

## **The Effect of Taxes and Capital Expenditures on Economic Growth The Effects of the COVID-19 Pandemic in Indonesia**

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### **Abstract**

*This study aims to determine tax revenues and capital expenditures before and during the COVID-19 pandemic on Indonesia's economic growth. The secondary data from October 2014 to December 2020 was collected through Badan Pusat Statistik (BPS). This study uses a descriptive quantitative approach. The analysis used in this study is to use the ARDL (Autoregressive Distributed Lag) method. The survey results indicate that tax revenues and capital expenditures in the short and long term have a positive and significant effect on economic growth in Indonesia, which follows the hypothesis of this study. Even tax revenues and capital expenditures have a significant positive impact on fiscal policy to help overcome the pandemic's economic impact. The resulting coefficient value is 0.6705. So that in the long term, an increase in tax revenue of 1 percent will increase economic growth by 0.6705 percent. Furthermore, the long-term capital expenditure variable also has a positive and statistically significant effect, with the resulting coefficient of 0.1743. an increase in capital expenditure of 1 percent will increase economic growth by 0.1743 percent.*

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### **Article Info**

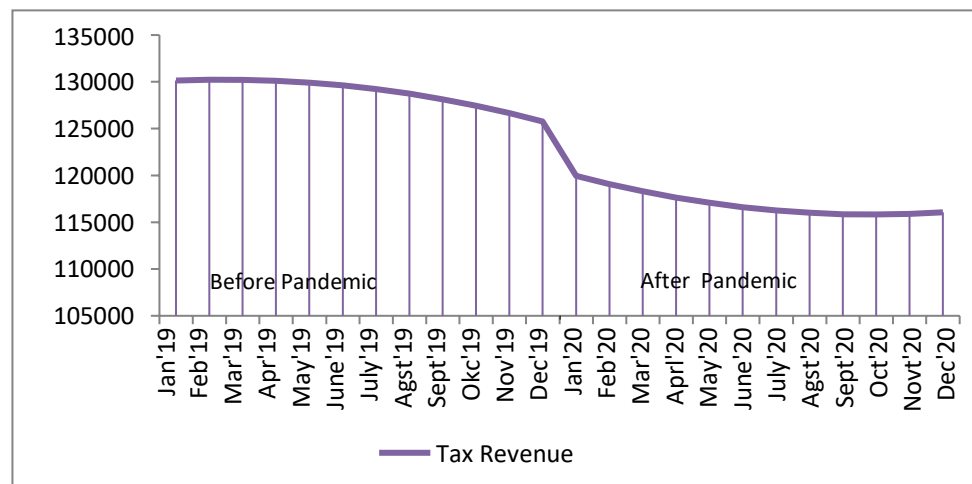
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## 1. Introduction

The COVID-19 pandemic has gradually become an economic crisis in various countries, especially Indonesia. The existence of restrictions on activities in the community affects business activities. It's increased the number of unemployed and declining economic growth, especially in the manufacturing, mining, tourism, transportation, and warehousing sectors. Export and import performance declined along with the inhibition of trade activities between countries. Therefore, the pandemic COVID-19 impact is tremendous for the economy, can use policies taxes to create flexible incentives for individuals and businesses so that, when applied can be used to control environmental externalities and others (Craig & Hines, 2020). Therefore, taxes as a fiscal instrument can provide a role that supports the domestic economy. Several countries have selected instruments taxes became one of the alternatives to rescue the economy in the country.

Government spending is also essential for social protection and economic recovery during the COVID-19 pandemic. The fiscal stimulus in tax cuts and additional government spending can provide enormous benefits for the groups of people who suffer the most from the weakening economy due to the pandemic. This study will focus on tax revenues and capital expenditures as fiscal instruments used by the government to restore economic activity that is expected to affect economic growth in Indonesia, which in this study uses GDP data at constant prices.



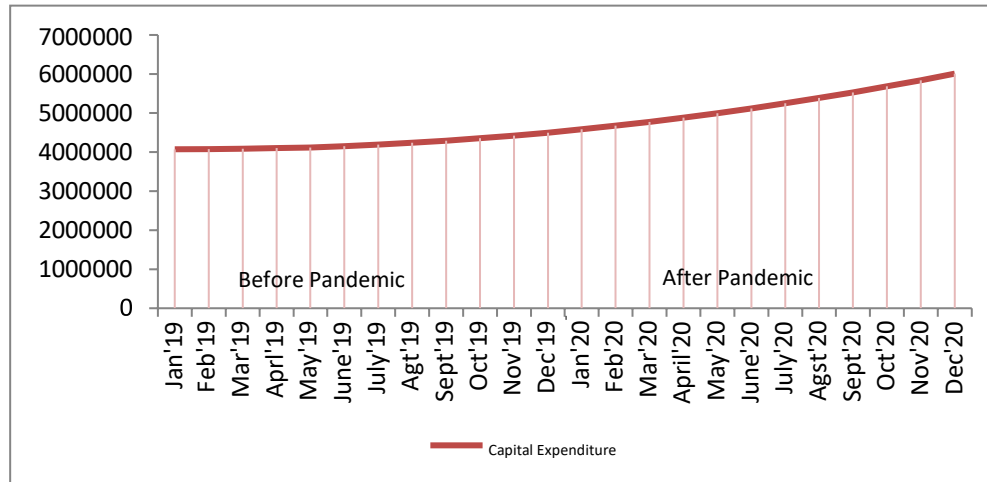
**Graph 1. Indonesia's Tax Revenue Data Before and During the COVID-19 Pandemic**

Source: BPS Indonesia, data processed

Tax revenue has decreased before the pandemic COVID-19, although not too significant. During the COVID-19 pandemic, tax revenues experienced a very substantial decline, recorded in the first quarter of 2020, sharing a contraction of up to 2.5%. In reality, the decline occurred in the reception of the tax sector of trade, whereas the industry that provides contributions significant on admission taxes. Some tax instruments that are minus after handling COVID-19 are Income Tax and Imports Tax, experienced the decline in tax revenues until the fourth quarter of 2020. It was due to fiscal incentives by issuing PMK- 23 / 2020 and



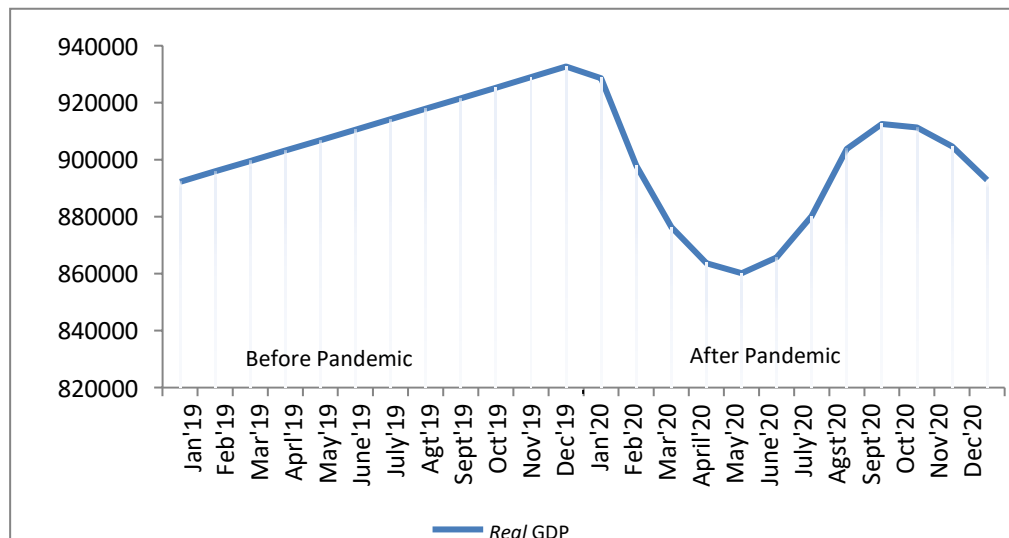
PMK 28/2020 to overcome the COVID-19 pandemic and protect domestic industry (Kementerian Keuangan RI, 2020)



**Graph 2. Indonesia's Capital Expenditure Data Before and During the COVID-19 Pandemic**

Source: BPS Indonesia, data processed

Both before and throughout the COVID-19 epidemic, capital expenditures have steadily climbed. Even though the COVID-19 epidemic did not instantly halt or stall project activity, efforts were made to boost economic growth by enacting spending rules to encourage the government to do so. So that it can be gradually recovered while also controlling the COVID-19 epidemic and recovering from economic recovery. Although capital expenditure has been relegated to subsidy spending, it is critical for developing consumption.



**Graph 3. Indonesia's Real GDP Data Before and During the COVID-19 Pandemic**

Source: BPS Indonesia, data processed



Indonesia's economic growth based on real Gross Domestic Product (GDP) in the third quarter of 2020 amounted to Rp2,720.5 trillion, which increased by 5.05 percent, after contracting by 4.19 percent in the previous quarter with a GDP of Rp2,589.6 trillion. However, the decline began from the first quarter of 2020. Based on these data, economic growth experienced negative growth in the second quarter of 2020 and improved in the third quarter of 2020. Compared to before the pandemic, economic growth constantly increased from the first to third quarters. This is shown in the first quarter of 2019, amounting to Rp2,625.2 trillion, then the second quarter of 2019 amounting to Rp2,735.3 trillion, and the third quarter of Rp 2,818.8 trillion.

Research conducted by Habib Saragih (2018), Pambudy & Syairozi (2019), Triastuti & Pratomo (2016) that capital expenditure has a significant effect with a positive relationship to economic growth in districts/cities in Indonesia. It means that the greater the realization of capital expenditure will impact increasing economic growth. However, Fajri (2016) research shows that capital expenditure does not have a significant influence on increasing economic growth. It is because there is still a less precise policy of allocating capital expenditure so that it is not able to encourage increased production demand.

Tax revenue realization impacts both short and long-term economic growth (Stoilova, 2017; Habib Saragih, 2018; Sumaryani, 2019; Yunita & Sentosa, 2019). On the other hand, policy preparation is generally finished in a short amount of time. The inability of tax authorities to undertake monitoring during pandemics, resulting in the distribution of tax incentives that are open to abuse and not on target during the pandemic (OECD, 2020). Estimates of the impact of the COVID-19 pandemic are still diverse, at the initial analysis stage shows the GDP contraction to tax revenues will be very significant (OECD, 2020). At the pandemic, tax policy is also considered less likely to comprehensively and sustainably address the country's problems (Craig & Hines, 2020). The crisis in 2008 reinforced the statement by showing a decrease in the tax ratio in times of crisis and did not immediately improve even when the economy began to improve.

It is essential to understand whether tax revenues and capital expenditures impact economic growth in Indonesia at the time of the Covid-19 pandemic as a fiscal instrument to restore the economy. It is the implementation of the PSBB program that will hamper the process of community mobility and global demand. Based on the above presentation, this study is interesting to discuss "**Tax Revenue and Capital Expenditure on Economic Growth of the effects of the Covid-19 Pandemic in Indonesia.**" This research will discuss how the effect of taxes and capital expenditures on economic growth affects the COVID-19 pandemic in Indonesia in the short term. Then analyze the impact of taxes and capital expenditure on the economic development of the effects of the COVID-19 pandemic in Indonesia in a long time.



## 2. Literature Review

### **Tax Revenue, Agency Theory and Capital Expenditure**

Tax revenue consists of domestic taxes and international trade taxes (Andrejovská & Puliková, 2018). Tax revenue theory describes the relationship between tax revenue to economic growth using Agency Theory and Peacock and Wiseman Theory. Agency theory assumes that agents have more information than principals. In the implementation appears information asymmetry, because the principal does not have enough information about the agent's performance, then the principal never feels precise how the agent's efforts in contributing. So that conflicts of interest can occur between principals and agents due to differences in interests. In this study, the conflict happened between the taxpayer and the tax authorities as a representation of the Government. Conflict occurs because the Government wants to maximize tax revenues from taxpayers while taxpayers try to avoid paying taxes. Agency conflict can be relatively low if tax revenues have exceeded the previously set target. Common agency conflicts will positively impact tax revenues, which will ultimately drive economic growth.

The realization of tax income impacts both short and long-term economic growth (Stoilova, 2017; Habib Saragih, 2018; Sumaryani, 2019; Yunita & Sentosa, 2019). On the other hand, policy preparation is usually completed in a short period. Moreover, because tax authorities cannot monitor during pandemics, tax incentives are distributed that are vulnerable to abuse and are not targeted during the pandemic (OECD, 2020). Capital expenditures are regional investments that prioritize protecting and enhancing people's quality of life. Capital expenditures help to improve critical services, education, health care, social services, public infrastructure, and social security. Following regional obligations, all are issued by examining expenditure standards, price standards, performance benchmarks, and primary service standards (Livdan & Nezlobin, 2021; Zhu, 2021).

### **Growth Theory**

Economic growth as increasing output over the long term, which includes three aspects, namely the process, per capita, and long-term production (Rodrik & Rosenzweig, 2010; Romer, 2019). Adam Smith emphasized that capital fertilization must be done first rather than the division of labor. Smith also explained that the growth process is clumpy (cumulative). When prosperity arises due to advances in agriculture, manufacturing industry, and business, such wealth will attract capital fertilization, engineering progress, increasing population, market expansion, division of labor, and continuous increase in profits. But once the yield decreases, it will continue to decline and create a stationary state. When this happens, capital fertilization stops, dropping profits, per capita income decreases, production and the economy become stuck. Smith called this a progressive situation. Therefore, it takes the role and policy of the government to conduct capital expenditures other than those carried out by the private sector (Jhingan, 2014).



### 3. Research Methods

This study uses a quantitative descriptive approach. The data type used is secondary data in the form of time series on a monthly scale. The observation period in this study is from October 2014 to December 2020. The data used to see the impact of tax revenues and capital expenditures on Indonesia's economic growth before the COVID-19 pandemic is data from October 2014 to December 2019. Meanwhile, data from January to December 2020 is used to look at the impact of tax revenues and capital expenditures on economic growth in Indonesia during the Covid-19 pandemic. This study projected economic growth using GDP data based on constant prices. Gdp data, tax revenues, and capital expenditures in the monthly period (monthly) are obtained by interpolating quarterly and annual (yearly) data on E-views 9 using the quadratic match sum method.

This study using the Autoregressive Distributed Lag (ARDL) model is a method used to analyze long-term relationships involving the concept of cointegration between time series variables (Razzaq, Sharif, Najmi, Tseng, & Lim, 2021; Wen et al., 2022). Using the ARDL method can analyze the influence and impact of Y and X over time by distinguishing short- and long-term responses, the power of past Y variables on present Y, and testing or analyzing cointegration between variables

#### Autoregressive Distributed Lag(ARDL) Estimation Model

$$\Delta \ln GDP_t = \beta_0 + \beta_1 \sum_{i=1}^p \Delta \ln TAX_t + \beta_2 \sum_{i=1}^p \Delta \ln CE_t + \beta_3 \ln TAX_{t-k} + \beta_4 \ln CE_{t-k} + \varepsilon_t$$

#### OLS Estimation Model

$$LNGDP = \alpha + \beta_1 LNTAX + \beta_2 LNCA + \varepsilon$$

Description:

GDP	= Gross Domestic Product
TAX	= Tax
CE	= Capital Expenditure
$\beta_0$	= Constanta
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$	= Coefficient
t	= period after
t-k	= period before
$\varepsilon_t$	= error which is normally distributed
$\alpha$	= Constanta
$\beta_1, \beta_2$	= Coefficient
$\varepsilon$	= error which is normally distributed

Economic growth is a long-term process of growing output that has three components: process, output per person, and in the long run. Gross Domestic Product (GDP) at constant prices is used in this study as a proxy for economic growth (Jhingan, 2014). According to The Regulation of the Minister of Finance/PMK.06/2006 Article 1, tax revenues are all receipts made up of



domestic taxes and foreign trade taxes. The information used is the monthly tax realizations extrapolated in rupiah units. The purchase of fixed assets and other assets that provide benefits for more than one accounting period is referred to as a capital expenditure under Law Number 71 of 2010. Spending on models comprises capital investments for the purchase of land, structures, tools, and intangible assets. The Central Statistics Agency provided the data utilized in this analysis, which was then interpolated to use the rupiah as the unit of measurement.

## 4. Results

### Stationary Test

The Augmented Dicky Fuller (ADF) test is used for unit root testing in this research model. To evaluate if a series has a unit root or not, it must compare the ADF t-statistical values to the ADF table. The time-series data is not stationary if the absolute value of t-statistics in the ADF Test is less than the critical value of the ADF in the table with a specific degree of significance. The unit root test result is provided in the table 1.

**Tabel 1. Stationary Test Result**

Unit Root Test (Level)					Unit Root Test (First Difference)				
Method		Statistic	Prob.**		Method		Statistic	Prob.**	
ADF - Fisher Chi-square		3.68020	0.7199		ADF - Fisher Chi-square		34.4864	0.0000	
ADF - Choi Z-stat		1.24508	0.8934		ADF - Choi Z-stat		-4.5548	0.0000	
Series	Prob.	Lag	Max Lag	Obs	Series	Prob.	Lag	Max Lag	Obs
LNGDP	0.3917	2	11	72	D(GDP)	0.0001	1	11	72
LNTAX	0.4069	2	11	72	D(TAX)	0.0262	1	11	72
LNCA	0.9962	1	11	73	D(CA)	0.0138	1	11	72

**Source: data processed**

Based on the table 1, it can see that the ADF Statistics, GDP, TAX, and CA variables are not significant = 1%, 5% and 10% at the level. However, the results of the stationarity test using the ADF statistic on the first difference show that the null hypothesis can be rejected, meaning that the data is stationary after being derived once at the degree of integration of one or first difference. The ADF statistic's absolute value is greater than the critical McKinnon value at = 1%, 5% and 10%. The variables in this study have been integrated to the same degree, namely the degree of integration of one or first difference.

In the ARDL model, the lowest Akaike Criterion is -8,62, and all AIC values with a negative value are being used in the test results (2,8,0). It demonstrates that the best research model is the ARDL model (2,8,0). It will use the following equation to estimate the general form of the ARDL model (2,8,0):



$$d(\text{lngdp}) = \beta_1 d(\text{lngdp})_{t-1} + \beta_2 d(\text{lngdp})_{t-2} + \beta_3 d(\text{lntax})_t + \beta_4 d(\text{lntax})_{t-1} + \beta_5 d(\text{lntax})_{t-2} + \beta_6 d(\text{lntax})_{t-3} + \beta_7 d(\text{lntax})_{t-4} + \beta_7 d(\text{lntax})_{t-5} + \beta_7 d(\text{lntax})_{t-6} + \beta_7 d(\text{lntax})_{t-7} + \beta_7 d(\text{lntax})_{t-8} + \beta_7 d(\text{lntax})_{t-9} + \beta_8 d(\text{dummy})_t + \mu_t$$

Description:

- $\beta_i$  = Estimated model parameter coefficient
- $e_i$  = Residual model
- $i$  = 1,2,3,...,10

Based on the estimation results of the ARDL model parameters (2,8,0) (Table 2), it can be written in the following equation:

$$\text{LNGDP} = 1.5113*\text{LNGDP}(-1)-0.6656*\text{LNGDP}(-2)+ 0.0049*\text{LNTAX} + 0.3377*\text{LNTAX}(-1)-0.3304*\text{LNTAX}(-2)+0.0770*\text{LNTAX}(-3)- 0.0145*\text{LNTAX}(-4)-0.0387*\text{LNTAX}(-5)-0.0556*\text{LNTAX}(-6)- 0.0771*\text{LNTAX}(-7)+0.02701*\text{LNTAX}(-8)+0.0269*\text{LNCA} - 0.0099*\text{DUMMY} + 0.3066$$

**Table 2. Model Parameter Estimation**

Variable	Coefficient	t-Statistic	P-Value
LNGDP(-1)	1.511354	20.4786	0
LNGDP(-2)	-0.665696	-9.183911	0
LNTAX	0.004979	0.086688	0.9312
LNTAX(-1)	0.337787	4.250157	0.0001
LNTAX(-2)	-0.330418	-3.898599	0.0003
LNTAX(-3)	0.007065	0.088669	0.9297
LNTAX(-4)	-0.014508	-0.182515	0.8559
LNTAX(-5)	-0.038715	-0.491821	0.6249
LNTAX(-6)	-0.055658	-0.713511	0.4787
LNTAX(-7)	-0.077182	-0.987127	0.3281
LNTAX(-8)	0.270143	4.85819	0
LNCA	0.026908	2.433575	0.0184
DUMMY	-0.009908	-2.803358	0.0071
C	0.306617	1.811445	0.0757
<b>R-Squared</b>	0.998367	<b>AIC</b>	-8.61743
<b>Adj R-Squared</b>	0.997966	<b>SIC</b>	-8.15674
<b>F-Statistic</b>	2491.986	<b>HQ</b>	-8.43513
<b>Prob (F-Stat)</b>	0	<b>DW Stat</b>	1.579773

Source: data processed

The relationship between the dependent and independent variables can be understood using the parameter coefficient estimation results from the ARDL model (2,8,0). In this study, this model describes the relationship between economic growth variables impacted by tax revenues and capital expenditures and the effect of dummy variables.





According to the equation, economic growth has a positive and significant effect on the current value of economic growth. For example, it was obtained by 1,5113 in the first lag, implying that if economic growth in the first period grew by 1%, present economic growth would increase by 1,5113%. The coefficient in the second lag, on the other hand, is -0.6656, which means that for every 1% rise in economic growth, 0.6556 per cent is lost.

At zero lag, tax income does not affect changes in economic growth. Furthermore, with a coefficient value of 0.3377, the first lag has a positive and substantial association, implying that for every 1% increase in GDP, economic growth will increase by 0.3377 per cent. The second lag reveals a statistically significant negative connection. -0.3304 is the resultant coefficient value. As a result, each 1% increase in tax revenue reduces economic growth by 0.3304 per cent. The difference in tax income between the third and seventh lags is not significant. On the other hand, the ninth lag has a positive and significant effect of 0.2701, meaning that every 1% rise boosts economic growth by 0.2701%.

Capital expenditure transactions have a statistically significant and beneficial effect. The resulting coefficient is 0.2701, which means that for every 1% rise, economic growth will increase by 0.2701%. The dummy variable that describes the effect of the COVID-19 pandemic on economic development reveals that the pandemic has a negative and significant impact on economic growth to some extent. Because the dummy coefficient is -0.0009, a 1% rise in shock reduces the value of economic growth by 0.0099%. The R-Squared result is 0.9983, indicating that tax revenue, capital expenditure, and dummy contribute 99.83 per cent to Indonesian economic growth. In comparison, other variables not covered in this study account for the remaining 0.17 per cent.

### ARDL Model Suitability Test (2,8.0)

Furthermore, the ARDL model that has been previously selected is tested for model suitability (goodness of fit) so as not to violate econometric rules and become biased. The diagnostic test of the ARDL model (2,8.0) was carried out by testing the autocorrelation and stability of the model. Autocorrelation test will be carried out using the Breusch-Godfrey Lagrange Multiplier test. The hypotheses used in this study are:

H0 = there is no autocorrelation in the ARDL model residuals (2,8.0)

H1 = there is autocorrelation in the ARDL model residuals (2,8.0)

**Table 3. Autocorrelation Test Results**

Breusch-Godfrey Serial Correlation LM Test:

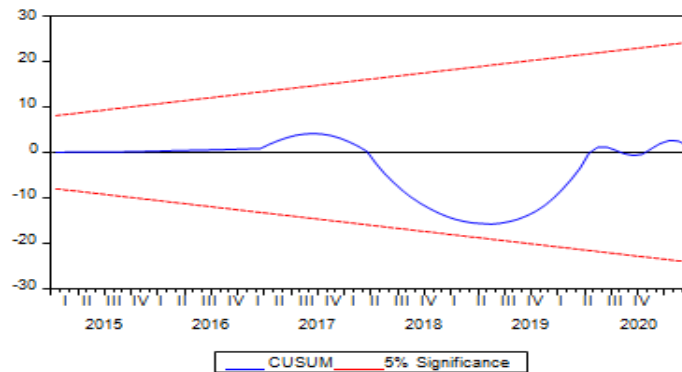
F-statistic	1.794145	Prob. F(2,51)	0.1766
Obs*R-squared	4.404156	Prob. Chi-Square(2)	0.1106

Source: data processed

The statistical p-value is  $0.1106 > 0.05$ , indicating that there is no autocorrelation problem in the ARDL model residuals, as determined by the results of the autocorrelation test using the Breusch-Godfrey Lagrange Multiplier test method (2.8, 0).



The stability of the ARDL model (2,8.0) will be tested using Cumulative Sum of Recursive Residual (CUSUM) with a 95% confidence level.



**Graph 5. CUSUM Test**  
Source: data processed

The results of the CUSUM test on the ARDL model (2,8.0) in this study indicate the position of the blue CUSUM line is between the two 5% red significant lines. It proves that the ARDL model (2,8.0) is stable.

**ARDL Bound Test and Estimation**

The bound test was used to test cointegration in this study. The set test was used to check the long-run association in the ARDL model chosen previously. In this approach, the bound test findings will be more focused on the F-statistic value (Baltagi, 2018; Gujarati & Porter, 2015). It is possible to conclude that cointegration occurs if the F-statistic value surpasses the upper bound value. It can be assumed that there is no cointegration if the F-statistic value is less than the lower limits value. However, the conclusion is unclear if the F-statistic falls between the upper and lower boundaries.

Table 4 will show the bound test on the ARDL model (2,8.0) with a significance level of 1%, 2.5 per cent, 5%, and 10%.

**Table 4. Results of Bound Tests**

Test Statistic	Value	K
F-statistic	15.01971	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	3.17	4.14
5%	3.79	4.85
2.5%	4.41	5.52
1%	5.15	6.36

Source: data processed



The F-statistic value for the Bound Test technique's cointegration test is 15.01. The F-statistic value exceeds the upper bound at the 5% significance level, which is 4.85. At the 95 per cent confidence level, it can be concluded that there is a cointegration or long-term relationship between economic growth, tax revenue, and capital investment. After it was concluded that there was a long-term relationship between the variables studied, to obtain a short-term and long-term relationship between economic growth, tax revenues and capital expenditures.

### Short Term Estimation

The analysis of the short-term equation for tax revenues and capital expenditures on economic growth are as follows:

**Table 5. Short-term ARDL Estimation Results**

	Coefficient	t-Statistic	P-Value
D(LNPDB(-1))	0.665696	9.183911	0
D(LNTAX)	0.004979	0.086688	0.9312
D(LNTAX(-1))	0.330418	3.898599	0.0003
D(LNTAX(-2))	-0.007065	-0.088669	0.9297
D(LNTAX(-3))	0.014508	0.182515	0.8559
D(LNTAX(-4))	0.038715	0.491821	0.6249
D(LNTAX(-5))	0.055658	0.713511	0.4787
D(LNTAX(-6))	0.077182	0.987127	0.3281
D(LNTAX(-7))	-0.270143	-4.85819	0
D(LNBM)	0.026908	2.433575	0.0184
D(DUMMY)	-0.009908	-2.803358	0.0071
CointEq(-1)	-0.154342	-6.827063	0

Source: data processed

According to the short-term estimation results, the CointEq value is negative and significant, indicating that there is a short-term cointegration in the study variables. As a result, it can be determined that the model will reach equilibrium at a rate of 15.43% each month. Economic growth in the first lag has a considerable positive effect on economic development at the 1%, 5%, and 10% accurate levels of 0.6656, so it can be observed that if economic growth in the first lag is increased by 1%, economic growth in the current period will also increase by 0.6556 per cent.

Tax revenue is not considerable at zero lag, but it is significant and positive in the first place. The coefficient value, as a result, is 0.3304. If tax income increases by 1% in the first year, economic growth will increase by 0.3304 per cent. It is not statistically significant from the second to the sixth lag. Furthermore, with a value of -0.2701, the seventh lag has a negative and significant effect. An increase of 1% will result in a 0.2701% reduction in economic growth. Capital spending is a positive and significant factor in economic growth. 0.0269 is the resultant coefficient. The COVID-19 pandemic in Indonesia has had a negative and



considerable impact on the country's economic growth, as shown by statistics. The obtained coefficient value of 0.0109 indicates that a 1% rise in shock reduces economic growth by 0.0109 per cent.

### Long-Term Estimate

The table of ARDL estimation results in the long term can be seen in Table 6 as follows:

**Table 6. Long-Term ARDL Estimation Results**

Variable	Coefficient	t-Statistic	P-Value
LNTAX	0.670544	13.041244	0.0000
LNBM	0.174342	2.643823	0.0108
DUMMY	-0.064197	-2.695492	0.0094
C	1.986604	1.893115	0.0638

Source: data processed

Tax revenue influences economic growth positively and vitally. The coefficient value, as a result, is 0.6705. As a result, a 1% increase in tax revenue will enhance economic growth by 0.6705 per cent in the long run. Furthermore, with a coefficient of 0.1743, the long-term capital expenditure variable has a positive and statistically significant influence. A 1% increase in capital expenditure will result in a 0.1743 per cent rise in economic growth.

This study utilized the dummy variable to demonstrate the difference between before and after the COVID-19 pandemic. The model's effect of the COVID-19 pandemic is low, as evidenced by the significant negative and significant results. The resulting coefficient value of 0.0641 implies that a 1% rise in shock will diminish economic growth by 0.0641 per cent in the long run. In the short term, tax revenue positively impacts economic growth but will not be significant at zero lag. Tax revenue is substantial in the first and seventh lags. Tax revenue in the long term shows a positive and significant impact on economic growth. These results follow the hypothesis, theory, and previous research. If tax revenues have exceeded the previously set target, the agency conflict will be below (Andrejovská & Puliková, 2018). This low agency conflict causes tax revenues to have a positive impact by encouraging economic growth. The theory put forward by Peacock and Wiseman states that economic growth causes tax collection to increase and increase spending so that it can stimulate the economy.

Research conducted by Stoilova (2017), Habib Saragih (2018), Sumaryani (2019), Yunita & Sentosa (2019) that tax revenue has a positive impact on economic growth if it is used to realize effective programs and activities that will ultimately create social welfare. So following the study results, tax revenues both in the short and long term have a positive and significant impact on economic growth. In the short and long term, capital expenditures have a positive and significant impact on economic growth. The capital expenditure used to build community facilities and infrastructure and infrastructure will encourage economic development. The results of this study are supported by theory and previous research. Adam Smith's idea of economic growth suggests that the role



and policies of the government are needed to carry out capital expenditures other than those carried out by the private sector to increase economic growth. Neoclassical economic growth theory also argues that economic growth and development will depend, among other things, on the accumulation of capital owned. It is also in line with the strong push theory, which pushes the economy towards progress. Therefore, a strong push is needed in capital accumulation.

Previous research that supports the results of this study was conducted by Habib Saragih (2018), Pambudy & Syairozi (2019), Triastuti & Pratomo (2016), Waryanto (2017) that capital expenditure has a positive and significant impact on economic growth. The higher the realized capital spending, the community's economic activity increases so and the higher the output produced. Therefore, capital expenditures have a positive and significant impact on economic growth in both the short and long term.

The study results show that tax revenues and capital expenditures as fiscal policy have a positive and significant impact on economic growth in Indonesia, both in the short and long term. In a short time, the dummy variable shows that the COVID-19 pandemic in Indonesia has had a negative and significant effect on economic growth in Indonesia. Substantial and adverse, the dummy explained that the shock that occurred had reduced economic growth. However, over time the impact of the COVID-19 pandemic would decrease, especially with the government's policies using fiscal instruments, namely tax revenues and capital expenditures, which had a positive impact on overcoming the effects of the COVID-19 pandemic.

In the long term, the results are negative and significant, proving that the influence of the COVID-19 pandemic plays a minimal role in the model. It shows that tax revenues and capital expenditures play a role in helping to overcome the negative impacts during the COVID-19 pandemic. Tax policy is even considered to play an essential role in controlling the economic impact of the pandemic, such as research conducted by Craig & Hines (2020). The acceleration of stimulus realization by the government from the state budget is directed as an effort to accelerate economic recovery (Wuryandani, 2020). However, tax policy during the pandemic is also considered unlikely to address the country's problems comprehensively and sustainably. Model spending can also not increase economic growth due to the distribution of tax and capital stimulus, which has not been right on target (Wuryandani, 2020), and tax revenues have decreased even though tax incentives have been given. Therefore, the impact of tax revenues and capital expenditures has not had a significant effect on economic growth during the pandemic in Indonesia, although they have had a positive impact.

## 5. Conclusion and Suggestion

Tax revenue boosts economic growth in the near run, but its effect is negligible at zero lag. In the first and seventh delays, tax revenue is large. Long-term economic growth trends indicate a favorable and considerable impact on tax income. These findings are consistent with the theory, hypothesis, and earlier study. Short- and



long-term capital investments have a favorable and considerable effect on economic growth. This is so that a country's economy can flourish thanks to capital investments made to build infrastructure and community facilities. Theoretical predictions and earlier studies provide support for the study's findings. In line with the agency theory proposed by Jensen & Meckling (1976) if tax revenues have exceeded the previously set target, the agency conflict will be low. This low agency conflict causes tax revenues to have a positive impact by encouraging the progress of economic growth. The theory put forward by Peacock and Wiseman states that economic growth causes tax collection to increase, as well as increase spending. So that it can stimulate the economy. According to Adam Smith's theory of economic growth, the government's role and policies are necessary to implement capital expenditures other than those made by the private sector to boost economic growth (Jhingan, 2014). According to the neoclassical theory of economic growth, the accumulation of capital ownership will be one factor in determining how much an economy grows and develops. It also complies with the strong push theory, which contends that capital accumulation is the necessary strong push needed to propel the economy forward (Jhingan, 2014).

Based on the results of the research and discussion of the estimation results of the ARDL (Autoregressive Distributed Lag) model, the conclusions that can be obtained from this study are tax revenues. Capital expenditures in the short and long term have a positive and significant impact on economic growth in Indonesia, which is following the hypothesis of this study. Even tax revenues and capital expenditures have had a significant positive effect on fiscal policy to help overcome the economic impact of the pandemic. So several suggestions generated in this study is the Government of Indonesia is expected to support it by providing tax policy and the allocation of capital expenditures to increase production and economic demand. It is also hoped that fiscal policy will align with the monetary policy implemented. For further researchers, it is recommended to add economic variables involved in the model so that the results will be more efficient and can be used for policy recommendations useful for related parties.

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