Analysis of Foreign Public and Private Debt on Economic Growth in Indonesia

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Abstract

This study investigates the role of foreign debt in indonesia's economic growth by examining both public and private sector contributions. utilizing data from recent reports and empirical analyses, the study employs granger causality tests and ardl modeling techniques to explore the relationships between public sector debt, private sector debt, and economic growth. findings suggest that while public sector debt exhibits a significant negative relationship with economic growth in both short and long terms, private sector foreign debt positively influences long-term economic growth. these results underscore the importance of foreign debt instruments in bridging financing gaps and stimulating economic development in indonesia.

Keywords: Foreign Debt, Economic Growth, Public Debt, Private Sector, External Debt

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INTRODUCTION

As one of the developing countries with the Many other developing countries also use foreign debt instruments to support development and encourage growth; A study conducted by Kusumasari (2020) found that foreign debt in Indonesia is used as a source of external financing to bridge the gap between savings and investment, which ultimately plays an important role in efforts to achieve economic growth and improve social welfare.

Based on reports International Debt Report (2022) released by the World Bank, it is explained in figure 1 that Indonesia is the country with the largest foreign debt among the lower middle-income countries in Southeast

Asia. In the report International Debt Report The report explains that in 2021 Indonesia will have a total foreign debt of USD 416.47 billion, far exceeding the debt of neighboring countries as seen in Figure 1.

The World Bank also reported that the foreign debt of lower-middle-class countries worldwide will total USD 9 trillion in 2021, an increase of 5.6% compared to 2020. This is also explained by Darmawan's study (2022), which assesses that global debt is increasing. This has an impact on increasing the risk of a debt crisis in developing countries. This is supported by soaring central bank interest rates in many countries. This is caused by the impact of war Russia Ukraine and the wave of inflation.

As a country holding the highest level of foreign debt in the group of lower-middle countries in Southeast Asia, Indonesia shows how crucial the role of foreign debt instruments is in the Indonesian economy.
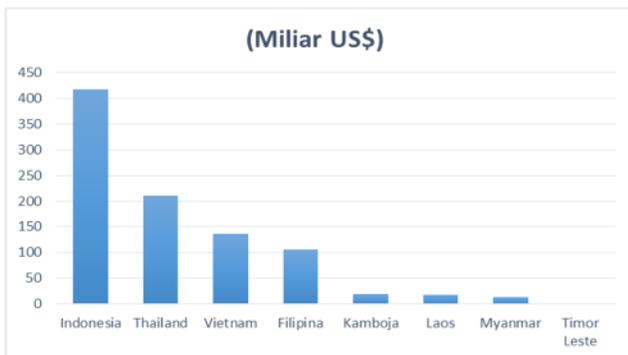

Figure 1. External Debt of the Group of Lower-Middle Southeast Asian Countries 2021
Source : WorldBank, 2021

In increasing economic growth, of course the role of the government cannot be separated, but there is another role for the private sector in encouraging growth and development. Research by Djadjuli (2018) shows that the government has a major role in making various policies to increase productivity, and develop infrastructure and structural reform as important factors in encouraging sustainable economic growth.

In addition, this is an effective way to compensate for the central government's budget shortfall (budget deficit) through foreign debt obtained by building cooperation between creditor and debtor countries, which is less risky than printing banknotes which can encourage inflation. (Atmadja, 2000) This is where the role of financing through debt instruments comes into play. Debt is not only carried out by the government, but the private sector also uses debt instruments to encourage their production sector.
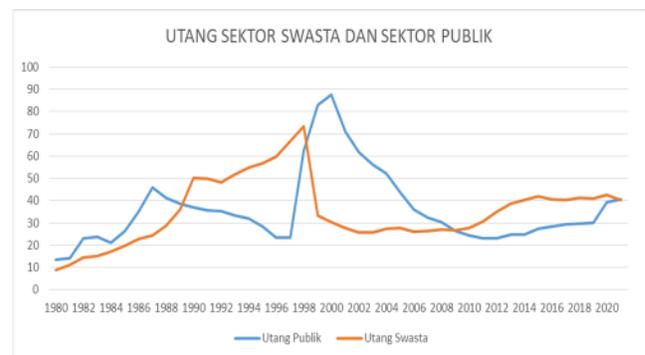

Figure 2. Percentage of Public Debt and Private Debt from GDP 1980-2021
Source : WorldBank, 2021

In figure 2, it is explained that the foreign debt of the private sector and the public sector both experience fluctuations. As seen from Figure 2, public sector debt increased significantly from 1997 to 2001. This was because the government at that time attempted to overcome the impact of the monetary crisis that occurred in Asia by increasing government loans.

On the other hand, during a monetary crisis, the private sector prefers not to borrow so that the level of private sector debt is much

lower than public sector debt. However, as explained in Figure 2, over time there began to be an increase in private sector debt from year to year until finally the ratio between private sector debt was higher than public sector debt.

Thus, the pattern of increasing private sector debt that currently dominates cannot be separated from its influence on the economic conditions of society in Indonesia. This condition explains how the country of Indonesia is currently still part of the group of middle-income countries, showing how great the strength of the Indonesian economy is currently.

Compared to other countries such as Vietnam, Thailand and the Philippines. However, on the other hand, there are several economic problems that middle-income countries must face. One of them is explained in research by Tulus (2015) who said that if a country is enjoying high economic growth, at one point it will experience saturation or will not be able to enter the classification of a high-income country.
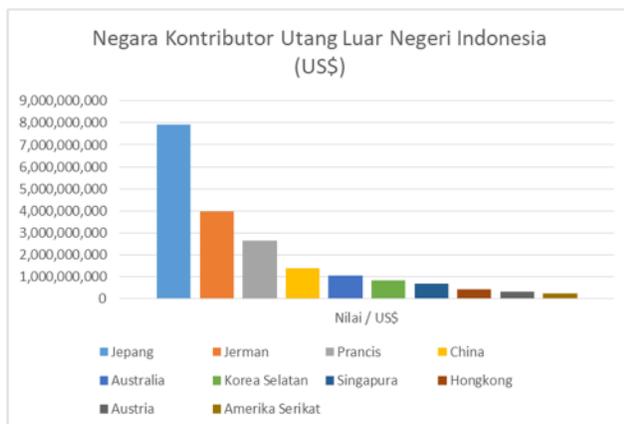

Figure 3. Contributing Countries to Indonesia's Foreign Debt in Billions of USD
Source: Bank Indonesia, data processed 2023

In Figure 3 it can be seen that based on data published by Bank Indonesia (2023),

Indonesia's foreign debt without a central bank reached USD 185.1 billion. Japan showed its position as the country providing the largest foreign debt to the Indonesian government, followed by Germany and France. There was an increase of 3% (year-on-year/yoy) in the amount of government foreign debt when compared to the same period in the previous year.

Bank Indonesia explained that the use of foreign debt is used to support government priority spending and protect the public. The aim is to maintain Indonesia's economic growth to remain stable amidst increasing uncertainty in the global economy. This support covers various sectors, including the health services sector and social activities which reached 23.8% of the government's total foreign debt, followed by government administration, defense and mandatory social security with 18.4%.

In addition, the education services sector contributed 16.7%, construction 14.2%, and the financial services and insurance sector 10.0%. Based on the background of the problem above, it can be concluded that the problem in this research focuses on the fluctuating conditions of economic growth in Indonesia and how foreign debt from the private and public sectors plays a role in driving economic growth and vice versa.

Even though currently Indonesia's debt condition is still below the threshold of 60 percent of GDP, the trend of increasing debt is still being discussed in the economic world. Therefore, the author conducted research to identify and analyze the influence of public sector and private sector debt on Indonesia's fluctuating economic growth.

RESEARCH METHODS

This research uses Granger Causality and ARDL, where the ARDL model is a regression

model that includes variable values that explain the present value and past value of the independent variable in addition to a model that includes the past value of the dependent variable as an explanation (Gujarati, 2004). This model can differentiate short-term and long-term responses of the dependent variable to a one-unit change in the value of the explanatory variable.

The ARDL model is a dynamic model in econometrics which is useful in empirical econometrics because it makes static economic theory dynamic by explicitly taking into account the role of time, so that time is taken into account and the length of the time difference (lag) is known. So the application of the ARDL model is considered capable of providing a good model description (Gujarati, 2004).

The ARDL model is a model based on Ordinary Least Square which can be used for non-stationary time series data or combinations of integration sequences, but what needs to be paid attention to is that the ARDL model cannot be used on variables at the second difference level (Ali & Chani, 2013). According to Gujarati (1995), the ARDL model (p, q_1, q_2, . . . , qn) can be stated as follows:

$$Yt = \alpha + \delta_1 Yt_{-1} + \cdots + \delta p Yt_{-p} + \beta_0 Xt + \beta_1 Xt_{-1} + \cdots + \beta q Xt_{-q} + \varepsilon t$$

RESULTS AND DISCUSSION

Based on the output results of the Granger Causality Test, no reciprocal relationship / 2-way relationship was found between the variables of economic growth and foreign debt in the public sector and the private sector. However, in the results of the Granger test, a 1-way interaction was found in this variable. This is proven by the probability value in the economic growth

variable for private sector foreign debt which is less than the alpha value, namely 0.05. Likewise with private sector foreign debt towards public sector foreign debt. This shows that there is a one-way relationship in the Granger causality test.

Table 1. Granger Causality Test

Pairwise Granger Causality Tests	Obs	F Statistics	Prob.
PD does not Granger Cause GDPG	40	0.16751	0.8464
GDPG does not Granger Cause PD		0.94244	0.3993
PRD does not Granger Cause GDPG	40	0.79517	0.4595
GDPG does not Granger Cause PRD		44.8675	2.E-10
PRD does not Granger Cause PD	40	1.90969	0.1632
PD does not Granger Cause PRD		19.6968	2.E-06

Source : Data processed, 2023

Based on table 1, the Granger causality test shows that Economic Growth (GDPG) does not significantly influence public debt (PD), with a probability value of 0.8464 > 0.05, and also public debt (PD) does not significantly influence Economic Growth (GDPG), with a probability value of 0.3993 > 0.05. So it is concluded that there is no two-way causality between Economic Growth (GDPG) and public debt (PD).

Furthermore, private debt (PRD) does not significantly influence Economic Growth (GDPG) with a probability value of 0.4595 > 0.05, but a unidirectional relationship with Economic Growth (GDPG) was found with significant results affecting private debt (PRD), with a probability value < 0, 05. So it is

concluded that there is a one-way causality between Economic Growth (GDPG) and private debt (PRD).

Lastly, private debt (PRD) does not significantly influence public debt (PD) with a probability value of 0.1632 > 0.05, But public debt (PD) significantly influences private debt (PRD), with a probability value < 0.05, so it is concluded that this occurred one-way causality between public debt (PD) and private debt (PRD).

In the initial stages of research using the ARDL method, the data must go through a unit root test. Unit root testing is needed to avoid the appearance of skewed regression model specifications. The ARDL model can be used for non-stationary time series data or combinations of integration sequences, but what needs to be paid attention to is that the ARDL model cannot be used on variables at the second difference level. Data is said to be stationary if the Dickey-Fuller GLS t-statistic value is > 5% critical value

Table 2. Stationary Test

Unit Root ADF	ProbLevel	Result	Prob. 1 diff	Result
GDPG	0.0003	Stationary	0.0000	Stationary
PD	0.0302	Stationary	0.0055	Stationary
PRD	0.2355	Not Stationary	0.0000	Stationary

Source : Data processed, 2023

Based on the stationary test results in Table 2, it is known that economic growth data (GDPG), public sector foreign debt (PD), are stationary with a probability value < alpha 5%, while private sector foreign debt (PRD) is not stationary at the level, with a p value > 0.05. The data for these three variables was again subjected to stationary testing on first differences. The results of the stationary test on the first difference show that it is stationary on the first difference, with all p values <0.05. So testing can continue.

Optimum lag is a way to choose how much lag will be used in the model, so choosing the optimum amount of lag is one of the most important parts of getting better results. Selecting the optimum lag needs to be done because if too little lag is used then the residuals from the regression cannot display the white noise process (derivatives over time) so that the model cannot estimate the actual error correctly.
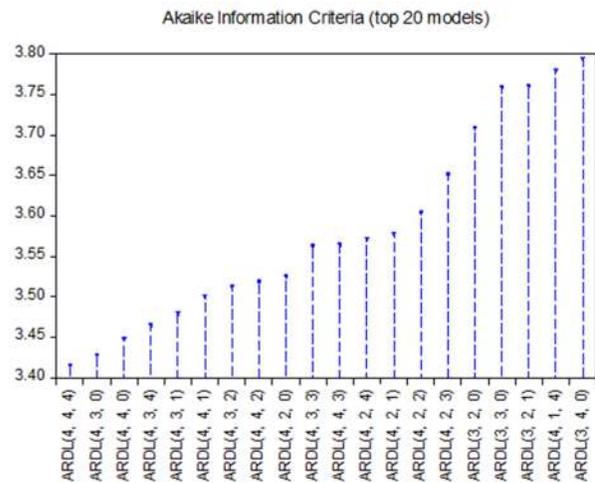

Figure 4. Akaike Information Criteria Model Lag (4,4,4)
Source : Data processed, 2023

Based on the test results, the lag selection criteria are estimated by looking at the values Akaike Information Criteria (AIC) is the smallest of the 20 best models. The best criterion is ARDL (4,4,4), meaning that GDPG is 4 lags, public sector foreign debt (PD) is 4 lags, and private sector foreign debt is 4 lags. In this research, the optimal lag ensures that all variables in the equation influence each other up

to four periods in advance. For time series data before estimation is carried out, a cointegration test must be carried out first.

The cointegration test is a continuation of the stationarity test which is carried out to see whether there is a long-term relationship between the research variables. The cointegration test using the limit test method is by comparing the calculated F value with the upper and lower limits.

If the calculated F value is greater than the upper limit and lower limit, then it is concluded that there is cointegration between variables, conversely if the calculated F value is smaller than the lower limit and upper limit, then there is no cointegration between variables in the model.

Table 3. Cointegration F-statistic Bound Test

F-statistic	7.256904	
Signif.	I(0)	I(1)
10%	3.38	4.02
5%	3.88	4.61
2.5%	4.37	5.16
1%	4.99	5.85

Source : Data processed, 2023

The results of the cointegration test as in table 3 show that the F-statistic value is 7.256904 which is greater than the lower limit and upper limit values at the level of 1%, 2.5%, 5%, 10%. Thus, it can be concluded that there is cointegration between the dependent and independent variables in the ARDL model.

The Public External Debt (PD) variable has a significant effect at lag 1 with a probability value above alpha > 5%, meaning that changes in PD in the previous year are directly responded to by changes in GDPG in the following period. While at lag 2 the PD variable has a negative and

significant effect on GDPG with a coefficient of -0.101020 which is significant at the 5% level, meaning that in the short-term changes in PD affect GDPG but require a time lag of up to (lag 3). On the other hand, the Private External Debt variable (PRD) at lag 1 has no significant effect with a probability value of >5% level, while at lag 3 it has a positive effect (0.126328) and is significant at the 5% level.

If you compare the significance levels of the three lags, the results of the lags 3 are more recommended for use, meaning that in the short term changes in PRD will be responded positively by increasing GDPG. Based on the condition that the coefficient value of CointEq(-1) is negative and also the probability value of CointEq(-1) also shows that there is a significant long-term relationship at the 5% confidence level, which shows that this short-term model is valid.

Apart from that, based on the coefficient value, it can be explained that in time if the position of economic growth experiences pressure (shock), the independent variable will make adjustments to the long-term relationship. So, this short-term model analysis can be used as a benchmark.

The cointegration test shows that there is a long-term relationship between the independent variables and the dependent variable. By using models Autoregressive Distributed Lag (ARDL), the next step is to estimate the long-term coefficient. If it has been proven that there is a cointegration relationship, the next step is to obtain an error correction representation from the selected ARDL model after estimating long-term coefficients (Ekananda, 2015)

Based on the results of the ARDL model estimation in the long term, it proves that in the long term public external debt (PD) has a

negative and significant long-term influence on economic growth. This means that for every 1 percent increase in public external debt, the proportion of economic growth will decrease by 0.072752 assuming all other variables remain constant. On the other hand, private external debt (PRD) has a positive and significant influence on economic growth in the long term. This shows that every 1 percent increase in private external debt will result in economic growth increasing by 0.028600 and vice versa.

CONCLUSION

Based on the results of the analysis that has been carried out, it can be concluded as follows. In testing causality using the Granger Causality test, it was found that there was a one-way interaction of public sector foreign debt on private sector foreign debt and also economic growth on private sector foreign debt. Thus causality is only found in the form of one-way interactions between these variables.

In the ARDL model estimation, it was found that public sector debt in Indonesia has a significant negative relationship in the short term and also in the long term. On the other hand, private-sector foreign debt has a significant positive effect on economic growth in the long term.

This indicates that any increase in economic growth will be influenced by a decrease in public-sector debt and an increase in private-sector external debt. The implication is that Indonesia's economic growth also comes directly from the role of foreign debt, both public and private sector foreign debt. There is limited data in this research and limited variable indicators, therefore it is hoped that future research will carry out analysis using the latest data and using other variable indicators.

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