INDONESIA'S FOREIGN DEBT DEVELOPMENT AND MACROECONOMIC VARIABLES

Helma Malini¹, Yufita Efie Seinna², Rustam³
¹,²,³Universitas Tanjungpura, Indonesia

ABSTRACT

Indonesia's foreign debt presents a dilemma for the government because, on the one hand, repayment of maturing loans has become a burden in the government budget as an expense item that must be considered. Loans, on the other hand, are a source of government revenue that can be used to close the budget deficit. Economic variables are the focus of this research. The type of research is associative descriptive research, with secondary data acquired from relevant institutions and agencies from 208 to 2020 and evaluated using descriptive and time series analysis. The results showed that the Rupiah exchange rate had a significant effect on the development of Indonesia's foreign debt. This conclusion implies that the government must stabilize the rupiah exchange rate against the US dollar in order to avoid the debt burden and interest payments being incurred and the occurrence of an economic crisis in the future. The public should utilize the government's jobless relief program. The higher the level of tax compliance from taxpayers, the higher state revenues and the ability to pay debts.

JEL: E1, E2, E3.

Keywords: foreign debt, macroeconomic variable, inflation, exchange rate, open unemployment rate.

1. INTRODUCTION

Dependency theory gives a point of view that the economic life of certain countries is influenced by the development and extension of the economic life of other countries. Dependency theory focuses on nations' roles as suppliers of raw materials, cheap labor, and markets for expensive industrialized goods. Uneven exchange rates between industrialized and developing countries hampered economic growth. Industrial developments in particular countries (underdeveloped or developing) always encounter oscillations that lead to a deficit position as a result of the reliance process (Abdullahi, Bakar & Hassan, 2015; Erhiewovwe & Onovwoakpoma, 2013; Ghosh, 2019; Joy & Panda, 2019).

Trade interactions between impoverished countries and developed countries have the impact of commensalism, reducing the imbalance in the balance of payments of poor countries and allowing them to progress economically. Developing countries like Indonesia must spend a lot to develop. Efforts to achieve national welfare development sometimes face obstacles. The government's problem is a lack of funds to fund development. The budget deficit results from a mismatch between spending and revenue (Liu & Zhang, 2022; Ramasamy & Abar, 2015). In an effort to remedy this imbalance, the Government of Indonesia has started a number of initiatives, including a stimulus to optimize sources of state revenue through tax and non-tax extensification and intensification, to implementing foreign debt and foreign investment policies. Combined monetary and fiscal policy efforts are calming global financial markets and lessening the impact of the recent economic shocks. Global central banks have reduced policy rates, injected liquidity and eased economic and financial pressures by implementing looser monetary policy. Various

¹ Email: helma.malini@ekonomi.untan.ac.id
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144
fiscal stimulus measures have been implemented, such as raising the healthcare budget, reducing tax laws, and extending social assistance.

Indonesia's foreign loan policy has always been a source of development financing and a means of covering the budget deficit in order to maintain a sustainable fiscal position during the last few decades (Ali, Javid & Subhan, 2015; Asatryan, Feld & Subhan, 2015). Indonesia's foreign debt has certainly grown to a substantial level and is rather frightening. Indonesia's external debt (ULN) was US$ 417.5 billion or Rp. 5,845 trillion at the end of the fourth quarter of 2020, representing 32.1 percent of Gross Domestic Product (GDP). In absolute terms, Indonesia's foreign debt has continually increased year after year. However, the extent of a country's debt is determined not by its nominal value but by its debt to GDP ratio. The debt-to-GDP ratio can be viewed as a barometer of a country's financial health. Indonesia's debt-to-GDP ratio has never topped 50% between 2008 and 2020. Indonesia's regulations, as outlined in Law No. 17 of 2003 on State Finances, limit the debt-to-GDP ratio to 60% (Ebbotemhen, 2020; Prasetyantoko, 2006).

By contrast, developed countries such as the United States and Japan have the world's greatest economy. In terms of international debt, it is worth noting that Uncle Sam's country currently owes Rp. 410,000 trillion, or 125 percent of GDP. Meanwhile, Japan, Asia's highest-ranking country in terms of human development, has a debt-to-GDP ratio of 177 percent. Even more unusually, Japan's jobless rate has remained constant at 1% since 1960 (Skilling & Zeckhauser, 2002). Indirectly, these data demonstrate that foreign debt does not impede a country's economic development.

Indonesia's foreign debt presents a conundrum for the government because, on the other hand, maturing loans represent a burden on the government budget as an item of expenditure that must be considered. On the other side, loans serve as a source of revenue for the government, helping to close the budget deficit. The state budget deficit is the difference between state revenues and expenditures, which is often negative, indicating that state spending exceeds revenue. According to Kis-Katos & Sjahir (2013), and Lau & Lee (2016), a budget deficit can be caused by a variety of factors, including the government's desire to accelerate economic growth, the rupiah's depreciation, rising inflation rates, or low people's purchasing power, which results in the state requiring expenditures to subsidize these goods.

The sources of the budget deficit appear to be largely macroeconomic issues. The two primary causes of a budget deficit are excessive government spending and inadequate levels of taxation. Tax cuts can reduce government revenue, leading to a budget deficit, or a huge fiscal stimulus might raise government spending in excess of its income. Macroeconomics is an incredibly essential subject because it influences all elements of life and everyone's interests. Macroeconomics is a subject of economics that deals with issues that affect the majority of society. These include inflation, unemployment, GDP, national income, interest rates, and exchange rates. GDP is a macroeconomic indicator that measures economic growth and is used to measure a country's debt. In simple terms, the higher Indonesia's GDP, the bigger the potential for foreign debt to climb in nominal terms, even if it does not expand in percentage terms.

Politicians and some economists have recently paid careful attention to the debt situation. It is regarded to be unusual since this topic was developed and debated as if Indonesia was genuinely in a debt crisis, affecting and involving social media users. Presidential Regulation 72/2020 on Posture Adjustment and Details of the 2020 State Budget incorporates debt planning.
Indonesia’s overall debt amounted at Rp 5,756.87 trillion at the end of September 2020. So, the debt to GDP ratio is 39.41 percent. The total public debt is Rp 864.29 trillion in loans and Rp 4,892.57 trillion in SBN (Prasetyantoko, 2006). Debt levels in G20 countries have risen considerably. This places Indonesia’s debt condition in the safe category. A debt crisis is averted only if the political elite, economists, and the general people continue to pay attention to debt (Hassan & Nassar, 2015).

External debt was expected to spur economic growth. Overemphasizing the negative effects of debt will induce morbid fear of debt, resulting in debt avoidance when it would have encouraged the economy by bringing in much-needed capital for infrastructure development and investment. From the above, it’s evident that there are varied perspectives on the impact of external debt on the economy, thus policymakers must understand its impact at various debt accumulation levels to make informed judgments. Sometimes debt is beneficial and required, but other times it should be avoided.

Before panicking over Indonesia’s massive foreign debt, it’s best to consider the country’s macroeconomic conditions, where the government implements fiscal and monetary policies. The existence of foreign debt aids the development of the Indonesian state through the utilization of additional finances from foreign nations. The rate of economic growth can be accelerated in accordance with previously established objectives. Inflation rate, economic growth, Rupiah exchange rate, and open employment rate are valuable antecedents that will influence Indonesia’s ability to pay its foreign debts and maximize the use of these debts in key Indonesian sectors. On the other hand, the state directly controls macroeconomic variables. So, the researcher intends to analyze how macroeconomic variables affect Indonesia’s foreign debt development from 2006 to 2020. Inflation, economic growth, the rupiah exchange rate, and the open unemployment rate are macroeconomic factors that will be studied in this study.

2. LITERATURE REVIEW

Economic development often requires funding from both within and beyond the country. Foreign funds and foreign debt might be in the form of foreign investment (PMA) or foreign debt. The requirement for foreign capital and debt is based on the concept of the so-called Two gap dilemma (Asatryan et al., 2015; Ebhotemhen, 2020; Habib, 2004). The first issue is the saving gap. Poor incomes in developing countries result in low public savings. However, the country requires rapid economic development and substantial investment. Thus, a gap exists between the requirement for savings as a source of funding and the requirement for investment. As such, in position, the financing required for a developing economy’s development process, both foreign debt and financing from foreign capital, is critical. Second, there is the currency imbalance. Requirements for foreign money despite the fact that capital goods imports help to encourage domestic industry in emerging countries, the lack of exports in general limits foreign exchange availability. Thus, the need for foreign exchange necessitates the use of debt and foreign investment.

For the wellbeing of the Indonesian people, the benefits of foreign debt have existed for a very long period, Sunder-Plassmann (2020) contends that foreign debt-based development finance has a good value because it does not burden the populace with high taxes. Foreign loans assist governments in amassing capital and are utilized to expedite growth, hence improving people’s welfare. research examines the effect of GDP, PDN, and DA on foreign debt using the Ordinary
Least Square (OLS) approach. The findings indicate that GDP has a detrimental effect on external debt. PDN, on the other hand, has a favorable connection with foreign debt. The DA variable then has a positive effect on the amount of foreign debt. Saymeh & Orabi (2013) stated in a similar study that foreign debt is driven by government expenditure and the budget deficit to the tune of 81 percent, while the remaining 19 percent is influenced by external factors.

Martin (2015) indicated that, in the short run, the dummy variable for the 1997 economic crisis and the error correction term (ECT) variable had a substantial effect on the Indonesian government's foreign loans using the Error Correction Model (ECM) technique. Meanwhile, in the long run, the currency rate, the fictitious 1997 economic crisis, exports, and the level of GNP all had a substantial effect on the Indonesian government's foreign loans, although the budget deficit had no significant effect (Hallward-Driemeier & Rijkers, 2013).

According to Siddique, Selvanathan & Selvanathan (2016), the government's financial deficit as a percentage of GDP has a long-run negative relationship with the volume of external debt absorption, but has no influence in the short run. Inflation is positively associated to growth but not statistically significant in the long run and negatively related to growth but statistically significant in the short run. International interest rates are inversely related in the long run, but positively correlated in the short run. In the short term, political stability is positively related to economic stability. Furthermore, economic development has no influence on external debt.

3. RESEARCH METHODS

3.1. Research Form

The research method is the process by which a research problem is solved. At the time of this writing, this type of research employs a quantitative method, where the information or data is represented numerically and examined through statistical analysis. Descriptive and correlational statistical analysis are both used. A descriptive analysis is a type of statistical analysis that is used to evaluate data by summarizing or explaining the data that has been obtained in its whole without generalizing or conclusions applicable to the general audience. While correlation analysis is a
3.2. Data Source

Data, whether factual or statistical, is the result of researchers documenting their discoveries (Hsing & Hsieh, 2012). The authors compiled the facts and data for this research by analyzing quarterly figures on inflation, economic growth, the rupiah exchange rate, and the open unemployment rate from 2008 to 2020. The secondary data for this study comes from the Central Statistics Agency (BPS). Bank Indonesia, on the other hand, provides information on Indonesia’s external debt. There is a total of 52 data points to be assessed.

3.3. Research Variable

The definition of the operational variable utilized in this study is shown in Table 1. To determine whether there is correlation between the variable and debt, the following variables were chosen: inflation, economic growth, exchange rate, open unemployment rate, and Indonesia’s foreign debt.

<table>
<thead>
<tr>
<th>Table 1. The Definition of Operational Variable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Variable</strong></td>
</tr>
</tbody>
</table>
| Inflation | Inflation Rate = \[
\frac{\text{IHK year}_t - \text{IHK year}_{t-1}}{\text{IHK year}_{t-1}} \times 100
\] |
| Economic Growth | \[
I_{t-1} = \frac{\text{PDB}_t - \text{PDB}_{t-1}}{\text{PDB}_{t-1}} \times 100\%
\] |
| Exchange Rate | Middle Rate = \[
\frac{\text{Sell Rate} + \text{Buy Rate}}{2}
\] |
| Open Unemployment Rate | TPT = \[
\frac{a}{b} \times 100\%
\] |
| Indonesia’s Foreign Debt | The private sector (bank/non-bank financial institutions and non-financial institutions) and the government debt (SULNI). Indonesia’s total foreign debt is denominated in USD (USD). |

3.4. Data Analysis Technique

Multiple linear regression analysis demonstrates there is a long-run equilibrium relationship if the two or more variables are cointegrated:

\[
Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e
\]

Remarks:
- \(Y\) : Foreign Debt
- \(\beta_1\) : Regression coefficient for \(X_1\)
- \(\beta_2\) : Regression coefficient for \(X_2\)
- \(\beta_3\) : Regression coefficient for \(X_3\)
- \(\beta_4\) : Regression coefficient for \(X_4\)
- \(X_1\) : Inflation Rate
- \(X_2\) : Economic Growth
- \(X_3\) : Exchange Rate
- \(X_4\) : Open Unemployment Rate
Classical regression assumption test is a prerequisite test if using multiple regression analysis. These tests include: normality test, multicollinearity test, heteroscedasticity test and stationarity test. If these assumptions are violated, the results of regression analysis and tests such as t-test and F-test will be invalid or biased.

4. RESULTS AND DISCUSSIONS

4.1. Foreign Debt

There are numerous causes for the government's incursion of foreign debt. One of the reasons Indonesia must borrow money is to sustain momentum and prevent lost opportunities. "There are unavoidable expenditure requirements, such as the supply of health services and food security. The development of Indonesia's foreign debt from 2008 to 2020 is quite volatile but tends to increase. The following is a graph of the development of Indonesia's foreign debt from the first quarter of 2008 to the fourth quarter of 2020.

![Figure 1. Development of Indonesia's Foreign Debt 2008-2020](source)

Source: Bank Indonesia (2021) - processed

The largest growth happened in 2009, when Indonesia's foreign debt reached 1,679,890,082,687.30 US dollars in the third quarter, up from 1,537,407,628,864.5 in the second quarter. In other words, Indonesia's foreign debt climbed 9.27 percent in 3 months. Despite an increase, Indonesia's foreign debt fell 3.64 percent in the first quarter of 2020 to 388,750,926,712.92 US dollars. Previously, Indonesia's foreign debt stood at 403,446,024,337.61 dollars. The study's initial and final results show that Indonesia's foreign debt has increased by 2.78 times.

4.2. Inflation

Indonesia's inflation rate is improving year on year. In keeping with Bank Indonesia's aim, inflation is forecast to range from 2 to 4% next year, driven by rising domestic demand and stable supply. The graph below shows Indonesian inflation from 2008 through 2020. The greatest recorded inflation was in the third quarter of 2008. Indonesia's inflation rate never reached 10% until 2009, keeping with the government's pledge to keep it below 10%. Inflation in Indonesia has been 2-4 percent for the last 5 years. Indonesia's average inflation rate from 2008 through 2020 is 4.99%.
4.3. Economic Growth

The study used GDP statistics to measure economic growth. This graph shows Indonesia's economic development from 2008 through 2020. Except for 2020, the data used in this study show that Indonesia's economic growth has always been positive. The second quarter of 2020 saw negative 5.32 percent economic growth. This negative economic growth tendency extended into the third and fourth quarters of the same year. Indonesia is officially in a recession after three straight quarters of negative economic growth. An unexpected economic shock that causes major financial troubles, such as the COVID-19 outbreak that has affected Indonesia since March 2020, might cause a recession. Activity restrictions that are applied automatically reduce demand for various sectors such as transportation, accommodation, and trade. The decline in demand is then responded by providers of goods/services by reducing production or even closing their businesses temporarily to reduce costs incurred.

4.4. Rupiah Exchange Rate

The rupiah's value against the dollar fluctuates constantly, weakening and strengthening. One unit or one dollar is defined as weaker rupiah. According to research, the rupiah's highest dollar exchange rate happened in the first quarter of 2020. At the time, 1 US dollar was worth Rp 16,367.00. The dollar exchange rate was Rp. 13,901.00. Thus, the rupiah exchange rate depreciated by 17.74 percent. Volatile exchange rates can be generated by market issues/sentiments; normally, a currency's exchange rate moves swiftly beyond its fundamental conditions. Depending on the domestic forex market and speculation factors, this doesn't persist long. The exchange rate will
return to its underlying equilibrium condition after the adjustment process happens. Sharp swings in currency rates and stock index prices can be produced by the monetary crises or by national calamities that occur periodically during economic difficulties, such as the Covid-19 pandemic that hit simultaneously in multiple locations. Wuhan’s Covid-19 epidemic began in mid-September 2019.

![Graph: Middle Rate of Rupiah Exchange Rate against US Dollar](source)

**Figure 4. Middle Rate of Rupiah Exchange Rate against US Dollar**

### 4.5. Open Unemployment Rate

Unemployment is referred to as a macroeconomic issue that impedes regional development since it contributes to the emergence of other social concerns. Figure 5 is data on Indonesia’s open unemployment rate. According to studies, the third quarter of 2020 had the greatest growth in the open jobless rate. In August 2020, the total workforce was 138.22 million individuals, an increase of 2.36 million persons over the previous year. Thus, the open unemployment rate increased 1.84 percentage points year over year and 2.08 percentage points quarter over quarter.

![Graph: Indonesia's Open Unemployment Rate 2008-2020](source)

**Figure 5. Indonesia’s Open Unemployment Rate 2008-2020**

As observed in Table 2, data from several variables still have a unit root, indicating that the data is not stationary at the level. This result is drawn because the t-Statistic value is larger than the ADF critical threshold of 5 percent. For non-stationary data, the ADF test will be repeated using the initial differentiation (1st Difference). As shown in Table 2, the t-statistic is less than the ADF critical value and the likelihood is less than 0.05, indicating that the data meets the stationarity requirements.
Table 2. Augmented Dickey-Fuller Test (Level)

<table>
<thead>
<tr>
<th>Series</th>
<th>t-Statistic</th>
<th>Test critical values 5% level</th>
<th>Max Lag</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1_INF</td>
<td>-1.657002</td>
<td>-2.919952</td>
<td>4</td>
<td>0.4461</td>
</tr>
<tr>
<td>X2_PE</td>
<td>-0.853631</td>
<td>-2.919952</td>
<td>4</td>
<td>0.7948</td>
</tr>
<tr>
<td>X3_NT</td>
<td>-1.206274</td>
<td>-2.919952</td>
<td>4</td>
<td>0.6650</td>
</tr>
<tr>
<td>X4_TPT</td>
<td>-1.955437</td>
<td>-2.919952</td>
<td>4</td>
<td>0.3050</td>
</tr>
<tr>
<td>Y_ULN</td>
<td>-7.534982</td>
<td>-2.919952</td>
<td>4</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Augmented Dickey-Fuller Test (1st difference)

<table>
<thead>
<tr>
<th>Series</th>
<th>t-Statistic</th>
<th>Test critical values 5% level</th>
<th>Max Lag</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(X1_INF)</td>
<td>-6.700741</td>
<td>-2.925169</td>
<td>4</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(X2_PE)</td>
<td>-6.532163</td>
<td>-2.921175</td>
<td>4</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(X3_NT)</td>
<td>-8.632620</td>
<td>-2.921175</td>
<td>4</td>
<td>0.0000</td>
</tr>
<tr>
<td>D(X4_TPT)</td>
<td>-5.703795</td>
<td>-2.922449</td>
<td>4</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Tables 3 show that the t-statistic value is smaller than the critical value of 1%, 5%, or 10%. The probability value is also smaller than the value of, so the ECT is stationary at level or difference 0. So, it can be concluded that there is a short-term and long-term relationship between the independent variable and the dependent variable in this regression model.

Table 3. Augmented Dickey-Fuller Test (Level)

<table>
<thead>
<tr>
<th>t-Statistic</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Augmented Dickey-Fuller test statistic</td>
<td>-7.953982</td>
</tr>
</tbody>
</table>

Test critical values:
- 1% level: -3.565430
- 5% level: -2.919952
- 10% level: -2.597905


Table 4. Phillips-Perron Test (Level)

<table>
<thead>
<tr>
<th>Adj. t-Stat</th>
<th>Prob.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phillips-Perron test statistic</td>
<td>-8.145176</td>
</tr>
</tbody>
</table>

Test critical values:
- 1% level: -3.565430
- 5% level: -2.919952
- 10% level: -2.597905


Residual variance (no correction) | 4.031666
HAC corrected variance (Bartlett kernel) | 3.149746

Based on table 5, the long-term effect equation between the independent variable and the dependent variable can be stated as follows:

\[ Y = 12.02462 - 0.210954X_1 - 0.100380X_2 + 0.000608X_3 - 0.183933X_4 \]

The exchange rate of the rupiah against the US dollar has a significant effect on foreign debt. While the variables of inflation, economic growth, and the open unemployment rate do not affect Indonesia's foreign debt in the long term.

Table 5. Long-term Effect Estimation Table

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X1_INF</td>
<td>-0.210954</td>
<td>0.153452</td>
<td>-1.374721</td>
<td>0.1757</td>
</tr>
<tr>
<td>X2_PE</td>
<td>-0.100380</td>
<td>0.173767</td>
<td>-0.577668</td>
<td>0.5662</td>
</tr>
<tr>
<td>X3_NT</td>
<td>0.000608</td>
<td>0.000220</td>
<td>-2.755919</td>
<td>0.0083</td>
</tr>
<tr>
<td>X4_TPT</td>
<td>-0.183933</td>
<td>0.449994</td>
<td>-0.408744</td>
<td>0.6846</td>
</tr>
<tr>
<td>C</td>
<td>12.02462</td>
<td>5.278740</td>
<td>2.277934</td>
<td>0.0273</td>
</tr>
</tbody>
</table>
Based on table 6, the short-term effect equation between the independent variable and the dependent variable can be stated as follows:

\[ Y = 0.037993 - 0.149890X_1 - 0.105935X_2 + 0.001728X_3 - 0.450910X_4 - 1.026937 \]

In the short term, the rupiah exchange rate against the US dollar has a significant effect on foreign debt. Meanwhile, the variables of inflation, economic growth, and the open unemployment rate do not affect Indonesia's foreign debt in the short term. Furthermore, in table 4.7, the probability value of the F-statistic is below (0.05). Likewise, the speed of adjustment coefficient ECT (-1) is negative and significant (prob. < 0.05). So, there is a 102.69% imbalance in the short-term effect of variables \( X_1, X_2, X_3, \) and \( X_4 \) on variable \( Y \), which is corrected every period.

**Table 6. Short-term Effect Estimation Table**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( D(X_1_{INF}) )</td>
<td>-0.149890</td>
<td>0.203645</td>
<td>-0.736034</td>
<td>0.4655</td>
</tr>
<tr>
<td>( D(X_2_{PE}) )</td>
<td>-0.105935</td>
<td>0.229885</td>
<td>-0.460816</td>
<td>0.6471</td>
</tr>
<tr>
<td>( D(X_3_{NT}) )</td>
<td>0.001728</td>
<td>0.000419</td>
<td>-4.126308</td>
<td>0.0002</td>
</tr>
<tr>
<td>( D(X_4_{TPT}) )</td>
<td>-0.450910</td>
<td>0.795380</td>
<td>-0.566911</td>
<td>0.5736</td>
</tr>
<tr>
<td>ECT(-1)</td>
<td>-1.026937</td>
<td>0.138311</td>
<td>-7.424821</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>0.037992</td>
<td>0.284294</td>
<td>0.133636</td>
<td>0.8943</td>
</tr>
</tbody>
</table>

R-squared        | 0.693985  | Mean dependent var | -0.077979 |
Adjusted R-squared | 0.659983  | S.D. dependent var  | 3.370031  |
S.E. of regression | 1.960998  | Akaike info criterion | 4.299093 |
Sum squared resid  | 173.7725  | Schwarz criterion    | 4.526366  |
Log likelihood    | -103.6269 | Hannan-Quinn criter. | 4.385941 |
F-statistic       | 20.41029  | Durbin-Watson stat   | 2.064003  |
Probt(F-statistic)| 0.000000  |                      |           |

### 4.6. Effect of Inflation Rate on External Debt

According to the estimation results for long-term and short-term effects, Indonesia's inflation rate had no discernible effect on the development of foreign debt. The inflation coefficient calculated from the long-term estimation result is -0.210954, which means that for every one unit increase in inflation, 0.210954 units of foreign debt will drop. 0.1757 is a probability value that is significantly greater than the alpha value. While the short-term inflation coefficient is -0.149890, every one unit increase in inflation will result in a 0.149890 unit drop in foreign debt, ceteris paribus. According to the research from Baharumshah, Slesman & Wohar (2016), Lim & Sek (2015), and Neely & Rapach (2011) concluded that while inflation does not influence foreign debt, foreign debt does affect inflation. According to (Scharnagl & Stapf, 2015), a review of the literature reveals that the relationship between inflation and foreign debt differs per country, while the majority of research find a positive correlation between the two variables. However, there is no consensus on whether inflation and external debt have a positive or negative connection.

Faraglia, Marcet, Oikonomou & Scott (2013), Munir & Fin (2018), and Saymeh & Orabi (2013) provide a similar view, suggesting that substantial inflation can benefit in the reduction of foreign debt in three ways. To begin, the government can absorb true resources via base money (seigniorage). Second, inflation can degrade the real value of debt, although this is dependent on the maturity structure and currency denomination of the debt, as well as the interest rate reaction to increased inflation, with inflation having the largest influence on long-term fixed interest rates and local currency debt. Third, inflation may have an influence on the primary balance if the index is not subject to progressive income taxation.
4.7 The Effect of Economic Growth on Foreign Debt

According to the results of the long- and short-term effects estimations, Indonesia's economic growth has a little effect on the development of foreign debt. Economic growth coefficient is -0.100380 in the long-term estimation result, which means that for every 1 (one) unit rise in economic growth, there will be a 0.100380 unit drop in foreign debt. 0.1757 is a probability value that is significantly greater than the alpha value ($\alpha$). While the estimated short-term effect results in a coefficient of economic growth of -0.105935, every rise of 1 (one) unit of economic growth is followed by a drop of 0.105935 units of foreign debt, ceteris paribus.

A negative coefficient of economic growth demonstrates the inverse relationship between foreign debt and economic growth (Lin & Sosin, 2001). This means that if economic growth slows, debt levels rise. Inversely, if Indonesia's economic growth accelerates, there is a possibility that the country's foreign debt will decline. According to Changyong, Jun & Chen (2012), while the economy grows, the debt-to-GDP ratio can be reduced without resorting to a fiscal surplus, but when the economy does not develop, a fiscal surplus is the only alternative.

In keeping with the findings of this analysis, a 2013 report by the United States Committee for a Responsible Federal Budget concluded that stronger economic growth might benefit debt projections in at least two ways. To begin, quicker growth results in increased income, which results in a $315 billion reduction in the US budget deficit for every 0.1 percentage point rise in yearly economic growth. Second, economic growth strengthens the economy's ability to handle debt. When foreign debt is expressed as a percentage of GDP, increasing GDP can help reduce the debt-to-GDP ratio, just as reducing nominal debt can help reduce the external debt ratio.

4.8. The Effect of the Rupiah Exchange Rate on Foreign Debt

The rupiah exchange rate has a considerable positive effect on Indonesia's foreign debt. The long-term estimation results indicate that the rupiah exchange rate coefficient is 0.000608, implying that every 1 (one) increase in the exchange rate unit is followed by an increase in foreign debt of 0.000608 units. 0.0083 is less than the alpha value ($\alpha$). Thus, over time, the exchange rate will have a major positive effect on Indonesia's external debt. According to the short-term estimation results, every 1 (one) point increase in the exchange rate will result in an increase of 0.001728 units of foreign debt, ceteris paribus. As with the long term, the currency rate has a positive and considerable effect on Indonesia's foreign debt in the short term (short run).

The fact that the regression is positive implies that there is a linear and significant relationship between the rupiah exchange rate and foreign debt. In other words, the higher the rupiah's exchange rate relative to the US dollar (the rupiah depreciates), the greater Indonesia's foreign debt. The findings of this analysis corroborate those of Gonzalez, Bua, Lopez & Santomil (2010), who found that the rupiah exchange rate had a favorable and significant effect on foreign debt from 2000 to 2017. The exchange rate has a significant impact on the economic conditions of a variety of macroeconomic and microeconomic variables. Each year, if there is currency volatility, a country will suffer the effects. Foreign debt is frequently utilized to finance development. As a result of the rupiah's depreciation, extra international debt will be created, as the loan's value is measured in foreign currency.

Not just in Indonesia, but also in other nations, the currency rate has a considerable impact on the rise of foreign debt. Nabila & Anwar (2021) gathered empirical evidence that currency
devaluation raises foreign debt significantly. According to Hassan & Nassar (2015), the ARDL model, depreciation of one Indian rupee raises external debt by 0.75 percent of GDP in the short run and by 1.26 percent in the long run. Additionally, this study establishes a causal relationship between external debt and economic growth in India, emphasizing the importance of the exchange rate and debt relationship.

4.9. The Effect of the Open Unemployment Rate on External Debt

According to the estimation results for long- and short-term effects, Indonesia's open unemployment rate has no discernible effect on the growth of foreign debt. The coefficient of the open unemployment rate is -0.183933, which implies that for every 1 (one) unit increase in the open unemployment rate, there will be a 0.183933 unit drop in foreign debt. 0.6864 is a probability value that is significantly greater than the alpha value (𝛼). Meanwhile, the coefficient of the open unemployment rate as a result of the estimated short-term effect is -0.45910, implying that each unit increase in the open unemployment rate variable is followed by a 0.450910 unit decrease in foreign debt, ceteris paribus.

According to another study, the open unemployment rate has a direct effect on the fiscal deficit. This is because the government's unemployment alleviation program consumes a significant percentage of the state's annual financial structure, as indicated in the APBN. Not only has the COVID-19 pandemic increased unemployment, but according to Finance Minister Sri Mulyani, Indonesia will need to borrow again to fund health budget needs. The additional loan is to cover the cost of health care as it becomes necessary. He highlighted that protecting human lives is non-negotiable, which means that whether Indonesia likes it or not, it will need to borrow again. Additionally, the prolonged response to the pandemic risks wreaking havoc on the country's economy.

According to Cahyadin & Ratwaningsih (2020), the head of the Budget Agency, the government truly needs to borrow again in light of the current scenario. He stated that the additional debt would be used to fund the National Economic Recovery (PEN) initiative. The program finances health incentives ranging from vaccines to social aid.

5. CONCLUSION

From the results of research and discussion that have been stated in the previous section, some conclusions can be conveyed from the research as follows. The inflation rate does not have a significant effect on Indonesia's foreign debt, both in the long term and in the short term. Economic growth does not have a significant effect on Indonesia's foreign debt, both in the long and short term. The Rupiah exchange rate has a significant influence on Indonesia's foreign debt, both in the long term and in the short term.

The open unemployment rate does not have a significant effect on Indonesia's foreign debt, both in the long and short term. From the results of the research, discussion, and conclusions put forward, researchers can provide some suggestions as follows. Based on the findings in this study, several major macroeconomic variables do not have a significant effect on Indonesia's foreign debt, both in the long and short term. Therefore, further research should make modifications to the dataset such as adding years of observation, using monthly data, or adding macroeconomic variables.
The results showed that the rupiah exchange rate had a significant effect on the development of Indonesia's foreign debt. This conclusion implies that the government must stabilize the rupiah exchange rate against the US dollar in order to avoid the debt burden and interest payments being incurred and the occurrence of an economic crisis in the future. The central bank must immediately intervene through a Domestic Non-Deliverable Forward policy in rupiah denominations to mitigate exchange rate and spot market risks by selling US dollars, as well as buying government bonds denominated in rupiah in the secondary market.

In this study, the dependent variable is Indonesia's foreign debt which includes government debt, central bank, private sector (bank & non-bank). It is suggested to further researchers to conduct research on foreign debt according to the group of borrowers in the hope of knowing in full how the burden of state debt is. This can be a new breakthrough considering that Indonesia's foreign debt statistics are dominated by the private sector. It is recommended for the general public to make the best use of the unemployment alleviation program run by the government. Tax compliance from taxpayers is very necessary in this foreign debt problem, because the higher the level of taxpayer compliance in paying taxes, the higher state revenues and the ability to pay debts is also higher.

Based on previous discussions, it can be concluded several conclusion regarding independent variables. First, coupon rate positively affects liquidity of benchmark government bonds of 10 years tenor. Second, remaining time to maturity does not affect the government bonds liquidity. The results also showed that the rupiah exchange rate had a significant effect on the development of Indonesia's foreign debt. This conclusion implies that the government must stabilize the rupiah exchange rate against the US dollar in order to avoid the debt burden and interest payments being incurred and the occurrence of an economic crisis in the future. The central bank must immediately intervene through a Domestic Non-Deliverable Forward policy in rupiah denominations to mitigate exchange rate and spot market risks by selling US dollars, as well as buying government bonds denominated in rupiah in the secondary market.

Based on the results, several suggestions for government abound. The Indonesian government, especially Ministry of Finance, should consider coupon rate which is suitable to energize liquidity of government bonds in the secondary market. The coupon rate should be sufficiently high to attract investors but too high to add substantially interest costs which may reduce expenditures for other productive public sectors. According to this analysis, main macroeconomic variables have no long-term impact on Indonesia's foreign debt. Further research should include observation years, monthly data, or macroeconomic variables to the dataset.

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