

Determinants of Labor Absorption in Indonesia

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ABSTRACT

This study examines the determinants of labor absorption in Indonesia with variables of domestic investment, government spending, and consumer price index on labor absorption using quantitative methods with panel data sourced from BPS and BKPM data covering a period of 19 years from 2006 to 2024. The data for this study was processed using SPSS. The results of this study indicate that domestic investment, government spending, and the consumer price index simultaneously have a positive effect on labor absorption in Indonesia. However, when analyzed individually, domestic investment and the consumer price index do not have a significant effect on labor absorption. On the other hand, government spending has a significant effect on labor absorption in Indonesia when analyzed individually.

INTRODUCTION

Indonesia has the fourth largest population in the world with 283.49 million people, including 214 million working-age people and 149.38 million workers. This is a challenge for the country in terms of building a good business ecosystem so that economic growth in Indonesia can improve and provide jobs for its people. To achieve this goal, the government must take several steps, including increasing investment, government spending, and encouraging higher levels of consumer spending.

Investment is a crucial tool for economic growth in any country, as capital invested in a nation can boost its economic growth. According to Government Regulation No. 25 of 2007, Article 1, investment or capital investment is defined as activities carried out by domestic investors (PMDN) or foreign investors (PMA) to conduct business activities within the territory of the Republic of Indonesia.

Government spending can serve as a driver of economic growth and increased labor absorption if the spending undertaken by the government, such as fiscal spending, infrastructure capital spending, social spending, and economic policy interventions, can enhance economic growth.

The Consumer Price Index (CPI) can be used as an economic indicator to measure changes in the prices of goods and services consumed by the public during a specific period, as the CPI can measure inflation and deflation rates that impact public consumption. By using the Consumer Price Index for measurement, the government can identify changes in the prices of goods and services consumed by the public during a specific period, enabling the government to formulate policies that can stimulate economic growth.

In this context, to achieve higher employment absorption, the government must collaborate with investors to increase domestic investment, provide ease of access for investment, and ensure infrastructure and security for investment activities.

LITERATURE REVIEW

Development Economics

The development of a country is very important in improving the welfare of its people. Development economics describes the importance of equitable economic development without disparities between one region and another within a country. In this context, development requires collaborative efforts between the government and society, each with their respective roles and responsibilities. The government's role should be to promote economic development by reducing income inequality through income redistribution, increasing GDP, facilitating infrastructure, education, and healthcare, as well as creating job opportunities for the public. The role of society involves supporting government programs that can drive better economic growth. (Todaro and Smith, 2006).

Labor absorption refers to the availability of numerous filled job positions, reflecting the number of employed individuals across various economic sectors. Labor is a group of people capable of producing goods and services when there is demand for labor and they are willing to perform such work. (Todaro & Smith,

2006), Labor plays a crucial role as a production factor; without human resources (labor), the production process cannot be carried out effectively (Rusniati et al., 2018).

To create a balance between labor supply and demand for jobs, there must be interaction between employers and prospective workers in order to achieve equilibrium, as not all capital invested in a country can drive labor absorption. Investments that can absorb labor are those that are labor-intensive and encourage the absorption of a large workforce. (Ria, 2024)

Investment can be one of the drivers of economic growth in a country, because with investment, the country will receive additional capital to develop the country, which will increase GDP and thus promote employment and better economic growth. (Yuliana, et.al 2023)

Government expenditure is all expenditure spent by the government in the form of consumption expenditure and transfer expenditure. Government expenditure (Government Expenditure) includes all expenditures such as civil servant salaries, central and regional infrastructure development through the national development system. (Nahumuri, 2019) Transfer expenditures are expenditures made by the government for subsidies, scholarships, and other assistance provided directly to the community (Ramli, 2022)

Based on the above information, the researcher conducted research using the following Conceptual Framework:

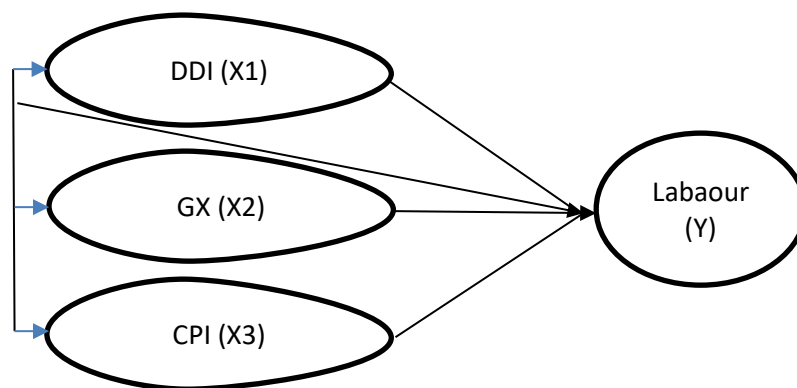


Figure 1. Conceptual Framework

Based on the conceptual framework, researchers conducted research on domestic investment variables, government spending, and consumer price indices on labor absorption, with Indonesia as the object of study.

METHODOLOGY

In this research study, the researcher used multiple regression analysis with panel data types, employing quantitative descriptive methods with multiple linear regression and multiple correlation approaches, which combine two types of data from time series and cross-section. This means that the panel data obtained from cross-section data was tested repeatedly on the same research

object at different time intervals. This provides an overview of the behavior of several objects over a specific period of time from the research conducted (Tarigan, 2013). There are several advantages to using panel data, namely that panel data provides clearer and more varied information and has less collinearity between several variables, making the data more efficient (Gujarati, 2012). Secondary data is data that is available and can be used directly in research (Sugiyono, 2019).

The variables in this study consist of three independent variables, namely Domestic Direct Investment (DDI), Government Expenditure (Gx), and Consumer Price Index (CPI), while the dependent variable is Labor Absorption. The population used in this study is all panel data on Domestic Direct Investment (DDI), Government Expenditure (Gx), and Consumer Price Index (CPI), while the dependent variable is Labor Absorption in Indonesia during the period 2006–2024 using a saturated sample technique (census method) where all members of the population are included as samples in this study.

Thus, the sample used in this study is Indonesia's data over a period of 19 years. The data analysis tool used in this study is SPSS to find correlations and multiple linear regression. Since this study uses secondary data, to meet data requirements, the secondary data collection method used in this study is sourced from the Indonesian Central Statistics Agency (BPS RI).

RESEARCH RESULT

To support this research, data from the variables to be processed is required. The data from these research variables consists of Domestic Direct Investment (DDI), Government Expenditure (GX), and Consumer Price Index (CPI) on Labor Absorption (L) from 2006 to 2024 over a period of 19 years, as follows:

Table 1.
Research Data

No	Years	DDI (X1) (Milyar Rp)	GX (X2) (Milyar Rp)	IHK(X3) (Poin)	L (Y) (Ribuan orang)
1	2006	20788,4	699099,1	141,48	95646695
2	2007	34878,7	763571,5	150,55	97968652
3	2008	20363,4	854660,7	132,73	102552750
4	2009	37799,8	1037057,6	115,06	104870663
5	2010	60626,3	1047666,9	120,97	108207767
6	2011	76000,7	1294999,1	127,45	107416309
7	2012	92182,1	1491410,2	132,9	112504868
8	2013	128150,6	1650563,7	142,18	112761072
9	2014	156126,3	1777182,8	113,22	114628026
10	2015	179465,9	1806515,2	120,42	114819199
11	2016	216230,8	1864275,1	124,67	118411973
12	2017	262350,5	2007351,8	129,42	121022423
13	2018	328604,9	2213117,8	133,56	126282186
14	2019	386498,4	2309287,3	137,6	128755271
15	2020	413535,5	2595481,1	104,91	128454184

16	2021	447063,6	2786411,4	106,55	131050523
17	2022	552769,1	3096262,7	111,03	135296713
18	2023	674923,4	3123677,3	115,11	139852377
19	2024	814017,7	3325118,9	106,1	144642004

Source: BPS, 2024

To facilitate data processing, the above variables are converted to Ln. The use of natural log (Ln) in this study is intended to reduce fluctuations in different data. If the variable values are used directly, the variable values will be very large. By using natural log, these different values are simplified without changing the proportions of the original values. The data from the research variables consist of Domestic Direct Investment (DDI), Government Expenditure (GX), and Consumer Price Index (CPI) in relation to Labor Absorption (L), which have been log-transformed as follows:

Table 2.
Data on Research Variables in Loankan

No	Tahun	DDI (X1) (Milyar Rp)	GX (X2) (Milyar Rp)	IHK(X3) (Poin)	L (Y) (Ribuan Orang)
1	2006	9,942150418	13,45755	4,952158	18,37617
2	2007	10,45963161	13,54576	5,014295	18,40016
3	2008	9,921494451	13,65846	4,888317	18,44589
4	2009	10,54005909	13,8519	4,745454	18,46824
5	2010	11,01248407	13,86208	4,795543	18,49956
6	2011	11,23849783	14,07402	4,847724	18,49222
7	2012	11,43152125	14,21523	4,889597	18,53851
8	2013	11,76096141	14,31663	4,957094	18,54078
9	2014	11,95842057	14,39054	4,729333	18,5572
10	2015	12,0977405	14,40691	4,790986	18,55887
11	2016	12,28410163	14,43838	4,82567	18,58968
12	2017	12,47743667	14,51233	4,863063	18,61149
13	2018	12,7026114	14,60991	4,894551	18,65403
14	2019	12,86488301	14,65245	4,924351	18,67342
15	2020	12,93249864	14,76928	4,653103	18,67108
16	2021	13,01045615	14,84027	4,668614	18,69109
17	2022	13,22269565	14,94571	4,7098	18,72298
18	2023	13,42235448	14,95452	4,745888	18,7561
19	2024	13,60973739	15,01702	4,664382	18,78977

Sumber: BPS 2024, data diolah peneliti.

From the research data, a test of requirements (classical assumption test) was then conducted for multiple linear regression analysis through a classical assumption test, where the classical assumptions observed in this study included 1) Normality Test, 2) Multicollinearity Test, 3) Heteroscedasticity Test, and 4) Autocorrelation Test. First, the normality test aims to test whether the regression model is normally distributed or not, with the following data analysis results:

Tabel 3.
One-Sample Kolmogorov-Smirnov Test

		DDI	GX	IHK	LABOR
N		19	19	19	19
Normal Parameters ^{a,b}	Mean	2017590649.1053	1365567600.4737	4136625718.1579	1506141914.1053
	Std. Deviation	2811282485.08712	299513295.36056	1629695372.95070	700607218.68273
Most Extreme Differences	Absolute	0.487	0.421	0.469	0.473
	Positive	0.487	0.325	0.295	0.297
	Negative	-0.260	-0.421	-0.469	-0.473
Asymp. Sig. (2-tailed)		0.487	0.421	0.469	0.473

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.

From the table of normalcy test results for testing multiple linear regression analysis, the first test is the normalcy test obtained from the table above with an Asymp. Sig. (2-tailed) > $\alpha=5\%$ (0.05) for $X_1 = 0.487$, $X_2 = 0.421$, and $X_3 = 469$, as well as $Y = 0.473 > \alpha=5\%$ (0.05), since the calculated normality test results for all X variables are greater than 0.05, it is concluded that the data comes from a population with a normal distribution.

Tabel 4.
Coefficients^a

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	DDI	0.861	1.161
	GX	0.681	1.469
	IHK	0.609	1.641

a. Dependent Variable: LABOR

The second classical assumption test is the multicollinearity test. This test aims to determine whether there is a correlation between the independent variables through the Variance Inflation Factor (VIF) values obtained from the SPSS calculations, which are $X_1 = 1.161$, $X_2 = 1.469$, and $X_3 = 1.641$ (all less than 10). Meanwhile, the tolerance levels are $X_1 = 0.861$, $X_2 = 0.681$, and $X_3 = 0.609$ (not within the range of 1). Based on these results, it can be concluded that the regression model in this study does not exhibit multicollinearity..

The third classical assumption test is the heteroscedasticity test, which can occur due to changes in circumstances that are not reflected in the regression model specification, such as changes in economic structure, politics, and government policies that affect the accuracy of secondary research data. The results of the analysis of heteroscedasticity symptoms are obtained by looking at the residual diagram pattern. The graph below is a scatter plot of residuals. The

decision based on the scatter plot below shows a random, scattered pattern. Therefore, it can be explained that the regression does not experience heteroscedasticity, as seen from the results of the heteroscedasticity test obtained from the scatter plot below:

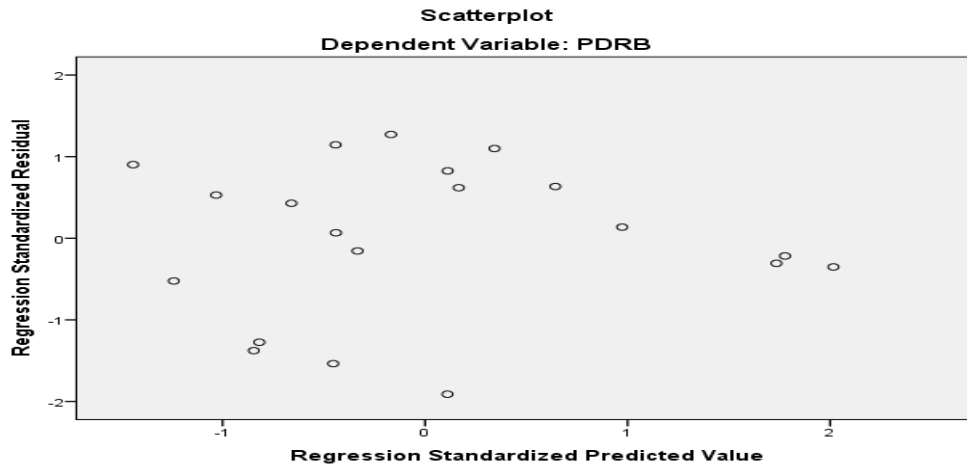


Figure 2
Scatter Plot of Heteroscedasticity Test

Tabel 5.
Model Summary^b

Model	Durbin-Watson
1	1.994

a. Predictors: (Constant), IHK, DDI, GX
 b. Dependent Variable: LABOR

The fourth is the autocorrelation test using the Durbin-Watson value (DW test). The following are the results of the autocorrelation test, with the standard used being $d_U < d < 4 - d_U$ according to Imam Ghazali (2011). If the calculated Durbin-Watson value is 1.994, the DW table at $\alpha 0.05$ is $dL = 0.966$, while $d_U = 1.685$. $DW \text{ calculated} > dL (1.994 > 0.966)$, so there is no autocorrelation. Or the value of d_U obtained is $(4 - 0.966 = 3.034) > d (1.994)$, so there is no autocorrelation. Thus, the requirements for multiple linear regression have been met with the classical assumption test, and further analysis can be performed.

Tabel 6.
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	26.341	69.833		0.380	0.709

DDI	-0.091	0.056	-0.365	-1.620	0.126
GX	1.475	0.592	0.630	2.491	0.025
IHK	-0.142	0.115	-0.331	-1.237	0.235

Sumber: data diolah peneliti

The results of the Individual Parameter Significance Test (t-Statistic Test) are as follows: Domestic Direct Investment variable (X_1) Because $t_{count} < t_{table}$ ($-1.620 < 1.746$), this means that Domestic Direct Investment does not have a significant partial effect on labor absorption. Furthermore, the Sig. value of $0.126 > 0.05$ means that there is no significant effect.

Government spending/governance variable (X_2) Because $t_{calculated} > t_{table}$ $2.491 > 1.746$, this means that there is a significant partial effect of government spending on increased labor absorption. Alternatively, the Sig. value of $0.025 < 0.05$ indicates that there is a significant effect.

Next, the Consumer Price Index (X_3) variable. Since $t_{calculated} > t_{table}$ $1.237 < 1.746$, there is no significant partial effect of the consumer price index on labor absorption. Alternatively, this can be seen from the Sig. value of $0.235 > 0.05$, indicating that there is no significant effect of the consumer price index on labor absorption. The results of the Simultaneous Significance Test (FStatistic) are demonstrated in the ANOVA table below:

Tabel 7.

ANOVA^a

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3055900662244054000.000	3	10186335540813 51300.000	4.644	0.008 ^b
	Residual	5779407885422217200.000	15	38529385902814 7840.000		
Total		8835308547666271200.000	18			

a. Dependent Variable: LABOR

b. Predictors: (Constant), IHK, DDI, GX

It can be seen at $\alpha = 0.05$ or a confidence level of 95% with the numerator degrees of freedom = $(k-1) = 4 - 1 = 3$. The denominator degrees = $(n - k) = 19 - 3 = 16$, $F_{table=0.05} = 3.01$. Since $F_{(calculated)} > F_{(table)}$ ($4.64 > 3.59$). Therefore, the conclusion is that the independent variables (domestic direct investment, government spending, and consumer price index) simultaneously have a significant effect on the dependent variable of labor absorption. If the probability is less than the significance level (0.05), the model is accepted. It is proven that the probability is $0.008 < (0.05)$, with the equation model:

$$Y = 26.341 - 0,091X_1 + 1.475X_2 - 0,142X_3 + \varepsilon$$

From this equation model, it can be explained that the Domestic Direct Investment variable has a negative relationship with employment absorption, meaning that if DDI increases, employment absorption may not increase accordingly. This may occur due to the existence of labor-intensive programs for workers, so that the labor force in that region is not affected. The Government Expenditure variable has a positive relationship with labor absorption, meaning that an increase in government expenditure can boost labor absorption. This can be attributed to government spending in the real industrial sectors of the country, which can create job opportunities for the public. The consumer price index has a negative relationship with labor absorption, meaning that labor absorption is not affected by increases in the consumer price index due to changes in the level of the index prevailing in the consumer market.

Tabel 8.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.588 ^a	0.346	0.215	620720435.48456	1.994

a. Predictors: (Constant), IHK, DDI, GX

b. Dependent Variable: LABOR

Multiple Correlation Coefficient testing explains the magnitude of correlation (R) in Adjusted R Square of 0.215, indicating a low correlation between independent variables X₁ (Domestic Direct Investment), X₂ (Government Spending), and X₃ (Consumer Price Index) with the dependent variable Y (Labor Absorption) is 21.50%, while the remaining 78.50% is caused by other variables not included in this study.

DISCUSSION

Based on the results of this study, domestic investment has no significant partial effect on employment, government spending has a partial effect on employment, and the consumer price index has no partial effect on employment in Indonesia. However, domestically invested capital, government spending, and the consumer price index simultaneously have a significant effect on employment.

The research results indicate that domestic investment does not have a significant partial effect on labor absorption in Indonesia. This is because the capital invested in Indonesia is not entirely directed toward labor-intensive sectors but rather toward technology-intensive sectors. This aligns with Kurniawati P's (2024) research, which states that domestic investment does not impact labor absorption because investors tend to focus on capital-intensive sectors, such as purchasing machinery to enhance production capacity. Not all capital invested domestically will necessarily boost employment; it may also lead

to job reductions as labor-intensive companies shift to machinery with higher production levels. Silfiana (2023).

Government spending has a partial influence on labor absorption because the more productive government spending is, the more labor absorption there will be. Government spending on infrastructure, whether in the form of capital expenditure or operational expenditure, can influence labor absorption in Sumatra. (Munthe, S. et al., 2024)

CONCLUSION

This study aims to prove and analyze whether there is a significant relationship between the independent variables X_1 (Domestic Direct Investment), X_2 (Government Spending), and X_3 (Consumer Price Index) and the dependent variable Y (Labor Absorption). The conclusion drawn from the hypothesis testing results is as follows: from the individual correlation test results, the correlation between the DDI variable (X_1) is not significant, as $t_{\text{calculated}} < t_{\text{table}}$ ($-1.620 < 1.746$), meaning that Domestic Direct Investment does not have a significant partial effect on employment absorption. Furthermore, the Sig. value of $0.126 > 0.05$ indicates that there is no significant effect.

Government spending/governance variable (X_2) Since $t_{\text{calculated}} > t_{\text{table}}$ $2.491 > 1.746$, this indicates that there is a significant partial effect of government spending on increased labor absorption. Alternatively, this can be seen from the Sig. value of $0.025 < 0.05$, indicating a significant effect. Then, the Consumer Price Index (X_3) variable: Since $t_{\text{calculated}} > t_{\text{table}}$ $1.237 < 1.746$, there is no significant partial effect of the consumer price index on labor absorption. Alternatively, this can be seen from the Sig. value. $0.235 > 0.05$, indicating that there is no significant effect of the consumer price index on labor absorption.

Therefore, this cannot be used as a benchmark for assessing the influence, which can be further proven through the F-test among all independent variables on the dependent variable. Since $F_{\text{calculated}} > F_{\text{table}}$ ($4.64 > 3.59$). Therefore, the conclusion is that the independent variables (domestic direct investment, government spending, and the consumer price index) simultaneously have a significant effect on the dependent variable of labor absorption. If the probability is less than the significance level (0.05), the model is accepted. It is proven that the probability is $0.008 < (0.05)$. with the equation model:

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From the results of this study, it can be concluded that there are many factors that determine employment in Indonesia, such as government policies in

labor-intensive real industrial sectors to have a real effect in overcoming unemployment, poverty, and income inequality.

ADVANCED RESEARCH

This study discusses the determinants of labor absorption in Indonesia, where the labor absorption variable is (Y) with the variables of domestic investment (X1), government spending (X2), and consumer price index (X3). Based on these variables, the study has limitations in terms of other variables that could improve the results of future studies, so that this study can be used as a reference for government decision-making.

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