ORIGINAL PAPER

DOI: 10.26794/2587-5671-2026-30-2-162-171
JEL F43, G10, G20, O11, P20

Investigating the Finance-Growth Nexus: New Evidence from Transition Economies

T.A.N. Nguyen[1], T.T.H. Luong[2]
[1] University of Economics and Law, Ho Chi Minh City, Vietnam;
[1] Vietnam National University, Ho Chi Minh City, Vietnam;
[2] University of Finance — Marketing, Ho Chi Minh City, Vietnam

ABSTRACT

There is abundant literature on the nexus between finance and economic growth while the impact of financial openness and financial development on economic growth is scarce, especially for transition economies. Hence this study aims to investigate this linkage to examine whether financial openness and financial development improve or worsen the economic growth of transition countries. We utilize financial development by broad indicators of both financial institutions and financial market development to present its multifaceted concept. Econometrically, the authors used several estimation techniques for panel data of 27 transition countries over the period 1995–2022. Our empirical findings documented the robust positive impacts of financial openness and financial development on economic growth. Remarkably, this linkage exhibits a stronger effect when we observe financial openness and financial development in combination. Also, while three indicators of financial institutions, including access, depth, and efficiency exert beneficial effects on economic growth, only the financial market depth has a positive impact, and the aggregate financial market index does not. This ambiguous finding exploits the dark sides of financial market development that require further investigations. Our research makes a valuable contribution to the scant extant literature and offers significant implications for transition economies when formulating economic development policies.

Keywords: financial development; financial institution access; financial institution depth; financial institution efficiency; financial market depth; financial market development; financial openness; economic growth; transition economies

For citation: **Nguyen T.A.N., Luong T.T.H. Investigating the finance-growth nexus: New evidence from transition economies. *Finance: Theory and Practice.* 2026;30(2):162-171. DOI: 10.26794/2587-5671-2026-30-2-162-171**

INTRODUCTION

Fostering economic expansion has long been one of a primary concern of decision-makers in transition economies. This is due to the fact that after making the transition to market economies, many nations have a plenty of difficulties in reorganizing their financial systems, enhancing the quality of their institutions, and maintaining a stable macroeconomic environment [1, 2]. There have not been many studies done on the issue of economic growth in the setting of transition nations, despite the fact that it is a popular topic of research in both rich and developing countries. As a result, research into economic growth in transition countries has the potential to make substantial contributions to the current knowledge base.

When a country makes a shift from a centralized economy to a market-based economy, specifically when it is considered to be a transition economy. This shift may have significant effects on financial growth and accessibility. For instance, many nations in transition may have an undeveloped financial industry or one dominated by state-owned institutions. This can slow the economy by making it harder for private companies to get loans and other forms of financing. While transition economies have much to gain from increased openness and financial growth, they may struggle to deal with corruption and political instability [3]. Despite these obstacles, research shows that progress in financial institutions and markets contributes to economic expansion in transition economies. Claessens and van Horen (2014) [4] discovered that the introduction of foreign banks in the banking sector of transition countries can increase competition and efficiency. Demirguc-Kunt and Levine (2008) [3] came to a similar conclusion arguing that policies that broaden people's access to credit and narrow knowledge gaps are good for the economy. When looking at transition economies as a whole, the connection between financial advancement and economic progress is nuanced and contextual. Hence more investigation into the elements that shape this connection in various national settings is required.

Moreover, researchers and policy makers have recently considered other factors which impact on the growth of economies. There are numerous studies that have been conducted with the primary objective of examining the relationship between financial development, trade openness, and economic expansion in different contexts, such as African countries [5], European countries [6], and BRICS nations [7]. However, there has been no consensus to admit the relationship between financial openness, financial development, and economic growth. Moreover, research on the links between financial openness, financial development, and economic growth is sparse, especially in transition countries. Accordingly, to make a contribution to the existing literature, our research aims to investigate the relationship between financial openness, financial development, and economic growth in transition countries. The findings from this research will be significant for policymakers to introduce and implement reforms to ensure that credit and capital could be accessed more easily while the risks of instability and volatility can be minimized.

This research is structured as follows: the literature is discussed in Section 2. In Section 3, data and econometric method are presented. Then data analysis and the outcomes are mentioned in the next section. The final section discusses the conclusion and summarizes the results.

LITERATURE REVIEW

Financial Development and Economic Growth

Numerous theoretical studies have interpreted the channels on how the financial system and financial development contribute to economic growth [8–10]. These researchers acknowledge that the role of financial progress as a motor of economic expansion varies from country to country. Early empirical studies backed the idea that developing countries' financial systems were underdeveloped [9,11], and that financial development played a more significant role in driving economic growth. A well-developed financial sector can aid in the elimination of external financing restrictions, thereby fostering economic growth. Moreover, a number of studies concentrating on developing countries have found a correlation between economic growth and financial development [12–14]. For instance, Guru and Yadav (2019) [15] examined this relationship in the BRICS countries between 1993 and 2014. The study used financial development variables such as banking sector, the value of shares traded on the stock market, and the turnover ratio. Besides, banking sector and stock market indicators stimulate economic development in the BRICS in a complementary manner. This finding contradicts the result of [16], which found the stock market variable to be insignificant. Moreover, the role of financial development in economic growth is also considered in developed economies. Swamy and Dharani (2019) [17] analyzed the non-linear impact of finance on the economic growth of 24 advanced economies from 1983 to 2013. This result validated and supported the findings of [16], but it contradicted the findings of [18]. In addition, Asteriou and Spanos (2019) [19] analyzed financial development and economic growth during the financial crises of 1990–2016. They documented that prior to a crisis, financial development stimulated economic growth, but afterwards a crisis, it inhibited economic growth.

Accordingly, prior research has focused primarily on developed and emerging or developing economies, resulting in a lack of interest in transition economies. Hence emphasizing the need to investigate the effect of financial development on economic growth in current transition countries.

Financial Openness and Economic Growth

In the abundance of literature on financial openness, there are several classifications and indicators that are applied. Generally, the categorization of financial openness includes three groups: de jure, de facto, and hybrid. Their indicators cover the aspects of regulations and governing external transactions. In addition, Quinn et al. (2011) [20] introduced other indicators measuring financial openness. In this review, we are interested in the KAOPEN index created by [21] and the second measure is the financial openness index (FOI) created by [22]. Both of them are comprehensive indexes and it covered a panel of various countries and time periods. The KAOPEN index presents the degree of openness or restrictions of financial transactions conducted at the cross-border level. They captured factors such as exchange rates, capital account and current account restrictions, and export proceeds requirements. Therefore, in this research, we follow the financial openness measurement of [21] and employ the KAOPEN index to measure financial openness. This

is a widely used measure that quantifies the degree of financial openness or capital account openness in countries.

Economists continue to debate the relationship between financial openness and economic development. The question of whether financially more open economies develop more quickly than closed ones as a result of their exposure to global capital markets is a subject of considerable debate. Empirical literature on the relationship between financial openness and economic growth lacks consensus, which may be attributed to various factors. Weaknesses in empirical strategies [23] and sample heterogeneity [24] are possible reasons. Additionally, most studies have focused on the direct effects of financial openness on economic growth, which may have contributed to the lack of agreement. However, recent research has confirmed the importance of financial openness as a factor in economic growth in both developed and developing countries [25, 26]. In addition, for African countries, Ali (2022) [27] stated that the influence of financial liberalization on economic growth is trivial.

As a result, further research into the link between financial openness and financial development is needed to offer persuasive evidence to complete the body of literature in this field, particularly evident pertaining to countries in transition.

DATA, MEASUREMENT OF VARIABLES, AND METHODOLOGY

Data and Measurement of Variables

In this paper, a panel data set for 27 transition countries over the period 1995–2022 is constructed. These countries are selected based on the classification of the International Monetary Fund (IMF) and the availability of data. A list of 27 transition countries is included in the Appendix.

The dependent variable for this research is the economic growth which is measured by the Gross Domestic Product growth rate and collected from the World Bank.

The first explanatory variable is financial openness (KAOPEN). We use the financial openness measurement from [21] and employ the KAOPEN index to measure financial openness. The index takes into account various dimensions of financial openness, such as restrictions on capital flows, exchange rate arrangements, and the presence of controls on foreign exchange transactions. The higher the value of the KAOPEN index, the greater the level of financial openness that a country achieves. The next main explanatory variable is financial development which is measured by financial institution development, and financial markets development from the IMF database.

In addition, based on the research of [28], our models include five control variables: inflation rate (*INF*), labor force participation rate ($LABOR$), household consumption expenditure (HE), government expenditure (GE), and foreign direct investment (INV) (*Table 1*).

DATA SUMMARY DESCRIPTION

Empirical Model and Methodology

The empirical model of this study is specified as follows:

$$EG_{i,t} = \alpha_0 + \beta_1 KAOPEN_{i,t} + \\ + \beta_2 FD_{i,t} + \beta_{3-7} CONTROL_{i,t} + \varepsilon_{i,t} \quad (1)$$

in which, we employ i and t to country i at year t while $\varepsilon_{i,t}$ is an error term. EG is economic growth; $KAOPEN_{i,t}$ is financial openness; $FD_{i,t}$ symbolizes a range of indicators which represent financial development encompassing financial institution access index (FIA), financial institution depth index (FID), financial institution efficiency index (FIE), financial market depth index (FMD), and financial market index (FM). Control variables $(CONTROL)$ include inflation rate *(INF),* labor force participation rate ($LABOR$), household consumption expenditure (HE), government expenditure (GE), and foreign direct investment (INV).

In terms of econometric techniques, this paper first applies Pooled-OLS regression as Equation (1). Then, this paper also employs fixed effects and random effects models to deal with the limitations of the Pooled-OLS method due to the omission of the unobservable elements in each country. In order to capture the dynamic model and deal with of heteroscedasticity, autocorrelation, and endogeneity, this paper uses difference Generalized Method of Moment (GMM) estimation, which was proposed by [29].

EMPIRICAL ANALYSIS AND RESULTS

Financial Openness and Economic Growth

Table 2 presents empirical results of the effect of financial openness and economic growth. The results

Table 1

Presents the Summary Description of Variables

Type of variable	Variable's name	Symbol	Measure	Obs.	Mean	Std. Dev.	Min	Max
Dependent variable	GDP growth	GDP	Annual %	756	4.291	5.073	−29.1	34.5
Main explanatory variables	Financial Openness	KAOPEN	Index	756	0.255	1.472	−1.931	2.334
	Financial institution access	FIA	Ranges from 0 (low quality) to 1 (high quality)	729	0.363	0.245	0.017	0.937
	Financial institution depth	FID		729	0.151	0.113	0.005	0.499
	Financial institution efficiency	FIE		729	0.577	0.139	0.067	0.830
	Financial market depth	FMD		729	0.102	0.124	0.001	0.708
	Financial market index	FM		729	0.148	0.179	0.001	0.701
Control variables	Inflation rate	INF	Annual %	756	15.696	61.382	−8.525	1058.374
	Labor force participation rate	LABOR	% of population ages 15–64	756	69.549	7.332	41.841	83.889
	Household consumption expenditure	HE	% GDP	756	64.134	14.696	33.401	116.618
	Government expenditure	GE	% GDP	756	15.918	4.810	3.461	38.235
	Foreign direct investment inflow	INV	% GDP	756	5.180	6.669	−40.087	61.868

Source: Authors' calculations.

measured by OLS in column 1 indicate that financial openness (KOPEN) has no statistically significant effect while the result of the fixed effect in column 2 poses the negative effect of financial openness on economic growth in transition countries. This negative effect means that when the financial industry becomes more integrated and liberalized, there is a reduction in economic growth. This result is contrary to Eduboah (2024) [30]. However, in the authors of [31] stated that no conclusive empirical evidence has been found to support a strong and consistent positive correlation between financial openness and economic growth. They argued that countries may experience initial short-term gains in economic growth after liberalizing their capital accounts. However, in the medium to long term, they may not sustain faster growth and could even encounter temporary periods of growth reversals. This research observes the data for 28 years from 1995 to 2022. During this relatively long period, the effect of financial openness is ambiguous and might change. Besides, ignoring autocorrelation, heteroscedasticity, and endogeneity in Pooled-OLS and fixed- effects does not lead to robust findings.

In the third column of *Table 2*, the results of difference GMM demonstrate a robust positive linkage between financial openness and economic growth in transition countries. This finding supports the hypothesis that, in transition countries, when the financial sector becomes more engaged with international liberalization and globalization, their economies would be strengthened. Consistently, previous studies have pointed out the positive correlation and concentrated on interpreting the mechanisms through which financial openness can potentially stimulate economic growth. For instance, Eduboah (2024) [30] suggests that financial liberalization facilitates resource allocation, and access to foreign capital for domestic companies. Besides, financial openness provides diversification in investment portfolios, creating higher profitable

investments and boosting growth. Additionally, [32] and [24] demonstrate that financial openness has a positive impact on domestic savings mobilization, investment, and resource allocation, which in turn benefit economic growth. Furthermore, the removal of barriers to the free movement of capital through financial openness is expected to increase foreign capital through technology transfer and digital technologies, increasing credit resources [33]. This aligns with neoclassical theory, which posits that financial openness results in capital transfers from capital-intensive countries to capital-poor ones, fostering economic growth in less affluent nations through a process of convergence. Consequently, financial openness is regarded as a significant engine for promoting economic growth and development. Notably, most transition countries suffered from war replacing the government's regime and restructuring the market-orientation [34]. Therefore, in the process of transition, integration into the global financial system serves as a major objective in order to tighten the gap in the development of countries around the world.

Table 2

Regression Results of Financial Openness and Economic Growth

Variable's name	OLS (1)	Random effects (2)	Difference GMM (3)
GDP_{t-1}	−0.1467	−0.606***	0.044*
KAOPEN	(0.118)	(0.217)	(0.001)
INF	−0.024***	−0.024***	4.112**
LABOR	(0.003)	(0.003)	(2.035)
HE	−0.057**	−0.154***	−0.238*
GE	(0.025)	(0.050)	(0.003)
INV	0.047***	0.045***	0.181*
	(0.013)	(0.023)	(0.002)
	−0.407***	−0.559***	0.241***
	(0.039)	(0.069)	(0.059)
	0.074**	0.096***	0.763***
	(0.025)	(0.026)	(0.146)
			0.195
			(0.168)
Obs.	756	756	702
R−square	0.236	0.207	
Hausman Test		0.024	
Arellano-Bond Test for 2nd order (*P*-value)			0.202
Sargan Test for overid (*P*-value)			0.352
Sargan Test excluding group (*P*-value)			0.296
Difference test of exogenous			0.749

Source: Authors' calculations.

Note: Robust standard errors reported in parenthesis.

***, **, *, significant at the 1%, 5%, and 10% levels respectively.

Financial Development and Economic Growth

Table 3 below presents the regression results of financial development and economic growth. Similar to the results of financial openness estimated by fixed effects methods, the regressions in columns (1) and (2) of *Table 3* provide evidence of a negative and statistical significance effects of the financial institution access index, the financial institution depth index, the financial market depth index, and the financial market index on economic growth. However, the financial institution efficiency index was not found to be statistically significant.

When we apply the GMM method, all five indicators of financial development have a significant impact on economic growth. In particular, financial access, financial depth, the efficiency of financial institutions and the depth of the financial market all have a positive relation with economic growth while the aggregate development of the financial sector is supposed to have a negative effect. Overall, financial development plays an essential role in promoting economic growth in transition countries. Previous literature has extensively discussed the mechanisms by which financial development contributes to economic growth. The development of the financial system is better for mobilizing savings and facilitating the efficient allocation of resources [35]. Also, a more developed financial system also helps to reduce transaction costs and more innovation activities, generating more capital resource and increasing economic growth in transition countries [36]. The positive findings of this paper on transition countries are in line with some studies which have relative similar scope in the number of countries and the period covered such as those by [18] on 29 Sub-Saharan African countries, and those by [19] on 26 European countries.

The contribution of financial development to economic growth is obvious for all countries. However, for transition countries, it becomes more significant. During the onset of the economic transition, establishing viable financial sectors posed significant challenges. The centrally planned

Table 3

Regression Results of Financial Development and Economic Growth

Variable's name	OLS (1)	Random effects (2)	Difference GMM (3)
GDP_{t-1}	−0.676***	− 0.825***	0.316*
FIA	(0.242)	(0.315)	(0.187)
FID	−0.457*	−0.429	2.644**
FIE	(0.250)	(0.323)	(1.259)
FMD	0.199	−0.006	3.701**
FM	(0.719)	(0.767)	(1.739)
INF	−0.743	−0.744**	12.911**
LABOR	(0.280)	(0.294)	(5.427)
HE	0.291	0.443*	5.257**
GE	(0.223)	(0.269)	(2.051)
INV	−0.028***	−0.028***	−0.367**
	(0.005)	(0.003)	(1.788)
	−4.709*	−6.656***	−0.037***
	(1.388)	(2.102)	(0.006)
	−6.327***	−6.152***	2.439*
	(1.554)	(1.241)	(0.366)
	−3634***	−4.114***	15.065*
	(0.689)	(0.735)	(1.464)
	0.078**	0.089***	6.409***
	(0.036)	(0.025)	(0.862)
			0.045*
			(0.021)
Obs.	729	729	702
R−square	0.265	0.262	
Hausman Test		0.053	
Arellano−Bond Test for 2nd order (P−value)			0.414
Sargan Test for overid (P−value)			0.318
Sargan Test excluding group (P−value)			0.295
Difference test of exogenous			0.408

Source: Authors' calculations.

Note: Robust standard errors reported in parenthesis.

***, **, *, significant at the 1%, 5%, and 10% levels respectively.

economies lacked financial systems designed for efficient credit allocation, as their primary role was to support the accounting functions of the economic plan. The transition process faced unique hurdles in creating market-oriented financial systems. Unlike developing economies, where enterprises gradually expand funding sources as they grow, transition economies already have established large enterprises. If the new financial systems do not operate effectively, these enterprises will face sudden disruptions in their previous funding sources. Over the past three decades since 1991, substantial advancements have been made in developing financial systems. These situations highlight the crucial role of financial development for the growth of the economies in transition countries.

However, we might be also concerned about the detrimental effects of the development of financial markets on economic growth as well. The rationale for this concern was discussed in a study conducted by [37], who proposed that the increased development activities in financial markets could contribute to higher levels of systemic risk and the creation of complex financial products [38]. Moreover, researchers have argued that the 2008 financial crisis originated from advanced financial products. A particular study by [19] highlighted that financial development had promoted economic growth in 26 EU countries prior to 2007, but subsequently hindered economic growth after this crisis.

Financial Openness, Financial Development and Economic Growth

After separately analyzing the effects of financial openness and financial development on economic growth, and obtaining baseline results, this paper conducts further steps by grouping two main explanatory variables into one model. Besides, in this part, financial development would be captured in two aspects: financial institutions and the financial market. There are three indices for measuring financial institution development and two indices for financial market development, as mentioned in the measurement of variables. This paper examines the effects of each indicator, in combination with those of financial openness on economic growth. Instead of respectively presenting the results of OLS, fixed effects, random effects and GMM regression, we only focus on the final results of difference GMM and present them in *Table 4*.

In terms of financial institutions, the development of access, depth, and efficiency has a positive relationship with economic growth. However, we have documented higher coefficients compared to the results in *Table 3*. This means that when we take into account the effects of financial openness in the model, the influence of both financial development and financial openness on economic growth in transition countries becomes stronger. In particular, increased financial institution access is represented by an increase in the number of bank branches and automated teller machines (ATMs), facilitating financial transactions at both internal

Table 4

Regression Results of Financial Openness, Financial Development and Economic Growth

	Financial institutions			Financial markets	
Variable's name	**FIA**	**FID**	**FIE**	**FMD**	**FM**
GDP_{t-1}	0.451** (0.207)	0.258** (0.122)	0.105* (0.014)	0.559** (0.233)	0.320** (0.159)
KAOPEN	10.208* (5.953)	2.054* (1.007)	2.071* (1.211)	2.963* (1.627)	1.181* (0.515)
Financial development	4.224* (2.285)	2.688** (1.572)	10.213** (4.874)	10.986** (4.888)	–5.729* (2.981)
INF	Yes	Yes	Yes	Yes	Yes
LABOR	Yes	Yes	Yes	Yes	Yes
HE	Yes	Yes	Yes	Yes	Yes
GE	Yes	Yes	Yes	Yes	Yes
INV	Yes	Yes	Yes	Yes	Yes
Obs.	702	702	702	702	702
AR(2)	0.687	0.134	0.202	0.424	0.162
Sargan Test for override	0.617	0.503	0.509	0.878	0.624
Sargan Test excluding group	0.447	0.364	0.601	0.908	0.777
Difference test of exogenous	0.972	0.993	0.129	0.360	0.151

Source: Authors' calculations.

Note: Robust standard errors reported in parenthesis. ***, **, *, significant at the 1%, 5%, and 10% levels respectively.

and cross-border levels. Together with the expansion of financial services within the context of financial integration, business activity and economic growth is encouraged. Besides, the operation of financial institutions such as pension funds, mutual funds, and insurance deeply mobilizes savings for investment [39]. The openness of the financial system would bring a variety of forms of institutions and sources of financial resources. That generates profit opportunities for financial activities and makes the financial system more efficient and creating an impulse for economic growth in transition countries.

Regarding the financial market, the depth level of the financial market also points out a positive relation with economic growth in terms of financial openness. Obviously, the introduction of the stock and bond market not only diversifies investors' portfolios but also provides capital for business activities in the economy. Financial openness allows the engagement of foreign investors that complementary enrich resources for economic growth [40]. However, the overall index of financial market development also exhibits negative signs of economic growth. That again emphasizes the results in the previous part when we add financial openness to the model. The implication of this case could be interpreted as that we should consider the dark side of the financial market when the financial system is more open. Looking at the Global Financial Crisis of 2007–2008, several researchers have highlighted the distortions caused by securitization and new derivatives. They argue that securitization creates aggressive risk-taking, reduces lending standards, and increases fragility [41]. Additionally, trading credit default swaps (CDS) in the financial markets heightens credit risk [42].

The results of AR(2), and Sargan tests demonstrate that the difference GMM method provides robust and stable results.

CONCLUSION

In this paper, we examine the effect of financial openness and financial development on the economic growth of transition countries. We constructed panel data for 27 transition countries located in Europe and Asia over the period 1995–2022. A highlight point of our work is that previous research tends to proxy financial development by private sector credit, domestic credit, or money supply, these indicators are insufficient in capturing the multifaceted and diverse aspects of financial development. Therefore, we developed a novel comprehensive measure of financial development that includes a broad index covering access to, depth and efficiency of financial institutions and markets.

By investigating individually and combining the effects of financial openness and financial development on economic growth, this paper confirms insightful findings. Firstly, financial openness has a robust positive effect on economic growth in transition countries in both two phases. Secondly, empirical results also highlight the significant positive impact of financial development on economic growth at both financial institutions and financial markets. However, it is important to note that excessive financial market development can introduce systemic risk and complex financial products, potentially impacting economic growth negatively. Considering the impact of financial openness strengthens the effect of financial development and economic growth in transition countries. In other words, when we observe the development of the financial industry in the context of financial integration and liberalization, we see a drive to promote business activities and stimulate economic growth.

This study bridges a gap in the research on economic growth in transition countries and provides valuable academic insights. The paper documents the positive effect of financial openness on economic growth in transition countries, and policymakers can consider integrating in the financial system as an impulse in development programs. The scale of financial system in transition countries is still at a moderate level compared to the world, so increased openness would stimulate foreign capital flows for more productive use. Also, positive effects of financial development on economic growth imply an important role for the financial system as a driver for transition countries whose financial development levels are generally underdeveloped. Therefore, policies aiming to increase a more efficient and robust financial system in both financial institutions and financial markets can induce economic growth in transition countries. Meanwhile, we raise concerns about the development of financial markets that applied policies for this sector should consider mandatory background such as regulatory aspects and financial infrastructure to avoid volatility, which can have a negative effect. With regard to financial openness, it could enlarge the positive impact of financial development and economic growth. Policymakers can use this finding to promote sustainable and comprehensive growth by applying it to their policies. After transition processes, transition economies still face challenges in aligning their policies with the objectives of transitioning to a market economy and integrating into the global economy. Therefore, policies using financial openness as a catalyst for financial development and economic advancement could be implemented in transition countries.

ACKNOWLEDGEMENTS

This research is partly funded by the University of Economics and Law, Vietnam National University, Ho Chi Minh City and is also partly funded by the University of Finance-Marketing, Ho Chi Minh City, Vietnam.

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ABOUT THE AUTHORS

Thi Anh Nhu Nguyen — PhD in Economics, Assoc. Prof., Faculty of Finance and Banking, University of Economics and Law, Ho Chi Minh City, Vietnam; Vietnam National University, Ho Chi Minh City, Vietnam
https://orcid.org/0000-0003-3619-4655
nhunta@uel.edu.vn

Thi Thuy Huong Luong — PhD in Economics, School of Financial and Banking Technology, University of Finance — Marketing, Ho Chi Minh City, Vietnam
https://orcid.org/0009-0007-1525-1004
Corresponding author:
huongltt@gv.ufm.edu.vn@gmail.com

APPENDIX

List of twenty-seven transition countries in this paper: Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Cambodia, China, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kyrgyz Republic, Kazakhstan, Latvia, Lithuania, Moldova, Poland, Laos, Romania, Russia, Slovak Republic, Slovenia, Tajikistan, Ukraine, Uzbekistan, Vietnam.

Conflicts of Interest Statement: The authors have no conflicts of interest to declare.

The article was submitted on 19.04.2024; revised on 23.05.2024 and accepted for publication on 22.11.2025.
The authors read and approved the final version of the manuscript.

Translated by N.I. Sokolova