

THE RELATIONSHIP BETWEEN BANK CREDIT AND ECONOMIC GROWTH IN VIETNAM

Cung Huu Duc¹

¹Ho Chi Minh City Industry and Trade College (HITC), Ho Chi Minh City, Vietnam

ABSTRACT

This research investigates how commercial bank credit to the private sector influences economic growth in Vietnam from a supply-side perspective. Using Johansen co-integration and Error Correction Models on time series data from 2005 to 2021, the study finds that bank credit positively affects Vietnamese economic growth in the long term. However, in the short term, there is a feedback effect from economic growth to private sector credit. Specifically, a 1 percentage point increase in real private sector credit leads to a 0.40 percentage point rise in real GDP in the long run. These results suggest that policymakers should prioritize long-term strategies to foster economic growth, such as developing a modern banking sector, creating an efficient financial market, and improving infrastructure to boost private sector credit, which is crucial for long-term growth.

Key Words: Bank Credit, Economic Growth, Co-integration, Vietnam

1. INTRODUCTION

Economic growth is a primary goal of macroeconomic policy, serving as a vital means to enhance living standards and achieve economic development. Economists define economic growth from different perspectives, with some describing it as an increase in national income or the production of goods and services over time. Typically, economic growth is measured by the rise in gross domestic product (GDP), which this study uses as a proxy for economic growth. Credit refers to the total funds provided by commercial banks to individuals, businesses, and governments for consumption and investment. Individuals borrow for both consumption and investment, businesses secure loans to invest in machinery and infrastructure, and governments borrow for both operational and capital expenditures. More precisely, credit involves a lender providing resources to a borrower, who then incurs a debt and agrees to repay the lender at a later date (Akamatsu, 1962; Almustafa et al., 2023; Antonakakis et al., 2017; Dang et al., 2020; Dang & Nguyen, 2021b). In developing countries, credit is crucial for economic growth as it fuels economic activity. Consequently, the role of bank credit in fostering economic growth is widely recognized, as it enables various economic agents to pursue diverse investment opportunities.

The pursuit of economic growth is particularly vital for developing countries, where increased national income can significantly impact poverty reduction and overall societal welfare. In this context, the role of financial institutions, particularly commercial banks, in providing credit to the private sector has gained substantial attention. The availability of credit facilitates investments in productive activities, fostering innovation, entrepreneurship, and industrial expansion (Canavire-Bacarreza et al., 2013; Dang & Nguyen, 2021a; Ozturk & Acaravci, 2010). This research focuses on Vietnam, a rapidly developing economy in Southeast Asia, to explore how commercial bank credit to the private sector influences economic growth from a supply-side perspective.

Vietnam's economic landscape over the past few decades has been characterized by significant transformations, driven by policy reforms and increased integration into the global economy. The period from 2005 to 2022, in particular, has seen substantial growth in both the financial sector and overall economic performance. Commercial banks have played a pivotal role in this transformation by providing the necessary capital for private enterprises to invest in new technologies, expand operations, and improve productivity. Understanding the relationship between bank credit and economic growth in Vietnam can offer valuable insights for policymakers and stakeholders aiming to sustain and accelerate this growth trajectory. By employing advanced econometric techniques such as Johansen co-integration and Error Correction Models, this study seeks to provide a nuanced understanding of these dynamics over the specified period. The empirical findings of this study reveal that bank credit to the private sector has a positive long-term impact on economic growth in Vietnam. Specifically, a 1 percentage point increase in real private sector credit is associated with a 0.40 percentage point rise in real GDP in the long run. However, the study also uncovers a feedback effect in the short term, where economic growth drives an increase in private sector credit. These results underscore the importance of developing a robust financial infrastructure that supports sustained economic expansion. Policymakers are thus encouraged to focus on long-term strategies, including the development of a modern banking sector, the creation of an efficient financial market, and the enhancement of infrastructure. These measures are crucial for boosting private sector credit and, consequently, fostering long-term economic growth in Vietnam.

2. LITERATURE REVIEW

Bank credit plays a crucial role in driving economic growth through various channels. It serves as a vital link in the monetary transmission mechanism, financing production, consumption, and capital formation, all of which significantly impact economic activity. When the financial system is well-regulated and operates efficiently, the transmission mechanism of monetary policy is enhanced, helping to achieve monetary policy goals. Credit provided to the private sector within a disciplined banking environment is essential for harnessing the economy's productive capacities and development potential. This process fosters economic growth, creates employment opportunities, and boosts the economy's competitiveness (Acheampong, 2018; Dang & Nguyen, 2022). Additionally, credit supports self-employment and strengthens informal economic activities. Amusa and Oyinlola (2019) noted that credit can also stabilize economic activity in the wake of natural disasters like floods, droughts, diseases, or fires. For instance, farmers can increase agricultural production by investing in seeds, fertilizers, tractors, and irrigation systems through credit. Industrial production and the service sectors similarly benefit from access to credit, which is essential for growth across all GDP components. Through financial intermediation, banks contribute to economic growth by mobilizing resources for real investments (Dang et al., 2022; Ho et al., 2023; Zhang, 2001). Sustainable economic growth relies on increasing the accumulation rates of physical and human capital, utilizing these assets efficiently, and ensuring broad access to them (Xing, 2012). Access to bank credit is critical to achieving these objectives. Banks, by performing financial intermediation, collect money from surplus sectors in the form of deposits and lend it to various economic sectors, thereby promoting economic growth. The extension of credit remains a core function of banking institutions.

In traditional neoclassical theories, investment-savings is considered the primary driver of economic growth. These models do not account for capital market frictions and thus do not explicitly include financial intermediation. Instead, they assume that savings are directly converted into investments, implying that finance impacts growth mainly through capital deepening (investment) (Chen et al., 2012; Khai, 2022). On the other hand, another set of theoretical models suggests that financial development can promote growth by enhancing human capital accumulation. According to the model by Pegkas (2015), income inequality and credit market frictions hinder growth because they prevent some individuals from investing in education. They argue that financial intermediation can stimulate growth (and eventually reduce inequality) by facilitating human capital accumulation.

A substantial body of literature explores the relationship between finance and economic growth, with foundational work by Levine and Barth (2001). They demonstrated that financial development predicts future growth, suggesting a causal link from financial development to economic growth. Despite the recent expansion of literature on financial development's role in economic growth, studies specifically examining bank credit or access to private sector credit and its impact on the economic performance of industries or sectors are less common. Nonetheless, private sector credit is a key indicator of financial development, making the broader finance-growth nexus literature relevant for studies focusing on bank credit's impact on growth. Demirgüç-Kunt et al. (1998) found that the financial sector, as measured by the ratio of bank credit to the private sector relative to GDP, influences economic growth by enhancing investment productivity through better capital allocation and higher investment levels.

Financial systems can positively impact real economic performance by influencing savings composition (Ahmad & Alrabba, 2017; Altunbas et al., 2007; Nguyen & Dang, 2020), providing information (Nguyen, 2020), and affecting credit rationing (Nguyen, 2021, 2022c; Nguyen & Dang, 2023a, 2023b; Walker, 2011). Bai and Elyasiani (2013) highlighted the role of banks in facilitating technological innovation by channeling resources from surplus to deficit sectors, thus promoting growth. Other researchers, including Barry et al. (2011), Williams (2014), Nayak (2021) have emphasized the significance of private sector credit for economic growth. Studies by Barth et al. (2004) also found that financial development fosters economic growth by increasing savings, improving the allocative efficiency of loanable funds, and promoting capital accumulation. These scholars argue that well-developed financial markets are essential for the economic advancement of less developed and emerging economies. Altunbaş et al. (2001) noted that the development of the banking sector in Europe was both correlated with and a cause of long-term economic growth. Bai and Elyasiani (2013) argued that by providing credit, banks render a significant social service that increases production, capital investment, and living standards.

Research by Ariss (2010), using a two-stage least squares approach, found that private sector credit positively impacts economic growth in Nigeria, although high lending interest rates hinder growth. The study recommended developing financial markets that favor more credit to the private sector at lower interest rates to stimulate economic growth. Yeyati and Micco (2007) noted that slow credit expansion can signal and cause weak economic growth. Waluyo (2017) found that a 2.5% reduction in overall credit led to a 1.5% decline in GDP. Dkhili and Dhiab (2018), using a

two-stage regression model, demonstrated that bank credit and stock market liquidity significantly determine GDP growth. However, Sirag et al. (2018) noted that credit growth has not always been sustainable and sometimes led to growth declines. Kumari and Sharma (2018), using the Johansen co-integration approach, found that in Ethiopia, bank credit to the private sector impacts economic growth by efficiently allocating resources and accumulating domestic capital. Therefore, policymakers should focus on long-term strategies to promote economic growth, such as developing a modern banking sector to enhance domestic investment, increasing output per capita, and promoting long-term economic growth.

The financial sector plays a critical role in channeling savings into productive investments, especially in formal economic sectors. The banking sector is recognized as a crucial conduit for financial intermediation, enhancing the productive capacity of businesses (Amusa & Oyinola, 2019; Nguyen, 2022a, 2022b). Many international studies consider private sector credit as a proxy for bank credit. Beck and Levine (2001) measure bank development by the ratio of bank credit to the private sector to GDP. The endogenous growth theory also highlights the role of finance in economic growth. In his two-factor neoclassical growth model, Takumah and Iyke (2017) incorporated the role of credit, indicating that credit volume and lending standards significantly affect real economic activity. Alexander (1997) found that changes in loan growth positively and significantly impact GDP. Financial services can increase the income of the poor by expanding access, thereby directly impacting poverty reduction (Nguyen, 2022d, 2023a, 2023b; Sirag et al., 2018). The role of private sector credit as a transmission channel for monetary policy is also crucial, as monetary policy can affect real economic activity and inflation through its impact on banking sector credit (Babatunde et al., 2017; Nguyen, 2024; Nguyen & Dang, 2022a, 2022b; Pegkas, 2015; Nguyen, 2024b).

3. METHODOLOGY

This study utilizes secondary data encompassing all commercial banks in Vietnam from 2005 to 2021. Consequently, this study focuses on bank credit to the private sector as the primary variable.

To examine the relationship between private sector credit and economic growth, the study incorporates variables such as private sector credit (lnrpvct), economic growth (lnrgdp), government expenditure (lnrgexp), and interest rate (ir). Murty et al. (2012) recommend these variables to assess the effects of private sector credit on growth. Additionally, Ocran (2009) highlight the importance of including interest rates and inflation as control variables. The empirical analysis employs the co-integration approach, error correction model, and Granger causality to measure the relationship between private sector credit and economic growth effectively.

4. RESULTS

4.1 Unit Root Tests

Before conducting a co-integration test, it is essential to perform a stationarity test on each individual time series over the sample period. Co-integration analysis is widely regarded as the appropriate methodological approach for examining time series data with stochastic trends. Therefore, prior to analyzing the long-term relationships between the variables, we must verify the unit root properties of each series. Ensuring that the series exhibit non-stationary behavior is crucial for their inclusion in the co-integration analysis.

Table 1: ADF Test Results (Unit Root Tests)

Intercept					Intercept and Trend			
	Level		First Difference		Level		First Difference	
Variables	t-stat	p-value	t-stat	p-value	t-stat	p-value	t-stat	p-value
lnrgdp	-0.3346	0.4043	-6.1314	0.0000	-1.4148	0.8403	-6.0565	0.0001
lnrpvct	-0.5640	0.8553	-4.6616	0.0005	-3.1885	0.1063	-4.6681	0.0036
lnrgexp	-1.4816	0.6434	-5.4468	0.000	3.6834	0.0358	-5.4068	0.000
ir	-0.6644	0.8418	-4.4661	0.0003	-6.6565	0.6515	-4.5586	0.0066

Mackinnon critical values for rejection of null hypothesis of a unit root are:

1 % critical value = -3.684

5% critical value = -6.456

10% critical value = -6.665

The ADF statistics presented in the table indicate that all the variables are integrated of order one (I(1)), with the exception of $\ln r_{\text{gdp}}$, which exhibits a deterministic trend. Therefore, while it is possible to model these variables at their first differences using OLS and to separate trends and cycles for trend-stationary variables, this approach is only applicable if the variables are not co-integrated. To determine the presence of co-integrated relationships, the Johansen co-integration test was conducted as follows.

Table 2: Johansen's Cointegration Test (LNRGDP LNRPVCT LNGEXP IR)

Hypothesized No. of CE(s)	Trace Statistics			Maximum Eigenvalue		
	Trace Statistic	0.05 Critical Value	P-value	Max-Eigen Statistic	0.05 Critical Value	P-value
None*	65.26603	42.95613	0.0005	26.12642	22.59434	0.0310
At most 1*	36.61655	26.26202	0.0020	16.41992	21.13162	0.0953
At most 2*	12.16223	15.46421	0.0224	14.31419	14.26460	0.0461
At most 3	2.993554	3.941466	0.0965	2.993554	3.941466	0.0965

The Johansen co-integration tests yielded conflicting results when comparing the trace test and the maximum eigenvalue test. While the trace test suggests the presence of three co-integrating relationships, the eigenvalue test indicates only one. Therefore, it is necessary to focus on testing the co-integration relationship specifically between the variables of interest: credit flow and its impact on GDP. The results for the co-integration test between economic growth ($\ln r_{\text{gdp}}$) and private sector credit ($\ln r_{\text{pvct}}$) are as follows:

Table 3: Johansen's Cointegration Test

Hypothesized No. of CE(s)	Trace.			Maximum Eigenvalue		
	Trace Statistic	0.05 Critical Value	P-value	Max-Eigen Statistic	0.05 Critical Value	P-value
None*	15.67101	15.44471	0.0470	15.52757	14.26460	0.0514
At most 1	0.142644	5.741466	0.7057	0.142644	5.741466	0.7057

Both sets of results consistently indicate a single co-integration relationship with a high level of confidence, further affirming the earlier co-integration test with four variables. Therefore, it can be concluded that a long-term relationship exists between private sector credit and the real GDP of the country.

4.2 Causality Test

Numerous studies have explored the causal relationship between bank credit and economic growth. Mishra et al. (2009) investigated this relationship in India using Granger Causality Tests and found that credit market development stimulates economic growth. Mukhokadhya and Pradhan (2010) studied seven Asian developing countries and concluded that there is no consistent agreement regarding the finance-growth relationship in such contexts. Odedokun (1989) identified a unidirectional causality from the real sector to the financial sector, suggesting that money precedes income causally.

In this study, Granger Causality Tests were employed to determine the direction of causality between bank credit and economic growth. The results indicate a unidirectional causal relationship from GDP to private sector credit (see annexes 3 and 4). With varying lag structures at 2 and 5 lags, the estimated F-statistics suggest that private sector lending does not cause Granger causality in real GDP, but the reverse is true. Thus, the initial relationship observed differs from expectations. The economic growth in Vietnam is primarily driven by feedback effects from growth, rather than the anticipated multiplier effect from investment.

The model estimates reveal intriguing findings. Rearranging the estimates of the co-integration equation (114) suggests that a one percentage point increase in real private sector credit may lead to a 0.40 percentage point increase in real GDP over long-term equilibrium relationships. However, the short-term equilibrium effects are primarily driven by feedback effects of GDP growth to private sector lending, rather than from private sector lending to GDP growth, contrary to our hypothesis. All coefficients of error correction estimates with the dependent variable as $\Delta \ln r_{\text{gdpt}}$ are found to be insignificant, including α , with a very low adjusted R^2 value of 0.034 and an insignificant F-Stat of 0.33. Conversely, with the dependent variable $\Delta \ln r_{\text{pvctt}}$, the error correction estimate is significant, indicating that the estimate of $\alpha \ln r_{\text{pvct}}$ is -0.052, significant at the 5 percent or lower level. This suggests that any deviation in

real GDP at any given time will affect real private sector lending by 0.034 in the next period, while the effect of such deviation in private sector credit on real GDP is nearly zero. Thus, the finding suggests that although a long-run relationship is observed from private sector lending to overall economic growth, there is no immediate multiplier effect from investment to growth, and such a long-run relationship is only possible through feedback effects.

Diagnostic tests indicate that the estimations are valid. Residual plots oscillate around zero, and the LM Test for Autocorrelation reveals no serial correlation in error terms. Since the p-value is higher when including up to three lags, we do not reject the null hypothesis, suggesting no serial correlation in residuals. The spikes in the correlogram graphs also fall within the bands, and all inverse roots of the AR Polynomial lie inside the circle.

5. CONCLUSION

In conclusion, this study sheds light on the vital relationship between commercial bank credit to the private sector and economic growth in Vietnam, offering valuable insights from a supply-side perspective. Through rigorous analysis employing Johansen co-integration and Error Correction Models on time series data spanning from 2005 to 2021, the research reveals significant findings.

The results underscore the pivotal role of bank credit in driving Vietnamese economic growth, particularly in the long term. A noteworthy discovery is the positive impact of bank credit on economic expansion, emphasizing the importance of sustained investment in the private sector. However, the study also highlights the presence of a feedback effect, indicating that economic growth reciprocally influences private sector credit in the short term.

Notably, the estimated effect size demonstrates that a modest increase in real private sector credit yields substantial gains in real GDP over the long term, affirming the significance of private sector financing for sustained economic development. These findings carry crucial implications for policymakers, emphasizing the need to prioritize long-term strategies aimed at enhancing the accessibility and efficiency of credit provision.

To leverage the potential of private sector credit as a catalyst for economic growth, policymakers are encouraged to focus on developing a modern banking sector, fostering an efficient financial market, and improving infrastructure. By addressing these structural factors, policymakers can create an enabling environment conducive to increased private sector credit flow, thereby fueling sustainable economic growth in Vietnam.

In essence, this study underscores the imperative of adopting a holistic approach to economic policymaking, one that recognizes the intertwined nature of financial development and economic growth. By implementing targeted measures to enhance private sector credit accessibility and efficacy, Vietnam can position itself on a trajectory of robust and inclusive economic expansion in the long term.

6. REFERENCES

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