

Factors Affecting Investment: Case in Central Java

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Abstract

This study aims to analyze the factors that influence domestic investment. This research is a quantitative study conducted to determine the direction and magnitude of the influence of the Human Development Index (HDI), District Minimum Wage, Gross Regional Domestic Product (GRDP), Workforce, and Taxes on PMDN in regencies/cities in Central Java province in 2019- 2021. The data used is a combination of time series and cross section data obtained from BPS Central Java. The analysis tool used is panel data regression. The selected model is the FEM model. Based on the results of the analysis that has been done, it can be concluded that there are two variables that have a positive and significant effect on PMDN in the model, namely GRDP and UMK. Meanwhile, the other three variables have no significant effect on PMDN. Based on research that has been done to keep the investment climate stable, the government can increase the minimum wage and maintain economic stability.

Keywords: PMDN; HDI; GRDP; UMK; Workforce; Tax

1. Introduction

Investment is an important factor to increase the economic growth of a region. The formation of this investment has been seen as one of the main factors in economic development. For example, investment in capital equipment or capital formation can not only increase production or economic growth, but can also provide employment opportunities for people. Thus, there is a positive relationship between investment formation and economic growth [1].

Economic theory interprets or defines investment as expenditures to purchase capital goods and production equipment with the aim of replacing and especially adding to capital goods in the economy that will be used to produce goods and services in the future. In other words, investment means shopping activities to increase the production capacity of an economy [2].

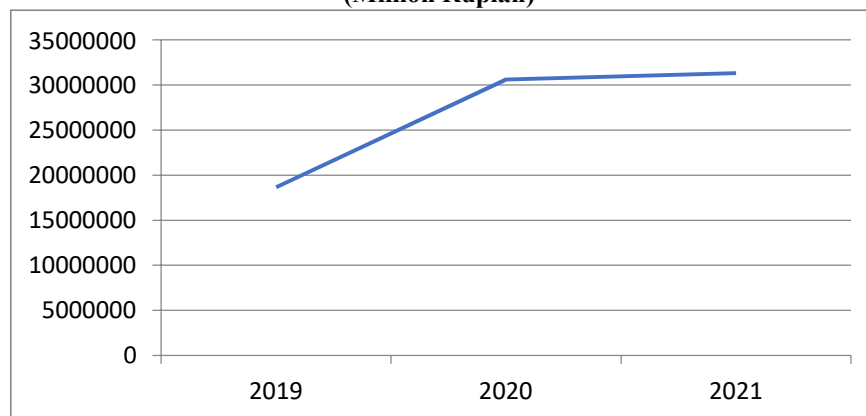
Indonesia's experience so far also shows how important investment is for the continuity of development or domestic economic growth. Based on BPS data, since early 2000, Indonesia's GDP has indeed experienced positive growth, after two consecutive years previously being negative. However, the growth rate is very low, especially when compared to the average annual growth experienced by Indonesia in the pre-crisis period [3], [43].

Investment achievements or Domestic Investment (PMDN) in Central Java Province came from an increase in the workforce in Central Java. Where when the number of workers increases, PMDN in Central Java will increase because many investors will invest their capital in the country to gain profits or to increase investment value.

The highest investment in Central Java occurred at the end of 2020. This success was driven by a conducive situation, transparent and accountable licensing in accordance with legislation, so as to create a comfortable investment climate for investors in 2020.

The development of domestic investment in Central Java Province during the 2019-2021 period tends to increase from year to year. Since 2019 investment has increased, and will increase significantly in 2020. During 2019-2021 Central Java Province has begun to organize its economic stability which has caused the inflation rate to be reduced. Investments are starting to gain trust and want to re-invest their capital.

Graph 1: Investment Development in Central Java Province for the 2019-2021 Period (Million Rupiah)



Graph 1 presents the realization of Domestic Investment (PMDN) in Central Java Province during the 2019-2021 period, which has always increased from year to year. In 2021, the highest investment value during the research period is Rp. 31,311,180.80 million. The lowest realization of domestic investment in Central Java Province occurred in 2019, namely Rp. 18,654,680.80 million. Even though it is low, during 2019, Central Java achieved its realization target of Rp. 47.24 trillion, namely FDI of Rp. 32.27 trillion and PMDN of Rp.18.65 trillion. Central Java is the prima donna of investment from various countries, because the investment climate is calm, the progress of infrastructure development and the social conditions of the people of Central Java will improve investment competitiveness.

PMDN achievements in Central Java are considered fantastic because there is flexibility compared to other regions in dealing with a pandemic. The new normal habits that have been implemented in the world of work and handling of COVID-19 by the government within 7 months have been able to restore investor confidence to carry out activities for investment in stages, and investment achievements in 2020 in Central Java are still positive even in the midst of the Covid-19 pandemic. Investment achievements in 2020 were able to penetrate Rp. 30,606,130 million. This is due to the successful investment in Central Java Province in 2020, triggered by a conducive situation, transparent and accountable permits in accordance with legislation, so as to be able to create a comfortable investment climate for investors in 2020. Many factors influence investment. Domestic Capital in Central Java Province, one of which is the Human Development Index.

The Human Development Index is a comparative measure of life expectancy, literacy, education and standard of living. HDI explains how residents access development results in obtaining income, health, education and so on [4]. Over the past 10 years, Central Java's HDI has increased by an average of 0.80 percent per year. The lowest increase in HDI occurred in 2020, during the Covid-19 pandemic of 71.87, up only 0.20 percent from the previous year.

GRDP is all goods and services as a result of economic activities operating in the domestic area, regardless of whether the factors of production come from or are owned by residents of the area or are domestic products of the area concerned [5]. BPS noted, Central Java's GRDP reached Rp. 1.42 quadrillion in 2021, this number is higher than in 2020 which experienced a contraction of 2.65%.

Wages are the compensation received by a unit of labor in the form of the amount of money paid to them [6]. The Investment Coordinating Board (BKPM) stated that low wages are the main attraction of Central Java in attracting labour-intensive investment. Central Java Provincial Minimum Wage (UMP) in 2020 is only Rp. 1.4 million lower than neighboring provinces such as East Java of Rp. 1.76 and West Java 1.81 million. In the midst of a stagnant economy, investment in Central Java offers a low UMP which is an attractive option for investors.

The workforce is the population of working age (15 years and over) who are still in school, taking care of the household or carrying out other activities besides personal activities [7]. Central Java Province is listed as one of the provinces that absorbs the second largest number of workers in Indonesia. Although the realization of Central Java in 2022 ranks 9th nationally, the impact of job creation in Central Java is the highest.

Tax revenues are all revenues consisting of domestic taxes and international trade taxes [8]. Taxes really help investment in Central Java, one example is in the city of Semarang. One of the various investment opportunities in the city of Semarang is to provide local tax relief for up to six months

after the business starts operating. Apart from that, it also provides relief regarding Land and Building Rights Acquisition Fees (BPHTB) and Conditional Exemption (PB) and all of them with a proportional calculation of the investment value.

The difference between this research and previous studies lies in the variables and research objects. This study uses variables related to labor and income, namely workforces and wages. This is because the variables related to the workforce and wages are factors that are close to investment in influencing the welfare of the population. In addition, the object of this research is the Regency/City of Central Java Province where the area has abundant resources and ease in fulfilling the workforce. In addition, from 2019 to 2021 the value of domestic investment in Regencies/Cities in Central Java Province tends to increase. Several previous studies on domestic investment have not included the Human Development Index variable as one of the factors estimated to affect domestic investment [9][10][11].

Currently, Central Java is still optimizing Domestic Investment (PMDN), so various efforts are still needed to increase PMDN. Based on the background of the problems that have been described, this study aims to determine the direction and magnitude of the influence of the Human Development Index, District Minimum Wage, Gross Regional Domestic Product, Workforce and Taxes on PMDN in Central Java during the 2019-2021 period.

2. Literature Review

2.1. Human Development Index

Human Development Index (HDI) which is one way to measure progress in human development. HDI provides a better development achievement because it does not only measure economic achievement. The figures in the HDI are a combination of 3 (three) main dimensions including longevity and healthy life as measured using Life Expectancy (LE), in the field of education it is measured using the Average Length of Schooling (ALS), and Living Standards Eligible which can be measured using Per Capita Income Level [12].

This HDI focuses more on people concerned or people first, which means that the main development is humans. This is because residents can offer their skills and abilities to the production sector to obtain services. The production sector, both private and government, which has a workforce with good skills certainly increases the profit potential. This is attractive for potential domestic and foreign investors to invest their funds in this sector [13].

In Aceh Province during the 2010-2019 period using Ordinary Least Square (OLS) regression analysis, found that the Human Development Index and economic growth had a significant effect on investment, while the poor were found to have no effect on investment [14]. Meanwhile, using panel data regression analysis it is known that the Human Development Index has a one-way relationship with investment in 44 developing countries during the period 1991-2018 [15].

In developing countries during the period 2003-2019 using panel data regression analysis, found that HDI had a significant effect on investment, birth rate, GDP and unemployment were found to have no effect on investment [16]. In Cameroon during the period 1995-2019, using OLS (Ordinary Least Square) regression analysis, found that HDI, imports, exports and GDP had no significant effect on investment [17], [44].

2.2. District Minimum Wage

Wages are payments of money obtained as a form of service provided and provided by workers to employers [18]. According to the Labor Law No.13 of 2000, Chapter I, article 1, paragraph 30, wages are rights of workers/laborers who are received and expressed in the form of money as compensation from employers/employers to workers/laborers who are determined and paid according to a work agreements, agreements, or regulations and/or services that have been or will be performed.

Keynesian theory states that an increase in the wage rate can result in an increase in the demand for money, both with transactional and speculative motives. When there is an increase in interest rates, interest rates for deposits and credit for loans also increase, so that later these interest rates will affect the ups and downs of investment [19].

During the 2011-2015 period, using the Ordinary Least Square (OLS) regression, in Central Java it was found that the wage and CPI variables had an effect on investment. Economic growth was found to have no effect on investment [20]. During the 2000-2021 period, using the Ordinary Least Square (OLS) regression, in Indonesia it was found that the variables of inflation and credit interest rates had an effect on investment. Economic growth was found to have no effect on investment [21].

2.3. Gross Regional Domestic Product

Gross Regional Domestic Product (GRDP) is the total market value of all goods and services produced by a region or province within a certain year. An important indicator to be able to determine the economic condition of a region in a certain period of time is to use Gross Regional Domestic Product (GRDP) data, which can be used at current prices or at constant prices [18].

There is a close relationship between investment and income in an area. An increase in the level of income results in an increase in the demand for consumer goods and services. Increasing the income of a region results in an increase in the number of investment projects implemented by the community. In this case investment is a function of income, namely $I = f(Y_d)$ [22]. The relationship between investment and regional income is positive, meaning that if GRDP increases it will spur investors to invest. But if the GDP decreases, it will reduce the interest of investors to invest.

Research using Ordinary Least Square (OLS) regression analysis found that PAD and economic growth had a significant effect on investment in Indonesia during the 2006-2015 period [10]. The exchange rate was found to have no effect on investment. During the 1990- 2015 period using the Granger Causality in Ghana it was found that inflation and GDP variables had an effect on investment [23].

Meanwhile, research using Auto Regressive Distributed Lag (ARDL) found that GDP had a significant effect on investment in South Africa during the period 1995-2016 [24]. Meanwhile, in Afghanistan during the period 2010-2014 using Granger causality analysis it is known that GDP and energy consumption have a significant effect on investment [25]. In Afghanistan during the period 1991-2017, using the Ordinary Least Square (OLS) regression, GDP was found to have a significant effect on investment. Exports and Imports were found to have no effect on investment [26].

2.4. Workforce

Labor is every person, male or female, who is in or will do work, both outside and in work relations to produce goods or services to meet community needs, in other words people of working age are considered capable of working [7].

Lewis said that overstaffing was an opportunity and not a problem. An excess of workers in one sector will benefit output growth and the supply of workers in other sectors. There are two sectors in the economy of developing countries, namely the modern sector and the traditional sector. The relationship between labor and domestic investment is very significant. That is, the availability of labor will increase investment, conversely if the workforce owned by a region is small it will reduce investment [27].

In Indonesia during the period 1989-2019 using Ordinary Least Square (OLS) regression analysis found that GDP and exports had a significant effect on investment, while labor and exchange rates were found to have no effect on investment [28]. In North Sulawesi during the 2003-2018 period using Ordinary Least Square (OLS) multiple regression analysis, found that the workforce had an effect on investment. Inflation and interest rates were found to have no effect on investment [11].

2.5. Tax

Taxes are payments of contributions by the people to the government that are regulated by law without direct compensation. In general, taxes collected by the government can be divided into two groups, namely direct taxes and indirect taxes. Direct tax is a type of government levy that is collected directly from parties who are required to pay taxes. Every individual who works and companies that carry out activities and benefits are obliged to pay taxes. Meanwhile, indirect taxes are taxes that can be transferred to other parties. Among the important types of indirect taxes are import taxes and sales taxes [29].

As an investor, all activities, whether positive or negative, are influenced by state taxes. Taxation plays an important role in the political economy which is called globalization and if a country lowers tax rates it will increase the process of growth and development of a country's investment [30].

During the 1985-2020 period using Auto Regressive Distributed Lag (ARDL) and Error Correction Model (ECM), in Pakistan it was found that the variables of taxes, GDP, open trade, and exchange rates had an effect on investment. Interest rates were found to have no effect on investment [31].

3. Research Methods

This research is a quantitative research with secondary data obtained from the Central Bureau of Statistics (BPS). The purpose of this research is to estimate and find out the magnitude of the influence of the factors influencing investment in the Regency/City of Central Java in 2019-2021. The data used is a combination of time-series data and cross section. This research used a panel data regression analysis tool with the eviews 9 application. This research was conducted in 35 regencies/cities in Central Java Province during the 2019- 2021 period. The selection of panel data analysis tools is based on the reason that this analysis tool is suitable for studying the dynamics of changes every year and the data is complete and informative.

The research data used is time series data from 2019-2021 and cross sections in 35 regencies/cities in Central Java Province, which were obtained from the Central Bureau of Statistics (BPS). The econometric model in this study was modified from the research model used by several previous studies [15][16]. The econometric model used is as follows:

$$\ln(DI)_{it} = \beta_0 + \beta_1 HDI_{it} + \beta_2 \ln(DMW)_{it} + \beta_3 \ln(GRDP)_{it} + \beta_4 \ln(LF)_{it} + \beta_5 \ln(TXS)_{it} + \varepsilon_{it} \quad (1)$$

wherein:

DI	= Domestic Investment (Million Rupiah)
HDI	= Human Development Index (%)
DMW	= District Minimum Wage (Rupiah)
GRDP	= Gross Regional Domestic Product (Million Rupiah)
WF	= Workforce (Soul)
TXS	= Taxes (billion RP)
β_0	= constants
$\beta_1 \dots \beta_6$	= Regression Coefficient
i	= Regency/City
t	= t year
log	= Natural logarithm

The dependent variable used in this study is PMDN. The dependent variable is the variable that is affected or which is the result because of the independent variables. Meanwhile, the independent variable is a variable that influences or causes a change or emergence of the dependent variable [32]. The dependent variable and independent variable used in this study include:

Table 1. Operational Variable Definitions

No	Variable	Operational Definition	Unit	Resource
1.	Domestic Investment	Total investment made by domestic entities in all economic sectors during one year.	Million Rupiah	Capital Investment Coordinating Board (CICB)
2.	Human Development Index	Comparative measures of life expectancy, literacy, education and standard of living.	Percent	Central Bureau of Statistics (CBS)
3.	Tax	All revenues consist of domestic taxes and international trade taxes.	Billion Rupiah	Central Bureau of Statistics (CBS)
4.	District Minimum Wage	The lowest monthly wage set by the governor consisting of wages without allowances or basic wages with fixed allowances.	Rupiah	Central Bureau of Statistics (CBS)
5.	Gross Regional Domestic Product	All goods and services as a result of economic activities operating in the domestic area, regardless of whether the factors of production come from or are owned by residents of the area or are domestic products of the area concerned.	Million	Central Bureau of Statistics (CBS)
6.	Workforce	Residents aged 15 years and over	Soul	Central Bureau

who work, or have a job but are temporarily not working. of Statistics (CBS)

The steps for estimating the econometric model above will include: parameter estimation of the panel data model using the Pooled Least Squares (PLS) approach, Fixed Effect Model (FEM), and Random Effect Model (REM). Then the selection of the best estimator model with the Chow test and Hausman test and if necessary Lagrange Multiplier test, test the goodness of the model on the selected estimator model, and test the validity of the effect on the selected estimator model.

4. Result

The estimation results of the econometric model in advance using the Pooled Least Square (PLS) approach, the Fixed Effect Model (FEM) and the Random Effect Model (REM) along with the results of the model selection test are summarized in Table 2.

Table 2 Estimation Results of Panel Data Regression Econometric Models - Cross section

Variable	Regression Coefficient		
	PLS	FEM	REM
<i>C</i>	-64,44846	-304,2101	-90,24754
<i>LOG(GRDP)</i>	0,368759	11,36504	0,291788
<i>LOG(DMW)</i>	4,577118	7,591077	6,380519
<i>HDI</i>	-0,016238	-0,006373	-0,015547
<i>LOG(WF)</i>	0,179106	2,145559	0,290898
<i>LOG(TXS)</i>	0,745368	0,552439	0,613341
<i>R²</i>	0,505051	0,798299	0,415084
<i>Adjusted. R²</i>	0,480054	0,677279	0,385542
Statistic <i>F</i>	20,20415	6,596408	14,05100
Model selection test			
(1) Chow			
Cross- Section $F(34,65) = 2,779474$; Prob. $F(34,65) = 0,00002$			
(2) Hausman			
Cross-Section random $\chi^2(5) = 13,654451$; Prob. $\chi^2(5) = 0,0180$			

Resource: CBS, processed.

From Table 2, it can be seen that the p-value, probability or statistical empirical significance of χ^2 is 0.00002 (<0.01), so H_0 is rejected. In conclusion, the estimated model is the Fixed Effect Model (FEM).

4.1. Estimate Model Selection Test

The Chow test and Hausman test will be used to select the best estimated model – Pooled Least Square (PLS), Fixed Effect Model (FEM) or Random Effect Model (REM). If it turns out that the Chow Test selected Pooled Least Square (PLS) and the Hausman test selected Random Effect Model (REM), then an additional test must be carried out, namely the Lagrange Multiplier (LM) test to select the best estimated model between Pooled Least Square(PLS) and Random Effect Model (REM).

4.2. Chow Test

The Chow test is used to determine the PLS or FEM estimated model. The H_0 of Chow's test: the estimated model is Pooled Least Squares (PLS), and the H_a : the estimated model is the Fixed Effect Model (FEM). H_0 is accepted if the p value, probability or statistical empirical significance of $F > \alpha$; H_0 is rejected if the p-value, probability or statistical empirical significance of $F < \alpha$. The Chow test results can be seen in Table 2.

From Table 1 it can be seen that the p value, probability or empirical statistical significance of F is 0.0000 (<0.01), so H_0 is rejected. In conclusion, the estimated model is FEM.

4.3. Hausman Test

The Hausman test is used to select the FEM or REM estimated model. Hausman test H_0 : the estimated model is the Random Effect Model (REM) and the H_a : the estimated model is the Fixed Effect Model (FEM). H_0 is accepted if the p-value, probability or statistical empirical significance is

$\chi^2 > \alpha$; and H_0 is rejected if the p-value, probability or statistical empirical significance is $\chi^2 < \alpha$. The results of the Hausman test can be seen in Table 1.

From Table 1 it can be seen that the p-value, probability or statistical empirical significance of χ^2 is 0.0180 (< 0.05), so H_0 is rejected. In conclusion, the estimated model is FEM.

The Chow test and Hausman test show that (FEM) was selected as the best estimated model, as seen from the probability or empirical significance of the F statistic with a value of 0.0000 (< 0.01) and a statistic of χ^2 with a value of 0.0180 (< 0.05). The complete estimation results from the FEM estimated model are shown in Table 2.

Table 3 Fixed Effect Model (FEM)

$\log(DI)_{it} = -304,2101 + 11,36504 \log(GRDB)_{it} + 7,591077 \log(DMW)_{it}$		
	(0.0115)**	(0.0007)*
$-0.006373HDI_{it} + 2.145559 \log(WF)_{it} + 0.552439 \log(TXS)_{it}$		
	(0.7292)	(0.4985) (0.5818)
$R^2 = 0.798299$; $DW = 3.246858$; $F = 6.596408$; Prob. $F = 0.0000000$		

Resource: CBS, processed. **information** *Significant at $\alpha = 0.01$; **Significant at $\alpha = 0.05$;

***Significant at $\alpha = 0.10$; The number in brackets is the probability of the t statistic.

4.4. FEM Estimated Model Existence Test

The model exists when at least one independent variable affects the dependent variable (not all regression coefficients are zero). The model existence test is the F test. Because in the best estimated model FEM (Fixed Effect Model) there are 5 independent variables, the hypothesis formulation is: $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ (the regression coefficients of the four variables are zero or the model does not exist); $H_a: \beta_1 \neq 0 \vee \beta_2 \neq 0 \vee \beta_3 \neq 0 \vee \beta_4 \neq 0 \vee \beta_5 \neq 0$ (at least one regression coefficient is not equal to zero or the model exists). H_0 will be accepted if the p-value, probability, or statistical empirical significance of $F > \alpha$; H_0 will be rejected if the p-value, probability, or statistical empirical significance of $F < \alpha$.

From Table 3, it can be seen that the p-value, probability, or statistical empirical significance of F is 0.0000 (< 0.01); so H_0 is rejected. In conclusion, the FEM estimated model exists.

4.5. Interpretation of the Coefficient of Determination (R^2)

The coefficient of determination (R^2) shows the predictive power of the estimated model. From Table 3 it can be seen that the R^2 value in the Fixed Effect Model (FEM) is 0.798299 meaning that 79.8% of the variation in the Domestic Investment variable can be explained by the HDI, Workforce, GRDP, DMW and Tax variables. The remaining 20.2% is influenced by variables or other factors not included in the model.

4.6. Test the Validity of the Effect of Independent Variables on the FEM Estimated Model

The effect validity test examines the significance of the effect of the independent variables individually or partially. Test the validity of the effect using the t test. H_0 t test is $\beta_i = 0$, independent variable i in the estimated model has no significant effect; The H_a is $\beta_i \neq 0$: the i independent variable in the estimated model has a significant effect. H_0 will be accepted if the p value, probability, or statistical empirical significance is $t > \alpha$; H_0 will be rejected if the value of p p(value), probability, or statistically significant empirical $t < \alpha$. The results of the influence validity test can be seen in Table 3.

4.7. Interpretation of Independent Variable Effects

Based on the influence validity test in Table 4, it can be seen that GRDP and DMW have an influence on DI. Meanwhile, the Workforce, HDI and Taxes have no influence on DI in Central Java Regencies/Cities.

Table 4. Validity Test Results for the Effect of Independent Variables

Variabel	Sig.t	Kriteria	Kesimpulan
$\log(GRDP)$	0.0115	< 0.05	Significant at $\alpha = 0.05$
$\log(DMW)$	0.0007	< 0.01	Significant at $\alpha = 0.01$
HDI	0.7292	> 0.10	Not significant

<i>LOG(WF)</i>	0.4985	> 0.10	Not significant
<i>LOG(TXS)</i>	0.5818	> 0.10	Not significant

Sumner: The writer, processed.

The GRDP variable has a regression coefficient value of 11.36504, with a logarithmic- logarithmic relationship pattern. That is, if GRDP increases by 1 percent, PMDN will increase by 11.36504 percent. Preferably, if GRDP has decreased by 1 percent, then PMDN will decrease by 11.36504 percent.

The DMW variable has a regression coefficient value of 7.591077, with a logarithmic- logarithmic relationship pattern. That is, if the DMW increases by 1 percent, DI will increase by 7.591077 percent. Preferably, if the DMW decreased by 1 percent, the DI would decrease by 7.591077 percent.

4.8. Economic Interpretation

DI in Central Java Regencies/Cities during the 2019-2021 period turned out to be influenced by GRDP and DMW. Meanwhile, the Workforce, HDI and Taxes have no influence on di in Central Java Regencies/Cities.

4.9. Gross Regional Domestic Product

The increase in GRDP as an illustration of the added value of goods and services produced by all business units in a region is a reflection of the increase in regional economic growth dueto increased public consumption. This is able to become a stimulus for investors to invest inthe form of domestic investment, so that when the GRDP of Central Java Province increases it will increase PMDN in Central Java Province.

The higher the level of economic growth, the higher the interest of investors to invest their capital. High economic growth shows the country's ability to increase economic capacity, so that it can attract investors to invest their funds because large economic growth will have an impact on increasing the country's ability to produce goods and services. This is a favorable and positive situation for investors to invest in the country.

The results of this study are supported by research conducted by [33] that GRDP has apositive effect on PMDN. [30] also found that GRDP has a positive effect on DI. Research [34] found the same thing that GRDP has an effect on DI in Indonesia.

4.10. District Minimum Wage

The results of the study found that the District Minimum Wage has a positive effect on DI. This is not in accordance with the hypothesis that the higher the wage, the lower the DI. However, in some cases, investors are willing to pay high wages, it is assumed that workers have good quality and skilled human resources. As long as wages are still at the production equilibrium point, an increase in the UMP can increase worker productivity and increase investor profits.

This research is supported by the efficiency-wage theory which states that high wagesmake workers more productive. So, even though a reduction in wages will lower a company's wage bill, it will also decrease worker productivity and company profits. The first efficiency- wage theory argued that higher wages made workers more productive. The effect of wages on worker efficiency may explain the failure of firms to cut wages despite an excess supply of labour. Although it will reduce the company's wage bill, the reduction in wages will lower worker productivity and company profits. The second efficiency-wage theory, states that high wages reduce labor turnover. By paying high wages, companies reduce the frequency with which workers are out of work, while reducing the time it takes for companies to attract and train new workers. The third efficiency-wage theory states that the average quality of a firm's workforce depends on the wages it pays its employees. If the company reduces its wages, then the best workers can take jobs elsewhere, leaving the company with uneducated workers who have few alternatives. And the fourth efficiency-wage theory states that high wages increase worker effort. This theory asserts that companies cannot perfectly monitor the efforts of workers, and workers must decide for themselves how hard they will work. The higher the wages, the greater the loss for workers if they get fired. By not being lazy and thereby increasing their productivity. Although the four efficiency-wage theories differ in detail, they address the same topic: because firms operate more efficiently if they pay their workers high wages, firms can perceive that maintaining wages above a level that balances supply and demand is a profitable [35].

The results of this study are supported by research conducted by [36] which found that wages affect investment in Java. [37], [42] also found the same thing that wages have a positive effect on investment in Kalimantan.

4.11. Human Development Index

The results of the study found that HDI had no effect on DI. It can be explained that increasing human development will lead to increased productivity. In general, investors prefer a productive production sector. This productivity is assumed to attract foreign investors to invest their funds in the country. If the HDI increases and the economy improves, it is possible that the country will enter the mature category, so that more and more domestic capital will be used for investment, both domestic and foreign. The state will invest a lot of funds abroad because domestic investment needs have been fulfilled.

The results of this study are supported by research conducted [38] that the Human Development Index has no effect on investment in Indonesia. [39] also found that the Human Development Index had no effect on investment in Malang Regency

4.12. Workforce

From the processing results it was found that the labor variable had no influence on Domestic Investment. According to Lewis, excess workers are an opportunity and not a problem. Excess workers in one sector will contribute to output growth and supply of workers in other sectors. Lewis further argued that there are two sectors in the economy of developing countries, namely the modern sector and the traditional sector. The initial hypothesis said that labor will have a positive effect on domestic investment.

Based on the results of the analysis and theory it was not appropriate. This is because even though the availability of abundant labor in Central Java Province does not always have a significant effect on DI. The mismatch factor between the labor demand by investors against the available workforce. This resulted in that the workforce is not so influential on domestic investment. The increase in the number of workers was relatively not followed by an increase in the quality of the workforce. So that an increase in labor is perceived by investors as an increase in the risk of conflict with workers, in the form of demonstrations, strikes and the potential for social jealousy with existing foreign workers. This is why the workforce has no effect on investment in Central Java.

In addition, the quantity of the workforce is not matched by the quality of the workforce, so it is unable to contribute significantly to DI. The large number of workers in Central Java province does not necessarily make it profitable for investors who invest capital, there are many labor issues that have not been addressed so that they do not have a significant effect on DI flows. The large number of uneducated workforce contributes to productivity. Low productivity levels result in losses for entrepreneurs and cause PMDN flows to decline due to investors' distrust of the returns on their capital gains.

The results of this study are supported by research conducted [28] that workforce has no effect on DI. [40] also found that workforce had no effect on DI in East Java Province during the 2003-2020 period.

4.13. Tax

The results of the study found that taxes had no effect on DI. The initial hypothesis says that the tax rate has a negative effect on DI. The higher the tax rate that applies in a country, it will reduce the number of investors who will invest in that country, because a high tax rate will reduce the amount of profit/profit from the company. Investors will invest in countries that set low tax rates, so this will benefit investors.

Taxes on company profits can affect investment, although this tends to be insignificant. There are other factors that are considered by investors in making investment decisions, such as the ease of licensing, the size of the domestic market, access to international markets, infrastructure, social and security conditions, and the availability of human resources. The point of institutional stability, credibility and transparency is key for investors, before tax incentives. So the relationship between taxes and investment is not so strong.

The results of this study are supported by research conducted [30] that taxes have no effect on investment. [41] also found the same thing that taxes have no effect on investment.

5. Conclusion

The Fixed Effect Model (FEM) estimated model was chosen as the best estimation result. The goodness-of-fit test of the FEM estimated model shows that the FEM estimated model exists with a coefficient of determination (R^2) of 0.798299 meaning that 79.8% of the variation in the Domestic Investment variable can be explained by the HDI, Workforce, GRDP, DMW and

Tax variables. The remaining 20.2% is influenced by variables or other factors not included in the model. The results of the influence validity test (t test) show that the independent variables that have an influence on PMDN in Central Java in 2019-2021 are GRDP and DMW. Meanwhile, the Workforce, HDI and Taxes have no influence on DI in Central Java Regencies/Cities.

The government should be able to encourage domestic investors to invest and create a conducive climate for domestic investment because the current year's investment value will be very influential for the future. It is hoped that future studies will be able to use other variables that are more complex and measurable in explaining the factors of domestic investment, considering that the independent variables used in this study are still not fully able to explain the factors Domestic Investment in a more comprehensive country. In addition, future researchers are expected to be able to use complex and systematic analytical tools to explain the factors of domestic investment in the short and long term.

References

- [1] A. Fuadi, "Analysis of Factors Influencing PMDN in Central Java in 1985-2010," Semarang State University, 2013.
- [2] S. Sukirno, *Introductory Macroeconomic Theory*. Jakarta: PT Raja Grafindo Persada., 2011.
- [3] T. Tambunan, *Indonesian Economy: Theory and Empirical Findings*. Jakarta: Salemba Empat, 2010.
- [4] BPS, *Human Development Index*. Jakarta: Central Bureau of Statistics., 2021.
- [5] BPS, *Gross Regional Domestic Product*. Jakarta: Central Bureau of Statistics, 2021.
- [6] I. Suhendra and B. A. Wicaksono, "Levels of Education, Wages, Inflation and Economic Growth on Unemployment," *JEQu*, vol. 6, no. 1, pp. 1–17, 2016.
- [7] BPS, "Manpower," 2021.
- [8] Ministry of Finance, *Tax*. Jakarta: Ministry of Finance., 2021.
- [9] E. L. Nisa and W. Juliprijanto, "Analysis of Factors Influencing Foreign Direct Investment in Indonesia in 1989-2019," *Transeconomics of Accounting, Business and Finance*, vol. 2, no. 1, pp. 29-43., 2022.
- [10] M. Mulyani, "Factors Influencing Government Investment in the Agricultural Sector in Jambi Province," *J. Media Agribusiness*, vol. 2, no. 2, pp. 85-91., 2017.
- [11] C. Tarigan, T. O. Rotisulu, and K. D. Tolosang, "Fa Analysis[1] T. Dartanto, IPM, Hopes and Challenges for Indonesia's Future. Jakarta: Media Indonesia., 2020. Factors Affecting PMDN Investment in North Sulawesi Province in 2003-2018., "J. EMBA, vol. 9, no. 2, pp. 516-522., 2021.
- [12] T. Dartanto, *HDI, Hopes and Challenges for Indonesia's Future*. Jakarta: Media Indonesia., 2020.
- [13] Y. Astikawati and A. D. Sore, "The Effect of the Human Development Index and Economic Growth on Foreign Investment in Indonesia," *Pacioli J. Kaji. account. and Finance.*, vol. 1, no. 1, pp. 15-21., 2021.
- [14] M. Qismullah, "Analysis of the Influence of the Human Development Index (IPM), Gross Regional Domestic Product (GDP), Number of Poor Population & Number of Visits of Tourists on Halal Tourism Sector Investment in Aceh Province," *J. Ilm. Ms.*, vol. 8, no. 2, pp. 1-10., 2021.
- [15] J. G. Djokoto, F. K. Gidiglo, F. Y. Srofenyo, and A. A. Afrane, "Human Development Effects of Food Manufacturing Foreign Direct Investment," *Int. J. food Agric. Econ.*, vol. 10, no. 1, pp. 23-39., 2022.
- [16] S. A. Apostu, A. T. Tudor, A. Socol, O. R. Ivan, C. Mihaescu, and E. Gogu, "Determinants of Foreign Direct Investment in the Least Developed Countries: Static and Dynamic Panel Data Evidence, Economic Computation and Economic," *Cyberne. Stud. Res.*, vol. 53, no. 3, pp. 21-35., 2022.
- [17] O. M. Mbang, "Foreign Direct Investment and Human Development in Cameroon.," *Am. J. Ind. buses. Manag.*, vol. 12, p. 58-72., 2022.

- [18] S. Sukirno, *Introductory Macroeconomic Theory*. Jakarta: Raja Wali Press., 2016.
- [19] K. Anggrainy, "Analysis of the Impact of City Minimum Wage Increases on Employment and Investment Opportunities," *J. Ilm. Univ. Brawijaya*, vol. 1, no. 1, 2015.
- [20] I. R. Briwantara, "Analysis of Patterns of Investment Distribution and Factors Affecting It in Central Java," *Econ. Dev. Anal. Journals*, vol. 7, no. 1, pp. 68–77, 2018.
- [21] K. M. Hendika and E. Setyowati, "Analysis of the Effect of Credit Interest Rates, Gross Domestic Product, and Inflation On Domestic Investment in Indonesia in 2000- 2021.," *Int. J. Islam. Econ.*, vol. 4, no. 1, pp. 49-59., 2022.
- [22] M. Todaro and C. S. Smith, *Economic Development: Eleventh Edition Volume 2*. Jakarta: Erlangga., 2011.
- [23] M. Asiamah, D. Ofari, and J. Afful, "Analysis of the Determinants of Foreign Direct Investment in Ghana.," *JABES*, vol. 26, no. 1, pp. 57-75., 2018.
- [24] D. F. Mayes and T. Habanabakize, "An Analysis of the Relationship between Foreign Direct Investment (FDI), Political Risk and Economic Growth in South Africa," *Bus. Econ. Horizons.*, vol. 14, no. 4, pp. 777-788., 2018.
- [25] W. Fan and Y. Hao, "An Empirical Research on the Relationship Amongst Consumption, Economic Growth and Foreign Direct Investment in China.," *Renew. Energy*, vol. 146, pp. 598-609., 2020.
- [26] A. Q. Shafaq and M. Eryigit, "Factors Affecting Foreign Direct Investment: The Afghanistan Case.," *Econ. App.*, vol. 39, no. 1, pp. 185-195., 2020.
- [27] H. Setiawan, "Analysis of the Influence of the Provincial Minimum Wage, Labor, and Infrastructure on Foreign Investment in DKI Jakarta Province," 2014.
- [28] E. L. Nisa and W. Juliprijanto, "Analysis of Factors Influencing Foreign Direct Investment in Indonesia in 1989-2019," *Transeconomics of Accounting, Business and Finance*, vol. 2, no. 1, pp. 29–43, 2022.
- [29] T. Ismail, *Tax Law and Tax Procedures*. Jakarta: FHSIP-UT, 2017.
- [30] P. K. Dewi and N. Triaryati, "The Influence of Economic Growth, Interest Rates and Taxes on Foreign Direct Investment," *E-Jurnal Manaj.*, vol. 4, no. 4, pp. 1–10, 2015.
- [31] M. N. Shafiq, L. Hua, M. A. Bhatti, and S. Gillani, "Impact of Taxation on Foreign Direct Investment Empirical Evidence from Pakistan," *Pakistan J. Humanit. Soc. Sciences.*, vol. 9, no. 1, pp. 10-18., 2021.
- [32] Sugiyono, *Educational Research Methods with Quantitative, Qualitative, and R&D Approaches*. London: Alphabetta., 2009.
- [33] I. T. Murdo, J. Affan, and R. A. Albertus, "Development of Domestic Investment (PMDN) in the last 2 decades and the influencing factors," *J. Ekobis Dewantara*, vol. 6, no. 4, 2023.
- [34] S. P. Desweni, "Analysis of Investment and Economic Growth in Indonesia," *J. Menara Ekon. Researcher. And Kaji. Science. bid. Econ.*, vol. 3, no. 5, 2017.
- [35] N. G. Mankiw, E. Quah, and P. Wilson, *Introduction to Macroeconomics*. Jakarta: Salemba Empat, 2012.
- [36] D. O. Sitorus, "The Effect of Per Capita GRDP, Inflation, Provincial Minimum Wage on Foreign Investment in Java," *J. Ilm. Mhs. FEB*, vol. 5, no. 2, 2017.
- [37] W. Meilani, "The Influence of the Provincial Minimum Wage, Inflation and Gross Regional Domestic Against Foreign Capital in Kalimantan," *J. Ekon. Dr.*, vol. 5, no. 2, 2021.
- [38] Y. Astikawati and A. D. Sore, "The Effect of the Human Development Index and Economic Growth on Foreign Investment in Indonesia," *Pacioli J. Kaji. Accounting and Finance.*, vol. 1, pp. 15–21, 2021.
- [39] M. Murniati, "The Influence of Economic Growth, Human Development Index and Regional Minimum Wage on Unemployment Rates through Total Investment in Malang Regency," *SEIKO J. Manag. Bus.*, vol. 4, no. 2, pp. 189–202, 2021.
- [40] B. K. N. Safni, "Factors Influencing Domestic Investment (PMDN) in East Java Province in 2003-2020.," *Indonesian Islamic University.*, 2022.
- [41] W. A. Putri, "Tax Incentives in Forming Investment Decisions," *Monet. account. And Finance.*, vol. 4, no. 2, pp. 132-138., 2017.
- [42] U. T. Dian, "The Effect of Investment Value, Number of Business Units and Minimum Wage on the Demand for Labor for Small and Medium Industries in Central Java Province, 2016
- [43] S. Daryono and A. S Hascaryo, "Analysis of Leading Sectors for Regional Economic Growth in Central Java
- [44] R. F. Ine and M. I. Hasmarini, "Analysis of the Influence of Investment, Inflation, PAD, and Minimum Wage on Labor Absorption in 6 Cities