to private sector, bank concentration, Population growth, bank overhead costs and the percentage of urban population to total population. Detailed statistical information is provided in Table 1.

A correlation matrix was developed to assess multicollinearity by examining the strength of relationships between control variables. The findings are presented in Table 2, providing a comprehensive overview of the results pertaining to inter-variable correlations.

Based on the results presented in Table 2, there are no cases of multicollinearity. The values of correlation between all variables do not exceed 70%. The only exception is the correlation between (Urban% and Institutions) which is 0.70004. To delve deeper into the potential multicollinearity among the independent variables, a variance inflation factor (VIF) test was conducted. The findings revealed a mean VIF value of 2.35 as well as all other control variables, with values fell below the threshold of 10. This outcome explicitly confirmed no presence of multicollinearity in our data set. Detailed results can be found in Table 3.

Pre-estimation tests

To select a suitable estimation model, the study conducted three pre-estimation tests (cross sectional, unit root and cointegration tests). The analysis conducted indicated that all variables became stationary at first difference, suggesting that they do not exhibit unit root behavior. Only two variables or our database (Bank concentration and Bank overhead costs) did not pass the cross-sectional test. Hence, we exclude them from our empirical test. For the remaining variables, the null hypothesis of a unit root test was rejected. Furthermore, a cointegration test based on Kao's (1999) method was used to examine if the variables are

Table 1. Summary statistics of key variables for the period (2000–2021)

Variable	Definition and data sources	Abbreviation	Mean	SD	Minimum	Maximum
ATM	Number of Automated teller machines (ATMs) (per 100,000 adults) (WDI)	ATM	740.162	2930.55	0.000000	15491.9
No. Accounts	Account ownership at a financial institution or with a mobile-money-service provider (% of population ages 15+) (GFD)	Acc	18420.5	54772.2	18.4067	273254
No. Branches	Number of Commercial bank branches (per 100,000 adults) (WDI)	Branches	103.546	375.566	0.171042	1784.20
Bank concentration	Assets of three largest commercial banks as a share of total commercial banking assets (GFD)	B-con	73.3918	17.7203	29.2703	100.000
Bank overhead costs	Operating expenses of a bank as a share of the value of all assets held (GFD)	B-costs	1.79624	1.29476	0.328004	11.1995
Deposit interest	Deposit interest rate is the rate paid by commercial or similar banks for demand, time, or savings deposits (GFD)	D-interest	4.50302	3.49773	0.0373823	20.0000
Domestic credit to priv	Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except Central banks) (WDI)	Credit	39.7610	29.1559	0.497601	138.858
Foreign banks	Percentage of the total banking assets that are held by foreign banks (GFD)	ForeignB	22.9238	21.6325	0.000000	71.0000
Institutions	Aggregate of six institutional indicators: rule of law, government effectiveness, political stability, regulatory quality, control of corruption, and voice and accountability (WGI)	Institutions	−0.666259	0.777500	−2.40953	0.722041
Population growth	Annual population growth rate for year *t* is the exponential rate of growth of midyear population from year *t* - 1 to *t*, expressed as a percentage (WDI)	Popu%	2.68845	2.76264	−6.85212	19.3604
Urban percentage	Urban population (% of total population) (WDI)	Urban%	67.4235	22.5412	16.5040	100.000

Note(s): This table presents the dependent variable and the explanatory variables that we used in the paper, their definitions the abbreviations used in empirical results, and Source: of observed data. WDI stands for World Development Indicators, GFD stands for Global Findex database, WGI stands for World Governance Indicators

Source(s): Author's own work

Table 2. Correlation coefficients for the period (2000–2021)

Variables	B-con	B-costs	ForeignB	D-interest	Credit	Popu%	Urban%	Institutions
B-con	1.0000	0.1372	−0.3038	−0.2531	−0.3352	0.1091	−0.0477	−0.1725
B-costs		1.0000	−0.0393	0.1169	−0.2301	−0.0851	−0.5149	−0.2850
ForeignB			1.0000	−0.2434	0.3469	−0.1858	−0.0460	−0.0004
D-interest				1.0000	−0.1411	−0.0508	−0.4098	−0.2428
Credit					1.0000	0.0282	0.5625	0.6943
Popu%						1.0000	0.1533	0.2753
Urban%							1.0000	0.7004
Institutions								1.0000

Source(s): Author's own work

Table 3. Variance inflation factor (VIF) test for the period (2000–2021)

Variable	VIF
Bank concentration	1.361
Bank overhead costs	2.097
Deposit interest	2.516
Domestic credit to priv	2.293
Foreign banks	1.631
Institutions	2.855
Population growth	1.464
Urban percentage	4.598
Mean VIF	2.351

Source(s): Author's own work

cointegrated. The results presented in Table 4 confirmed the presence of cointegration among the variables, indicating a long-term relationship. This finding suggests that the variables move together in the long run, supporting the existence of a stable and consistent relationship among them. Based on the results of the three pre-estimation tests, the present study found the panel corrected standard error PCSE and the FGLS methods to be the most accurate and reliable for estimation. These estimation methods were selected for their superior performances in capturing the complex relationships within the data.

Theoretical framework

Our theoretical framework (Figure 1) suggests that when foreign banks enter a market, they can boost financial inclusion through two main avenues: access, which refers to the physical infrastructure, and usage, meaning the adoption of financial services. It's important to note that these effects are influenced by the financial development level and institutional quality of the host country, leading to varying outcomes. Drawing on modernization theory (Bernstein, 1971) and concepts of information asymmetry (Stiglitz and Weiss, 1981), the entry of foreign banks brings in advanced technologies and competitive pressures that can improve financial inclusion by enhancing service quality (usage). However, dependency theory (Frank, 1967) and the idea of institutional voids (North, 1990) indicate that foreign banks might focus on "cherry-picking" creditworthy clients in less developed markets, which can limit access for marginalized groups (Gormley, 2010).

Table 4. Pre-estimation analysis results

Variable	Pearson cross sectional test	Unit root test CIPS Level	Unit root test CIPS First difference
ATM	30.26***	4.44*	/
Bank branches	9.17***	7.93	4.59*
Bank accounts	3.19***	8.35*	/
Bank concentration	0.79		
Bank overhead costs	1.42		
Deposit interest	11.26***	−0.32	−5.13*
Domestic credit to priv	10.87***	1.06*	/
Foreign banks	11.76***	0.33	−4.85***
Institutions	7.87***	0.58	−9.60***
Population growth	8.31***	2.203	−5.73***
Urban percentage	49.22***	5.40	−5.04***
ADF (augmented Dickey–Fuller) cointegration test			
Dependent variable	Statistic	*p*-value	cointegration
ATM	−3.0393	0.0012	Yes
Bank branches	−3.2482	0.0006	Yes/at first difference
Bank accounts	−2.1625	0.0153	Yes

Note(s): ***$p < 0.01$; **$p < 0.05$; *$p < 0.1$
Source(s): Author's own work

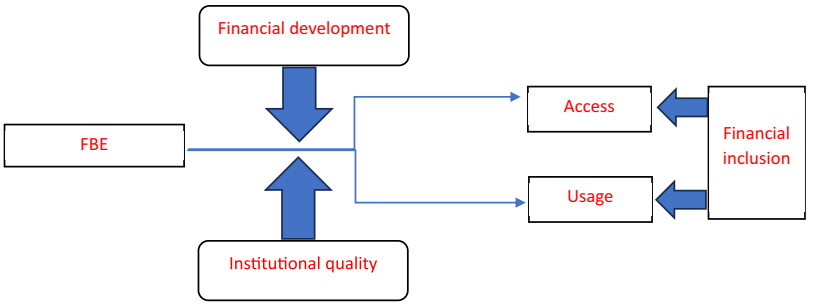

Figure 1. Theoretical model: FBE's dual impact on financial inclusion, moderated by financial development and institutional quality
Source: Moderated by Financial Development and Institutional Quality

The pathways in our model are crucial:

- *Financial Development:* In regions with low financial development (like MENA), foreign banks encounter greater risks related to asymmetric information. This often leads them to limit the expansion of branches and ATMs (access) while concentrating on urban, high-income customers (usage). This observation aligns with Detragiache *et al.* (2008) regarding credit rationing.
- *Institutional Quality:* When institutions are weak, foreign banks tend to be more risk-averse, which can worsen access issues (for instance, resulting in fewer branches in rural areas). On the flip side, strong institutions can help bridge

information gaps, allowing foreign banks to sustainably increase access (Kebede *et al.*, 2021).

This framework pushes back against overly simplistic narratives by highlighting the importance of context, as illustrated in Figure 1.

Model estimation

We use the PCSE technique in our empirical analysis because of its capacity to account for autocorrelation, yielding unbiased parameter and standard error estimates. This method is particularly suitable for dynamic heterogeneous panel data, where observations may be correlated over time and exhibit varying individual characteristics. By incorporating panel-specific and time-specific fixed effects, the PCSE technique helps to control for unobserved heterogeneity and time-varying factors that may affect the relationship between the variables of interest. The feasible generalized least squares (FGLS) approach is also included in the research as a robustness check. It tackles heteroscedasticity and cross-sectional dependency and improves the accurateness of model estimation. These approaches ensure that the estimated model is robust and reliable, making it well-suited for long-run analysis and a robust choice for panel data analysis (Bailey and Katz, 2011; Adeleye *et al.*, 2023).

According to previous empirical literature, the concept of financial inclusion can be represented as a mathematical equation that includes variables such as foreign bank presence and other factors related to the overall economic and institutional environment. To determine the impact of FBE on financial inclusion, we construct the following model:

$$Y_{it} = \alpha + \beta FB_{it} + \gamma Z_{it} + \mu_{it}, \tag{1}$$

In our empirical investigation, we consider the following variables:

Y: Represents financial inclusion.
FB: Represents FBE.
Z: Denotes the matrix of control variables.
μ: Represents the error term.
α: The constant term.
β: The coefficient associated with FBE.
γ: A vector of coefficients corresponding to the control variables.

The subscripts (i) and (t) refer to the country studied and the time period, respectively. Hence the model takes the following forms:

$$ATM\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + \varphi\,Urban\,it + \lambda\,Institutions\,it + \mu\,it, \tag{2}$$

$$Branches\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + \varphi\,Urban\,it + \lambda\,Institutions\,it + \mu\,it, \tag{3}$$

$$Accounts\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + \varphi\,Urban\,it + \lambda\,Institutions\,it + \mu\,it, \tag{4}$$

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We extend our analysis by incorporating a financial development and institutional variables into our model and examining its interaction with FBE. To ensure that the interaction term is not merely a proxy for either foreign banks entry, financial development or institutions, we include these variables as separate terms in the regression analysis. The significance of the interaction coefficient is assessed to determine its importance in our analysis:

$$ATM\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + \varphi\,Urban\,it + \lambda\,Institutions\,it + \chi\,Foreign\,Banks * Institutions + \mu\,it, \tag{5}$$

$$ATM\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + \varphi\,Urban\,it + \lambda\,Institutions\,it + \delta\,Foreign\,Banks * Private\,credit + \mu\,it, \tag{6}$$

$$Branches\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + Urban\,it + \lambda\,Institutions\,it + \chi\,Foreign\,Banks * Institutions + \mu\,it, \tag{7}$$

$$Branches\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + Urban\,it + \lambda\,Institutions\,it + \delta\,Foreign\,Banks * Private\,credit + \mu\,it, \tag{8}$$

$$Accounts\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + Urban\,it + \lambda\,Institutions\,it + \chi\,Foreign\,Banks * Institutions + \mu\,it, \tag{9}$$

$$Accounts\,it = \alpha + \beta\,Foreign\,Banks\,it + \gamma\,Dep\text{-}interest\,it + \phi\,Private\,credit\,it + \psi\,Population\,it + Urban\,it + \lambda\,Institutions\,it + \delta\,Foreign\,Banks * Private\,credit + \mu\,it, \tag{10}$$

The focus of our analysis on equations (5) to (10) lies in the determination of the sign and significance level of the interaction coefficients. The empirical model explicitly tests the theoretical pathways outlined in Figure 1.

Modernization Theory: The positive effect of foreign banks on Accounts (usage) reflects efficiency gains and technological spillovers (*H2*).

Neo-Institutional Theory: (Foreign Banks * Institutions) interaction term captures how governance quality moderates' access/usage tradeoffs (*H3–H4*).

Dependency Theory: The negative baseline effect of foreign banks on ATMs/Branches (access) and its amplification in low-financial-development contexts (Foreign Banks * Private Credit) reflects structural inequities and asymmetric information.

This study applies PCSE and FGLS methods to analyze the impact of foreign banks on financial inclusion. For each of the three inclusion measures, these techniques are used in three models: first, with only financial determinants (including foreign bank presence); second, with additional population-related variables; and third, with full control variables, including institutional quality and financial development. The detailed outcomes are outlined in Tables (5–8).

Results and discussion

Impact of foreign bank entry on the number of ATMs (per 100,000 adults)

Table 5 shows that FBE consistently has a negative and statistically significant effect on the number of ATMs per 100,000 adults at the 1% level across all models. These findings support the hypothesis that foreign banks tend to focus on serving creditworthy customers, which may marginalize fewer stable segments of the population. What the analysis specifically shows is that, while FBE may indeed enhance efficiency and service variety for their customers, this advantage is at least partially offset by reduced accessibility to marginalized groups. This finding is a reflection of the broader evidence reported in the literature, with Gormley (2010) and Kebede *et al.* (2021) showing that foreign banks "cherry-pick" their customers, thereby exacerbating disparities in financial access.

Moreover, our findings demonstrate a negative interaction effect between FBE and both institutional quality and financial development (as evidenced in regressions 4, 5, 9 and 10). This interaction highlights the substitutive nature of foreign bank impact on financial access: in contexts with poor institutional quality, foreign banks are less likely to contribute to expanding access, which calls for targeted policy interventions aimed at improving governance and institutional capacity. From a theoretical standpoint, this underscores the critical role of institutional quality as a moderator that can either facilitate or hinder the potential complementarities between foreign bank presence and financial inclusion, indicating that without robust institutions, foreign banks are more likely to act as substitutes rather than complements in driving financial access.

Impact of foreign bank entry on the number of branches (per 100,000 adults)

Similar to our analysis of ATMs, the results in Table 6 show that FBE reduces the number of branches per 100,000 adults with a negative coefficient that is statistically significant at the 1% level. This suggests that while foreign banks might increase operational efficiency, this is at the cost of a reduction in broader access initiatives.

Further exploration into the interaction between FBE and financial indicators reveals nuanced implications. For instance, while FBE correlates with a decrease in branch numbers, positive relationships observed with financial development indicators such as credit provision to the private sector and urban population suggest that these contexts could foster branch activities when institutional quality is robust. This complexity echoes prior studies (Iddrisu *et al.*, 2024) that highlight varying contextual outcomes, emphasizing the importance of a well-regulated financial environment to maximize the benefits from foreign bank presence.

Impact of foreign bank entry on the number of accounts (per 1,000 adults)

In sharp contrast to the access-oriented indicators, our findings for the number of accounts, which is the usage aspect of financial inclusion, show the positive and statistically significant effect of FBE as reported in Table 7 at 1% significance level. This indicates a complementary relationship, where foreign banks can enhance financial usage when supported by strong institutional frameworks. From a policy perspective, this underscores the importance of

Table 5. Foreign bank entry and financial inclusion in the MENA countries for the period (2000–2021): Panel-Corrected standard errors (PCSE) and feasible generalized least square (FGLS). dependent variable: Number of automated teller machines (ATMs) (per 100,000 adults)

Variables	(1) PCSE ATM	(2) PCSE ATM	(3) PCSE ATM	(4) PCSE ATM	(5) PCSE ATM
Foreign banks	−0.402*** (0.0583)	−0.111*** (0.0373)	−0.101*** (0.0330)	−0.430*** (0.0909)	0.0269 (0.0570)
Dep-interest	−1.290*** (0.274)	0.389** (0.176)	0.624*** (0.215)	0.578*** (0.222)	0.675*** (0.206)
Private credit	0.445*** (0.0401)	0.225*** (0.0271)	0.145*** (0.0289)	0.225*** (0.0299)	0.369*** (0.110)
Population		1.701*** (0.370)	0.894*** (0.303)	0.686** (0.280)	0.826*** (0.310)
Urban		0.424*** (0.0454)	0.340*** (0.0468)	0.291*** (0.0497)	0.315*** (0.0510)
Institutions			11.77*** (2.237)	14.06*** (2.217)	8.571*** (2.760)
ForB*Ins				*−0.428*** (0.103)*	
ForB*Pcredit					*−0.0061** (0.00277)*
Constant	19.56*** (3.778)	−23.81*** (3.870)	−7.529 (4.762)	−2.866 (4.910)	−12.52** (5.424)
Observations	86	86	86	86	86
R-squared	0.599	0.828	0.871	0.893	0.881
p	0.00	0.00	0.00	0.00	0.00

Note(s): *t*-statistics in parentheses, *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$
Source(s): Author's own work

(*continued*)

Table 5. Continued

Variables	(6) FGLS ATM	(7) FGLS ATM	(8) FGLS ATM	(9) FGLS ATM	(10) FGLS ATM
Foreign banks	−0.305*** (0.0486)	−0.131*** (0.0236)	−0.104*** (0.0296)	−0.502*** (0.0733)	0.0235 (0.0519)
Dep-interest	−1.102*** (0.241)	0.217** (0.0951)	0.548*** (0.193)	0.620*** (0.172)	0.590*** (0.189)
Private credit	0.411*** (0.0247)	0.245*** (0.0153)	0.191*** (0.0206)	0.253*** (0.0183)	0.451*** (0.104)
Population		1.957*** (0.294)	1.237*** (0.267)	0.495** (0.230)	1.229*** (0.271)
Urban		0.364*** (0.0342)	0.351*** (0.0391)	0.281*** (0.0328)	0.292*** (0.0431)
Institutions			8.342*** (1.963)	14.31*** (1.981)	5.014** (2.456)
ForB*Ins				*−0.498*** (0.0825)*	
ForB*Pcredit					*−0.0065** (0.00261)*
Constant	17.90*** (2.995)	−19.27*** (1.987)	−11.94*** (3.991)	−2.334 (3.494)	−16.22*** (4.604)
Observations	86	86	86	86	86
R-squared					
p	0.00	0.00	0.00	0.00	0.00

Table 6. Foreign bank entry and financial inclusion in the MENA countries for the period (2000–2021): Panel-Corrected standard errors (PCSE) and feasible generalized least square (FGLS). dependent variable: Number of branches (per 100,000 adults)

Variables	(1) PCSE Branches	(2) PCSE Branches	(3) PCSE Branches	(4) PCSE Branches	(5) PCSE Branches
Foreign banks	−0.112*** (0.0194)	−0.071*** (0.0195)	−0.071*** (0.0169)	−0.218*** (0.0506)	−0.162*** (0.0278)
Dep-interest	−0.442*** (0.101)	0.0296 (0.140)	0.0292 (0.130)	0.0113 (0.116)	−0.0147 (0.122)
Private credit	0.219*** (0.0160)	0.168*** (0.0166)	0.168*** (0.0199)	0.210*** (0.0239)	0.0166 (0.0552)
Population		−0.214 (0.136)	−0.214 (0.163)	−0.247 (0.162)	−0.174 (0.160)
Urban		0.150*** (0.0346)	0.150*** (0.0359)	0.133*** (0.0343)	0.164*** (0.0339)
Institutions			−0.0101 (1.203)	0.444 (1.157)	2.235 (1.422)
ForB*Ins				*−0.197*** *(0.0583)*	
ForB*Pcredit					*0.00424*** *(0.00139)*
Constant	8.664*** (0.966)	−2.576 (2.920)	−2.586 (3.557)	−1.701 (3.318)	1.104 (3.560)
Observations	95	95	95	95	95
R-squared	0.669	0.726	0.726	0.752	0.751
p	0.00	0.00	0.00	0.00	0.00

Note(s): *t*-statistics in parentheses, *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$
Source(s): Author's own work

(*continued*)

Table 6. Continued

Variables	(6) FGLS Branches	(7) FGLS Branches	(8) FGLS Branches	(9) FGLS Branches	(10) FGLS Branches
Foreign banks	−0.111*** (0.00822)	−0.066*** (0.00644)	−0.067*** (0.00669)	−0.175*** (0.0344)	−0.117*** (0.0186)
Dep-interest	−0.544*** (0.0836)	0.0471 (0.0720)	0.0476 (0.0721)	0.0704 (0.0581)	0.0654 (0.0708)
Private credit	0.208*** (0.00800)	0.143*** (0.0126)	0.140*** (0.0139)	0.173*** (0.0174)	0.0197 (0.0414)
Population		−0.140* (0.0772)	−0.156* (0.0822)	−0.256*** (0.0980)	−0.130 (0.104)
Urban		0.179*** (0.0191)	0.178*** (0.0193)	0.176*** (0.0182)	0.193*** (0.0209)
Institutions			0.331 (0.590)	0.585 (0.753)	1.448 (0.954)
ForB*Ins				*−0.136*** *(0.0403)*	
ForB*Pcredit					*0.00378*** *(0.00109)*
Constant	9.661*** (0.516)	−4.825*** (1.542)	−4.326** (1.781)	−4.299** (1.931)	−3.120 (2.274)
Observations	95	95	95	95	95
R-squared					
p	0.00	0.00	0.00	0.00	0.00

Table 7. Foreign bank entry and financial inclusion in the MENA countries for the period (2000–2021): Panel-Corrected standard errors (PCSE) and feasible generalized least square (FGLS). dependent variable: Number of bank accounts (per 1,000 adults)

Variables	(1) PCSE Accounts	(2) PCSE Accounts	(3) PCSE Accounts	(4) PCSE Accounts	(5) PCSE Accounts
Foreign banks	−4.811*** (1.553)	0.360 (2.105)	0.350 (2.094)	30.63*** (5.886)	17.36*** (2.445)
Dep-interest	−33.95*** (6.012)	2.735 (6.391)	2.828 (6.545)	0.757 (5.508)	15.80** (6.347)
Private credit	8.403*** (1.221)	1.019 (2.008)	1.020 (2.014)	−2.920 (1.793)	15.08*** (2.910)
Population		−16.06** (6.576)	−15.73* (8.773)	−8.199 (5.233)	−13.42** (5.749)
Urban		12.70*** (2.082)	12.80*** (2.253)	12.58*** (1.773)	16.89*** (1.948)
Institutions			−5.482 (67.14)	−28.37 (48.84)	−400.8*** (78.58)
ForB*Ins				*36.35*** (6.560)*	
ForB*Pcredit					*−0.573*** (0.0860)*
Constant	579.7*** (53.85)	−320.5** (148.0)	−333.0 (210.1)	−313.0* (166.8)	−1,234*** (214.1)
Observations	52	52	52	52	52
R-squared	0.664	0.778	0.778	0.886	0.896
p	0.00	0.00	0.00	0.00	0.00

Note(s): *t*-statistics in parentheses, *** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$
Source(s): Author's own work

(*continued*)

Table 7. Continued

Variables	(6) FGLS Accounts	(7) FGLS Accounts	(8) FGLS Accounts	(9) FGLS Accounts	(10) FGLS Accounts
Foreign banks	−3.285*** (1.020)	2.055 (1.375)	2.032 (1.403)	30.86*** (5.638)	12.21*** (2.213)
Dep-interest	−36.69*** (5.820)	6.749** (2.772)	5.046* (2.940)	6.731* (4.058)	6.365 (5.965)
Private credit	5.763*** (0.941)	−0.806 (1.084)	−1.379 (1.127)	−3.154** (1.590)	10.98*** (2.498)
Population		−22.60*** (3.328)	−28.02*** (4.074)	−14.96*** (4.373)	−12.81** (4.990)
Urban		13.42*** (0.827)	12.33*** (0.970)	13.83*** (1.292)	14.16*** (1.809)
Institutions			95.02** (41.44)	−23.97 (43.20)	−274.8*** (71.09)
ForB*Ins				*36.86*** (6.402)*	
ForB*Pcredit					*−0.409*** (0.0750)*
Constant	650.7*** (48.56)	−364.6*** (62.72)	−169.0 (106.7)	−412.6*** (128.6)	−826.6*** (197.5)
Observations	52	52	52	52	52
R-squared					
p	0.00	0.00	0.00	0.00	0.00

Table 8. Summery the results of the interaction terms

Dependent variable	ATM	Branches	Accounts
Foreign banks * institutions	Substitute	Substitute	Complement
Foreign banks * private credit	Substitute	Complement	Substitute

Source(s): Author's own work

nurturing governance standards to enable foreign banks to effectively leverage their operational efficiencies to expand financial access across diverse population segments. Theoretically, this supports the modernization view that institutional strength fosters synergy between foreign banking activities and financial inclusion, leading to more equitable outcomes (Koudalo and Wu, 2022). Conversely, the finding that the interaction with financial development is substitutive – implying that in less developed financial systems, foreign banks are less effective at translating their presence into increased account ownership – raises the importance of targeted capacity-building policies. This duality emphasizes that outcomes are context-dependent, reinforcing the argument that financial and institutional capacity are necessary conditions for foreign banks to act as true complements in promoting financial inclusion rather than substitutes. This duality in the results points to the complex interactions between FBE and local conditions, a prerequisitive from the literature, which suggests that outcomes depend on national contexts (Gopalan and Rajan, 2018; Ashenafi and Dong, 2024).

Robustness checks: Quantile GMM regression

The application of quantile GMM regression for robustness considerably enhances the credibility of our estimates by avoiding inherent weaknesses in mean-based estimators like PCSE and FGLS. Contrary to such traditional methods, quantile GMM estimates the heterogeneous effects of foreign bank penetration at different points in the distribution of financial inclusion and thus offers rich information on how foreign banks influence access and use for countries with varying levels of development or institutional quality. This approach is particularly relevant in our study setting, where foreign banks' impacts are expected to differ across countries at different quantiles of financial inclusion – from very excluded to more inclusive economies. By using quantile GMM, which both deals with endogeneity and potential dynamic biases by using instrumental variable techniques appropriate for different parts of the distribution, we ensure that our estimates are stable, reliable and representative of the whole spectrum of the data. Not only does this validate our main findings, but it also identifies heterogeneity in the effects, again upholding the necessity to consider distributional impacts in policy schemes.

The quantile GMM findings (see Table 9) reveal patterns that support and complement our earlier PCSE and FGLS outcomes. Specifically, the negative impact of foreign bank penetration on both the number of branches and ATMs is largest at lower quantiles (25th), as in the most financially inaccessible countries, foreign banks further restrict physical infrastructure, likely motivated by heightened informational asymmetries and poor institutions. By contrast, the positive spillovers on account ownership are strongest for higher quantiles (75th), meaning that in more financially deep and well-governed countries, foreign banks play a very important role in expanding usage. This heterogeneity by distribution points out that the FBE effects are not homogeneous; they are strongly based on country-specific environments, particularly financial development and institutional quality.

These insights validate the need for tailored policies that consider the diverse experiences along the spectrum, and not generic solutions.

Discussion

Theoretical implications

This paper significantly enhances the theoretical understanding of how foreign banks enter and promote financial inclusion in the MENA region. It does this by clearly linking its findings to the two main pathways of access and usage shown in Figure 1. According to neo-institutional theory, the environment of institutions plays a crucial role in shaping the strategies of foreign banks. Our findings support this idea, revealing that weak institutions tend to worsen access (like fewer ATMs and branches), while strong institutions boost usage (such as growth in account numbers). This ties back to the substitution effect proposed in Figure 1: in places with poor institutional quality, foreign banks focus more on cost-effective digital services (usage) rather than building physical infrastructure (access), which can worsen exclusion for marginalized communities.

The paradox between modernization and dependency theory that we observe – where foreign banks enhance usage but limit access – is clearly illustrated by the moderating pathways in Figure 1. Modernization theory suggests that efficiency gains (usage) should occur, but in low-financial-development settings, dependency theory's "cherry-picking" behavior (Gormley, 2010) takes over. Here, foreign banks are hesitant to expand physical access due to asymmetric information, which results in a decline in the number of ATMs and branches, thus negatively affecting access. This apparent contradiction can be understood as a consequence of the different mechanisms at play: foreign banks tend to prioritize efficiency and profitability (usage) in environments where risks are high and information is limited, leading to a focus on existing, creditworthy clients rather than expanding physical infrastructure to underserved populations. Consequently, while foreign banks facilitate increased account ownership among those already within the financial system, their reluctance or strategic focus on high-quality clients results in reduced physical access for marginalized groups – hence the negative impact on access metrics. Our model brings these theories together by highlighting financial development and institutional quality as key factors, showing that the inclusivity of foreign banks really hinges on how ready the host country is.

Practical implications

From a practical perspective, these findings have some important implications for policymakers seeking to improve financial access in the MENA region. The empirical results point to the need for individualized financial regulation and policy framework, especially in jurisdictions with diversified institutional quality. With low institutional quality reinforcing the negative impacts on financial access, the clear motivation for policymakers should go toward the enhancement of governance frameworks, regulatory effectiveness and the overall institutional environment to mitigate the adverse effects of FBE on access and usage of financial services. In fact, when institutional quality is low, it can erode trust and effectiveness in regulatory systems, which in turn pushes foreign banks to focus on wealthier, lower-risk clients, cut costs more sharply and overlook the more vulnerable groups that might not have solid credit histories. Additionally, weak institutions can indicate a greater risk of financial fraud and regulatory issues, causing foreign banks to be more cautious when lending to potentially riskier and less established segments of the population. In addition, the positive relationship between FBE and financial usage – as reflected in increased account ownership – suggests that foreign banks

Table 9. Foreign bank entry and financial inclusion in the MENA countries for the period (2000–2021): quantile GMM regression method. Dependent variables: ATM, branches and accounts

Dependent variable				ATM		
Variables	qtile_25	qtile_50	qtile_75	qtile_25	qtile_50	qtile_75
Foreign banks	−0.358*** (0.113)	−0.422*** (0.0922)	−0.530*** (0.0795)	0.0874 (0.0671)	0.0255 (0.0620)	−0.0275 (0.0731)
Dep-interest	0.973*** (0.266)	0.622* (0.341)	0.0272 (0.543)	1.012*** (0.233)	0.667** (0.310)	0.372 (0.428)
Private credit	0.195*** (0.0405)	0.222*** (0.0369)	0.267*** (0.0454)	0.332** (0.162)	0.370*** (0.123)	0.402*** (0.117)
Population	0.498 (0.329)	0.665** (0.325)	0.948** (0.428)	0.847** (0.334)	0.825*** (0.293)	0.807** (0.328)
Urban	0.336*** (0.0670)	0.296*** (0.0613)	0.228*** (0.0764)	0.341*** (0.0829)	0.314*** (0.0669)	0.291*** (0.0705)
Institutions	14.53*** (2.819)	14.11*** (3.049)	13.39*** (4.137)	7.990*** (2.446)	8.585*** (3.207)	9.093** (4.214)
ForB*Ins	*−0.427*** (0.121)*	*−0.428*** (0.104)*	*−0.430*** (0.101)*			
ForB*Pcredit				*−0.00598 (0.00383)*	*−0.00615** (0.00283)*	*−0.00630** (0.00254)*
Constant	−10.97* (6.664)	−3.773 (5.902)	8.437 (7.159)	−20.98*** (5.798)	−12.32** (5.700)	−4.912 (7.152)
Observations	86	86	86	86	86	86
	Branches			Accounts		
Foreign banks	−0.124*** (0.0282)	−0.152*** (0.0299)	−0.209*** (0.0348)	29.14*** (8.474)	30.51*** (7.700)	32.71*** (8.174)
Dep-interest	−0.0226 (0.136)	−0.0167 (0.131)	−0.00493 (0.181)	3.925 (10.17)	1.017 (7.804)	−3.661 (4.852)
Private credit	0.0227 (0.0594)	0.0181 (0.0586)	0.00894 (0.0653)	−3.194* (1.835)	−2.942* (1.774)	−2.538 (2.174)
Population	−0.0147 (0.119)	−0.134 (0.139)	−0.371* (0.195)	−3.083 (5.255)	−7.779 (5.633)	−15.33** (7.779)
Urban	0.170*** (0.0351)	0.166*** (0.0360)	0.158*** (0.0478)	13.31*** (2.401)	12.64*** (1.967)	11.57*** (1.648)
Institutions	−0.291 (1.459)	1.596 (1.574)	5.367*** (1.823)	−73.03 (54.97)	−32.04 (53.26)	33.89 (68.43)
ForB*Ins				*34.57*** (9.089)*	*36.20*** (8.594)*	*38.84*** (9.719)*
ForB*Pcredit	*0.00323** (0.00147)*	*0.00398*** (0.00150)*	*0.00549*** (0.00167)*			
Constant	−3.858 (3.091)	−0.150 (3.697)	7.254 (5.059)	−464.2** (209.5)	−325.4* (180.1)	−102.2 (184.4)
Observations	95	95	95	52	52	52

Note(s): Robust standard errors in parentheses ***$p < 0.01$; ** $p < 0.05$; * $p < 0.1$
Source(s): Author's own work

(*continued*)

Table 9. Continued

Dependent variable		Branches	
Variables	qtile_25	qtile_50	qtile_75
Foreign banks	−0.0905 (0.0568)	−0.211*** (0.0583)	−0.320*** (0.0676)
Dep-interest	0.119 (0.127)	0.0174 (0.130)	−0.0756 (0.158)
Private credit	0.159*** (0.0287)	0.207*** (0.0257)	0.251*** (0.0276)
Population	−0.133 (0.156)	−0.241 (0.149)	−0.339* (0.175)
Urban	0.170*** (0.0429)	0.135*** (0.0388)	0.103** (0.0401)
Institutions	−2.091 (1.272)	0.301 (1.262)	2.487** (1.243)
ForB*Ins	*−0.0795 (0.0591)*	*−0.190*** (0.0625)*	*−0.291*** (0.0791)*
ForB*Pcredit			
Constant	−8.861** (3.767)	−2.105 (3.832)	4.071 (4.069)
Observations	95	95	95
	Accounts		
Foreign banks	16.91*** (2.402)	17.35*** (2.307)	17.97*** (2.774)
Dep-interest	13.07 (10.90)	15.79* (8.211)	19.56*** (7.244)
Private credit	13.91*** (2.106)	15.07*** (1.780)	16.69*** (2.587)
Population	−11.34** (5.100)	−13.41*** (4.351)	−16.29*** (4.581)
Urban	16.90*** (2.643)	16.89*** (2.197)	16.87*** (2.237)
Institutions	−413.4*** (84.52)	−400.8*** (68.70)	−383.4*** (70.91)
ForB*Ins			
ForB*Pcredit	*−0.534*** (0.0605)*	*−0.573*** (0.0621)*	*−0.627*** (0.0870)*
Constant	−1,284*** (252.4)	−1,234*** (224.2)	−1,165*** (236.9)
Observations	52	52	52

can play an important role in stimulating product adoption and usage among the population. To unleash this potential, regulatory frameworks must be supportive of foreign banks to innovate and diversify their offerings toward a greater range of clients, including underserved segments of the population. The policymakers should make it a policy to attract foreign banks for more inclusive practices that reach out beyond already established customers.

Another interesting finding is that the relationship is moderated by the level of financial development. The negative impact of FBE on access to services could be more pronounced for countries with underdeveloped financial systems. Therefore, policymakers should make efforts to improve the financial infrastructure and market participation before liberalizing the banking sector to foreign entrants. This strategy could help cultivate a more resilient financial ecosystem capable of integrating foreign banks in ways that promote inclusivity rather than exclusivity.

Conclusion

This paper critically analyzes the relationship between FBE and financial inclusion in the MENA region, using extensive data from 2000 to 2021 and advanced statistical approaches such as PCSE, FGLS and QGMM. Our findings indicate a complex dynamic wherein foreign bank presence significantly reduces financial access, reflected in the declining numbers of ATMs and bank branches. The quantile GMM results confirm that this negative impact is most pronounced in countries with low financial inclusion, while the positive effects on account ownership are stronger in countries with higher levels of financial development and institutional quality. This trend suggests that foreign banks might be focusing on serving more creditworthy clients, further marginalizing the vulnerable populations. The negative impact of foreign bank presence is significantly higher in contexts characterized by low institutional quality, which would thus appear to suggest that insufficient institutional frameworks may amplify financial exclusion.

In contrast, FBE is positively correlated with the usage of financial services, as measured by depositors per capita, according to our findings. Although foreign banks seem to increase access to a range of financial services, this benefit is not shared equally among socio-economic groups. This paradox underlines that foreign bank presence, while boosting efficiency in the sector, may simultaneously retreat from initiatives for broader access to financial services for the marginalized, which complicates the narrative surrounding foreign bank contributions to financial inclusion.

These heterogeneities highlight the importance of context-aware policies that reinforce institutional capacity and financial infrastructure to maximize the inclusive benefits of foreign bank entry (FBE). From a policy perspective, our results highlight the need for context-specific interventions to improve financial inclusion in the MENA region. The improvement of institutional quality and financial development should be core aspects of policy, rather than peripheral issues. Regulation should encourage foreign banks to reach out to the excluded segments of the population while enhancing governance in the financial sector. Ultimately, this study contributes to a more nuanced understanding of the impact of foreign banking on financial inclusion, suggesting that its effects are conditional and merit further empirical inquiry into whether FBE facilitates or hinders inclusive economic growth. The study also faced a number of challenges, most of which pertained to the inconsistent availability and quality of data across the 21 MENA countries, which made the comparability of financial inclusion metrics quite problematic. A key limitation was the fact that, for several country-year observations, FBE data was missing in our panel data.

Future insights

Future research should focus on comparative analyses within individual countries in the MENA region to observe local effects and explore alternative methodologies, such as qualitative approaches that may provide deeper insights into the operational strategies of foreign banks and their impacts on varied customer segments. Furthermore, examining the long-term impacts of FBE over time, especially in the context of evolving regulatory landscapes and financial crises, would enrich the understanding of their role in financial inclusion.

Notes

1. The countries included in the study are: Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arab Emirates, Palestine and Yemen.
2. A foreign bank is a bank where 50 percent or more of its shares are owned by foreigners.
3. Global financial development and world development indicators databases.

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