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## The Influence of Covid-19 and Foreign Investment on Regency/City GRDP in Riau Province in 2017-2021

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### ABSTRACT

*This study aims to analyze the effect of Covid-19 and Foreign Investment on the value of the Regency/City Gross Regional Domestic Product (GRDP) in Riau Province in 2017-2021. This study uses quantitative research methods with panel data analysis methods and processed using Eviews 10. The dependent variable is Gross Regional Domestic Product in 11 Regency/Cities in Riau Province. The independent variables in this study are the value of Foreign Investment and Covid-19 using dummy numbers. The results of this study indicate that foreign investment has a positive but not significant effect on the GRDP of Regency/city in Riau Province. Meanwhile, the dummy variable of Covid-19 has a positive and significant effect on Regency/City GRDP in Riau Province*

**Keywords:** Covid-19, Foreign Investment, GRDP

### 1. Introduction

The Covid-19 pandemic (*Corona Virus pandemic 2019*) is a disease of a new virus found in Wuhan, China. Covid-19 infects the human respiratory tract and spreads through social interaction. This virus has provided global shocks and uncertainties in aspects of human life, both in terms of health and livelihoods. Extending the impact of this health crisis to the economy as a whole. At the beginning of the pandemic in 2019, the Chinese government implemented strict containment to break the chain of spread of the virus. This is done by closing and isolating areas in various provinces. This step paid off because less than three months the Covid-19 outbreak could be contained. However, the spread of Covid-19 actually spread to various countries. Italy, Iran, Spain, Germany and the United States are the countries with the highest increase in cases (Bank Indonesia). Meanwhile, the pandemic in Indonesia began in March 2020. Publication on the official website for Covid-19 Indonesia recorded the number of Covid-19 cases reaching 743,198 cases with a death toll of 22,138 people throughout 2020. Where the highest rate of spread of Covid-19 is centered on the island of Java. However, the Covid-19 pandemic storm continues to occur in all provinces of Indonesia, including Riau Province.

Riau Province is an area located on the island of Sumatra with a population of 6.49 million people. From March to December 2020, 48,914 Covid cases in Riau were recorded. Meanwhile, in the following year there was an increase in cases recorded as of December 31, 2021 of 147,457 cases. The cities of Pekanbaru and Dumai are the provinces with the highest cases in Riau Province. In the fourth quarter of 2020, the trend of new Covid cases was seen declining until the middle of the first quarter of 2021, precisely in February with 2,390 new cases. However, the trend of new cases has surged again, where the highest peaks occurred in the third quarter of 2021 in July and August. Furthermore, in the fourth quarter of 2021, the surge in Covid-19 cases seemed to subside again. This is supported by the enactment of *social distancing* policies to suppress public mobility, as well as increasing public awareness of the importance of Covid-19 vaccination throughout Indonesia.

When entering 2020, there was a sharp decline in the growth rate to reach -3.32% in the second quarter. Furthermore, Riau's economy slowly began to improve over time. This is marked by the growth rate in the first quarter of 2021 which grew by 0.40%. In the second quarter, Riau's growth rate again reached its achievement by growing by 5.17%. This indicates economic improvement in Riau Province after the pandemic in early 2020. However, the Covid-19 pandemic in Riau is not over yet. Previously, it was explained that 2021 was the highest peak of Covid-19 cases in Riau province. If you look at the previous 1.1 chart, it can be seen that the number of Covid-19 cases began to surge since the beginning of 2021 with the highest peak in the third quarter with 26,818 cases in June. This is the concern of researchers to analyze whether Covid-19 has an influence on GRDP in Riau Province. In accordance with Bank Indonesia's statement stating that Covid-19 has reduced economic growth in Indonesia and the world. Therefore, researchers are interested in analyzing the relationship between Covid-19 and GRDP in Riau Province.

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The Harrod-Domar theory explains that an important role in creating national income is from investment. (Jhingan, 2003). This means that investment performance is able to affect the value of GDP at the national level and GDP at the regional level. Investment is divided into two, namely Domestic Investment (PMDN) and Foreign Investment (PMA). Bank Indonesia revealed that the pandemic had an impact on declining investment due to increasing global financial market uncertainty as a result of lower consumer and business confidence in the economic outlook. Foreign Direct Investment in Riau province when viewed from before and after the pandemic has an increasing trend. However, within the scope of Districts & Municipalities, the value of foreign investment is seen fluctuating. Regencies & Cities with increased FDI values from 2019 to 2020 are Indragiri Hulu, Indragiri Hilir, Siak, Kampar, Rokan Hilir, Pekanbaru City and Dumai City.

**2. Theoretical Basis**

Gross Domestic Product at the national level as well as Gross Regional Domestic Product (GDP) at the regional level (Province) describe the ability of a region to create added value at a given time (usually one year). To compile GDP and GDP, two approaches are used, namely business and expenditure. Both present the composition of value-added data broken down according to the source of economic activity (business field) and according to the component of its use. GDP and GDP in terms of business field is the sum of all components of gross value added that can be created by economic sectors for their various production activities. Meanwhile, from the expenditure side, it explains the use of added value. (BPS, 2022)

According to Sjafrizal (2014) Gross Regional Domestic Product (GRDP) is basically basic data and information about the economic activities of a region. Definitely, the GRDP is basically the sum of the production value of goods and services produced in a region in a certain period. Development analysis and planning related to the regional economy, such as regional economic structure, economic growth and regional prosperity, generally use GRDP as basic data and information.

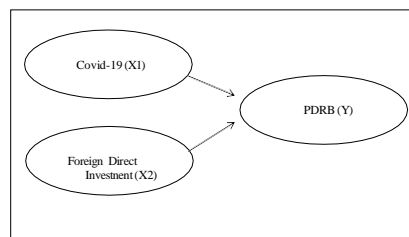
Investment in general is the expenditure activity of investors or companies to buy capital goods and production equipment to increase the ability to produce goods and services available in the economy. (Sukirno, 2012). On the other hand, investment is divided into investment made by foreign parties and investment made by domestic parties.

In analyzing the problem of economic growth, the Harrod-Domar theory aims to explain the conditions that must be met so that an economy can achieve steady growth or steady growth in the long run.

According to Jhingan (2003), Harrod and Domar play a key role in investment in the process of economic growth. First, it creates income as a result of demand, and increases the productive capacity of the economy by increasing the capital stock as a result of supply. Therefore, as long as investment continues, real income and output will continue to grow. However, to maintain an equilibrium level of income at full employment from year to year, both real income and output must increase at the same rate as the productive capacity of capital increases

The Harrod-Domar analysis is complementary to Keynesian analysis. In Keynesian analysis what is considered is the short-term economic problem. In contrast, the Harrod-Domar theory pays attention to long-term economic growth prospects.

**3. Research Framework and Hypothesis Formulation**



Based on existing theories, the hypothesis that can be formulated from this study is suspected that the value of Foreign Direct Investment has a positive influence on the GDP of Districts / Municipalities in Riau Province. And it is suspected that Covid-19 has a negative influence on the Gross Regional Domestic Product in Riau Province Districts/Cities.

**4. Research and Discussion**

**Tabel 1. Hasil Uji Chow**

Effects Test	Statistic	d.f.	Prob.
Cross-section F	631.576548	(10,42)	0.0000
Cross-section Chi-square	276.086945	10	0.0000

Source : Eviews, 2023

Based on table 1 above, the probability value of chi-square is smaller than the standard error value or 0.0000 < 0.05. This means that this result rejects H0, so the right model to use is the Fixed Effect Model rather than the Common Effect Model.

**Table 2. Hausman Test Result**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	2	0.8037

Source : Eviews, 2023

Based on table 2 above, the results of the *Hausman* test show a probability value greater than the error value of 5% ( $0.8037 > 0.05$ ). Then  $H_0$  is accepted and  $H_1$  is rejected. The right model to use is the *Random Effect Model*. Next, a *Lagrange Multiplier* test will be performed to see if a REM or CEM model is better to use.

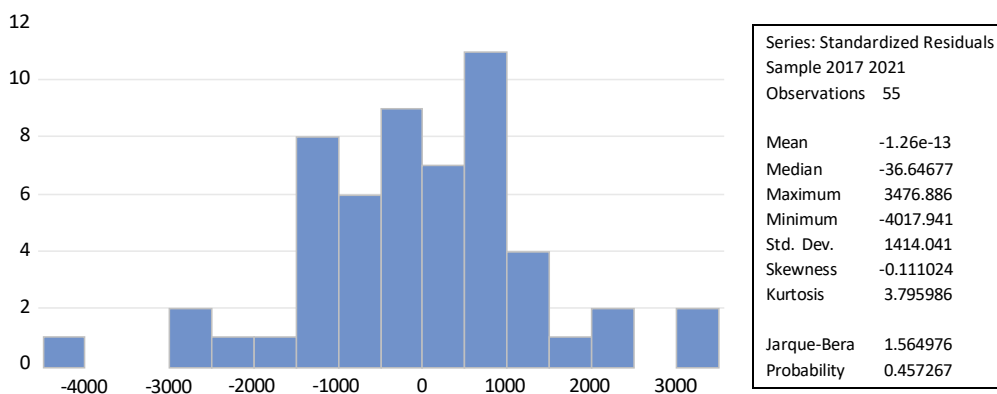
**Table 3. Hausman Test Result**

	Hypothesis Test		
	Cross-Section	Time	Both
Breusch-Pagan	105.0902 (0.0000)	2.518452 (0.1125)	107.6086 (0.0000)
Honda	10.25135 (0.0000)	- 1.586963 (0.9437)	6.126646 (0.0000)
King-Wu	10.25135 (0.0000)	- 1.586963 (0.9437)	4.138348 (0.0000)
Standardized Honda	10.98574 (0.0000)	- 1.197907 (0.8845)	4.442045 (0.0000)
Standardized King-Wu	10.98574 (0.0000)	- 1.197907 (0.8845)	2.460405 (0.0069)
Gourieroux, et al.	--	--	105.0902 (0.0000)

Source : Eviews, 2023.

Based on table 3 above, the test results show the probability value of *Cross-Section* in the *Breusch-pagan* table  $< 0.05$  then  $H_1$  is accepted and  $H_0$  is rejected so that the model that should be used is the *Random Effect Model*.

**Figure 1. Normality Test Results**



Based on table 5.2 above, it shows that the normality test results on regression data of GRDP, FDI and COVID-19 have been distributed normally or it can be said that the normality requirements have been met. This conclusion is drawn after looking at *the probability* value of 0.457267, where the value is greater than 0.05.

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**Table 4. Multicollinearities Detection Test**

	X	D1
X	1.000000	0.125010
D1	0.125010	1.000000

Source: Eviews, 2023.

Based on the results of the correlation matrix output in table 5.3 above, the correlation between the independent variables of foreign investment (X) and COVID-19 (D1) is 0.125010 that it can be drawn is that there is no correlation between independent variables that is high above 0.90, so there is no problem of multicollinearity between independent variables.

**Table 4. Heteroscedasticities Result Test**

Variable	Coefficient	Std.Error	t-Statistic	Prob.
C	1180.981	171.652	6.880091	0.0000
X	-0.036596	0.047970	-0.762902	0.4490
D1	-121.3186	254.3216	-0.477028	0.6353

Source: Eviews, 2023.

Based on the results of the heteroscedasticity test in table 5.4 above, it can be seen that the two independent variables of foreign investment (X) and COVID-19 (D1) have probability values of 0.4490 and 0.6353 respectively. The decision-making is, if the probability value of the independent variable is greater than the standard error 0.05 then there is no heteroscedasticity problem. Therefore, this model has been free from the problem of heteroscedasticity.

**Table 4. Cross-Section Coefficient Data in 11 Regencies / Cities in Riau Province Test Result**

Fixed Effects (Cross)	
_KUANSING--C	-19804.88
_INHU--C	-13558.95
_INHIL--C	883.9305
_PELALAWAN--C	-10034.59
_SIK--C	9995.186
_KAMPAR--C	7918.622
_ROHUL--C	-18257.06
_BENGKALIS--C	33059.24
_ROHIL--C	3279.632
_PEKANBARU--C	26070.15
_DUMAI--C	-19551.28

Based on table 5 above, the regression equation for each region can be determined, namely:

$$Y = \beta_1i + 42536.52 + 0.179769X_{it} + 1237.750D_{1it}$$

This means that when added up, the intercept for Kuansing Regency is 22731.64 (-19804.88 + 42536.52) which means that the GDP value for Kuansing Regency from 2017-2021 is 22731.64 when the independent variables of PMA and COVID-19 are not considered.

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## 5. Conclusions and Suggestions

Based on the results of research in Chapter V, several conclusions can be drawn as follows:

1. Foreign Direct Investment (PMA) is known to be insignificant to GRDP in Regencies / Municipalities in Riau Province in the 2017-2021 period. The results of this study are not in line with the Harrod-Domar theory which states that investment has a positive influence on national income. The value of FDI in each Regency / City in Riau Province experienced differences before and during Covid-19. The realization of the value of foreign investment in Riau province cumulatively increased. Meanwhile, in each district/city in Riau Province, the realization of FDI seems to have fluctuated. However, the increase in FDI value did not occur in all regions in the Regencies / Municipalities in Riau Province.
2. The effect of Covid-19 on the value of GRDP is known to have experienced differences and increased in 2021. The increase in the value of GDP was followed by improvements in the Indonesian and world economies. This is reflected by the increase in the export value of goods and services in Riau province by 38.02 percent in 2021. This was followed by an increase in demand for Riau's leading commodities, especially in chemical products, pulp, and refined commodities by major importing countries, in line with the global economic recovery.

The suggestions that can be conveyed by the author in this study are as follows:

1. Foreign Direct Investment  
Investment basically increases the value of Gross Domestic Product, therefore it is necessary to increase investment in several other sectors that will increase the economic growth of Riau Province. The government is also expected to make policies and decisions that provide benefits to the regions. COVID-19 on GRDP
2. The COVID-19 pandemic has changed since the pandemic began in early 2020. The impact is not only from the health side but also from the economic side. Riau Province did experience a contraction in early 2020 and this is the usual initial response when a country is faced with the unexpected such as a global pandemic. However, along with the decline in pandemic cases accompanied by public awareness to vaccinate, this also has an impact on economic recovery slowly. The role of the government is no less important to maintain that the negative impact caused by the pandemic can be reduced if the same situation repeats itself in the future.

## References

- Alice, et al. (2021). The Effect of Investment on Economic Growth through an Increase in Gross Domestic Product in Indonesia. *Journal of Economics, Business and Accounting*. Volume 20. Number 2. Pages 77-83.
- Adi, H. and Syahlina. (2020). Analysis: The Effect of Domestic Investment (PMDN) and Foreign Investment (PMA) on Gross Regional Domestic Product (GRDP) in Jambi Province. *Journal of Economics-Qu*. Volume 10. Number 1.
- Azis, Muh. I. (2020). Increased Local Original Revenue through Capital Expenditure on District/City Governments in North Kalimantan Province. *Perspective: Journal of Economics & Management, Bina Sarana Informatika University*. Volume 18. Number 2.
- Central Bureau of Statistics Riau Province. (2021), *Riau Economic and Social Overview Semester I- 2021*, Central Bureau of Statistics Riau Province. Riau.
- Central Bureau of Statistics of Riau Province, 2022. *Riau in 2022 figures*, Central Bureau of Statistics Riau Province, Riau.
- Bank Indonesia. (2020), *Indonesia Economic Report 2019*, Bank Indonesia, Jakarta. Bank Indonesia. (2021), *Indonesia Economic Report 2020*, Bank Indonesia, Jakarta.
- Basuki, Agus T., and Prawoto, N. (2019). *Regression Analysis in Economic & Business Research (Equipped with Spss and Eviews Applications)*. First Edition. PT Rajagrafindo Persada, Depok.
- Cherlyn., Desy., Fairly, D., and Febriana, H. (2021), The Influence of Covid-19 on Economic Growth on the PDR of Central Java Province. *Journal of Social and Technology (SOSTECH)*. Volume 1. Number 6.
- DPMPTSP Riau Province. (2022), *Riau Province Investment Statistics Book 2022*, DPMPTSP Riau Province, Riau.
- DPMPTSP Riau Province. (2021), *Riau Province Investment Statistics Book 2021*, DPMPTSP Riau Province, Riau.
- DPMPTSP Riau Province. (2020), *Riau Province Investment Statistics Book 2020*, DPMPTSP Riau Province, Riau. Alice, et al. (2021). The Effect of Investment on Growth Economy Through Increasing Gross Domestic Product in Indonesia. *Journal of Economics, Business and Accounting*. Volume 20. Number 2. Pages 77-83.