

Success Deteriminan of the Manufacturing Industry Sector to Survive During the Pandemic in Indonesia



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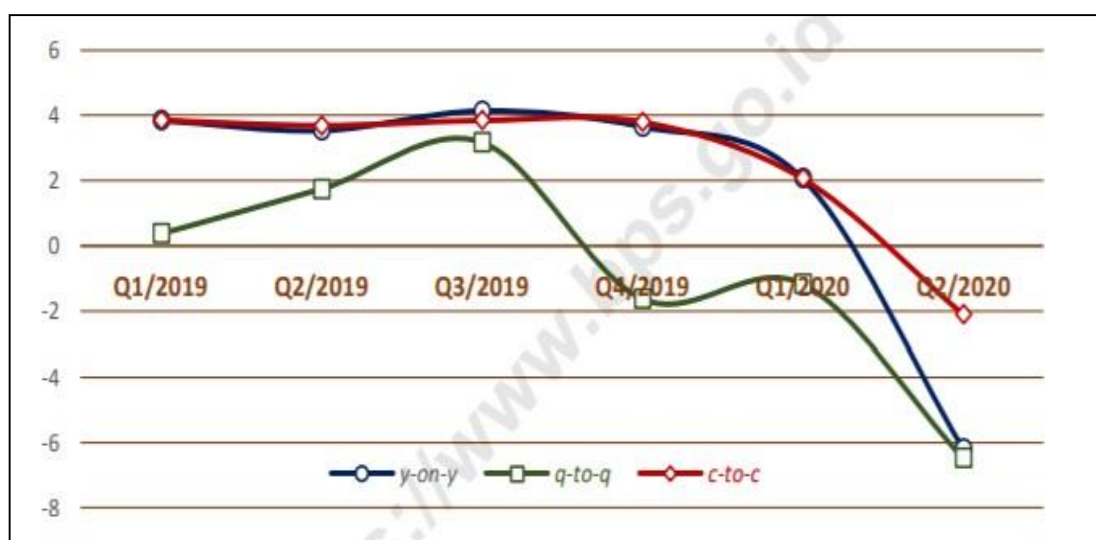
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ABSTRACT: The island of Java is the area with the largest processing industry development in Indonesia. Supported by a large number of industries and the number of workers, industrialization in Java is growing. In the face of an increasingly rapid competition pattern, every industry player must always innovate by increasing the company's capabilities, in this case, it is associated with capital capacity through investments, both Domestic Investment (PMDN) and Foreign Investment (PMA) as well as the capacity of the workforce to generate income. Output in the manufacturing sector. The theory used in this study is a theory related to the factors of production, namely the Cobb-Douglas production function. This study uses quantitative methods using secondary data. The panel data regression technique was used in analyzing the data. The purpose of this study was to determine the effect of domestic investment, foreign investment, and labor on the output of the processing industry using quantitative methods using data from provinces on Java Island from 2015-2020.

KEYWORDS: Processing Industry, Investment, Labor, Panel Data Regression.

I. INTRODUCTION

The industrial sector is now the main sector that contributes greatly to the national Gross Domestic Product (GDP). The manufacturing industry contributes the largest contribution to Indonesia's GDP at 17.34 percent and is considered more productive and can increase the added value of raw materials, increase the workforce, generate the largest source of foreign exchange, and the largest contributor to taxes and customs.



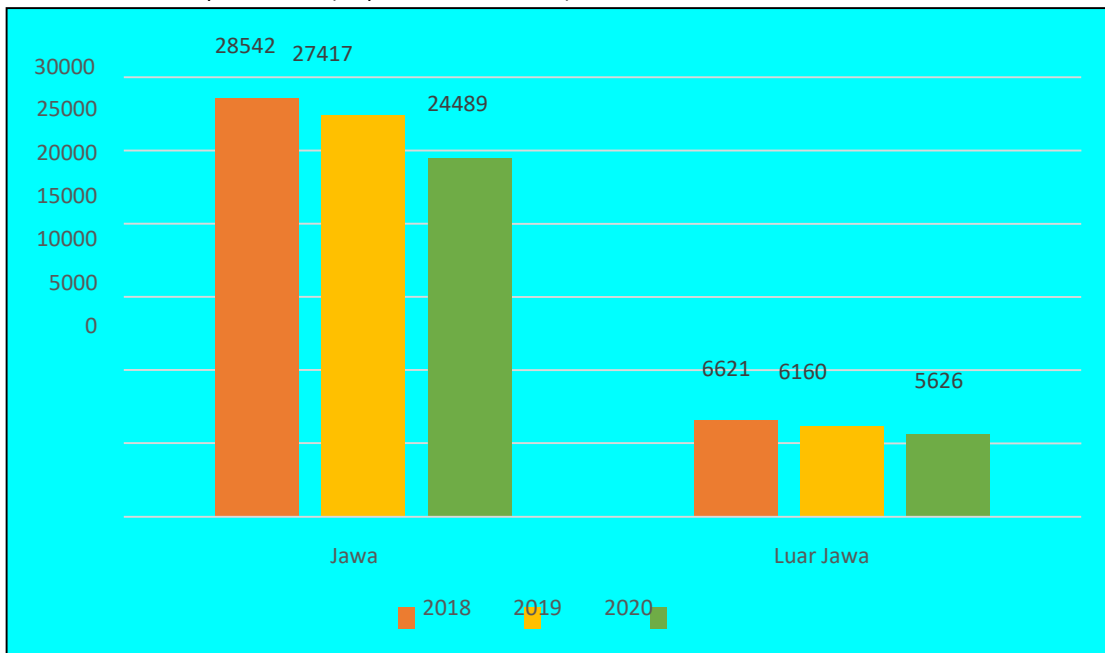
Graph 1. Processing Industry Growth Rate 2019-2020 (percent)

Sourcer: BPS Indonesia, 2016-2020.

Graph 1 shows that the manufacturing industry experienced a growth contraction of 6.19 percent due to a decline in the performance of the Oil and Gas and Non-Oil and Gas Processing Industries (y-on-y). This is due to the consequences of the implementation of Large-Scale Social Restrictions (PSBB) in several areas due to the Covid-19 pandemic and is also reflected in the decline in electricity consumption in the industrial segment.

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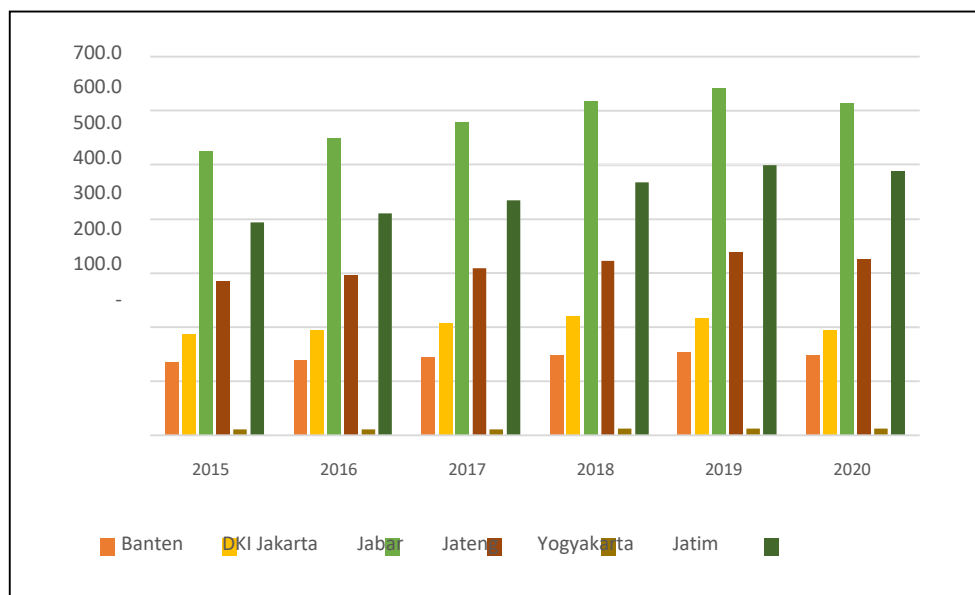
Many development economists believe that the industrial sector is a driver of economic growth and equity through the so-called trickle downs effect (Amir, 2007). The development of the manufacturing sector is faster than other sectors where it can provide productive employment opportunities, in contrast to other sectors such as services and agriculture which accommodate many informal workers who are less productive (Depnakertrans, 2003).



Graph 2. Number of Large and Medium Processing Industries in Java and Outside Java

Source: BPS, 2020.

Based on graph 2, it is known that the largest number of large and medium manufacturing industry sectors is on the island of Java so is a reason for interest to see industrial sector revenues. Business or industry actors must always innovate to improve their efficiency by increasing the company's capabilities related to capital capacity through PMDN, PMA, and labor capacity. In research on the industry in the United States in 1928, C.W. Cobb and Paul H. Douglas used the production function with production factors, namely labor, and capital which are the most important inputs in the production process. This theory also states that there is a quantitative relationship between output and input. The more inputs of production factors used, the more the output produced will also be.



Graph 3. Processing Industry Output in the Provinces of Java

Source: BPS, 2020.

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In graph 3, it can be seen that the largest manufacturing industry output contribution is Central Java Province because almost 60 percent is located in West Java so the national economy is strongly influenced by industrial performance in this region and acts as a leading sector in the economic development process, especially Central Java Province in Java Island. Meanwhile, D.I Yogyakarta is the lowest, because the main sector is agriculture, where its contribution to the output of the manufacturing industry is lower. Several previous studies have been conducted and stated that domestic investment, foreign investment, and labor have an effect on the output of the manufacturing industry, but there are also those who state that domestic investment and labor have an effect while foreign investment has no effect and there are also those who state that domestic investment and foreign investment have an effect while the workforce has no effect. Based on these conditions, the researcher wants to prove how the output of the processing industry is influenced by domestic investment, foreign investment, and labor in the province on the island of Java. This study aims to determine the contribution of domestic investment, foreign investment, and labor and to determine the joint influence of the domestic investment variable, foreign investment, and labor on the output of the processing industry in Central Java Province. This study also compares the effect of the independent variable between and during Covid 19.

II. LITERATURE REVIEW

Growth Theory

The Solow model assumes that economic growth is only influenced by changes in production factors of physical capital (savings and investment) and labor (population growth), while the technology that describes the level of efficiency is an exogenous variable and is considered a residual. The Solow model is a development of the Harrod-Domar growth model by adding labor and technology factors into the growth equation and is assumed to experience diminishing returns if both are analyzed separately and constant returns to scale if both are analyzed together (Todaro and Smith, 2006) (Maryaningsih, Hermansyah, & Savitri, 2014).

Solow analyzes how higher saving and investment affects long-run economic growth. In the short run, higher saving and investment does increase the rate of growth of national income and product in the short run. According to the Solow growth model, in contrast, higher saving and investment has no effect on the rate of growth in the long run. Solow sets up a mathematical model of long-run economic growth. He assumes full employment of capital and labor. Given assumptions about population growth, saving, technology, he works out what happens as time passes. The Solow model is consistent with the stylized facts of economic growth. The labor force L (the population) grows at a constant rate n : $\frac{1}{L} \frac{dL}{dt} = n$. For example, $n = 0.03$ would mean that the population grows 3% per year.

Net national product Y is a function of capital K and labor L , $Y = F(K, L)$. This aggregate production function is fixed; how the product depends on capital and labor does not change as time passes. Developing countries usually have more labor and lack capital in the early stages of opening. Developing countries cannot achieve optimal combinations of input factors and therefore cannot reach productivity limits. Then access must be granted an increase in capital input is conducive to realizing an optimal input factor structure so that a significant increase in productivity must be structured (Zhang, Wei, & Ma, 2022). The Solow–Swan model is a nonlinear system consisting of a single ordinary differential equation that models the evolution of the *per capita* stock of capital. Due to its particularly attractive mathematical characteristics, Solow–Swan proved to be a convenient starting point for various extensions. Based on the theoretical and empirical review of the model economic growth and the industrial sector on economic growth we develop a conceptual framework that shows the social and economic factors in terms of revenue growth of the industrial sector. It should be noted here that the mainstream theory of Solow explains that capital and labor are inputs in actual investment (Kadig, et al., 2022).

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A. Previous Study

Table 1. Matriculation of Previous Study about Economic Growth toward Poverty

No.	Researcher and Title	Result of the Study	Similarities	Difference
1	Esther Dweck, Marilia Bassetti Marcato, Julia Torracca, Thiago Miguez (2022) COVID-19 and the Brazilian manufacturing sector: Roads to reindustrialization within societal purposes	That the pandemic-crisis has harmful effects on the Brazilian productive structure, revealing the dependence on imports of the Brazilian Health System. Reductions in manufacturing gross output and value-added are mainly seen in knowledge-intensive subsectors, followed by job losses and tax revenue reduction. We suggest that the pandemic points to some roads to reindustrialization and resilience, given the reorganization of international production networks and the growing dependence on imports in key manufacturing sectors. Thus, the potential role of the manufacturing sector to achieve inclusive and sustainable growth reveals the importance of building productive capacity beyond the pandemic.	discusses the impact of the covid pandemic on the growth of the industrial sector	In this latest study, it discusses regularly about the influence of variables from the economic and social dimensions related to the influence of the growth of the industrial sector
2	Jian-yi Fisher Ke, James Otto, Chaodong Han (2022) Customer-Country diversification and inventory efficiency: Comparative evidence from the manufacturing sector during the pre-pandemic and the COVID-19 pandemic periods.	U.S. manufacturing firms may be able to reduce negative impacts on inventory in a global pandemic and achieve greater inventory efficiency if they can target global customer bases with demand characteristics less correlated with U.S. domestic demand.	Discusses the impact of the covid pandemic on the growth of the industrial sector and the government role when the Covid-19 exist.	geographically diversified customer base significantly reduced inventory efficiency during the pre-pandemic period exist.
3	Zibing Dong, Yanshuang Li, Xintian Zhuang, Jian Wang (2022) Impacts of COVID-19 on global stock sectors: Evidence from time-varying connectedness and asymmetric nexus analysis	Indicate the different characteristics in responses of the stock sectors to the pandemic intensity. Specifically, most sectors are severely impacted by the COVID-19. In contrast, some sectors (Necessary Consume and Medical & Health) that are least affected by the COVID-19 pandemic (especially in the milder stage of the COVID-19 pandemic) are those that are related to the provision of goods and services which can be considered as necessities and substitutes.	Discusses the role of investors in the sustainability of the manufacturing industry	In the latest research, separates the role of domestic and foreign investment in the growth of the manufacturing industry sector, and includes the social and economic impacts affected by Covid-19

Sumber: (Dweck, Marcato, Torracca, & Miguez, 2022), (Ke, Otto, & Han, 2022), (Dong, Li, Zhuang, & Wang, 2022).

B. Frame Work

The industrial sector is one of the sectors that support the Indonesian economy, the role and function of industry in community activities is as a provider of goods and services, a place to absorb labor, added value for products and regional income and improve people's lives. This study assumes that there are domestic and foreign investments, labor, inflation, poverty levels, unemployment, taxes, levies, and Regional Original Income. By including the components of economic and social variables as a measure of influence that can determine the acceptance of the manufacturing industry sector. The industrial sector is a sector that is able to accommodate problems in the economy and helps absorb labor because it can create jobs, in addition to the growth of the industrial sector it will add added value to a product.

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III. RESEARCH METHODOLOGY

A. Time and Place of Study

Data analysis was carried out by panel data analysis. The data consists of domestic investment, foreign direct investment, and labor in the provinces on the island of Java, namely Banten, DKI Jakarta, West Java, Central Java, Yogyakarta, and East Java for 6 years (2015-2020).

B. Population and Research Sample

Data analysis was carried out by panel data analysis. The data consists of domestic investment, foreign direct investment, and labor in the provinces on the island of Java, namely Banten, DKI Jakarta, West Java, Central Java, Yogyakarta, and East Java for 6 years (2015-2020). Statistical tests include the Coefficient of Determination Test, t-test, and F-test to determine the effect of the variable PMDN Investment, Foreign Investment and, Manpower on the Output of the Provincial Processing Industry in Java. The analytical tool used is Stata 15 software.

While the sample used in this study is panel data with 6 (six) cross-sectional data, including Banten, DKI Jakarta, West Java, Central Java, D.I. Yogyakarta, and East Java, while the time series data is 6 (six) years. The sample data in this study amounted to 36 (thirty-six) data.

C. Definition and Variable Measurement

Operationalization of research variables is an explanation of each variable used in research on the indicators that compose it. Operational research variables can be seen in the following table:

Table 2. Definition and Variable Measurement

Variable	Conceptual Definition	Operational Definition	Data Source	Measurement Scale
PDRB (Y)	The total value of all goods and services produced in a region in a given period of time (usually one year).	GRDP of the Processing Industry Sector, year period of 2015-2020	Central Bureau of Statistics	Nominal
PMDN (X₁)	Investment activities to conduct business in the territory of the Republic of Indonesia are carried out by domestic investors using domestic capital.	Domestic investment, year period of 2015-2020	Central Bureau of Statistics	Nominal
PMA(X₂)	Investment activities to conduct business in the territory of the Republic of Indonesia are carried out by foreign investors, both those who use fully foreign capital, and those in joint ventures with domestic investors	Foreign investment, year period of 2015-2020	Central Bureau of Statistics	Nominal
Labor (X₃)	Residents of working age or more than 15 years who are able to do a job to produce goods and services to meet the needs of the community	Labor, year period of 2015-2020	Central Bureau of Statistics	Nominal
Inflation (X₄)	The percentage rate of increase in the price of a number of goods and services that are generally consumed by households (%).	Inflation, year period of 2015-2020	Central Bureau of Statistics	Ratio
Poverty (X₅)	Percentage of poor people who are below the poverty line. The Headcount Index simply measures the proportion categorized as poor(%).	Percentage of poor people, year period of 2015-2020	Central Bureau of Statistics	Ratio
Unemployment (X₆)	Unemployment includes residents who are not working but are looking for work, or preparing for a business, or feel it is impossible to get a job (desperate), or have been accepted for work but have not started work. The open unemployment rate is the percentage of the number of unemployed to the total labor force(%).	Open Unemployment Rate, year period of 2015-2020	Central Bureau of Statistics	Ratio

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Tax (X₇)	Tax is a mandatory contribution to the state that is owed by an individual or entity that is coercive in nature based on the law, with no direct compensation and is used for the needs of the state for the greatest prosperity of the people.	Tax, year period of 2015-2020	Central Bureau of Statistics	Nominal
Retribution (X₈)	Regional levies as payments for services or granting certain permits specifically provided and/or granted by local governments for the benefit of individuals or entities.	Retribution, year period of 2015-2020	Central Bureau of Statistics	Nominal
PAD (X₉)	Regional income is collected based on regional regulations in accordance with laws and regulations to collect funds for the needs of the region concerned in financing its activities.	Locally-generated revenue, year period of 2015-2020	Central Bureau of Statistics	Nominal

D. Data Analysis Technique

The data used in econometric analysis can be in the form of time series data, cross section data, or panel data. Panel data (panel pooled data) is a combination of cross section data and time series data. In other words, panel data are the same individual units that are observed over a certain period of time. In general, panel data are characterized by a small T time period (t = 1,2,...,T) and a large n number of individuals (i = 1,2,...,n). However, it does not rule out the opposite, namely that panel data consists of a large period of time and a small number of individuals. Regression using panel data is called panel data regression model.

According to Baltagi (2005), some of the advantages of using panel data are as follows:

1. Panel data is able to accommodate the level of heterogeneity of variables that are not included in the model (unobserved individual heterogeneity).
2. Data Panel data is able to reduce collinearity between variable.
3. Panel data can minimize the bias generated by individual aggregation because there are more data units.

The panel data method has two approaches, namely Fixed Effect Model (FEM) and Random Effect Model (REM). Both are distinguished based on whether or not there is a correlation between the error component and the independent variable.

This model adopts the Cobb-Douglas production function as follows:

$$Q = AL\alpha K\beta \dots\dots\dots (1)$$

(Kusminarti, Hadi, & Santoso, 2015)

This model is then transformed into (Gujarati, 2005):

$$\ln(Q) = \ln(A) + \alpha \ln(L) + \beta \ln(K) \dots\dots\dots (2)$$

Then the model is analyzed using panel data, so that the shape becomes:

$$\ln(PDRB_{it}) = \beta_0 + \beta_1 \ln(PMDN_{it}) + \beta_2 \ln(PMA_{it}) + \beta_3 \ln(TK_{it}) + \beta_4 \ln(Inflasi_{it}) + \beta_5 \ln(Poverty_{it}) + \beta_6 \ln(Unemployment_{it}) + \beta_7 \ln(Tax_{it}) + \beta_8 \ln(Retribution_{it}) + \beta_9 \ln(PAD_{it}) + \varepsilon_{it} \dots\dots\dots (4)$$

dengan model pendugaan adalah:

$$\ln(\hat{PDRB}_{it}) = \beta_0 + \beta_1 \ln(PMDN_{it}) + \beta_2 \ln(PMA_{it}) + \beta_3 \ln(TK_{it}) + \beta_4 \ln(Inflasi_{it}) + \beta_5 \ln(Poverty_{it}) + \beta_6 \ln(Unemployment_{it}) + \beta_7 \ln(Tax_{it}) + \beta_8 \ln(Retribution_{it}) + \beta_9 \ln(PAD_{it}) + \varepsilon_{it} \dots\dots\dots (5)$$

Keterangan:

- $\ln(PDRB_{it})$ = Normal logarithm GRDP of the Processing Industry Sector
- $\ln(PMDN_{it})$ = Normal logarithm Domestic investment
- $\ln(PMA_{it})$ = Normal logarithm Foreign investment
- $\ln(TK_{it})$ = Normal logarithm Number of workers
- $\ln(Inflasi_{it})$ = Normal logarithm Inflation
- $\ln(Poverty_{it})$ = Normal logarithm Poverty

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$\ln(\text{Unemployment}_{it})$	= Normal logarithm Unemployment
$\ln(\text{Tax}_{it})$	= Normal logarithm Tax
$\ln(\text{Retribution}_{it})$	= Normal logarithm Retribution
$\ln(\text{PAD}_{it})$	= Normal logarithm Locally-generated revenue
i	= Cross section, the number of provinces in Central Java
t	= Observation time

IV. RESULT AND DISCUSSION

The manufacturing industry sector in Java's GDP is the largest contributor. In 2020 the contribution of the manufacturing industry category was 34.52%, followed by the agriculture, forestry and fishery sectors with 14.30%, the wholesale and retail trade sector, car and motorcycle repairs at 13.48 and the construction sector with 10.54%. If we look at the development of the contribution of the manufacturing industry sector during the 2016-2020 period, the value shows a fairly stable trend. In 2016, the manufacturing industry sector contributed 34.69%, then 34.58% in 2017, then 34.41% in 2018, 34.44% in 2019. According to sub categories, in 2020, the food and beverage industry Beverage is a sub-category of industry with the largest contribution. The gross added value (NTB) provided by this sub category is Rp. 186,502.07 billion rupiah (40.07 %), followed by the tobacco processing industry at Rp 103,315.17 billion (22.19 %), and the oil and gas refining industry at Rp 39,197.22 billion (8.42 %).

During the 2016-2019 period, the growth of the manufacturing industry sector continued to increase until it reached its peak in 2019, which was 5.18%. But in the following year, when the Covid-19 outbreak began, the trend of increasing seemed meaningless. In 2020, the performance of the manufacturing industry contracted quite deeply to minus 3.74%. These contractions are caused by contractions of almost all sub-categories. Two of the sub-categories that experienced a sharp decline were the oil and gas refining industry which reached minus 18.44% and the textile and apparel industry which contracted 12.24%. The next sub-category that experienced a significant decline in production was the rubber and rubber goods industry which grew by minus 10.00%, the base metal industry with a growth of minus 8.44%, and the sub-category of manufacturing metal, computer, electronic and optical goods industries. Of minus 8.02% (Central Java BPS, 2021).

However, in the midst of the pandemic, there are still four sub-categories that are able to show positive growth even though it is Quite slow. The food and beverage industry as well as the chemical, pharmaceutical, and traditional medicine industries were able to grow 3.36% and 3.33% respectively. Both are the first and fifth largest industry sub categories in contributing to the performance of this sector. This fairly good performance has helped restrain the growth of the manufacturing industry from falling further. The demand for industrial products of food, medicine, vitamins and masks during the pandemic has driven high growth in these two sub categories.

In addition to the two sub categories, other sub categories that showed positive growth were the machinery and equipment industry (1.32%) and the paper and paper products industry, printing and reproduction of recording media (0.74%). In addition, during the period of activity restrictions due to the Covid-19 pandemic, the Central Java Provincial Government stipulates that only a few sectors may operate, namely health; foodstuffs; energy; communication and information technology; finance; logistics; hospitality; construction; strategic industry; basic services, public utilities, and industries that are designated as national vital objects and certain objects; as well as daily necessities.

Table 3. Descriptive statistics

	Mean	Std.Dev	Min	Max
PDRB	15.46	0.96	13.63	18.03
PMDN	12.09	1.79	7.43	16.61
PMA	8.33	2.85	-1.20	14.18
TK	12.98	0.60	10.95	13.75
Inflation	4.64	2.47	1.62	10.46
Poverty	11.49	3.79	3.98	20.53
Unemployee	5.10	1.89	1.50	9.97
Tax	18.19	0.72	16.91	21.17
Retribution	16.83	0.57	15.49	19.44
PAD	19.60	0.42	18.12	21.65

Source: Processed Data

Sourced from table 1, it can be seen that the highest mean value is the PAD variable, which is 19.60 and the lowest is the inflation

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variable, which is 4.64. Then the variable with the value of Std. The highest Dev is PMA of 2.85 and the lowest is the PAD variable of 0.42. The variable with the highest minimum value is PAD of 18.12 and the lowest is the PMA variable of -1.20, then the variable with the highest maximum value is PAD and the lowest variable is Unemployment.

Table 4. Model Selection

Test	Distribution		Probability	
Chow test/Wald Test	F(34, 166)	1966.72	0.000	***
Hausman Test	chi2(9)	102.21	0.000	***
LM test	chibar2(01)	418.1	0.000	***

Source: Processed Data

Chow test/Wald test is used to test whether the appropriate model is Fixed Effect (FE) or Common Effect (CE), with Ho: Common Effect. It can be seen that the value of F (34,166) is the same as 1966.72 with a probability of 0.000 which is smaller than 1% indicating that it is better to use the FE model.

Hausman Test is used to test whether the appropriate model is Fixed Effect (FE) or Random Effect (RE), with Ho: Random Effect. It can be seen that the Chi Square value with df = 9 is equal to 102.21 with a probability of 0.000 which is smaller than 1% indicating that it is better to use the FE model.

LM Test is used to test whether the model fits the Common Effect (CE) or Random Effect (RE), with Ho: Random Effect. It can be seen that the average Chi Square value with df = 1 is 418.1 with a probability of 0.000 which is smaller than 1% indicating that it is better to use the FE model, after it is known that the model is suitable, then the classical assumption test is carried out, which includes: a) Multicollinearity test, b). Autocorrelation Test and c) Heteroscedasticity Test.

Multicollinearity Test

There are several formal tests that can be used to test multicollinearity, but none of these methods really give satisfactory results. According to Gujarati and Porter (2009) one method to see the symptoms of multicollinearity is the intercorrelation value of the independent variable. The model used does not contain multicollinearity problems if the correlation between the independent variables does not exceed 0.8 (Gujarati and Porter, 2009), (Soleh, 2022), 0.85 (Widarjono, 2005), 0.90 (Woldridge, 2020)..

Table 5. Correlation between Independent Variables

	PMDN	PMA	TK	Inflation	Poverty	Unemployment	Tax	Retribution	PAD
PMDN	1.0000								
PMA	0.2567	1.0000							
TK	0.3154	0.2069	1.0000						
Inflation	-0.0921	0.1275	-0.0058	1.0000					
Poverty	-0.2036	-0.2768	0.3334	0.2132	1.0000				
Unemployment	0.0707	0.0733	-0.1238	-0.0827	-0.0461	1.0000			
Tax	0.5113	0.2368	0.3965	-0.2748	-0.3643	0.1330	0.6806	1.0000	
Retribution	0.3138	0.1672	0.4217	0.0228	-0.1032	0.1330	0.6806	1.0000	
PAD	0.4884	0.1989	0.4705	-0.2865	-0.2399	0.2340	0.8450	0.6577	1.0000

Source: Processed Data

The correlation table between the independent variables shows that the correlation between the independent variables is 0.90, while the pad with Tax is 0.8450, because it is below 0.90 (Woldridge, 2020) it is stated that the model used does not have a multicollinearity problem.

Autocorrelation Test

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Because panel data is a combination of time series and cross section data, in panel data there are two forms of autocorrelation that may occur, namely: temporal correlation and cross sectional correlation. Temporal correlation is autocorrelation that occurs between time periods (time series) in the same individual, while cross-sectional correlation is autocorrelation or also called cross-sectional dependence or spatial (Driscoll & Kraay, 1998) that occurs between individuals or cross-sectional units at different time periods. Same. The results of the f-statistical value of the correlation test show that the value is 0.0000 so that it shows that there is no autocorrelation problem in this study.

Heteroscedasticity Test

The classical linear regression model assumes that the variance of the error term has a constant value for each observation (Gujarati and Poerter, 2009).

Table 6. Autocorrelation and Heteroscedasticity Test Results

Classic assumption	Distribution		Probability	
Temporal correlation	F(1,34)	14.235	0.000	***
Cross-sectional dependence	Pesaran's test	8.11	0.000	***
Wald test	Chi2(35)	1895.63	0.000	***
Breusch-Pagan Lagrange Multiplier Panel	LM Test	348.5846	0.000	***

Description: significant at 0.01. Level

Source: Processed Data

The results of the temporal correlation test, the distribution value of F(1.34) is equal to 14,235 with a probability of 0.000 which is smaller than 1%, indicating that the model has temporal correlation problems. Testing of Cross-Sectional dependence Pesaran's test value is equal to 8.11 with a probability of 0.000 which is smaller than 1%, indicating that the model has a problem with Cross-Sectional dependence. Heteroscedasticity testing using the Wald test, the value of the Chi Square distribution (df = 35) is equal to 1895.63 with a probability of 0.000 which is smaller than 1%, indicating that the model has heteroscedasticity problems. Using the Breusch-Pagan Lagrange Multiplier Panel test, the LM test is equal to 348.5846 with a probability of 0.000 which is less than 1%, indicating that the model has heteroscedasticity problems. Conclusion: this model has problems: temporal correlation, cross-sectional dependence and heteroscedasticity.

Table 7. Fixed Effect Analysis Results Using the Driscoll-Kraay . Estimator

	Model (1)	
PDRB	Coefficient	
PMDN	0.1329	***
	(0.0455)	
PMA	-0.0034	
	(0.0099)	
TK	0.8910	***
	(0.0460)	
Inflation	0.0476	***
	(0.0133)	
Poverty	-0.0825	***
	(0.0072)	
Unemployee	0.0408	***
	(0.0132)	
Tax	0.2055	***
	(0.0751)	
Retribution	-0.0751	
	(0.0769)	
PAD	0.1127	

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	(0.0896)	
_cons	-1.8496	**
	(0.8636)	
F	15770.09	
Prob	0.0000	
R-squared	0.6408	

Description : ***) significant level on 0.01

**) significant level on 0.05

*) significant level on 0.1

Source: Processed Data

Based on the results of the regression in the table above, it shows that the influence of the PMDN variable on the GRDP of the manufacturing sector is consistent, because it is positive and significant at the 1% real level and the positive coefficient value is 0.1329. The results of this study are in line with Kusminarti, Hadi, & Santoso (2015), Batari Saraswati Karlita (2013), Mursalam Salim (2013).

Based on the regression results in the table above, it shows that the influence of the PMA variable on the GRDP of the manufacturing sector is consistent, because it is negative and not significant at the 1% real level for the three models used and the negative coefficient value is -0.0034. The results of this study are in line with the research of Kusminarti, Hadi, & Santoso (2015).

Based on the results of the regression in the table above, it shows that the influence of the Labor (TK) variable on the GRDP of the manufacturing sector is consistent, because it has a positive and significant value at the 1% real level for the three models used and the positive coefficient value is 0.8910. The results of this study are in line with the research of Novita Panelewen, Josep Bintang Kalangi, Een Walewangko (2020).

Based on the regression results in the table above, it shows that the effect of the inflation variable on the GRDP of the manufacturing sector is consistent, because it has a positive and significant value at the 1% real level for the three models used and the positive coefficient value is 0.0476. The results of this study are in line with the research of Putri Sari Margaret Juliyanti Silaban and Raysa Rejeki (2020).

Based on the results of the regression in the table above, it shows that the influence of the Poverty variable (poverty level) on the GRDP of the manufacturing sector is consistent, because it has a negative and significant value at the 1% real level for the three models used and the negative coefficient value is -0.8925. The results of this study are in line with the research of Bosede Comfort Olopade, et al (2019).

Based on the results of the regression in the table above, it shows that the influence of the Unemployee variable (unemployment rate) on the GRDP of the manufacturing sector is consistent, because it is positive and significant at the 1% real level for the three models used and the positive coefficient value is 0.0408. The results of this study are in line with the research of Victor Agboli (2021).

Based on the results of the regression in the table above, it shows that the effect of the Tax variable on the GRDP of the manufacturing sector is consistent, because it has a positive and significant value at the 1% real level for the three models used and the positive coefficient value is 0.02055. The results of this study are in line with Dwika's research. Julia Mutiara (2015).

Based on the results of the regression in the table above, it shows that the effect of the Retribution variable on the GRDP of the manufacturing sector is consistent, because it is not significant at the 1% real level for the three models used and the negative coefficient value is -0.0751. The results of this study are in line with the research of Hani Sri Mulyani, et al (2021).

Based on the regression results in the table above, it shows that the influence of the PAD variable on the GRDP of the manufacturing sector is consistent, because it is not significant at the 1% real level for the three models used and the positive coefficient value is 0.1127. The results of this study are in line with the research of Abdul Mafahir & Aris Soelistiyo (2017).

DISCUSSION AND DISCUSSION OF RESEARCH RESULTS

Variable Gross Regional Domestic Product (GRDP)

Gross Regional Domestic Product (GDP) is the result of the sum of the gross value added (Gross Value Added) originating from all economic sectors of a region (Santi, Jumiarti, & Muslihatinningsih, 2019). GRDP is one of the benchmarks that describes the economic growth of a region by looking at the sectors that cause economic changes (Parahita, Rahajuni, & Windha, 2018). In Keynesian theory, the focus of economic growth is the active use of government policies in managing aggregate demand or

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preventing economic recession. Fiscal policy, monetary policy and direct supervision are policies that are actively used in this management. GRDP on the basis of current prices describes the Value Add of goods and services calculated using the prevailing prices in that year, then GRDP on the basis of constant prices describes the Value Add of goods and services calculated using the base year (Hartono, Busari, & Awaluddin, 2018) (Parahita, Rajuni, & Windha, 2018).

Domestic Investment Variables (PMDN)

The PMDN variable has a positive and significant effect, meaning that if PMDN increases, GRDP will increase and vice versa. This is due to the increasing domestic investment, the availability of public goods will increase and will encourage an increase in Gross Regional Domestic Product. This is also in accordance with Harrod-Domar's theory that the key role of investment is not only to create demand, but also to increase production capacity for its role in the process of economic growth. This is the same as the research conducted by Yuliana Ayu Mega Pertiwi (2021).

Variable Foreign Investment (PMA)

The PMA variable has no significant effect on the processing industry. The Cobb-Douglas theory states that investment affects output while this result states that FDI affects the manufacturing industry but the effect is not significant. The same results were also obtained from the research of Enik Kusminarti, T. Hadi, E. Santoso (2015), Habiba (2008) and Yuliana Ayu Mega Pertiwi (2021). This is probably due to the fluctuating conditions of Java Province so that it cannot be a priority as a place for foreign investment. There are many obstacles, such as a bureaucracy that is less transparent, efficient and convoluted, thereby reducing the interest of foreign investors to invest in Indonesia.

Labor Variables

The labor variable can increase economic growth if the workforce is absorbed properly, this must be supported by the availability of employment opportunities in accordance with the existing workforce. If the number of the workforce exceeds the number of jobs, the labor force cannot be absorbed properly so that it can lead to unemployment which can reduce economic growth. Manpower, labor is the population of working age between 15 to 64 years (Suparmoko, 2002). Labor is the population of working age or the total population in a country in producing goods and services if there is a demand for their labor, and if they are willing to participate in these activities. The results of this study indicate that the workforce has no significant effect on the GRDP of the manufacturing sector. This is in accordance with the research of Marlina and Pebrina (2019), while Mega Intan Permata (2018) is positive and significant. This can happen because the increase in the minimum wage rate causes a decrease in the demand for labor, which in turn will make the workforce unable to be fully absorbed and cause unemployment. Population growth (increase in labor) in the long term will lower the level of development back to a lower stage. This happens because of the law of diminishing returns, because in the long run the economy will reach a stationary state. With a low level of investment, there will be fewer available jobs so that the resulting productivity will also decrease. To be able to increase productivity, what is needed is an increase in capital accumulation. The large population but very high efficiency and productivity will be able to increase the rate of economic growth.

Inflation Variable

Based on the macro theory put forward by Keynes, inflation is caused because some parts of society want to live beyond their economic capacity. The condition that occurs is that public demand for goods that always exceeds the amount of available commodities will later cause an inflationary gap. This situation is in accordance with the law of economics, namely when demand increases but supply is constant, then prices will increase. As long as the inflationary gap still exists, during that time the inflation process will continue and be sustainable. (Silvia Karenina, Muchtolifah & Sishadiyati, 2022). Inflation is one of the important indicators to analyze the economy in addition to economic growth, poverty, unemployment, and export-import (Daniel, 2018). Inflation has an effect on the economy in an area, the impact is either negative or positive (Asnidar, 2018). High inflation that occurs continuously does not only have a negative impact on economic activity, but can also be difficult for the community because it can cause a decrease in job absorption and an increase in unemployment (Kusuma, Sarfiah, & Sepatiani, 2019). The high price of goods/services will limit people's purchasing power of goods/services which will cause the company to suffer losses. The results of this study indicate that inflation has a positive and significant effect. These results are in line with the research of Rizka Rahmadani Putri (2018). This is in accordance with the theory contained in this study that inflation can have a positive effect because when inflation occurs, there will be an increase in the price of goods first, but the wages of workers remain so that triggers entrepreneurs to increase production results so that business profits increase and can expand business.

Poverty Variable

The poverty variable has a negative and significant effect on GRDP, meaning that with an increase in GRDP, it will reduce poverty

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in districts or cities in Java. Kuznet (2001) in Permana (2012), GRDP growth and poverty have a very strong correlation, because in the early stages of the development process the poverty rate tends to increase and when approaching the final stage of development the number of poor people gradually decreases. According to the research of Hermanto S. and Dwi W. (2008) which states that when the economy develops in a region (a certain smaller country or region) there is more income to spend and has a good distribution of income among the region, it will reduce poverty. Wongdesmiwati (2009) states that poverty reduction in Indonesia can be influenced by the growth rate of real Gross Domestic Product (GDP) and other supporting factors, such as investment through employment by the private sector.

Unemployment Variable

According to Sukirno (1997), the bad effect of unemployment is to reduce people's income which in turn reduces the level of prosperity a person achieves. The decline in people's welfare due to unemployment will certainly increase their chances of being trapped in poverty because they have no income. If unemployment in a country is very bad, political and social chaos always prevails and has a bad effect on people's welfare and prospects for economic development in the long term. The unemployment variable has a positive and significant effect on GRDP, meaning that with an increase in unemployment, it will increase GRDP in districts or cities in Java.

Tax variable

The Tax variable has a positive and significant effect on GRDP, meaning that with an increase in Tax received by the region, it will increase GRDP in districts or cities in Java. Increase in regional taxes through the participation of people who pay taxes and the government who actively collects taxes and the existence of new tax objects in the form of land and urban and rural buildings tax (PBB-P2). So, it will increase regional tax revenues that will be used for production activities so that it will produce output in the form of goods and services, so that it will increase GRDP. The results of this study are in line with the Solow-Swan theory, where economic growth depends on the supply of production factors, one of which is capital accumulation in this case is regional tax. Based on this theory, it is known that input variables, especially regional taxes, have an important role because they determine the amount of output produced. This is because regional taxes are used as capital to carry out development so as to stimulate economic activity and will produce output in the form of goods and services which will ultimately increase economic growth (GDP production) (Mutiar, 2015).

Retribution Variable

Retribution variable has no effect on GRDP, meaning that with an increase in Retribution received by the region, it will not increase GRDP in districts or cities in Java. The level of regional retribution will affect regional development, there is a negative direction of retribution on development autonomy, this is because the efforts made by the regional government in extracting the potential for levies are less effective which causes high retribution as a component of regional revenue retribution which actually reduces the ability of local governments to finance development his own area. The inability of local governments to explore the potential of their regions to the fullest causes local governments to continue to rely on the allocation of funds from the central government in financing regional development. The number of retribution problems that often occur in the regions, such as parking fees on public roads or in traditional markets which are often misused by unauthorized parties Individuals are responsible for reaping personal benefits so that government efforts to improve facilities and infrastructure have not contributed to increasing local user fees (Mulyani, Sudirno, & Hakim, 2021).

Variable Local Revenue (PAD)

Regional Original Income, namely income originating from within the region concerned which is the result of regional taxes, regional retribution results, profits from regionally owned companies and also other legitimate regional income. PAD is an income that shows the ability of a region to collect sources of funds to finance regional activities (Sutrisno, 1984). According to article 6 of Law no. 32 of 2012, PAD comes from regional taxes, regional retribution, regional company profits, and official revenue and other legalized income. (Marlina and Pebrina, 2019). The results of this study indicate that PAD has a positive but not significant effect. This result is different.

CONCLUSION

The independent variables that affect the amount of industrial sector revenue calculated in GRDP are PMDN, PMA, Manpower (TK), inflation, poverty, unemployee, and Tax. Industrial sector revenues fluctuated throughout the study year, this is because the independent variables used in this study describe the economic and social linkages that can affect the industrial sector's revenues,

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PMA and PMDN being instruments that provide input on the sustainability of the industrial sector, fund receipts investment provides capital assistance to the industrial sector. Economic growth is strongly influenced by the industrial sector, because it can help reduce the problem of poverty, unemployment and can also provide additional revenue for taxes, but what needs to be considered based on this research is that the inflation rate can affect the company's capital and inventory in terms of production.

TARGET

Research related to the industrial sector is very well done and it is recommended for future researchers to further deepen this research, and in the future can compare with the conditions of the industrial sector in other provinces on the island of Java, and use other independent variables such as the number of labor force, wage levels and sector share. Other economies that are still related to the industrial

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