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Investing in Education: The Path to Prosperity in Vietnam

Nguyen The Khang[1]

Abstract

This study analyzes the impact of social investment in education on economic prosperity in Vietnam during the period 1998–2023 using an autoregressive distributed lag model. The results show that investment in education has a positive impact on economic prosperity in both the short and the long run. Meanwhile, labor has a complex relationship, with a negative but statistically insignificant impact in the long run but a positive short-term impact on economic prosperity. The long-run equilibrium coefficient reflects a fast adjustment speed of approximately 83.1%, bringing the economy back to equilibrium after shocks. This result affirms the essential role of education as a driver of prosperity and resilience in the Vietnamese economy, consistent with global evidence of the impact of human capital development on the economy. Policy recommendations include increasing education budgets, improving labor quality through vocational training, and promoting cooperation between education and businesses to enhance sustainable development and modernize Vietnam's economy.

Keywords: *Education Investment, Economic Growth, GNI; Human Capital, ARDL Mode.*
JEL Classification Codes: O11, O47, O53, O25.

Introduction

According to the World Economic Forum (2016), education is a store of skills, abilities, and characteristics that enhance human productivity. Education helps people understand and accept complex scientific changes in the world, improves efficiency and the ability to absorb knowledge, and is considered the most important tool in the production process in a rapidly changing economic and technological environment. Education helps increase productivity by improving workers' skills; enhancing their ability to receive, understand, and use new factors; and improving overall management capacity. A well-educated person can supervise economic activities more effectively than an uneducated person can.

Teixeira and Queirós (2016) argued that education determines the economic prosperity of a country and increases human capital in the workforce. In previous neoclassical models, economists believed that physical capital was the most important factor determining economic growth and development. Therefore, they recommend building physical capital to promote economic growth, especially in developing countries (Habib et al., 2019). However, in the 1960s, it was demonstrated that along with all other factors, education played the most important role in economic development in the form of human capital (Kuzminov et al., 2019). Without a significant investment in human capital, a country cannot achieve economic development. Human capital, also known as the human factor, is an active agent that explores natural resources, accumulates capital, and builds social, economic, and political organizations that, in turn, promote economic development.

Spending on education is considered an investment with returns expressed in the form of higher productivity and earnings for the educated. In general, earnings increase with the number of years of schooling and the rate of return varies with the level of education. It has been observed that each dollar spent on education can generate as much as $10 to $15 of economic growth (UNESCO, 2012). An additional year of schooling can increase a person's earnings by 10% and increase GDP (Gross Domestic Product) by an average of 0.37% annually (Valente et al., 2016). Many developed and emerging countries have devoted a significant portion of their resources to investing in education, with the sole objective of improving the quantity and quality of human capital to increase productivity and economic growth. According to Ololube et al. (2016), a well-funded education system will provide quality education, thereby

[1] University of Finance - Marketing, Ho Chi Minh City, Vietnam, Email: nguyenthekhang@ufm.edu.vn

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producing excellent talent that boosts national productivity and economic development. A study with a sample of 29 developing countries on economic growth during 1984 proved that the contribution of education to economic growth ranged from less than 1% to 23% (Appiah, 2017). Schiliro (2017) estimates that in the United States, from 1909 to 1949, 57.5% of the growth in output per hour of labor can be attributed to improvements in the quality of the labor force, mainly due to education.

Vietnam is a developing country, and education has always been considered a key factor in its socioeconomic development strategies. Over the past decades, the Vietnamese Government has prioritized investment in education, considering it an important driving force to promote economic prosperity and improve the quality of life of the people. Public spending on education in Vietnam accounts for a large proportion of the national budget. According to the GSO, spending on education usually accounts for approximately 15% to 20% of the state budget, equivalent to 4-5% of GDP annually (MANSOOR et al., 2021). This demonstrates the government's strong commitment to improving the education system and creating the best conditions for the younger generation to access necessary knowledge and skills.

Currently, there are few studies on the role of investment in education in Vietnam. This study examined the impact of investment in education on economic prosperity in Vietnam. At the same time, it provides an empirical study that contributes to the basis for government policies as well as implications for future solutions in Vietnam. The rest of the article includes the following: a general summary of studies related to this topic, introducing the model and explaining the reasons for choosing the model used in the study, describing data sources and data processing, providing evidence of research results, and finally proposing policy implications.

Literature Reviews

Lucas (1988) focuses on the role of human capital in economic growth and explains why some countries grow faster than others. The dependent variable in the model is economic growth, measured by GDP per capita growth. The independent variables included human capital, investment in education and training, physical capital accumulation, and spillover effects. This study emphasizes that human capital is an important driver of sustainable economic development. The study argued that policies that encourage investment in education and skills development not only benefit individuals, but also create broader positive effects for society. This is a foundational study of modern growth economics.

Yang (2020) focuses on the relationship between investment in education and economic growth in China in a modern context. The dependent variable in the model is economic growth, measured by GDP per capita. The main independent variables include investment in education, educational attainment, labor quality, and regional resource allocation. The study illustrates that investment in education has a significant impact on China's economic growth, especially by improving labor quality and promoting technological innovation. The author emphasizes the need to reduce inequality in education investment between regions and to focus on developing a high-quality education system to ensure sustainable development..

Hanushek and Woessmann (2020) study the economic origins of human capital, focusing on the factors that promote the formation and development of human capital in the context of the global economy, with prominent evidence from many countries, including both developed and developing economies. In the research model, the dependent variable is human capital, measured through educational attainment and labor productivity. The main independent variables include education expenditure, education quality, economic growth, the labor market, and institutional and social factors. This study concludes that human capital is a determinant of sustainable economic growth, with contributions from economic, social, and institutional factors. It emphasizes the role of educational reform and appropriate economic policies to promote human capital development, especially in developing countries.

Baltagi et al. (2021) used panel data to analyze the relationship between human capital and economic growth. The main dependent variable was GDP per capita growth, which was used to assess the level of economic development. The independent variables included education level, education expenditure, physical capital, Labor, Institutions, and economic policies. The results indicate that human capital has a positive and

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significant effect on economic growth, especially in countries with high-quality education systems. This study emphasizes the importance of investing in education and improving institutions to promote sustainable development.

Siregar et al. (2022) analyzed the impact of education on income inequality in Indonesia using empirical data and econometric methods. In the research model, the dependent variable was the level of income inequality (measured by the Gini index). The independent variables include education level, education expenditure, school enrollment rate, and control variables, such as economic growth, unemployment rate, and urbanization level. The results indicate that education has a negative and significant effect on income inequality, meaning that, as the level of education improves, the income gap between population groups decreases. In particular, education expenditures and school enrollment rates at higher levels have a strong impact on reducing inequality. Control variables such as GDP growth also have a positive effect on reducing inequality, whereas the unemployment rate tends to increase the income gap. This study emphasizes the important role of education policies and recommends increasing investment in this area to promote income equality and sustainable economic development.

From the above studies, the general conclusion is that investment in education has a positive impact on economic growth, reducing inequality through the quality of human resources. The GDP and GINI indices were used as dependent variables. This study uses the Gross National Income (GNI) index instead of GDP as a measure of the economic prosperity of a country for the following reasons:

First, the GNI reflects national income more comprehensively. GNI includes not only the value of domestically produced goods and services like GDP, but also net income from abroad, such as profits, remittances, and international investment. This is important in the context of education research because education not only affects domestic labor productivity but also affects migrant workers who send remittances back home. Countries with high-quality labor often export highly skilled human resources, and GNI reflects the value of income from these activities, while GDP does not.

Second, GNI is closely linked to people's standards of living and welfare. The GNI is an index closer to the level of income that people actually receive, helping to assess the impact of education on welfare and prosperity more directly. This is consistent with educational research, where the main goal is to improve living standards and human development. Third, the GNI emphasizes the long-term impact of education. Education often affects national prosperity through factors such as improving labor productivity, increasing personal income, and reducing inequality. These factors are reflected not only in domestic production and GDP but also in income flows from abroad, especially in the context of globalization.

Fourth, it is more appropriate for economies that depend on labor exports. In countries with a high proportion of labor working abroad (such as Vietnam, the Philippines, and India), education contributes greatly to increasing income from these sources. GNI, with the inclusion of remittances and investment returns, more fully reflects national prosperity.

Fifth, they are more suitable for policy recommendations. Using GNI in research can provide more specific policy recommendations, especially those related to developing education, to increase the quality of labor export. Improving the competitiveness of the domestic and international labor force. Promote policies to attract investment from overseas Vietnamese or international enterprises.

Therefore, using GNI instead of GDP in research on the impact of education on national prosperity helps reflect the economic and social impact of education more fully and accurately. GNI is suitable for the context of globalization and countries with high dependence on international income and is more closely linked to the goal of sustainable development and improving people's welfare.

Methodology

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Based on the recent literature reviews mentioned above, the main independent variable used in the model was investment in education (based on the research of Yang, 2020 and Baltagi et al., 2021). There are also two control variables: labor (Baltagi et al., 2021) and credit to the private sector.

Private credit provides the necessary capital for businesses and individuals, promoting investment, consumption, and job creation, thereby contributing to economic growth and overall national prosperity. Understanding this relationship will help policymakers design effective financial measures. Studying the impact of private credit on economic growth in the context of global economic fluctuations helps to evaluate the effectiveness of credit policies and make timely adjustments to maintain economic stability. Empirical evidence from recent studies, such as Nguyen (2022), examines the impact of private credit on economic growth and GDP per capita in five Southeast Asian countries (Vietnam, Thailand, Malaysia, Indonesia, and the Philippines) over the period 1985–2020. The results demonstrate that private credit has a positive impact on economic growth while emphasizing the importance of credit management in avoiding financial risks. Phan (2023) examined the short- and long-term impacts of bank credit on private sector economic growth in Vietnam using quarterly data over the period 2000–2021. The results show that lending is closely related to private-sector economic growth, especially in the long run. These studies provide empirical evidence on the relationship between private credit and economic growth, and emphasize the importance of credit management and regulation to ensure sustainable economic development. The study will be conducted in Vietnam, and the data to be analyzed will be from 1998 to 2023, based on Table 1.

Table 1. Description of Variables

Acronyms	Description	Sources
GNI	Gross National Income per capita growth (annual %).	https://databank.worldbank.org/source/world-development-indicators#. Statistical yearbook of Vietnam (2023).
EDU	Social investment on education, total (% of GDP).	Statistical yearbook of Vietnam (2000–2023).
LAB	Labor force participation rate, total (% of total population ages 15-64).	https://databank.worldbank.org/source/world-development-indicators#. Statistical yearbook of Vietnam (2023).
CRE	Domestic credit to private sector (% of GDP).	https://databank.worldbank.org/source/world-development-indicators#. Statistical yearbook of Vietnam (2023).

Source: author's compilation.

The model for this study is:

$$GNI_t = \beta_0 + \beta_1 EDU_t + \beta_2 LAB_t + \beta_3 CRE_t + \varepsilon_t \quad (1)$$

This study uses the same technique as Pesaran et al. (1996), further developed by Pesaran et al. (2001) and Im et al. (2003), the ARDL cointegration approach. The ARDL model is considered an unrestricted dynamic model, with the dependent variable expressed as a function of its past values and other explanatory independent variables. Several scholars have adopted this methodology after investigating the macroeconomic variables of GNI based on cointegration.

The ARDL methodology is a general-to-specific approach with several attractive properties. It avoids the issue of the order of integration, which is appropriate for large- and small-scale samples, because it does not require the same order of lag of the variables, and unbiased estimates of some of the explanatory variables are endogenous. Over the years, bound testing in ARDL analysis has nurtured a long-term equilibrium relationship from a dynamic ECM. This makes ARDL estimates that are re-specified in case

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provide short-and long-run coefficients, and the speed of adjustment estimates far more in touch with reality.

The following are the steps involved in the quantitative ARDL approach: the lagg AIC, SIC, and HQ statistics set the agg of the variables of the ARDL model; second, checking the stationarity by the correlogram approach method, where none of the series has the same order of integration and none of the series is stationary at I(2); third, cointegration between the series is tested using the procedure of bound testing of F-Bounds Test statistics to assert long-term relationships critical bounds I(1) and I(0). If it is above the I(1) and I(0) critical bounds, then there is a long-term relationship. Based on this, the model will work out the ECM:

$$DGNI_t = \beta_0 + \sum_{i=>1} \beta_1 DGNI_{t-i} + \sum_i \beta_2 DEDU_{t-i} + \sum_i \beta_3 DLAB_{t-i} + \sum_i \beta_4 DCRE_{t-i} + \psi ECM_{t-i} + \varepsilon_{2t} \quad (2)$$

This is an error-correction model. A high ψ value indicates that the adjustment towards the long-term equilibrium is fast. If this parameter of the ECM self-adjustment mechanism is negative and statistically significant, it indicates that the variable under consideration has a self-adjustment property. In this case, GNI must return to a balance path after having been at some point moved away from long-term equilibrium.

Step four entails estimating the ARDL model using the lag orders obtained to identify the long- and short-term relationships in the model. The final step is estimating the short-term effects of the variables based on the (ECM) using the ARDL approach as per Engle and Granger's (1987) methodology, depending on the cointegration model.

Equation (1) The ARDL regression equation for this study is as follows:

$$DGNI_t = \beta_0 + \sum_{i=>1} \beta_1 DGNI_{t-i} + \sum_i \beta_2 DEDU_{t-i} + \sum_i \beta_3 DLAB_{t-i} + \sum_i \beta_4 DCRE_{t-i} + \lambda_1 GNI_{t-1} + \lambda_2 EDU_{t-1} + \lambda_3 LAB_{t-1} + \lambda_4 CRE_{t-1} + \varepsilon_{it} \quad (3)$$

where: The model for evaluating the long-term impact is

$$GNI_t = \beta_0 + \lambda_1 GNI_{t-1} + \lambda_2 EDU_{t-1} + \lambda_3 LAB_{t-1} + \lambda_4 CRE_{t-1} + \varepsilon_{1t} \quad (4)$$

And the model for the short-term is:

$$DGNI_t = \beta_0 + \sum_{i=>1} \beta_1 DGNI_{t-i} + \sum_i \beta_2 DEDU_{t-i} + \sum_i \beta_3 DLAB_{t-i} + \sum_i \beta_4 DCRE_{t-i} + \varepsilon_{2t} \quad (5)$$

Finally, to check the consistency of the regression results, this study undertook diagnostic tests such as VIF, Normality Test, Breusch-Godfrey Serial Correlation LM Test, Heteroskedasticity Test, Ramsey RESET Test, and CUSUM (Hair et al., 2006).

4. Empirical Analysis

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Descriptive Statistics of Variables

Table 2 descriptive statistics of the study variables, which embody the nature and attributes of the variables under consideration. It tabulates for each variable the mean, median, minimum and maximum values, standard deviation, and P value of Jarque-Bera statistic for testing normality distribution of variables.

Table 2. Descriptive Statistics

	GNI	EDU	LAB	CRE
Mean	4.972962	0.950077	79.20815	79.78158
Median	5.106500	0.974500	79.14650	81.43700
Maximum	7.631000	1.378000	81.86600	127.9120
Minimum	0.772000	0.543000	75.86400	20.12400
Std. Dev.	1.500609	0.292535	1.963671	31.07563
Jarque-Bera	2.341714	2.355775	2.278757	1.171367
Probability	0.310101	0.307929	0.320018	0.556725
Sum	129.2970	24.70200	2059.412	2074.321
Sum Sq. Dev.	56.29569	2.139412	96.40010	24142.37
Observations	26	26	26	26

Source: Own processing from Eviews 12

The mean GNI was 4.972962, with a standard deviation of 1.500609. The maximum value of GNI was 7.631 and its minimum value was 0.772. The Jarque-Bera test statistic equals 2.341714, probability 0.310101, and rejects the null hypothesis of normal distribution only in the loosest sense.

The EDU has a mean of 0.950077 with a relatively low standard deviation of 0.292535, indicating good stability of observations regarding the mean. It ranged from a minimum of 0.543 to a maximum of 1.378. The test (JB = 2.355775) prob. (0.307929) does not reject the null hypothesis that the distribution is normal.

The LAB mean is 79.20815, with a fairly low standard deviation of 1.963671, which indicates some semblance of employment stability. The maximum and minimum values are 81.866 and 75.864, respectively. This range is not very large. The Jarque-Bera probability is 0.320018, which proves that the LAB distribution is almost normal.

The mean of CRE B was 79.78158, where the standard deviation of 31.07563 was too high, showing large dispersion among observations. Its maximum and minimum values are 127.912 and 20.124, respectively, indicating great variation. The Jarque-Bera test statistics value and probability value for JB = 1.171367 and 0.556725, respectively, reject the null hypothesis of a normal distribution.

Conclusion: GNI, EDU, LAB, and CRE were normally distributed. CRE presents the most variability (high standard deviation) and EDU the least variability. GNI and LAB have slight left skewness, which is still negligible.

Correlation Analysis

In view of the above correlation coefficient table between the variables in Table 3, there are some critiques as follows:

The correlation between variables with GNI: EDU was positive at 0.32003. This indicates that educational investment has a positive but not strong relationship. It had a very weak negative correlation with LAB (-0.01661), showing almost no clear relationship. There was a slight negative correlation with CRE (-0.09731). Therefore, credit is not strongly related to GNI and its effects may be adverse.

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Correlation of EDU with other variables: LAB exhibits a negative correlation of -0.26205, which is, in essence, the inverse relationship between educational investment and labor. This might indicate that, as labor increases, average education investment tends to fall, or vice versa. CRE is another negatively correlated variable (-0.38374) in a transparent manner. Credit and education have a straightforward, negative relationship. This labor correlates positively with the CRE at 0.40227. When labor increases, credit tends to increase and vice versa.

Conclusion: Considering that most pairs had weak correlations, except for the relatively positive relationship between LAB and CRE, most pairs of variables were quite weak, except for EDU, particularly with GNI and CRE. This reveals that most of the pairs entered by GNI are weak. In general, this might mean that other more sophisticated means of analysis, such as regression models, will reveal the actual effects.

Mukaka (2012) applied the rule of thumb to the variable pairing relationship strength. The modest correlation that the model's independent variables show with each other, since no two exceed 0.70, indicates multicollinearity, and estimations can be undertaken. Further, after estimating the equation, I check for variance inflation factors (VIFs) to examine the multicollinearity of coefficients.

Table 3. Correlation Coefficients of Variables

	GNI	EDU	LAB	CRE
GNI	1.00000	0.32003	-0.01661	-0.09731
EDU	0.32003	1.00000	-0.26205	-0.38374
LAB	-0.01661	-0.26205	1.00000	0.40227
CRE	-0.09731	-0.38374	0.40227	1.00000

Source: Own processing from Eviews 12

Optimal Lag Selection and Stationarity Tests of Variables

Based on Table 4, Optimal Lag Selection, and some comments related to the selection of the optimal lag: The table provides criteria such as LogL, Likelihood Ratio (LR), Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ) to determine the optimal lag. The lag marked with (*) represents the optimal lag according to each criterion. Lag 0, all criteria have higher values than lags 1 and 2 and are not selected as optimal. Lag 1 was selected as optimal by the criteria FPE, AIC, SC, and HQ because the values of these criteria were the smallest at lag 1. The LR value was 109.5734, indicating a significant improvement in the model fit compared with lag 0. Lag 2 was not selected as optimal by any criteria; although the LogL value (-115.1128) was better than lag 1, the criteria FPE, AIC, SC, and HQ all increased, indicating that this lag was not optimal. Conclusion: Lag 1 is the optimal choice based on most criteria (FPE, AIC, SC, and HQ). This suggests that using the model with lag 1 achieves the best balance between the forecast accuracy and model simplicity.

Table 4. Optimal Lag Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-196.5090	NA	212.2511	16.70909	16.90543	16.76118
1	-127.3048	109.5734*	2.582219*	12.27540*	13.25711*	12.53584*
2	-115.1128	15.24000	4.035180	12.59273	14.35981	13.06154

Source: Own processing from Eviews 12

In the analysis of the ARDL bounds testing model, the stationarity test of the variables is viewed as a forerunner for checking the level of integration of the observed data series. The correlogram method was employed to determine variable stationarity. As indicated in Table 5, the GNI variable is stationary at level

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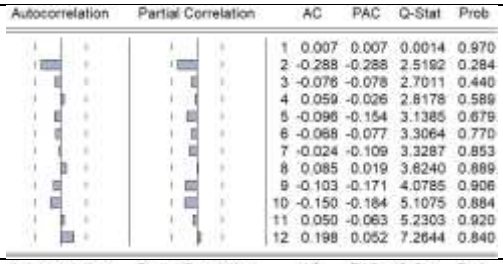
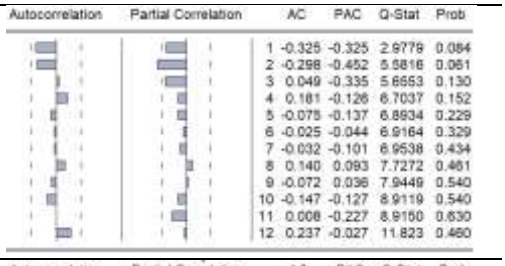
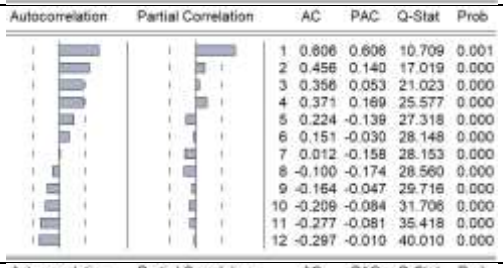
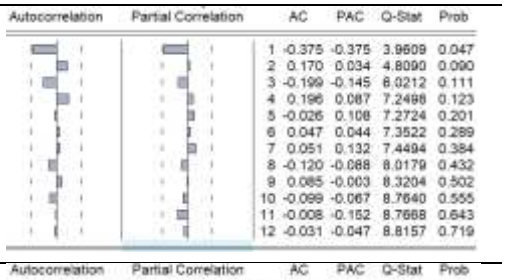
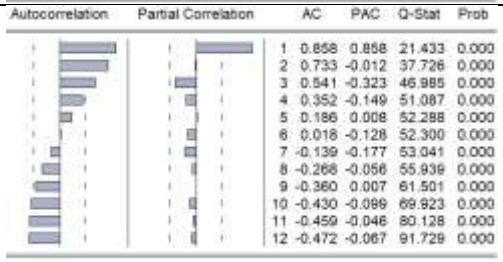
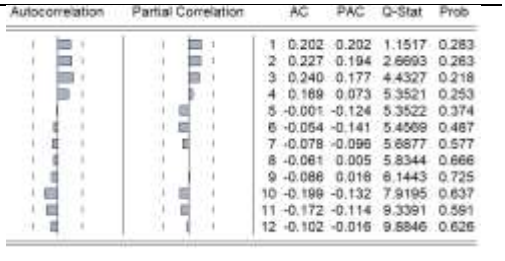
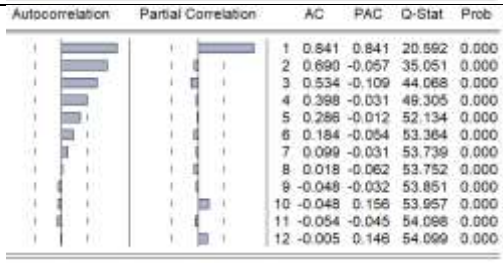
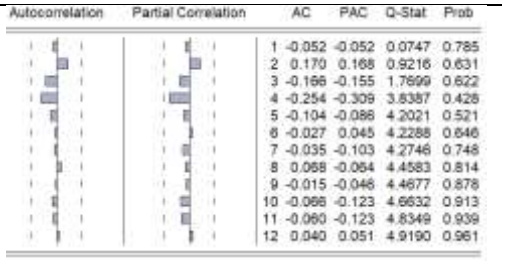
I(0), while the others are stationary at level I(1) and not at level I(2), which means that they do not have the same trend. This makes these characteristics suitable for regression models using the ARDL technique.

Table 5. Stationarity Test Results of Variables

Variables	I(0)	I(1)
GNI		
EDU		
LAB		
CRE		

Source: Own processing from Eviews 12

Bound Test for Cointegration

Having identified the appropriate lag length and tested variable stationarity, the study undertakes bound testing to ascertain the long-term relationship between the GNI and its independent variables, as depicted in Table 6.

Table 6. Bound Test Results

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	F-statistic	5.665427	10%	2.72
k	k	3	5%	3.23

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			2.5%	3.69
			1%	4.29

Source: Own processing from Eviews 12

From Table 6, it can be seen that the calculated value of the F-statistic is 5.665427, which lies much above the high-bound critical values at 90%, 95%, and 99% confidence levels, which are 2.72, 3.23, and 4.29, respectively. Hence, it can be concluded that cointegration or a long-term relationship exists between the dependent variable, GNI, and independent variables. The long-and short-term relationships between variables are estimated in the following section.

ARDL Model Estimation

Table 7. Estimation Results

Variables	Coefficient	Std. Error	t-Statistic	Prob.
The dependent variable: GNI. Long-Term Estimation Results				
EDU	1.723599	2.469367	-0.697992	0.0146
LAB	-0.250510	0.249196	-1.005269	0.3289
CRE	0.003940	0.015317	0.257234	0.0001
The dependent variable: D(GNI). Short-Term Estimation Results				
C	22.21085	4.236789	5.242378	0.0001
D(EDU)	1.674374	1.207271	1.386908	0.0234
D(LAB)	1.017533	0.312774	3.253253	0.0047
D(CRE)	0.068997	0.036023	-1.915376	0.0324
CointEq(-1)*	-0.831458	0.161029	-5.163413	0.0001

Source: Own processing from Eviews 12

To enhance the reliability of the estimation results, six diagnostic tests were performed; the outcomes are detailed in Tables 8 and 9.

Table 8. Diagnostic Test Results

No	Tests	P-Value	Results
1	Normality test	0.6580	Normal distribution
2	Breusch-Godfrey Serial Correlation LM Test	0.5884	No autocorrelation
3	Heteroskedasticity Test: Breusch-Pagan-Godfrey	0.2373	No heteroscedasticity detected
4	Ramsey Reset Test	0.3425	No need for additional variables

Table 9. Variance Inflation Factor (VIF) and CUSUM Test Results

Variables	Coefficient Variances	Centered VIF	

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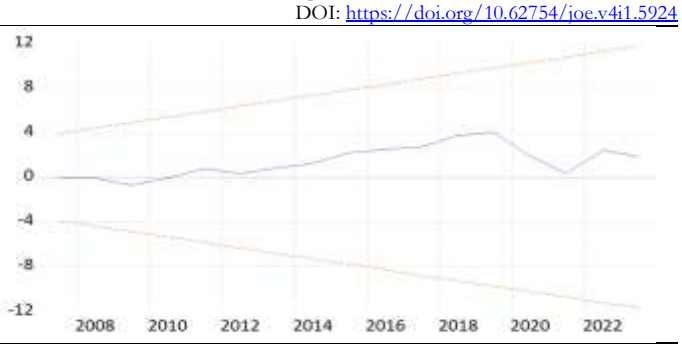
GNI(-1)	0.047942	1.322284	
EDU	2.387404	2.363145	
EDU(-1)	3.208198	3.166496	
LAB	0.231838	1.076480	
LAB(-1)	0.306020	3.468700	
CRE	0.001623	6.505811	
CRE(-1)	0.001596	7.300679	

Source: Own processing from Eviews 12

All entered VIF values were below comparable results for the long-term model without multicollinearity, as defined by Hair et al. (2006). No clear indication points for CUSUM test instability or major changes in the model over the period tested the line well within the testing boundary. Overall, the CUSUM plot indicates that the time regression model used in this study is time stable.

Discussion of Research Findings

Long-run estimation results: Social investment in education has a coefficient of 1.723599, indicating that education investment has a positive impact on GNI growth in the long run and is statistically significant (Prob = 0.0146, <5%). The labor force participation rate has a coefficient of −0.250510, suggesting that the labor force participation rate has a negative impact on GNI in the long run, but Prob = 0.3289 (>10%) notes that this impact is not statistically significant. Domestic credit to the private sector has a coefficient of 0.003940, showing that credit in the private sector supports GNI growth in the long run, and is statistically significant (Prob=0.0001, <1%).

Short-run estimation results: Social investment in education, coefficient 1.674374, shows that short-run education investment has a positive impact on GNI and is statistically significant (Prob = 0.0234, <5%). The labor force participation rate, with a coefficient of 1.017533, suggests that the short-run labor participation rate promotes GNI growth and is statistically significant, with a value of Prob=0.0047 (<1%). Domestic credit to the private sector, coefficient 0.068997, private sector credit supports GNI in the short run and is statistically significant. CointEq (-1) has a coefficient of −0.831458, reflecting the speed of adjustment back to the long-run equilibrium, and is significant with a value of Prob=0.0001 (<1%), indicating that approximately 83.1% of the deviation in GNI is adjusted to the equilibrium in the next period.

Overall conclusion: In the long run, investment in education has a positive and statistically significant effect, demonstrating the important role of education in GNI growth. This supports the priority of policies that increase investment in education to improve labor productivity and national income. The labor participation rate has a negative and statistically insignificant impact, suggesting that labor quality or labor efficiency may need to be improved rather than focusing on labor participation alone. Private-sector credit has a positive and statistically significant impact, suggesting that increasing private credit is an effective tool for promoting economic growth. In the short run, both education investment and private credit have positive and statistically significant impacts, emphasizing that education and credit support policies are not only effective in the long run, but also bring immediate positive results. The labor participation rate has a positive and statistically significant impact, which is different from that in the long run. This may reflect immediate labor demand or labor force efficiency under short-run conditions. The speed of adjustment to equilibrium revealed a rapid adjustment speed (83.1%) when the system deviated from equilibrium, reflecting the economy's strong ability to recover to a steady state.

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Policy Implications

The following are the policy implications for education investment to foster economic prosperity in Vietnam:

To begin, give top priority to investment in education. The government should raise the budget for education, with particular emphasis on investing in educational infrastructure and high-quality training programs, as well as the training of workers' skills. This will not only enhance labor productivity but also usher long-term economic growth in the common prosperity of the country.

Second, quality labor is synonymous with an increase in the number of workers. Rather than merely trying to increase the labor force participation rate, improve the quality of labor by vocational training, skilling up, and innovating. This promotes more active worker involvement in economic growth.

Third, we built a comprehensive and just education system. Care is taken to ensure that all parts of the population, especially the weak groups (rural and mountainous areas), have access to quality education. Programs of scholarships, fee aids, and educational infrastructure should focus on backward areas.

Fourth, vocational education and skill training improved. First, we develop and expand relevant vocational education programs that meet labor market needs. Second, they invest in information technology, automation, and soft skills to meet the modern economic requirements.

Fifth, promote education-business cooperation. Increase the linkage between educational institutions and businesses to develop training programs closely related to production practices. Let industries participate in curriculum design and have a scope for offering internship opportunities to students.

Sixth, we invest in EdTech. Applying technology in education will help ensure effective teaching and learning, especially in ASEAN members' rural areas. Developing online learning platforms and handing out technological equipment will enhance the access and quality of education in the region. Seventh, educational research and innovation centers should be built. Create conditions for opening educational research centers aimed at testing new teaching methods with an educational process quality enhancement focus. During these studies, reforms that modernize the system of education will be made later.

Investing in education and uniting workforce quality improvement would make the ground for Vietnam to ensure not only sustainable economic growth, but also steady economic development in the long term. The policy should be oriented toward developing quality human resources that can meet the requirements of the modernized, integrated economy on the quality front.

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