

## **Revisiting the linkage between financial inclusion and economic growth: Time series evidence from Vietnam**

**Qazi Muhammad Adnan Hye**

Academic Research and Development Wing, Dubai, United Arab Emirates; adnan.econ@gmail.com (Q.M.A.H.).

**Abstract:** Financial inclusion has played a key role in encouraging the development of financial sectors in recent decades. Only a few studies, however, have looked at the linkage between financial inclusion and economic growth. This study examines the impact of financial inclusion on economic growth in Vietnam, utilizing data spanning the period from 2001 to 2021. The study uses composite risk, trade openness, and government expenditures as control variables. The study follows the access to finance theory, which suggests that access to financial services such as credit, savings, and insurance can help promote economic growth and development. The nexus between financial inclusion and economic growth has never been examined in the case of Vietnam, which represents a greater share of global trade and income. Moreover, this study uses trade openness, government expenditures, and the composite risk index as control variables in the empirical model. Hence, the study contributes to the existing literature in some meaningful ways. This study employs the FMOLS method to estimate the long-run coefficients of financial inclusion, trade openness, composite risk, and government expenditures. According to the findings, financial inclusion boosts economic performance. On the contrary, composite risk is negatively related to economic growth. The results of this study suggest that Vietnam must implement policies to improve financial inclusion so as to enhance its economic growth.

**Keywords:** ARDL, Composite risk, Economic growth, Financial inclusion.

### **1. Introduction**

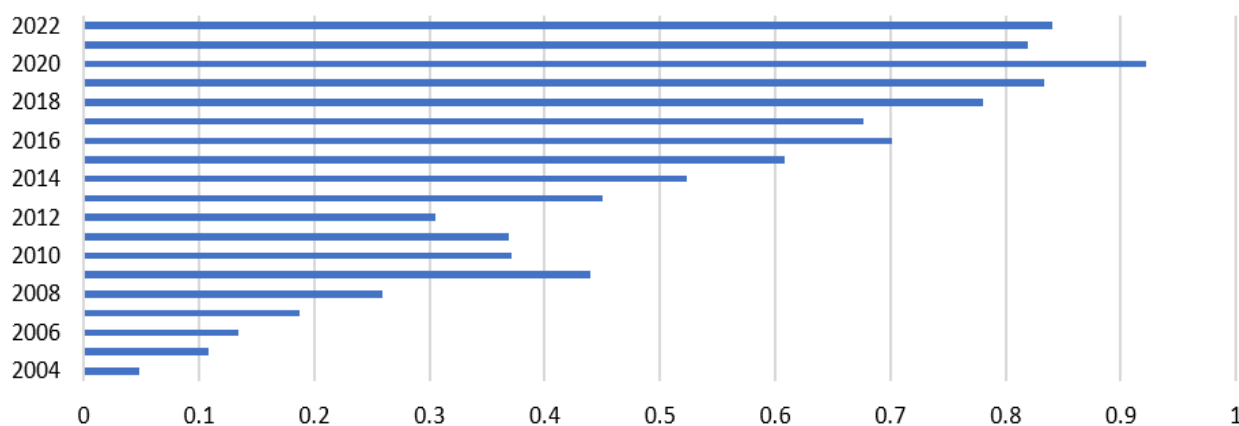
Financial inclusion (hereafter FI) refers to the provision of diverse and affordable financial goods and services to businesses and individuals, regardless of their socio-economic background. It is a crucial component of the financial development process. Sahay, et al. [1]. Kim [2] defines FI as the capacity of a household to access a variety of financial services. In today's society, the extent to which a person's aptitude, political connections, initiative, and social position affect their economic prospects is variable. FI also impacts the capacity to launch a business and pay for college. In addition, it affects an individual's ability to achieve economic goals, altering the wealth gap and its duration between generations. FI can be induced by challenges with prices, access, marketing, and settings, as well as by self-exclusion due to negative experiences or views. Because access to money is a kind of empowerment, it is a crucial component of our efforts to promote sustainable development for the poor and disadvantaged. In order for customers to effectively engage in financial transactions, it is imperative that they possess a certain level of financial knowledge and abilities. Similarly, providers of financial products, services, and advice must have the necessary financial assessment to cater to the needs of these customers. Financial and developmental institutions alike aspire for inclusivity [3].

In Vietnam, the promotion of FI has become a crucial aspect of improving the economic performance of the country. Firstly, by increasing access to credit and financial services, FI can help to promote entrepreneurship and small business development, which in turn can lead to job creation, economic growth, and poverty reduction. Secondly, FI can encourage the savings of individuals, which can

provide a stable source of funding for investment and growth. This, in turn, can lead to increased economic activity and overall economic performance. Moreover, by providing access to insurance, FI can reduce the cost of risks and uncertainties for the economy, such as natural disasters and economic shocks. This can help to maintain stability and encourage investment, which is crucial for sustainable economic growth. In conclusion, the promotion of FI is an important factor in promoting economic performance in Vietnam. By increasing access to credit, savings, and insurance, FI can help to spur entrepreneurship, support economic activity, and promote stability, all of which are crucial for sustained economic growth and development.

Due to its effect on capital distribution, FI would alter the rate of economic growth and labor demand, with repercussions for poverty and wage distribution [4]. A high level of FI is essential to a nation's economic health because it provides credit, risk management goods, insurance, and payment services to individuals with diverse requirements. It enables a comprehensive variety of freely accessible financial services with no costs or non-price obstacles, allowing disadvantaged individuals to benefit because they no longer need to rely on their savings to finance their education or to launch a business in order to pursue growth prospects. Therefore, increased FI leads to increased savings and investment, which ultimately encourages economic growth [5, 6]. According to Sharma [7], social exclusion is a much larger phrase that refers to what can occur when individuals or communities face multiple interrelated challenges, such as unemployment, inadequate skills, high crime rates, inadequate housing, poverty, bad health, and family breakup. Social exclusion results in the establishment of social groupings and divisions; conversely, those who are excluded become scared and suspicious of those who are included, leading to unstable economies. Hence, FI must be evaluated with other social, cultural, and geographical factors [8, 9].

### Financial inclusion index (Availability, accessibility and usage)



**Figure 1.**  
Financial inclusion index.  
**Source:** International Monetary Fund (IMF).

The economy of Vietnam takes several steps to maximize the level of financial inclusion. The economy has increased the number of bank branches over the years. The index value of financial inclusion has increased from 0.047 in 2004 to the highest level of 0.922 in 2020 Figure 1. Nevertheless, the value of the financial index decreased after 2020 and reached 0.841 in 2022. The main reason for the downfall is due to COVID-19 and financial crises.

This endeavor examines the linkage between FI and economic growth in the presence of trade openness, government spending, and the composite risk index in Vietnam over the period of 2001 to 2021. Many stakeholders would benefit from the findings of this investigation. First and foremost, researchers, academics, policymakers, and regulators in Vietnam must uncover the linkage between FI and economic growth. Future finance scholars and academics will benefit from the findings, particularly in terms of FI and its impact on economic growth. Second, financial institutions would profit from this research since it would help them uncover characteristics that would boost their market share and financial efficiency. Third, this study looks into the impact of FI on economic growth in Vietnam.

## 2. Literature Review

The impact of FI on economic growth has been a subject of much research in the past few decades [3, 5, 6, 8-19]. This section begins by discussing the theoretical foundations of the FI-growth nexus. Then follows a comprehensive assessment of empirical studies on this topic. Calculating FI is the topic of the first series of studies. Using the Financial Global Findex dataset, a number of academics formulated a thorough multidimensional computation of FI. Bigirimana and Hongyi [20], Mehrotra and Yetman [21], Ali, et al. [12], Ratnawati [13], Neaime, et al. [14], Sarma [22], Verhoef and Hidden [15], Morgan [5], Kim [2], Dogan, et al. [6], Park and Mercado [16], Ratnawati [17], Sahay, et al. [1], Beck, et al. [23], Polloni-Silva, et al. [8], and Erlando, et al. [9], among others, are the most famous authors in this category of works. These academics created multidimensional and composite indexes of FI. For instance, Sarma [22] constructs a FI index that measures financial deepening. The author observes that the promotion of a broad financial system is a primary policy concern in a number of economies. Studies have found a strong positive relationship between FI and economic performance. For example, one study found that access to credit can help spur entrepreneurship and small business development, which in turn can lead to job creation, economic performance, and poverty reduction [24]. Another study found that microfinance can be an effective tool for poverty reduction and economic performance, as it provides credit to small businesses [16].

Furthermore, the existing literature agrees on the positive linkage between FI and economic performance. FI has been shown to be favorably linked with growth in research. The main concept of the FI-growth nexus is that more FI increases consumers' access to different financial services, resulting in a rise in family income. A well-developed financial sector can help to increase the availability of credit, reduce the cost of borrowing, and provide a stable source of funding for investment and growth. Access to insurance and other financial services can also help individuals and businesses manage risks and uncertainties, such as natural disasters and economic shocks [20]. By reducing the impact of these risks, FI may encourage investment, which can lead to sustained economic performance. A rise in income eventually leads to a rise in output [3, 18, 25-27]. The samples in these studies are primarily from developing countries. These include, for example, Erlando, et al. [9] in the case of eastern Indonesia; Ali, et al. [28] in the case of Pakistan; Ali, et al. [28] in the case of 45 Islamic countries; Gul, et al. [29] in the case of 185 countries; Suidarma [26] in the case of ASEAN economies; Nwafor [30] in the case of Nigeria; Ali, et al. [31] in the case of 45 Organization of Islamic Cooperation economies; Sahu [32] and Dixit and Ghosh [33] in the case of India. Of course, this is not an exhaustive list. Nevertheless, several studies have indicated that the relationship between financial inclusion and economic performance is not consistently linear. For example, Yin, et al. [11] found that FI can adversely affect economic performance if the financial sector is not well-regulated. Another study found that the effects of FI on economic performance may be limited in countries with weak institutions and a lack of infrastructure Ali, et al. [12]. Nwafor [30] discovers the factors that determine FI. The primary objective of this study is to determine what factors influence Kenyans' use of mobile banking services. In addition, the survey sampled Nairobi's primary business sector. The usage of financial services, mobile payments, and mobile banking by individuals is influenced by criteria such as education, gender, and wealth, as well as service tariffs and transaction volume.

The third category of studies empirically estimates the impact of FI on the main macroeconomic outcomes [3, 10, 12, 13, 23, 30]. The vast majority of studies demonstrate a robust connection between FI and economic performance. Some investigations support the opposite conclusion. Numerous studies have demonstrated the positive influence of FI on economic performance. In a few studies, the effect of financial development on production growth was examined: Neaime, et al. [14], Verhoef and Hidden [15], Morgan [5], Dogan, et al. [6], Park and Mercado [16], Kim [2], Erlando, et al. [9], Dahiya and Kumar [34], Ali, et al. [28], Ratnawati [17], Sethi and Acharya [35], Van, et al. [18], Sethi and Acharya [35], Bakar and Sulong [36], Ali, et al. [27], Sarma [22], Sahu [32], Vo, et al. [25], Churchill and Marisetty [19], and Polloni-Silva, et al. [8]. Churchill and Marisetty [19], and analyzed the effect of FI on economic performance in different developing and developed nations. According to their research, FI and economic performance have a strong long-term relationship in 31 economies. In addition, researchers discovered a bidirectional relationship between economic performance and FI. Due to the possibility of bidirectional influence, it is difficult to establish a definitive causal nexus between economic performance and FI. In other words, the causation between these two variables can operate in any direction.

As previously mentioned, Lenka and Sharma [37] suggest a unidirectional relationship, whereas [35] research demonstrates a bidirectional association. On the one hand, FI may increase economic performance because, as discussed in the previous section, firms with easy access to financial services and products are better able to meet their financing requirements, resulting in increased economic growth. This is particularly beneficial for sectors dependent on outside finance [14]. Furthermore, FI allows the poor and disadvantaged to invest more in their physical assets and education, thereby lowering the income gap and enhancing economic growth [21]. On the other hand, economic growth can influence FI, as rapid economic expansion often results in quick financial development. For instance, Sarma and Pais [38] study the nexus between economic growth and the development of a comprehensive financial system. These researchers utilized a FI index to determine what factors influence the level of FI in various nations. Their findings demonstrate a connection between FI and human quality. Park and Mercado [16] examined the significance of FI for economic performance, arguing that an increase in FI will reduce farmer indebtedness, which is the major cause of suicide in rural regions, according to their results. It would also speed up India's agricultural innovation, which is a big advantage. Fresh agriculture required additional working capital, making it a venture with high capital intensity. Therefore, modern seeds, fertilizers, and machinery are necessary. Farmers should be incentivized to adopt cutting-edge technologies as soon as feasible, as greater FI equals improved production tools for farmers. In addition, research is conducted to determine how FI influences other economic factors. Dogan, et al. [6] demonstrate that social exclusion is the ancestor of financial exclusion, highlighting the significance of FI in facilitating complete economic growth. In addition, the study suggests that to increase FI, both usage and access must be improved.

In conclusion, FI has garnered considerable attention in the literature. In the literature, there are three major research strands: (1) FI measurement, (2) factors of FI, and (3) FI and key macroeconomic indicators. The majority of studies in the third literature tier concentrated on the effects of FI on economic performance manipulation. The bulk of academic studies concur that FI promotes economic performance. Higher FI makes a variety of financial products (such as credit and insurance) more available to customers, leading to an increase in household income. Increased revenue leads to increased output. Therefore, increasing FI may result in more inclusive economic growth. Moreover, a well-functioning financial system helps households get low-cost capital for their enterprises, allowing them to expand their production and, consequently, increase their consumption. The objective of this study is to analyze the impact of FI on the economic growth of Vietnam. The majority of previous studies included samples from developing nations. Vietnam's economy has demonstrated tremendous growth in recent years. To sum up, the literature suggests that the relationship between these two variables is complex and may depend on a number of factors, such as regulation, institutions, and infrastructure. Further research is needed to fully understand the dynamics of FI and to determine the best ways to

promote FI for maximum economic benefit. The theoretical input of this study lies in identifying the linkage between FI and output in the presence of trade openness, government expenditures, and the composite risk index. This study contributes to the existing literature in some meaningful ways: First, the nexus between FI and economic growth has never been examined in the case of Vietnam, which represents a greater share of global trade and income. Moreover, this study uses trade openness, government expenditures, and the composite risk index as control variables in the empirical model.

### 3. Methodology

#### 3.1. Theoretical Background

This study follows the access to finance theory, which suggests that access to financial services such as credit, savings, and insurance can help promote economic growth and development. By providing individuals and businesses with access to finance, they can invest in productive activities, create jobs, and increase their income, which can lead to overall economic growth. The linkage between FI and economic performance can also be traced in the microfinance theory, which suggests that FI, particularly through microfinance, can be an effective tool for achieving economic performance. Financial intermediaries promote economic growth by facilitating the movement of funds to firms. Four characteristics distinguish financial intermediaries: First, the categories of their principal liabilities (deposits) are accurate for a long-term investment unrelated to portfolio performance. Second, the duration of their deposits is typically shorter than that of their resources. Ultimately, the extent of their obligations can be verified through market demand. Microfinance can help offer small loans to the deprived, which can help promote entrepreneurship and economic activity. The process ultimately leads to increased economic performance. The primary function of financial intermediaries is to ensure a steady flow of funds from entities with excess funds to those with inadequate funds. The primary function of financial intermediaries is to create unique financial products [39]. These items are manufactured when intermediaries determine that they may be sold at prices that pay their total production expenses (opportunity costs and direct costs). Furthermore, imperfect markets contain financial intermediaries. Therefore, in a perfect market, financial intermediaries cannot exist, as there are no transaction or information costs. Unbalanced information between buyers and sellers is characteristic of markets.

There are informational disparities in the financial markets. Typically, lenders know more about the creditworthiness, sincerity, and honesty of borrowers than the reverse is true. For instance, Leland and Pyle [40] note that lenders have access to a wealth of information regarding entrepreneurs and their financing-seeking enterprises. The financial development theory suggests that financial development, including FI, can improve economic performance. A well-developed financial sector can help to increase the availability of credit, reduce the cost of borrowing, and provide a stable source of funding for investment and growth. The risk management theory suggests that access to insurance and other financial services can help individuals and businesses manage risks and uncertainties, such as natural disasters and economic shocks. By reducing the impact of these risks, FI can promote stability and encourage investment, which can lead to sustained economic growth. It is clear from the preceding discussion that financial intermediaries play a crucial role in encouraging economic growth by distributing funds to businesses seeking financing for their projects. Nonetheless, the question of access cannot be ignored. In numerous developing nations, not all individuals or organizations have equal access to financial intermediaries and their products. Therefore, FI, which improves the public's access to financial intermediaries and their products, should also be regarded as an economic growth element. The topic at hand will be addressed in the next section.

To sum up, the theoretical framework for this research paper will be built on the relationship between FI and economic performance, drawing on access to finance, microfinance, financial development, and risk management theories. The framework will help to explain the mechanisms through which FI can promote economic growth and development in Vietnam and provide a basis for understanding the importance of FI for the economic performance of the country.



### 3.2. Model

To experimentally analyze the connection between FI and economic growth in the presence of trade openness, composite risk, and government expenditures, the basic regression model is:

$$EG_t = \lambda_1 FI_t + \lambda_2 TO_t + \lambda_3 CRI_t + \lambda_4 GE_t + \eta_t \quad (1)$$

Where EG stands for economic growth, FI stands for financial inclusion, TO stands for trade openness, CRI represents the composite risk index, and GE stands for government expenditures. Financial inclusion is measured by the number of individuals who have access to formal financial services. Financial inclusion is measured by the number of individuals who have access to formal financial services.

Following [Kebede, et al. \[41\]](#) we applied principal component analysis (PCA) to construct the financial inclusion index based on eigenvalues and eigenvectors. Financial Inclusion (FI) is an index calculated by utilizing variables such as the institutions of commercial banks, the number of bank branches, the amount of deposits and loans of banks, and the number of ATMs. The data for all indicators of FI is collected from the [International Monetary Fund \[42\]](#). Moreover, the data for TO, government expenditures, and economic growth are collected from the [International Monetary Fund \[42\]](#).

### 3.3. Analytical Techniques

This endeavor uses Narayan and Pop unit root tests to check the stationarity. For this purpose, we use STATA version 14 software. In the next step, the study employs the Bayer and Hanck (BH) method to check the long-run relationship between variables. The BH test combines different cointegration tests. The test equations are given as:

$$EG - J = -2[\ln(P^{EG}) + \ln(P^J)] \quad (2)$$

$$EG - J - Bo - Ba = -2[\ln(P^{EG}) + \ln(P^J) + \ln(P^{Bo}) + \ln(P^{Ba})] \quad (3)$$

Whereas  $P$  is for p-values of each cointegration test.  $EG - J$  and  $EG - J - Bo - Ba$  are critical values.

Next, this study employs the FMOLS method to estimate the long-run coefficients of financial inclusion, trade openness, composite risk, and government expenditures. The FMOLS estimator is asymptotically unbiased and efficient. It is a semi-parametric approach that removes the issues of bias, endogeneity, and correlation between variables [\[43\]](#). To deal with the issues, FMOLS utilizes a lesser degree of freedom than other approaches. This study also employs DOLS and CCR approaches to estimate model 1. The DOLS method uses leads and lags of variables to deal with simultaneity bias.

## 4. Results and Discussion

We find that all variables are integrated of order one. The results of Narayan and Pop are reported in [Table 1](#).

**Table 1.**  
Results of unit root test (Level and trend).

Variables	I(0)	I(1)
EG	-2.026	-4.832***
FI	-2.142	-4.864***
TO	-1.841	-3.85***
CRI	-1.813	-3.731***
GE	-1.626	-3.629***

Note: \*\*\*mean  $p < 0.10$  respectively.

The results of B&H test, presented in [Table 2](#), show that economic growth and its determinants, i.e., FI, trade openness, composite risk, and government expenditures, are cointegrated.

**Table 2.**  
Bayer and Hanck [44] cointegration test.

Test	Test statistics
Banerjee (Ba)	-6.365***
Johansen (JJ)	43.628**
Engle-Granger (EG)	-6.094*
Boswijk (Bo)	34.285***
EG-J	51.175**
EG-J-Ba-Bo	56.439**

Note: \*\*\*, \*\* and \* mean  $p < 0.01, 0.05$  and  $0.10$  respectively.

This study uses FMOLS, DOLS, and CCR methods to test the long-run linkage amongst economic growth, financial inclusion, the composite risk index, trade openness, and government expenditures. The outcomes are presented in Table 3. We find that FI, trade openness, risk, and government expenditures are important variables affecting economic growth in Vietnam. FI positively influences economic growth, which means improvements in FI are beneficial for economic growth.

The main reason behind the positive effect of FI on economic growth is that FI alters the rate of economic growth in Vietnam as a result of its impact on capital distribution, which has repercussions for poverty and wage distribution. A high level of FI is essential to a nation's economic health because it provides credit, risk management products, insurance, and payment services to individuals with diverse requirements. It enables a comprehensive variety of freely accessible financial services with no costs or non-price obstacles, allowing disadvantaged individuals to benefit because they no longer need to rely on their savings to finance their education or to launch a business in order to pursue growth prospects. Thus, a rise in FI leads to an increase in saving and investment, which fosters economic growth, which is typically associated with enhanced macroeconomic performance. According to its statistics, Vietnam's economic performance has also significantly improved over the years. The remarkable success of the Vietnamese economy in generating significant economic development is a result of the improvement of its financial system and other variables. These modifications to the financial system have enhanced the economic growth and development of Vietnam. This study's findings are consistent with those of Kim [2], Erlando, et al. [9], Dahiya and Kumar [34], Ali, et al. [28], Sharma [7], Gul, et al. [29], and Kim, et al. [45]. Sethi and Acharya [35]. In addition, the results demonstrate that trade openness promotes economic growth in Vietnam. Consequently, engaging in trade activities in Vietnam's economy is deemed beneficial and contributes to the country's stronger economic growth. In addition, an increase in the CRI decreases Vietnam's economic growth. This demonstrates that an increase in risk reduces economic growth. Therefore, increasing CRI is not beneficial to economic growth. Moreover, government expenditures contribute to Vietnam's economic growth. In general, increases in government spending would contribute to economic expansion. The findings of this study are consistent with those of Romer [46] and Dollar and Kraay [47].

**Table 3.**  
Long-run results

Variables	FMOLS	DOLS
FI	0.816* [0.307]	0.809*** [0.298]
TO	0.657*** [0.015]	0.642*** [0.082]
CRI	-0.084** [0.004]	-0.076*** [0.023]
GE	0.189*** [0.092]	0.173* [0.074]
Constant	1.145*** [0.216]	1.172*** [0.174]

Note: \*\*\*, \*\* and \* mean  $p < 0.01, 0.05$  and  $0.10$  respectively. [ ] contain standard errors.

The outcomes are shown in Table 4. The results indicate a positive relationship between FI and economic growth, suggesting that advances in FI are advantageous for economic growth. A rise in FI influences investment, leading to a rise in production growth. In addition, an increase in consumer expenditure on durable items would have a greater impact on output. Similarly, trade openness improves Vietnam's economic growth. Hence, participating in commercial endeavors within Vietnam is regarded as advantageous and plays a role in fostering economic growth. In contrast, an increase in the CRI has a negative effect on Vietnam's economic growth. This demonstrates that an increase in risk reduces economic growth. Therefore, increasing CRI is not beneficial to economic growth.

**Table 4.**  
Robustness check: Results of CCR estimator.

Variables	Coefficients
FI	0.799*** [0.217]
TO	0.329*** [0.072]
CRI	-0.068* [0.021]
GE	0.152** [0.048]
Constant	1.195*** [0.162]

**Note:** \*\*\*, \*\* and \* mean  $p < 0.01, 0.05$  and  $0.10$  respectively. [ ] contain standard errors.

## 5. Conclusions and Policy Implications

In today's society, the extent to which a person's aptitude, political connections, initiative, and social position affect their economic prospects is variable. FI also impacts the capacity to launch a business and pay for college. In addition, it affects an individual's ability to achieve economic goals, altering the wealth gap and its duration between generations. This endeavor examines the linkage between FI and economic growth in the presence of trade openness, government spending, and the composite risk index in Vietnam over the period of 2001 to 2021. Using FMOLS, DOLS, and CCR approaches, the results indicate FI enhances growth. Moreover, trade openness and government expenditure also enhance growth. On the contrary, risk is negatively related to economic growth.

These findings are important for Vietnam's economy. In Vietnam, the promotion of FI has become a crucial aspect of improving the economic performance of the country. By increasing access to credit and financial services, FI can help promote entrepreneurship and small business development, which in turn can lead to job creation, economic growth, and poverty reduction. Moreover, FI can encourage the savings of individuals, which can provide a stable source of funding for investment and growth. This, in turn, can lead to increased economic activity and overall economic performance. Moreover, by providing access to insurance, FI can reduce the cost of risks and uncertainties for the economy, such as natural disasters and economic shocks. This can help to maintain stability and encourage investment, which is crucial for sustainable economic growth. In conclusion, the promotion of FI is an important factor in promoting economic performance in Vietnam. By increasing access to credit, savings, and insurance, FI can help to spur entrepreneurship, support economic activity, and promote stability, all of which are crucial for sustained economic growth and development. Low and sensible costs of access to credit reduce the weakness of the poor by improving their living standards. The reasons are as follows: Low-cost credit is beneficial to small-income and feeble groups. With low-cost credit available, these groups can start to plan production activities in rural areas, which leads to a rise in services and production. As a result, such production and service activities in rural areas increase national income, thereby contributing to macro-level growth. Additionally, this phenomenon contributes to the improvement of



the quality of life for marginalized populations by increasing their income levels. Worldwide access to insurance goods and bank deposits enables people and companies to raise funds easily in the financial marketplace, which, in turn, induces people to invest their money in financial system. And the financial market is well capable of distributing these funds to long-term investment plans in the economy. Hence, the financial market reduces liquidity risk for companies by alleviating their shortage of funds through external financing, which will further expand their investment. This process also generates more employment and production, which leads to a rise in the income of the poor. Hence, we conclude that FI is linked with high economic growth in Vietnam.

The results of this study point out that FI is significantly linked to economic performance. Therefore, Vietnam must implement policies to improve FI so as to enhance its economic growth. Considering the complex nature of FI in Vietnam's economy, we should address the diffusion and accessibility problems by implementing reform programs that can enhance access to and usage of better financial goods. Furthermore, they should also put forth initiatives to strengthen people's habits of banking, especially in rural areas. Examples of such initiatives include the latest awareness program for financial literacy in some developing economies. On the other hand, policymakers in Vietnam should also exert efforts to increase government expenditures and improve their trade openness by engaging in more free-trade agreements with other economies in the world. These policy measures should also promote economic growth.

### Funding:

This study received no specific financial support.

### Institutional Review Board Statement:

Not applicable.

### Transparency:

The author confirms that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

### Competing Interests:

The author declares that there are no conflicts of interests regarding the publication of this paper.

### Copyright:

© 2022 by the author. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

### References

- [1] R. Sahay *et al.*, "Financial inclusion: Can it meet multiple macroeconomic goals?," IMF Staff Discussion Notes No. 15/17, International Monetary Fund, Washington, DC, 2015.
- [2] J. H. Kim, "A study on the effect of financial inclusion on the relationship between income inequality and economic growth," *Emerging Markets Finance and Trade*, vol. 52, no. 2, pp. 498–512, 2016. <https://doi.org/10.1080/1540496X.2016.1110467>
- [3] A. A. Babajide, F. B. Adegboye, and A. E. Omarkhanlen, "Financial inclusion and economic growth in Nigeria," *International Journal of Economics and Financial Issues*, vol. 5, no. 3, pp. 629–637, 2015.
- [4] M. Ziolo, B. Z. Filipiak, I. Bąk, K. Cheba, D. M. Tîrca, and I. Novo-Corti, "Finance, sustainability and negative externalities. An overview of the European context," *Sustainability*, vol. 11, no. 15, p. 4249, 2019. <https://doi.org/10.3390/su11154249>
- [5] P. J. Morgan, "Fintech and financial inclusion in Southeast Asia and India," *Asian Economic Policy Review*, vol. 17, no. 2, pp. 183–208, 2022. <https://doi.org/10.1111/aep.12379>
- [6] E. Dogan, M. Madaleno, and D. Taskin, "Financial inclusion and poverty: Evidence from Turkish household survey data," *Applied Economics*, vol. 54, no. 19, pp. 2135–2147, 2022. <https://doi.org/10.1080/00036846.2021.1985076>

- [7] D. Sharma, "Nexus between financial inclusion and economic growth: Evidence from the emerging Indian economy," *Journal of Financial Economic Policy*, vol. 8, no. 1, p. 13e36, 2016. <https://doi.org/10.1108/jfep-01-2015-0004>
- [8] E. Polloni-Silva, N. Da Costa, H. F. Moralles, and S. M. D. Neto, "Does financial inclusion diminish poverty and inequality? A panel data analysis for Latin American countries," *Social Indicators Research*, vol. 158, no. 3, pp. 889–925, 2021. <https://doi.org/10.1007/s11205-021-02730-7>
- [9] A. Erlando, F. D. Riyanto, and S. Masakazu, "Financial inclusion, economic growth, and poverty alleviation: Evidence from Eastern Indonesia," *Heliyon*, vol. 6, no. 10, p. e05235, 2020. <https://doi.org/10.1016/j.heliyon.2020.e05235>
- [10] A. Atkinson and F.-A. Messy, "Promoting financial inclusion through financial education," OECD Working Papers on Finance, Insurance and Private Pensions. No. 34. 2013.
- [11] X. Yin, X. Xu, Q. Chen, and J. Peng, "The sustainable development of financial inclusion: How can monetary policy and economic fundamental interact with it effectively?," *Sustainability*, vol. 11, no. 9, p. 2524, 2019. <https://doi.org/10.3390/su11092524>
- [12] M. Ali, M. I. Nazir, S. H. Hashmi, and W. Ullah, "Financial inclusion, institutional quality and financial development: Empirical evidence from OIC countries," *The Singapore Economic Review*, vol. 67, no. 01, pp. 161–188, 2022. <https://doi.org/10.2139/ssrn.3408639>
- [13] K. Ratnawati, *Financial inclusion and its impact on performance of MSMEs with efficiency and financial flexibility as mediation: Empirical evidence from Malang City. In Contemporary Research on Business and Management*. Boca Raton, FL, USA: CRC Press, 2021.
- [14] S. Neaime, T. Lagoarde-Segot, and I. Gaysset, "Financial inclusion and stability in the MED Region: Evidence from poverty and inequality," FEMISE Research Paper No. FEM44-11, 2019.
- [15] G. Verhoef and K. Hidden, *Savings groups in South Africa. In Redford, D.T. and Verhoef, G. (Ed.) Transforming Africa*. Bingley: Emerald Publishing Limited, 2022, pp. 235–260.
- [16] C.-Y. Park and R. J. Mercado, "Financial inclusion, poverty, and income inequality," *The Singapore Economic Review*, vol. 63, no. 1, pp. 185–206, 2018. <https://doi.org/10.2139/ssrn.2558936>
- [17] K. Ratnawati, "The impact of financial inclusion on economic growth, poverty, income inequality, and financial stability in Asia," *The Journal of Asian Finance, Economics and Business*, vol. 7, no. 10, pp. 73–85, 2020. <https://doi.org/10.13106/jafeb.2020.vol7.no10.073>
- [18] L. T. H. Van, A. T. Vo, N. T. Nguyen, and D. H. Vo, "Financial inclusion and economic growth: International evidence," *Emerging Markets Finance and Trade*, vol. 57, no. 1, pp. 239–263, 2021.
- [19] S. A. Churchill and V. B. Marisetty, "Financial inclusion and poverty: A tale of forty-five thousand households," *Applied Economics*, vol. 52, no. 16, pp. 1777–1788, 2020. <https://doi.org/10.1080/00036846.2019.1678732>
- [20] M. Bigirimana and X. Hongyi, "Research on relationship between financial inclusion and economic growth of Rwanda: Evidence from commercial banks with ARDL approach," *International Journal of Innovation and Economic Development*, vol. 4, no. 1, pp. 7–18, 2018. <https://doi.org/10.18775/ijied.1849-7551-7020.2015.41.2001>
- [21] A. N. Mehrotra and J. Yetman, *Financial inclusion—issues for central banks*. Basel, Switzerland BIS Quarterly Review Bank for International Settlements, 2015.
- [22] M. Sarma, "Index of financial inclusion – A measure of financial sector inclusiveness," Berlin Working Papers on Money, Finance and Trade Development, Working Paper No 07/2012, Berlin, Germany, 2012.
- [23] T. Beck, A. Demirgüç-Kunt, and R. Levine, "Finance, inequality and the poor," *Journal of Economic Growth*, vol. 12, pp. 27–49, 2007. <https://doi.org/10.1007/s10887-007-9010-6>
- [24] S. Ali and Z. K. Malik, "Revisiting economic globalization-led growth: The role of economic opportunities," *Journal of Public Affairs*, vol. 21, no. 2, p. e2193, 2021. <https://doi.org/10.1002/pa.2193>
- [25] A. T. Vo, L. T.-H. Van, D. H. Vo, and M. McAleer, "Financial inclusion and macroeconomic stability in emerging and frontier markets," *Annals of Financial Economics*, vol. 14, no. 02, p. 1950008, 2019. <https://doi.org/10.1142/s2010495219500088>
- [26] I. M. Suidarma, "The nexus between financial inclusion and economic growth in ASEAN," *Jurnal Ekonomi dan Kebijakan*, vol. 12, no. 2, pp. 267–281, 2019. <https://doi.org/10.15294/jejak.v12i2.18747>
- [27] M. Ali, S. H. Hashmi, M. R. Nazir, A. Bilal, and M. I. Nazir, "Does financial inclusion enhance economic growth? Empirical evidence from the IsDB member countries," *International Journal of Finance & Economics*, vol. 26, no. 4, pp. 5235–5258, 2021.
- [28] N. Ali, K. Fatima, and J. Ahmed, "Impact of financial inclusion on economic growth in Pakistan," *Journal of Managerial Sciences*, vol. 13, no. 3, pp. 166–174, 2019.
- [29] F. Gul, M. Usman, and M. T. Majeed, "Financial inclusion and economic growth: A global perspective," *Journal of Business & Economics*, vol. 10, no. 2, pp. 133–152, 2018.
- [30] M. C. Nwafor, "The nexus between financial inclusion and economic growth: Evidence from Nigeria," *International Journal of Science and Innovation in Social Science*, vol. 2, no. 4, pp. 1–7, 2018.
- [31] S. Ali, E. Dogan, F. Chen, and Z. Khan, "International trade and environmental performance in top ten-emitters countries: The role of eco-innovation and renewable energy consumption," *Sustainable Development*, vol. 29, no. 2, pp. 378–387, 2021. <https://doi.org/10.1002/sd.2153>

- [32] Sahu, "Commercial banks, financial inclusion and economic growth in India," *International Journal of Business and Management Invention*, vol. 2, no. 5, pp. 01-06, 2013.
- [33] R. Dixit and M. Ghosh, "Financial inclusion for inclusive growth of India-A study of Indian states," *International Journal of Business Management & Research*, vol. 3, no. 1, pp. 147-156, 2013.
- [34] S. Dahiya and M. Kumar, "Linkage between financial inclusion and economic growth: An empirical study of the emerging Indian economy," *Vision: The Journal of Business Perspective*, vol. 24, no. 2, pp. 184-193, 2020. <https://doi.org/10.1177/0972262920923891>
- [35] D. Sethi and D. Acharya, "Financial inclusion and economic growth linkage: Some cross country evidence," *Journal of Financial Economic Policy*, vol. 10, no. 3, pp. 369-385, 2018. <https://doi.org/10.1108/jfep-11-2016-0073>
- [36] H. O. Bakar and Z. Sulong, "The role of financial inclusion on economic growth: Theoretical and empirical literature review analysis," *Journal of Business & Financial Affairs*, vol. 7, no. 356, p. 2167, 2018. <https://doi.org/10.4172/2167-0234.1000356>
- [37] S. K. Lenka and R. Sharma, "Does financial inclusion spur economic growth in India?," *The Journal of Developing Areas*, vol. 51, no. 3, pp. 215-228, 2017. <https://doi.org/10.1353/jda.2017.0069>
- [38] M. Sarma and J. Pais, "Financial inclusion and development," *Journal of International Development*, vol. 23, no. 5, pp. 613-628, 2011.
- [39] B. Scholtens and D. Van Wensveen, "The theory of financial intermediation: An essay on what it does (not) explain," SUERF Studies. No. 2003/1, 2003.
- [40] H. E. Leland and D. H. Pyle, "Informational asymmetries, financial structure, and financial intermediation," *The Journal of Finance*, vol. 32, no. 2, pp. 371-387, 1977. <https://doi.org/10.2307/2326770>
- [41] J. Kebede, A. Naranpanawa, and S. Selvanathan, "Financial inclusion: Measures and applications to Africa," *Economic Analysis and Policy*, vol. 70, pp. 365-379, 2021. <https://doi.org/10.1016/j.eap.2021.03.008>
- [42] International Monetary Fund, "Dataset," Retrieved: <https://data.imf.org>. 2022.
- [43] B. E. Hansen and P. C. Phillips, "Estimation and inference in models of cointegration: A simulation study," *Advances in Econometrics*, vol. 8, pp. 225-248, 1990.
- [44] C. Bayer and C. Hanck, "Combining non-cointegration tests," *Journal of Time Series Analysis*, vol. 34, no. 1, pp. 83-95, 2013.
- [45] D.-W. Kim, J.-S. Yu, and M. K. Hassan, "Financial inclusion and economic growth in OIC countries," *Research in International Business and Finance*, vol. 43, pp. 1-14, 2018. <https://doi.org/10.1016/j.ribaf.2017.07.178>
- [46] P. M. Romer, "Endogenous technological change," *Journal of Political Economics*, vol. 98, no. 5, Part 2, pp. 71-102, 1990. <http://dx.doi.org/10.1086/261725>
- [47] D. Dollar and A. Kraay, "Growth is good for the poor," *Journal of Economic Growth*, vol. 7, pp. 195-225, 2002. <https://doi.org/10.1023/a:1020139631000>