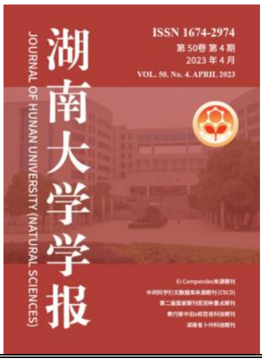

湖南大学学报（自然科学版）
Journal of Hunan University (Natural Sciences）

第 50 卷 第 4 期
2 0 2 3 年 4 月

Available online at http://jonuns.com/index.php/journal/index

Vol. 50 No. 4
April 2023

Open Access Article https://doi.org/10.55463/issn.1674-2974.50.4.3

Role of Financial Stability in Strengthening the Relationship between Financial Inclusion and Investments in the Jordanian Financial Sector

Abdelkarim Fawwaz AlBataineh[1], Yaser Mohd Hamshari[2]*, Ahmad Rajab Jwailes[3]

[1] Department of Finance and Banking, University of Petra, Jordan

[2] Department of Accounting, University of Petra, Jordan

[3] College of Business and Management, Universiti Sultan Zainal Abidin, Malaysia

* Corresponding author: yhamshari@uop.edu.jo

Received: February 20, 2023 ▪ Revised: March 7, 2023 ▪ Accepted: March 13, 2023 ▪ Published: April 28, 2023

Abstract: Although it has been shown in the past that expanding access to banking services has positive effects on the economy and poverty reduction, it remains uncertain if doing so also improves bank investment. Although the availability of financial services and the amount of deposit balances have no discernible impact on investment in Jordan's financial sector, the study concludes that financial inclusion is critical for improving the economy and reducing the number of loan accounts. This study is the first to investigate the role of financial instability on the relationship between financial inclusion and investment in Jordan. This research looked at financial inclusion and financial instability as two significant investment drivers. Using a panel analysis, this study will look at the Jordanian financial sector from 2017 to 2021 to see how financial stability affects the relationship between financial inclusion and investment. A dynamic panel approach using the System GMM was used in the research. The research showed that financial inclusions have a major and negative effect on financial sector investment in Jordan. However, financial inclusions have had a substantial and favourable effect on investment in Jordan's financial industries. Investments in Jordan's banking system have a closer connection to financial inclusion because of the country's history of financial instability. With this information in hand, officials in Jordan can shift their attention to providing accessible, low-cost financial services to back loans and new ventures for small- and medium-sized enterprises. The report can also help Jordanian policymakers and regulators reach the goals of Jordanian national strategy for financial inclusion.

Keywords: financial stability, financial inclusion, investments, Jordanian financial sector, system GMM.

金融稳定在加强约旦金融部门普惠金融与投资之间关系中的作用

摘要：尽管过去已经表明扩大银行服务的可及性对经济和减贫有积极影响，但这样做是否也能改善银行投资仍不确定。尽管金融服务的可用性和存款余额对约旦金融部门的投资没有明显影响，但该研究得出结论，金融普惠对于改善经济和减少贷款账户数量至关重要。这项研究首次调查了金融不稳定对约旦金融普惠与投资之间关系的影响。这项研究将金融包容性和金融不稳定视为两个重要的投资驱动因素。通过面板分析，本研究将审视2017年至2021年的约旦金融部门，以了解金融稳定性如何影响金融普惠与投资之间的关系。研究中使用了

使用系统广义矩法的动态面板方法。研究表明，普惠金融对约旦的金融部门投资具有重大的负面影响。然而，普惠金融对约旦金融业的投资产生了重大而有利的影响。由于该国金融不稳定,对约旦银行系统的投资与普惠金融有着更密切的联系。有了这些信息，约旦的官员就可以将注意力转移到提供便利、低成本的金融服务上，以支持中小企业的贷款和新企业。该报告还可以帮助约旦决策者和监管机构实现约旦国家普惠金融战略的目标.
关键词：金融稳定性、金融包容性、投资、约旦金融业、系统广义矩量法.

Introduction

The United Nations Conference on Trade and Development (UNCTAD) describes the digital economy and highlights its growing importance in its 2017 Global Investment Report [1]. The report emphasizes the need for targeted investment policy support to construct infrastructure connectivity facilities, encourage digital companies, and support the digitization of the entire economy in order to facilitate digital development in all countries, in particular the inclusion of developing countries in the global digital economy [2]. It is important to incorporate both digital development and investment strategies into overall policymaking. Policymakers must address public concerns about global development while simultaneously encouraging investment in digital growth [3]. The growth of Jordan's economy and standard of living can clearly be traced back to the rise of the automated economy. Investments made by locals are crucial to Jordan's economic growth and social capital circulation since they provide a complement to the country's citizens' spending [4]. Sustainable economic and social growth, poverty alleviation, job creation, and a more secure financial system all benefit from increased access to and use of financial services [5].

Poverty and economic growth are both hindered by the absence of available funds. This is due to the widespread belief that low-income people are unable to save and invest in productive businesses because of their limited access to financial resources. However, when capital is readily available, businesses are encouraged to increase their investment and risk-taking, both of which contribute to the economic expansion [6]. After the recent financial crisis, there has been renewed global interest in expanding access to financial services. Therefore, in order to achieve all-encompassing and long-term growth, international organizations and financial and monetary authorities in both developed and developing nations have prioritized the notion of financial inclusion within their goals and programs [7-9]. The research [10] summed up the causes of economic marginalization as follows. To begin with, banks' unwillingness to work with some consumers is due to the former's low income and the latter high risk of lending. Second, bias toward specific groups based on their race or religion. Third, financial institutions are unable to offer these services because of the enormous expenses. As a fourth issue, people are generally financially ignorant. However, due to the growth in financial transactions as well as in the number of clients and the dangers connected with these factors, financial inclusion alters the very foundation of the financial system [11]. After the subprime crisis, there was a resurgence of interest from academics and politicians in the idea of financial stability.

All parts of the financial system rely on financial stability, and it plays a significant role in ensuring the systems long-term health and prosperity [12]. The term "financial stability" refers to the ability of the financial system to absorb shocks and minimize the harm they can inflict [13]. Several previous studies have found a link between financial inclusion and financial instability [14, 15]. Low-income clients in Jordan's banking system are remarkably resilient, with their deposit and borrowing patterns remaining unchanged even during times of crisis. As a result, the Jordanian banking system maintains a steady stream of deposits for use in its lending operations. By increasing the diversity and size of the financial system's customer base, FI helps FS better serve as an intermediary between savers and borrowers. By closing the gap between the rich and the poor, FI helps to reduce income inequality. That is why it is so hard to achieve financial inclusion without a stable financial system and why it is so hard to create financial stability in a system that includes economically, socially and financially excluded populations. However, [16] and [17] warned that there are hazards associated with financial inclusion that might threaten FS in various ways. First, the problem of information asymmetry is aggravated by the rising involvement of the low-income population in the financial system, which is characterized by high transaction and information costs in financial operations.

Poor governance and regulatory systems of local financial institutions increase their susceptibility to financial problems. Third, without proper oversight and regulation, the use of novel financial methods such as phone banking can be dangerous for financial instability. More empirical research examining the connection between FI and FS is required, however, because financial inclusion is still in its infancy and there is considerable dispute over its influence. Over the past few years, Jordan has come to determine financial inclusion as a cornerstone of long-term inclusive growth. Because of this, in 2015, the Central Bank of Jordan began developing the National Financial Inclusion Strategy, which was officially launched in 2017. Microfinance, online financial services, and capital for SMEs are the three pillars on which NFIS rests. Financial technology, financial consumer protection, data and research, and rules and regulations are the four enablers addressed to construct the pillars of NFIS. The primary objectives of NFIS are to decrease the gender gap from 53 percent to 35 percent in terms of financial independence (as measured by account ownership among adults) by 2020.

However, the high poverty and unemployment rates in Jordan, which reached 14.4% and 18.5% respectively in 2017, prompted Jordan's interest in FI. Low levels of financial inclusion are also shown by the CBJ survey from 2017, which found that only 33% of Jordanians have bank accounts. However, keeping FS going strongly is one of the CBJ's primary goals. The CBJ formed the Department of Financial Stability in 2013 to work toward this end. This office oversees the macroprudential policy of Jordan, which reduces systemic risk and strengthen the country's financial sector's resilience to shocks. Despite the growing interest in financial inclusion matters, no prior empirical research has examined the role of financial instability on the link between financial inclusion and investment in the Jordanian setting. While the empirical literature on Jordan is relatively scarce, this paper adds to that literature by bridging a significant existing gap, especially in the aftermath of the recent financial and debt crises and the recent COVID-19 and Russian invasion to Ukraine that affected many countries, with Jordan not an exception. Therefore, this research aims to address this information gap. Jordanian officials and regulators will use the important results of this study to improve the National Strategy for financial inclusion.

1. Literature Review

Those who live in a country are said to have "invested" if they have made purchases of income-generating assets such as stocks and bonds or those used in production or business. In addition to assisting with the appropriate deployment of capital and the modification of Jordan's industrial structure, domestic investment can help alleviate the country's construction sector's severe funding deficit. On the other hand, learning from the experiences of Jordanian citizens who have invested in the digital economy can inform the reform of Jordan's future investment system. It is not enough to just consider the role of microfinance in a country's growth; microfinance's impact on household financial decisions is significant; and resident investment is, once again, central to household financial choices. For future researchers interested in studying resident investment and household financial assets, [18] asset portfolio theory provided a theoretical foundation. It also discussed some of the elements that influenced resident investment, some of which were explored from the standpoint of physical capital, such as household income, assets, and borrowing limits on the impact that resident investment choices in financial asset portfolios could have. Investing in financial markets, such as stocks, necessitates a certain level of financial knowledge and the ability to acquire and process financial information, which primarily includes education level [19, 20], financial knowledge [21], cognitive ability [22], and health level. This motivated academics to investigate human capital inequalities from this vantage point [23]. Marriage and other sociodemographic factors [24], social interaction and social capital [25], and macroeconomic policies are all investigated in the literature as potential influences on household financial investment participation [26]. The impact of Internet finance and market frictions on the traditional financial sector and the financial investments of citizens is a topic that has begun to be explored in the literature as the Internet has developed [27]. However, the effect of financial inclusion on residents' investment in the digital economy has received scant attention. Even though there is a lot of research on how the Internet affects local investment, it is important to keep in mind that Internet access and digital financial development vary from place to place. In a study on financial inclusion, [28] talked about the development of financial inclusion from the late nineties until the present day, when development finance organizations called for their support for microcredit, small loans for people who lack a stable source of income. Recently, the concept of financial inclusion has evolved and includes providing broader services to all segments of society, especially to individuals who do not benefit from banking services, and micro, small, medium and holistic companies means reaching them in a sustainable manner.

The study by Jameh [29] talked about the impact of financial technology on the Islamic banking sector, as it has created a variety of financial services on the Islamic financial system. The Middle East, North Africa and Turkey account for 75% of the size of the financial technology market in the Islamic Labor Organization, and countries such as Saudi Arabia, Iran, UAE, Malaysia and Indonesia achieve financial inclusion in a remarkable way and at very high rates for the rest of the OIC countries. [30] concluded the need to increase awareness and interest in financial culture among all segments of society. To achieve social justice, [31] clarified the necessity of paying attention to financial inclusion as long as its elements are available in the state to achieve the desired goals, the most important of which are combating poverty, reducing unemployment, and reaching the needs of society through innovative technology that saves time and effort for all members of society and meets all political and economic conditions, financial crises and health conditions as the Corona epidemic, which may increase of the number of poor in the world in the absence of a fixed income per capita.

[32], which included 100 countries for the year 2017, concluded that there is a positive relationship between financial inclusion and information and communication technology, which helped to provide services to all levels of customers in society and increased society's interest in financial inclusion after the crisis of the Corona epidemic, through Embodying base structures and infrastructure, encouraging investment and achieving sustainability to face economic problems, including unemployment, achieve welfare for the community, and mitigate economic and financial fluctuations. The study [33] showed that there is a clear shortcoming in financial inclusion in Sudan and customer dissatisfaction with banking services in terms of use and cost. Customers and the importance of using financial technology and communications that commensurate with the possibility of society and focus on sustainability projects.

2. Methodology

The primary purpose of this research is to analyze how investments in Jordan's financial sector can be strengthened by the presence of a more inclusive financial system. Beginning with a description of the study population and sample, the study variables, and the measurement techniques, this section details the approach taken in assessing statistical correlations between the variables. There is also information here on where to go for data and how to analyze it To begin with, the entire financial sector that is listed on the Amman Stock Exchange (ASE) is included in the study population, and the same financial sector is also included in the study sample. Furthermore, the method used to pick samples for the years 2017–2021 is all of the necessary information was culled from publicly available secondary sources, such as the Amman Stock Exchange's yearly reports on Jordan's financial industry. The period from 2017 to 2021 was the main focus of the research. The benefit (or return) of an investment divided by the cost of the investment is a more ideal investment measure that can capture future growth potential, and this is how we computed investment (the dependent variable) [34, 35].

First, there is the availability of financial services. It is critical for comprehensive financial system services to be readily available, which may be reflected in the number of bank outlets and/or ATMs, the number of employees per customer in the bank, or the number of bank branches, for availability measures how accessible financial services are to the general population. Second, low-cost financial services. This procedure allows low-income and marginalized persons to gain access to the financial services they demand and to receive the proper amount of credit when they require it [36]. Third, Financial Service uses the thrust in this dimension is generated by the underbanked or marginally banked idea, as noted by [37], where in some countries with a high poverty rate and higher level of banking, several people do not use the services offered although they have a bank account. In this paper, this was quantified using two of the banking industry's most fundamental functions: credit and deposit. In addition, the Jordanian Financial Stability Index was used to assess the economy's health [38]. This work uses GDP, firm size, and board size as control variables, based on the research of several experts. To account for the impact of both individuals and time periods in the estimate of the generalized method of moments, panel time analysis data is used. GMM estimators are often used to estimate dynamic panels because they avoid Nickel bias [39].

To avoid endogeneity and simultaneity bias, GMM estimators are superior to fixed effects estimators [40]. When estimating the model as a set of equations, one for each time period, the Difference GMM estimator (also known as the Arellano and Bond Estimator) uses the lagged levels of the dependent variables as instruments for the first differenced lags of the dependent variable [41] The lagged values of the dependent variables, however, are often poor instruments for the first differenced variables, as argued by [42]. Since the System GMM estimator employs lagged differences as instruments for the equation in levels in addition to lagged levels of as instruments for the equation in first differences, it was recommended that this method be used. Therefore, the System GMM estimator outperforms the Difference GMM estimator in terms of stability. Furthermore, robust standard errors for FE estimation and Windmeijer-corrected standard errors for GMM estimations have been described to address heteroskedasticity and autocorrelation issues, respectively. Using the Sys-GMM approach, we develop the following model to assess the impact of a company's corporate governance on information asymmetry within the company. To investigate the role of financial stability in strengthening the relationship between financial inclusion and investments, the following empirical model was developed:

$$INV_{it} = \rho_1 + \gamma_1 FINC_{it} + \gamma_2 GDP_{it} + \gamma_3 FSIZE_{it} +$$

$$\gamma_4 BSIZE_{it} + \mu_{it} \quad (1)$$

$$FINS_{it} = \rho_1 + \gamma_1 FINC_{it} + \gamma_2 GDP_{it} + \gamma_3 FSIZE_{it} + \gamma_4 BSIZE_{it} + \mu_{it} \quad (2)$$

$$INV_{it} = \rho_1 + \gamma_1 FINS_{it} + \mu_{it} \quad (3)$$

$$INV_{it} = \rho_1 + \gamma_1 FINS_{it} + \gamma_2 FINC_{it} + \gamma_3 GDP_{it} + \gamma_3 FSIZE_{it} + \gamma_4 BSIZE_{it} + \mu_{it} \quad (4)$$

3. Results and Discussions

Using a panel data model, this research examines the impact of financial inclusion on the development of the commercial Jordanian financial industry from 2017 to 2021. Table 1 summarizes the findings from the descriptive analysis of the study variables. Every study variable's range of possible values from mean to minimum is examined, as are their central tendencies, dispersions, and extremes. Multicollinearity is a prevalent problem in statistical estimation of regression coefficients. This results from the independent variables in the study being highly correlated with one another [43]. The multivariate Pearson analysis correlations are shown in Table 2, where the greatest pair-wise correlation coefficient is 0.85, indicating that there is no multicollinearity problem. The results of Sys-GMM analysis are presented in Table 3. System GMM was claimed to be Windmeijer-corrected. As stated by [42], system GMM estimators are more reliable than difference GMM and FE estimators. Our analysis and inferences in this part are grounded mostly in the findings of the system GMM estimation. In addition, we have employed a two-stage generalized method of moment estimators with standard errors corrected for Windmeijer's method. When we look at the System GMM output, we see that information asymmetry has a major impact on corporate governance processes. Information asymmetry is still there, as shown by the fact that the lagging terms of investment and financial inclusion are significant (at the 1% level).

Based on the results from Table 3, it can be seen that the direct effect of the relationship between financial inclusion and investment is negative and significant (Beta = -0.039). For the indirect effect, the relationship between financial inclusion and financial instability is also significant (Beta = 0.109) and that of mediation with financial instability was significant (Beta = 0.528). Therefore, since the direct and indirect relationships are significant, and the coefficient of the mediation than the coefficient of the direct relationship, it can be concluded that financial inclusion fully mediates the relationship between financial inclusion and investment in Jordanian financial sectors. The possibility of dangers associated with financial inclusion that endanger and lower FS is one explanation for this outcome. Along with an expansion in financial system participants, including low-income customers and new financial service providers, these risks were brought on by new, innovative financial products. In this defense, the need for financial oversight in lowering the danger brought on by the growth of unregulated financial system participants is emphasized [38]. Furthermore, it is evident from the experiment findings that financial instability is significant at the same level in both the groups with low and high levels of education, both at the 1% level of significance. This indicates that both groups of citizens are significantly affected by financial inclusion in terms of their investment. When comparing the coefficients, the high education-level group shows a stronger influence of digital finance on investment [44]. The reason could be that digital finance depends on cutting-edge technologies such as big data, cloud computing and information technology, which broaden the scope of services and reach of inclusive finance. But people who want to invest money should know something about finances and be able to choose the right financial products. People with more education and better judgment are more likely to be in the high-education group.

Table 1 Descriptive statistics

	INV	FINC	FINST	FSIZE	GDP	BSIZE
Mean	0.573136	0.276432	0.730173	17.51061	0.026535	8.155556
Median	0.620217	0.217903	0.553386	17.12481	0.024294	7.000000
Maximum	1.115048	0.901230	3.592888	21.27039	0.072323	23.00000
Minimum	0.043131	0.000768	0.034622	15.21337	-0.015514	4.000000
Std. Dev.	0.278395	0.211907	0.592711	1.179543	0.018653	2.794388
Skewness	-0.355000	0.858190	1.870067	1.122838	0.360216	1.810966
Kurtosis	2.095558	2.894791	8.224530	4.124785	4.795416	7.842337
Observations	360	360	360	360	360	360

Table 2 Correlation matrix

	INV	FINC	FINST	FSIZE	GDP	BSIZE
INV	*1.000*					
FINC	-0.022	*1.000*				
	(0.676)					
FINST	0.107**	-0.349*	*1.000*			
	(0.042)	(0.000)				
FSIZE	0.072	0.229*	0.192*	*1.000*		
	(0.171)	(0.000)	(0.000)			

Continuation of Table 2

GDP	-0.128	-0.058	0.120**	-0.028	*1.000*	
	(0.989)	(0.266)	(0.022)	(0.590)		
BSIZE	0.088	-0.067	0.385*	0.227*	0.062	*1.000*
	(0.095)	(0.198)	(0.000)	(0.000)	(0.238)	

Table 3 Sys-GMM analysis

Variables	**Model 1**	**Model 2**	**Model 3**
Lagged INV	0.871*	-	-
Lagged FINS	-	0.711*	-
Lagged INV	-	-	0.804*
FINC	-0.039*	0.109*	-0.528*
FINS	-	-	0.465*
GDP	0.096**	-0.616*	0.038**
FSIZE	0.048*	-0.020**	0.061*
BSIZE	0.138*	0.004*	0.010*
AR(2)	1.96	0.19	1.07
Sargan test	1.60	0.50	1.69
Hansen test	8.43	14.00	11.60
The number of obs	288	288	288
The number of groups	72	72	72

4. Conclusion

There has been a lot of discussion recently about how to achieve equitable and sustainable growth in both developing and wealthy nations. At the same time, officials at both the national and international levels have come to determine financial inclusion as a crucial means of fostering the anticipated expansion. The Central Bank of Jordan has issued the 2017 National Strategy for Financial Inclusion considering these changes. Conversely, policymakers everywhere value stable economies. It has been stated in prior research that a country’s financial stability can be improved by greater financial inclusion. Indeed, no empirical research has been conducted in the Jordanian context on the connection between financial inclusion and financial stability. As a result, the purpose of this research is to determine whether or not there is a connection between financial inclusion and financial security. The Jordanian financial inclusion index, calculated using annual data of selected financial inclusion variables, was used to assess Jordanian financial inclusion levels between 2017 and 2021. The study's findings corroborate the concept that financial inclusion has a substantial and beneficial effect on financial stability as evaluated by the Jordanian financial stability index.

Research findings suggest that authorities in charge of financial regulation would do well to adhere to sensible and adequate supervisory requirements designed to curb the dangers posed by the rapid growth of the sector's many players. In addition, financial education is essential for all segments of Jordanian society since it promotes the use of financial services and equips participants with the tools they need to effectively manage their savings and make sound investment decisions. Constant factors showed a positive correlation between GDP per capita and fiscal health. In contrast, domestic loans to the private sector, income inequality, financial integration, and the global financial crisis all have major harmful effects on economic security. The main difficulties encountered by the research were short data series and missing data. Due to these constraints, a more all-encompassing index of financial inclusion could not be constructed using the available information. Future research, once the data is made available, will be able to include more measures of financial inclusion to create a more complete index of financial inclusion. To further our understanding of this critical topic, future research might also look into the correlation between financial inclusion and factors such as poverty and income inequality.

This research and its findings make it clear that financial inclusion plays a crucial part in Jordan's economy. The results showed that the investment of the Jordanian financial industry in Jordan was negatively and considerably impacted by the number of loan accounts and the quantity of deposits. This finding corroborates the findings of previous research. Investment in Jordan's banking sector was unrelated to the country’s branch and ATM density. Investment in Jordan's commercial banking sector was most affected by two factors: leverage and bank sizes. With this information in hand, officials in Jordan can shift their attention to providing accessible, low-cost financial services to back loans and new ventures for small- and medium-sized enterprises. The banking system in Jordan should encourage families to diversify their holdings beyond cash and deposits. Keeping asset management costs stable is important for the Jordanian financial sector and other banks if they want to increase the demand for their services. Investigating the links between financial inclusion and banking hazards is an interesting avenue for future research.

Our results have important policy implications. The findings suggest that banking stability is strongly influenced by the degree to which households and SMEs have access to financial services, indicating the importance of ensuring an inclusive financial sector for achieving inclusive economic growth. By broadening banking services to unbanked and/or underbanked people, bank managers can not only take early advantage of exploiting the untapped potential of customers and creating a ‘lock-in’ effect but also aid an inclusive development agenda while allocating resources in more productive areas. As only 41% of people in developing countries compared to 89% in developed ones have bank accounts, additional policies should focus on ensuring access to those excluded from formal financial services, especially in developing countries. To maximize the benefits of financial inclusion, the commercial Jordanian financial sector should increase its investment and adopt laws to facilitate this goal. Therefore, the commercial Jordanian financial sector should be creative and imaginative in its efforts to achieve financial inclusion regulations. Loans to small- and medium-sized enterprises and startups can be supported by these policies if more of them are made available.

References

[1] LI K., KIM D. J., LANG K. R., KAUFFMAN R. J., and NALDI M. How should we understand the digital economy in Asia? Critical assessment and research agenda. *Electronic Commerce Research and Applications*, 2020, 44: 101004. https://doi.org/10.1016/j.elerap.2020.101004

[2] LUO Y. A general framework of digitization risks in international business. *Journal of International Business Studies*, 2022, 53(2): 344-361. https://doi.org/10.1057/s41267-021-00448-9

[3] ZHAN J. X., & SANTOS-PAULINO A. U. Investing in the Sustainable Development Goals: Mobilization, channeling, and impact. *Journal of International Business Policy*, 2021, 4(1): 166-183. https://doi.org/10.1057/s42214-020-00093-3

[4] SETHI D., & ACHARYA D. Financial inclusion and economic growth linkage: Some cross country evidence. *Journal of Financial Economic Policy*, 2018, 10(3): 369-385. https://doi.org/10.1108/JFEP-11-2016-0073

[5] OZTURK I., & ULLAH S. Does digital financial inclusion matter for economic growth and environmental sustainability in OBRI economies? An empirical analysis. *Resources, Conservation and Recycling*, 2022, 185: 106489. https://doi.org/10.1016/j.resconrec.2022.106489

[6] KOULADOUM J. C., WIRAJING M. A. K., & NCHOFOUNG T. N. Digital technologies and financial inclusion in Sub-Saharan Africa. *Telecommunications Policy*, 2022, 46(9): 102387. https://doi.org/10.1016/j.telpol.2022.102387

[7] METAWEA M. S. The role of financial institutions in supporting entrepreneurial success: case of Egypt. *American Journal of Business and Operations Research*, 2020, 1(1): 36-51. http://dx.doi.org/10.5281/zenodo.3733841

[8] LAKUMA C. P., MARTY R., and MUHUMUZA F. Financial inclusion and micro, small, and medium enterprises (MSMEs) growth in Uganda. *Journal of Innovation and Entrepreneurship*, 2019, 8(1): 1-20. https://doi.org/10.1186/s13731-019-0110-2

[9] MPOFU F. Y., & MHLANGA D. Digital Financial Inclusion, Digital Financial Services Tax and Financial Inclusion in the Fourth Industrial Revolution Era in Africa. *Economies*, 2022, 10(8): 184. https://doi.org/10.3390/economies10080184

[10] MBUTOR M. O., & UBA I. A. The impact of financial inclusion on monetary policy in Nigeria. *Journal of Economics and International Finance*, 2013, 5(8): 318-326. https://giwps.georgetown.edu/dei-resources/the-impact-of-financial-inclusion-on-monetary-policy-in-nigeria/

[11] ARNER D. W., BUCKLEY R. P., ZETZSCHE D. A., & VEIDT R. Sustainability, FinTech and financial inclusion. *European Business Organization Law Review*, 2020, 21(1): 7-35. https://link.springer.com/article/10.1007/s40804-020-00183-y#citeas

[12] ADUDA J., & KALUNDA E. Financial inclusion and financial sector stability with reference to Kenya: A review of literature. *Journal of Applied Finance and Banking*, 2012, 2(6): 95. https://econpapers.repec.org/article/sptapfiba/v_3a2_3ay_3a2012_3ai_3a6_3af_3a2_5f6_5f8.htm

[13] HEALEY J., MOSSER P., ROSEN K., & TACHE A. *The future of financial stability and cyber risk*. The Brookings Institution Cybersecurity Project, 2018: 1-18. https://www.brookings.edu/wp-content/uploads/2018/10/Healey-et-al_Financial-Stability-and-Cyber-Risk.pdf

[14] RATNAWATI K. The impact of financial inclusion on economic growth, poverty, income inequality, and financial stability in Asia. *The Journal of Asian Finance, Economics and Business*, 7(10), 2020: 73-85. https://doi.org/10.13106/jafeb.2020.vol7.no10.073

[15] VO D. H., NGUYEN N. T., and VAN L. T. H. Financial inclusion and stability in the Asian region using bank-level data. *Borsa Istanbul Review*, 2021, 21(1): 36-43. https://doi.org/10.1016/j.bir.2020.06.003

[16] MOHAN D. M. M., RAO P. V. L., CHAKRAVARTHI D. P., and RAO D. M. A. Financial Inclusion As A Result Of The Digital India Initiative. *International Journal of Aquatic Science*, 2021, 12(2): 2657-2667. http://www.journal-aquaticscience.com/article_134016_cacbf8e45086d3a37b0cfa71a9bcfcc2.pdf

[17] EZZAHID E., & ELOUAOURTI Z. Financial inclusion, financial frictions, and economic growth: Evidence from Africa. *Journal of African Business*, 2022, 23(3): 731-756. https://doi.org/10.1080/15228916.2021.1926856

[18] BOSE S., SAHA A., KHAN H. Z., and ISLAM S. Non-financial disclosure and market-based firm performance: The initiation of financial inclusion. *Journal of Contemporary Accounting & Economics*, 2017, 13(3): 263-281. https://doi.org/10.1016/j.jcae.2017.09.006

[19] OMOJOLAIBI J. A. Financial inclusion, governance and economic progress in Nigeria: what happens to the welfare of the poor? *Oman Chapter of Arabian Journal of Business and Management Review*, 2017, 34(93): 1-14. https://www.arabianjbmr.com/pdfs/OM_VOL_6_(7)/3.pdf

[20] TALWAR M., TALWAR S., KAUR P., TRIPATHY N., and DHIR A. Has financial attitude impacted the trading activity of retail investors during the COVID-19 pandemic? *Journal of Retailing and Consumer Services*, 2021, 58: 102341. https://doi.org/10.1016/j.jretconser.2020.102341

[21] KAISER T., LUSARDI A., MENKHOFF L., and URBAN C. Financial education affects financial knowledge and downstream behaviors. *Journal of Financial Economics*, 2022, 145(2): 255-272. https://doi.org/10.1016/j.jfineco.2021.09.022

[22] NILSEN F. M., RUIZ J. D., & TULVE, N. S. A meta-analysis of stressors from the total environment associated with children's general cognitive ability. *International Journal of Environmental Research and Public Health*, 2020, 17(15): 54-51. https://doi.org/10.3390/ijerph17155451

[23] KHAN Z., ALI S., DONG K., and LI R. Y. M. How does fiscal decentralization affect CO2 emissions? The roles of institutions and human capital. *Energy Economics*, 2021,

94: 105060. https://doi.org/10.1016/j.eneco.2020.105060
[24] OSUAFOR G. N., MAPUTLE S. M., & AYIGA N. Factors related to married or cohabiting women's decision to use modern contraceptive methods in Mahikeng, South Africa. *African Journal of Primary Health Care and Family Medicine*, 2018, 10(1): 1-7. https://doi.org/10.4102%2Fphcfm.v10i1.1431
[25] LI L. Financial inclusion and poverty: The role of relative income. *China Economic Review*, 2018, 52: 165-191. https://doi.org/10.1016/j.chieco.2018.07.006
[26] KALAITZAKE M. Central banking and financial political power: An investigation into the European Central Bank. *Competition & Change*, 2019, 23(3): 221-244. https://doi.org/10.1177/1024529418812690
[27] CHEN W., & YUAN X. Financial inclusion in China: an overview. *Frontiers of Business Research in China*, 2021, 15(1): 1-21. https://doi.org/10.1186/s11782-021-00098-6
[28] BABAJIDE A. A., ADEGBOYE F. B., and OMANKHANLEN, A. E. Financial inclusion and economic growth in Nigeria. *International Journal of Economics and Financial Issues*, 2015, 5(3): 629-637. https://www.rsisinternational.org/journals/ijriss/Digital-Library/volume-5-issue-1/323-330.pdf
[29] SAYED M. N., & SHUSHA A. Determinants of financial inclusion in Egypt. *Asian Economic and Financial Review*, 2019, 9(12): 1383-1404. https://doi.org/10.5430/ijfr.v11n1p123
[30] AYASH, & YOUSEF B. The contribution of financial technology to enhancing financial inclusion in banking institutions. *Journal of Economic and Financial Research*, 2021, 8(2): 362-384. https://www.asjp.cerist.dz/en/article/176593
[31] NUGRAHA F. M., TULUNG J. E., and ARIE, F. V. The impact of financial literacy and financial inclusion on investment decision in Manado. *Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, 2021, 9(3): 411-418. https://doi.org/10.35794/emba.v9i3.34748
[32] ABOR J. Y., AMIDU M., and ISSAHAKU H. Mobile telephony, financial inclusion and inclusive growth. *Journal of African Business*, 2018, 19(3): 430-453. http://dx.doi.org/10.1080/15228916.2017.1419332
[33] NAUMENKOVA S., MISHCHENKO S., and DOROFEIEV D. Digital financial inclusion: Evidence from Ukraine. *Investment Management & Financial Innovations*, 2019, 16(3): 194. http://dx.doi.org/10.21511/imfi.16(3).2019.18
[34] SANDERSON A., MUTANDWA L., and LE ROUX P. A review of determinants of financial inclusion. *International Journal of Economics and Financial Issues*, 2018, 8(3): 1. https://www.econjournals.com/index.php/ijefi/article/view/5458
[35] AKILENG G., LAWINO G. M., and NZIBONERA, E. Evaluation of determinants of financial inclusion in Uganda. *Journal of Applied Finance and Banking*, 2018, 8(4): 47-66. http://www.scienpress.com/Upload/JAFB%2FVol%208_4_4.pdf
[36] KARA A., ZHOU H., and ZHOU Y. Achieving the United Nations' sustainable development goals through financial inclusion: A systematic literature review of access to finance across the globe. *International Review of Financial Analysis*, 2021, 77: 101833. https://doi.org/10.1016/j.irfa.2021.101833
[37] KAMAL A., HUSSAIN T., and KHAN M. M. S. Impact of Financial inclusion and financial stability: Empirical and theoretical review. *Liberal Arts and Social Sciences International Journal*, 2021, 5(1): 510-524. https://ideapublishers.org/index.php/lassij/article/view/304
[38] FOUEJIEU A., SAHAY R., CIHAK M., and CHEN S. Financial inclusion and inequality: A cross-country analysis. *The Journal of International Trade & Economic Development*, 2020, 29(8): 1018-1048. https://doi.org/10.1080/09638199.2020.1785532
[39] POMEROY R., ARANGO C., LOMBOY C. G., and BOX S. Financial inclusion to build economic resilience in small-scale fisheries. *Marine Policy*, 2020, 118: 103982. https://doi.org/10.1016/j.marpol.2020.103982
[40] KIMANI P., & KISAKA S. The impact of collective investment schemes on financial inclusion in Kenya. *Journal of Poverty, Investment and Development*, 2016, 1(1): 54-73. http://erepository.uonbi.ac.ke:8080/xmlui/handle/123456789/12387
[41] RENZHI N., & BAEK Y. J. Can financial inclusion be an effective mitigation measure? Evidence from panel data analysis of the environmental Kuznets curve. *Finance Research Letters*, 2020, 37: 101725. https://doi.org/10.1016/j.frl.2020.101725
[42] AJEFU J. B., & OGEBE J. O. Migrant remittances and financial inclusion among households in Nigeria. *Oxford Development Studies*, 2019, 47(3): 319-335. https://doi.org/10.1080/13600818.2019.1575349
[43] CHATTERJEE A. Financial inclusion, information and communication technology diffusion, and economic growth: a panel data analysis. *Information Technology for Development*, 2020, 26(3): 607-635. https://doi.org/10.1080/02681102.2020.1734770
[44] SAYDALIYEV H. B., CHIN L., and MOHAMED A. Remittance inflow and economic development: interaction with financial inclusion and human capital. *Migration and Development*, 2022, 11(3): 876-893. https://doi.org/10.1080/21632324.2020.1839215

参考文:

[1] LI K., KIM D. J., LANG K. R., KAUFFMAN R. J., 和 NALDI M. 我们应该如何理解亚洲的数字经济？批判性评估和研究议程。电子商务研究与应用, 2020, 44: 101004. https://doi.org/10.1016/j.elerap.2020.101004
[2] LUO Y. 国际商业数字化风险的一般框架。国际商业研究杂志, 2022, 53(2): 344-361. https://doi.org/10.1057/s41267-021-00448-9
[3] ZHAN J. X., 和 SANTOS-PAULINO A. U. 投资于可持续发展目标：动员、引导和影响。国际商业政策杂志, 2021, 4(1): 166-183. https://doi.org/10.1057/s42214-020-00093-3
[4] SETHI D., 和 ACHARYA D. 金融包容性和经济增长联系：一些跨国证据。金融经济

政策杂志, 2018, 10(3): 369-385. https://doi.org/10.1108/JFEP-11-2016-0073

[5] OZTURK I., 和 ULLAH S. 数字普惠金融对“在线商业登记面试”经济体的经济增长和环境可持续性有影响吗？实证分析。资源、保护和回收, 2022, 185: 106489. https://doi.org/10.1016/j.resconrec.2022.106489

[6] KOULADOUM J. C., WIRAJING M. A. K., 和 NCHOFOUNG T. N. 撒哈拉以南非洲的数字技术和金融普惠。电讯政策, 2022 , 46(9): 102387. https://doi.org/10.1016/j.telpol.2022.102387

[7] METAWEA M. S. 金融机构在支持创业成功方面的作用：埃及案例。美国商业与运筹学杂志, 2020, 1(1): 36-51. http://dx.doi.org/10.5281/zenodo.3733841

[8] LAKUMA C. P., MARTY R., 和 MUHUMUZA F. 乌干达的普惠金融和微型、小型和中型企业的增长。创新创业杂志, 2019, 8(1): 1-20. https://doi.org/10.1186/s13731-019-0110-2

[9] MPOFU F. Y., 和 MHLANGA D. 非洲第四次工业革命时代的数字普惠金融、数字金融服务税和普惠金融。经济, 2022, 10(8): 184. https://doi.org/10.3390/economies10080184

[10] MBUTOR M. O., 和 UBA I. A. 金融包容性对尼日利亚货币政策的影响。经济与国际金融杂志, 2013, 5(8): 318-326. https://giwps.georgetown.edu/dei-resources/the-impact-of-financial-inclusion-on-monetary-policy-in-nigeria/

[11] ARNER D. W., BUCKLEY R. P., ZETZSCHE D. A., 和 VEIDT R. 可持续性、金融科技和普惠金融。欧洲商业组织法评论, 2020, 21(1): 7-35. https://link.springer.com/article/10.1007/s40804-020-00183-y#citeas

[12] ADUDA J., 和 KALUNDA E. 参考肯尼亚的金融包容性和金融部门稳定性：文献综述。应用金融与银行学报, 2012, 2(6): 95. https://econpapers.repec.org/article/sptapfiba/v_3a2_3ay_3a2012_3ai_3a6_3af_3a2_5f6_5f8.htm

[13] HEALEY J., MOSSER P., ROSEN K., 和 TACHE A. 金融稳定和网络风险的未来。布鲁金斯学会网络安全项目, 2018: 1-18. https://www.brookings.edu/wp-content/uploads/2018/10/Healey-et-al_Financial-Stability-and-Cyber-Risk.pdf

[14] RATNAWATI K. 普惠金融对亚洲经济增长、贫困、收入不平等和金融稳定的影响。亚洲金融、经济与商业杂志, 7(10), 2020: 73-85. https://doi.org/10.13106/jafeb.2020.vol7.no10.073

[15] VO D. H., NGUYEN N. T., 和 VAN L. T. H. 使用银行级数据的亚洲地区金融包容性和稳定性。伊斯坦布尔证交所评论, 2021, 21(1): 36-43. https://doi.org/10.1016/j.bir.2020.06.003

[16] MOHAN D. M. M., RAO P. V. L., CHAKRAVARTHI D. P., 和 RAO D. M. A. 数字印度倡议带来的金融包容性。国际水产科学杂志, 2021, 12(2): 2657-2667. http://www.journal-aquaticscience.com/article_134016_cacbf8e45086d3a37b0cfa71a9bcfcc2.pdf

[17] EZZAHID E., 和 ELOUAOURTI Z. 金融普惠、金融摩擦和经济增长：来自非洲的证据。非洲商业杂志, 2022, 23(3): 731-756. https://doi.org/10.1080/15228916.2021.1926856

[18] BOSE S., SAHA A., KHAN H. Z., 和 ISLAM S. 非财务披露和基于市场的公司绩效：金融包容性的启动。当代会计与经济学杂志, 2017, 13(3): 263-281. https://doi.org/10.1016/j.jcae.2017.09.006

[19] OMOJOLAIBI J. A. 尼日利亚的金融普惠、治理和经济进步：穷人的福利发生了什么变化？阿拉伯商业与管理评论杂志阿曼分会, 2017, 34(93): 1-14. https://www.arabianjbmr.com/pdfs/OM_VOL_6_(7)/3.pdf

[20] TALWAR M., TALWAR S., KAUR P., TRIPATHY N., 和 DHIR A. 在新冠肺炎大流行期间，金融态度是否影响了散户投资者的交易活动？零售与消费者服务杂志, 2021, 58: 102341. https://doi.org/10.1016/j.jretconser.2020.102341

[21] KAISER T., LUSARDI A., MENKHOFF L., 和 URBAN C. 金融教育影响金融知识和下游行为。金融经济学杂志, 2022, 145(2): 255-272. https://doi.org/10.1016/j.jfineco.2021.09.022

[22] NILSEN F. M., RUIZ J. D., 和 TULVE, N. S. 与儿童一般认知能力相关的总体环境压力源的荟萃分析。国际环境研究与公共卫生杂志, 2020, 17(15): 54-51. https://doi.org/10.3390/ijerph17155451

[23] KHAN Z., ALI S., DONG K., 和 LI R. Y. M. 财政分权如何影响二氧化碳排放量？机构和人力资本的作用。能源经济学, 2021, 94: 105060. https://doi.org/10.1016/j.eneco.2020.105060

[24] OSUAFOR G. N., MAPUTLE S. M., 和 AYIGA N. 南非马希肯已婚或同居妇女决定使用现代避孕方法的相关因素。非洲初级卫生保健和家庭医学杂志, 2018, 10(1): 1-7. https://doi.org/10.4102%2Fphcfm.v10i1.1431

[25] LI L. 金融包容性和贫困：相对收入的作用。中国经济评论, 2018, 52: 165-191. https://doi.org/10.1016/j.chieco.2018.07.006

[26] KALAITZAKE M.

中央银行和金融政治权力：对欧洲中央银行的调查。竞争与变革, 2019, 23(3): 221-244. https://doi.org/10.1177/1024529418812690

[27] CHEN W., 和 YUAN X. 中国的普惠金融：概览。中国商业研究前沿, 2021, 15(1): 1-21. https://doi.org/10.1186/s11782-021-00098-6

[28] BABAJIDE A. A., ADEGBOYE F. B., 和 OMANKHANLEN, A. E. 尼日利亚的金融包容性和经济增长。国际经济与金融问题杂志, 2015, 5(3): 629-637. https://www.rsisinternational.org/journals/ijriss/Digital-Library/volume-5-issue-1/323-330.pdf

[29] SAYED M. N., 和 SHUSHA A. 埃及金融包容性的决定因素。亚洲经济金融评论, 2019, 9(12): 1383-1404. https://doi.org/10.5430/ijfr.v11n1p123

[30] AYASH, 和 YOUSEF B. 金融科技对增强银行机构金融包容性的贡献。经济与金融研究杂志, 2021, 8(2): 362-384. https://www.asjp.cerist.dz/en/article/176593

[31] NUGRAHA F. M., TULUNG J. E., 和 ARIE, F. V. 金融知识和金融普惠对万鸦老投资决策的影响。经济、管理、商业和会计研究杂志, 2021, 9(3): 411-418. https://doi.org/10.35794/emba.v9i3.34748

[32] ABOR J. Y., AMIDU M., 和 ISSAHAKU H. 移动电话、普惠金融和包容性增长。非洲商业杂志, 2018, 19(3): 430-453. http://dx.doi.org/10.1080/15228916.2017.1419332

[33] NAUMENKOVA S., MISHCHENKO S., 和 DOROFEIEV D. 数字普惠金融：来自乌克兰的证据。投资管理与金融创新, 2019, 16(3): 194. http://dx.doi.org/10.21511/imfi.16(3).2019.18

[34] SANDERSON A., MUTANDWA L., 和 LE ROUX P. 对金融包容性决定因素的审查。国际经济与金融问题杂志, 2018, 8(3): 1. https://www.econjournals.com/index.php/ijefi/article/view/5458

[35] AKILENG G., LAWINO G. M., 和 NZIBONERA, E. 乌干达金融包容性决定因素的评估。应用金融与银行学报, 2018, 8(4): 47-66. http://www.scienpress.com/Upload/JAFB%2FVol%208_4_4.pdf

[36] KARA A., ZHOU H., 和 ZHOU Y. 通过普惠金融实现联合国的可持续发展目标：对全球融资渠道的系统文献回顾。国际金融分析评论, 2021, 77: 101833. https://doi.org/10.1016/j.irfa.2021.101833

[37] KAMAL A., HUSSAIN T., 和 KHAN M. M. S. 普惠金融和金融稳定的影响：实证和理论回顾。文科与社会科学国际期刊, 2021, 5(1): 510-524. https://ideapublishers.org/index.php/lassij/article/view/304

[38] FOUEJIEU A., SAHAY R., CIHAK M., 和 CHEN S. 金融包容性和不平等：跨国分析。国际贸易与经济发展杂志, 2020, 29(8): 1018-1048. https://doi.org/10.1080/09638199.2020.1785532

[39] POMEROY R., ARANGO C., LOMBOY C. G., 和 BOX S. 建立小规模渔业经济弹性的金融包容性。海洋政策, 2020, 118: 103982. https://doi.org/10.1016/j.marpol.2020.103982

[40] KIMANI P., 和 KISAKA S. 集体投资计划对肯尼亚金融普惠的影响。贫困、投资与发展杂志, 2016, 1(1): 54-73. http://erepository.uonbi.ac.ke:8080/xmlui/handle/123456789/12387

[41] RENZHI N., 和 BAEK Y. J. 普惠金融能否成为有效的缓解措施？来自环境库兹涅茨曲线面板数据分析的证据。金融研究快报, 2020, 37: 101725. https://doi.org/10.1016/j.frl.2020.101725

[42] AJEFU J. B., 和 OGEBE J. O. 尼日利亚家庭的移民汇款和金融包容性。牛津发展研究, 2019, 47(3): 319-335. https://doi.org/10.1080/13600818.2019.1575349

[43] CHATTERJEE A. 普惠金融、信息和通信技术传播以及经济增长：面板数据分析。信息技术促进发展, 2020, 26(3): 607-635. https://doi.org/10.1080/02681102.2020.1734770

[44] SAYDALIYEV H. B., CHIN L., 和 MOHAMED A. 汇款流入与经济发展：金融包容性和人力资本的相互作用。移民与发展, 2022, 11(3): 876-893. https://doi.org/10.1080/21632324.2020.1839215