

ANALYSIS OF FACTORS AFFECTING INVESTMENT IN BALI PROVINCE 2019 – 2022

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Abstract : *Investment is the act or process of allocating a certain amount of funds in the hope of obtaining future profits. This study aims to analyse the influence of the human development index (HDI), gross regional domestic product (GRDP) per capita, labour force (AK), and district/city minimum wage (UMK) on investment in the province of Bali from 2019 to 2022. This study utilises secondary data in the form of panel data, specifically incorporating cross-sectional data from 9 districts / cities in Bali Province and time series data covering the observation range 2019 - 2022. The data analysis technique employed in this study is panel data regression using the Fixed Effect Model (FEM) as the chosen model. The findings indicated a negative correlation between gross regional domestic product (GRDP) per capita and investment. Concurrently, the human development index (HDI), labour force (AK), and district/ city minimum wage (UMK) have no effect on investment in Bali province in 2019-2022.*

Keywords: *Investment, HDI, GRDP per capita, Labor Force, Minimum Wage*

1. Introduction

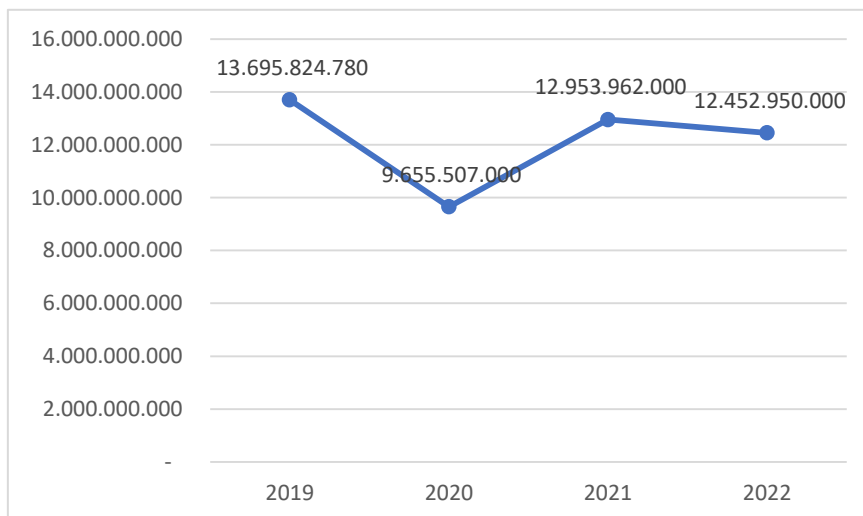
Indonesia is a developing country with a large territory and a large population. In an effort to improve community welfare and overcome development challenges, of course, large enough funds or financing are needed to build an equitable and prosperous economy. According to Todaro (2016), the goal of development is to create a better life through alleviating poverty and hunger, achieving education, and protecting the environment.

In the process of economic development, domestic funds are still unable to meet development needs. Apart from trying to find domestic sources of financing, the government also invites external sources which can come from foreign debt and foreign investment. However, if a country always uses foreign financing in the form of debt, then this can lead to the accumulation of debt in the long term which ultimately becomes a burden for the country in the future.

Investment is part of national production, Investment has the capacity to influence economic expansion, especially in Indonesia as a developing country. The government is aware of the importance of investment in a province, especially in terms of economic growth. Investment and economic growth have a positive relationship to develop a province to be more advanced (Susetyo, 2016).

According to Solow (2010), increasing investment will cause an increase in capital, when the capital stock increases then production or productivity will increase. Therefore, the government and private sector are trying to increase economic growth by investing in both domestic investment (PMDN) and foreign investment (PMA). Data on the amount of PMA and PMDN investment in Bali for the 2019-2022 period is presented in Graph 1

Graph 1
Total PMA & PMDN Investment
Bali Province 2019 – 2022 Rupiah



Source: Bali Province Central Statistics Agency

Graph 1 shows that in 2019-2022, the amount of PMA and PMDN investment tends to fluctuate. However, in 2020, the level of PMA and PMDN investment witnessed a very rapid decrease resulting from the introduction of the Covid-19 pandemic in Indonesia, which had a direct impact on investment, especially in Bali Province. Then the amount of investment increased in 2021 but again experienced a slight decrease in 2022. The difference in the amount of investment shows that there are factors that can influence investment in Bali Province.

The Central Statistics Agency (2023) defines the human development index (HDI) as a composite measure consisting of three fundamental dimensions: longevity, knowledge, and a fair standard of living. The Human Development Index (HDI) explains how people can improve their level of living by considering factors such as income, health, education, and more. Diminished human welfare will have a negative impact on investment endeavours.

Nugroho (2008) states that GRDP per capita is an indicator of the community or market's purchasing power. A country or region with a higher national income per capita or GRDP per capita is going to be more appealing for investment due to the increased purchasing power of its population.

According to Sukirno (2016), with the formation of domestic capital (PMDN) and foreign investment (PMA) will increase the manufacturing process of goods and services, absorbing a big workforce and providing pay, resulting in increased purchasing power and new knowledge for the workforce. By increasing greater investment in the production of goods and services, more labor can be absorbed, it will finally enhance the calibre of human resources.

According to Sirait (2020), increasing the amount of production is influenced by the costs of production factors, especially wages, and increasing the amount of production requires an increase in the stock of capital goods or investment. Therefore, it can be concluded that wages are one of the factors considered by business actors in making decisions regarding increasing capital stock or investment.

According to what has already been said, researchers want to investigate the impact of the Human Development Index, GRDP per capita, Labor Force, Minimum Wage on Investment in Regencies and Cities in the province of Bali in 2019-2022.

1. Literature review

Understanding Investment

According to the Central Statistics Agency (2011), investment is defined as productive capital from Indonesian society that can be used for economic development. This investment includes various assets such as movable and immovable goods owned by the Indonesian people and can be used to run a company's business.

According to Samuelson (2011), investment includes additional capital goods or capital stock of a country, such as buildings, production equipment and inventories, within one year. Investment can be considered a sacrifice for greater consumption in the future.

Investment, according to economic theory, refers to the spending on capital goods and production equipment. The purpose of this expenditure is to replace existing capital goods and, more importantly, to increase the overall stock of capital goods in the economy. These capital goods are essential for producing commodities and services in the future. Investment refers to the act of allocating resources to enhance the output of an economy (Sukirno, 2011).

Factors That Influence Investment

1. Human Development Index

Based on the Central Statistics Agency, the Human Development Index (HDI) elucidates the means by which individuals might attain improved outcomes in across the spectrum of income, education, health, and other relevant areas of development. The Human Development Index (HDI) is utilised to categorise countries as developed, developing, or undeveloped. It also acts as an instrument to assess the impact of economic policy on the general level of life. HDI reflects the ability of a country's people to work. If the HDI is high, it can be considered that the people of a country have a quality workforce, while a low HDI indicates a low level of workforce capability.

IPM emphasizes the concept of people concerned or putting people first, which means that the main development is people. In this context, development aims to empower people and give them the freedom to actualize themselves. Human development is commonly understood as a systematic effort to expand the range of options accessible to a given population (Asnidar, 2018).

2. Gross Regional Domestic Product Per Capita

According to Sitorus & Sakti (2017), GRDP per capita refers to the mean income of the people in a certain country. GRDP per capita is calculated by dividing a country's national income by its population. GRDP per capita is used as an indicator to measure the purchasing power of a region. High GRDP per capita in a region indicates a high level of people's purchasing power, which reflects the effectiveness of the domestic market, especially in the context of investment. Therefore, the GRDP per capita of a region is one of the main considerations for investors when investing

3. Labor Force

As to the Central Statistics Agency, the labour force comprises individuals who are of working age (15 years and over) who are either employed, temporarily unemployed, or unemployed. According to Sitompul (2008), briefly there are two employment problems that influence investment interest, namely:

1. The tendency for high minimum wages to increase and large non-UMP costs
2. Uncertain industrial relations between companies and workers. These two problems result in costs related to production costs being high.

4. Minimum wage

According to Article 1 paragraph 30 of Law Number 13 of 2003 on Employment, wages refer to the monetary compensation that workers or labourers receive from employers or entrepreneurs. The compensation is given in line with work agreements, agreements, or statutory regulations, and encompasses provisions for compensation to employees and their dependents for completed or anticipated work or services. The minimum wage is a mandated level that employers must provide to workers in order to ensure a satisfactory standard of living, as regulated in Article 89 of the Employment Law.

As stated by Khasanah (2009), the minimum wage influences a company's production costs. If the increase in production costs is not in line with the level of worker productivity, then company profits will decrease and investment will also decrease. However, in some cases, investors are willing to pay high wages because it is assumed that workers have good quality human resources and have appropriate skills. As long as wages are at the production equilibrium point, an increase in the minimum wage can increase worker productivity and be profitable for investors.

2. Research Methods

The research use panel data regression as the analytical technique, utilising the following econometric model:

$$\log INV_{it} = \beta_0 + \beta_1 HDI_{it} + \beta_2 \log GRDP_{it} + \beta_3 \log AK_{it} + \beta_4 \log MSE_{it} + e_{it}$$

Information:

INV : Investment (thousand rupiah)

HDI : Human Development Index (%)

GRDP : Gross Regional Domestic Product Per Capita (thousand rupiah)

AK : Labor Force (soul)

MSE : Regency/City Minimum Wage (rupiah)

e : Term error

β_0 : Constant

β_1, \dots, β_4 : Independent variable regression coefficient

i : Ith district/city in Bali Province

t : Year t

This study used panel data, which is a blend of time series and cross-sectional data. The cross-sectional data encompasses 9 cities/ districts in Bali Province, with the data of time series spans from 2019 to 2022. The utilised statistics comprise of Investment (INV), Human Development Index (HDI), GRDP per capita (PDRB), Labour Force (AK), and Regency/City Minimum Wage (UMK).

The econometric model estimation stage includes: estimating the parameters of an econometric model utilising the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) techniques. Choosing an optimal estimating model by applying the Chow Test and Hausman Test; model goodness test which includes testing the existence of the model and interpretation of the coefficient of determination (R²), and determining the validity of the independent influence on the chosen estimated model.

D. Estimation Results

Table 1 presents the results of estimating the econometric model using the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches, as well as the model selection tests.

Table 1
Estimation Results of Panel Data Regression Econometric Models - Cross Section

Variable	Regression Coefficients		
	CEM	FEM	REM
C	-150.1144	33.4657	-150.1140
HDI	-0.0472	0.6332	-0.0472
LOG(GRDP)	2.8231	-3.6407	2.8231
LOG(AK)	1,1921	-5.2945	1,1921
LOG(MSE)	8.6914	2.9912	8.6914
R ²	0.8013	0.9107	0.8013
Adjusted R ²	0.7756	0.8641	0.7756
F statistics	31.2559	19.5541	31.2559
Prob. F statistics	0.0000	0.0000	0.0000
Model Selection Test			
(1) Chow			
Cross-section F (8.23) = 3.5239; Prob. F(8.23) = 0.0084			
(2) Hausman			
Cross-section random χ^2 (4) = 26.3686; Prob. χ^2 (4) = 0.0000			

Source: Bali Province Central Statistics Agency, processed

Table 1 showed the subsequent analysis results:

The Fixed Effects Model (FEM) had been selected as the most appropriate model according to the low probability or empirical significance of the F and χ^2 statistics, with values of 0.0084 and 0.000, respectively (both < 0.01). Table 2 contains the complete estimation results of the Fixed Effects Model (FEM).

Table 2
Fixed Effect Model (FEM) Estimation Model

$$\log INV_{it} = 33,4657 + 0,6332 HDI - 3,6407 \log GRDP_{it} - 5,2945 \log AK_{it} + 2,9912 \log MSE_{it} + e_{it}$$

(0.1875) (0.0646)*** (0.1808) (0.5193)

R² = 0.9107; DW = 2.6384; F-statistic = 19.5541; Prob. F = 0.0000

Source: Processed secondary data.

Note: *Significant at $\alpha = 0.01$

**Significant at $\alpha = 0.05$

***Significant at $\alpha = 0.10$

The bracketed numbers represent the t statistic's probability values.

Interpretation of the Coefficient of Determination (R^2)

The coefficient of determination (R^2) quantifies the extent to which changes in the independent variable may account for changes in the dependent variable. Table 2 shows that the coefficient of determination is 0.9107. Hence, 91.07% of the variability in investment can be accounted for by fluctuations in the human development index, GRDP per capita, labour force, and district/city minimum wages. The remaining 8.93% is due to variances in factors that aren't included in the statistical model.

FEM Estimated Model Existence Test (F Test)

The F test is used to determine if the regression model's independent variables have a cumulative influence on the dependent variable. Table 2 shows that the F-statistic has a probability value of 0.0000, meaning it is less than the level of significance α (0.05), rejecting the null hypothesis (H_0). As a result, it is possible to conclude that the human development index, GRDP per capita, labor force, and district/city minimum wages all influence investment.

Goodness Test of the Validity of the Effect of Independent Variables (t Test)

The GRDP per capita and the human development index were tested as independent variables using the t test. The workforce and specific city/district minimum salaries have significant effects on the dependent variable, investment. The t test hypothesis is either $\beta_i = 0$ ($i = 1-4$) or H_0 is rejected if the likelihood of the t-statistical result is less than α . Table 3 displays the results of the t tests.

Table 3
t Test Results

Variable	Coefficient	Sig.t	Information	Conclusion
HDI	0.6332	0.1875	$\alpha = 0.10$	β_1 is not significant
logGRDP	-3.6407	0.0646	$\alpha = 0.10$	β_2 is significant
LogAK	-5.2945	0.1808	$\alpha = 0.10$	β_3 is not significant
logMSE	2.9912	0.5193	$\alpha = 0.10$	β_4 is not significant

According to Table 3, the variable that has the greatest influence on investment is GRDP per capita, whereas the human development index variables, labor force, and city/district minimum wage have little effect on investment. Gross domestic product per capita has been empirically shown to have a detrimental impact on investment. Thus, the coefficient of GRDP per capita can be examined and analyzed, however the human development index, labor force, and district/city minimum wage do not require interpretation because they are insignificant. The regression coefficient for GDP per capita is -3.6407, indicating a logarithm-logarithm relationship pattern. This indicates which if the GRDP per capita rises by 1%, investment will fall by 3.6407%. In contrast, if the GRDP per capita falls by 1%, investment rises by 3.6407%.

3. Results and Discussion

GRDP per capita has a negative effect on investment. Based on GRDP per capita data for Bali Province 2019-2022, it is clear that the decline in GRDP per capita has increased investment in several districts/cities. The decline in GRDP per capita may make investors see the potential for economic growth in the future. This condition can make investors see opportunities in developing areas with lower input prices and higher growth potential. Apart from that, a decrease in GRDP per capita can also indicate the potential for improvement or development of infrastructure, services, or certain economic sectors that require investment encouragement.

These findings are consistent with previous research by Wikaningrum and Soelistyo (2021), which found that GRDP had a negative impact on investments. This is due to a lack of investment in various districts/cities in East Java. Nonetheless, the conclusions of this study differ from Risnawati's (2018) research, which found that GRDP had a favorable influence on investment. The higher the GRDP value, the greater the amount of investment.

The Human Development Index has no effect on investment. A high Human Development Index can reflect higher quality human resources, other economic factors such as potential economic growth, business opportunities, as well as conducive investment policies, play a greater role in attracting investment. In this case, investment decisions are more influenced by profit potential and a favorable business environment than just social welfare factors as measured by the Human Development Index. This finding is consistent with research undertaken by Tohir and Utomo (2023), who found that a high human development index does not ensure investors' interest in investing in the region. Investors or companies tend to look for minimum wages that are not too high. Therefore, increasing investment does not affect the human development index. However, this research differs from that of Dinarjito and Dharmazi (2020), who discovered that the human development index shows a positive influence on investment, implying that it can raise the value of investment.

Between 2019 and 2022, the labor force has little effect on investment in Bali Province. The increase in the workforce does not directly affect investment because investment is influenced by many complex economic factors. Although a large workforce indicates employment potential, investment decisions are more influenced by factors such as government policy, economic stability, market demand, infrastructure, and ease of doing business. Apart from that, the lack of knowledge and abilities of the workforce can also reduce productivity so that it does not attract the interest of investors or companies to invest. This is in accordance with research by Utma & Rakhman (2019) which found that the workforce has no effect on investment. Labor supply is influenced by 3 components, namely the population in a region, the percentage of the workforce, and working hours. Labor selection requires special skills, education, expertise and experience to be able to work in the formal sector so that it can increase productivity and investment. However, this study differs from Cahyani's (2019) findings, which claim that the workforce influences investment. An improvement in the workforce can boost production and attract investors.

Regency/City Minimum Wage has no effect on investment. This is due to the mechanism for determining district/city minimum wages which is regulated by the Governor taking into account recommendations from the Provincial Wage Council. Although the minimum wage continues to increase, this does not guarantee increased investment. This research supports Utma and Rakhman's (2019) finding that minimum salaries have no influence on investment. Investors' decisions to invest more are influenced by the desire to increase profits by reducing costs, including raw material costs and labor costs. Cheap raw material costs can be an attractive factor for investors, as can the profits that can be gained from lower labor costs. However, this research differs from that carried out by Bayu Windayana and Darsana (2020), who found that the minimum wage had a detrimental impact on investment. Increasing the minimum wage value can increase the company's production costs, which can result in a reduction in labor and reduce productivity, thereby reducing the amount of investment.

4. Conclusion

The research findings were derived from a study that used panel data regression analysis, notably applying the Fixed Effect Model, the conclusion was obtained that GRDP per capita has a negative effect on investment. This shows that an increase in GRDP per capita may not necessarily increase investment. Meanwhile, there is no correlation between the human

development index, labour force, and district/city minimum salaries and investment in Bali Province from 2019 to 2022. The government can focus on steps such as stimulating economic growth by strengthening GRDP per capita, adjusting wage policies, improving the quality of the workforce, and increasing cooperation and research in making investment policies. These steps are expected to improve investment conditions and economic growth in Bali Province.

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