

Original Article

# The Effect of Foreign Debt, Workforce, and Net Exports on Indonesia's Economic Growth in Period of 1986 Q1 - 2020 Q4

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**Abstract** — The purpose of this study is to analyze the effect of foreign debt, labor force, and net exports on economic growth in Indonesia. The data used is time-series data for the period 1986 first quarter to 2020 fourth quarter. The results of this study include; the foreign debt variable has a negative and significant effect on economic growth in Indonesia, while the labor force and net exports variables each have a positive and significant impact on economic growth in Indonesia. The results of the study show that Indonesia's choice to choose foreign debt as capital to cover the budget deficit is not the right thing.

**Keywords** — Economic growth, External debt, Labor force, Net exports.

## I. INTRODUCTION

Sustainable development is needed for the improvement of a country's economy. Indonesia, as a developing country, has obstacles in realizing development programs for national prosperity. The government faces the problem of limited capital for financing development, and this is due to the gap in revenue and expenditure or often called the development budget deficit. Mankiw (2013) states that the economy of a country requires a certain amount of capital to generate production and sustain economic growth in a situation when government spending exceeds tax revenues, there will be a budget deficit financed by borrowing from the private sector or from foreign governments.

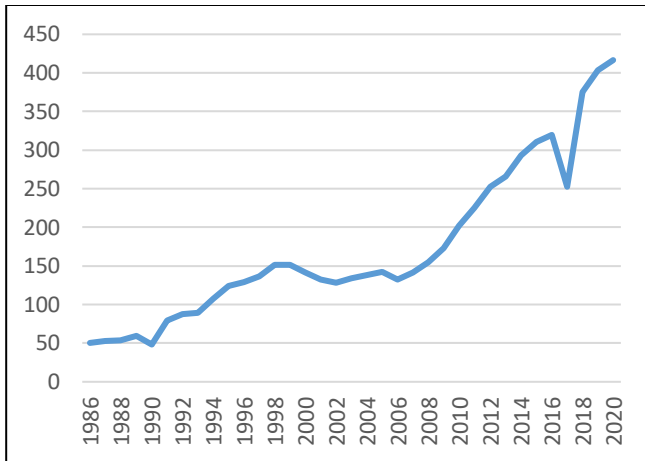
Until now, the deficit condition is still difficult to overcome due to the lack of policies that stimulate an increase in income apart from tax and grant receipts. The government took an expansionary fiscal policy with state spending greater than state revenues to encourage the economy to continue to grow. The expansionary fiscal policy carried out by the Indonesian government has several problems, one of which is that the portion of increased revenue from several sources of income is not greater than

the portion of spending (Anwar, 2014). Sources of state revenue are from tax and non-tax revenue sources, as well as from grants. Meanwhile, non-tax sources of revenue include profits from BUMN (*Badan Usaha Milik Negara*), natural resource management, confiscated goods, money printing, as well as levies related to public services or interests of the public use, business services, and certain permits.

The macroeconomic theory states that public sector spending should have a positive impact on economic growth. Based on this theory, Weber (2009) find that productive types of public service spending in education and health can generate long-term economic benefits. Education and health are the main factors in the formation of the Human Development Index (HDI). Individuals who are qualified from education and health factors will have high productivity and are effective in their contribution to economic development and growth. Likewise, type of expenditure in other sectors, spending will be effective and efficient if used appropriately and according to predetermined targets.

Since 2000, the main source of deficit financing has come from debt obtained from the issuance of government bonds in the form of *Surat Berharga Negara* (SBN), foreign loans, and domestic loans (Bappenas, 2021). Until now, foreign debt is still a very important source of financing development in many countries, including countries in Southeast Asia, especially Indonesia. Indonesia has had foreign debt starting from the old order era until the present. Initially, the debt was used to finance development, but in the future, apart from financing development, foreign debt is also additional financing for the budget deficit to spur the desired economic growth. Bellow is the movement of Indonesia's foreign debt from 1986 to 2020:





**Fig. 1 Indonesia's foreign debt chart 1986-2021 (billion USD)**

Figure 1 illustrates the movement of the total amount of Indonesia's foreign debt from 1986 to 2020. In 2017 there was actually a decrease in the amount of Indonesia's foreign debt to 252,4 billion USD, but in the next year, 2018, it experienced a significant increase with a value of 375,3 billion USD until 2020 is still experiencing a significant increase. External debt is divided into foreign debt of the government, central banks, and the private sector. The portion of foreign debt is dominated by government and central bank debt at 51%, and the remaining 49% is private debt (Bank Indonesia, 2021).

Indonesia's foreign debt in the short term is useful to cover the budget deficit that occurs. In the long term, Indonesia's foreign debt serves as capital in shaping economic development and growth through infrastructure development and financing in various productive sectors (Basten et al., 2021).

If viewed from its function, foreign debt serves to finance the Anggaran Pendapatan Belanja Negara (APBN) deficit, fund priority activities of Ministries/Agencies, manage debt portfolios, continue to be loaned to Regional Governments, continue to be loaned to BUMN, and/or granted to Regional Governments. In relation to the macroeconomy, foreign debt has the main function of capital in shaping the growth and development of the national economy.

Research conducted by Pattillo et al. (2002) found a negative relationship between debt and per capita income levels. Of the 100 countries studied, his research found that the contribution of debt to a country's per capita income is negative for the debt to GDP ratio (debt to GDP ratio), which is in the percentage range of 35-45%.

The success of economic development is also influenced by factors of production. Factors of production are often defined as anything that is technically needed to produce a

good or service. These factors of production include basic materials for building equipment, labor, machinery, and capital.

Labor is also a factor that affects the output of a region. A large workforce will be formed from a large population. However, it is feared that population growth will have a negative effect on economic growth.

Research conducted by Eliza (2015) states that there is a positive and significant relationship between the labor force and economic growth. His research found that a greater number of workers will increase the level of production. A large number of workers can mean increasing the number of productive workers. Labor input through skills, knowledge and discipline is an important element in economic growth.

Another factor thought to influence economic growth is net exports. Indonesia is a country that adheres to an open economic system by trading with other countries through exports and imports, where if exports are greater than imports, it will contribute income in the form of foreign exchange. Net exports are the difference in the value of goods and services exported to other countries minus the value of goods and services imported from other countries (Mankiw, 2013).

Research conducted by Akalpler & Shamadeen (2017) found that there is a positive and significant relationship between net exports and economic growth in America. His research found that the net value of American exports, which is always positive, has an impact on increasing income and productivity in America which will directly increase economic growth.

**II. RESEARCH METHODOLOGY**

This research is quantitative descriptive. The data used in this study is secondary data using time series data from 1986Q1-2020Q4. The data were obtained from the World Bank, Statistik Utang Luar Negeri Indonesia (SULNI Bank Indonesia), Badan Pusat Statistik (BPS) and reading books also sources from online media references that can support this writing.

The variables used in this study are data on economic growth, foreign debt, workforce, and net exports. The analytical method used in this research is the multiple regression analysis methods using time series data. In conducting this research, the researcher used the help of the E-Views-9 analysis tool. The data analysis technique used in this study was the method of simple linear analysis or OLS (Ordinary Least Square). To use multiple linear regression analysis in order to obtain a good model, it is required to fulfil the classical assumption test.

The next step is to do a unit root test, which is the first test that must be done before performing a regression analysis of the data used. The purpose of the stationarity test is to see if the average variance of the data is constant over time.

After testing the unit root, the method used in this study uses the Ordinary Least Square (OLS) method. The regression equation model used in this study is as follows:

$$PE_t = \beta_0 + \beta_1 ULN_t + \beta_2 AK_t + \beta_3 NX_t + \varepsilon_t$$

- PE<sub>it</sub> = Economics Growth
- β<sub>i</sub> = Constanta
- ULN<sub>t</sub> = Foreign Debt
- AK<sub>t</sub> = Workforce
- NX<sub>t</sub> = Export
- ε<sub>t</sub> = error term

Also, hypothesis testing is used to draw research conclusions and determine the accuracy of the data by performing t-test, F-test and coefficient of determination (R<sup>2</sup>).

**A. Classic Assumption Test**

**a) Normality test**

A normality test is carried out to see whether the independent and dependent variables have a normal distribution or not in the regression model. Residuals are stated to be normally distributed if Jarque Bera > chi-squares, and / or probability (p-value) > α = 5% (Gujarati, 2012).

**b) Multicollinearity Test**

The multicollinearity test detects whether the data in the regression model used has a relationship between independent variables. The multicollinearity test can be carried out with Auxiliary regression by comparing the partial determination coefficient (r<sup>2</sup>) with the multiple determination coefficient (R<sup>2</sup>). If R<sup>2</sup> < r<sup>2</sup>, then the model has a multicollinearity problem, and if R<sup>2</sup> > r<sup>2</sup>, then the model is free from multicollinearity problems.

**c) Heteroscedasticity Test**

The heteroscedasticity test detects a problem with the unstable homoscedasticity assumption. The regression results will show misleading if the regression model has heteroscedasticity problems (Gujarati, 2012). The heteroscedasticity test is done by comparing Obs \* R-Squared with the χ<sup>2</sup> (Chi-Square) table. If the value of Obs \* R-Squared is greater than the χ<sup>2</sup> table, it is concluded that there is no heteroscedasticity in the model.

**d) Autocorrelation Test**

The autocorrelation test can detect whether there is a relationship between residuals in the regression model by using the Breusch-Godfrey Serial correlation LM Test by comparing the Obs \* R Square value with the Chi-square value. (Gujarati, 2012)

**B. Statistical Hypothesis Testing**

**a) T-test (Partially)**

T-test was conducted to detect the partial influence of the independent variable on the dependent variable at the significant level α = 5 percent ceters paribus. In this case, the value between t-count and t-table will be compared with the testing criteria if t table < t statistic, then H<sub>0</sub> is rejected. H<sub>a</sub> is accepted. This means that partially the dependent variable regression coefficient has a significant effect on the dependent variable and vice versa.

**b) F Test Statistics**

The essence of the statistical F test is to determine the effect of all independent variables on the dependent variable together. The test criteria if F table < F statistic, then H<sub>0</sub> is rejected H<sub>a</sub> accepted. This means that the regression coefficient of the independent variables together has a significant effect on the independent variable and vice versa.

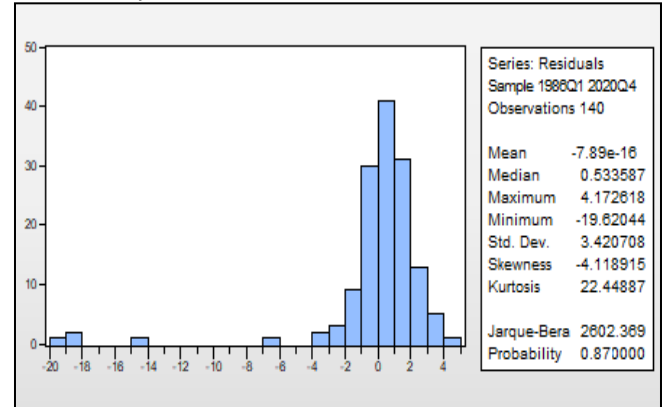
**C. Coefficient of Determination (R<sup>2</sup>)**

The coefficient of determination test sees how much influence the independent variable has on the dependent variable used in the study. If the value of R<sup>2</sup> is close to 1, then the independent variable used is able to properly explain the variation of the dependent variable.

**III. RESULT**

**A. Classic Assumption Testing**

**a) Normality Test**



**Fig. 2 Normality Test Result**

Based on Fig 2, normality test results obtained probability results of 0.87000 greater than = 0.05. It can be concluded that the data is normally distributed.

**b) Multicollinearity Test**

**Tabel 1. Result of multicollinearity test**

	ULN	AK	NX
ULN	1.000000	0.724218	0.170170
AK	0.724218	1.000000	0.324248
NX	0.170170	0.324248	1.000000

From the multicollinearity test, the results showed that there was no variable that had an  $r^2$  value of more than an  $R^2$  value or 0,86. Therefore, it can be concluded that in the variables used, there is no multicollinearity, or in other words, there is no linear relationship between the independent variables used in this study.

**c) Heteroscedasticity Test**

**Tabel 2. Result of Heteroscedasticity Test**

Prob. F(9,130)	0.0930
Prob. Chi-Square(9)	0.6300
Prob. Chi-Square(9)	0.6900

Table 2 shows that the results of the white test show a p-value of 0.6300 or greater than (0.05). Thus accepting  $H_0$  states that the variance is the same or there is no symptom of heteroscedasticity.

**d) Autocorrelation Test**

From the test results obtained the Durbin-Watson stat value of 1.846313, while for the value of  $DL = 1.6804$  and  $DU = 1.7678$  ( $n = 140, k = 3$  with  $\alpha = 5\%$ ). So it can be written  $dU < d < 4 - dU$  or  $1.7678 < 1.846313 < 4 - 1.7678$  (2.2322), meaning that it failed to reject the null hypothesis; no autocorrelation.

**e) Unit Root Test**

**Tabel 3. Unit root test result**

Variable	t-statistics	Alpha (5%)	Prob.	Description
PE	-4.15	-2.88	0.0011	Stasioner (0)
ULN	4.28	-2.88	0.0085	Stasioner (0)
AK	4.36	-2.88	0.0005	Stasioner (0)
NX	-3.38	-2.88	0.0132	Stasioner (0)

Based on Table 3, the results of the stationarity test for all variables show that the t-statistic value is greater than the critical value (5%), and the probability value is smaller than the alpha value (5%), which means the data is stationary at the level (0). The results of the unit root test indicate that this research is appropriate to use Ordinary Least Square (OLS) regression estimation.

**f) Ordinary Least Square (OLS)**

The following are the results of the regression using the Ordinary Least Square (OLS) method:

**Table 4. Result of Ordinary Least Square (OLS)**

Variable	Coeffisien	Std. Error	t-statistic	Prob.
C	0.949839	2.725241	3.348534	0.0280
ULN	-0.016442	0.008174	-2.811513	0.0062
AK	0.078045	0.040551	2.924598	0.0064
NX	0.000240	8.83E-05	2.715827	0.0075
R-Squared	0.861796	Prob (F-Statistic)		0.033454
Adjusted R-Squared	0.841100	Durbin-Watson Stat		1.846313

Based on the result of Ordinary Least Square (OLS) above, it can be interpreted as follows:

1. The coefficient of the constant is 0.949839. This shows that if all the independent variables used are equal to 0 (zero), then the economic growth in Indonesia from 1986 to 2020 is 0.949%.
2. Foreign debt has a negative and significant effect on = 5% (0.05) with a coefficient of 0.016442. These results indicate that if there is an increase in foreign debt of one billion USD and ceteris paribus, then economic growth in Indonesia will decrease by 0.016%.
3. The workforce has a positive and significant effect on = 5% (0.05) with a coefficient of 0.07804. These results indicate that if there is an increase in the number of the workforce by one million people and ceteris paribus, then economic growth in Indonesia will increase by 0.078%.
4. Net exports have a positive and significant effect on = 5% (0.05) with a coefficient of 0.000240. These results indicate that if there is an increase in net exports of one million USD and ceteris paribus, then economic growth in Indonesia will increase by 0.0002%.

**g) Statistical Hypothesis Testing**

**1) Partial T-Test**

In this study, the t-test was carried out at a 95 percent confidence level ( $\alpha = 0.05$ ) with a  $n-k-1$  degree of freedom ( $n =$  number of observations,  $k =$  number of independent variables) or df of 46.

**Tabel 5. T-Test Result**

Variable	t-Statistic	t-Table	Prob.	Description
ULN	-2.811513	1,65613	0.0062	$H_0$ ditolak
AK	2.924598	1,65613	0.0064	$H_0$ ditolak
NX	2.715827	1,65613	0.0075	$H_0$ ditolak

Based on the results of the t-test, all variables in the study reject  $H_0$  and accept  $H_a$ , meaning that each independent variable, such as foreign debt, workforce, and net exports, has a partial effect on economic growth in Indonesia from 1986 to 2020.

## 2) F-Test Statistics

Here are the results of the F-test:

**Tabel 6. F-Test statistics result**

F-Statistic	F-Table	Prob.	Conclusion
3,985938	3,06	0,033454	Rejected $H_0$

Based on the F-test result obtained for the F-statistic value of 3.985938 and the F-table value of 3.06. It can be seen that the F-statistic value is greater than the F-table, then  $H_0$  is rejected, and  $H_a$  is accepted, meaning that foreign debt, labor force, and net exports together have an effect on economic growth in Indonesia from 1986 to 2020.

## h) Detemination Coefficient ( $R^2$ )

The coefficient of determination ( $R^2$ ) is used to see how well the regression line fits the data or to measure the percentage of the total variation in Y explained by the regression line using the concept of the coefficient of determination ( $R^2$ ). The value of the coefficient of determination is 0.861796 or 86.17%. This shows that variations in foreign debt, workforce, and net exports are able to explain variations in economic growth in Indonesia by 86.17%, and the remaining 13.83% is explained by other factors outside the model.

## IV. CONCLUSION

Based on the results of data processing and discussions that have been carried out, it can be concluded: the foreign debt variable has a negative and significant influence on economic growth in Indonesia from 1986 Q1 to 2020 Q4. This makes it aware that the financing of foreign debt with the aim of helping the condition of the budget deficit and infrastructure development has not been implemented properly in Indonesia.

The workforce variable has a positive and significant impact on economic growth in Indonesia. The availability of demand in the form of the workforce must be balanced with the supply of jobs to avoid unemployment which can affect the Indonesian economy.

And then, the net export variable has a positive and significant influence on economic growth in Indonesia. International trade is a potential source of revenue for Indonesia because various kinds of raw, processed, semi-finished, and finished natural resources are so abundant in Indonesia.

## V. SUGGESTION

Financing through foreign debt must go through a more in-depth study so that its use is effective for productive sectors. National economic development, financing of budget deficits, as well as payment of interest and principal of previous existing debts must have their respective portions and solutions, not only relying on foreign loans. Creating new markets to find sources of state revenue is the right strategy for the government. This is done to reduce dependence on foreign debt and add new sources of revenue references for Indonesia.

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