INDERSCIENCE PUBLISHERS
Linking academia, business and industry through research

International Journal of Economics and Business Research

ISSN online: 1756-9869 - ISSN print: 1756-9850
https://www.inderscience.com/ijebr

Banking development contributes to economic growth and inflation control in Vietnam

Thao Huong Phan, Thao Viet Tran, Trang Mai Tran

DOI: 10.1504/IJEBR.2025.10068799

Article History:

Received:	19 February 2024
Last revised:	24 June 2024
Accepted:	28 June 2024
Published online:	27 January 2025

INDERSCIENCE PUBLISHERS
Linking academia, business and industry through research

International Journal of Economics and Business Research

ISSN online: 1756-9869 - ISSN print: 1756-9850
https://www.inderscience.com/ijebr

Banking development contributes to economic growth and inflation control in Vietnam

Thao Huong Phan, Thao Viet Tran, Trang Mai Tran

DOI: 10.1504/IJEBR.2025.10068799

Article History:

Received:	19 February 2024
Last revised:	24 June 2024
Accepted:	28 June 2024
Published online:	27 January 2025

Banking development contributes to economic growth and inflation control in Vietnam

Thao Huong Phan and Thao Viet Tran

Thuongmai University,
79 Ho Tung Mau, Cau Giay Dis, Ha Noi, Vietnam
Email: thaophandhtm@tmu.edu.vn
Email: tranvietthao@tmu.edu.vn

Trang Mai Tran*

Vietnam Institute of Economics,
Vietnam Academy of Social Sciences,
Ha Noi, 10000, Vietnam
Email: tranmaitrang@iames.gov.vn
*Corresponding author

Abstract: Every nation's banking system, including Vietnam, has always been crucial to its economic growth (EC). Policymakers always believe the proliferation of banks will spur economic expansion, especially in developing countries. The banking system allocates capital effectively, minimising financial risks and avoiding financial shocks to developing economies. In addition to the banking industry's growth, several other factors, such as inflation or trade openness, contribute to GDP development. Therefore, this study examines the connections between trade openness, GDP growth, inflation, and banking development. We use basic variables such as GDP as a stand-in for the rising economy in Vietnam, private domestic credit capital of banks (DCP), inflation rate (INF), and trade openness (TO). The study uses data from 1990–2022 in Vietnam and uses the ARDL model to find short-run and long-run relationships between variables. The estimated results show a positive relationship between the variables in the long and short-term. Based on the research results, some policy suggestions will be made for Vietnam's economic growth and development.

Keywords: financial system; ARDL; bank development; inflation; Vietnam.

Reference to this paper should be made as follows: Phan, T.H., Tran, T.V. and Tran, T.M. (2025) 'Banking development contributes to economic growth and inflation control in Vietnam', *Int. J. Economics and Business Research*, Vol. 29, No. 7, pp.1–16.

Biographical notes: Thao Huong Phan is a Lecturer and researcher from Management Accounting Department at Thuongmai University. She received her Master's in Accounting at Thuongmai University in 2012 and is a currently a Doctor. Her major is in accounting, sustainable development. She has more than 24 international papers in this field. She is interested in financial accounting, management accounting, sustainable development and how to apply them to business management.

Thao Viet Tran is a Lecturer and researcher from Research Administration Department at Thuongmai University. His major is in marco economic, economy management, and business administration. He received his Master's in Accounting at Hanoi National University in 2009 and is currently a Doctor. He has more than 30 international papers in this field. He is interested in marco economic, business administration, economy management, and how to apply them to business management and sustainable development.

Trang Mai Tran works at Vietnam Institute of Economics, specialising in development economics. She focuses on research related to economic growth, poverty reduction, and sustainable development in the Vietnamese context. Her work explores the impact of economic policies on marginalised communities and the role of local economies in national development.

1 Introduction

The connection between financial development and economic expansion is another fascinating topic that economists worldwide frequently discuss. In theory and experiment, there are frequently contrasting and incompatible viewpoints (De Gregorio and Guidotti, 1995). Banking institutions and the financial market are the two most crucial components of the financial system (Thakor, 1996). For economists, the bank-based theory affirms the critical role of commercial banks in EC. For policymakers, financial development is always assumed to promote EC, especially in developing economies. In particular, through the banking system, capital can be allocated efficiently, minimising financial risks and avoiding creating financial shocks to developing economies in monitoring and consulting business activities for businesses and individuals. Banking systems can also reduce the adverse effects of information asymmetry in underdeveloped economies (Bhide, 1993). Supporting Schumpeter's research results, many scholars have continued to validate the significance of banks in particular and the function of financial growth in general, which boosts EC (King and Levine, 1993; Bonin et al., 2014; Arestis et al., 2011; Durusu-Ciftci et al., 2017). However, multiple research studies also demonstrate that economic expansion promotes the growth of the financial sector, such as Awdeh and Hamadi (2018), Hasan and Barua (2015), Liang and Teng (2006), Colombage (2009), Habibullah and Eng (2006) and Odhiambo (2008). According to Lucas and Prescott (1971), financial development is the decisive factor for EC. EC focused on not only labour policies and productivity improvement programs, implementing tax reform, pro-investment, and encouraging exports but also the banking systems. As a result, there are divergent opinions regarding the findings of the connection between EC and financial development in numerous researches.

According to Shangquan (2000), countries worldwide will inevitably pursue economic development trends that involve fostering collaboration and signing up for regional and international trade associations. Coe and Helpman (1995) have acknowledged that trade openness influences EC. TO reflect the degree of transparency to a country's international trade, indicating widespread economic globalisation. Through increased market shares, increased access to advancement, increased spread of technology, and increased competitive pressures, increased trade openness can either positively or negatively affect the productivity of domestic goods producers (Tybout,

2000). On the other hand, Feldkircher and Siklos (2019) suggested that global trade is another significant factor contributing to inflation. This has sparked discussions regarding the results of inflation and trade openness on various financial development and EC levels. Different developed and emerging economies have acknowledged the potential for important effects of INF and TO. Many nations are implementing initiatives to exploit inflation and trade openness as growth drivers. The core objective of macroeconomic strategies in creating countries is to maintain stable inflation while promoting EC (Samimi et al., 2012).

However, more research is needed in Vietnam, a developing economy, to fully understand how banking development and EC relate to trade openness and inflation. Because the stock market is relatively young and the financial system has not yet matured simultaneously, the banking system substantially contributes to the economy in developing countries (Naceur et al., 2008). Meanwhile, most previous studies mainly explored the relationship between financial development and EC in developed economies.

This paper's results will be reliable empirical evidence for managers and policymakers to refer to solutions for banking development, trade openness, and inflation to achieve the goal of EC in Vietnam. The paper provides new empirical evidence on the relationship between banking development and EC in the context of increasing inflation in Vietnam today.

The paper is structured into six sections: Section 1 is the introduction, in which Section 2 is the literature review of studies on banking development with trade openness, bank development with inflation rate, etc. Section 3 is devoted to describing the methodology. Section 4 of the paper presents the study's findings, and after the discussion in Section 5, the authors make some conclusion in Section 6.

2 Literature review

2.1 Banking sector and economic growth

In the literature, empirical studies done by Driscoll and Starik (2004) and Omankhanlen and Mukoro (2012) suggested that bank credits enhance and stimulate growth. Also, studies Antonios (2010) and Murty et al. (2012) revealed that banking sector credit influences growth positively. Other studies such as Johnson (2015) and Ngongang (2015) however, revealed that banking sector credit exerts a negative effect on growth. The development of the banking industry will have a positive impact on economic growth if it reduces the financial constraints of businesses and increases the efficiency of capital allocation for businesses with investment opportunities. Islam and Mozumdar (2007) shows that higher levels of financial development reduce firms' financial constraints. When the level of financial development is high, companies must be able to finance their investments at an appropriate cost of capital. With better access to financial resources more efficient allocation of capital and more effective uses, the development of the banking industry can promote economic growth activities. The role of the banking sector in promoting industrialisation and economic development has been studied in the past. As economic structure tends to become increasingly industrialised when economies develop, the contribution of financial development to industrial development and growth is expected to be different at various stages of economic development.

2.2 Banking sector and trade openness

Researchers are interested in investigating the relationship between financial development and trade openness. By studying TO's impact on financial development, Niroomand et al. (2014) found that trade openness promotes economic development. TO reduces incentives for companies or interest groups that are inhibiting financial development by creating a healthy competitive environment with the participation of external actors to enhance banking and investment activities to help advance financial development. Do and Levchenko (2007) showed that the trade pattern pursued by each country could affect the rate of financial development. Countries with comparative advantages in goods for which the production of these goods is in great demand from external financial support will promote financial development. As for the countries that mainly export goods that do not depend much on external financial support, they will have a slower financial development rate. According to Law (2008), trade openness is critical to fostering financial development. Iyke (2017) identified that trade openness in the West African economy promotes the growth of financial intensification in these nations. Baltagi et al. (2009) found that TO negatively affect financial openness. This implies that a highly closed economy may gain more from trade liberalisation than others.

Aizenman and Noy (2009) discovered a negative correlation between TO and finance. Gries et al. (2009) studied the relationship between finance, TO, and growth in 16 sub-Saharan African countries. They only found evidence indicating that trade openness impacts financial development and that finance stimulates growth through trade openness.

Huang and Temple (2005) have proved that TO encourage financial development in high-income nations. This conclusion is also held by Kim et al. (2012) investigated the connection between financial development, TO, and growth in 63 countries and found that the relationship between TO and economic development depends on the national income level.

Beck (2002) found that financial development strongly impacts the export level and balance of trade for a large-scale manufacturing sector in the economy. He concluded that the degree of financial development plays a significant role in determining global trade patterns. Svaleryd and Vlachos (2005) show that the degree of economic advancement largely influences the pattern of industry specialisation and global commerce. Especially developed countries tend to specialise in industries that depend extensively on outside funding. Niroomand et al. (2014) identified that the financial market and developments, including the banking and stock markets, positively and significantly affect short-and long-term open trade.

Thus, the link between financial growth and TO has emerged in a new direction for industries and economic sectors with better financial access. Developed financial markets can offer a competitive edge to sectors largely dependent on outside financing. An economy with a developed financial system will make it easier for industry and commerce or other industries to access financial resources. Due to the potential risks associated with external shocks and foreign competition, trade openness can increase demand for new financial products. The financial system, in general, and the commercial banking system need to develop and provide more sophisticated and diversified new financial products to hedge and spread risks.

2.3 Banking development and inflation

The influence of inflation is another critical factor that determines bank development through the bank's business performance. Perry (1992) states that whether or not the inflation rate is predictable will determine how inflation affects bank operations. If the effects of inflation are adequately anticipated and interest rates are adjusted appropriately, banks will benefit financially from them. On the contrary, an unexpected increase in inflation will cause cash flow difficulties for borrowers, leading to early loan termination and low bank income from lending. If banks are slow to adjust interest rates, it can cause bank expenses to increase more quickly than bank income. Hoggarth and Chrystal (1998) stated that high inflation can make planning and negotiating loans difficult. Thus, high inflation is related to the cost and income of the bank. Inflation will positively affect profitability if a bank's income grows faster than its expenses.

Boyd et al. (2001) suggest that inflation can affect resource allocation in the financial sector. Inflation increases uncertainty about future repayments and will dampen bank lending to encourage productive economic investment. Because it is challenging for banks to evaluate the success of investment projects when inflation is high, they will prioritise short-term loans and restrict medium-and long-term loans to minimise risks. At that time, bank lending policies will emphasise funding working capital more than project investments. As a result, inflation has altered the actual capital demand of the economy, impacting both banking development and EC. Because high inflation creates uncertainty about prices, interest rates, and currency rates, it might interfere with the operation of financial markets and jeopardise macroeconomic stability. Due to the difficulty in pricing financial instruments, inflation also raises the cost of financial hedging between trade partners. This can obstruct commercial banking and economic development. Rousseau and Wachtel (2002) found that inflation negatively affects financial depth and EC. And the market's information flaws caused by inflation have a negative impact on financial development.

Akbaş (2012), who examined data from 26 Turkish banks between 2005 and 2010, also discovered that inflation had a detrimental impact on the development of the banking sector. The paper has found that inflation and banks' return on assets in Türkiye have a negative relationship. Boyd et al. (2001) discovered a robust negative correlation between the banking industry and inflation in studying the impact of INF on financial performance. Sayilgan and Yildirim (2009) showed that inflation significantly influenced Turkish banks' profitability ratios between 2002–2007. Abdelaziz et al. (2011) studied financial liberalisation and bank efficiency using the REM model's panel data analysis for nine Tunisian banks. They found that inflation had a negative impact on banks from 1980 to 2009. Because if inflation is not predictable and banks do not adjust interest rates, it can lead to bank expenses exceeding revenue, negatively affecting bank profits.

However, besides the negative influence of inflation on banking development, the research has also discovered a favourable effect of inflation on banking development. Studies by Tan and Floros (2012) analysed data from 101 Chinese banks from 2003–2009 using the GMM method to assess how inflation affects banks' profitability in China. Research indicates that bank profitability and inflation have a positive relationship. During the research period, the authors found that inflation created an opportunity for banks to adjust interest rates, increasing revenue faster than costs and positively affecting profits. Sufian (2009) discovered that high inflation favoured Malaysia's bank profitability in 2000–2004. Vong and Chan (2009) used the GLS model

to analyse the data of five Macao banks and found that inflation had a strong and favourable effect on banks' profit from assets in 1993–2007. Flamini et al. (2009) found that inflation positively affected the profitability of 389 banks in 41 sub-Saharan African countries during the 2000s. Audo (2014) explored the relationship between inflation rate and banks' performance in Kenya over the period 2000 to 2009. The results indicated that there is a significant and negative relationship between the inflation rate and banks' performance. In other words, when the inflation rate decreases, the banking sector in Kenya will make more profit and vice versa.

However, in Vietnam, only some studies have evaluated the connection between banking growth and other factors, such as EC, inflation, and trade openness. Most studies are conducted to explore the relationship between financial development and EC in developed economies. Therefore, the results of this paper are challenging to provide policy implications for Vietnam. Thus, this study will contribute to filling the research gap and be empirical evidence for managers to come up with solutions for banking development, trade openness, and inflation to attain the goal – Vietnam's EC.

3 Methodology

3.1 Research model

The research hypothesis of this paper is that the development of banking leads to the development of the economy in the context of inflation and integration in Vietnam. This study uses the ARDL bounds test to determine the connection between banking development and EC. We utilise data from time series in the context of inflation and the deep integration of Vietnam. The model's broad form can be expressed as follows:

$$DCP = f(GRR, INF, TO) \tag{1}$$

In which

- *GRR*: economic growth rate of Vietnam
- *DCP* is domestic credit to the private sector by banks (% of GDP).
- *INF*: is the inflation rate
- *TO*: is the trade openness.

To study the short-run and long-run relationship between the variables *GRR*, *DCP*, *INF*, and *TO,* the study uses the following equation:

$$DCP_{2t} = \beta_0 + \beta_1 GRR + \beta_2 INF + \beta_3 TO + \varepsilon_t \tag{2}$$

In which β_0, β_1, β_2, β_3 are the slope coefficients, ε_t is the time period.

3.1.1 Unit root test (URT)

To satisfy the demands of the analytical model, halting characteristics must be assessed when evaluating data. The URT is used to check the stability of this research data. The hypothesis is a sequence with a unit origin (not fixed). We use the ADF URT to ascertain the integrations. The formula for the URT is described below:

$$\Delta y_t = \mu + \sigma y_{t-1} + \beta_t \sum_{i=1}^{k} d_i \Delta_{yt-i} + e_t$$

In which k shows the lag of variables, σ is the regression coefficient of y_{t-1}, Δy_t is the difference of y_t and e_t is the white noise. The null hypothesis for ADF is that $\sigma = 0$.

3.1.2 Cointegration test

This study uses bound test cointegration to evaluate the connection between EC and bank development. The following equation estimates the long-run cointegration correlation between the variables where ε_t is the white noise, Δ denotes the 1st difference and $t - i$ represents the optimal delay selected according to the criterion AIC. The research hypothesis is:

- H0: $\beta_1 = \beta 2 = \beta 3 = \beta 4 = \beta 5 = \beta 6 = \beta 7 = 0$: no cointegration.
- H1: $\beta_1 = \beta_2 = \beta 3 = \beta 4 = \beta 5 = \beta 6 = \beta 7 = 0$: reject the hypothesis H0.

With the general formula:

$$\Delta DCP_{2t} = \beta_0 + \beta_1 GRR_{t-i} + \beta_2 INF_{t-i} + \beta_3 TO_{t-i} + \sum_{i-1}^{p} \beta_4 DCP_{2t-1} + \sum_{i=1}^{p} \beta_5 GRR_{2t-1} + \sum_{i-1}^{p} \beta_6 TO_{2t-1} + \varepsilon_t$$

3.1.3 Cointegration test using Johansen

The Johansen test method estimates the long-term correlation between the factors. The cointegration technique estimates the long-run relationship between sequences based on trace statistics and peak value statistics. The follow-up statistic that tests the hypothesis of cointegration is as follows:

$$\lambda_{trace} = -N \sum_{i=r+1}^{n} \log(1 - \lambda_i)$$

N represents the number of observations and λ is the degree of the matrix eigenvalues.

3.2 Research data

3.2.1 Bank development (DCP)

According to the International Monetary Fund (2016), measuring the development of financial intermediaries through three indicators is the indicator of financial in all aspects as depth, access, and intermediation to measure financial performance. In this study, the authors use the criterion of the domestic credit ratio of the private sector (DCP: domestic credit to the private sector by banks). This index reflects the credit capital loaned by commercial banks to individuals and businesses in investing in the private sector, production, and business activities. This index is strongly correlated with the income level of the country and is correlated with EC. In addition, this index also reflects the efficiency of using idle money in the economy mobilised in the form of deposits at commercial banks for lending.

3.2.2 Economic growth rate (GRR)

The economic growth rate is the economy's supply of commodities and production capability. Numerous measurements, such as the real GDP growth rate to gauge the nation's overall productivity or real GDP growth per person, were employed in earlier research to measure EC characteristics. The GDP growth rate reflects the economy's production capacity (Andersen and Tarp, 2003).

3.2.3 Trade openness (TO)

According to Beck (2002) and Beck and Levine (2004), trade or export openness is crucial when evaluating the relationship between EC and financial development. Jalil et al. (2010) have demonstrated the importance of TO to EC and financial development in countries, showing that TO positively impacts EC and financial development. Thanks to TO, a country can more easily exploit technology developments via its trading counterparts. In emerging nations, in particular, the transparency of commerce makes it simpler to exchange goods and obtain capital for EC (Yanikkaya, 2003). This indicator is determined by dividing the total exports and imports by GDP.

3.2.4 Inflationary (INF)

The inflation index is measured through the quarterly growth of the consumer price index (year-on-year), and a high increase in this index is a sign of instability in the economy. Inflation impacts both development and bank performance because it will directly impact the amount of money that individuals and businesses in the economy deposit in banks, which will affect the capital available to lend to banks.

The research data is extracted from World Bank data. Variables and data sources are displayed in Table 1.

Table 1 Variables description

Code	*Variable*	*Source*
GRR	GDP growth rate	WDI
DCP	Domestic credit to private sector	WDI
Inf	Inflation	WDI
TO	Trade openness	WDI

4 Results

4.1 Basic statistics

This study conducts data from 1990–2022 and includes 32 observations for each variable selected in the model. Descriptive statistics for the variables are presented in Table 2.

4.2 Unit root test

The results of the URT are presented in Table 3. The test results show that there are two stationary variables at the first difference, DCP, and TO, while the two variables, INF and GRR, are stationary at the 1st difference.

Table 2 Descriptive statistics

Variable	*Obs.*	*Mean*	*Std. dev.*	*Min*	*Max*
INF	32	8.630888	8.81769	1.467487	42.30327
DCP	32	71.5713	33.92582	18.48467	126.3807
TO	32	139.8115	42.31307	66.21227	210.545
GRR	32	6.449357	1.533085	2.56	9.54

Table 3 URT result

Tests	*INF*	*DCP*	*TO*	*GRR*
At level I (0)	–3.521*	–0.479	–0.622	–3.560*
	(–2.994)	(–2.628)	(–2.994)	(–2.994)
First difference I (1)		–5.155*	–6.445*	
		(–2.997)	(–2.997)	

4.3 ARDL bounds test

To be able to implement the ARDL model, the study examines the selection of lagged variables through AIC criteria. The selection results show that lag four is selected in the model (Table 4).

Table 4 Lag order selections

Lag	*LL*	*LR*	*df*	*p*	*FPE*	*AIC*	*HQIC*	*SBIC*
0	–6.94159				0.000037	1.15175	1.1854	1.35058
1	41.7158	97.315	16	0.000	1.0e-06	–2.28587	–2.11762	–1.29173
2	62.0793	40.727	16	0.001	1.0e-06	–2.74519	–2.44234	–0.955724
3	93.9857	63.813	16	0.000	4.8e-07	–4.41954	–3.9821	–1.83476
4	801.3	1414.6*	16	0.000	2.9e-37*	–77.1895*	–76.6174*	–73.8094*

After selecting the appropriate lag (4), by the AIC criteria, the study uses this lag to ascertain cointegration between the variables using the Bounds test. The experimental results for the cointegration test are presented in Table 5. If the F statistic is lower than the critical value series, there is no cointegration; if the F statistic is higher than the UCB series, there is cointegration. In this study, the calculated F value (3.685) is higher than UCB [I_1] (–2.57) at 1% of the critical value.

Table 5 Bounds test

Model	*F-statistic*	*LCB*	*UCB*
log	3.685	2.72	–2.57

4.4 Johansen test

After the Bounds limit test results in 1 cointegration, we check the cointegration relationships by the Johansen test. The results are presented in Table 6. Johansen's test results show one cointegration relationship between the research variables.

Table 6 Johansen cointegration test

Rank	*Params*	*LL*	*Eigenvalue*	*Trace statistic*	*Critical value 5%*
0	20	–287.98285		50.1365	47.21
1	27	–276.18993	0.59633	26.5507	29.68
2	32	–265.74303	0.55229	5.6569	15.41
3	35	–263.15458	0.18054	0.4800	3.76
4	36	–262.91459	0.01829		

4.5 ARDL model

Table 7 presents the long-run equilibrium relationship between the research variables using the ARDL(1,2,0,2) method using ECM. The long-term coefficient estimation results show that inflation, economic development, and TO all positively impact banking development. When inflation increases by 1%, it corresponds to an increase in GDP of 0.22%; when the level of banking development increases by 1%, it leads to a rise in GDP of 0.49%. Similarly, TO also have the effect to increasing GDP, respectively, when TO increases by 1%, it leads to an increase in GDP of 0.42%.

Table 7 Long-run ARDL (1, 2, 0, 2)

Variables	*Coeff.*	*t-stats*	*Prob.*
Constant	7.360215	–0.60	0.05
INf	0.22	0.52	0.02
GRR	0.49	0.57	0.06
TO	0.42	0.57	0.91
Normality	0.87	F-stat (prob.)	292.26
Jarque-Bera	0.85	Adjusted R^2	0.66
R^2			

The adjustment coefficient ECM is necessary to determine the short-run relationship and cointegration between variables. Table 8 presents the short-term results and the impact of the independent variable (INF, GRR, TO) on the dependent variable (DCP) in Vietnam.

Table 8 Short-run dynamics (ARDL approach)

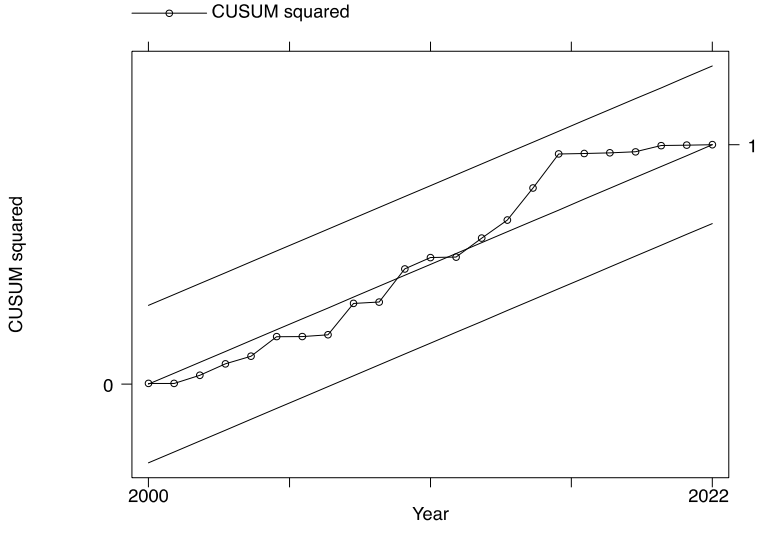
Variables	*Coeff.*	*t-stats*	*Prob.*
ΔDCP	1.4	4.53	0.00
ΔGRR	1.8	2.07	0.06
ΔTO	0.63	0.5	0.06
ΔInf	0.08	1.10	0.02
ECM (–1)	–1.57	–6.35	0.00

The findings indicate that the evolution of the banking sector has a significant positive effect (coefficient 1.8 at the significance level of 5%) on the GDP growth in Vietnam. Similarly, the results show that TO and inflation positively affects banking development in the short-term with significance levels of 1% and 5%.

4.6 Testing for stable model

Cumsum test is used to verify the model's stability during the study period. As shown in Figure 1, the CUSUMQS graph is within the 5% limit, so the model ensures stability.

Figure 1 CusumQ test



5 Discussion

In the short-term, a causal relationship exists between banking development and EC. The results of this study are consistent with the endogenous growth theory and previous studies of Hassan et al. (2011), Demetriades and Hussein (1996), Jenkins and Katırcıoglu (2010). Meanwhile, a causal relationship exists in the long run between EC and banking development. The findings of this study confirm earlier research on the demand-following hypothesis of Awdeh and Hamadi (2018), Liang and Teng (2006), and Habibullah and Eng (2006).

When the economy grows, production and business activities are more dynamic and developed, increasing capital demand to expand and improve production and business activities. At that time, the credit activities of commercial banks were also raised and developed to meet the demand for loans from the economy. Research results also show that TO positively impacts banking development in the long run. This result is consistent with the research results of Zingales and Rajan (2003), Do and Levchenko (2007), Law (2008), and Iyke (2017).

Increased TO means that effective international trade transactions force the government to take policy reform actions under the pressure of international competition. Institutional quality can be improved, reinforcing the trade impacts on general financial and banking development. On the other hand, the short-term negative effects of TO on banking development show that international trade, but weak institutional policies, will be vulnerable to fluctuations in movements and economic shocks of the world.

While TO impacts banking development in the short and long-term, the research results also show the impact of TO on EC in the short time. This shows that Vietnam's economy adheres to classical and endogenous growth theories. Thus, TO contributes to EC in Vietnam. This result is also consistent with the research results of Bojanic (2012), Yavari and Mohseni (2012), and Muhammad et al. (2016). In addition, the study also shows that TO interact with EC, which has contributed to promoting banking development in the long run.

Vietnam's economy is relatively open and proliferating. This results from the policy of opening up and integrating with the world in the context of globalisation. Regarding bilateral relations, Vietnam has developed diplomatic relations with more than 170 nations (Shaari et al., 2022). It is growing its trade relationships with over 230 nations and regions, establishing good relations with all major countries, becoming a comprehensive strategic partner with China, and a strategic partnership with Russia, Japan, India, Korea, the UK, and Spain.

Research results also show that inflation interacts with growth also affects bank development in the long run. When the inflation rate is moderate, it will be a catalyst to bring some benefits to the economy through stimulating consumption and investment, which is a tool to help the Government encourage investment in low-priority areas. Through the extension of credit, it helps to redistribute income and resources in society in targeted directions and a selective period.

6 Conclusions

The growth of the banking industry is an indispensable part of the development of each country, especially in the context that inflation is showing signs of increasing worldwide after the COVID-19 pandemic. Therefore, this study used 28-year time series data to test the relationship between banking growth and economic development, inflation level, and TO. This study used a URT, ARDL test method, and cointegration test to estimate the relationship between variables. The test results show that all variables have a positive relationship and EC thanks to the contribution of growth in the banking industry.

These findings may offer policy implications for the Vietnamese government in developing the banking sector, controlling inflation, and enhancing integration. When focusing on the development of the banking sector, the Vietnamese Government needs to encourage the development of the private sector. The private economy contributes to the dynamic transformation of the Vietnamese economy. The bank can accomplish its corporate objectives and promote effective capital allocation to the economy when it strengthens and broadens its loan policy to finance capital for the private sector. The Bank has maintained the effective implementation of connection programs between banks and businesses and proactively restructured loans to support customers in the event of natural disasters, epidemics, or new loans with suitable lending rates. Consolidate and diversify credit products and develop specific credit programs to support businesses with

convenient and transparent processes and conditions for loans. In particular, when Vietnam's economy is increasingly open to trade, and the ratio of credit to the private sector to GDP is relatively high, the Vietnamese banking system has great potential for risks when it comes to trade. Combined with lessons learned from Malaysia in the study of Jomo (1998), it was found that Malaysian banks did not direct the allocation of resources to manufacturing investment areas in the early 1990s, but instead, Malaysian commercial banks lent money to buy stocks and real estate. This led to a bubble in the real estate sector and triggered much speculative activity in the stock market during the 1997 financial crisis.

Therefore, Vietnam's private sector economy needs to be safe and effective, focusing credit capital for the private sector for borrowing in the critical investment and production sectors to promote EC. The increasing TO help Vietnam exploit the strengths of the domestic economy and take advantage of the world market. Meanwhile, banks have always played an important role in implementing monetary policy to stabilise the macroeconomy. It is essential to meet the capital needs of organisations and individuals for production and business, especially in production, export, agriculture, rural areas, and small and medium enterprises. With such efforts and the ever-expanding TO, Vietnam's economy has achieved outstanding achievements. The increased TO means that import and export activities are increasingly expanding. Export activities increase production value and indirectly promote banking development by expanding the scale of credit in banks, contributing to EC in Vietnam. Higher commercial openness can reduce risks for banks by giving customers more access to different banks and a wider choice of borrowers. Businesses involved in the international trade market will have more favourable access to loans from banks than domestic enterprises because it is easier to demonstrate the loan purpose and financial capacity through higher sales and business cycles due to the advantages of international trade.

Globalisation and increasing TO are challenges for the commercial banking system in Vietnam and other countries. The rapid growth in investment and production activities requires commercial banks to improve their operational capacity to meet the needs of financial and banking services for socio-economic activities. The expansion of scale and improvement of functional capacity have made commercial banks directly face a series of risks surrounding the banking business and possible negative impacts from these risks, such as credit risk and liquidity risk. Therefore, commercial banks must ensure profits from business activities and maintain a safe operation level by international standards and practices. In addition, the State Bank should regularly strengthen inspection and supervision and have specific and robust sanctions to enhance the investment and lending environment of the banks themselves. At the same time, commercial banks must develop a liquidity control and management process to promptly meet their due payment obligations, ensure operational safety, and minimise liquidity risks.

The limitation of this study is that it has yet to analyse the development of banks toward financial stability due to the lack of research data. This is also an expanded research direction for the authors later when we overcome the data search process difficulties.

Acknowledgements

This research is funded by Thuongmai University, Ha Noi, Vietnam.

References

Abdelaziz, H., Mouldi, D. and Helmi, H. (2011) 'Financial liberalization and banking profitability: a panel data analysis for Tunisian banks', *International Journal of Economics and Financial Issues*, Vol. 1, No. 2, pp.19–32.

Aizenman, J. and Noy, I. (2009) 'Endogenous financial and trade openness', *Review of Development Economics*, Vol. 13, No. 2, pp.175–189.

Akbaş, H.E. (2012) 'Determinants of bank profitability: an investigation on Turkish banking sector', *Öneri Dergisi*, Vol. 10, No. 37, pp.103–110.

Andersen, T.B. and Tarp, F. (2003) 'Financial liberalization, financial development and economic growth in LDCs', *Journal of International Development: The Journal of the Development Studies Association*, Vol. 15, No. 2, pp.189–209.

Antonios, A. (2010) 'Stock market and economic growth: an empirical analysis for Germany', *Business and Economics Journal*, Vol. 2010, pp.1–12.

Arestis, P., Demetriades, P.O. and Luintel, K.B. (2011) 'Financial development and economic growth: the role of stock markets', *Journal of Money, Credit and Banking*, Vol. 13, No. 7, pp.16–41.

Audo, P.N. (2014) *The Relationship between Inflation Rates and Liquidity of Commercial Banks in Kenya* [PhD thesis] [online] http://erepository.uonbi.ac.ke/handle/11295/76725.

Awdeh, A. and Hamadi, H. (2018) 'Factors hindering economic development: evidence from the MENA countries', *International Journal of Emerging Markets*, Vol. 14, No. 2, pp.281–299.

Beck, T. (2002) 'Financial development and international trade: is there a link?', *Journal of International Economics*, Vol. 57, No. 1, pp.107–131.

Beck, T. and Levine, R. (2004) 'Stock markets, banks, and growth: panel evidence', *Journal of Banking & Finance*, Vol. 28, No. 3, pp.423–442.

Bhide, A. (1993) 'The hidden costs of stock market liquidity', *Journal of Financial Economics*, Vol. 34, No. 1, pp.31–51.

Bonin, J., Hasan, I. and Wachtel, P. (2014) *Banking in Transition Countries*, 18 March, BOFIT Discussion Paper No. 8/2014, SSRN [online] https://ssrn.com/abstract=2416826 or http://dx.doi.org/10.2139/ssrn.2416826.

Boyd, J.H., Levine, R. and Smith, B.D. (2001) 'The impact of inflation on financial sector performance', *Journal of Monetary Economics*, Vol. 47, No. 2, pp.221–248.

Coe, D.T. and Helpman, E. (1995) 'International R&D spillovers', *European Economic Review*, Vol. 39, No. 5, pp.859–887.

Colombage, S.R. (2009) 'Financial markets and economic performances: Empirical evidence from five industrialized economies', *Research in International Business and Finance*, Vol. 23, No. 3, pp.339–348.

De Gregorio, J. and Guidotti, P.E. (1995) 'Financial development and economic growth', *World Development*, Vol. 23, No. 3, pp.433–448.

Demetriades, P.O. and Hussein, K.A. (1996) 'Does financial development cause economic growth? Time-series evidence from 16 countries', *Journal of Development Economics*, Vol. 51, No. 2, pp.387–411.

Do, Q-T. and Levchenko, A.A. (2007) 'Comparative advantage, demand for external finance, and financial development', *Journal of Financial Economics*, Vol. 86, No. 3, pp.796–834.

Driscoll, C. and Starik, M. (2004) 'The primordial stakeholder: advancing the conceptual consideration of stakeholder status for the natural environment', *Journal of Business Ethics*, Vol. 49, No. 1, pp.55–73, https://doi.org/10.1023/B:BUSI.0000013852.62017.0e.

Durusu-Ciftci, D., Ispir, M.S. and Yetkiner, H. (2017) 'Financial development and economic growth: some theory and more evidence', *Journal of Policy Modeling*, Vol. 39, No. 2, pp.290–306.

Feldkircher, M. and Siklos, P.L. (2019) 'Global inflation dynamics and inflation expectations', *International Review of Economics & Finance*, Vol. 64, pp.217–241, https://doi.org/10.1016/j.iref.2019.06.004.

Flamini, V., McDonald, C.A. and Schumacher, L.B. (2009) *The Determinants of Commercial Bank Profitability in Sub-Saharan Africa*, January, IMF Working Paper No. 09/15, SSRN [online] https://ssrn.com/abstract=1356442.

Gries, T., Kraft, M. and Meierrieks, D. (2009) 'Linkages between financial deepening, trade openness, and economic development: causality evidence from Sub-Saharan Africa', *World Development*, Vol. 37, No. 12, pp.1849–1860.

Habibullah, M.S. and Eng, Y-K. (2006) 'Does financial development cause economic growth? A panel data dynamic analysis for the Asian developing countries', *Journal of the Asia Pacific Economy*, Vol. 11, No. 4, pp.377–393.

Hasan, R. and Barua, S. (2015) 'Financial development and economic growth: evidence from a panel study on South Asian countries', *Asian Economic and Financial Review*, Vol. 5, No. 10, pp.1159–1173.

Hassan, M.K., Sanchez, B. and Yu, J-S. (2011) 'Financial development and economic growth: new evidence from panel data', *The Quarterly Review of Economics and Finance*, Vol. 51, No. 1, pp.88–104.

Huang, Y. and Temple, J.R. (2005) *Does External Trade Promote Financial Development?*, July, CEPR Discussion Paper No. 5150, SSRN [online] https://ssrn.com/abstract=785244.

Islam, S.S. and Mozumdar, A. (2007) 'Financial market development and the importance of internal cash: Evidence from international data', *Journal of Banking & Finance*, Vol. 31, No. 3, pp.641–658.

Iyke, B.N. (2017) 'Does trade openness matter for economic growth in the CEE countries?', *Review of Economic Perspectives*, Vol. 17, No. 1, pp.3–24.

Jalil, A., Feridun, M. and Ma, Y. (2010) 'Finance-growth nexus in China revisited: new evidence from principal components and ARDL bounds tests', *International Review of Economics & Finance*, Vol. 19, No. 2, pp.189–195.

Jenkıns, H.P. and Katırcıoglu, S.T. (2010) 'The bounds test approach for cointegration and causality between financial development, international trade and economic growth: the case of Cyprus', *Applied Economics*, Vol. 42, No. 13, pp.1699–1707.

Johnson, K-A. (2015) 'Analysis of the impact of the economic credits on the inflation and economic growth in Togo', *African Journal of Marketing Management*, Vol. 7, No. 6, pp.69–79.

Jomo, K.S. (1998) 'Financial liberalization, crises, and Malaysian policy responses', *World Development*, Vol. 26, No. 8, pp.1563–1574.

Kim, D-H., Lin, S-C. and Suen, Y-B. (2012) 'The simultaneous evolution of economic growth, financial development, and trade openness*', The Journal of International Trade & Economic Development*, Vol. 21, No. 4, pp.513–537.

King, R.G. and Levine, R. (1993) 'Finance, entrepreneurship and growth', *Journal of Monetary Economics*, Vol. 32, No. 3, pp.513–542.

Law, S.H. (2008) 'Does a country's openness to trade and capital accounts lead to financial development? Evidence from Malaysia', *Asian Economic Journal*, Vol. 22, No. 2, pp.161–177.

Liang, Q. and Teng, J-Z. (2006) 'Financial development and economic growth: evidence from China', *China Economic Review*, Vol. 17, No. 4, pp.395–411.

Lucas Jr, R.E. and Prescott, E.C. (1971) 'Investment under uncertainty', *Econometrica: Journal of the Econometric Society*, pp.659–681.

Muhammad, N., Islam, A.R.M. and Marashdeh, H.A. (2016) 'Financial development and economic growth: an empirical evidence from the GCC countries using static and dynamic panel data', *Journal of Economics and Finance*, Vol. 40, pp.773–791.

Murty, K.S., Sailaja, K. and Demissie, W.M. (2012) 'Macroeconomic determinants of current account deficit in Ethiopia', *ZENITH International Journal of Business Economics & Management Research*, Vol. 2, No. 11, pp.81–96.

Naceur, S.B., Ghazouani, S. and Omran, M. (2008) 'Does stock market liberalization spur financial and economic development in the MENA region?', *Journal of Comparative Economics*, Vol. 36, No. 4, pp.673–693.

Ngongang, E. (2015) 'Financial development and economic growth in Sub-Saharan Africa: a dynamic panel data analysis', *European Journal of Sustainable Development*, Vol. 4, No. 2, pp.369–369.

Niroomand, F., Hajilee, M. and Al Nasser, O.M. (2014) 'Financial market development and trade openness: Evidence from emerging economies', *Applied Economics*, Vol. 46, No. 13, pp.1490–1498.

Odhiambo, N.M. (2008) 'Financial depth, savings and economic growth in Kenya: a dynamic causal linkage', *Economic Modelling*, Vol. 25, No. 4, pp.704–713.

Omankhanlen, A.E. and Mukoro, D.O. (2012) 'Insider perceptions of insider trading and corporate governance at Nigerian banks', *International Journal of Risk and Contingency Management (IJRCM)*, Vol. 1, No. 2, pp.1–15.

Perry, P. (1992) 'Do banks gain or lose from inflation?', *Journal of Retail Banking*, Vol. 14, No. 2, pp.25–31.

Rousseau, P.L. and Wachtel, P. (2002) 'Inflation thresholds and the finance-growth nexus', *Journal of International Money and Finance*, Vol. 21, No. 6, pp.777–793.

Samimi, A.J., Ghaderi, S., Hosseinzadeh, R. and Nademi, Y. (2012) 'Openness and inflation: new empirical panel data evidence', *Economics Letters*, Vol. 117, No. 3, pp.573–577.

Sayilgan, G. and Yildirim, O. (2009) 'Determinants of profitability in Turkish banking sector: 2002-2007', *International Research Journal of Finance and Economics*, Vol. 28, pp.207–214.

Shaari, M.S., Esquivias, M.A., Ridzuan, A.R., Fadzilah Zainal, N. and Sugiharti, L. (2022) 'The impacts of corruption and environmental degradation on foreign direct investment: new evidence from the ASEAN+ 3 countries', *Cogent Economics & Finance,* Vol. 10, No. 1, p.2124734.

Shangquan, G. (2000) 'Economic globalization: trends, risks and risk prevention', *Economic & Social Affairs*, CDP Backround Paper, Vol. 1, pp.1–8.

Sufian, F. (2009) 'Determinants of bank profitability in a developing economy: empirical evidence from the China banking sector', *Journal of Asia-Pacific Business*, Vol. 10, No. 4, pp.281–307.

Svaleryd, H. and Vlachos, J. (2005) 'Financial markets, the pattern of industrial specialization and comparative advantage: evidence from OECD countries', *European Economic Review*, Vol. 49, No. 1, pp.113–144.

Tan, Y. and Floros, C. (2012) 'Bank profitability and inflation: the case of China', *Journal of Economic Studies*, Vol. 39, No. 6, pp.675–696.

Thakor, A.V. (1996) 'The design of financial systems: an overview', *Journal of Banking & Finance*, Vol. 20, No. 5, pp.917–948.

Tybout, J.R. (2000) 'Manufacturing firms in developing countries: how well do they do, and why?', *Journal of Economic Literature*, Vol. 38, No. 1, pp.11–44.

Vong, P.I. and Chan, H.S. (2009) 'Determinants of bank profitability in Macao', *Macau Monetary Research Bulletin*, Vol. 12, No. 6, pp.93–113.

Yanikkaya, H. (2003) 'Trade openness and economic growth: a cross-country empirical investigation', *Journal of Development Economics*, Vol. 72, No. 1, pp.57–89.

Yavari, K. and Mohseni, R. (2012) 'Trade liberalization and economic growth: a case study of Iran', *Journal of Economic Policy Reform*, Vol. 15, No. 1, pp.13–23.

Zingales, L. and Rajan, R. (2003) *Banks and Markets: The Changing Character of European Finance*, National Bureau of Economic Research Cambridge, Mass., USA.