Why Are Many Countries Bankrupt Because of Debt?

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Abstract. To prevent debt-related fraud, Indonesia and a few other nations have adopted the Maastricht Treaty Concept, in which the government sets a maximum limit on government debt of 60 percent of GDP and a maximum limit on a budget deficit of 3 percent. In Indonesia are regulated by ACT Number 17 of 2003. This study employs the New Consensus Macroeconomic (MKB) school to make an optimal decision using fiscal rule and expectation variables as a form of economic thought in a state of general equilibrium. The debt stabilization deficit model represents the budgetary rule. Long-term deficit debt stabilizer has a positive effect on output gaps, prices, exchange rates, current account, and primary budget deficits in Indonesia but has no impact on the level of interest rates. In contrast, on a short-term basis, the debt deficit stabilizer in the model has a positive effect on the output gap, exchange rate, and primary budget deficit but has little impact on the price level, interest rates, and current account. If the debt stabilizing deficit model is implemented in Indonesia, it will positively affect the output gap, price level, and primary budget deficit but harm the current account. The debt stabilization deficit does not affect the interest or exchange rate as a monetary instrument variable. Fiscal policy has little influence on the domestic price level, interest rate, and exchange rate over the short term. Because the Central Bank governs these variables, their long-term and short-term significance are noteworthy. To improve economic performance, economic growth, and fiscal sustainability, the Central Bank must improve its coordination with budgetary authority. In contrast, the fiscal equation adjusts to the new equilibrium the slowest. To prevent fraud in counties, it is necessary to consider expectation variables, such as inflation and expected output, as well as the fact that an increase in the debt-stabilizing deficit results in decline in economic performance. Therefore, ACT Number 17 of 2003 is still relevant and necessary for debt management in Indonesia.

Keywords: Fiscal Rule · Sustainability · Debt Stabilizing Deficit · Equilibrium Model

1 Introduction

Currently, many developed countries are experiencing fraud in their economy, one of which is due to improper and wise debt management. State debt has swelled, which is triggered by high inflation. The debt-to-GDP ratio in the UK swelled up to 100% due to

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inflationary pressures of up to 13.3%. Economic conditions worsened due to high debt burden, however, not only the UK, Sri Lanka also became a defaulting country due to mismanagement of debt, as well: Laos Mongolia, Pakistan, Congo, Ghana, South Africa also experienced the same thing, where the ratio of government debt above 60% of GDP, Mozambique, Angola above 100%. Even a mistake in debt management caused the government in Iceland to resign, Mexico experienced a financial crisis in 1994, Russia in 1998 experienced a money and stock market crisis, Venezuela became a fraudulent country that was unable to pay its debts. Then what about Indonesia?

In Indonesia, debt management and the budget deficit are governed by Act No. 17 of 2003. The government established a maximum debt ratio of 60% of GDP and a maximum budget deficit of 3%. This concept is flawed in that debt will increase yearly regardless of whether the economy needs it. As long as the debt-to-GDP ratio does not exceed 60%, the debt will always grow as long as the GDP increases. In reality, GDP will always increase because prices rise annually. Since 1997, Indonesia has experienced this condition. That year, the government debt ratio was 89% of GDP, constraining economic growth to -13.2 percent. Having these experiences, a new concept of debt management and budget deficit capable of achieving long-term fiscal sustainability and financial stability is necessary. The debt stabilizing deficit is one of the management debt and budget deficit properties related to the steady state. This is the fiscal rule principle that maintains a stable budget deficit level.

Maintaining this stability of the debt is referred to as a debt-stabilizing deficit. This policy has the advantage that the fiscal can be sustained [1]. If the concept is implemented in Indonesia, what effect will it have on macroeconomic performance? This study is a deductive examination of the application of New Consensus Macroeconomics as an economic theory in a state of general equilibrium. Are some assumptions made and fiscal variables added to each equation for this model to become a debt-stabilizing deficit model?

2 Literatur Reviews

According to both theory and empirical evidence, the budget deficit influences macroeconomic performance, including economic growth, inflation, interest rate, and exchange rate. For instance, Ballassone (2005) found that an increase in the budget deficit will boost the aggregate and stimulate economic growth. Sargent and Wallace (1981) stated that the budget deficit would impact inflation in the long run but not in the short run [2]. Metin (1998) discovered that inflation would rise when Turkey's budget deficit increases and domestic revenue decreases [3]. According to Cebula (1997), the budget deficit will affect the interest rate in the long run [4].

Beare (1978) and Laubach (2000) note a correlation between the budget deficit and the interest rate (2009) [5, 6]. In addition, Laubach (2009) found that a one-percentage-point increase in the budget deficit will result in a 25- to a 30-point increase in the interest rate over the long term [6]. Burney (1992) and Bernheim (1988) discovered that a twin deficit, the condition of an economy in which the budget deficit increases, will cause the real domestic exchange rate to increase [7, 8]. Based on some research, it is necessary to study the relationship between the macroeconomic performance in Indonesia and model construction [9].

This study uses the New Consensus Macroeconomic Theory as its theoretical framework (NCM). NCM is the most recent development of the most contemporary macroeconomic ideas, demonstrating the convergence of New Keynesian and Business Cycle Theories. Aspects of the NCM consistent with Indonesia's economy are prevalent. First, the economy is confronted with imperfect market competition. Second, the economy of Indonesia is frequently impacted by supply shocks, such as natural disasters, technological advancements, disruptions in the distribution of goods, and worker protests. Third, the agent makes intertemporal choice decisions using pertinent data. The economy faces sticky prices, which is the fourth challenge. Fifthly, Indonesia's monetary policy utilizes Taylor's (1979) rule to maintain price stability by determining the target interest rate and inflation [10].

This study's objectives are, first, to estimate the effect of implementing the debt stabilizing deficit model on the macroeconomic performance in Indonesia, including the economic output gap, domestic price level, domestic interest rate, exchange rate, current account, and primary budget deficit; and, second, to estimate the pattern of output gap response, domestic price level, domestic interest rate, exchange rate, and primary budget deficit when implementing fiscal stimulus. This study's contribution is an alternative model of fiscal policy in which the deficit and government debt is managed. This scenario is conducive to the long-term viability of fiscal and economic growth.

3 Methodology

Time series data is typically subject to spurious regression. The ADF and Phillips-Perron unit root tests are conducted to avoid erroneous regression. In this step, the unit root test on the error term is also used to ensure there are no issues with heteroskedasticity and autocorrelation I. (0). To determine if there is a long-term relationship between variables, a co-integration test must be performed using Johansen's (1991) co-integration method. The whole variables have already attained the same degree of integration in the first difference, followed by the Vector Error Correction Model (VECM) construction. The purpose of VECM, as stated by Boschi and Girardi (2005), is to analyze the behavior of long-term and short-term variables in dynamic equation system models. Two-Stage Least Square was used in his study to process VECM (2SLS). The next step entails simulating the debt stabilization deficit magnitude (dt) with a ($\pm 1\%$) tolerance on each equation, assuming that all other variables are constant. Each equation's response pattern is observed due to the simulation's output.

4 Results and Discussion

Non-stationary data pose the greatest challenge for time series. Unit root tests can be used to verify the validity of the statement. In order to avoid spurious regression, non-stationary data are differentiated to obtain a stationary nature [11]. This study will then employ the augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) methods to examine the static nature of the series in this study. Studies suggest that the PP method is more effective than the ADF [12].

Data series in Table 1 are stationary at first differences, thus, we continue with co-integration test where results are presented in Table 2.

According to Table 2, each equation in the model has at least one long-term relation. Table 3 indicates that all data variables are stationary and that the regression technique can be used to make predictions.

Table 1. THE ADF & PP UNIT ROOT TESTS

Variabel	**Symbol**	**ADF Test**		**PP Test**	
		I(0)	***I(1)***	***I(0)***	***I(1)***
Output Gap	Y^d	−2.9972	−3.959*	−8.6423*	−16.2279*
Interest Rate	r^d	−1.3785	−2.65*	−0.9965	−3.0101*
Debt Stabilizing Deficit	d*	−3.9362*	−5.3187*	−5.1423*	−11.5607*
Exchange Rate	er^t	−3.2213*	−4.4016*	−3.9242*	−7.807*
Price Domestic	p^d	−1.5516	−4.6102*	−2.5658	−6.7698*
Interest Rate Policy	r*	−1.9442	−3.4172*	−1.349	−2.9566*
Current Account	CAt	−2.4219	−3.725*	−4.1901*	−9.827*
Primary Deficit	dt	−2.382	−4.2079*	−5.5203*	−7.5966*
Output Gap in Euro Union	$[y^w]$	−4.9214*	−3.6536*	−6.5088*	−17.357*
Interest rate (Libor)	$[r^w]$	−1.4673	−2.2313*	−1.8254*	−5.5811*
Price in Europe union expectation	$E[p^w]$	−0.2292	−3.2004*	−0.6562	−7.909*
Domestic Price Expectation	$E[p^d]$	−1.6918	−4.258*	−2.8389	−8.2891*
Nominal Domestic Exchange Rate	$E[r^d]$	−3.1693	−4.3693*	−6.0497*	−8.5462*
Expectation					
Output Gap Expectation	$E[y^d]$	−2.5249	−3.2731*	−8.6562*	−8.5462*

Table 2. JOHANSEN COINTEGRATION TEST

Agregat Demand Equation (IS)					
H0	***H1***	***Trace Statistics***	***5% Critical Value***	***Max-Eigen Statistic***	***5% Critical Value***
$r = 0$	$r = 1$	123.8841*	88.8038	53.4055*	38.331
$r \leq 1$	$r = 2$	70.4785*	63.8761	29.6995	32.1183
$r \leq 2$	$r = 3$	40.779	42.9152	19.2245	25.8232
$r \leq 3$	$r = 4$	21.5545	25.8721	15.2292	19.387
$r \leq 4$	$r = 5$	6.3252	12.5179	6.3252	12.5179

(*continued*)

Table 2. (*continued*)

Agregat Demand Equation (IS)					
H0	***H1***	***Trace Statistics***	***5% Critical Value***	***Max-Eigen Statistic***	***5% Critical Value***
Agregat Supply Equation (IA)					
r = 0	r = 1	120.9358*	63.8761	67.4777*	32.1183
r ≤ 1	r = 2	53.5812*	42.9152	27.7295*	25.8232
r ≤ 2	r = 3	25.7285	25.8721	20.7723*	19.387
r ≤ 3	r = 4	4.9561			
			12.5179	4.9561	12.5179
Monetary Policy Equation (MP)					
H0	***H1***	***Trace Statistics***	***5% Critical Value***	***Max-Eigen Statistic***	***5% Critical Value***
r = 0	r = 1	148.4161*	88.8038	53.7393*	38.331
r ≤ 1	r = 2	94.6766*	63.8761	46.8366*	32.1183
r ≤ 2	r = 3	47.84*	42.9152	21.4729	25.8232
r ≤ 3	r = 4	26.3671*	25.8721	17.7882	19.387
r ≤ 4	r = 5	8.5788	12.5179	8.57887	12.5179
Exchange Rate Equation (E)					
r = 0	r = 1	136.4804*	76.9727	81.4144*	34.8058
r ≤ 1	r = 2	55.0659*	54.079	29.8823*	28.588
r ≤ 2	r = 3	25.1836	35.1927	19.7852	22.2996
r ≤ 3	r = 4	5.3984	20.2618	3.8075	15.8921
r ≤ 4	r = 5	1.5908	9.1645	1.5908	9.1645
Current Account Equation (CA)					
r = 0	r = 1	68.6894*	63.8761	32.4139*	32.183
r ≤ 1	r = 2	36.2754	42.9152	25.9973*	25.8232
r ≤ 2	r = 3	10.2781	25.8721	8.4769	19.387
r ≤ 3	r = 4	1.8011	12.5179	1.8011	12.5179
Fiscal Policy Equation (FP)					
r = 0	r = 1	81.0397*	42.9152	42.4538*	25.8232
r ≤ 1	r = 2	38.5859*	25.8721	25.4541*	19.387
r ≤ 2	r = 3	13.1317*	12.5179	13.1317*	12.5179

In the short-term model, the changing dependent variable is not only described by the changing independent variable but also by the instability of the variable in the past. The ECT rate and its rate are between 0 and minus 1. The ECT rate coefficient indicates

Table 3. UNIT ROOT TEST AT ERROR TERM USING ADF TEST

Equation	Symbol	ADF Test I (0)	Prob
Output Gap	Yd	−5.9494	0.0000
Inflation Adjustment ent	p^d	−7.3768	0.0000
Interest Rate (Monetary Policy)	r^d	−3.3493	0.0083
Exchange Rate	ert−	−6.2113	0.0000
Current Account	CAt	−4.1010	0.0024
Primary Budget Deficit (fiscal policy)	d_t	−3.8266	0.0053

the rate at which a variable returns to its stable state after a shock has been counteracted. This condition indicates that the prediction derived from the equation system is valid since the value is between 0 and 1. Table 4 displays the estimation results for the short and long terms.

If the debt stabilization deficit model is implemented in Indonesia, it will have positive long-term effects on the output gap, price level, and primary budget deficit but negative effects on the current account, according to the results. As a variable for monetary instruments, the debt stabilization deficit has no significant effect on interest or exchange rates. When debt stabilization deficits are implemented in the economy, the output gap will increase in addition to the primary deficit. Spending by the government will increase actual output while leaving potential output unchanged. Government spending increases the domestic price level by increasing demand.

On the other hand, the budget deficit policy negatively impacts the current account, but only in the long run. The longer the steps, the lower the significance of the variable. A budget deficit financed by a loan results in an influx of foreign currency, a rise in the value of the local currency, and an increase in the current account. The subsequent export performance decreased due to the strengthening of the rupiah.

It is also established that monetary variables need to support fiscal variables better. It is approved when the debt stabilization deficit is implemented; however, it does not affect the interest or exchange rate. The central bank will control the interest rate through the central bank rate (BI Rate) without regard to the budget deficit or any other factor. It is a financial rule concept.

This issue indicates a need for more cooperation between the central bank (or Bank Indonesia) and the Ministry of Finance as the fiscal authority responsible for achieving their respective objective goal variables. In order to improve macroeconomic performance, economic development, and fiscal sustainability, the Central Bank must improve coordination with fiscal authorities. The study also concludes that, because of the time lag, fiscal policy is less effective than monetary policy. When the government tells the media of a salary boost for state servants, the price outlook for domestic items immediately improves. When the expectation is excessively high, it tends to motivate economic players to purchase things in real-time, which may increase the price of items. When the actual price of goods rises, the central bank will exert some influence on the interest rate until the aggregate supply shifts to the right to prevent the price increase. Consideration

Table 4. ESTIMATION OF SHORT RUN (SR) AND LONG RUN (LR)

Equation	Variable	SR StatCoefficient	T	LR Coefficient
Output Gap (dyd)	Drd	0.0002	0.9670	0.0003
	Dds	0.0097*	−1.2762	0.0041*
	Dle	0.6041	4.4168	−1.1110*
	dydf	0.0008*	6.3763	0.0012*
	ect_is(−4)	**−0.6318***		
Inflation Adjustment (dpd)	Dyd	−0.5608	−0.3109	−7.7164
	Dds	0.0006	0.4835	0.1678
	dpgapf	1.3509*	10.5770	1.1698
	ect_ia(−4)	**−0.7992***		
Interest rate (drd)	Dyd	−117.5666*	−2.6573	−6.0861
	dpdf	−0.5148	−0.2522	0.7876*
	Dds	−0.0247	−0.7773	−0.1012*
	Drs	0.6943*	8.7726	0.8749*
	ect_r(−4)	**−1.2187***		
Exchange Rate (dle)	drgap	0.0040	1.8204	−0.0101
	Dds	0.0021**	8.2592	−0.0002
	Dca	−0.0145**	−2.5519	−0.0115
	Dlef	1.0716*	1.1109	1.0107
Current Account(dca)	ect_e(−4) dygap	**−0.4390**** 26.7827	0.7047	−4.5221
	Dds	−0.0026**	−0.0448	−0.0826
	Dle	−12.7432**	−2.5116	0.3230
	ect_ca(−4)	**−0.4852***		
Primary Deficit (ddt)	Dyd	−131.461**	−0.7444	42.0545
	Dds	0.4003*	3.2838	0,0041
	ect_kf(−4)	**−0.5405***		
*significant at $\alpha = 1\%$, ** significant at $\alpha = 5\%$		,*** significan	t at $\alpha = 10\%$,	

should be given to the implementation of the Fiscal Policy Rule in order to achieve fiscal sustainability.

The short-term analysis has the same shape and signs as the long-term analysis. When a debt stabilization deficit model is adopted, it has a favorable impact on the production gap and primary deficit but a negative impact on the current account. The price level is the primary difference. The domestic price level is not substantially influenced if the debt-stabilizing deficit model is used. This is an expected result of the debt stabilization

deficit model's lack of influence on domestic prices. It suggests that prices will be sticky in the economy shortly. At 1.2187, the coefficient rate in the interest rate equation is statistically significant. This ECT rate demonstrates that interest rate policy shapes the interest rate equation. Theoretically, when the interest rate gap widens due to the interest rate being increased continuously compared to the average interest rate in European Union countries, capital will flow into the country, strengthening the rupiah rate over the long term. However, research indicates that the opposite is true. Global conditions heavily influence Indonesia's floating exchange rate system. Foreign investors will evaluate external factors in a country and their desire to earn a return on their long-term investment in the country. External factors such as security and ease of conducting business, legal certainty, and facility and infrastructure licensing are mentioned. If these conditions are not met, no capital will enter the country.

The impact of the debt stabilization deficit on the rupiah exchange rate is significant. When the government is obligated to repay its debt, it will purchase additional foreign currency. Not only is the government dependent on the demand for foreign currency, but so are speculators. The devaluation of the rupiah results from the rising demand for foreign currency. Depreciation of the rupiah results in a negative current account. This finding is consistent with the research's premise and presumption. The exchange rate negatively impacts the output gap. This indicates that the output gap will diminish if the rupiah exchange rate against the foreign currency appreciates. Long-term appreciation of the exchange rate will dramatically increase manufacturing costs, particularly for Indonesian industries that continue to rely on imported raw materials. This condition caused the output gap to narrow. If the expectation of the output gap grows by 1%, the actual output gap will increase by 1.11 billion IDR; conversely, if the output gap lowers, the actual output gap will decrease.

The anticipation of the exchange rate has a considerable and favorable effect on the rupiah-euro exchange rate. Increased exchange rate anticipation will drive the real exchange rate to move in the same direction as the expectation. On a long-term basis, there is a negative correlation between the domestic output gap and the average output level of European Union countries and Indonesia's current account. When the output gap increases and moves further from the potential output, the price of goods tends to increase even more. As the recovery of the economic crisis's influence in some developed nations and Indonesia still needs to be completed, the domestic demand for imported goods is not necessarily substantial. However, in the short run, the opposite is true. Long-term, the debt stabilization deficit favors the primary budget deficit, and the production gap is related to the primary budget deficit. When the output gap widens by 1 trillion IDR in the short run, this will increase demand, raising the primary deficit by 131%.

This scenario shows the importance of fiscal policy in addressing the demand-driven increase in finance needs. Simulation results indicate that when a shock occurs in the form of adding and subtracting 1% of the debt stabilizing deficit from the data baseline debt stabilizing deficit, the response pattern of the output gap equation, price, interest rate, exchange rate, current account, and primary budget deficit returns to equilibrium, as it did before simulation was conducted. If 1% is added to the debt stabilization deficit, these five equations imply that the position of the curve is below the curve prior to simulation. When the magnitude of the debt stabilization deficit is deducted by 1% of the baseline,

the position of the curve is above the position of the curve prior to simulation, and its coefficient is greater compared to earlier simulations for all equations. It implies that it is essential for the government to maintain a constant debt level.

5 Conclusion

This study is a logical examination of the application of New Consensus Macroeconomics as an economic philosophy in a state of general equilibrium. Are certain assumptions made, fiscal variables are added to each equation, and the model is transformed into a debt-stabilizing deficit model? First, if the debt stabilization deficit model is used in Indonesia, it has a good long-term effect on the output gap, price level, and primary budget deficit but a negative effect on the current account. As a monetary instrument variable, the debt stabilization deficit has no impact on interest or exchange rates. Fiscal policy has little influence on the domestic price level, interest rate, and exchange rate in the short term. Since the Central Bank regulates these variables, they are insignificant in the long run and the near term. In order to improve economic performance, economic growth, and fiscal sustainability, the Central Bank must establish strong coordination with fiscal authority. Second, economic phenomena in Indonesia exhibit sticky prices. Third, the inflation equation adjusts to the new equilibrium faster than other equations. This is because the inflation rate or monetary variable is directly under the central bank's authority. On the other hand, the fiscal equation adjusts to the new equilibrium the most slowly.

Fiscal policy is subject to policy lag, which indicates that if it is enacted, it will take a considerable amount of time to carry out the policy since legislative bodies must approve the new fiscal policy. As a result, fiscal policy is less effective than monetary policy. Fourth, every anticipation variable exerts a positive and statistically significant influence on every represented variable, including the real price level, actual exchange rate, and output gap. In order to formulate a sound macroeconomic and fiscal policy, it is necessary to consider the variable of expectations. Fifth, simulations conducted on the extent of the debt stabilization deficit reveal that a rise in the debt stabilization deficit harms economic performance. When the economy is booming, the government must undertake a counter-cycle strategy to maintain debt levels.

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