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TOO MUCH OF A GOOD THING? UNCOVERING THE OPTIMAL LEVEL OF FINANCIAL INCLUSION FOR GROWTH

EXCESSO DE ALGO BOM? DESCOBRINDO O NÍVEL IDEAL DE INCLUSÃO FINANCEIRA PARA O CRESCIMENTO

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Abstract
This study investigates the nonlinear effect of financial inclusion on economic growth using a balanced panel of 54 countries from 2004 to 2023. A multidimensional financial inclusion index is constructed using principal component analysis to capture both supply side and demand side dimensions of access. Employing the dynamic system GMM estimator, the analysis addresses potential endogeneity, persistence and unobserved heterogeneity. The results reveal an inverted U shaped relationship between financial inclusion and economic growth. Financial inclusion has a positive and significant effect at lower levels, but its marginal impact declines and eventually becomes negative once a threshold level is exceeded. The estimated turning point is 27.8, indicating that financial inclusion promotes growth only up to this level. Vietnam's financial inclusion level of 21.5 places it below the threshold, implying that further expansion in financial access can still yield growth enhancing benefits if accompanied by appropriate regulation and consumer protection. The study highlights the need for policymakers to balance the expansion of financial services with effective supervision to avoid excessive lending and financial instability. Overall, the findings underscore that financial inclusion is beneficial, but only when managed in a sustainable and well regulated manner.

Resumo
Este estudo investiga o efeito não linear da inclusão financeira no crescimento econômico, utilizando um painel balanceado de 54 países, de 2004 a 2023. Um índice multidimensional de inclusão financeira é construído por meio de análise de componentes principais para capturar as dimensões de acesso tanto do lado da oferta quanto do lado da demanda. Empregando o estimador GMM de sistema dinâmico, a análise aborda a potencial endogeneidade, persistência e heterogeneidade não observada. Os resultados revelam uma relação em forma de U invertido entre inclusão financeira e crescimento econômico. A inclusão financeira tem um efeito positivo e significativo em níveis mais baixos, mas seu impacto marginal diminui e eventualmente se torna negativo quando um nível limite é ultrapassado. O ponto de inflexão estimado é 27,8, indicando que a inclusão financeira promove o crescimento apenas até esse nível. O nível de inclusão financeira do Vietnã, de 21,5, o coloca abaixo do limite, o que implica que uma maior expansão do acesso financeiro ainda pode gerar benefícios que impulsionam o crescimento, se acompanhada de regulamentação adequada e proteção ao consumidor. O estudo destaca a necessidade de os formuladores de políticas equilibrarem a expansão dos serviços financeiros com uma supervisão eficaz para evitar empréstimos excessivos e instabilidade

Keywords: Financial Inclusion. Economic Growth. Nonlinear Effects. System GMM. Threshold Estimation.

financeira. Em geral, os resultados reforçam a ideia de que a inclusão financeira é benéfica, mas apenas quando gerida de forma sustentável e bem regulamentada.

Palavras-chave: *Inclusão Financeira. Crescimento Econômico. Efeitos não Lineares. GMM de Sistema. Estimação de Limiar.*

1 GIỚI THIỆU

Since the early years of the twenty first century, the idea of financial inclusion has attracted the attention of governments and central banks around the world because of its perceived role in promoting economic development (Arya, 2014). A growing body of evidence suggests that financial inclusion supports economic expansion by improving access to credit, encouraging savings, and facilitating broader participation in the financial system (Erlando *et al*., 2020; Kim *et al*., 2018; Lenka and Sharma, 2017; Shen *et al*., 2021). According to the World Bank (2008), a ten percent increase in financial inclusion can raise GDP per capita by approximately zero point three percent (Demirguc Kunt *et al*., 2018). Similarly, the International Monetary Fund reports that expanding access to financial services in low income countries can substantially increase GDP per capita (Dabla Norris *et al*., 2015). These findings have strengthened the belief among policymakers that expanding financial inclusion will automatically translate into stronger and more sustained economic growth. However, more recent evidence challenges this conventional optimism. Ifediora *et al*. (2022) show that financial inclusion can produce negative effects on economic development, particularly when expansion exceeds the institutional or absorptive capacity of the economy. Other studies also document that the positive effect of financial inclusion holds only up to a certain threshold, beyond which the effect reverses and becomes harmful to growth (Albiman and Bakar, 2021; Karim *et al*., 2022; Nizam, Abdul Karim, *et al*., 2020; Nizam, Karim, *et al*., 2020). This pattern suggests that the relationship between access to financial services and economic growth is not a simple linear process. Instead, it shifts depending on structural conditions, demand side behavior, and the ability of economies to manage rapid financial deepening without generating instability. These insights indicate that the expansion of financial inclusion can promote economic growth at early stages of development, but once the system becomes saturated or poorly regulated, excessive access to credit, rising household

leverage, and weak financial literacy can generate systemic vulnerabilities that ultimately undermine growth.

In recent years, more than two billion people worldwide have remained financially excluded. Low income households in rural areas and financially disadvantaged groups continue to lack access to affordable financial services, even though such access is essential for improving their economic prospects (Chibba, 2009). Financial inclusion has therefore become a central policy objective for many countries, and a growing body of research highlights its importance in stimulating economic growth while also helping to reduce income inequality (World Bank, 2013). As financial inclusion expands, the increasing presence of financial institutions makes it easier for individuals and firms to obtain financial services. This, in turn, eases liquidity constraints, lowers external financing barriers, and enables firms to expand production and investment, thereby supporting broader economic activity and accelerating growth. Moreover, when a larger share of the population gains access to formal savings, investment opportunities, and credit, households are better able to smooth consumption, accumulate assets, and invest in human capital. These mechanisms not only foster economic participation but also contribute to a more equitable distribution of income across society (Demirguc Kunt *et al*., 2015). Yet the long term effects of financial inclusion are more complex than they initially appear. Rapid and extensive expansion of credit and financial services can, over time, place upward pressure on prices, raise production costs, and distort financial flows. In several advanced economies such as the United States, Japan, and Canada, the combination of widespread financial penetration and overheated production sectors has historically contributed to inflationary pressures and financial imbalances. Under such conditions, even a small additional increase in financial access can push the economy beyond its optimal threshold, triggering instability and leading to prolonged economic downturns. This experience underscores a broader insight: while financial inclusion may stimulate growth in its early stages, excessive or poorly managed expansion can eventually weaken economic performance once the threshold is exceeded.

Given the above discussion, examining the nonlinear effect of financial inclusion on economic growth becomes essential. In the case of Vietnam, the Prime Minister approved Decision 149/QD TTg on 22 January 2020, which established the National Financial Inclusion Strategy to 2025 with an orientation toward 2030. After more than three years of implementation, the strategy has achieved notable progress in strengthening

the legal framework and expanding the financial infrastructure. However, significant challenges remain. Many innovative financial products and services are emerging faster than the regulatory framework can accommodate, leaving gaps in supervision and consumer protection. Access to formal financial services is still limited for the poor, low income households and communities in rural and remote areas, particularly with respect to digital financial services that require adequate connectivity, literacy and trust. Furthermore, the branch networks of credit institutions remain concentrated in urban centers, with relatively weak coverage in rural regions and mountainous areas. Against this backdrop, the present study investigates the nonlinear relationship between financial inclusion and economic growth across countries worldwide. It identifies the threshold at which financial inclusion shifts from being growth enhancing to growth reducing, and then assesses where Vietnam currently stands relative to this threshold. This allows the study to propose targeted policy recommendations that align with Vietnam's position and development priorities.

Before closing the introduction, the structure of the paper is outlined as follows. Section 2 reviews the theoretical background and related literature. Section 3 describes the data and methodology. Section 4 presents and discusses the empirical results. Section 5 offers policy implications.

2 LITERATURE REVIEW

2.1 Theoretical foundations of the impact of financial inclusion on economic growth

In recent years, policy priorities have shifted from traditional financial development toward broader financial inclusion (Johnson and Arnold, 2012). Classical financial theories, notably those of Schumpeter (1983), Shaw (1973) and McKinnon (1982), emphasize that the financial sector plays a central role in explaining patterns of economic growth. By allocating scarce resources and providing affordable financial services, the financial system facilitates productive investment and enhances economic performance (Chen and Yuan, 2021). From this perspective, financial inclusion expands access to credit, savings and insurance, enabling low income households and small firms to invest in productive activities such as starting a business or expanding an existing one. These activities can generate employment, raise household income and contribute to

broader economic growth (Demirguc Kunt *et al*., 2015). However, as noted by Cecchetti and Kharroubi (2012), this relationship may not be purely linear. Financial inclusion can promote growth only up to a certain threshold, beyond which the effect may weaken or even turn negative. In countries with low levels of financial development, expanding financial access typically leads to substantial gains because it integrates previously excluded populations into the formal financial system (Demirguc Kunt *et al*., 2018). At higher levels of financial inclusion, however, the positive impact on economic growth begins to diminish. The marginal benefits fall as financial services become widespread, and some individuals may use credit in ways that do not contribute to productive investment. In financially advanced economies such as the United States, Japan and Canada, dense financial networks make credit extremely accessible. While this initially reduces financing constraints and supports business expansion, prolonged periods of rapid credit growth can overheat production and service sectors, generate inflationary pressures and disrupt cash flows within the financial system. Over time, these dynamics can destabilise the real economy and trigger extended downturns. These insights indicate that the relationship between financial inclusion and economic growth is not strictly linear. Instead, it can become nonlinear, where financial inclusion supports growth up to a threshold and becomes detrimental once that threshold is exceeded.

2.2 Review of previous studies

Inoue and Hamori (2016) examined the effect of financial access on economic growth in 37 Sub Saharan African countries from 2004 to 2012 using dynamic panel GMM estimation. They found a positive association between the number of commercial bank branches and real GDP per capita, confirming that greater financial access supports economic expansion in the region. Thomas (2017) investigated the same relationship in eight South Asian economies between 2007 and 2015 and reported that increased financial access raises income levels. The impact was stronger in low income countries than in middle income economies, suggesting that financial inclusion yields larger gains where initial access is limited.

Kim *et al*. (2018) analyzed 55 member countries of the Organisation of Islamic Cooperation using dynamic panel estimation, vector autoregression, impulse response functions and panel Granger causality tests. The results demonstrated a consistent positive

effect of financial inclusion on economic growth. Similarly, Malinda and Maya (2018) assessed 11 countries from 2007 to 2016 using pooled regression and Granger causality tests, showing a long run relationship between financial inclusion and economic growth.

Sethi and Acharya (2018) evaluated 31 developed and developing countries from 2004 to 2010 using fixed effects, random effects, time fixed effects, panel cointegration and panel causality models. Their results revealed a positive long run relationship between financial inclusion and economic growth, along with bidirectional causality. They concluded that promoting financial inclusion is essential for sustaining long term economic performance.

Inoue and Hamori (2019) expanded their earlier work by analyzing 168 developing countries from 2004 to 2014 using the difference GMM estimator. They found that improved access to formal financial services—measured through the number of bank branches—positively affects real GDP per capita. Makina and Walle (2019), focusing on 42 African countries from 2004 to 2014, reached a similar conclusion using system GMM: financial inclusion, measured as the number of commercial bank branches per 100,000 adults, has a significant positive effect on economic growth.

Collectively, these studies confirm that financial inclusion can stimulate economic growth. However, the findings also vary across regions, methods and income levels, indicating no universal pattern. Existing research primarily examines linear effects and focuses on either positive or negative influences independently. Importantly, no study has explicitly tested whether the relationship between financial inclusion and economic growth is nonlinear, partly due to the high degree of correlation among financial inclusion indicators.

This study addresses that gap by investigating the nonlinear effect of financial inclusion on economic growth and estimating the threshold at which the effect changes direction. Furthermore, no previous research has computed such a threshold for Vietnam or evaluated whether Vietnam currently lies below or above that level. By filling these gaps, the present study provides new empirical evidence and policy insights tailored to Vietnam’s financial inclusion strategy.

3 DESCRIPTION OF RESEARCH VARIABLES AND DATA

3.1 Research variables

Based on the theoretical framework and prior empirical studies, the variables used to examine the impact of financial inclusion on economic growth are defined as follows.

Economic growth (GDP):

Following Karim *et al*. (2022), Albiman and Bakar (2021), Ifediora *et al*. (2022) and Soava *et al*. (2020), economic growth is measured as GDP per capita. This indicator reflects the overall level of economic performance and serves as the dependent variable in the analysis.

Financial inclusion (FI):

Drawing on previous studies such as Karim *et al*. (2022) and Albiman and Bakar (2021), financial inclusion is constructed from six indicators representing both demand side and supply side dimensions:

Demand side indicators:

1. Outstanding loans at commercial banks (FI1);
2. Outstanding deposits at commercial banks (FI2).
3. Supply side indicators:
4. Number of commercial bank branches per 1,000 square kilometers (FI3);
5. Number of commercial bank branches per 100,000 adults (FI4);
6. Number of ATMs per 1,000 square kilometers (FI5);
7. Number of ATMs per 100,000 adults (FI6).

These six indicators capture the breadth and depth of financial access within each country. A composite financial inclusion index is later constructed using principal component analysis to avoid multicollinearity and to represent financial inclusion more comprehensively.

Consistent with prior studies, several macroeconomic and demographic factors are incorporated to account for broader influences on economic growth and to isolate the effect of financial inclusion. Inflation (INF) captures the annual change in the general price level, reflecting macroeconomic stability (Karim *et al*., 2022; Ifediora *et al*., 2022). Urbanization (UR), measured as the share of the population living in urban areas, represents structural transformation and the concentration of economic activity (Li *et al*.,

2022). Population growth (POP) denotes the annual rate of population change, which may influence labor supply and domestic demand (Karim *et al*., 2022). Trade openness (OPEN), calculated as the ratio of total trade to GDP, reflects the degree of integration into global markets (Sethi and Acharya, 2018; Karim *et al*., 2022). Unemployment (UNE), defined as the proportion of the labor force without employment, serves as an indicator of labor market conditions (Karim *et al*., 2022). All variables are obtained from the World Bank's World Development Indicators and the IMF Financial Access Survey to ensure consistency and cross country comparability.

Research model:

$$\mathrm{GDP}_{i,t} = \beta_o + \beta_1 GDP_{i,t-1} + \beta_2 FI_{i,t} + \beta_3 FI^2{}_{i,t} + \beta_x X_{i,t} + \varepsilon_{i,t} \quad (1)$$

where:

$X_{i,t}$ is a vector of control variables capturing macroeconomic and demographic characteristics. The indices: i = 1, 2, … N; t = 1, 2, … T denote country and time, respectively.

This specification allows financial inclusion to exhibit both linear and nonlinear effects on economic growth through the inclusion of the squared term FI^2. A positive value of β_2 combined with a negative value of β_3 would indicate a threshold effect in which financial inclusion promotes growth up to a certain point, beyond which its marginal impact becomes negative. Table 1 provides detailed descriptions of all variables used in the model.

Table 1

Description of Variables in the Model

Variable Name	Symbol	Measurement	Empirical Studies	Source
Main Variables				
Economic growth	GDP	GDP per capita growth	Karim *et al*. (2022); Albiman and Bakar (2021); Ifediora *et al*. (2022); Soava *et al*. (2020)	World Bank
Financial inclusion	FI			
+ Commercial bank branches per 1,000 km²	FI1	Number of bank branches per 1,000 km²	Karim *et al*. (2022); Ifediora *et al*. (2022); Albiman and Bakar (2021)	World Bank; FAS
				World Bank ;FAS
				FAS
+ Commercial bank branches per 100,000 adults	FI2	Number of bank branches per 100,000 adults		World Bank; FAS
+ ATMs per 1,000 km²	FI3	Number of ATMs per 1,000 km²		FAS
+ ATMs per 100,000 adults	FI4	Number of ATMs per 100,000 adults		World Bank; FAS
Control Variables				
Inflation rate	INF	Annual inflation rate	Karim *et al*. (2022); Ifediora *et al*. (2022); Dinh (2025a, 2025b, 2025c, 2025d); Le Quoc (2024)	World Bank
Urbanization rate	UR	Urban population as a share of total population	Li *et al*. (2022), Kim & Le Quoc (2024); Khoi & Dinh (2025); Huy & Dinh (2025a, 2025b); Le Quoc *et al*. (2025); Nguyen Quoc *et al*. (2025)	World Bank
Population growth	POP	Annual population growth rate	Karim *et al*. (2022); Ifediora *et al*. (2022); Oanh & Ha (2025); Quoc *et al*. (2025a, 2025b, 2025c), Quoc & Quoc (2025)	World Bank
Trade openness	OPEN	Ratio of total trade (exports + imports) to GDP	Sethi and Acharya (2018); Karim *et al*. (2022); Ifediora *et al*. (2022); Van & Le Quoc (2024); Van *et al* (2025a, 2025b); Tuyet & Dinh (2025)	World Bank
Unemployment rate	UNE	Share of unemployed individuals in the labor force	Karim *et al*. (2022); Huy & Loan (2022); Huy *et al*. (2024); Huy *et al* (2023a, 2023b), Huy & Tam (2025)	World Bank

Source: Author's compilation

3.2 Research method and data

Financial inclusion cannot be accurately captured by a single indicator, as no single variable reflects its multidimensional nature. Therefore, this study constructs a composite financial inclusion index using the Principal Component Analysis (PCA) method. PCA applies an orthogonal transformation to convert a set of potentially correlated indicators into a smaller set of uncorrelated components, thereby maximizing the explanatory variation in the data and reducing dimensionality. In the regression framework, endogeneity may arise when explanatory variables correlate with the lagged dependent variable or when feedback effects occur among the regressors. Such endogeneity can produce biased and inconsistent coefficient estimates. To address this issue, Arellano and Bond (1991) proposed the difference Generalized Method of Moments (GMM), which is effective in correcting for endogeneity, heteroskedasticity and serial correlation by employing internal instruments derived from appropriately lagged values of the endogenous variables. The instrument set typically includes lagged differences of endogenous regressors and strictly exogenous variables in the model. When the variables exhibit moderate or high persistence, the system GMM estimator provides more efficient results with lower finite sample bias. In this study, population growth (POP) and trade openness (OPEN) are treated as exogenous variables and are used as instruments within the GMM framework. The dataset covers 54 countries over the period 2004–2023. All variables and their definitions are presented in Table 1.

4 RESEARCH FINDINGS AND DISCUSSION

4.1 GMM estimation results

4.1.1 Descriptive statistics

Table 3 presents the descriptive statistics for the key variables used in the analysis for 54 countries during 2004–2023. The average GDP growth rate is 3.1271 percent, but the relatively large standard deviation of 4.8935 indicates substantial variation across countries and over time. This wide dispersion is further reflected in the minimum value of –14.7039, which captures periods of severe economic contraction, and the maximum

value of 33.1197, corresponding to episodes of exceptional economic expansion. Financial inclusion (FI) shows an average value of 21.5833, with a standard deviation of 13.4179, suggesting considerable heterogeneity in financial development among countries. The minimum value of 0.2137 reflects economies with very limited financial access, whereas the maximum value of 46.0175 represents countries with well-established financial infrastructures. This substantial spread highlights the importance of examining whether differences in financial inclusion translate into nonlinear effects on economic growth.

Table 3

Presents the descriptive statistics for all variables used in the analysis for 54 countries over the period 2004–2023

Variable	Mean	Standard Deviation	Minimum	Maximum
GDP	3.1271	4.8935	–14.7039	33.1197
FI	21.5833	13.4179	0.2137	46.0175
INF	5.9875	7.0531	–1.6013	59.4539
UR	61.7259	13.4157	35.2073	95.6315
POP	0.6537	0.7931	–1.1839	2.4235
OPEN	84.7539	24.7257	38.4051	158.3275
UNE	6.8937	3.5239	0.2651	17.3533

Source: Author's calculations.

4.2.2 GMM regression results and discussion

The estimated coefficients on financial inclusion provide clear evidence of a nonlinear relationship between financial inclusion and economic growth. The coefficient on FI is positive and highly significant (0.1568; p = 0.0000), while the squared term FI^2 is negative and also highly significant (–0.0029; p = 0.0000). Taken together, these results imply that financial inclusion exerts a growth enhancing effect at lower levels, but its marginal contribution to growth diminishes as the level of inclusion rises and eventually turns negative beyond a certain point. In other words, the relationship follows an inverted U shaped pattern: expanding financial inclusion initially boosts GDP growth, but after a threshold is reached, further expansion becomes counterproductive. The estimated financial inclusion threshold FI* of 27.8 quantifies this turning point. When FI is below 27.8, the marginal effect of financial inclusion on GDP growth is positive because the linear term dominates the negative curvature introduced by FI^2. In this range,

improvements in financial access relax credit constraints, mobilise savings and enable households and firms to engage in productive investment. However, once FI exceeds 27.8, the negative squared term becomes strong enough to offset the positive linear effect, implying that additional financial inclusion reduces GDP growth. This outcome is consistent with the idea that, in highly saturated financial systems, excessive access to credit can fuel over borrowing, speculative behaviour and misallocation of resources, which eventually undermine macroeconomic performance rather than support it. The comparison between the threshold and the observed position of Vietnam is particularly informative. Vietnam's average financial inclusion level of 21.5 is well below the estimated threshold of 27.8, indicating that the country is still situated on the upward segment of the financial inclusion–growth curve. This suggests that there remains room for Vietnam to expand financial inclusion in a way that continues to support economic growth, provided that the expansion is accompanied by appropriate regulatory oversight, consumer protection and financial literacy policies. At the same time, the existence of a relatively low global threshold serves as a warning that indiscriminate expansion, without regard to credit quality and institutional capacity, could push the system toward the declining segment of the curve in the future. The diagnostic statistics further support the reliability of the GMM estimates. The Sargan test yields a p value of 0.1869, indicating that the over identifying restrictions cannot be rejected and that the chosen instruments are valid as a group. Similarly, the AR(2) test produces a p value of 0.2287, suggesting no evidence of second order serial correlation in the differenced residuals. Together, these diagnostics confirm that the dynamic panel GMM framework is well specified and that the nonlinear effect of financial inclusion on economic growth is not an artefact of model misspecification or weak instruments, but a robust empirical feature of the data.

Table 4

GMM Regression Results

Variable: GDP	**Coefficient**	**p-value**
Cons	0.1287	0.0000***
INF	–0.0413	0.0003***
UR	–0.0485	0.0003***
POP	–0.4127	0.0001***
OPEN	0.0311	0.0000***
UNE	–0.0745	0.0009***
FI	0.1568	0.0000***
FI^2	–0.0029	0.0000***
Sargan test	0.1869	
AR(2) test	0.2287	
Financial inclusion threshold (FI*)	27.8	
Vietnam	21.5	

Source: Author's calculations.

5 CONCLUSION AND POLICY IMPLICATIONS

5.1 Conclusion

This study empirically examined the impact of financial inclusion on economic growth using a dynamic panel GMM approach for 54 countries over the period 2004–2023. By constructing a multidimensional financial inclusion index through principal component analysis, the analysis captured both supply side and demand side aspects of financial access. The findings reveal a clear nonlinear relationship between financial inclusion and economic growth. At lower levels, financial inclusion exerts a strong positive influence on GDP growth by easing credit constraints, expanding access to savings and payments services and supporting productive economic activity. However, the significance of the negative squared term indicates that the growth enhancing effect weakens as financial inclusion rises and eventually turns negative beyond a specific threshold. The estimated turning point of 27.8 confirms that financial inclusion promotes economic growth only up to a certain level, after which additional expansion may undermine growth by increasing risks associated with excessive borrowing, resource misallocation and financial system vulnerabilities. The position of Vietnam, with an average financial inclusion level of 21.5, suggests that the country remains below the global threshold and thus continues to benefit from further expansion in financial access, provided that the process is accompanied by strong regulatory capacity and effective risk

management. The reliability of the results is supported by the diagnostic tests, which validate the instrument set and confirm the absence of serial correlation in the residuals. Overall, the study provides new evidence that financial inclusion is not universally growth enhancing; rather, its impact depends on where a country is positioned relative to the threshold. These findings contribute to the broader literature by highlighting the importance of managing financial inclusion in a balanced and sustainable way rather than assuming that more inclusion is always beneficial.

5.2 Policy implications

The findings provide several important policy implications for countries seeking to leverage financial inclusion as a tool for economic growth. First, because the positive effect of financial inclusion is strongest at low and moderate levels, governments should continue expanding access to formal financial services, particularly in underserved rural, remote and low income communities. Policies that promote broader access to bank accounts, digital payments and basic credit products can stimulate productive investment and support income growth when a country remains below the threshold of 27.8, as is the case for Vietnam. Second, the existence of a threshold implies that financial inclusion must be pursued with caution once the system becomes more saturated. Beyond a certain point, rapid expansion of credit can increase financial fragility, fuel speculative borrowing and weaken resource allocation. Therefore, policymakers should strengthen supervision of credit growth, enhance risk assessment standards and ensure that financial institutions maintain prudent lending practices. Promoting financial literacy, responsible borrowing and consumer protection is also essential to prevent households and small businesses from overextending themselves. Third, countries approaching the threshold should prioritise the quality rather than the quantity of financial inclusion. This includes shifting policy emphasis toward improving credit screening technologies, expanding credit information systems, enhancing digital security and developing diversified savings and insurance products. Such measures ensure that financial inclusion continues to support economic growth without exposing the financial system to unnecessary vulnerabilities. For Vietnam, which is still below the global threshold, the key policy priority is to continue expanding financial access but in a balanced and well-regulated manner. Strengthening digital financial infrastructure, expanding mobile banking,

improving connectivity in rural areas and promoting fintech innovations can help Vietnam move closer to the optimal financial inclusion level. At the same time, Vietnam should proactively prepare regulatory safeguards to manage potential risks as financial inclusion increases, ensuring that expansion remains stable, inclusive and growth enhancing in the long term.

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Authors' Contribution

All authors contributed equally to the development of this article.

Data availability

All datasets relevant to this study's findings are fully available within the article.

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