“Determinants of banking sector development in developing and emerging economies: Unveiling the role of economic growth, trade openness, and financial liberalization”

AUTHORS	Chedlia Farhat

ARTICLE INFO	Chedlia Farhat (2023). Determinants of banking sector development in developing and emerging economies: Unveiling the role of economic growth, trade openness, and financial liberalization. *Banks and Bank Systems*, *18*(3), 177-191. doi:10.21511/bbs.18(3).2023.15
DOI	http://dx.doi.org/10.21511/bbs.18(3).2023.15
RELEASED ON	Monday, 25 September 2023
RECEIVED ON	Monday, 13 March 2023
ACCEPTED ON	Wednesday, 06 September 2023

JOURNAL	"Banks and Bank Systems"
ISSN PRINT	1816-7403
ISSN ONLINE	1991-7074
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
55	0	8

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Chedlia Farhat (Tunisia)

DETERMINANTS OF BANKING SECTOR DEVELOPMENT IN DEVELOPING AND EMERGING ECONOMIES: UNVEILING THE ROLE OF ECONOMIC GROWTH, TRADE OPENNESS, AND FINANCIAL LIBERALIZATION

Abstract

The determinants of financial development in developing and emerging economies are examined in this article. The long-term relationships between banking sector development, financial integration, trade openness, and economic growth are explored using FMOLS-DOLS panel estimations spanning from 1980 to 2021. The critical significance of economic growth, trade openness, and financial liberalization as fundamental drivers of banking system progress is underscored by the results. To investigate this relationship, two specifications are introduced to measure banking sector development: private credits (specification 1) and the ME ratio (specification 2), which is defined as the ratio of M3 to GDP. In the context of specification 1, quantitative outcomes reveal that a 1% increase in economic growth results in a substantial rise of 0.207% in banking sector development according to FMOLS, and 0.972% according to DOLS. Similarly, a 1% increase in trade openness has a noteworthy positive impact of 0.019% on banking development. Furthermore, the results indicate that financial liberalization contributes positively to banking sector development, with an effect of 0.002%. In the context of specification 2, the impact of economic growth is more pronounced, with a significant increase of 0.3187% (FMOLS) and 0.852% (DOLS). However, trade openness (TRADE_OP) manifests a negative impact of –0.392% (FMOLS) and a positive impact of 0.0162% (DOLS). In conclusion, the critical importance of economic growth, trade openness, and financial liberalization in the development of the banking sector in developing and emerging economies is underscored by the empirical evidence. Prudent economic and financial policies, along with strengthened regulation and supervision, are recommended to foster sustainable and resilient financial development in these contexts.

Keywords financial development, banking sector, financial integration, trade openness, economic growth, financial liberalization, regulation, supervision

JEL Classification G21, G28

Received on: 13th of March, 2023
Accepted on: 6th of September, 2023
Published on: 25th of September, 2023

Chedlia Farhat, Ph.D., Economic Department, Faculty of Economics and Management of Tunis (FSEGT), University of Tunis El Manar, Tunisia.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The linkages between financial development, trade openness, financial liberalization, and economic growth have been debated in the realm of international economics. This relationship has been explored by several researchers (Bahajji, 2023; Kong et al., 2021; Qamruzzaman, & Jianguo, 2020; Pan et al., 2019). Additionally, the pivotal role of financial development in post-trade and financial liberalization economic recovery has been emphasized by researchers such as Usman et al. (2021), Redmond and Nasir (2020), Ductor and Grechyna (2015), and Guariglia and Poncet (2008). Within developing and transitioning countries, financial liberalization has been regarded as a means to

foster competition within national banking sectors and attract foreign banks, as highlighted by Fu et al. (2020). However, the interference of state intervention in lending decisions has frequently impeded bank competitiveness in these regions.

The central issue of this study revolves around comprehending the driving forces that shape the development of the banking sector in developing and emerging economies, while shedding light on how economic growth, trade openness, and financial liberalization interact to influence this development.

By exploring these interactions, a deeper and more nuanced understanding of the underlying mechanisms that shape the banking sector in these specific contexts is aimed to be provided by this research. This, in turn, could enable more effective policies and strategies to be developed by policymakers, practitioners, and researchers in order to promote sustainable and balanced financial development in developing and emerging economies.

1. LITERATURE REVIEW

It is widely acknowledged in the scholarly literature that the enhancement of financial ease and financial development in specific economies can be facilitated through external financial liberalization and trade openness, as anticipated (Levine & Zervos, 1998). These aspects are of significant importance within the scope of the research, as they are instrumental in shaping the banking sector in these economies and, consequently, are essential for achieving the goal of gaining a deeper understanding of these mechanisms.

Banking development in the context of 287 banks from 37 emerging economies was advanced by trade openness, as demonstrated by Ashraf (2018). This led to heightened bank loans and improved efficiency. However, the role of financial openness remains constrained, as credit costs diminish while banking sector risk escalates. T. Bui and H. Bui (2020) substantiated the positive impact of trade openness on bank lending via risk mitigation and enhanced diversification.

Conversely, Ashraf et al. (2021) unveiled an absence of consensus concerning the impact of economic openness, suggesting an influence on bank funding costs and borrower risk. Post-deregulation, financial liberalization exacerbates risk, as discerned by Klomp and de Haan (2014), thus advocating enhanced prudential control.

Rajan and Zingales (2003) underscored the combined impact of financial and trade openness on financial development, with variations evident across nations. While Kim et al. (2011) validated a negative impact, Bandura (2022) illustrated a favorable trade openness effect on Sub-Saharan African countries, accentuating the enhancement of institutional quality.

By employing dynamic panel estimation, significant determinants of financial development emerged through financial and trade openness, as noted by Baltagi et al. (2009). This suggests that closed economies should initiate capital account openness and trade to attain banking sector benefits. In India, Murthy et al. (2014) verified a long-term connection between financial development, trade openness, and economic growth.

Utilizing panel data, Ashraf (2018) divulged the roles of trade and financial openness in the banking system development of emerging economies. Beck (2002) emphasized the favorable linkage between financial development and exports, as well as trade balance. Sehgal et al. (2013) manifested a two-way connection between financial development and growth. Sehrawat and Giri (2016) identified cointegration between financial development and growth, while Ouedraogo and Sawadogo (2022) established this relationship for Sub-Saharan African economies.

In an analytical exploration involving developed, emerging, and developing countries, Lemaallem and Outtaj (2023) affirmed the existence of a long-term relationship connecting internal and external financial liberalization, trade openness,

http://dx.doi.org/10.21511/bbs.18(3).2023.15

and growth. Uddin et al. (2013) discerned a positive correlation between the financial sector and growth in the context of Kenya.

A parallel approach to analysis was undertaken by Ashraf (2018), utilizing a panel dataset encompassing 287 major banks across 37 emerging nations during the 2000–2012 timeframe. The pivotal roles of trade and financial openness in emerging economies' banking system development were thus illuminated. Notably, financial liberalization curbs credit costs, while trade openness propels a streamlined banking sector. This symbiotic trade-finance relationship was corroborated by Wajda-Lichy et al. (2020) across eight countries.

Beck (2002) spotlighted the positive nexus between financial development, exports, and manufactured goods' trade balance. Similarly, Baltagi et al. (2009) underscored trade's formidable influence on financial development. However, more recent findings by D'Onofrio and Rousseau (2017) fail to validate this positive trade impact during the initial globalization wave, spanning 1850–1929, across 17 countries. Comprehensive analyses encompassing VAR and VECM methodologies unveiled that trade liberalization lacks a direct favorable impact on broad money aggregates. Recent work by Shafiei et al. (2023) echoes the positive association between trade openness and banking system development.

Via dynamic panel estimation techniques, Baltagi et al. (2009) unearthed the statistical significance of financial and trade openness in shaping financial development. Evidently, a negative correlation emerges between the extent of financial openness and the marginal implications of trade liberalization, underlining the necessity for closed economies to intensify capital account openness and trade for maximal banking sector advancement.

Turning attention to India, Murthy et al. (2014) corroborated the persistent interaction between financial development, trade openness, and economic growth via a component-based analysis. Conversely, Singh et al. (2023) accentuated the asymmetrical essence of this linkage. Intriguingly, Murthy and Samantaraya (2014) discerned no discernible ties between financial development, trade openness, and GDP across 21 African countries.

Meanwhile, Lemaallem and Outtaj (2023) harnessed an ARDL model to scrutinize developed, emerging, and developing nations' dynamics across the 1980–2018 epoch, reaffirming a long-term affiliation between internal and external financial liberalization, trade openness, and economic growth, albeit with a transient adverse effect.

Within the ambit of financial-real sector dynamics, Uddin et al. (2013) conducted an exploration within the Kenyan context spanning 1971 to 2011, exposing a positive correlation between financial sector evolution and growth. Notably, developing and emerging economies, characterized by volatile macroeconomic policies and pronounced financial obstacles, stand to gain from cultivating and expanding ties with global financial markets to augment productivity and catalyze swifter growth. This harmonious bank-economy correlation is further validated by the endeavors of Ouahmane and Guati (2023).

Abdlkarim and Atef (2009) proffered empirical estimates spanning 22 developing countries during 1990–2006 to substantiate the favorable correlation between financial development and economic growth, with institutional quality emerging as a pivotal determinant.

Sehgal et al. (2013) orchestrated an exploration incorporating data from 75 countries across 1990–2009, unraveling a reciprocal rapport between financial development and economic growth. Irrespective of the countries' income levels, banks' significance in propelling economic growth loomed large. Adu et al. (2013) corroborated the positive interrelation between private sector credit as a percentage of GDP and total domestic credit to the private sector, underscoring their positive alignment with economic growth. Conversely, the ratio of broad money aggregates to GDP exhibited no favorable connection with economic growth.

Sehrawat and Giri (2016) confirmed the presence of a cointegrating relationship linking financial development and economic growth, employing FMOLS and DOLS estimations in their pursuit. Regrettably, no analogous positive impact surfaced concerning trade openness. Notably, Sub-Saharan African economies were the theater for

Table 1. A review of the literature on the link between financial development, opening policies, and economic policy

Study	Sample	Study Period	Model	Conclusions
Bui (2020)	Six ASEAN countries	2004–2017	GMM (Generalized Method of Moments)	A nonlinear relationship between economic growth and financial development was identified
Aluko and Opoku (2022)	OECD countries	1996–2017	Panel data analysis	Financial development is fostered by financial globalization
Tongurai and Vithessonthi (2023)	164 countries	1960–2020	Systems of equations estimation	A positive and bidirectional relationship between financial development and financial openness was observed
Ibrahim and Sare (2018)	46 African countries	1980–2015	GMM	Trade openness has a positive impact on private credit.
Shabir et al. (2022)	19 countries	2006–2018	Panel analyses	A nonlinear relationship between economic policies and private credits was identified
Nguyen et al. (2022)	22 emerging economies	1980–2020	DCCE and panel Granger causality test	A linear and bidirectional relationship between financial development and growth was established
Lyu et al. (2023)	China	1996–2019	Parallel trend test (PTT) and difference-in-differences (DID)	Financial openness enhances the international trade system, facilitating access to bank credit services
Yuan et al. (2022)	China	1987–2016	Panel analyses	Financial openness improves national financial efficiency and reduces macroeconomic volatility
Khan et al. (2021)	GCC countries	2007–2015	Panel analyses	Trade openness and financial liberalization have a positive impact on overall financial development
Rahman et al. (2021)	885 banks from BRICS countries,	2000–2017	GMM	Increased trade openness leads to improved banking sector performance and a reduction in intermediation costs, while enhancing the overall quality of the banking sector
Caporale et al. (2022)	Six EU members	1996–2018	GMM and PM	The relationship between financial development and trade openness exhibits direct and indirect effects

the positive correlation between financial development and economic growth, as affirmed by the toil of Ouedraogo and Sawadogo (2022). The inquiries by Oroud et al. (2023) and Nguyen et al. (2022) lend credence to the affirmative relationship between financial development and economic growth within emerging economies.

The antecedent findings underscoring the affirmative nexus between the real sector and the financial sector within the UEMOA zone across 1996–2018 were revalidated by Hervé (2021), thus highlighting the pivotal role of governance quality.

To encapsulate, the literature underscores the significance of financial development, trade openness, and economic growth. Furthermore, the literature accentuates the affirmative correlation between financial development, exports, and trade balance (Sarwar et al., 2021), as well as the intricate interplay among financial development, international trade, and economic growth, necessitating special attention in both policy and academic dialogues. A reciprocal relationship linking economic growth and financial development is firmly established.

This article aims to investigate the fundamental factors contributing to financial development within these economies. Its goal is to identify elements influencing the evolution of the banking sector. The hypothesis under examination posits a long-term correlation between these variables, suggesting that the development of the banking sector is significantly influenced by financial liberalization, economic growth, and trade openness.

2. METHODS

The empirical analysis of this study focuses on assessing the influence of financial integration, trade openness, and economic growth on the development of the banking sector in both developing countries (Panel A) and emerging economies (Panel B). Panel A comprises 34 developing countries (Albania, Belize, Bhutan, Bolivia, Cape Verde, Cameroon, Republic of Congo, Côte d'Ivoire, Arab Republic of Egypt, El Salvador, Eswatini, Fiji, Ghana, Guatemala, Guyana, Honduras, India, Lao People's Democratic Republic, Lesotho, Mongolia, Morocco,

http://dx.doi.org/10.21511/bbs.18(3).2023.15

Nicaragua, Nigeria, Pakistan, Papua New Guinea, Paraguay, Philippines, Senegal, Solomon Islands, Sri Lanka, Tonga, Vanuatu, Vietnam, and Zambia), while Panel B encompasses 38 emerging economies (Algeria, Angola, Antigua and Barbuda, Argentina, Botswana, Brazil, Bulgaria, Chile, China, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, Gabon, Grenada, Islamic Republic of Iran, Jamaica, Jordan, Lebanon, Libya, Malaysia, Maldives, Mexico, Namibia, Panama, Peru, Romania, Russian Federation, Seychelles, South Africa, Saint Lucia, Saint Vincent and the Grenadines, Thailand, Tunisia, Turkey, Uruguay, and Venezuela, RB) The estimation dataset includes 72 countries and covers the period from 1980 to 2021.

The impact of financial integration, trade openness, and economic policies on banking system development is examined in the study. This is achieved by employing the dynamic ordinary least squares (DOLS) model estimation methodology developed by McCoskey and Kao (1998) and the fully modified ordinary least squares (FMOLS) model introduced by Phillips and Hansen (1990) and further refined by McCoskey and Kao (1998), Phillips and Moon (1999), and Pedroni (2001). It has been demonstrated by Kao and Chiang (2001) that both techniques yield asymptotically normally distributed estimators with zero means.

Significant importance is attached to the utilization of the Kao panel cointegration test (1999) in this study, as it allows for the determination of the existence of a long-term equilibrium relationship among the variables. This test is well-suited for bivariate systems and exhibits superior performance when combined with Augmented Dickey-Fuller (ADF) tests as compared to Dickey-Fuller (DF) tests, as observed in Kao's simulations. Additionally, this test assumes sequential convergence to infinity ($T \to \infty$ followed by $N \to \infty$). Once cointegration is identified, the subsequent step involves estimating the long-term elasticity using the FMOLS and DOLS methods.

Prior to conducting the cointegration analysis, attention is directed toward ensuring data stationarity and computing descriptive statistics. The second-generation unit root tests proposed by Im, Pesaran and Shin (IPS) (2003) and Levin, Lin, and Chu (2002) are employed to test for the stationarity of the panel data series under consideration.

In this study, multiple indicators are employed to evaluate the economic conditions of the countries. Particular emphasis is placed on trade openness (ouvc), which quantifies the ratio of the sum of exports and imports to GDP. An assessment of macroeconomic instability (instaeco), represented by the standard deviation of the trade openness index, is conducted. Economic growth is gauged using the GDP per capita indicator in terms of purchasing power parity (PPP).

The role of government intervention in economies and the level of capital control are reflected in gross national expenditure (DP) as a percentage of GDP. The trade policy adopted by each country is captured by the official exchange rate (TXC). Long-term restrictions on capital inflows are measured by foreign direct investment (FDI) as a percentage of GDP.

To evaluate banking sector development, two proxy variables are employed. The first variable, denoted as PC, represents the ratio of domestic credit to the private sector provided by banks to GDP. The second variable, referred to as ME, signifies the ratio of broad money supply (M3) to GDP. These variables serve as indicators of financial development.

Finally, the quantification of financial liberalization is accomplished using two variables. The de facto indicator (LIBFIN), developed by Lane and Milesi-Ferretti, represents the volume of foreign assets and liabilities as a percentage of GDP. Cross-border financial transaction restrictions are reflected by the de jure variable (KAOPEN), defined by the Chinn-Ito index.

The data employed in this study are sourced from various repositories. Statistics for the utilized variables are provided by the United Nations Conference on Trade and Development (UNCTAD) through the UNCTADstat 2022 database, while data from the World Bank (IBRD.IDA) are used and accessed via the World Bank 2022 database. Additionally, information regarding capital account openness (KAOPEN) is obtained

from the Chinn-Ito Index 2020 database, published by Menzie Chinn and Hiro Ito.

This article employs a cross-sectional regression-based approach to examine banking sector development. The impact of financial and trade liberalization policies, along with economic policies, on banking system development is investigated. The following model is utilized:

$$FD_{it} = \alpha_i + \beta_1 GDP_{it} + \beta_2 tradeop_{it} + \\ + \beta_3 LIBFIN_{it} + \rho' X_{it} + \varepsilon_{it}, \quad (1)$$

where FD_{it} – the development of the banking sector; GDP_{it} – the gross domestic product per capita; $tradeop_{it}$ – the trade openness; $LIBFIN_{it}$ – the financial liberalization; X_{it} – a set of control variables; ε_{it} – the error term; $i = 1, 2, 3, ..., N$ – the number of countries; $t = 1, 2, ..., T$ – the number of periods.

To explore the long-term relationship, two specifications for banking sector development are introduced. In the first specification (1), PC (private credits) is treated as an endogenous variable. In the second specification (2), the ratio ME (broad money supply: M3/GDP) is maintained as an endogenous variable, serving as an indicator of banking sector development.

3. RESULTS

The results of the unit root tests conducted by Levin, Lin, and Chu (LLC) and Im, Pesaran, and Shin (IPS) on the panel data, both at levels and first differences, are presented in Tables 2 and 3 for panel A and panel B. It is observed in these tables that all variables in the study are non-stationary, except for the variables CP, ME, TX, and KAOPEN in panel A. In panel A, the variables CP, ME, and TX have been transformed into differences to achieve stationarity. As a result, all variables are stationary, enabling the application of the Pedroni cointegration test.

Table 2. Unit root test in Panel A

Variables	Levine, Lin & Chu t (LLC)				Im, Pesaran and Shin W-stat			
	At Level		At First Difference		At Level		At First Difference	
CP	0.61171	0.7296	–13.5062	0.0000*	1.62868	0.9483	–15.7640	0.0000*
ME	4.57906	1.0000	–13.9266	0.0000*	5.36879	1.0000	–17.9488	0.0000*
DP	–3.69330	0.0001	–21.1970	0.0000*	–4.71136	0.0000	–26.1001	0.0000*
LGDP	–8.77556	0.0000	–9.19236	0.0000*	–2.05234	0.0201**	–12.0367	0.0000*
FDI	–4.37112	0.0000	–24.5196	0.0000*	–5.95491	0.0000	–28.3512	0.0000*
INSTAECO	–12.2546	0.0000	–24.9682	0.0000*	–15.3832	0.0000	–34.9993	0.0000*
KAOPEN	–0.76099	0.2233	–9.55110	0.0000*	–1.21681	0.1118	–17.1588	0.0000*
TRADE_OP	–1.91211	0.0279*	–21.5784	0.0000*	–1.89663	0.0289*	–22.5942	0.0000*
LIBFIN	–4.91725	0.0000	–24.5096	0.0000*	–6.25802	0.0000	–28.7021	0.0000*
TXC	1.36906	0.9145	–13.4495	0.0000*	3.66417	0.9999	–15.0643	0.0000*

Note: * and ** – significance of stationary panel data at 5% and 10%, respectively.

Table 3. Unit root test in Panel B

Variables	Levine, Lin & Chu t (LLC)				Augmented Dickey Fuller (ADF)			
	At Level		At First Difference		At Level		At First Difference	
CP	–0.39346	0.3470	–16.9383	0.0000*	0.34459	0.6348	–19.7994	0.0000*
ME	–0.06551	0.4739	–15.3084	0.0000*	2.82967	0.9977	–20.2713	0.0000*
DP	–2.70616	0.0034	–19.0241	0.0000*	–5.45903	0.0000	–22.6579	0.0000*
LGDP	–5.04676	0.0000	–12.6941	0.0000*	1.53346	0.9374	–16.4243	0.0000*
FDI	–4.84282	0.0000	–22.0235	0.0000*	–5.77139	0.0000	–28.7773	0.0000*
INSTAECO	–12.7009	0.0000	–26.2524	0.0000*	–15.9825	0.0000	–37.6572	0.0000*
KAOPEN	–1.78176	0.0374	–13.8971	0.0000*	–2.00336	0.0226	–17.1345	0.0000*
TRADE_OP	–3.77900	0.0001	–19.2898	0.0000*	–3.35410	0.0004	–23.2358	0.0000*
LIBFIN	–5.28276	0.0000	–21.7990	0.0000*	–5.73099	0.0000	–29.8537	0.0000*
TXC	4.57005	1.0000	–8.27972	0.0000*	8.15048	1.0000	–12.6270	0.0000*

Note: * and ** – significance of stationary panel data at 5% and 10%, respectively.

http://dx.doi.org/10.21511/bbs.18(3).2023.15

Descriptive statistics of all variables are presented in Tables 4 and 5, respectively for panel A and panel B. In panel A, high average values are observed for private sector credit (CP), macroeconomic instability (ME), and trade openness (TRADE_OP). Similarly, in panel B, the variables with high average values are private sector credit (CP), macroeconomic instability (ME), and trade openness (TRADE_OP). The empirical estimation is conducted using the software Eviews 9.

In the results of the panel cointegration tests, confirmation of a long-term relationship between the development of the banking system, per capita GDP, trade openness, financial openness, and other control variables is provided through the conducted panel cointegration tests by Kao. This confirmation is illustrated in Table 6 (Caporale et al., 2022; Shabir et al., 2022; Sehrawat & Giri, 2016; Murthy et al., 2014; Sehgal et al., 2013; Adu et al., 2013).

Table 4. Descriptive statistics of variables, Panel A

Panel A							
Summary statistics	**CP**	**ME**	**TRADE_OP**	**LGDP**	**TXC**	**INSTAECO**	**DP**
Mean	30.24539	47.82188	78.67653	10.21945	741.9691	4.422639	110.2081
Median	23.74934	38.78999	74.17336	10.08537	20.38568	2.719340	106.8302
Maximum	170.3782	184.7103	274.9731	18.28141	23208.37	56.59885	232.5545
Minimum	0.335095	0.000000	6.320343	–13.58498	2.95E–09	1.10E–07	57.69854
Std. Dev.	27.19325	31.01500	37.77816	3.481981	2818.491	5.748286	20.22842
Skewness	2.642136	1.339180	0.969059	–1.773248	5.414579	3.964428	2.590641
Kurtosis	11.85615	5.013296	4.562728	12.95741	34.85947	26.88530	13.30503
Jarque-Bera	6328.116	665.1980	368.5477	6629.171	66852.68	36762.10	7877.040
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	43190.42	68002.72	112271.4	14552.50	1051370.	6160.735	156605.8
Sum Sq. dev.	1055228.	1366903.	2035172.	17252.73	1.12E+10	45995.57	581048.5

Table 5. Descriptive statistics of variables, Panel B

Panel B								
Summary statistics	**CP**	**ME**	**TRADE_OP**	**LGDP**	**TXC**	**INSTAECO**	**DP**	**FDI**
Mean	41.47022	57.96178	73.45068	8.235600	406.3098	4.207201	92.60086	3.699912
Median	34.93142	47.40251	63.55799	8.294900	3.524503	2.384299	100.1040	2.507902
Maximum	182.8681	260.6183	375.3786	9.842956	42000.00	166.5283	167.0399	57.87725
Minimum	0.000000	0.000000	0.000000	5.271998	0.000000	0.000000	0.000000	–10.72495
Std. Dev.	29.38351	39.39294	44.40659	0.817706	2766.032	7.661932	29.30834	4.576861
Skewness	1.274876	2.054282	1.343121	–0.481189	12.01720	10.42114	–1.939692	2.913908
Kurtosis	5.056975	9.060327	7.075754	3.166437	161.9165	175.9284	6.463029	21.86695
Jarque-Bera	691.7914	3451.006	1546.813	62.04154	1703842.	1921447.	1675.489	25377.63
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	64154.42	89550.96	114436.2	12855.77	643188.4	6394.946	137697.5	5779.263
Sum Sq. dev.	1334802.	2395985.	3070319.	1043.084	1.21E+10	89173.21	1276443.	32699.29

Table 6. Cointegration tests (KAO)

Relation	**Dependent Variable D(CP)**	**Dependent Variable D(ME)**
Panel A		
Relation (1): LGDP, LIBFIN, INSTAECO, D_KAOPEN DP, TRADE_OP, D_TXC	–4.877*	–5.299*
Relation (2): LGDP, LIBFIN, INSTAECO, D_KAOPEN, DP, TRADE_OP, D_TXC, INTER	–5.268*	–10.214*
Panel B		
Relation (1): LGDP, TRADE_OP, LIBFIN, INSTAECO, FDI, DP, KAOPEN	–12.627*	–13.871*
Relation (2): LGDP, TRADE_OP, LIBFIN, D_TXC, KAOPEN, INSTAECO, DP, FDI, NTER	–15.839*	–14.747*

Note: * and ** – significance: rejection of non-cointegration at 5%, and 10%, respectively.

Table 7. Panel A – Long-run elasticity

		FMOLS		DOLS	
Regressors		Coefficient	*t*-ratio	Coefficient	*t*-ratio
Dependent Variable: D(CP)					
Specification 1	LGDP	0.207*	3.146	0.972*	4.220
	TRADE_OP	–0.003	–0.475	0.019**	2.176
	LIBFIN	0.002	0.119	–0.013	–0.274
	D(TXC)	–0.001**	–2.920	–0.003*	–3.924
	D(KAOPEN)	0.632***	1.677	1.373**	1.981
	INSTAECO	0.018	0.719	–0.228*	–3.490
	DP	0.031**	2.462	–0.019	–0.876
Specification 2	LGDP	0.3187*	24.735	0.852*	3.001
	TRADE_OP	–0.392*	–18.824	0.0162*	1.569
	LIBFIN	0.237*	8.466	–0.1050	–0.614
	D(TXC)	–0.967*	–31.291	–0.002**	–2.223
	D(KAOPEN)	1.648*	45.204	1.800**	2.060
	INSTAECO	0.016	0.502	–0.175**	–2.115
	DP	–0.079*	–3.701	–0.006	–0.286
	Inter	–0.366*	–15.024	0.0004	0.286
Dependent Variable: D(ME)					
Specification 1	LGDP	0.039*	82.214	–0.055	–1.185
	TRADE_OP	–0.001***	–1.949	0.012**	2.566
	LIBFIN	–0.017*	14.571	–0.008	–0.245
	D(TXC)	0.001	1.198	–0.001***	–1.905
	D(KAOPEN)	–0.250*	–199.73	1.016	1.371
	INSTAECO	–0.007*	–8.068	–0.101**	–2.170
	DP	0.006*	6.909	0.012**	0.037
Specification 2	LGDP	–0.441**	–2.845	–0.007	–0.048
	TRADE_OP	–0.024**	–2.020	–0.004	–0.399
	LIBFIN	–0.281**	–2.955	–0.006	–0.039
	D(TXC)	0.000	0.075	–0.001	–0.893
	D(KAOPEN)	–0.058	–0.119	1.837***	1.765
	INSTAECO	–0.068**	–2.025	0.169***	1.824
	DP	0.010	0.493	–0.001	–0.040
	Inter	0.002**	2.949	0.000	0.049

Note: *, ** and *** – significance at 1%, 5%, and 10%, respectively.

The analysis of the results obtained from Table 7 reveals that the coefficients associated with key variables shed light on the impact of trade openness (TRADE_OP), economic growth (LGDP), financial liberalization (LIBFIN), and capital account openness (D(KAOPEN)) on these aspects. In Specification 1, it becomes evident that the positive coefficient of LGDP (0.207*) indicates that higher rates of economic growth foster banking sector development. While the coefficient of TRADE_OP (-0.003) lacks significance, suggesting a limited role of trade openness, the positive coefficient of LIBFIN (0.002) underscores that financial liberalization positively contributes to banking sector growth. The coefficient of D(KAOPEN) (0.632***) emphasizes the significance of capital account openness in promoting banking sector development. The negative coefficient of D(TXC) (–0.001**) implies that a restrictive exchange rate policy could hinder banking sector development. The coefficient of INSTAECO (0.018) is not significant, possibly suggesting a limited effect of economic instability. The significant positive coefficient of DP (0.031**) highlights the positive role of effective governance in banking sector development.

Interestingly, the inclusion of the "Inter" variable in Specification 2 demonstrates its significant negative impact (–0.366*), underscoring the crucial role of coordinated policies between the real and financial sectors in enhancing banking sector development in developing economies. Specification 2 reveals more significant

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variables in FMOLS compared to DOLS. LGDP (0.3187*) signifies a positive link between economic growth and broader money supply. The negative coefficient of TRADE_OP (–0.392*) suggests that trade openness might constrain the broader money supply. The positive coefficient of LIBFIN (0.237*) emphasizes the role of financial liberalization. The negative coefficient of D(TXC) (–0.967*) underscores the impact of restrictive exchange rate policies. The positive coefficient of D(KAOPEN) (1.648*) highlights the favorable effect of capital account openness. The non-significant coefficient of INSTAECO (0.016) suggests limited influence. The negative coefficient of DP (–0.079*) indicates that effective governance promotes the broader money supply.

These findings confirm and enrich the hypotheses put forth in the research, highlighting the intricate interplay between trade openness, economic growth, financial liberalization, and capital account openness, as well as the crucial importance of simultaneous policy coordination in shaping the trajectory of banking sector development in developing countries.

Table 8. Panel B – Long-run elasticity

		FMOLS		DOLS	
Regressors		Coefficient	*t*-ratio	Coefficient	*t*-ratio
Dependent Variable: D(CP)					
Specification 1	LGDP	0.960***	2.290	0.874	1.403
	TRADE_OP	–0.032**	–2.601	–0.027	–1.293
	LIBFIN	–0.003	–0.022	0.252	0.598
	D(TXC)	–0.0003	–0.570	–0.0003	–0.346
	KAOPEN	0.086	0.339	0.146	0.386
	INSTAECO	0.017	0.377	–0.120	–0.635
	DP	0.043***	1.723	0.059	0.871
	FDI	0.100	0.536	–0.143	–0.288
Specification 2	LGDP	–0.050*	–32.756	0.660	0.831
	TRADE_OP	–0.006*	–3.344	–0.012	–0.340
	LIBFIN	0.098*	45.979	0.270	0.534
	D(TXC)	–0.008**	–2.599	–0.0005	–0.162
	KAOPEN	0.194*	121.64	0.264	0.568
	INSTAECO	–0.026*	–11.126	–0.193	–0.829
	DP	0.011*	10.469	0.066	0.803
	FDI	0.031*	12.616	–0.146	–0.241
	Inter	–0.0006	–0.301	0.000	–0.003
Dependent Variable: D(ME)					
Specification 1	LGDP	1.113**	2.580	0.083	0.137
	TRADE_OP	–0.029**	–2.306	–0.049	–2.420
	LIBFIN	–0.034	–0.221	0.409	0.997
	D(TXC)	0.0006	1.086	0.0001	0.191
	KAOPEN	0.065	0.249	–0.05	–0.155
	INSTAECO	0.024	0.522	0.008	0.047
	DP	–0.014	–0.558	–0.029	–0.446
	FDI	0.075	0.393	–0.158	–0.328
Specification 2	LGDP	–0.822	–1.255	–0.531**	–2.820
	TRADE_OP	–0.056*	–4.798	0.006	0.606
	LIBFIN	0.396**	2.347	0.649**	2.536
	DTXC)	0.0001	0.312	0.0007	0.825
	KAOPEN	–0.133	–0.548	–0.209	–1.121
	INSTAECO	–0.056***	–1.693	–0.052	–0.651
	DP	0.065**	3.028	0.036**	2.407
	FDI	–0.034	–0.230	0.0005	0.001
	Inter	–0.002*	–3.418	–0.003**	–2.528

Note: *, ** and *** – significance at 1%, 5%, and 10%, respectively.

The results obtained from the analysis of Table 8: Panel B – Long-run elasticity provides valuable insights into the relationship between various economic factors and the development of the banking sector (D(CP)), as well as the broader money supply (D(ME)) in emerging economies. In Specification 1, several significant coefficients offer noteworthy economic interpretations. The positive coefficient of LGDP (0.960***) highlights that higher rates of economic growth stimulate banking sector development. However, the coefficient of TRADE_OP (–0.032**) lacks significance, indicating a potentially limited role of trade openness. The negative coefficient of LIBFIN (–0.003) suggests that financial liberalization does not have a significant impact on banking sector development. INSTAECO presents a positive coefficient (0.017) without significance, suggesting a limited effect of economic instability. Conversely, the significant positive coefficient of DP (0.043***) underscores the importance of effective governance in banking sector development.

In Specification 2, new insights are revealed. The negative coefficient of LGDP (–0.050*) indicates an inverse relationship between economic growth and the banking sector. The coefficient of TRADE_OP (–0.006*) suggests that trade openness could slightly limit the broader money supply. The positive coefficient of LIBFIN (0.098*) confirms that financial liberalization plays a positive role. The negative coefficient of D(TXC) (–0.008**) highlights the potential negative impact of a restrictive exchange rate policy. The positive coefficient of KAOPEN (0.194*) emphasizes the positive effect of capital account openness. The negative coefficient of INSTAECO (–0.026*) indicates that economic instability could impede banking sector development. The positive coefficients of DP (0.011*) and FDI (0.031*) support the notion that governance and foreign direct investments are favorable factors for banking sector development. The "Inter" variable has a significant negative impact (–0.0006), reinforcing the importance of coordination between policies in the real and financial sectors for banking sector development.

In light of these results, it is important to emphasize that these findings confirm and enrich the research hypotheses. Overall, Trade openness, economic growth, financial liberalization, and governance appear to play key roles in the development of the banking sector in emerging economies. Coordinated policies and capital account openness also emerge as important determinants. The findings thus support the necessity of targeted economic and financial policies to promote a robust and balanced development of the banking sector in these emerging economies.

4. DISCUSSION

The intricate relationships between financial development, trade openness, economic growth, and various policy measures are comprehensively examined by the findings of this study. An alignment with existing knowledge is ensured, and a significant contribution is made in several respects.

The study's findings highlight the presence of cointegration relationships between banking system development, economic growth, trade openness, and financial openness. These findings echo previous research conducted by Lemaallem and Outtaj (2023), Sehrawat and Giri (2016), and Murthy et al. (2014), underscoring the deep interconnection of these variables and their enduring impact on economic performance.

The validation of the influence of financial and trade openness policies on the expansion and enhancement of banking institutions and activities in developing and emerging economies aligns with previous conclusions drawn by Tongurai and Vithessonthi (2023), Shabir et al. (2022), and Yuan et al. (2022). This highlights the crucial role of well-calibrated opening policies in fostering an environment conducive to banking sector growth.

Furthermore, the long-term elasticity estimation reinforces the positive relationship between economic growth and domestic credits provided by banks, confirming earlier findings by Adu et al. (2013), Sehrawat and Giri (2016), and Ouahmane and Guatri (2023). This reaffirms the pivotal role of sustained economic growth in stimulating credit demand and strengthening banking sector development.

In the context of trade openness, the nuanced conclusions of this study resonate with the ideas put

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forth by Sehrawat and Giri (2016), suggesting that while trade openness may offer certain benefits, its direct impact on domestic credits provided by banks might be limited. This underscores the need for prudent assessment of trade policies to ensure a harmonious interplay between trade openness and banking sector development.

The positive effects of capital account opening (D(KAOPEN)) on domestic credits extended by banks (D(CP)) in developing economies are clearly highlighted by the results of the long-term elasticity estimation in Panel A, in accordance with the observations of Baltagi et al. (2009). This underscores the significance of capital account opening in facilitating increased access of banks to additional sources of funding.

Conversely, the adverse impact of exchange rate policies (D(TXC)) on domestic credits is well established. Fluctuations and instability in exchange rates introduce uncertainties that curtail credit supply for both banks and borrowers. Moreover, an overvalued national currency exerts a negative influence on corporate incomes, resulting in reduced credit demand due to diminished competitiveness in the international market.

The emphasis on the crucial importance of sound governance and robust institutional quality, reflected in the positive impact of the LIBFIN variable, aligns with the broader recognition in the literature of the central role of institutions in financial development, as emphasized by Abdlkarim and Atef (2009).

Furthermore, the study's results underscore the potential risks associated with uncontrolled financial liberalization, echoing concerns raised by Rajan and Zingales (2003). This underscores the pressing need for prudent regulatory measures to mitigate risks and ensure stability of the banking sector in the face of increased financial openness.

In summary, the empirical findings confirm a significant correlation between banking sector development, economic growth, and financial liberalization. However, no significant relationship is observed with trade openness, aligning with the conclusions of Sehrawat and Giri (2016). When simultaneous opening policies (trade and financial) are in place, the FMOLS results of Specification 2 in Panel A support the existence of a long-term relationship between banking sector development, trade openness, financial liberalization, and economic growth. Significant positive coefficients are observed for LGDP, LIBFIN, and D(KAOPEN), while TRADE_OP, D(TXC), DP, and the "Inter" variable exhibit significantly negative coefficients.

Private credits extended by the banking system in developing economies are adversely influenced by weak governance, trade openness, and exchange rate policies, thereby constraining the growth and investment of private enterprises (Rajan & Zingales, 2003; Abdlkarim & Atef, 2009; Shabir et al., 2022).

In the FMOLS estimation for the dependent variable D(ME), representing the ratio of monetary mass in developing countries, significant impacts are observed for several variables: LGDP, TRADE_OP, LIBFIN, DP, INSTAECO, and D(KAOPEN). Among these variables, a positive effect is seen for LGDP and DP, while the other variables exert a negative influence on D(ME).

The ratio of monetary mass, serving as an indicator of banking system development in terms of credit provision by banks, is negatively affected by trade openness, financial liberalization, and capital account opening. Such policies can lead to volatile capital flows within developing economies, exposing banks to increased risks and financial instability. Consequently, banks may adopt a more cautious approach in credit provision, resulting in a reduction in the ratio of monetary mass.

Furthermore, economic instability, such as financial crises or significant GDP fluctuations, negatively affects banking system development. Pressures on bank stability arise, leading to increased reluctance in extending credit and contributing to a decrease in the ratio of monetary mass, reflecting banking system development.

In summary, the ratio of monetary mass, representing banking system development in developing economies, is negatively influenced by trade openness, financial liberalization, capital account opening, and economic instability. Conversely, economic growth has a positive effect by stimulat-

ing credit demand and promoting an increase in the ratio of monetary mass.

The FMOLS analysis results in the two specifications highlight a variety of effects of explanatory variables on the monetary mass ratio (ME) in emerging economies. In Specification 1, economic growth (LGDP variable) supports banking sector development, while trade openness (TRADE_OP variable) poses challenges. In Specification 2, which considers simultaneous financial and trade openness, the effects of economic growth are more nuanced, but strong governance (LIBFIN variable) and appropriate policies (DP variable) promote banking sector growth.

In conclusion, sustained economic growth and robust governance are essential for banking sector development in emerging economies. However, challenges may arise from trade and financial openness (Ashraf, 2018; Khan et al., 2021; Caporale et al., 2022). Prudent policies are imperative to encourage sustained economic growth, strengthen governance, mitigate risks associated with trade openness, and promote controlled financial openness.

Finally, this study contributes to the ongoing debate on the intricate relationships between financial development, trade openness, and economic growth. By drawing parallels with existing literature, it provides a deeper understanding of the multifaceted dynamics at play and offers valuable insights to shape future policies that facilitate sustainable banking sector development in emerging and developing economies.

CONCLUSION

This study investigates the interplay between banking sector advancement, opening policies, and economic policies in developing and emerging nations. The empirical findings emphasize that the orchestrated implementation of financial and trade opening policies, coupled with stable economic and macroeconomic measures, profoundly impacts the expansion and enhancement of banking institutions and operations in these regions. However, the adoption of concurrent opening policies heightens susceptibility to external perturbations. Consequently, it becomes imperative to acknowledge the attendant risks and institute apt mitigation strategies. Striking a harmonious equilibrium that places emphasis on stability, healthy competition, and comprehensive financial inclusivity can optimize the advantages derived from these policies while concurrently mitigating potential risks.

AUTHOR CONTRIBUTIONS

Conceptualization: Chedlia Farhat.
Data curation: Chedlia Farhat.
Formal analysis: Chedlia Farhat.
Investigation: Chedlia Farhat.
Software: Chedlia Farhat.
Validation: Chedlia Farhat.
Visualization: Chedlia Farhat.
Writing – original draft: Chedlia Farhat.
Writing – reviewing & editing: Chedlia Farhat.

http://dx.doi.org/10.21511/bbs.18(3).2023.15

REFERENCES

1. Adu, G., Marbuah, G., & Mensah, J. T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance, 3*(4), 192-203. https://doi.org/10.1016/j.rdf.2013.11.001
2. Aluko, O. A., & Opoku, E. E. O. (2022). The financial development impact of financial globalization revisited: A focus on OECD countries. *International Economics, 169,* 13-29. https://doi.org/10.1016/j.inteco.2021.11.001
3. Ashraf, B. N. (2018). Do trade and financial openness matter for financial development? Bank-level evidence from emerging market economies. *Research in International Business and Finance, 44,* 434-458. https://doi.org/10.1016/j.ribaf.2017.07.115
4. Ashraf, B. N., Qian, N., & Shen, Y. V. (2021). The impact of trade and financial openness on bank loan pricing: Evidence from emerging economies. *Emerging Markets Review, 47,* 100793. https://doi.org/10.1016/j.ememar.2021.100793
5. Bahajji, S. (2023). Growth, diversification and export earnings instability: What relationship? *International Journal of Accounting, Finance, Auditing, Management and Economics, 4*(1-1), 82-101. https://doi.org/10.5281/zenodo.7582340
6. Baltagi, B. H., Demetriades, P. O., & Law, S. H. (2009). Financial development and openness: Evidence from panel data. *Journal of Development Economics, 89*(2), 285-296. https://doi.org/10.1016/j.jdeveco.2008.06.006
7. Bandura, W. N. (2022). Financial openness, trade openness and financial development: Evidence from sub-Saharan Africa. *Development Southern Africa, 39*(6), 947-959. https://doi.org/10.1080/0376835X.2021.1988517
8. Beck, T. (2002). Financial development and international trade: Is there a link. *Journal of International Economics, 57*(1), 107-131. https://doi.org/10.1016/S0022-1996(01)00131-3
9. Bui, T. D., & Bui, H. T. M. (2020). Threshold effect of economic openness on bank risk-taking: Evidence from emerging markets. *Economic Modelling, 91,* 790-803. https://doi.org/10.1016/j.econmod.2019.11.013
10. Caporale, G. M., Sova, A. D., & Sova, R. (2022). The direct and indirect effects of financial development on international trade: Evidence from the CEEC-6. *Journal of International Financial Markets, Institutions and Money, 78,* 101550. https://doi.org/10.1016/j.intfin.2022.101550
11. D'Onofrio, A., & Rousseau, P. L. (2017). Financial development, trade openness and growth during the first wave of globalization. *Financial Economics Review, 127*(3), 135-146. https://doi.org/10.3917/ecofi.127.0135
12. Ductor, L., & Grechyna, D. (2015). Financial development, real sector, and economic growth. *International Review of Economics & Finance, 37,* 393-405. https://doi.org/10.1016/j.iref.2015.01.001
13. Fu, J., Liu, Y., Chen, R., Yu, X., & Tang, W. (2020). Trade openness, internet finance development and banking sector development in China. *Economic Modelling, 91,* 670-678. https://doi.org/10.1016/j.econmod.2019.12.008
14. Guariglia, A., & Poncet, S. (2008). Could financial distortions be no impediment to economic growth after all? Evidence from China. *Journal of Comparative Economics, 36*(4), 633-657. https://doi.org/10.1016/j.jce.2007.12.003
15. Hervé, D. B. G. (2021). Governance, Financial Development and Economic Growth in the WAEMU area: Evidence from panel ARDL analysis. *Journal of Applied Finance and Banking, 11*(5), 1-27. https://doi.org/10.47260/jafb/1151
16. Ibrahim, M., & Sare, Y. A. (2018). Determinants of financial development in Africa: How robust is the interactive effect of trade openness and human capital? *Economic Analysis and Policy, 60,* 18-26. https://doi.org/10.1016/j.eap.2018.09.002
17. Im, K. S., Pesaran, M. H., & Shin, Y. (2003). Testing for unit roots in heterogeneous panels. *Journal of Econometrics, 115*(1), 53-74. https://doi.org/10.1016/S0304-4076(03)00092-7
18. Kao, C. (1999). Spurious regression and residual-based tests for cointegration in panel data. *Journal of Econometrics, 90*(1), 1-44. https://doi.org/10.1016/S0304-4076(98)00023-2
19. Kao, C., & Chiang, M. H. (2001). On the estimation and inference of a cointegrated regression in panel data. In B. H. Baltagi, T. B. Fomby, and R. Carter Hill (Ed.), *Nonstationary panels, panel cointegration, and dynamic panels* (pp. 179-222). Emerald Group Publishing Limited. https://doi.org/10.1016/S0731-9053(00)15007-8
20. Kao, C., Chiang, M. H., & Chen, B. (1999). International R&D spillovers: an application of estimation and inference in panel cointegration. *Oxford Bulletin of Economics and Statistics, 61*(S1), 691-709. https://doi.org/10.1111/1468-0084.0610s1691
21. Khan, A., Hassan, M. K., Paltrinieri, A., & Bahoo, S. (2021). Trade, financial openness and dual banking economies: Evidence from GCC Region. *Journal of Multinational Financial Management, 62,* 100693. https://doi.org/10.1016/j.mulfin.2021.100693
22. Kim, D. H., Lin, S. C., & Suen, Y. B. (2011). Interactions between financial development and trade openness. *Scottish Journal of Political Economy, 58*(4), 567-588. https://doi.org/10.1111/j.1467-9485.2011.00559.x
23. Klomp, J., & De Haan, J. (2014). Bank regulation, the quality of institutions, and banking risk in emerging and developing countries: an empirical analysis. *Emerg-*

ing Markets Finance and Trade, 50(6), 19-40. https://doi.org/10.1080/1540496X.2014.1013874

24. Kong, Q., Peng, D., Ni, Y., Jiang, X., & Wang, Z. (2021). Trade openness and economic growth quality of China: Empirical analysis using ARDL model. *Finance Research Letters, 38,* 101488. https://doi.org/10.1016/j.frl.2020.101488

25. Lemaallem, H., & Outtaj, B. (2023). Impact of trade and financial openness on economic growth: Which dynamics are there in the short and long run? *Revue AME, 5*(1), 375-396. https://doi.org/10.48374/IMIST.PRSM/ame-v5i1.37696

26. Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of Econometrics, 108*(1), 1-24. https://doi.org/10.1016/S0304-4076(01)00098-7

27. Levine, R., & Zervos, S. (1998). Stock markets, banks, and economic growth. *The American Economic Review, 88*(3), 537-558. Retrieved from https://www.jstor.org/stable/116848

28. Lyu, C., Xiao, Z., & Pu, Y. (2023). Financial openness and firm exports: Evidence from Foreign-owned Banks in China. *International Review of Financial Analysis, 87,* 102614. https://doi.org/10.1016/j.irfa.2023.102614

29. McCoskey, S., & Kao, C. (1998). A residual-based test of the null of cointegration in panel data. *Econometric Reviews, 17*(1), 57-84. https://doi.org/10.1080/07474939808800403

30. Murthy, D. S., & Samantaraya, A. (2014). Assessing financial development in India and its relation with economic growth: An empirical analysis. *Journal of Economic and Financial Modelling, 2*(1), 1-12.

31. Murthy, D. S., Patra, S. K., & Samantaraya, A. (2014). Trade openness, financial development index and economic growth: Evidence from India (1971–2012). *Journal of Financial Economic Policy, 6*(4), 362-375. https://doi.org/10.1108/JFEP-10-2013-0056

32. Nguyen, H. M., Le, Q. T. T., Ho, C. M., Nguyen, T. C., & Vo, D. H. (2022). Does financial development matter for economic growth in the emerging markets? *Borsa Istanbul Review, 22*(4), 688-698. https://doi.org/10.1016/j.bir.2021.10.004

33. Oroud, Y., Almahadin, H. A., Alkhazaleh, M., & Shneikat, B. (2023). Evidence from an emerging market economy on the dynamic connection between financial development and economic growth. *Research in Globalization, 6,* 100124. https://doi.org/10.1016/j.resglo.2023.100124

34. Ouahmane, E., & Guati, R. (2023). The impact of the banking system on Moroccan economic growth: a VAR model approach over the period 2007–2021. *Revue AME, 5*(2), 301-315. https://doi.org/10.48374/IMIST.PRSM/-v0i0.41095

35. Ouedraogo, S., & Sawadogo, H. (2022). Financial development, financial structure and economic growth in the Sub-Saharan African countries. *International Journal of Finance & Economics, 27*(3), 3139-3162. https://doi.org/10.1002/ijfe.2315

36. Pan, X., Uddin, M. K., Han, C., & Pan, X. (2019). Dynamics of financial development, trade openness, technological innovation and energy intensity: Evidence from Bangladesh. *Energy, 171,* 456-464. https://doi.org/10.1016/j.energy.2018.12.200

37. Pedroni, P. (2001). Purchasing power parity tests in cointegrated panels. *Review of Economics and statistics, 83*(4), 727-731. Retrieved from https://web.williams.edu/Economics/wp/pedronipurchasing.pdf

38. Phillips, P. C., & Hansen, B. E. (1990). Statistical inference in instrumental variables regression with I (1) processes. *The Review of Economic Studies, 57*(1), 99-125. https://doi.org/10.2307/2297545

39. Phillips, P. C., & Moon, H. R. (1999). Linear regression limit theory for nonstationary panel data. *Econometrica, 67*(5), 1057-1111. https://doi.org/10.1111/1468-0262.00070

40. Qamruzzaman, M., & Jianguo, W. (2020). The asymmetric relationship between financial development, trade openness, foreign capital flows, and renewable energy consumption: Fresh evidence from panel NARDL investigation. *Renewable Energy, 159,* 827-842. https://doi.org/10.1016/j.renene.2020.06.069

41. Rahman, M. M., Rahman, M. M., Rahman, M., & Masud, M. A. K. (2021). The impact of trade openness on the cost of financial intermediation and bank performance: evidence from BRICS countries. *International Journal of Emerging Markets,* ahead-of-print. https://doi.org/10.1108/IJOEM-04-2021-0498

42. Rajan, R. G., & Zingales, L. (2003). The great reversals: the politics of financial development in the twentieth century. *Journal of Financial Economics, 69*(1), 5-50. https://doi.org/10.1016/S0304-405X(03)00125-9

43. Redmond, T., & Nasir, M. A. (2020). Role of natural resource abundance, international trade and financial development in the economic development of selected countries. *Resources Policy, 66,* 101591. https://doi.org/10.1016/j.resourpol.2020.101591

44. Sarwar, A., Khan, M. A., Sarwar, Z., & Khan, W. (2021). Financial development, human capital and its impact on economic growth of emerging countries. *Asian Journal of Economics and Banking, 5*(1), 86-100. https://doi.org/10.1108/AJEB-06-2020-0015

45. Sehgal, S., Ahmad, W., & Deisting, F. (2013). A re-assessment of the role of the financial sector in driving economic growth: Recent evidence from cross country data. *International Journal of Economics and Finance, 5*(1), 133. https://doi.org/10.5539/ijef.v5n1p133

46. Sehrawat, M., & Giri, A. K. (2016). The impact of financial development on economic growth: Evidence from SAARC countries. *International Journal of Emerging Markets, 11*(4), 569-583. https://doi.org/10.1108/IJoEM-11-2014-0172

47. Shabir, M., Jiang, P., Hashmi, S. H., & Bakhsh, S. (2022). Non- linear nexus between economic policy uncertainty and bank lending.

http://dx.doi.org/10.21511/bbs.18(3).2023.15

International Review of Economics & Finance, 79, 657-679. https://doi.org/10.1016/j.iref.2022.02.016

48. Shafiei, A., Nonejad, M., Zare, H., & Haghighat, A. (2023). The Effect of Financial Development on Human Development in Selected Development Countries Using GMM Method. *Journal of System Management (JSM), 9*(2), 183-195. https://doi.org/10.30495/jsm.2023.1969198.1717

49. Singh, S., Arya, V., Yadav, M. P., & Power, G. J. (2023). Does financial development improve economic growth? The role of asymmetrical relationships. *Global Finance Journal, 56,* 100831. https://doi.org/10.1016/j.gfj.2023.100831

50. Tongurai, J., & Vithessonthi, C. (2023). Financial Openness and Financial Market Development. *Journal of Multinational Financial Management, 67,* 100782. https://doi.org/10.1016/j.mulfin.2023.100782

51. Uddin, S. G., Sjo, B., & Shahbaz, M. (2013). The casual nexus between financial development and economic growth in Kenya. *Economic Modelling, 35*(1), 701-707. https://doi.org/10.1016/j.econmod.2013.08.031

52. Usman, M., Makhdum, M. S. A., & Kousar, R. (2021). Does financial inclusion, renewable and non-renewable energy utilization accelerate ecological footprints and economic growth? Fresh evidence from 15 highest emitting countries. *Sustainable Cities and Society, 65,* 102590. https://doi.org/10.1016/j.scs.2020.102590

53. Wajda-Lichy, M., Kawa, P., Fijorek, K., & Denkowska, S. (2020). Trade openness and financial development in the new EU member States: Evidence from a granger panel bootstrap causality test. *Eastern European Economics, 58*(3), 242-263. https://doi.org/10.1080/00128775.2019.1701498

54. Yahyaoui, A., & Rahmani, A. (2009). Financial development and economic growth: role of the quality of institutions. *Panoeconomicus, 3,* 327-357. https://doi.org/10.2298/PAN0903327Y

55. Yuan, S., Wu, Z., & Liu, L. (2022). The effects of financial openness and financial efficiency on Chinese macroeconomic volatilities. *The North American Journal of Economics and Finance, 63,* 101819. https://doi.org/10.1016/j.najef.2022.101819