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THE IMPACT OF GREEN CREDIT ON A SUSTAINABLE ECONOMY: AN EMPIRICAL STUDY IN VIETNAM

Do Hoai LINH[1*], Tran Thi VAN HOA[1], Nguyen Khuong DAN[1], Tran Thi Phuong ANH[1], Do Hai NGOC[1], Pham Nam HOANG[1]

[1]National Economics University, Hanoi, Vietnam.

*Corresponding Author
E-mail: linhdh@neu.edu.vn

ABSTRACT

The article aims to investigate the impact of green credit on the sustainable economy in transition countries such as Vietnam. By using the Augmented Dickey-Fuller (ADF) test to evaluate the stationarity of variables and the Autoregressive Distributed Lag (ARDL) model to investigate the impact of green credit on the sustainable economy in Vietnam based on the secondary data obtained from the period spanning from 2016 to June 2023. The findings demonstrate a positive correlation between the use of green credit and the development of a sustainable economy in Vietnam. Moreover, other variables that have an impact on the sustainable economy including urbanization rate, education, public budget, and environmental pollution rate are also used as control variables of the model. The results indicate a negative association in the long run between the urbanization rate and a sustainable economy, while education has a positive effect on developing the economy sustainably in Vietnam. According to these findings, some recommendations are proposed to establish a green credit system as a means to attain sustainable economic development.

Keywords: *Green credit, Urbanization rate, Education, Sustainable economy, Emerging country, Vietnam.*

INTRODUCTION

In an era characterized by swift transformations and expansion, nations are compelled to engage in competition to attract investments, manufacture goods and services for the global market, and sustain a competitive advantage. The simultaneous pursuit of economic development and environmental conservation represents a prominent and complex issue within this particular framework (Ranganadhareddy, 2022, 2022c; Ranganadhareddy *et al.*, 2022b; Reddy, 2022; Van Hoa *et al.*, 2022; Sarangi *et al.*, 2023). Afzal *et al.* (2022), and Liu *et al.* (2020) have demonstrated that as nations attain economic stability, there is a corresponding change in focus towards the preservation of natural resources and the advancement of sustainable development. Within this particular environment, the incorporation of green finance plays a pivotal role in facilitating the advancement of the economy towards sustainable growth (Abdel Khafar *et al.,* 2022; Ranganadhareddy & Chandrasekhar, 2023). Vietnam is a developing country, ranking as the fourth-biggest economy in ASEAN and the 40th globally (Ranganadhareddy, 2023). The region exhibits a wide range of important natural resources, yet it is confronted with mounting challenges stemming from climate change and environmental pollution, such as industrial

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effluents, which require sustainable treatment approaches (Murugesan *et al.,* 2024). The economy of Vietnam is experiencing a phase of transformation and integration, necessitating the need for innovation and diversification. The study conducted by Nguyen *et al.* (2023) examines the significant importance of incorporating green finance in Vietnam as a means to facilitate the transition of businesses and stakeholders towards a more advanced framework of sustainable economic development, within this context, the inclusion of green credit is a component of the broader green finance movement in Vietnam (Van Hoa *et al.*, 2022; Choudhary *et al.*, 2023). Therefore, the primary aim of this study is to comprehensively examine and assess the influence of green credit on the sustainable growth of the Vietnamese economy (Almaghrabi, 2022).

Literature Review

Studies by Niu and colleagues (2022), Van Hoa *et al.* (2022), Chen *et al.* (2021), and Li *et al.* (2022) have provided a positive correlation between green credit and sustainable economics. The use of green credit serves as a potent mechanism for governmental entities to incentivize the shift and enhancement of economic activities towards a more ecologically sustainable trajectory. Furthermore, theories such as the theory of financial-economic relationship and the theory of resource-based views are employed to illustrate the influence of green credit on sustainable economics.

Conceptual Framework

The discipline of finance holds considerable importance in the general well-being of an economy, as elucidated in the theoretical framework of the financial-economic nexus proposed by esteemed researchers such as Bagehot (1873), Goldsmith (1969); Spoorthi *et al.* (2024); Mankiw (1992), and King and Levine (1993). Financial institutions that operate efficiently have a favorable influence on the overall economic performance. A resilient financial system can facilitate total factor productivity (TFP), as well as investment in research and development (R&D), by offering financial resources to both enterprises and households involved in commercial endeavors. In addition, a resilient financial system not only facilitates the mobilization of domestic capital but also assumes a pivotal role in attracting and optimizing the allocation of capital from foreign sources inside the economy.

From the resource-based view theory, green finance practices are regarded as strategic resources that enhance a firm's long-term competitive advantage (Wernerfelt, 1984; Barney, 1991), pertains to the utilization of surplus capital offered by financial institutions and intermediaries to support sustainable development objectives. These objectives encompass activities such as promoting environmentally friendly production methods, undertaking climate change initiatives, and integrating renewable energy sources into business operations. Concurrently, Schumpeter's (1911) theory of economic development examines how entrepreneurs, supported by bank credit, engage in innovative investments encompassing new technology, resource discovery, and other related activities. If this model succeeds, imitators follow suit, and the economy begins a period of strong development and prosperity.

Green finance is a method of finance aimed at sustainability and economic development while minimizing harm to the environment and society. Therefore, green credit is viewed as a significant financial tool in controlling the environmental protection behavior of businesses and

preventing uncontrolled development and pollution by enterprises (Fangmin & Jun, 2011; Haiyang, 2017; Xu & Li, 2020; Chen *et al.*, 2021; Zhang *et al.*, 2022; Islamoglu *et al.*, 2024; Suchy *et al.*, 2024). Currently, there is no universally agreed-upon global definition of green credit, and there are differences among countries and financial organizations worldwide. However, the common principle is providing financial resources for projects and activities that have a significant positive impact on the environment and society, which is crucial for promoting sustainable economic development.

Van Hoa *et al.* (2022); and An *et al.* (2021), in their investigation into the relationship between green credit and sustainable economic development, have shown that, in contrast to commercial credit, green credit helps reduce CO2 emissions, protect natural resources, biodiversity, ensure social equity, and are essential elements for sustainable economic development. Additionally, research groups like Zhou *et al.* (2021), and Xu *et al.* (2018) have also highlighted the role of green credit in stabilizing macroeconomic conditions and transitioning the economic structure to a sustainable green economy, balancing the development of national economic sectors, all of which are essential factors in ensuring sustainable economic development.

Based on the literature review and theoretical foundation presented above, to understand the impact of green credit on sustainable economics in Vietnam, we propose the following research hypothesis in this article:

H: Green credit has a positive relationship with sustainable economics in Vietnam.

Proposed Variables and Regression Model

GDP_t: This represents the Gross Domestic Product (GDP) growth rate, which serves as a proxy for Vietnam's sustainable economy at time t. This variable is used as the dependent variable. Liu *et al.* (2020) and Chen *et al.* (2021) posit that sustainable economies are commonly seen as a mechanism to mitigate resource strain and emissions, while simultaneously promoting economic advancement and societal welfare. Despite the existence of disparities in the measurement of sustainable economic growth, GDP continues to be a significant indicator selected from a range of potential possibilities for quantifying the dynamics of economic development.

GC_t: This variable represents Vietnam's green credit outstanding at time t. Chen *et al.* (2021) have mentioned the use of green credit outstanding as a measure of the extent of green credit business. Therefore, we use green credit outstanding as a core explanatory variable.

Moreover, control variables in this study encompass characteristics that exert an influence on sustainable economic development, as identified by prior research conducted by Jianglong and Bin (2018) and Li *et al.* (2022); (Bandyopadhyay *et al.*, 2024). The key control variables used in our study are:

URB_t: This represents the urban population ratio to the total population of Vietnam at time t, which represents Vietnam's urbanization rate at that time. The degree of urbanization can impact the effectiveness of sustainable economic development (Li *et al.*, 2022; Niu *et al.*, 2022).

EDU_t: This variable stands for the number of university students in Vietnam at time t, representing the state of education in Vietnam at that time. The number of university students provides a critical labor force element for sustainable economic development (Grant, 2017; Li *et al.*, 2022; Tilahun *et al.*, 2024).

NBG_t: This represents the ratio of government spending to the GDP of Vietnam at time t, serving as a proxy for Vietnam's national budget at that time. The public budget addresses market failures achieves macroeconomic regulation, optimizes social resource allocation, and ensures orderly industrial development, contributing to healthy, sustainable economic development (Li *et al.*, 2022; Niu *et al.*, 2022).

$PM25_t$: This variable represents the concentration of fine particulate matter PM 2.5 in Vietnam at time t, which reflects the rate of environmental pollution in Vietnam at that time. A significant amount of environmental pollution emissions can undermine sustainable economic development in the future, with PM 2.5 concentration being a comprehensive index used to measure air quality (Chen *et al.*, 2021; Thu *et al.*, 2022; Enwa *et al.*, 2024).

Therefore, the proposed econometric model is proposed as follows:

$$GDP_t = \beta_0 + \beta_1 GC_t + \beta_2 URB_t + \beta_3 EDU_t + \beta_4 NBG_t + \beta_5 PM25_t + \varepsilon_1 \quad (1)$$

MATERIALS AND METHODS

Data and Sample

As a typical representation of a developing country facing high pollution levels, Vietnam has prioritized green credit as one of the top agendas to promote sustainable economic growth. In recent years, there has been a notable surge in green credit throughout Vietnam, with outstanding debt exceeding 500,000 billion VND by June 2023, a remarkable increase from 71,000 billion VND at the end of 2015. Moreover, Vietnam has implemented targeted initiatives aimed at fostering green credit and establishing the requisite legal infrastructure in this domain. We utilize quarterly time-series data from Q1 - 2016 to Q2 - 2023 to address the research gap indicated by Van Hoa *et al.* (2022) and to avoid overlooking issues related to the global economic downturn and current geopolitical tensions. Data on Vietnam's green credit outstanding is collected quarterly from the Department of Credit for Economic Sectors under the State Bank of Vietnam. GDP data is collected quarterly from reports on the economic and social situation published by the General Statistics Office of Vietnam. Other related indicators such as the urbanization rate, public budget, education, and environmental pollution rate are sourced from statistical reports and data published on the official websites of the General Statistics Office of Vietnam, the Ministry of Finance of Vietnam, the Ministry of Education and Training of Vietnam, and IQAir AirVisual.

Analytical Methods

Descriptive statistics of the variables are presented in **Table 1**. The total number of observations for each variable is 30. For the dependent variable GDP, the average value is 5.46%, ranging from -6.02% to 13.67%. The standard deviation of the variables is relatively large, indicating variability during the study period. Specifically, green credit outstanding fluctuates from 38,377.62 billion dong to 530,736.3 billion dong. The average values of the control variables URB, EDU, and NBG are 35.7%, 1,739,657, and 3.92%, respectively. For the variable PM2.5, the average value is relatively high at 38.65.

Table 1. Descriptive statistics

Variables	Symbol	Obs	Mean	Std. Dev.	Min	Max
Sustainable economy	GDP	30	5.462333	3.13562	-6.02	13.67
Green credit	GC	30	275316.8	150398.8	38377.62	530736.3
Urbanization rate	URB	30	35.702	1.872955	33.6	40.1
Education	EDU	30	1739657	135145.7	1356890	1998999
National budget	NBG	30	3.92	0.4921872	3.44	4.95
Environmental pollution rate	PM25	30	38.64767	13.46357	24.2	66.38

Source: Compiled by the authors

The research chooses to use the Autoregressive Distributed Lag (ARDL) model instead of the standard regression model or the structural time series model. The ARDL model was introduced by Peseran and Shin (1998) and further developed by Peseran *et al.* (2001). According to Van Hoa *et al.* (2022), the ARDL model is used to study the relationships between variables, and it is suitable for analyzing experiments involving variables that are integrated in different orders, either I(1) or I(0). The ARDL procedure is considered the most appropriate approach for empirical research as it involves testing for cointegration and estimating short-run and long-run dynamics, and it is particularly useful when dealing with mixed-order integrated time series variables.

Before conducting the regression analysis, the study uses the Augmented Dickey-Fuller (ADF) test proposed by Dickey and Fuller (1979) to check the stationarity of the variables. The ADF test is a method that checks the stationarity of individual variables. Therefore, separate equations for each variable are formulated as follows:

- *Testing for the GDP variable:*

$$\Delta(GDP_t) = \alpha_0 + \beta_t + YGDP_{t-1} + \Delta(GDP_t(-1)) + \varepsilon_t \quad (2)$$

- *Testing for the GC variable:*

$$\Delta(GC_t) = \alpha_0 + \beta_t + YGC_{t-1} + \Delta(GC_t(-1)) + \varepsilon_t \quad (3)$$

- *Testing for the URB variable:*

$$\Delta(URB_t) = \alpha_0 + \beta_t + YURB_{t-1} + \Delta(URB_t(-1)) + \varepsilon_t \quad (4)$$

- *Testing for the EDU variable:*

$$\Delta(EDU_t) = \alpha_0 + \beta_t + YEDU_{t-1} + \Delta(EDU_t(-1)) + \varepsilon_t \quad (5)$$

- *Testing for the NBG variable:*

$$\Delta(NBG_t) = \alpha_0 + \beta_t + YNBG_{t-1} + \Delta(NBG_t(-1)) + \varepsilon_t \quad (6)$$

- *Testing for the PM25 variable:*

$$\Delta(PM25_t) = \alpha_0 + \beta_t + YPM25_{t-1} + \Delta(PM25_t(-1)) + \varepsilon_t \quad (7)$$

According to Gujarati (2004), the unit root test is an essential first step in estimating a model, as it is a way to check the stationarity of time series data. **Table 2** provides the results of the ADF

test, indicating that the GDP variable is stationary at the unit root (I(0)), while the remaining variables are stationary at the first differenced level (I(1)).

Table 2. The ADF test results

Variables	Test statistic	1% Critical Value	5% Critical Value	10% Critical Value
GDP(0)	-4.531	-3.723	-2.989	-2.625
GC(1)	-10.113	-3.730	-2.992	-2.626
URB(1)	-8.273	-3.730	-2.992	-2.626
EDU(1)	-8.610	-3.730	-2.992	-2.626
NBG(1)	-5.118	-3.730	-2.992	-2.626
PM25(1)	-6.420	-3.730	-2.992	-2.626

Source: Compiled by the authors.

In contrast to other cointegration techniques that require the regression variables to have the same order of lag, the ARDL model allows for different optimal lag lengths for the regression variables. The choice of lag length for the ARDL model is based on Akaike's Information Criterion (AIC), and the optimal lag length for the model is determined as (2 2 0 2 2 2).

Based on the ADF test results and the optimal lag length of the ARDL model, the research team conducted the ARDL bounds test. The ARDL bounds test, developed by Pesaran and colleagues in 2001, is used to determine whether there exists a long-run relationship between the variables. The results of the bounds test in **Table 3** show that the computed F-statistic is 27.449, which is greater than the upper bound critical value at the 5% significance level. This result confirms the existence of a cointegrating relationship among the variables.

Table 3. The ARDL bounds test results

k	Test statistic	Critical Value Bounds							
k	F-statistic	90%		95%		97.5%		99%	
		I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
5	27.449	2.26	3.35	2.62	3.79	2.96	4.18	3.41	4.68

Source: Compiled by the authors.

The ARDL approach, as suggested by Van Hoa *et al.* (2022), is believed to provide short-term and long-term results for the interrelationships among the variables. For our study, this is reflected in the following equation:

$$\Delta GDP_t = \alpha_0 + \Sigma\delta_1\Delta GDP_{t-1} + \Sigma\delta_2\Delta GC_{t-1} + \Sigma\delta_3\Delta URB_{t-1} + \Sigma\delta_4\Delta EDU_{t-1} + \Sigma\delta_5\Delta NBG_{t-1} + \Sigma\delta_6\Delta PM25_{t-1} + \varphi_1 GDP_{t-1} + \varphi_2 GC_{t-1} + \varphi_3 URB_{t-1} + \varphi_4 EDU_{t-1} + \varphi_5 NBG_{t-1} + \varphi_6 PM25_{t-1} \quad (8)$$

In Eq. 8, δ1, δ2, δ3, δ4, δ5, and δ6 represent the "short-run" coefficients for the relationships. On the other hand, φ1, φ2, φ3, φ4, φ5, and φ6 represent the coefficients for the long-run relationships.

RESULTS AND DISCUSSION

Table 4 presents the results of estimating the long-term coefficients with the ECM and short-run relationship of the ARDL model (2 2 0 2 2 2).

The long-term relationship between the dependent variable (sustainable economy) and the explanatory variable (green credit) is estimated using the ARDL model. Long-term elasticity is represented by the coefficient of the GDP variable. Based on the results in **Table 4**, the variable GC has a positive impact on the dependent variable GDP, with a probability (Prob) of 0.005, much lower than the 5% significance level. Specifically, when green credit debt increases by 1 billion VND, it leads to GDP growth of 0.000904%.

Considering the influence of the control variables on the independent variable, at the 5% significance level, the variables URB and EDU both affect GDP, with the probabilities (Prob) of these variables being less than 0.05. Specifically, for the URB variable, the correlation coefficient is -1.188, indicating an inverse relationship with GDP growth. For the EDU variable, at the 5% significance level, it has a positive impact on the dependent variable, with a correlation coefficient of 7.47e-06. The variables NBG and PM25, with probabilities (Prob) of 0.08 and 0.125, respectively, are not statistically significant in the long run, with 95% confidence. Therefore, the NBG and PM25 variables do not have a significant impact in the long term.

When there is a long-term relationship between the variables, estimating the Error Correction Model (ECM) becomes necessary. The ECM model is performed at the first difference. From the results in **Table 4**, in the short term, the variable GC is not statistically significant. However, with probabilities (Prob) for the other variables being 0.047, 0.000, and 0.022, respectively, they are all less than 0.05. The relationship between the variables EDU and NBG with respect to GDP is positively correlated, with correlation coefficients of 4.96e-06 and 2.496, respectively. The PM25 variable has a negative short-term impact on GDP with a correlation coefficient of -0.082 at the 5% significance level.

Table 4. Estimating the long-run coefficients the ECM and short-run relationship of the ARDL model

Variables	The long-run relationship		The ECM and short-run relationship	
	Coefficient	P > |t|	Coefficient	P > |t|
GC	9.04e-06	0.005	-9.22e-06	0.159
URB	-1.188266	0.000	-	-
EDU	7.47e-06	0.002	4.96e-06	0.047
NBG	-0.9230815	0.080	2.495776	0.000
PM25	0.044628	0.125	-0.0820783	0.022
cons	-	-	35.93509	0.001

Source: Compiled by the authors

After running the model, diagnostic tests are performed to evaluate the relationship between sustainable economy and green credit, as well as the relationship between sustainable economy and the other variables in the model. The study uses the RESET test by Ramsey to check for misspecification, the Breusch-Godfrey test to examine autocorrelation, and the Breusch-Pagan test to check for heteroscedasticity. **Table 5** presents the results of these diagnostic tests.

Table 5. The diagnostic test results

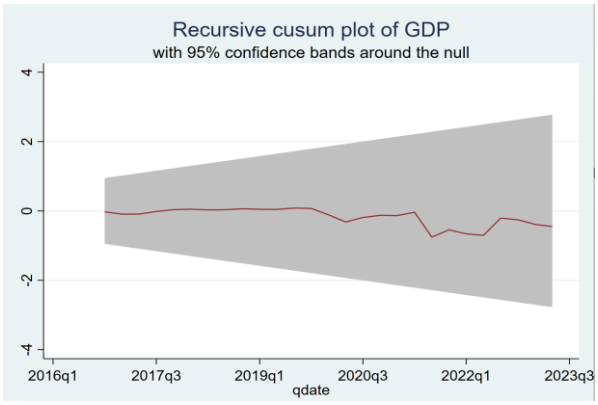
STT	Tests	Test statistic	Statistical value	P-value
1	Functional form	F(3, 20)	2.90	0.0605

2	Autocorrelation	CHSQ(1)	0.023	0.8789
3	Heteroscedasticity	CHSQ(1)	0.10	0.7513

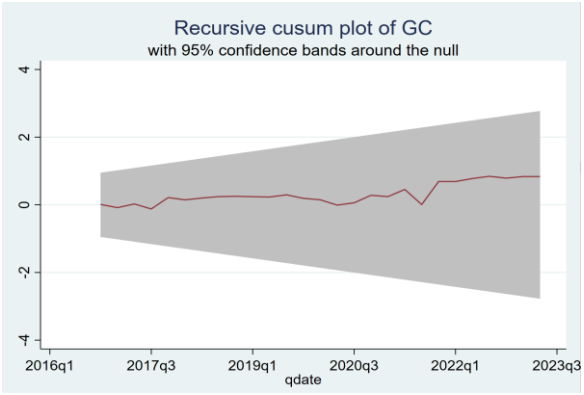
Source: Compiled by the authors.

The results from **Table 5** show that the probabilities of the functional form test, autocorrelation test, and heteroscedasticity test are all greater than 5%. This indicates that the regression model for the relationship between the variables is correctly specified, there is no autocorrelation, and the error variance is constant, homogeneous, and stable. Therefore, the ARDL model selected for studying the relationship between the variables is appropriate.

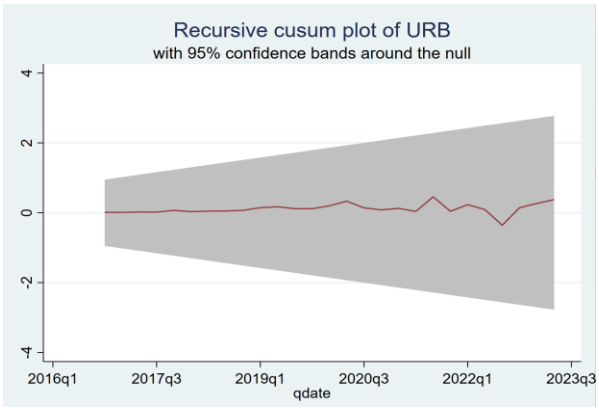
The study also conducts tests on the residuals. The results of the residual tests in **Figure 1** show that the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) both fall within the standard range at the 5% significance level. This suggests that the residuals of the model are stable, and therefore, the model is stable.



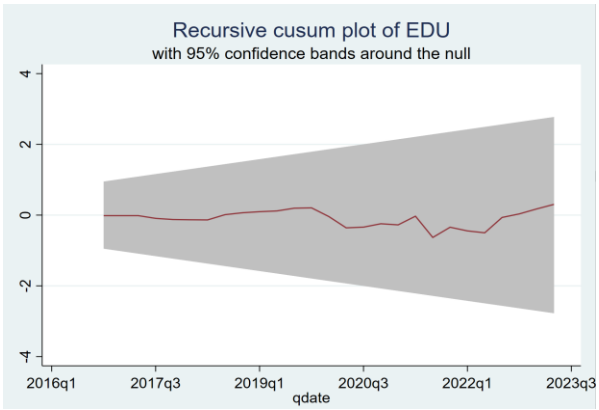
a) CUSUM of GDP



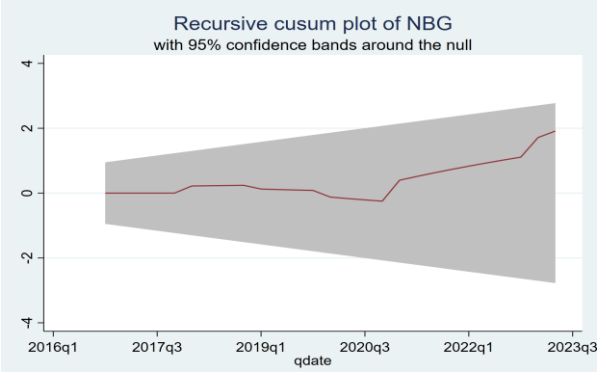
b) CUSUM of GC



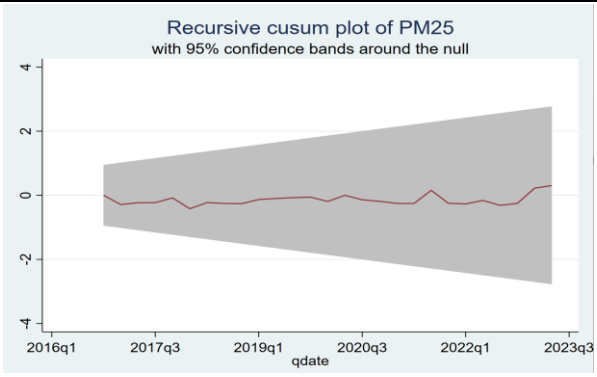
c) CUSUM of URB



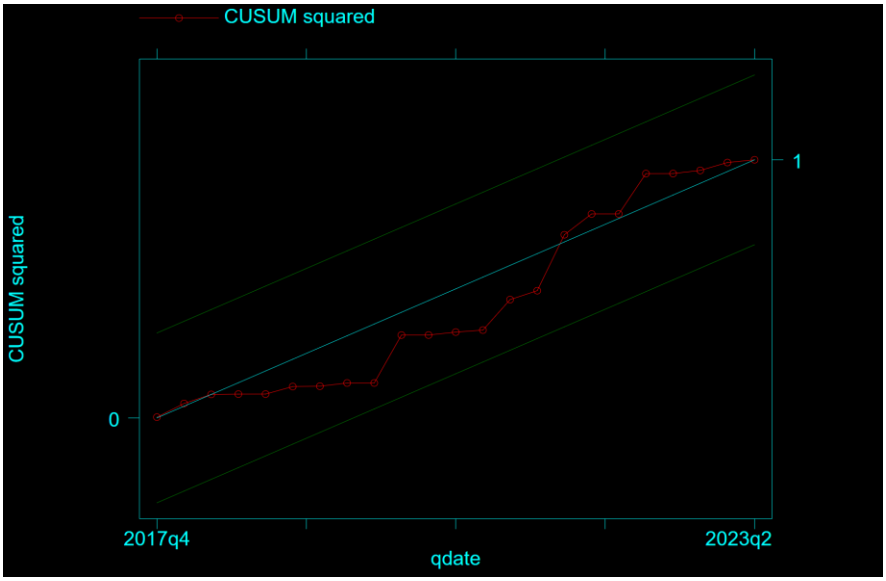
d) CUSUM of EDU



e) CUSUM of NBG



f) CUSUM of PM25



g) CUSUMSQ of all variables

Figure 1. The residual test results

Source: Compiled by the authors.

The study uses Granger causality tests. The Granger causality test method proposed by Granger (1969) is the most commonly used approach due to its simplicity in testing and is the final step in the estimation process to answer the question of whether the past values of one variable help predict another variable. The results of the Granger causality test are presented in **Table 6** as follows:

Table 6. The Granger causality test results

Equation	Excluded	CHSQ	df	Prob > CHSQ
GDP	**GC**	7.2212	2	0.027
GDP	**URB**	9.2839	2	0.010
GDP	**EDU**	3.6197	2	0.164
GDP	**NBG**	1.2627	2	0.532
GDP	**PM25**	2.003	2	0.367
GDP	**ALL**	18.602	10	0.046

GC	GDP	2.5559	2	0.279
GC	URB	2.489	2	0.288
GC	EDU	3.0347	2	0.219
GC	NBG	0.72072	2	0.697
GC	PM25	2.0495	2	0.359
GC	ALL	15.463	10	0.116
URB	GDP	1.669	2	0.434
URB	GC	3.1728	2	0.205
URB	EDU	3.759	2	0.153
URB	NBG	0.43763	2	0803
URB	PM25	0.378	2	0.823
URB	ALL	22.123	10	0.014
EDU	GDP	3.2186	2	0.200
EDU	GC	7.3535	2	0.025
EDU	URB	7.8836	2	0.019
EDU	NBG	1.0126	2	0.603
EDU	PM25	1.3301	2	0.514
EDU	ALL	13.472	10	0.198
NBG	GDP	0.10778	2	0.948
NBG	GC	1.4335	2	0.488
NBG	URB	1.7268	2	0.422
NBG	EDU	2.7644	2	0.251
NBG	PM25	0.67427	2	0.714
NBG	ALL	7.767	10	0.652
PM25	GDP	1.8805	2	0.291
PM25	GC	1.7433	2	0.418
PM25	URB	7.0283	2	0.030
PM25	EDU	3.558	2	0.169
PM25	NBG	3.2655	2	0.195
PM25	ALL	33.131	10	0.000

Source: Compiled by the authors.

The Granger causality test results show a one-way relationship between GC, URB, and GDP with respective Prob values of 0.027 and 0.010 (both less than 0.05). Furthermore, there is a one-way relationship between GC and EDU with a Prob value of 0.025, URB and EDU with a Prob value of 0.019, and URB and PM25 with a Prob value of 0.030. Additionally, the Granger causality test results do not indicate any relationship between NBG and the other variables.

According to the research findings, there is a positive connection between GC and GDP at a significance level of 5%, with a correlation coefficient of 9.04e-04. This suggests that green credit has a positive impact on promoting sustainable economic development in Vietnam. This result aligns with the findings of Hoa *et al.* (2022) support the idea that financial institutions invest in environmentally friendly technologies, clean resources, and other eco-friendly resources to achieve sustainable economic goals.

The positive relationship between green credit and sustainable economic development in Vietnam can be explained by the underlying theories mentioned above. These theories suggest that financial institutions support investments in TFP and R&D for "green" projects, including green credit that promotes green technology innovation, research and development of green credit systems, and sustainable economic development. In practice, in Vietnam, green credit has contributed to investments in TFP and R&D. For example, the Vietnam Sustainable Agriculture Transformation (VnSAT) project aimed to support the Vietnamese government in promoting agricultural restructuring through the sustainable innovation of cultivation methods for major crops such as rice and coffee. This project received a total funding of $301 million, with a 34.9% share of green credit. Another example is the "Modernization of Coastal Forests and Enhanced Resilience" (FMCR) project, which contributed to nearly 4,000 hectares of coastal protective forests to protect and develop coastal forests for climate change resilience and sustainable growth from 2021 to 2030.

Additionally, the results of the short-term error correction model indicate that GC does not show any statistical significance in the short term. This result is consistent with the findings of Nguyen Van Hoa and colleagues in 2022, which suggest that green credit does not have a short-term impact on sustainable economic development in Vietnam. This implies that green credit represents an investment source in green areas with a longer payback period and evaluation time for its impact on sustainable economic development.

Furthermore, this study assesses the influence of control variables on the sustainable economic development of Vietnam. The results indicate a negative association between urbanization (URB) and GDP, aligning with the conclusions reported by Najjar *et al.* (2024). The process of urbanization has the potential to intensify environmental contamination and have implications for the long-term viability of sustainable economic development. The correlation between education and sustainable economic development in Vietnam is found to be favorable, consistent with the findings of Yue Li *et al.* (2022). It has been suggested that the augmentation of educational attainment levels has the potential to enhance the efficiency of economic growth.

CONCLUSION

Fast and sustainable economic growth are both national goals for emerging countries such as Vietnam and a trend globally. In this context, green credit is considered an important and necessary solution. Therefore, other stakeholders should cooperate in attaining numerous tasks. First, the study results show that the green credit system needs to be improved and pushed, with the government playing a key part. For green credit, the government should improve the laws and rules that control it. It can also encourage the market to create green financial products like green bonds and investment funds by providing financial support, finding and pushing green projects, and making sure that these products are honest and transparent. Setting up a database and industry codes that meet green standards can make it easier to keep an eye on and assess how green financial goods and green loans affect society and the economy.

Secondly, the government needs to implement strategies that stimulate economic growth and GDP to achieve green growth and sustainable development goals. Long-term plans for economic growth should go hand in hand with the economy's recovery from changes in the global economy. It is important to restructure the economy in a way that makes it more competitive in

a worldwide and digitalized economy and to spend on education, science, and technology in a way that makes sense and works. It's also important to encourage investment and give companies ways to connect globally. The governments need to invest in green facilities, use natural energy, and promote green projects. Implementing community welfare policies to maintain social equity is crucial.

Lastly, the Central Bank, financial institutions, and businesses should make the processes for green credit more clear, including the formulation and issuance of regulations for green finance, green credit evaluation procedures, continuous monitoring and assessment, increased education and awareness, support for research and development, international cooperation, and technology transformation.

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