"Public debt management and economic growth: A threshold regression approach"

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PUBLIC DEBT MANAGEMENT AND ECONOMIC GROWTH: A THRESHOLD REGRESSION APPROACH

Abstract

This study deals with the impact of national debt on gross domestic product growth, which plays an essential role in economic development when the debt-to-GDP ratio achieves the optimal public debt ratio. The goal of this study is to comprehend the relationship between government debt and GDP growth, which becomes increasingly essential for economic development as the debt-to-GDP ratio approaches the optimal threshold of public debt. The study applied regression threshold models, unit roots, and Pearson correlation tests to the data collected in Vietnam from 2000 to 2020 to determine the optimum national debt-to-GDP threshold. The results show that the correlation between national debt-to-GDP and GDP growth was 85.2%. All the variables are stationary at the first difference and lag after one year, and the 38% threshold is the best level of national debt for GDP growth. This study contributes to the theoretical enhancement of the current knowledge of the factors that offer the Vietnamese government a point of reference for policy recommendations to control national debt successfully.

INTRODUCTION

A national debt crisis has been taking place in some countries and is likely to spread to many other economies, which is the government's primary concern. Public debt is an additional resource that compensates for the state budget deficit. However, it can negatively affect debt safety and national financial safety when it exceeds the optimal threshold, causing the economy to suffer from being prone to recession. Therefore, strictly controlling public debt is essential in stabilizing the national financial system.

Research shows that when the national debt is high, exceeding the safe threshold of the national debt, the economy is in recession and under internal and external pressure. Since the influence of public debt on the state of Vietnam's financial security is high, and the change in the threshold level of the public debt of Vietnam significantly impacts GDP growth, this problem requires increased attention.

1. LITERATURE REVIEW

Higher tax rates balance the budget but increase inflation when enterprises pay more tax, leading to enterprise bankruptcy. According to Mishkin (2013), government, public, or national debt is the total amount of money the government and local authorities borrow to fi-

nance their budget deficits. Government debt is, therefore, the real budget deficit up to a specific point. In order to make the amount of government debt easier to understand, it is frequently expressed as a proportion of GDP. Loans from local lenders are categorized as domestic debts, whereas loans from overseas lenders are categorized as external debts. To borrow money from businesses and individuals, the government issues bonds. Bonds issued in local currency are considered credit-free because the government can raise taxes or even manufacture more money to pay the principal and interest in government bonds when they mature. Foreign government bonds often have a higher credit risk than local government bonds because the government may not have sufficient foreign currency to pay its debts, in addition to the possibility of exchange rate risk.

In the case of the potential for government default, which results in more significant political and economic instability and slower GDP growth rates, the high national debt can hinder GDP growth (Fincke & Greiner, 2015; Kourtellos et al., 2013). Although the correlation between national debt and GDP growth has been studied in the economic literature, empirical evidence indicates that whether this relationship is positive or negative depends on the degree of national debt and each nation's capacity to provide the final commodities and services (Dinh, 2020a; Kim et al., 2021; Law et al., 2021).

Ndoricimpa (2020) used the panel smooth transition regression method to establish the debt threshold between 62 and 66%. According to the findings, GDP growth is slowed by high national debt, while growth is accelerated by low national debt. As a result, African nations' national debt should be reduced for economic development due to the negative correlation between national debt and GDP growth. Next, Sanusi et al. (2019) used a distributed lag model with automatic non-linear regression to investigate the connection between national debt and growth GDP in the South African Development Community. The empirical findings indicate that when long-term national debt exceeds a threshold of 57% of GDP, it stimulates GDP growth.

A panel threshold regression was used with data from 2003 to 2012 in North African nations to assess the threshold of dynamic debt switch on GDP growth (Khanfir, 2019; Dinh, 2020c; Panizza & Presbitero, 2014), focusing on the threshold of national debt affecting GDP growth. The findings indicate that national debt below 42.8% of GDP benefits GDP growth, but debt above this level has a negative effect. Therefore, North African nations should consider setting an adequate national debt ceiling to encourage GDP growth. Both domestic and foreign debt is considered national debt.

To analyze the asymmetry and threshold effects of external debt on economic development in Egypt from 1980 to 2019, Sharaf (2022) used a regression threshold of models. The findings show that when the external debt growth hits the threshold level of the national debt-to-GDP ratio equal to or beyond 96.7%, there is a negative correlation between external national debt and GDP growth in the short and long term. In order to assist policymakers in Egypt in determining the maximum level of foreign debt that can maintain GDP growth, the study determined the external national debt thresholds. However, the optimal level of state debt from abroad still needs to be assessed (Dinh, 2020d; Jacobs et al., 2020; Liu & Lyu, 2021). Shvets (2017), Aiyedogbon et al. (2022), and Presbitero (2012) referred to estimates of the threshold ratio of public debt to GDP in developing economies experiencing the impact of excessive public debt on macroeconomic dynamics. The results found a threshold ratio of 40% of GDP, meaning that public debt accounts for 40% of the total national output produced in a year. In addition, economic growth is substantial and responds negatively to changes in external debt.

Šuliková and Tykhonenko (2017) examined the threshold of national debt and economic development in 14 countries of the European Union. They applied a threshold model with a data series from 1995 to 2012, which shows a model of two national debt-to-GDP thresholds, that is, the thresholds of 40.2% and 96.6%. When the national debt exceeds 40.2%, there is an adverse correlation, meaning that if the national debt of these countries increases, their GDP growth decreases. In addition, Diallo and N'Zué (2021) focused on the threshold of external government

debt and GDP growth in Guinea. The study applied an autoregressive distributed lag model with a data series from 1990 to 2018. The findings show that the external debt-to-GDP ratio significantly non-linearly affects GDP growth, indicating that the optimum national debt-to-GDP threshold is 25.2%. Therefore, the economy slows if the external national debt exceeds this threshold. Thus, each study provides a different threshold of the national debt, which depends on the specific circumstances of each country (Checcherita-Westphal & Rother, 2012; Daud & Podivinsky, 2014; Dinh, 2020b; Chen & Li, 2019).

Analyzing national debt thresholds and GDP growth, Alshammary et al. (2020) collected data for 20 Eastern European and North African countries between 1990 and 2016. They applied a threshold model to analyze the correlation between the variables. The empirical results show that the national debt threshold is 58% of GDP; therefore, the national debt below this threshold will promote economic development and vice versa. This finding confirms that GDP growth depends on national debts (Dinh, 2019; Égert, 2015; Mohanty & Panda, 2020; Eneida, 2018).

One of the most divisive topics among economists and politicians in both rich and emerging nations – the increase of government debt – has attracted the interest of economists as an increasing threat to GDP growth (Panizza & Presbitero, 2013; Serrão, 2016; Mohsin et al., 2021). However, current economic research on the connection between national debt and economic growth revealed concerns about how the national debt threshold may affect economic growth; depending on the threshold, there may be a positive or negative correlation. Additionally, the impact of government debt on economic growth might vary based on each country's level of economic development. Lee et al. (2017) applied a threshold model to explore that the debt threshold is not about 90% but about 30%, above which average real gross domestic product (GDP) growth falls dramatically, and the national debt threshold has a relationship with GDP growth. In addition, Eberhardt and Presbitero (2015), Spilioti and Vamvouka (2015), and Doğan and Bilgili (2014) have addressed the relationship between public debt and long-term growth in numerous countries and shown a negative relation-

ship between debt and growth across countries but with no common debt threshold.

The literature review demonstrates that research has focused on how national debt affects GDP growth. This issue is still debatable today, and each empirical finding exploring how the level of national debt affects GDP growth is unique because each country has different macroeconomic policies and GDP growth depending on its stage of economic development. This investigation of the national debt ceiling and growth GDP, which served as its foundation, used a widely utilized research methodology, such as the threshold models of Owyang et al. (2013) and Ramey (2019).

Therefore, this study analyzes whether national debt negatively impacts GDP growth. The threshold model is applied to evaluate the change in the national debt threshold and how it affects GDP growth. Next, the study elaborates on the following assumptions (Schwarz, 1978). The hypothesis H_0: $\beta_1 = \beta_2$ leads to H_0 being rejected; if the hypothesis H_0 is not rejected, it may be established that there is no threshold impact between the $\Delta(GDP_{it})$ variable and the $\Delta(debt_{it})$ variable. If the hypothesis H_0: $\beta_1 \neq \beta_2$, H_0 is accepted. Besides, to test the existence of the threshold effect, Hansen (1999) applied the bootstrap method to calculate the likelihood ratio (Dinh, 2022; Johansen, 1995).

Additionally, the best k lag for the ADF model was chosen using the results of the ADF test, which is Akaike's Information Criterion. So, when the AIC is the smallest, the k value is selected (Akaike, 1973). The study tests the following hypotheses:

H_0: $\beta = 0$ ($\Delta(GDP_{it})$, $(debt_{\%t})$ are the non-stationary data time-series).

H_0: $\beta < 0$ ($\Delta(GDP_{it})$, $(debt_{\%t})$ are the stationary data time-series).

2. METHODOLOGY

A regression threshold of models is applied to analyze the economic variables with the same time series. The dependent variable is assumed to be stationary until the independent variables and error term cross its response threshold. Further, re-

gression threshold models are a diverse set of irregular regression models that depend on points of change or thresholds. They are used to model certain non-linear relationships between an outcome and a predictor (Fong et al., 2017). So, this study uses a regression threshold model to explore the optimum threshold for the national debt and whether these thresholds affect countries' GDP growth (Dickey & Fuller, 1981).

According to Dinh (2020a), who applied the threshold model to find the optimum tax threshold, this model has been applied in other studies to explore the optimum debt thresholds of different criteria. To explore countries' optimum national debt per GDP ratio threshold, the paper applies a regression threshold model (Hansen, 1999) to estimate and assumes these thresholds are constant over time. Observable data from a balanced panel of national debt per GDP and GDP growth are as follows (y_{it}, q_{it}, x_{it}: $1 \leq i \leq n$, $1 \leq t \leq T$). The dependent variable y_{it} (Δ_{GDP} is GDP growth) is scalar, and the subscripts i and t denote the individual and time, respectively; the threshold variable q is scalar, and the regressor x_{it} ($debt\%_{it}$) is a national debt per GDP ratio; k is a vector, so the model is written as:

$$\Delta_{GDP\,it} = \mu_i + \beta_i debt\%_{it} I\left(q_{it} \leq \gamma\right) + \\ +\beta_2 debt\%_{it} I\left(q_{it} > \gamma\right) + \omega_{it}. \quad (1)$$

In which $I(...)$ is the indicator function, so the formula (1) is written:

$$\Delta_{GDP\,it} = \begin{cases} \mu_i + \beta_i debt\%_{it} + \omega_{it} &,\left(q_{it} \leq \gamma\right) \\ \mu_i + \beta_2 debt\%_{it} + \omega_{it} &,\left(q_{it} > \gamma\right) \end{cases}. \quad (2)$$

The formula (2) is set up for compact as follows:

$$debt\%_{it}\left(\gamma\right) = \begin{cases} \beta_i debt\%_{it} I\left(q_{it} \leq \gamma\right) \\ \beta_2 debt\%_{it} I\left(q_{it} > \gamma\right) \end{cases}, \quad (3)$$

with $\beta = (\beta_1\ \beta_2)$ so that (3) is written as:

$$\Delta_{GDP\,it} = \mu_i + \beta_i debt\%_{it}\left(\gamma\right) + \omega_{it}. \quad (4)$$

The model's 3 levels and the value of threshold q_{it} are smaller or greater than the threshold, and the levels are different slopes of regression, β_1, and β_2, which are the elements of x, must not be time-invariant.

Furthermore, model (3) is assumed as the threshold q_{it} is not time-invariant, ω_{it} is independently distributed and identically distributed with zero mean and finite variance δ^2, excluding lagged dependent variables from $debt\%_{it}$ variable (Gujarati, 2003; Pesaran & Shin, 1999).

According to Hansen (1999), if there exists a two-threshold effect, the regression model is defined in a reduced form as follows, with the assumption that $\gamma_1 < \gamma_1$:

$$\Delta_{GDP\,it} = \mu_i + \beta_i debt\%_{it} I\left(debt\%_{it} \leq \gamma_1\right) + \\ +\beta_i debt\%_{it} I\left(\gamma_1 < debt\%_{it} \leq \gamma_2\right) + \\ +\beta_i debt\%_{it} I\left(debt\%_{it} > \gamma_1\right) + \omega_{it}. \quad (5)$$

The paper only focuses on research methods for the two-regression threshold models, so this model is applied to estimating countries' tax threshold and GDP growth (Johansen, 1991).

Table 1. Variable description

Variable	Acronym	Description	Source
The GDP growth rate	Δ_GDP (%)	The GDP growth rate analyzes annual (or quarterly) changes in Vietnam's economic production to determine how GDP grows. Vietnam's data were collected between 2000 and 2020	The data are available on the website of the World Development Indicators (World Bank, n.d.)
The national debt per GDP ratio	$debt_{\%t}$	The national debt per GDP ratio measures how much a nation collects in taxes compared to its GDP. This ratio was used to gauge how effectively a nation's leadership manages its financial resources. The study divides GDP by tax income for a given period to obtain the national debt per GDP ratio. Vietnam's data were collected from 2002 to 2020	The data are available on the website of the CEIC Data Global Database (CEIC Data, 2021)

Table 1 shows the variables used in this study to explore the impact of debt-to-GDP and GDP growth in Vietnam.

3. RESULTS

Using a regression threshold model to calculate the lag of time-series data is necessary, presuming that the series in question is stationary if its mean, variance, and covariance remain constant throughout time. Instead of the exact time the covariance was calculated, the difference between the two periods depends on their separation. As a result, the autocorrelation graphs of the various periods of the data will be identical.

To explain what a stationary series means, the study considers a specific economic time series, such as GDP growth and debt-to-GDP, which are non-stationary since these data are updated yearly. Why was it tested when a time series was stationary? There are several reasons. First, if a sequence is non-stationary, its behavior can be studied. Second, regression analysis with two or more non-stationary series might provide erroneous or spurious regression (Pienkowski, 2017).

A time series is deemed stationary, per Gujarati (2003), if the mean, variance, and covariance (at various lags) remain unchanged throughout the series determination. The stationary series tended to revert to the mean while its surrounding fluctuations remained constant. So a non-stationary time series will either have a time-varying mean, time-varying variance, or both. There are many methods to test the stationarity of a time series: the Dickey-Fuller test (DF), Phillip-Person test (PP), and extended Dickey-Fuller test (ADF) (Gujarati, 2003).

Table 2 shows that the time series of GDP are non-stationary because Prob* of 0.6344 was greater than the alpha level of 0.05. In other words, the value of t-Statistic is –1.242817, which is less than the test critical values of –3.808546, –3.020686, and –2.650413, respectively, for alpha levels of 1%, 5%, and 10%. In addition, the debt's time series is similar to GDP's (Table 2).

According to Ramanathan (2002), most economic time series are non-stationary because they frequently exhibit a linear or exponential trend across time. Through differentiation, they might be changed into a stationary series. If a series' first difference is stationary, the original series is referred to as the first difference and is denoted by I(1) (Ramanathan, 2002).

Table 3 shows that the time series of GDP are stationary because Prob* of 0.0049 was less than the alpha level of 0.05. In other words, the value of t-Statistic is –4.174081, which is greater than the test critical values of –3.831511, –3.029970, and –2.655194, respectively, for alpha levels of 1%, 5%, and 10%. In addition, the debt's time series is similar to that of GDP (Table 3).

Table 2. Testing the null hypothesis: Vietnam's debt and GDP unit root test at lag I(0)

Item		Debt		GDP	
		t-Statistic	Prob.*	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		−0.847666	0.7831	−1.242817	0.6344
Test critical values	1% level	−3.808546	−	−3.808546	−
	5% level	−3.020686	−	−3.020686	−
	10% level	−2.650413	−	−2.650413	−

Note: * one-sided p-values.

Table 3. Testing the null hypothesis: Vietnam's debt and GDP unit root test at lag I(1)

Item		Debt		GDP	
		t-Statistic	Prob.*	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		−4.289303	0.0039	−4.174081	0.0049
Test critical values	1% level	−3.831511	−	−3.831511	−
	5% level	−3.029970	−	−3.029970	−
	10% level	−2.655194	−	−2.655194	−

Note: * one-sided p-values.

Table 4. Vietnam's discrete threshold regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Vietnam's debt(–1) < 38.299999 – 12 obs				
Vietnam's GDP	–2.202753	0.545941	–4.034785	0.0009
38.299999 ≤ Vietnam's debt (–1) – 8 obs				
Vietnam's GDP	–0.171714	0.585305	–0.293376	0.7728
Non-Threshold variables				
C	45.92038	3.433634	13.37370	0.0000
R^2	0.843215	Mean		37.07000
Adjusted R^2	0.824769	S.D.		7.342243
S.E.	3.073505	A.C		5.220996
Sum squared resid	160.5894	S.C		5.370355
Log-likelihood	–49.20996	H.Q.		5.250152
F-statistic	45.71420	D.W		1.310653
Prob. (F-statistic)	0.000000		–	

Table 5. Discrete threshold specification

Summary			
Variable's threshold: VIETNAM'S DEBT(–1)			
Data value of threshold: 38.3			
Adjacent data value: 36.8			
Threshold value used: 38.299999			
Sequential F-statistic determined thresholds: 1			
Threshold Test	**F-statistic**	**Scaled F-statistic**	**Critical Value****
0 vs. 1 *	77.49343	77.49343	8.58
1 vs. 2	7.986267	7.986267	10.13
Threshold values			
1	**Sequential**	**Repartition**	
	38.299999	38.299999	

Note: * Significant at the 0.05 level. ** Bai-Perron (Econometric Journal, 2003) critical values.

The presence of a government's debt threshold influence on the correlation between national debt per GDP and GDP growth is empirically tested in this study. The optimal level of national debt promoting GDP growth is explored using the panel threshold estimation approach. If governmental debt surpasses this level, economic growth will be negatively impacted. Table 4 shows the national debt thresholds that affect economic growth. Therefore, this study used a threshold specification test to determine the maximum national debt level. This national debt leads to the highest economic growth (Table 5).

Another approach is to apply the separate threshold specifications explored and to determine the value of 1 if z exceeds a certain threshold and is equal to 0. In addition, the advantage of the method is that the statistical inference for each mode based on a set of observations is more effective

than when using discrete threshold parameters. It is particularly relevant in the case of determining national debt thresholds and economic growth (Dickey & Fuller, 1981).

The residual test of the regression threshold of models by the correlation diagram shows no series correlation. The ADF test shows that the residuals of the model are stationary series. Figure 1 shows the results of testing the stability of the regression threshold of models using the Inverse Roots of AR characteristic polynomial test. The eigenvalues are all in a single circle (or all less than 1), which implies that the regression threshold of models is stable and the estimated results from this model can be reliable.

Figure 2 shows the residual and estimated values. Actual is the actual value of the dataset: Yi, fitted is the value estimated by the regression function Ŷi,

Inverse Roots of AR Characteristic Polynomial
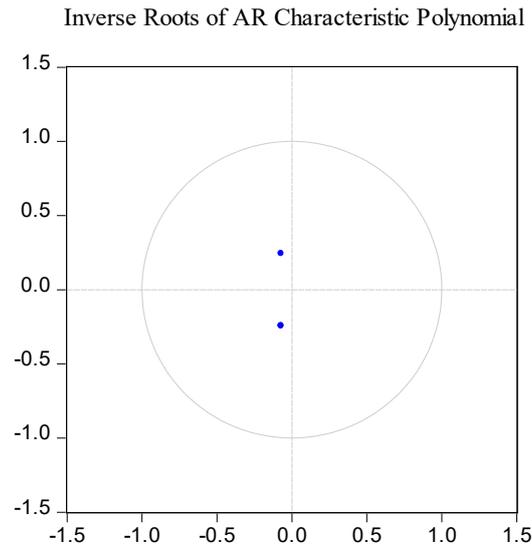
Figure 1. Inverse roots of AR characteristic polynomial test
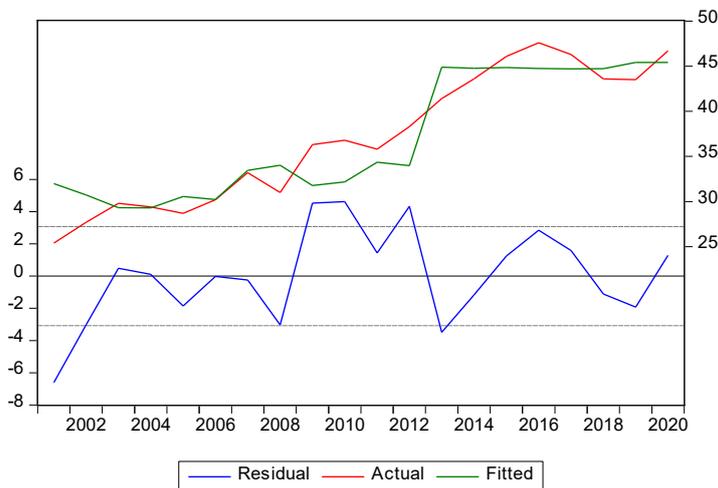
Figure 2. Residual and estimated values

and residual is the residual value: ei or ûi, which observations have the closest actual and estimated values. Thus, the actual value is higher or lower than the estimated value. These observations do the regression line that best describes the variation of the dependent variable Y.

4. DISCUSSION

National debt and economic growth have a lag of one year, which means that when national debt increases, it will not affect growth immediately, but it affects after one year; this result is consistent with earlier results. The national debt exceeds the optimal threshold, causing the economy to decline.

The empirical results show that national debt is not only a problem in slow or developing countries. Comparing national debt to GDP, the literature shows the high national debt in developed economies, in which the Euro area faces great challenges when Greece resorts to the rescue package. The EU and IMF support the avoidance of default. Therefore, governments must balance and control the national debt threshold for sustainable economic growth (Tables 2 and 3).

When the national debt is too high, the tightening of spending and implementing the "austerity" policy is observed to reduce the budget deficit. However, "austerity" policy leads to political instability due to welfare and government spending cuts. The correlation between government debt

and the economy's growth is inverse, or slower growth GDP arises from the higher national debt. In particular, the government's debt threshold is higher than the ideal threshold, which reduces the economy's growth (Table 4).

It is imperative to base the thresholds of government debt on GDP to determine the state of government debt; however, it is equally important to analyze national debt, the growth rate of the economy, and national reserves, whether government debt is domestic or foreign. Empirical results show that the correlation between national debt and economic growth is relatively close, 84.3%. Thus, there are other factors affecting growth in economics. The government should consider national debt policy and economic growth to suit each period of economic development, and the government must rely on the optimum threshold of government debt.

Government debt arises from domestic and foreign loans, signed, issued government bonds; government-guaranteed debt is a debt borrowed by an enterprise or a policy bank of the state and guaranteed by the government. Local government debt is incurred by the People's Committee of the province. Besides, the national debt is the debt of public sectors, including the State Bank's debt to implement monetary policies and state-owned enterprises. In contrast, Vietnam's national debt does not include debts of the State Bank and debts of state-owned enterprises' self-borrowing and self-paying.

The empirical findings demonstrate that the ideal national debt threshold is 38.3% (Table 5). This debt level can assure fiscal policy sustainability and promote economic development. When the national debt is within this threshold, it does not create an incentive for development investment because most of the resources will have to be used for debt repayment, reducing development investment and inhibiting economic growth. The empirical result shows that if the national debt is over the optimal threshold of 38.3%, economic growth will decrease to –2.203%; therefore, if the national debt threshold continues to increase, this will increase growth in economics and lead to economic recession. Besides, debt repayment resources decrease when the economy declines,

reducing debt repayment capacity and national debt safety level. Thus, the optimum threshold of the national debt is 38.3%, an essential indicator for managing and controlling national debt at the optimal level of the economy and a reference basis for considering Vietnam's national debt ceiling (Dinh, 2020d).

The findings are comparable to Yener et al. (2017) on determining the national-debt ceiling under the condition that the debt limit binds the government. When the government encounters debt limit constraints, it cannot continue to borrow, leading to a decrease in the national debt per GDP ratio; however, if the government continues to borrow, it should determine the level of debt based on the efficiency of the use of borrowed capital for investment and the possibility of growth in economics. Suppose the government issues money to offset the budget deficit. In that case, it is likely to cause the economy to suffer from inflation, and the risk of the economy will be in crisis (Yener et al., 2017).

Thus, the optimum threshold of government debt or national-debt ceiling should be considered a critical indicator in orienting economic growth. At the same time, this national debt threshold is the basis for the government to continue to borrow, which depends on the debt repayment capacity and economic growth (Pienkowski, 2017). The empirical results of Reinhart et al. (2003) suggest that a debt threshold may begin to increase the risk of default for countries with low debt retention of 35% of GDP. Reinhart and Rogoff (2009) show that some countries with good credit ratings have an external national debt per GDP ratio 35% lower and an external debt ratio lower than 30%. By contrast, for countries with relatively poor credit ratings, a threshold for external national debt per GDP ratios above 40% leads to slower economic growth and higher default risk (Reinhart & Rogoff, 2009). Besides, according to information from the Ministry of Finance (Loan, 2022), Vietnam's national debt tends to decrease gradually from 61.4% of GDP (in 2017) to 58.3% of GDP (in 2018), 55.9% of GDP in 2020 and 43.1% in 2021. In 2023, the level of government debt is expected to be equivalent to 2022, which is approximately 43-44% of GDP.

CONCLUSION

This study aimed to analyze the relationship between government debt and GDP growth in Vietnam. The current method for determining Vietnam's national-debt ceiling needs to be revised. If the government relies on these results to assess the sustainability of Vietnam's national debt, there may be inappropriate assessments of growth in economics.

The experimental results show that the government can serve as a reference for national debt policy formulation, economic growth, and the safety of Vietnam's national debt. The government can respond promptly to managing and controlling government debt and avoid a national debt crisis. Governments should rely on empirical results to obtain a suitable solution for economic growth. When foreign debt exceeds 40% to 45% of GDP, the country's debt solvency decreases, and the country's credit risk begins to increase significantly, consistent with Vietnam's optimum threshold of government debt, 38.3%.

The regression threshold models have been widely applied to assess the risk level of government debt and economic growth. The empirical results have been tested, have high reliability, and are associated with the research sample, specifically in Vietnam. This result is consistent with the literature, where models were applied to determine Vietnam's optimum threshold of government debt according to an approach based on the correlation between national debt and growth in economics. In addition, foreign loans are potentially risky when borrowing costs increase, and exchange rates fluctuate, raising interest rates and foreign debt. Therefore, the government should have solutions for economic growth to increase the budget revenue.

Simultaneously, the government can use appropriate debt instruments based on the optimum threshold of government debt and adjust domestic borrowing to promote internal resources and mobilize domestic capital. This requires the government to have a prudent and flexible plan for borrowing and repaying national debt in the medium- and long-term to meet national needs and simultaneously limit the long-term consequences for the future. In addition, national debt management policy is associated with fiscal and monetary policy; therefore, it is monitored and evaluated for all loans and repayments to ensure national debt policy compliance and stability with the optimum threshold of government debt for economic development. Simultaneously, the government should monitor the entire national debt portfolio risk by connecting the treasury management policy and national debt management. Therefore, it is necessary to study the national debt threshold so that the national debt management agency has complete information on the development of Vietnam's national debt management needs in each period.

AUTHOR CONTRIBUTIONS

Formal analysis: Nguyen Ngoc Son.
Investigation: Nguyen Ngoc Son.
Methodology: Nguyen Ngoc Son.
Resources: Nguyen Ngoc Son.
Writing – original draft: Nguyen Ngoc Son.

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