Impact of Foreign Direct Investment, Productivity, and Growth on Indonesian Youth Unemployment

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| Article Info	Abstract
	Unemployment is a consistent economic challenge faced by all countries. As a developing country, Indonesia grapples with unemployment issues that predominantly affect young individuals. On the other hand, Indonesia is a country experiencing significant foreign direct investment (FDI) and economic growth. However, it also faces the issue of low productivity, which impacts youth unemployment. There is still a scarcity of previous research focusing on youth unemployment in Indonesia, especially studies examining the influence of FDI, economic growth, and labor productivity. This research examines the impact of Foreign Direct Investment (FDI), economic growth, and labor productivity on youth unemployment in Indonesia. Annual time series data from 1991 to 2022 were analyzed using the Autoregressive Distributed Lag (ARDL) technique. The study reveals a significant negative relationship between economic growth and labor productivity with youth unemployment in the long term. Meanwhile, in the short term, FDI and labor productivity significantly positively impact youth unemployment. It is hoped that the Indonesian government will prioritize the creation of job opportunities for young domestic workers and provide training to enhance the quality of the youth workforce in Indonesia.

INTRODUCTION

Unemployment is an economic issue that is consistently faced by every country in the world. (Chowdhury & Hossain, 2014). In measuring economic development, it is not only the indicator of economic growth of a country that is considered but also the existence of unemployment as a financial issue. (Hasan & Sasana, 2020). Both developing and developed countries face unemployment, which should be a concern for policymakers, with the difference being that developed countries can assure the unemployed. In contrast, benefits are not distributed to the unemployed in developing countries. (Kurnia & Septiani, 2021).

Developing countries typically have unemployment rates dominated by young and educated individuals (Pratama & Purmiyati, 2020). Furthermore, the youth (aged 15 to 24) face smaller labor market opportunities than the active adult population (Ebaidalla, 2016). On the other hand, young workers can learn faster, adapt more efficiently, and even play a role in alleviating poverty to assist with financial limitations within families (Msigwa & Kipesha, 2013). Until now, many countries have only focused on adult unemployment while rarely paying attention to youth unemployment (Hasan & Sasana, 2020). However, young individuals dominate unemployment in

developing countries with a population composition where youth outnumber adults. Additionally, the issue of youth unemployment is more concerning in developing countries due to high poverty rates, requiring more people to work (ILO, 2011). One developing country facing youth unemployment issues is Indonesia. Youth unemployment has a much larger population than adult unemployment in Indonesia from 1991 to 2022. This is shown in Figure 1 below.

Figure 1. Unemployment by Age (Adult 25+ & Young 15-24) in Indonesia by ILO Models Years 1991 - 2022
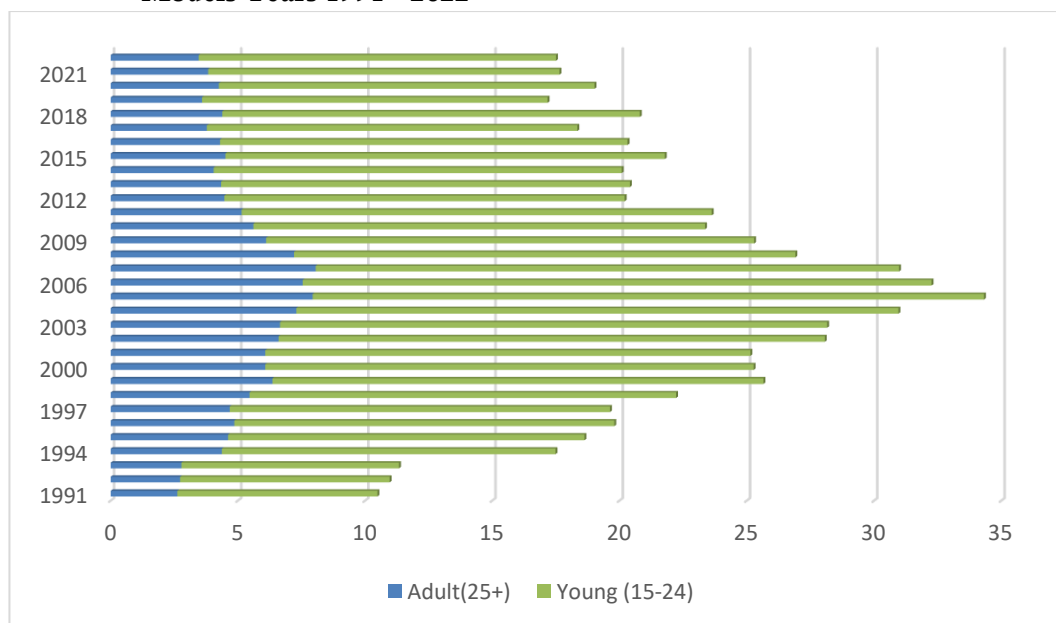
Source: ILO Statistics, Data Processed

Adult unemployment averages 5.11%, where the unemployment rate does not exceed 10%, but youth unemployment averages 16.8% from 1991 to 2022. However, according to Egessa et al. (2021), Specifically, the increase in youth unemployment can have various socio-economic, political, and moral impacts, such as increased criminal activities and violence, psychological issues among the youth, drug abuse, and heightened poverty. This highlights the importance of addressing the issue of youth unemployment by thoroughly analyzing the factors influencing it. (Ebaidalla, 2016).

Youth unemployment, as an employment issue that needs to be addressed, can be influenced by several macroeconomic factors of a country. First, foreign direct investment (FDI) can affect youth unemployment. According to the Harrod-Domar theory, investment should be able to reduce unemployment rates as it can increase a country's production. A country's economy is determined at least by the production factor of capital obtained from investment (Paramita & Christianingrum, 2022). FDI can create job opportunities by opening new employment avenues (Alalawneh & Nessa, 2020). However, in Indonesia, the issue arises that foreign labor does not

accommodate Indonesian workers because the investment is directed toward technology, which naturally replaces human labor (Arisusanti & Bendesa, 2021).

Previous studies have revealed that Foreign Direct Investment (FDI) can affect unemployment. Alalawneh & Nessa (2020) FDI negatively and significantly impacted the unemployment rate in six MENA countries in the long term but not significantly in the short term. Similarly, Choudhry et al. (2012) also found a significant negative relationship between FDI and youth unemployment rates. On the other hand, Grahovac Softić (2017) found varying results regarding the impact of FDI on unemployment in several West Balkan countries and others. Moreover, Mamuti Ganic (2019) found A positive and significant relationship between FDI and unemployment. Based on these findings, there is no clear consensus on the results of previous studies.

Secondly, labor productivity. Indonesia faces the issue of low labor productivity, which is a focus of the Ministry of Manpower's programs. This is especially critical as Indonesia is approaching a demographic bonus where the number of people in the productive age group is increasing. However, Indonesian youth workers still lack skills, leading to low productivity. If labor productivity in producing goods and services increases, the demand for labor will increase, thus reducing unemployment. (Zulhanafi et al., 2013). Previous studies have found a negative relationship between labor productivity and unemployment. (Parisi, 2017; Zulhanafi et al., 2013). However, there are also research findings that show that unemployment significantly increases with high productivity. (Folawewo & Adeboje, 2017), Even among youth unemployment (Bayrak & Tatli, 2018).

As for economic growth, Okun's Law states an inverse relationship between real GDP and the unemployment rate. (Astari et al., 2019). Several previous studies have also found that high economic growth rates reduce unemployment due to the production of more output. (Alshyab et al., 2021; Ebaidalla, 2016; Pratama & Purmiyati, 2020; Tello, 2015). Recent research by Foreign Direct Investment (FDI), GDP, and human resources as part of political instability transition tools can influence youth unemployment in Sub-Saharan African countries. Based on these findings regarding the three variables affecting unemployment, there is no clear consensus in previous studies, especially in Indonesia as a developing country. Therefore, the author aims to fill this gap by studying the subject in Indonesia.

The focus of this research is to examine the influence of Foreign Direct Investment, labor productivity, and economic growth on the youth unemployment rate in Indonesia from 1991 to 2022. To the best of the author's knowledge, there has been no research on the impact of these three variables on youth unemployment, focusing on Indonesia and conducting short- to long-term influence tests. Therefore, this research aims to fill this gap. Furthermore, Indonesia, the country with the largest Muslim population in the world, has a larger productive youth population aged 15-24, according to the population composition data from the Central Statistics Agency. This presents an opportunity to build the economy by reducing youth unemployment. It is hoped that this research will serve as an evaluation tool for key stakeholders in tackling youth unemployment in Indonesia by considering foreign direct investment, labor

productivity, and economic growth as influencing factors. Additionally, this research is expected to contribute to the literature by validating theories related to unemployment, economic growth, and investment in the context of Indonesia.

METHODOLOGY

The main objective of this study is to investigate the influence of Foreign Direct Investment (FDI), labor productivity, and economic growth on youth unemployment rates in Indonesia in both the short term and long term. Therefore, this study employs quantitative time series analysis and secondary data. According to Bungin (2005), population refers to the entirety of the research object, which can include humans, plants, animals, events, attitudes, countries, regions, and so on. Regarding the research carried out by the author, focusing on a single country, Indonesia, the population in this study encompassed the entire target group along with the sample, referred to as the total sample. (Bungin, 2005).

Data & Variable

This research utilizes annual time series data from 1991 to 2022. Secondary data sources are obtained from the World Development Indicator for variables such as youth unemployment, foreign direct investment, and economic growth. In contrast, data for labor productivity are sourced from the International Labor of Organization Statistics. This research involves two types of variables: endogenous variables and exogenous variables. Endogenous variables are more suitable for research that uses more complex models, for example, in studies related to time dynamics. (Ventura, 2023). On the other hand, exogenous variables are used to explain or predict other variables in the model. Exogenous variables help estimate long-term and short-term relationships because they are free from uncontrolled interdependencies. (Alharbi & Csala, 2022). Youth unemployment is endogenous, while foreign direct investment, economic growth, and labor productivity are exogenous variables.

Youth unemployment data is measured using the total unemployment indicator modeled by ILO estimation (% of the total labor force ages 15-24). The indicators "Foreign Direct Investment, net inflows (% of GDP)" are used for FDI. Economic growth is measured using GDP per capita growth (annual %) because GDP Per capita measures economic growth and serves as an indicator of welfare for society. (Büyüksarıkulak & Kahramanoğlu, 2019). Labor productivity is measured using output per worker modeled by ILO estimation (GDP constant 2010 US$).

Data Analysis Technique

The analysis technique employed in this study is the Autoregressive Distributed Lag (ARDL) approach, processed using the Eviews 12 software. The data analysis in this research follows the steps outlined below:

Stationary Test

The first step in analyzing time series data is to test for stationarity using a unit root test. (Menegaki, 2019). The data in this study is tested using the Augmented

Dickey-Fuller unit root test. (Ekananda, 2018). The ADF test is an extension of the Dickey-Fuller test, making it more robust against autocorrelation. (Greene, 2012). Additionally, the ADF test can be performed even with small sample sizes. Time series data are prone to autocorrelation, which can cause the data to become non-stationary, thus necessitating a test for stationarity. The regression equation for the Augmented Dickey-Fuller unit root test is below:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(1)$$

While the hypotheses for testing stationarity are as follows:

H0: The data is non-stationary or has a stochastic trend

H1: The data is stationary or does not have a stochastic trend

So, the data will be considered stationary if the significance level from the ADF test is <5%. If the data is still non-stationary at the level, it will be tested again at the first difference. The author will consider eliminating the data if it remains non-stationary even after taking the first difference.

Cointegration Test

The second step involves conducting cointegration tests using ARDL Bound Testing. The Bound Test for Cointegration tests whether the model has a long-term relationship (Ekananda, 2018). The equation for bound test transformation is as follows:

$$\Delta Yt = -\sum_{i=1}^{p-1} \gamma i \Delta y_{t-1} + \sum_{j=1}^{k} \sum_{i=0}^{qj-1} \Delta X_{j,t-i} \beta^*_{j,i} - \rho\, y_{t-1} - \alpha - \sum_{i=1}^{k} X_{j,t-1} \delta_j + \varepsilon_t \dots\dots\dots\dots\dots(2)$$

Results indicate cointegration if the F statistic value is greater than the critical value, both at I(0) or I(1) levels.

Autoregressive Distributed Lag (ARDL) Test

If cointegration is found in the model, the ARDL model can be used. ARDL is a method aimed at analyzing the influence of explanatory variables on the regressor variable, including the use of the influence of regressor variables in the past and involving past data explanatory variables (lag) (Gujarati & Porter, 2015). Thus, there are lags in both the endogenous and exogenous variables. The Long-run ARDL model uses the empirical equation as follows:

$$YUNP_t = \alpha + \beta 1 FDI_t + \beta 2 GDPC_t + \beta 3 PROD_t + \mu_t \dots\dots\dots\dots\dots\dots\dots\dots\dots(3)$$

Notes:

YUNP = Youth Unemployment Rate; FDI = *Foreign Direct Investment;* GDPC = GDP Per Capita; PROD = Labor Productivity; t = Period; μ = Standard Error; α = Intercept

When cointegration is established, short-term analysis uses an error correction model (ECM), an extension of ARDL. The estimation for the short term is as follows.

$$\Delta YUNP_t = \alpha + \sum_{i=1}^{p} \theta_{1i} \Delta YUNP_{t-i} + \sum_{j=1}^{q} \varphi_{1j} \Delta FDI_{t-j} + \sum_{j=1}^{q} \varphi_{2j} \Delta GDPC_{t-j} + \sum_{j=1}^{q} \varphi_{3j} \Delta LPROD_{t-j} + \gamma ECT_{t-1} + \epsilon_t \dots\dots\dots\dots\dots\dots\dots\dots\dots (4)$$

The coefficients θ and φ represent the short-term coefficients or parameters, while γ represents the speed of adjustment.

Diagnostic Test

This study employs diagnostic tests: Autocorrelation, Heteroscedasticity, and Stability. According to Ghozali (2018), The Autocorrelation test examines the correlation between errors in one period and other periods (preceding periods). This occurs due to the sequential nature of observation over time (time series), resulting in errors correlated with errors in other periods, leading to non-zero error correlation. The stability test aims to measure the stability of the ARDL model throughout the research period (Ekananda, 2018). This test utilizes the CUSUM and CUSUM of Squares test.

RESULT AND DISCUSSION

Statistics Descriptive
Table 1. Statistics Descriptive

	Y_UNP	FDI	PROD	GDPC
Mean	16.87897	1.295355	5708.080	3.276879
Median	16.24200	1.799223	5403.575	4.089086
Maximum	26.37900	2.916115	8417.930	6.465883
Minimum	7.869000	-2.757440	3741.930	-14.47565
Std. Dev.	4.420052	1.358639	1481.795	3.686159

Table 1 shows descriptive statistics of 32 observations in this study. The average youth unemployment rate from 1991 to 2022 is 16.8%, with a maximum value of 26.37 and a minimum of 7.86. The volatility of unemployment is 4.44, as indicated by the standard deviation. Foreign Direct Investment (FDI) has an average of 1.29 and a minimum value of -2.75, while the maximum value is 2.91 with a volatility of 1.35, measured by the standard deviation. The lowest FDI occurred in 1998, coinciding with the economic and monetary crisis. The minimum value of GDP per capita (GDPC) is -14.4, which also occurred in 1998 and reflects the impact of the crisis. The average of GDPC is 3.27, with a volatility of 3.68. PROD has an average of 5708.08 with a volatility of 1481.79. The youth unemployment and labor productivity variables exhibit low variations, as indicated by standard deviation lower than their respective means, suggesting that Foreign Direct Investment and Economic Growth have high variations.

Result Of Stationary Test

The stationary test using the Augmented Dickey-Fuller (ADF) in this study is presented in Table 2 below.

Table 2. Result of Unit Root Test

Variables	Augmented Dickey-Fuller (ADF)			
	Level I(0)		*First Difference* I(1)	
	T-Statistik	Probability	T-Statistik	Probability
Y_UNP	-2.063947	0.2598	-4.979209	0.0004***
FDI	-2.159360	0.2243	-5.268178	0.0002***

GDPC	-5.654626	0.0032**	-5.654626	0.0001***
PROD	0.842516	0.9932	-4.309644	0.0020**

Notes: *** and ** indicate significant at 1% and 5% respectively

The stationary test results using Augmented Dickey-Fuller (ADF) indicate that all new variables become stationary at the first difference level I(1), except for the GDPC variable, which remains stationary at level I(0) with a significance level of 5%. The outcomes above lead to rejecting the null hypothesis (H0) and accepting the alternative hypothesis (H1), indicating the absence of a stochastic trend or the stationary of the data. Stationarity in time series data indicates that the mean and variance of the data do not systematically change, which supports more accurate predictions from the model (Ekananda, 2018). These results show the presence of stationary variables at the level and some at the first difference level, allowing the ARDL approach to analyze the long-term relationship (cointegration) between these variables (Shrestha & Bhatta, 2018).

Result Of ARDL Bound Test

The null hypothesis of no cointegration is tested against the alternative hypothesis of cointegration based on the F-statistic value. The results of the Bound Test for cointegration are presented in the following Table 3.

Table 3. Result of ARDL Bound Test

F-Statistik	13.49892	
Critical Value	**Level I(0)**	*First Difference* I(1)
10%	2.37	3.2
5%	2.79	3.67
2.5%	3.15	4.08
1%	3.65	4.66

Table 3 shows that the F statistic value is 13.05146, significantly greater than critical values for level I(0) or first difference I(1) at all significance levels. Therefore, it can be interpreted that a long-run relationship exists between the endogenous variables and exogenous variables in this study.

Result Of Long Run And Short Run Relationship (Needs More Justification)

This research focuses on the long-term and short-term effects of youth unemployment variables on FDI, economic growth, and labor productivity. Table 4 shows the long-term relationship from the ARDL research model.

Table 4. Long Run Form-ARDL

Endogenous Variable = Pengangguran Usia Muda *(Youth Unemployment)*				
Variable	**Coefficient**	**Std. Error**	**T-Statistik**	**Prob.**
FDI	0.834398	0.825624	1.010627	0.3272
GDPC	-4.332478	0.937264	-4.622471	0.0003***
PROD	-0.004190	0.000836	-5.009746	0.0001***
C	44.91420	4.914570	9.138988	0.0000***

Notes: *** and ** indicate significant at 1% and 5% respectively

Table 4, when explained as an econometric equation model, is as follows.

Y_UNP = 0.8343*FDI -4.3324*GDPC -0.0041*PROD + μt ………………………..(5)

In the long term, FDI has a positive but statistically insignificant effect on youth unemployment. This is consistent with research from Ramadhan (2018), suggesting that FDI is not significantly effective in reducing unemployment in the long term. In theory, FDI should indeed be able to reduce unemployment rates significantly. However, without complementary policies and conducive conditions, young workers may not fully realize the benefits of FDI. This is due to a mismatch between young workers' skills and the required labor demand. (Jude & Silaghi, 2016). On the other hand, GDP per capita, as an indicator of economic growth and labor productivity, has a significant effect at the 1% and 5% levels. This indicates that in the long term, economic growth and labor productivity can reduce unemployment at a young age. An increase in GDP per capita leads to a decrease in youth unemployment by -4.2486 in the long term. This finding aligns with research by Ebaidalla (2016), Bayrak & Tatli (2018), and Pratama & Purmiyati (2020) and is consistent with Okun's Law, which suggests that economic growth leads to increased employment opportunities. Moreover, economic growth involves entrepreneurs producing goods and services generally dominated by the younger generation. (Suryadi, 2019).

Furthermore, increasing labor productivity by 1 unit reduces youth unemployment by -0.0032 in the long term. These results are consistent with research by Zulhanafi et al. (2013) and Parisi et al. (2014). Workers' skills improve when productivity increases, leading to increased labor demand (Zulhanafi et al., 2013). Additionally, young workers will actively seek employment in the long term, reducing youth unemployment. (Parisi et al., 2014). Moreover, young workers can innovate and be creative, making them more productive than adult workers (Suryadi, 2019).

As for the short-term model in the ARDL framework with automatic lag suggested by Eviews 12 (2,2,3,2) corrected with an Error Correction Model (ECM), it is applied due to the presence of stationary variables in the first differences, as shown in the following table 5.

Table 5. Short Run Form-ARDL

Endogenous Variable = *Youth Unemployment*			
Variable	**Coefisient**	**Std. Error**	**T-Statistik**	**Prob.**
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D(Y_UNP(-1))	-0.407274	0.114071	-3.570351	0.0026***
D(FDI)	0.685600	0.189291	3.621929	0.0023***
D(FDI(-1))	0.757925	0.198794	3.812625	0.0015***
D(PROD)	0.006392	0.002397	2.666179	0.0169**
D(PROD(-1))	0.007112	0.002787	2.551366	0.0213**
D(PROD(-2))	0.011753	0.003113	3.775022	0.0017***
D(GDPC)	-0.430793	0.121043	-3.559009	0.0026***
D(GDPC(-1))	0.663590	0.159653	4.156452	0.0007***
CointEq(-1)*	-0.372252	0.040527	-9.185219	0.0000***

R-Squared	0.827485
Adjusted R-Squared	0.758479

Notes: *** and ** indicate significant at 1% and 5% respectively

The short-term model results in Table 5 demonstrate that all exogenous variables and their respective lags (past values) significantly influence youth unemployment. Lagged youth unemployment (lag 1) significantly negatively impacts current youth unemployment in the short term, indicating a dynamic effect where unemployment in the previous period influences current unemployment. Meanwhile, FDI and its lagged value (lag 1) both positively and significantly affect youth unemployment in Indonesia in the short term. This unexpected positive relationship suggests that FDI increases unemployment among young people. This finding aligns with Mamuti and Ganic (2019) and Yusuf (2021). It implies that the influx of foreign direct investment may not necessarily create job opportunities for domestic workers, particularly young individuals, but rather for foreign workers, thus increasing unemployment in Indonesia (Abduh, 2020). This positive relationship can also be obtained from foreign investment in capital-intensive sectors with limited labor absorption. (Syamsudin & Setyawan, 2008).

GDP per capita has a significant negative effect in the short term, indicating that an increase in GDP per capita by 1 unit will reduce youth unemployment by 0.47 in the short term. This supports Okun's theory, which suggests that economic growth reduces unemployment. However, the lagged GDP per capita (Lag 1) positively influences youth unemployment in the short term. This discrepancy suggests that youth unemployment requires time to respond to changes in economic growth. Another reason that could occur is structural changes, workforce adjustments, and increased competition, temporarily resulting in increased youth unemployment. (Wijayanto & Ode, 2019).

Labor productivity, along with its lagged values (lag one and lag 2), has a significant positive effect on youth unemployment in the short term. When labor productivity increases by 1 unit, youth unemployment will increase by 0.006 in the short term. This finding aligns with research from Folawewo and Adeboje (2017) and Bayrak and Tatli (2018), indicating a trade-off in labor productivity with youth unemployment in the short term. It suggests that unemployment may persist or worsen despite productivity gains without sufficient output growth to generate employment opportunities for young individuals (Folawewo & Adeboje, 2017). Additionally, Indonesia faces challenges related to workforce quality that are mismatched with job demands, particularly for elementary, high school, and college graduates (Prasaja, 2013). Furthermore, the error correction coefficient value (CointEq (-1)) presents a negative and significant value, meeting the requirements for a short-term model using the Error Correction Model. A negative CointEq value indicates that the error in the model will decrease as they are corrected in the subsequent period.

Result of Diagnostic Test

Autocorrelation Test

The result of the Autocorrelation Test is shown in Table 6 below.

Table 6. Result of the Autocorrelation Test

F-Statistic	0.212331	Prob. F(2,12)	0.8113
Obs*R-Squared	0.853758	Prob. Chi-Square(2)	0.6525

The results of the autocorrelation test in Table 6 show that the values of Prob. F and Prob. Chi-Square are 0.9770 and 0.9490, respectively. These values are above the significance level of 0.05. This indicates no correlation between the errors in the ARDL model.

Heteroskedasticity Test

The result of the Heteroskedasticity Test is shown in Table 7 below.

Table 7. Result of the Heteroscedasticity Test

| F-Statistic	0.432003	Prob. F(12,16)	0.9267
Obs*R-Squared	7.096720	Prob. Chi-Square(12)	0.8512
Scaled Explained SS	1.445105	Prob. Chi-Square(12)	0.9999

The results indicate the Breusch-Pagan Godfrey test for heteroskedasticity, as seen from the Prob. F and Chi-Square values exceed the significance level of 0.05. Thus, the ARDL model is free from heteroskedasticity issues.

Stability Test

The author conducted a stability test of the ARDL model using the CUSUM Test and CUSUM of Squares, which can be seen in Figures 2 and 3 below.

Figure 2. Result of CUSUM Test   **Figure 3: Result of CUSUM of Square Test**
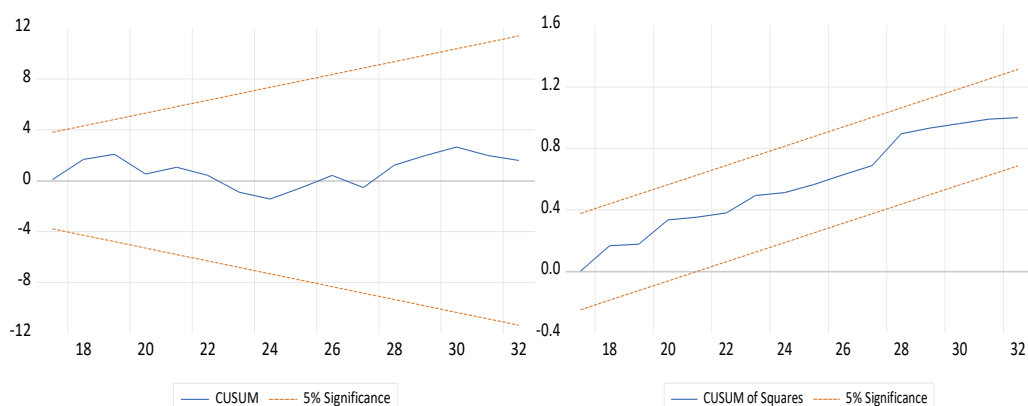
Figures 2 and 3 show that the CUSUM and CUSUM of Squares lines fall within the 5 percent significance area (inside the dashed red lines). This indicates that the ARDL model used remains stable throughout the study period. This stability

indicates that the identified relationship between the variables remains valid and is not influenced by structural changes in the data, thus making the predictions accurate and unbiased.

CONCLUSION

The research findings indicate that economic growth and labor productivity negatively and significantly impact youth unemployment in the long term. This confirms the existence of Okun's Law, which explains the inverse relationship between economic growth and unemployment. When productivity increases, it leads to an improvement in the quality of the workforce, thereby increasing labor demand. Specifically, young workers have better innovation and creativity abilities, thus reducing youth unemployment in the long term. On the other hand, Foreign Direct Investment does not significantly affect youth unemployment, indicating the ineffectiveness of FDI in reducing unemployment.

However, in the short term, FDI and labor productivity positively and significantly impact youth unemployment. The linear relationship between FDI and youth unemployment indicates that the creation of new job opportunities from foreign direct investment has not absorbed the young labor force. Additionally, even with an increase in productivity not accompanied by sufficient output growth, unemployment does not decrease but increases. On the other hand, economic growth, proxied by GDP Per Capita, has a negative and significant impact in the short term, proving Okun's law.

The recommendations from the findings are as follows: First, there needs to be a review by the government regarding FDI policies, prioritizing the absorption of the domestic youth labor force first and then establishing labor-intensive industries to reduce youth unemployment. Second, the result confirms the existence of Okun's law in Indonesia's economic conditions, making it essential to continue promoting the development of the real sector of the economy to absorb more youth labor force. Third, young workers have the potential for better productivity due to their innovation, ideas, and creativity, making it necessary for the government to fulfill their needs to compete in the labor market, especially as Indonesia is experiencing a demographic bonus. Providing the necessary training and certification is essential to enhance the skills of Indonesia's young workforce. The limitations of this study include its focus on Indonesia and the period used, which is only 32 years. So, future research could expand the scope of the research objects and periods. Additionally, future research could differentiate unemployment by age, focusing on youth and adult unemployment.

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