

Investment Development Before and During the Covid-19 Pandemic and Impact on Regional Economy in West Java

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<i>Info Articles</i>	<i>Abstract</i>
<p><i>Article history:</i> Received July 13, 2021 Revised August 17, 2021 Accepted November 24, 2021 Available online December 11, 2021</p> <p>Keywords: <i>Domestic Direct Investment; Foreign Direct Investment; Government Capital Expenditures; Gross Regional Domestic Product.</i></p> <p>JEL Classification; E22; G31; O16</p>	<p><i>The Covid-19 pandemic has reduced economic growth in West Java, including investment growth explained by the decline in economic growth in the Gross Fixed Capital Formation component. Moreover, the primary measure that illustrates the economic region shows how much monetary value is formed to Gross Regional Domestic Product. This study looks at the investment conditions of Foreign Direct Investment, Domestic Direct Investment, and Government Capital Expenditures before and during the Covid-19 pandemic and the effect of these investments on the Regional Economic. The multiple regression analysis methods use the data to cross-section with individual districts and cities in West Java Province and the three investment variables. The analysis results explain that the Covid-19 pandemic has reduced Foreign Direct Investment and Government Capital Expenditure, on the other hand, increased Domestic Direct Investment. This increase in Domestic Direct Investment is related to the new businesses that are strongly related to the handling of the Covid-19 pandemic. Domestic Direct Investment and Government Capital Expenditure are still being felt on the region's economy before and during the Covid-19 pandemic, but Foreign Direct Investment has decreased. Before the Covid-19 pandemic, the real impact of Foreign Direct Investment came from the first and second years after investment. In contrast, during the Covid-19 pandemic, the real impact came from three years after invested Foreign Direct Investment.</i></p>

INTRODUCTION

The Covid-19 pandemic that swept across the globe not only destroyed aspects of health and humanity but impacted the economic and social order. The impact of the Covid-19 pandemic decreased national economic growth in 2020 until it fell to the brink of recession, reaching a point of minus 2.07 percent. The economy of West Java Province fell to 2.44 percent (BPS-Jabar, 2021). In the early stages, the development of Covid-19 has triggered uncertainty in global financial markets and impacted on declining foreign capital inflows to Indonesia to depreciate the value of the rupiah. Pressure continues to decline in economic activity due to exports, and the world

economy is declining. Large-scale social restriction policies (PSBB) and health protocols have high implications for reducing human mobility, goods, and services resulting in economic activity in various sectors declining sharply (Bank Indonesia, 2020). The spending efficiency and budgeting obligations for handling Covid-19 are the leading cause of the decrease in government capital expenditure due to Covid-19 that has been felt since 2020. Access to human activities, especially in the tourism, trade, and investment sectors, is an obstacle to economic activity.

The value of Gross Regional Domestic Product (GRDP) at the current market price is an indicator of the macroeconomy in the current year. The value of GRDP from the business field-side describes the amount of accumulated added value created from the entire production process. In contrast, the value of GRDP in terms of expenditure describes how all goods and services are used. The Economic Growth Rate (EGR) gives an overview of the magnitude or measure of economic growth using percent from one period to another.

Table 1. GRDP at Current Market Price by Expenditure and Economic Growth Rate 2020, West Java Province.

No	Component Expenditure	Value (Billion Rupiah)	EGR
1	Household Consumption	1,378,904.38	-2.68
2	NPISHs Consumption	13,382.38	-3.78
3	Government Consumption	118,688.96	-0.48
4	Gross Fixed Capital Formation	493,956.36	-8.34
5	Inventory	27,708.12	-62.35
6	Export	915,058.23	-6.55
7	Import (Reducing Factor)	859,659.71	-17.07
	GRDP	2,088,038.73	-2.44

NPISHs: Non-Profit Institutions Serving Households
Source: BPS, 2021

The GRDP at the current market price of West Java Province in 2020 reached 2,088.04 trillion rupiahs with a negative growth rate or decreased by 2.44 percent. Most of the GRDP value used for household consumption got 66.03 percent, while the value used for investment was only 23.65 percent. The investment described by the Gross Fixed Capital Formation (GFCF) is closely related to the existence of fixed assets that can be classified according to the type of capital goods, namely buildings, other construction, machinery and equipment, vehicles, CBR (Cultivated Biological Resource's) and other capital goods (BPS-Jabar, 2020).

Observing the investment conditions described by the GFCF value decreased by 8.34 percent, this decrease is allegedly the impact of the Covid-19 pandemic, which resulted in a reduction of the flow of investment funds from Foreign Direct Investment (FDI), Domestic Direct Investment (DDI) and Government Capital Expenditure (GCE) also due to the influence of export contraction that inhibited the pace of investment growth. In addition, the decline in household income during the Covid-19 pandemic due to lost

revenue and calls to limit human mobility have changed people's behavior. People tend only to move to meet basic needs only. Moreover, of course, investment activities are no longer a priority activity. Thus, investments made by households have decreased. The same condition also occurs in investments made by private parties, which is the influence of declining investment fund flows, export contraction, and declining import value. The uncertainty of effort and the decline in economic growth confidence in the future resulted in a decrease in private investment (BI, 2021). As a result of the Covid-19 pandemic is very influential on micro, small and medium enterprises (UMKM), where more than 50% of actors UMKM are indicated to go out of business during the pandemic. With the contribution of UMKM to the Indonesian economy (GRDP) of 61.07%, this decrease is very influential on the national economy and investment (Thaha, 2020).

The Covid-19 pandemic has affected investment developments marked by lowering the growth rate of GFCF components. This situation certainly affects the economy of the region. This study wanted to determine the investment conditions before and during the Covid-19 pandemic. This investment includes investments made by private parties described by FDI, DDI, and government investments in the form of Government Capital Expenditure. Of the three acquisitions, they want to know the effect on the regional economy in West Java Province in conditions before and during the Covid-19 Pandemic.

Some researchers have commented on the impact of Covid-19 on the economy. (Rahmadia & Febriyani, 2020) reviewing the Impact of Covid-19 on the economy with systematic review methods, it was concluded that Covid-19 affects the global economy and affects three main sectors: the capital market sector, debt securities trading, and gold trade. (Azis et al., 2020) which reviewed the Impact of Covid-19 on Agricultural Sector Investment in the form of policies and impacts of FDI and DDI in the Agricultural sector. Research (Julfiansyah, 2013) discusses the influence of FDI, DDI, and Total Population on GRDP. The same variables are used, FDI and DDI and their effect on the economy (GRDP) and analytical methods with multiple regression analysis. This study was conducted at the conditions before the Covid-19 pandemic, so it only gives an idea of the influence of investment on the economy in the survey (Fauziana et al., 2014) which discussed the relationship between FDI and DDI to national income (Gross Domestic Product). The difference in analytical methods is descriptive qualitative analysis. The study (Rahman et al., 2016), which discussed the Influence of Investment, Government, and Labor Expenditure on District/City PDRB in Banten Province in 2010-2014, reviewed the variable influence of FDI, DDI, Government and Labor Expenditure on GRDP in Banten Province. There are similarities with the research conducted, namely the variables used, namely FDI, DDI, and their effect on the economy of regencies/cities (GRDP Regency/Cities). However, there are differences, namely the use of labor variables and varying government consumption expenditures and the method of analysis and the analysis used is the analysis of panel data. Discussions for

investment are conducted by combining FDI and DDI and do not discuss the influence of the two types of investments.

Thus there is a difference between the research done with previous research. This study specializes in the influence of investment on the regional economy in West Java Province; this investment includes private investments in the form of FDI and DDI and investments made by the government in the Government Capital Expenditure. In addition, I am comparing the influence of investment on the region's economy in conditions before and during the Covid-19 pandemic. The method of analysis is descriptive analysis and multiple regression analysis. The object of the study is the entire Regency/City of West Java Province was in the conditions before the Covid-19 pandemic using investment data from 2010 to 2019 while in the Covid-19 pandemic only using data in 2020

This research is expected to know how FDI, DDI, and Government Capital Expenditure affect the regional economy in West Java Province. Is there a difference between before the Covid-19 pandemic and during the Covid-19 pandemic? In addition, a picture of the strength of the investment is obtained in improving the regional economy so that it will give an idea to policymakers what steps should be taken in determining future development policies.

RESEARCH METHODS

Economic development is influenced by investments that occur in the region. Investment is a mainly physical investment (capital) is a significant factor in addition to labor which is a driver of economic growth. Physical investment is realized in capital addition, known as Gross Fixed Capital Formation (GFCF). The acquisition of capital is expected to increase production capacity. So that the value of GFCF is an overview of the importance of physical investment that has been done in a certain period. The actors of investment activities consist of the Government, Companies, Private Non-Profit Institutions, and Households (BPS-RI,2020)

Investment data based on business actors are still not available, for that in discussing this investment is done approach from the available data. Investments made by the government are reflected in the form of government capital expenditures both from the State Budget (APBN) and the Regional Budget (APBD). Private investment activities can be reflected in the value of FDI Investment and DDI Investment, while investments made by households are not yet available.

For that reason, in selecting variables using three approaches, namely investments made by private investments, namely FDI and DDI investments, and investments made by the government, namely Capital Expenditure from APBD. The selection of only the Capital Expenditure side of the APBD does not include the investment value of the State Budget Capital Expenditure due to the unavailability of the data in series per Regency/City from 2011 to 2020. The selection of FDI and DDI variables in measuring the influence on the regional economy has been made by several researchers before and has a positive impact on the regional economy (Julfiansyah, 2013); (Fauziana et al.,

2014); (Rahman et al., 2016). The selection of Government Capital Expenditure from APBD is part of government investment and the availability of data per Regency/City and data series.

This study used secondary data from BPS-Statistics, the Indonesian Investment Coordinating Board (BKPM), and the Directorate General of Financial Balance (DJPK). The data collected is GRDP at a current market price, FDI and DDI, and government capital expenditure from the regional budget (APBD). Data is detailed per district/city from 2010 to 2020. For government capital expenditure, data does not include the capital expenditure of APBN due to the unavailability of data per district/city (27 Regency/City) and data series. The data analysis used is Multiple Regression Analysis with a cross-sectional individual in Regency/City in West Java with variables FDI, DDI, and Government Capital Expenditure.

According to Gujarati (1988), Multiple Regression Analysis is an analysis used to measure the influence between more than one predictor variable and a free variable on a suspected or non-free variable. The multiple regression equations with the three variables X_1 , X_2 , X_3 of the individual as much as n can be described as follows:

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \mu_i \dots\dots\dots(1)$$

Y_i : independent variables for individual regency/city 1, 2, ...27; X_1 , X_2 , and X_3 dependent variables for individual regency/city 1,2,...27; β_0 *intercept*, β_1 *slope* for variable X_1 , β_2 *slope* for variable X_2 , and β_3 *slope* for variable X_3 .

As for linear regression models with three variables where each variable is repeated observations t times (observation data in 2010 to 2019 data), the equation can be written:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \mu_{it} \dots\dots\dots(2)$$

Y_{it} independent variables for individu regency/city 1, 2, ...27 and times (year) t ; 1,2,...10; X_{1it} , X_{2it} and X_{3it} dependent variables for individu regency/city 1, 2,...27 and times (year) t ; 1,2,...10; β_0 *intercept*. β_1 *slope* for variable X_1 , β_2 *slope* for variable X_2 dan β_3 *slope* for variable X_3 .

Between equation (1) and equation (2) gives the same response that distinguishes is the number of observations wherein equation (1) the number of observations as much as 27 while in equation (2) the number of observations as much as 270. The Independent variable (Y) is the GRDP at the current market price, and the dependent variable is X_1 :FDI, X_2 : DDI, X_3 : Government Capital Expenditure. Equation (1) describes 2020 in the Covid-19 pandemic, and equation (2) describes the period before the occurrence of Covid-19.

Gujarati (1988), in the book Basic Economics, explained that the requirement to get the equation BLUE (Best Linear Unbiased Estimation). Multiple Regression Analysis fulfills the classic condition of normality, no multicollinearity, no heteroscedasticity between variables, and no autocorrelation occurs, especially for time series data. A good regression model has a normal distribution. The normality test can be done with the Kolmogorov Smirnov Test (K-S) and looks at the histogram and expected

spread probability. Hypothesis for K-S: Ho: expected spread and H1: abnormal distribution. With α : 0.05, if the KS result > 0.05 , the normal distribution is the opposite. If < 0.05 , then the spread is not normal. Normality with histogram test and normal probability spread is to see the histogram resembles a bell, and the normal probability spread will spread to a straight line. Multicollinearity tests to look at situations that show a strong correlation between two or more free variables in a multiple regression model. Multicollinearity testing can be done by looking at VIF (Variance Inflation Factor) and tolerance values. If $VIF < 10$ and a tolerance value of > 0.1 , there is no multicollinearity between free variables. Heteroscedasticity is the inequality of diversity from residual one observation to another. To see if the data occurs, heteroscedasticity can be done with the Glejser Test stating that if the significant value is more excellent than $\alpha = 0.05$, then the conclusion does not occur heteroscedasticity; otherwise, if smaller, then there are symptoms of heteroscedasticity.

Data transformation is often recommended to address the problems of multicollinearity and heteroscedasticity with natural logarithm transformation ($\ln(x)$) or natural logarithm inverse transformation ($1/\ln(x)$). [Benoit, Kenneth \(2011\)](#), Logarithm transformation makes a linear relationship into a linear model. It can also convert data that was not initially normally distributed to or near-normal distribution. The result of natural logarithm transformation using the log-log linear model is the change of the natural logarithm on the independence variable (Y) and the dependent variable (X). The linear model of the logs can be directly interpreted that both are in the form of percent, which means that anyone percent increase in X can increase one percent Y. Transform the log-log model with a natural logarithm for the equation (1):

$$\ln(Y_i) = \beta_0 + \beta_1 \ln(X_{1i}) + \beta_2 \ln(X_{2i}) + \beta_3 \ln(X_{3i}) + \mu_i \dots\dots\dots(3)$$

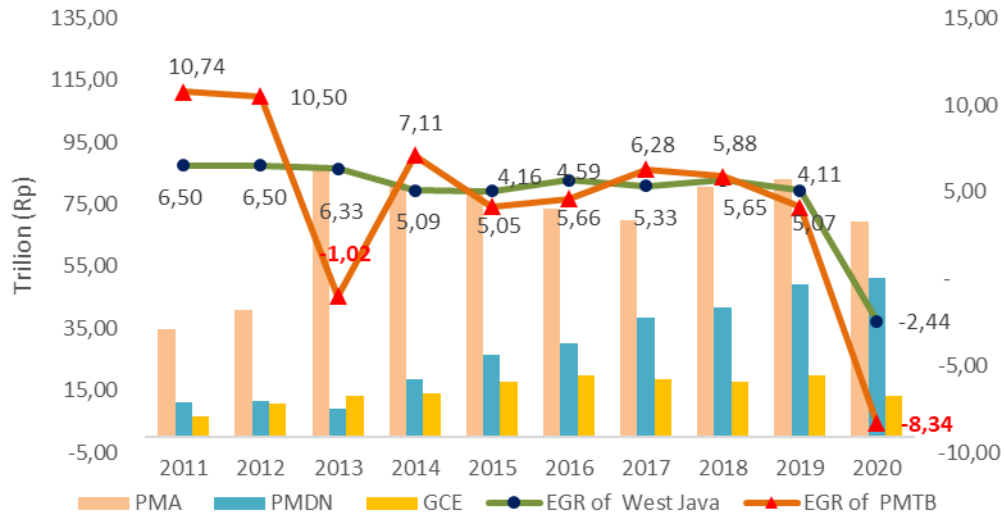
Transformation model log-log with logarithm natural for the equation (2):

$$\ln(Y_{it}) = \beta_0 + \beta_1 \ln(X_{1it}) + \beta_2 \ln(X_{2it}) + \beta_3 \ln(X_{3it}) + \mu_{it} \dots\dots\dots(4)$$

RESULTS AND DISCUSSION

Investment Development (FDI, DDI, and Government Capital Expenditure) and Economic Growth Rate of GFCF and West Java are depicted in Figure 1. It appears that in the period before the Covid-19 pandemic, investment growth in West Java was in line with its economic growth in both development of GFCF and growth of West Java, except in 2013, undergrowth of West Java even reached negative.

Figure 1. Investment Development (FDI, DDI, and Government Capital Expenditure) and EGR of GFCF and West Java 2010-2020

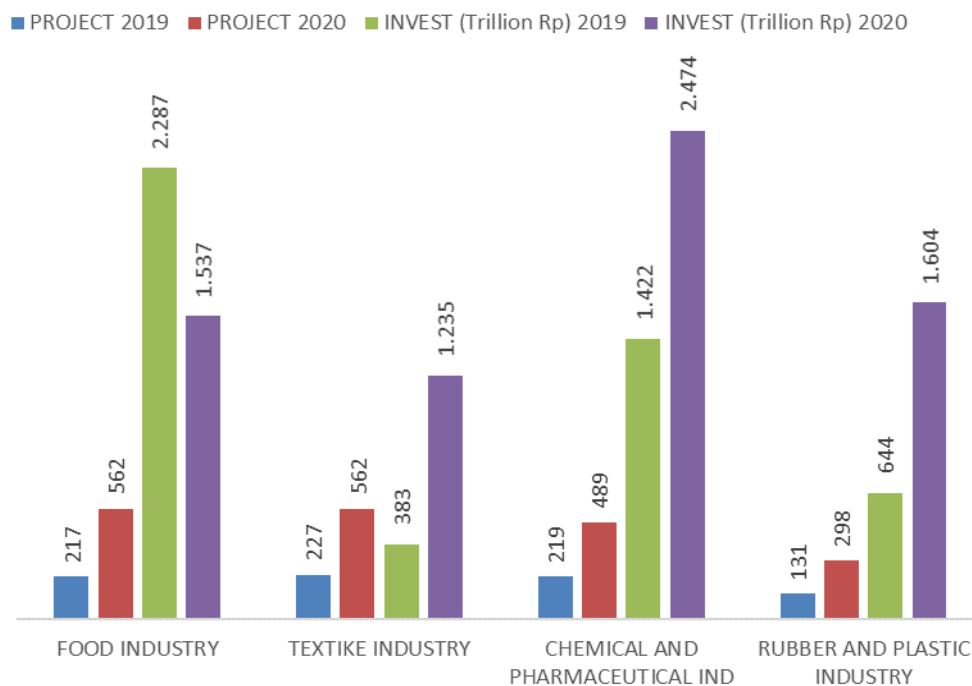


Source: BPS, 2021; BKPM 2021

While at the time of the Covid-19 pandemic occurred (In 2020), where the growth of West Java fell by 2.44 percent, and the EGR of GFCF also fell deeper by 8.34 percent. The decline in growth of GFCF is supported by the decline in FDI from 82.98 trillion rupiahs in 2019 to 69.55 trillion rupiahs in 2020 or down 16.13%. Likewise, Government Capital Expenditure fell from 19.63 trillion rupiahs in 2019 to 13.24 trillion rupiahs in 2020 or decreased by 32.59%. However, DDI investment increased from 49.28 trillion rupiahs in 2019 to 51.40 trillion in 2020, or an increase of 4.29%.

Based on the results of the BKPM report, it was noted that during the Covid-19 pandemic, investment was dominated by UMKM. This is characterized by the number of UMKM business actors who apply for a joint business number (NIB) and commercial, operational permit (IOK) of the food and health sector ([media indonesia.com](http://media.indonesia.com), July 18, 2020). Domestic Direct Investment data in 2020 gives an idea that there is an increase in the number of projects and the value of an investment in the sector.

Figure 2. Number of Project and Value of Domestic Direct Investment (Trillions Rupiah) Period 2019-2020 on West Java Province.



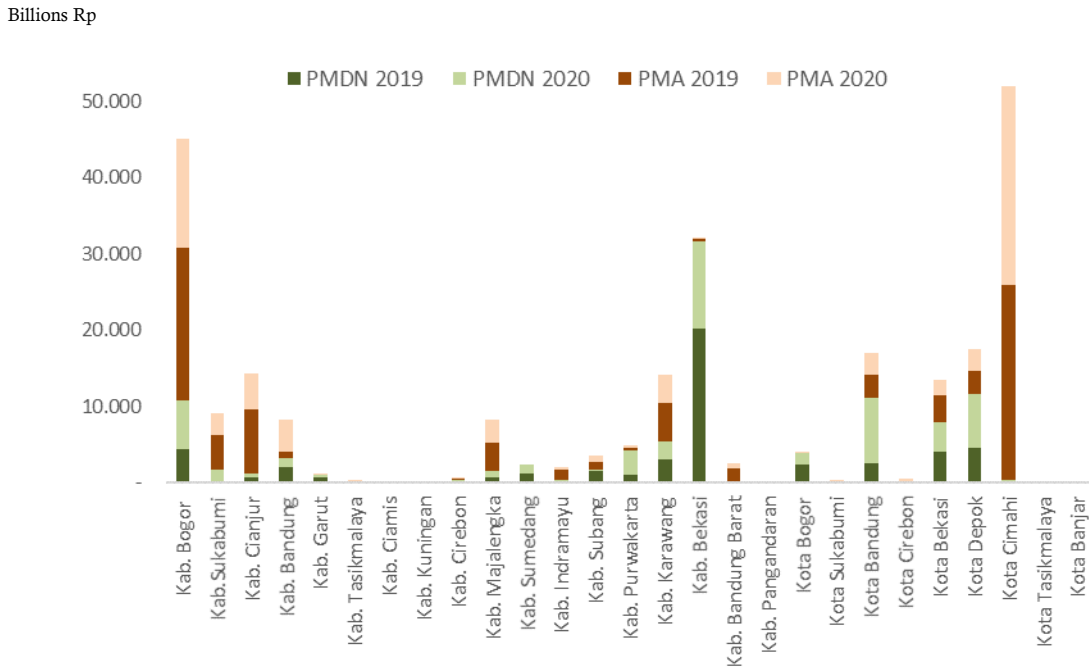
Source: BKPM 2021

DDI investment in the food industry sector has increased, but the investment value decreased. This condition is likely due to the growth of new business actors in the food industry carried out by UMKM, but the investment value is smaller than the year before the pandemic. During the Covid-19 period, the number of projects and investment value increased. This increase is allegedly due to the emergence of new health-related businesses such as masks and Personal Protective Equipment (APD) or products related to personal protection. The same is true of the chemical and pharmaceutical industries, which have also seen an increase in the number of projects and the value of their investments. During the Covid-19 pandemic, many people needed chemical products, such as hand sanitizer, hand soap, and chemical cleaning products, likewise for the rubber and plastics industry which has increased in terms of the amount and value of its investment. The increase in this industry is thought to be closely related to the packaging industry.

The potential of FDI and DDI investment in Regency/City in West Java is described in Figure 3. Cimahi City, Bogor Regency, and Cianjur Regency have a significant investment value compared to other Regency/City. Most of the FDI investment of Regency/City in West Java in 2020 decreased except Cimahi City and Bandung Regency. The decrease in FDI investment is relatively high in Bogor Regency, Cianjur Regency, and Sukabumi Regency. While for significant DDI investments in Bekasi Regency, Bandung City, and Depok City, most of them experienced an increase in the value of their investments in 2020. Bandung City, Depok City

and Kab. Bogor experienced a high rise in DDI investment compared to other City Districts.

Figure 3. Values of FDI and DDI Investment by Regency and City in West Java (Billion Rupiah), 2019-2020.



Source: BKPM 2021

The change value of FDI and DDI investment will impact the economy in the region. For this reason, in this study, it is also known whether there is a significant influence of FDI, DDI investment, and Government Capital Expenditure investment on the regional economy (GRDP value) in the period before and during the Covid-19 pandemic. For this reason, double regression analysis was carried out before and during the Covid-19 pandemic. Before the Covid-19 pandemic is cross-section data from 2010 to 2019 with individual regency/city in West Java and variable FDI, DDI, and Government Capital Expenditure. The data in the Covid-19 pandemic period is cross-section data in 2020 with individual regency/city in West Java and variable FDI, DDI, and Government Capital Expenditure.

Before the Multiple Regression Analysis, the initial data exploration is carried out. Multiple Regression Analysis for $Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \beta_3 X_{3i} + \mu_i$; with Y: GRDP at Current market Price; X_1 : FDI; X_2 : DDI and X_3 : Government Capital Expenditure. From the initial data exploration results, the feasibility of the normal test model and the absence of heteroscedasticity were not met. Thus, the transformation of data with the log-log model with natural logarithms (ln) so that the multiple regression equations are:

$$\ln(Y_i) = \beta_0 + \beta_1 \ln(X_{1i}) + \beta_2 \ln(X_{2i}) + \beta_3 \ln(X_{3i}) + \mu_i \dots \dots \dots (5)$$

Y : ln(GRDP at current market price); X₁: ln(FDI); X₂: ln(DDI) and X₃: ln (Government Capital Expenditure).

Then the assumption test is normality, not happened multicollinearity between free variables and no heteroscedasticity. First, the data normality test was conducted and obtained the results that the data before and during the Covid-19 pandemic spread normally. The results of the Kolmogorov_Smirnov test obtained by Sig Asymp, $\alpha = 5\% > 5\%$ means normal spread and histogram observation and observation of Normal $e \sim N(0,1)$ where e difference between Y and Y[^]. Multicollinearity tests for data before and during the Covid-19 pandemic obtained the VIF (Variance Inflation Factor) value <10 and the tolerant value > 0.1. This means that the data does not occur multicollinearity meaning there is no strong correlation between two or more free variables in the multiple regression model. The heteroscedasticity test obtained regression results with residual with variables showing that the probability value greater than 0.05 means that heteroscedasticity does not occur. This means that there is no variance in residual values of one observation to another in the model. The results of multiple regression analysis are:

$$\ln(\text{GRDP}_{\text{cmp}}) = \ln(\text{FDI}) + \ln(\text{DDI}) + \ln(\text{GCE}) \dots \dots \dots (6)$$

This equation applies to before and during the Covid-19 pandemic.

Table 2. The Result of Multiple Regression Model before and During Covid-19 Pandemic

Values	Before Covid-19	During Covid-19
R ²	0,650	0,661
F-Statistic	127,731	14,919
Sig-F	0,000	0,000
Sig-Intercept	0,000	0,008
Sig-FDI	0,054	0,228
Sig-DDI	0,000	0,003
Sig-GCE	0,000	0,024
Intercept	14,348	7,880
Slope FDI	0,0171	0,033
Slope DDI	0,100	0,197
Slope GCE	0,152	0,546

From the results of multiple regression obtained, the value of R² before the Covid-19 pandemic is slightly smaller than R² in the Covid-19 pandemic. F-Statistic value <5% explained that there is a linear relationship between variable independent Y and variable dependent X. This gives an idea that FDI, DDI investment, and Government Capital Expenditure investments together have a positive and tangible impact on the regional economy in West Java. However, partially in the first year (lag =0), FDI investment has not impacted the regional economy in West Java both before and during the Covid-19 pandemic. This is indicated by the signification of that test with a = 5% higher than 0.05. At the same time, DDI investment and Government Capital Expenditure have given a real influence.

The Multiple Regression Analysis continued to look for the year to which the FDI investment partially had a noticeable influence on the regional economy in West Java. Table 3 presents multiple regression results with FDI time lag. The result obtained that the value of R² before and during the Covid-19 pandemic is around 0.633 means that variable X. FDI investment, DDI can explain 63.3% of variable Y, and Government Capital Expenditure together have a positive and tangible effect on the regional economy in West Java. This is indicated by the Fhit Value <5%.

Table 3. The Result of Multiple Regression Model Before and During Covid-19 Pandemic with lag 1,2, and 3 Years of FDI Investment.

Value	Lag 1 Year		Lag 2 Year		Lag 3 Year	
	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19	Before Covid-19	During Covid-19
R ²	0,601	0,645	0,605	0,646	0,608	0,688
F-Statistic	120,037	13,932	108,210	14,005	95,720	16,932
Sig-F	0,000	0,000	0,000	0,000	0,000	0,000
Sig-Intercept	0,000	0,009	0,000	0,009	0,000	0,005
Sig-FDI	0,031	0,678	0,034	0,618	0,293	0,078
Sig-DDI	0,000	0,004	0,000	0,001	0,000	0,001
Sig-GCE	0,000	0,033	0,000	0,0316	0,000	0,025
Intercept	14,223	8,042	13,968	8,019	13,031	8,097
Slope FDI	0,020	0,013	0,020	0,017	0,011	0,051
Slope DDI	0,102	0,214	0,100	0,216	0,103	0,192
Slope GCE	0,158	0,535	0,181	0,529	0,258	0,516

If partially observed with $\alpha = 0.05$, investment influence gives a different response. DDI investment either before or during the Covid-19 pandemic has a positive and genuine effect on the economy of West Java. In contrast to government capital expenditure, investment before the Covid-19 pandemic had a positive and tangible impact on the region's economy in West Java, but after the Covid-19 pandemic gave a slightly different response that was already in a critical position to have no natural effect. Before the Covid-19 pandemic, FDI investment in the first year of acquisition (lag-0) gave a positive response but not a natural result. In contrast, investments made one to two years earlier (lag-1 and lag-2) can already have a real effect or can already be felt the impact. While the investment made in the previous three years (lag-3), the result is no longer tangible or no longer felt its influence. While during the Covid-19 pandemic, FDI investments made Covid-19 pandemic have not been handled. The effect of FDI investment thought in the year of the Covid-19 pandemic came from FDI investment in 2017 (3-year lag), with a significant $\alpha = 0.10$. Thus, FDI investment in the period before

the Covid-19 pandemic is more quickly felt by the effect of one to two years, while in the Covid-19 pandemic, three years from the period after FDI investment.

From Table 3 obtained, we get the best equation before the Covid-19 pandemic with lag 1 year FDI investment as follows:

$$\text{Ln (GRDP)} = 14,223 + 0,020\text{ln}(\text{FDI})_i + 0,102\text{ln}(\text{DDI})_i + 0,158\text{ln}(\text{GCE})_i + \mu_i \dots\dots (6)$$

$i : 1, 2, 3, \dots\dots 27$

Otherwise we get the best equation during the Covid-19 pandemic with lag 3 year FDI investment as follows:

$$\text{Ln (PDRB)} = 8,097 + 0,051\text{ln}(\text{FDI})_i + 0,192\text{ln}(\text{DDI})_i + 0,516\text{ln}(\text{BMP})_i + \mu_i \dots\dots (7)$$

$i : 1, 2, 3, \dots\dots 27.$

DISCUSSION

The Covid-19 pandemic in 2020 has influenced investment development in West Java Province. Based on BKPM data, the investment value of FDI and DDI investment in West Java ranked first for FDI investment and second for DDI investment after East Java Province. Table 3 provides an overview that before the Covid-19 pandemic, FDI investment could already be felt from assets invested one year ago and FDI investments invested two years ago. While in the Covid-19 pandemic, the real impact of FDI investment on the economy of the West Java region came from assets invested three years ago. This means that the Covid-19 pandemic has decreased the performance of FDI investment.

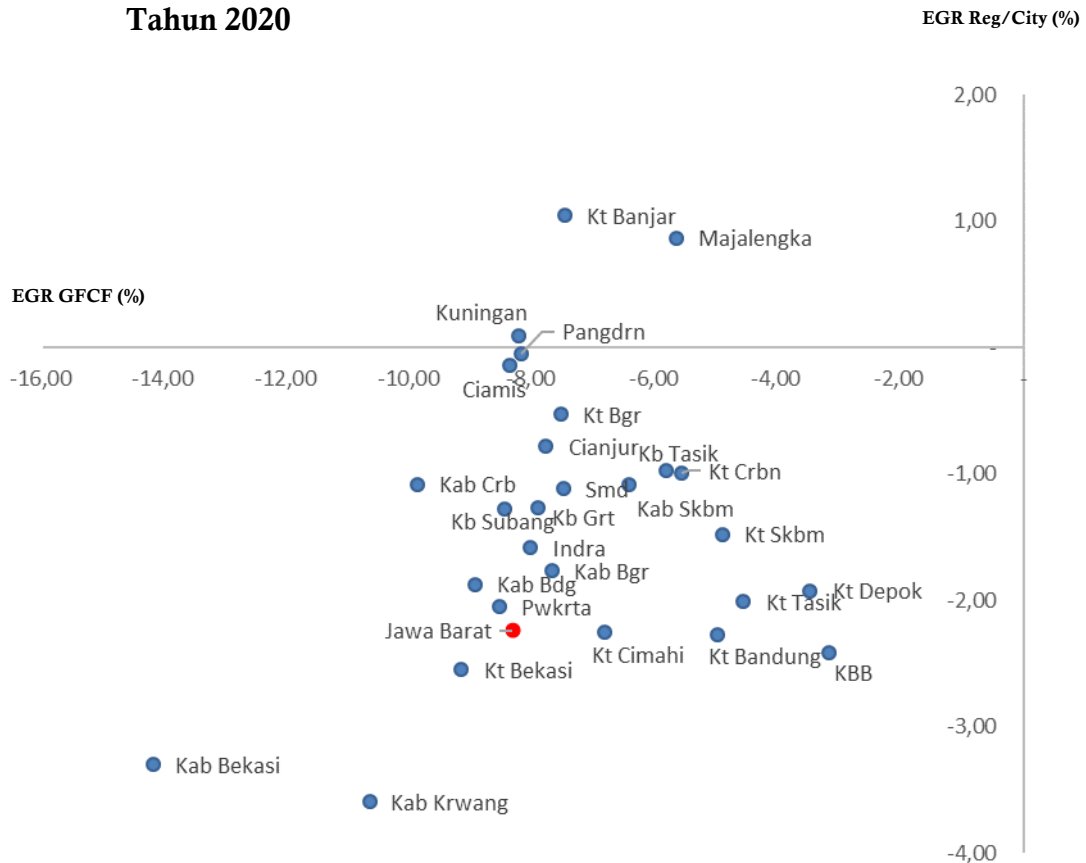
Thus, the Covid-19 pandemic and has decreased the value of FDI investment into West Java also reduced the performance of FDI investment to the West Java economy. The literature study (Putri et al., 2020) reviewed that the effects of the Covid-19 pandemic have caused enormous losses to various sectors, especially the economic sector, namely the occurrence of job cuts (layoffs) both carried out by large, medium and small-sized businesses. Some foreign companies are experiencing the same thing. The company's inability to pay workers' wages is the main thing to do layoffs.

The same thing for Government Capital Expenditure and experiencing a decrease in investment value due to budget refocusing has also decreased its effect on the regional economy in West Java, which is close to critical numbers with no natural impact. This condition is different from DDI investment, where precisely, the Covid-19 pandemic is experiencing an increase. However, it could not lift the total fall in investment in West Java Province. This is evidenced by the growth rate of GFCF, which has decreased.

The influence of FDI and DDI investments and Government Capital Expenditure on the economy is inseparable from the contribution of FDI, DDI investment, and Government Capital Expenditure to the formation of GFCF value which is one of the components of PDRB. The calculation of national figures in 2018 obtained that the institutions that contributed to the formation of GFCF were dominated by private institutions, which reached 84.35%, followed by government-owned enterprises by 7.09%, and finally,

government institutions 8.56% (BPS). This gives an idea that the private sector plays a high role in contributing GFCF value, ultimately affecting the region's economy.

Figure 4. Plot EGR Regency and City with EGR GFCF Regency and City Tahun 2020



Source: BPS-West Java

Figure 4 shows the economic growth rate of GRDP Regency/City with the growth of GFCF by Regency and City in 2020. In 2020 most Regency and City in West Java experienced negative growth except Majalengka Regency, Kuningan Regency, and Banjar City. While for the development of GFCF, the entire Regency and City experienced negative growth. Bekasi Regency, Karawang Regency, Cirebon Regency, Bekasi City, Subang Regency, Purwakarta Regency, and Ciamis Regency experienced a considerable decline in an industrial center West Java and is an industrial area. The influence of the decrease in the value of FDI and DDI investment also contributed to the decline of growth of GFCF. While in urban areas such as Depok City, Bandung Barat Regency, Tasikmalaya City, Sukabumi City, and Bandung City, the decline of growth GFCF is not as deep as in other Regencies dan City in West Java. The increasing value of DDI investment in Regency and City seems to help the decline of EGR GFCF.

The results of the 2016 Economic Census give an idea that the business potential in West Java Province is dominated by businesses on the scale of Small Micro Enterprises which reached 4.56 million firms (98.49%) the rest of companies with large medium enterprise-scale as much as 69.84 thousand

(1.51%) (BPS-Jabar, 2017). By looking at the private potential of GFCF and the potential of UMKM business in West Java and the results of research conducted by (Thaha, 2020) which reviewed that due to the Covid-19 pandemic has made UMKM go out of business, the Covid-19 pandemic has decreased the value of West Java investment. This illustrates that the decrease in investment due to the Covid-19 pandemic in West Java and the reduction in FDI investment and Government Capital Expenditure also contributed to the decline in investment from UMKM businesses that were also affected. At the same time, the increase in DDI investment during the Covid-19 pandemic can still stem from the rapid decline in investment.

Observation of slope value (β) for FDI, DDI, and Government Capital Expenditure in the multiple regression equation obtained information that the slope value (β) in the Covid-19 pandemic was higher than in the period before the Covid-19 pandemic. This means that during the Covid-19 pandemic, investment in FDI, DDI, and Government Capital Expenditure gave a higher response to improving the regional economy in West Java Province than before the Covid-19 pandemic. On the other hand, the elasticity of investment in the Covid-19 pandemic is more elastic than before the Covid-19 pandemic.

CONCLUSION

Investment developments during the Covid-19 pandemic have decreased investment performance in FDI and Government Capital Expenditure but increased investment in DDI. The increase in DDI investment is significantly related to the emergence of business actors who take advantage of the situation and conditions of the Covid-19 pandemic, namely with the rise of businesses that are closely related to the handling of the Covid-19 pandemic, namely food businesses, PPE, sanitary products and products related to it such as packaging products. Urban areas such as Bandung City, Depok City experienced a relatively high increase in DDI investment while the District area increased DDI investment occurred in Kabupaten Bogor and Sukabumi Regency.

Domestic Direct Investment has a positive influence on the economy of the West Java region, and the impact can be felt directly in the year DDI investment is invested. The increase in DDI investment also restrained the rate of decline of GFCF in West Java. Government Capital Expenditure Investment also has a positive influence on the regional economy in West Java, and the impact can be felt directly in the year the Government Capital Expenditure is invested. The decrease in government capital expenditure investment due to budget refocusing on the handling of the Covid-19 pandemic turned out to directly impact the regional economy in West Java. While FDI investment also positively influences the region's economy, the impact is only felt after the third year of acquisition is implanted. This means that the real influence of investment on the region's economy in 2020 comes from investments made in 2017. While FDI investment made in 2020 has not been noticeably felt, it has only been felt significantly in 2023.

While the development of investment in the period before the Covid-19 pandemic, giving an idea that DDI investment and Government Capital Expenditure felt its influence from the first year of investment was made. In contrast, FDI investment felt its effect on the economy of the West Java region came from investments made one to two years earlier. The invested FDI will have a natural effect one to two years later.

The Covid-19 pandemic seems to affect the level of responsibility of FDI, DDI, and Government Capital Expenditure on the region's economy. This is illustrated by the higher slope (β) rate than before the Covid-19 Pandemic.

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