Investment Resilience in Times of Crisis: The Nexus of Domestic, Foreign Investment, and Interest Rates on Economic Growth amidst The Covid-19

Cucu Hayati*
Hanifah
Diah Ayu Sanggarwati
Mochamad Fatchurrohman
Sekolah Tinggi Ilmu Ekonomi Mahardhika, Surabaya, Indonesia
Email: cucu.hayati@stiemahardhika.ac.id *[https://orcid.org/0000-0001-6488-5176],
hanifah@stiemahardhika.ac.id, diah.ayusanggarwati@stiemahardhika.ac.id,
mochamad.rohman@stiemahardhika.ac.id
*corresponding author

Received 1 November 2024, revised 23 December 2024, accepted 09 January 2025

ABSTRACT

This study examines the impact of foreign investment, domestic investment, COVID-19, and interest rates on economic growth across 34 provinces in Indonesia from 2010 to 2023, a period encompassing both pre- and post-pandemic phases. The urgency of this research lies in understanding how these factors have influenced regional economic performance, particularly during the COVID-19 pandemic, which disrupted global and local economies. This study uses a Panel data regression model, fixed-effects, and robust standard errors. The result analysis reveals that the regression model explains that 44.33% of the variation in economic growth can be attributed to domestic and foreign investments; and interest rates. The probability test results show that foreign investment significantly affects economic growth more than domestic investment. Interest rates did not significantly impact economic growth during the COVID-19 period, as indicated by the statistical analysis. It implies that despite its potential role in stabilizing the economy, interest rate policies may have been less effective in fostering growth during the pandemic. These findings highlight the critical role of foreign investment and pandemic-related factors in shaping economic growth dynamics in Indonesia provinces.

Keywords: COVID-19, Domestic Capital Investment, Economic Growth, Foreign Investment, Interest Rate, Panel Regression
JEL: E22, F21, C10, O53

DOI: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

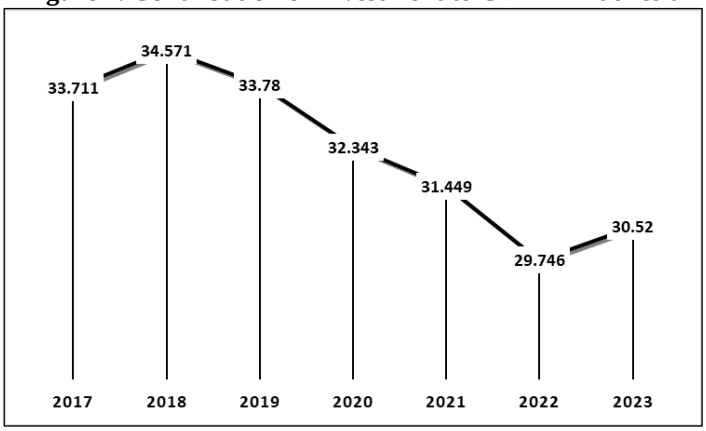
1. INTRODUCTION

Indonesia's economic growth remained relatively stable from 2014 to 2019. However, in 2020, global economic growth experienced a sharp decline due to the COVID-19 pandemic (Labiaga & Karl P. Campos, 2024). In addition to the pandemic, other factors influencing economic growth include political conditions (Zhorayev & He, 2022), natural resources (Cheng et al., 2024), human capital (Raphael & Carlos, 2024), and investment levels (Zhao & Lee, 2024). The external shock of COVID-19 led to a significant decline in Indonesia's economic growth, affecting regions across the country. The previous research indicates that the COVID-19 pandemic has disrupted various economic sectors, which in turn has impacted investment and overall economic growth (Akbar et al., 2022).

Investment is a crucial prerequisite for economic advancement. Through investment, resources can be allocated to increase production capacity, create jobs, and strengthen competitiveness. Investment, whether as physical assets that mentioned like infrastructure and technology, or human capital, which

are drive economic growth in the long term. Investment activities in a country's economy, classified as foreign capital investment and domestic investment, both have tangible effects on economic activity. These investments can lead to increased production, job creation, and higher community income, which, in turn, contribute to the increase in a region's Gross Regional Domestic Product (GRDP). However, Indonesia received a relatively low level of investment starting from 2019 (Zahara & Octavia, 2021).

Figure 1. Contribution of Investment to GDP in Indonesia



Source: IMF (data processed in 2024)

Economic growth is a multifaceted process that reflects a country's increasing production capacity, typically measured by an increase in real Gross Domestic Product (GDP). It is closely linked to economic development, which includes broader improvements in income distribution, structural changes in the economy, and overall societal welfare. Quantitatively, this is measured through metrics like real GDP, which reflects economic performance over time (Ani & Onu, 2022). However, investment trends have shifted due to the pandemic, both in terms of quantity and effectiveness in driving economic growth. Therefore, this study aims to understand how both domestic and foreign investments influence economic growth in Indonesia after the pandemic. Based on the above background, this study focuses on the following issues: (1) how does domestic capital investment affect economic growth post pandemic COVID-19? and (2) how does foreign investment impact economic growth post pandemic COVID-19?

The impact of foreign investment on long-term economic growth has been demonstrated in various sectors, such as tourism in Jordan from 1980–2016 (Al-Hallaq et al., 2020), in South and Southeast Asia from 2002–2019 (Bhujabal et al., 2024), the energy sector in Finland from 1990–2021(Georgescu & Kinnunen, 2024), and in political and economic conditions in Africa from 1970–2019 (Ganda, 2024), among other countries (Jui et al., 2024; Magazzino & Mele, 2022; Rawat, 2012). These studies found a positive long-term relationship between the ratio of foreign direct investment to GDP and the income ratio of various sectors to GDP.

In the context of investment, interest rates have a significant impact on investment decisions, both domestic and foreign. When interest rates are low, borrowing costs decrease, encouraging companies to invest more in new projects, which in turn can boost GDP (Saragih et al., 2021; Yasmin, 2023). Conversely, high interest rates can hinder domestic investment by increasing borrowing costs for companies. In the context of Indonesia, research by Hidayat indicates that interest rates have a positive impact on economic growth but also notes that high interest rates can suppress investment growth (Indra, 2019; Susanto, 2018).

One of the significant contributions of this study is to provide an in-depth understanding of investment predictors, incorporating the latest data as Indonesia enters a post-COVID-19 adaptation

period. Reliance on foreign investment carries substantial risks, especially considering that global instability can affect the flow of foreign capital into the country (Budiono & Purba, 2023). Therefore, domestic investment becomes a new variable worth considering, as it can support and drive national economic growth (Arta, 2013; Rizky et al., 2016; Wihda & Poerwono, 2014), particularly when foreign investment inflows are disrupted.

During the pandemic, Bank Indonesia adopted an accommodative monetary policy, lowering interest rates to stimulate economic growth (DJKN Kemenkeu, 2020). This policy aimed to mitigate the recession's effects by making borrowing cheaper, thereby encouraging investment and consumption. Sebayang et al. highlight that the reduction in the Bank Indonesia rate led to lower loan interest rates, which positively influenced economic growth during the pandemic (Sebayang et al., 2022). This aligns with findings from other studies indicating that lower interest rates can stimulate economic activity, particularly in times of crisis (Hariyanti & Soeharjoto, 2022).

2. METHOD

This study employs panel data regression, which allows for more robust analysis and provides more accurate estimates compared to analyses that rely solely on cross-sectional or time-series data separately (Durrah et al., 2020; Henukh & Atti, 2022). Panel data regression is a statistical method that combines cross-sectional and time-series data to analyze economic growth phenomena influenced by changes in foreign and domestic investment before and after the COVID-19 pandemic. The study covers 34 provinces in Indonesia over the period 2010-2023 and includes a dummy variable to account for the pre- and post-COVID periods.

In general, panel data regression can be divided into several models, including the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). The appropriate model selection depends on the characteristics of the data and the research objectives. FEM is used when the researcher aims to control for unobserved variables that may influence the dependent variable, while REM is more suitable when unobserved variables are considered random and uncorrelated with the independent variables (Durrah et al., 2020; Rahmadeni & Nurjannah, 2022).The equation for this research is written as shown on formula (1)

$$\ln\_GRDP_{it} = \beta_0 + \beta_1 IF_{it} + \beta_2 ID_{it} + \beta_3 COVID_{it} + \beta_4 BIRATE_t + \varepsilon_{it}, \varepsilon \sim N(0, \sigma^2) \quad (1)$$

In this model (formula 1), ln_RGDP$_{it}$ represents the dependent variable for the Gross Regional Domestic Product (GRDP) of province *i* at time *t*, while IF, ID, COVID, and BIRATE are the independent variables. The parameters β_0, β_1, β_2, β_3 and β_4 represent the regression coefficients, indicating the influence of each independent variable on ln_GRDP. The error term ε_{it} captures unobserved factors that might affect ln_GRDP for observation *i* at time *t*, with the assumption that these errors follow a normal distribution with a mean of zero and a constant variance (σ^2). Meanwhile, the dummy variable COVID is used to identify the impact of the pandemic on ln_GRDP, and the interest rate is assumed to be constant for all provinces at a given time. The error term (ε_{it}) reflects other factors influencing GRDP that are not included in the model. This model is essential for understanding the extent to which changes in foreign investment, domestic investment, the COVID-19 pandemic, and interest rate fluctuations impact economic growth at the provincial level.

In this context, the coefficient β2, representing the impact of Domestic Investment, is expected to be larger than β1, which reflects the effect of Foreign Investment (Hypothesis 1). The pandemic is expected to reduce economic growth due to market uncertainty, then decline in business activity (Hypothesis 2). The Hypothesis 3 proposes that an interest rate rule can support Economic Growth. Appropriate interest rate policies are expected to encourage investment, boost consumption, and ultimately strengthen economic growth.

Table 1. Operational Definition of Variables

Notation	Variables	Definition	Indicator	Source
ln_GRDP	Natural logarithm of Economic Growth	Economic growth measured through Gross Domestic Product (GDP), reflecting the increase in production, expenditure, and overall economic activity within a country over time (Purwanto & Siswahadi, 2021).	GDP from 2010-2023 in Billion Rupiahs	Central Bureau of Statistics (2023)
IF	Foreign Investment	Investment activities conducted by foreign investors to run businesses within Indonesia's territory (Law No. 25/2007 Article 1 Clause 9 in Aminda & Rinda, 2019)	Realization of foreign investment from 2010-2023 in Million USD	Central Bureau of Statistics (2023)
ID	Domestic Investment	Capital investment activities by domestic investors to run businesses within the Republic of Indonesia using capital originating from within the country (Law No. 25/2007 Article 1 Clause 2 in Aminda & Rinda, 2019)	Realization of domestic investment from 2010-2023 in Million USD	Central Bureau of Statistics (2023)
COVID	COVID-19	Dummy variable	0 = before covid 1 = starting covid	
BIRATE	Interest rate	the cost of borrowing money or the return on investment for savings (R et al., 2023)	BI Rate from 2010-2023	Bank Indonesia (2023b)

Sources: Various sources processed in 2024

After determining the best model (FEM, CEM, or REM) for estimation, it is necessary to test whether the model is free from multicollinearity, heteroscedasticity, and autocorrelation issues. The no-multicollinearity assumption (Gujarati, 2012) implies that there is no perfect linear relationship between the independent variables (X variables) in the regression model. The Variance Inflation Factor (VIF) < 10 indicates no serious multicollinearity issues. Conversely, a VIF ≥ 10 suggests significant multicollinearity, which may require actions like removing or combining independent varibles. When using time series data in multiple regression analysis, autocorrelation occurs when consecutive observations are correlated with each other. If autocorrelation exists, the regression coefficient estimates may be inefficient, and hypothesis test results may be biased (Gujarati, 2012). Homoskedasticity means that the variance of the regression error terms, represented by ε_{it}, is constant across the range of independent variable value ($var(u_i|X) = \sigma^2$). Where σ^2 indicates constant variance without variation or specific specification (Gujarati, 2012).

The t-statistic is used to test the significance of each regression coefficient of the independent variables (Gujarati, 2012). The t-value is used to determine if the regression coefficient is statistically significant. The larger the t-value, the greater the likelihood that the coefficient differs from zero (meaning, the independent variable affects the dependent variable). The t-value is compared to the critical value from the t-distribution to determine coefficient significance, usually with significance levels $\alpha = 0{,}1$ or $\alpha = 0{,}05$ or $\alpha = 0{,}01$ (Gujarati, 2012).

The F-statistic is also used to measure the significancy of all model of regression, calculated by comparing the Explained Sum of Squares (ESS) and the Residual Sum of Squares (RSS), adjusted for degrees of freedom (Gujarati, 2012). After calculating the F-statistic, it is compared to the critical value from the F-table to determine its significance. If the calculated F-statistic exceeds F-table, Hypothesis 3 (H3) is accepted, indicating that at least one independent variable is significant (Gujarati, 2012).

The Coefficient of Determination (R^2) is a measure of the overall fit of the estimated regression model, representing the proportion or percentage of total variation in the dependent variable Y (TSS) explained by all independent variables. The sum of RSS and ESS is the total variation in Y, called the Total Sum of Squares (TSS), expressed as follows (Gujarati, 2012). The R^2 value ranges from 0 to 1. The higher the R^2 value, the better the model explains the data variation.

3. RESULTS AND DISCUSSION

This research observed 476 observations for each variable. Table 2 defined the mean logarithm of Gross Regional Domestic Product (ln_GRDP) is 11.738 with a standard deviation of 1.586, suggesting moderate variation in regional economic size. The Foreign Investment (IF) variable has an average of 882.105, showing a wide range (min: 0, max: 8283.7) and a high standard deviation (1376.025), indicating a highly uneven distribution. Domestic Investment (ID) also displays significant variation, with a mean of 8344.722 and a standard deviation of 14050.419. The COVID indicator shows that around 35.7% of regions reported positive cases, with a minimum of 0 and a maximum of 1. The average interest rate (BIRATE) is 6.198 with a standard deviation of 1.512, reflecting relatively small fluctuations in interest rates across regions.

Table 2. Summary statistics

	N	Mean	Median	SD	Min	Max
ln_GRDP	476	11.738	11.662	1.586	0	14.534
IF	476	882.105	294.6	1376.025	0	8283.7
ID	476	8344.722	3340.15	14050.419	0	95202.102
COVID	476	.357	0	.48	0	1
BIRATE	476	6.198	6.39	1.512	3.21	8.75

Based on the results of the Breusch-Pagan Lagrangian Multiplier test, a chibar2(01) value of 368.22 with a p-value of 0.0000 was obtained (Table 3). This indicates that the variance between cross-sectional units (provinces) is significant, leading us to reject the null hypothesis, which states that there are no differences in effects between provinces. Therefore, the Random Effects (RE) model is more appropriate than the Pooled Ordinary Least Square (OLS) model because there is significant variation between provinces that affects GRDP values. As a result, the Random Effects model is better suited to capture the differing characteristics between provinces in this analysis.

Table 3. Lagrange Multiplier Test Results

	Var	**SD = sqrt (Var)**
ln_GRDP	2.514142	1.585605
e	.926797	.962703
u	.5011814	.7079416
Chibar2(01)	368.22	
Prob > chibar2	0.0000	

Table 4 shows The Hausman test result showing $chi^2(3) = 18.46$ and Prob > $chi^2 = 0.0004$ indicates that H0 (the difference in coefficients is not systematic) is rejected at the 1% significance level. This means that the difference between the coefficients obtained from Fixed Effects Model (FEM) and Random Effects Model (REM) is systematic. Therefore, the Model 1 with Fixed Effects (FEM) is more appropriate because the coefficient differences cannot be explained by chance alone.

The Variance Inflation Factor (VIF) value in Table 5 indicates no multicollinearity symptoms in the regression model. VIF is used to detect whether there is a strong linear relationship among independent variables. The model is considered free from multicollinearity if the VIF value is less than 10 and the value of Tolerance (1/VIF) is greater than 0.1.

Table 4. Regression Model Estimation

Dependent: ln_GRDP		Model Estimation Approach		
		Model 1	**Model 2**	**Model 3**
Intercept (_cons)	Coefficient	11.41451	11.14381	11.41451
	Std. Error	0.3131277	0.3450751	.2130089
	z	36.45	32.29	53.59
	P>|z|	0.000***	0.000***	0.000***
IF	Coefficient	0.0000968	0.0002197	.0000968
	Std. Error	0.0000676	0.000062	.000024
	z	1.43	3.54	4.03
	P>|z|	0.153	0.000***	0.000***
ID	Coefficient	3.32e-07	0.0000129	3.32e-07
	Std. Error	5.74e-06	5.61e-06	1.81e-06
	z	0.06	2.30	0.18
	P>|z|	0.954	0.021**	0.855
COVID	Coefficient	0.4364871	0.3152605	.4364871
	Std. Error	0.140079	0.1442253	.1638118
	z	3.12	2.19	2.66
	P>|z|	0.002*	0.029**	0.012**
BIRATE	Coefficient	0.0127751	0.029013	.0127751
	Std. Error	0.0423892	0.0439743	.0238095
	z	0.30	0.66	0.54
	P>|z|	0.763	0.509	0.595
R^2 overall		0.4433	0.5526	0.4433
F-stats		12.53		25.33
Wald chi2			46.27	
Prob (F-stats)		0,000000	0,000000	0,000000
Lagrange test			0.0000	
Hausman test			0.0004	

Standard errors in parentheses * p<0.10, ** p<0.05, *** p<0.01

Table 5. Multicollinearity Test Results

Variable	VIF	1/VIF
C	2.18	0.458978
BIRATE	2.18	0.480652
ID	1.87	0.533720
IF	1.69	0.593181

The result of the Modified Wald test for groupwise heteroskedasticity in the fixed-effects regression model shows Chi-Square statistic: $chi^2(34) = 700{,}000$ and p-value: Prob > $chi^2 = 0.0000$. Since the p-value = 0.0000, that far below the commonly used significance level of 0.05, we reject the null hypothesis (H0). It shows heteroskedasticity is present in the data across the different groups (provinces, in this case). The variance of the error terms (σ_i^2) is not constant across the groups, implying that the assumption of homoscedasticity is violated. In this case, the presence of heteroskedasticity suggests that adjustments (such as using robust standard errors) should be made to account for the varying error variances across the groups to avoid biased standard errors and incorrect inferences.

The results of the Wooldridge test for autocorrelation indicate that the p-value = 0.3202, which exceeds the significance level of 0.05. It suggests that there is no first-order autocorrelation in the model. This implies that the error terms in the panel data regression model are not significantly correlated across time periods, thus supporting the assumption of no autocorrelation and the model satisfies the assumption of independent error terms across time.

To address the issue of heteroskedasticity, the robust option was applied. Model 3 in Table 4

represents the robust regression model with the estimation of IF, ID, and COVID on ln_GRDP, resulting in the formula (2).

$$\ln\_GRDP_{it} = 11.41451 + 0.0000968IF_{it} + 3.32\text{e} - 07ID_{it} + 0.4364871COVID + 0.0127751\text{BIRATE} + \varepsilon_{it} \quad (2)$$

The intercept (β0) is 11.41451, representing the estimated economic growth when all independent variables are zero, which refers to the scenario before the impact of COVID. This implies that if foreign investment (IF) and domestic investment (ID) are at their minimum (0), economic growth, measured by the natural logarithm of regional GDP (ln_GRDP), is predicted to be approximately 11.41451. In real terms, this suggests that the projected economic growth, in the absence of foreign investment, domestic investment, and without the COVID-19 variable considered, would be around 11.41451 billion rupiahs. This intercept captures the baseline level of economic activity before the introduction of the independent factors, primarily reflecting the pre-COVID condition of the provincial economies in Indonesia.

The coefficient for IF is 0.0000968. This implies that 1 million USD increase in foreign investment is associated with an increase of 0.0000968 billion rupiahs in the log of GRDP, holding other variables constant. Though small, this shows a positive relationship between foreign investment and economic growth. The t-test probability which is less than 0.05. This result means that foreign investment is statistically significant in influencing economic growth at a 1% significance level.

The coefficient for ID is 3.32e-07, indicating that 1 billion rupiahs increase in domestic investment will increase 3.32e-07 billion rupiahs in the log of GRDP, holding other variables constant. This effect is very small and statistically insignificant (Prob 0.855 > 0.05). The coefficient of foreign investment is greater than domestic investment (**Hypothesis 1 is accepted)**. The dummy variable COVID has a coefficient of 0.4364871, which means that during the COVID-19 pandemic, the log of GRDP increases by 0.4364871 billion rupiahs compared to the pre-pandemic period, all else being equal. The COVID variable is significant at the 5% significance level. This positive coefficient might suggest that economic resilience was supported during COVID, though it can also reflect specific regional responses. Thus, the hypothesis **H2**, which states that "COVID-19 may reduce Economic Growth due to market uncertainty," is **not supported** by this analysis. Instead, the results show a positive impact on economic growth during COVID-19, which might be attributed to other factors, although this may seem counterintuitive to the expected negative impact.

The coefficient for BIRATE is 0.0127751, indicating that a one-unit percent increase in interest rates is associated with an increase of 0.0127751 billion rupiahs in the log of GRDP, assuming other variables remain constant. Since the p-value (0.763) is much greater than the commonly used significance level of 0.05, BIRATE is insignificant in this model. Therefore, **H3** is **not supported** by the data, as the interest rate does not significantly influence economic growth in this model.

Moreover, considering the overall fit of the model (R^2) value of 44.33% indicates that the model explains 44.33% of the variation in economic growth due to foreign investment, domestic investment, and other variables like COVID-19 and interest rates. The remaining 55.63% is explained by other factors outside the model, suggesting that additional variables or unobserved factors also significantly influence economic growth at the provincial level.

1. **Investment Adaptation through Foreign Investment and Its Impact on Economic Growth**

   Foreign investment, estimated with a regression coefficient of 0.0000968, indicates that each additional 1 million USD in foreign investment is projected to have a substantial positive impact on the province economic growth, increasing it by 0.0000968 billion rupiahs. This coefficient

suggests that the inflow of foreign investment plays a crucial role in accelerating economic growth. This may be attributed to the capacity of foreign capital to provide broader access to technology and knowledge (Georgescu & Kinnunen, 2024), which not only enhances productivity but also creates new jobs and strengthens various sectors of the economy (Magazzino & Mele, 2022).

The t-test result of 0.000 shows strong statistical significance at the commonly used 5% confidence level in research. This figure indicates that the impact of foreign investment on economic growth is not only positive but also statistically significant in all provinces and data years. This result is reliable in demonstrating that an increase in the flow of foreign investment consistently affects economic growth (Budiono & Purba, 2023).

The significant impact of foreign investment highlights reliance on foreign capital to accelerate its economic growth. The presence of foreign investment not only supports major industrial sectors, such as manufacturing and services (Magazzino & Mele, 2022), but also creates a multiplier effect that extends to other sectors, including SMEs and infrastructure. This positive effect reflects both local and national policies that are pro-foreign investment, particularly through improving the investment climate via regulatory reforms and facilities for foreign investors in the long run (Ani & Onu, 2022).

Based on the analysis conducted, a recommendation that can be considered is to increase foreign investment. Given that foreign investment has been shown to significantly boost economic growth, it is advisable for the regional government to create a more attractive investment climate. This could include tax incentives, simplifying licensing processes, and promoting local advantages that may attract foreign investors.

2. **Investment Adaptation through Domestic Investment and Its Impact on Economic Growth**

The regression coefficient for a domestic investment of 3.32e-07 indicates that each additional 1 billion rupiahs in domestic investment is expected to increase economic growth by 3.32e-07 billion Rupiah. However, the t-test probability of 0.0855 suggests a level of significance that is not strong enough to confidently assert that this effect consistently holds. Statistically, this value indicates that the relationship between domestic investment and economic growth is close to the standard significance threshold (0.05) but not quite significant (Wihda & Poerwono, 2014). This means that while the regression coefficient shows a positive impact, there remains some uncertainty regarding the statistical reliability of this effect.

Conceptually, these results may reflect several things. First, the impact of domestic investment on economy may occur indirectly or with a time lag (Aminda & Rinda, 2019) before its effect is fully realized in economic growth. Second, other factors such as local policies (Ganda, 2024) and infrastructure quality (Budiono & Purba, 2023) are also suggested to play a significant role in determining the effectiveness of domestic investment. This highlights the importance of the interaction between domestic investment and other factors to maximize its impact on economic growth. Despite its insignificant effect in the model, it recommended including capacity-building programs and support for local SMEs to encourage increased investment when designing suitable strategies (Rizky et al., 2016). This approach could strengthen the local economy and reduce dependence on foreign investment. Additionally, the provincial government should consider economic sector diversification, considering diversifying target sectors for investment (Arta, 2013), including underdeveloped sectors, to promote more balanced economic growth and resilience against global economic fluctuations.

3. The Interest Rates on Economic Growth During the COVID-19 Pandemic

The relationship between interest rates and economic growth has been a subject of extensive research, with central banks using interest rate policies to influence macroeconomic outcomes. In the context of Indonesia, the Bank Indonesia (BI) rate serves as a key tool for controlling inflation, stabilizing the currency, and stimulating or cooling down the economy. The analysis conducted in this study shows that the BI rate has a positive but statistically insignificant effect on economic growth. The coefficient for the BI rate in the regression model was 0.0127751 with a p-value of 0.763, indicating that BI rate changes do not significantly influence economic growth during the period studied. This suggests that, within the model framework, fluctuations in interest rates may not have been a primary driver of economic growth at the provincial level during the analyzed period.

Several factors may contribute to the lack of statistical significance of the BI rate in this model. One possible explanation could be the broader macroeconomic environment (Siregar et al., 2023), particularly during the COVID-19 pandemic, which overshadowed the effects of monetary policy. Bank Indonesia gradually lowered the benchmark interest rate, the BI 7-Day Reverse Repo Rate (BI7DRR), from the beginning of the pandemic until it reached 3.5% in 2022 (Bank Indonesia, 2023a). As a result of this policy, there was a decrease in loan interest rates, which was expected to boost economic growth (Sebayang et al., 2022).

Although there is a positive coefficient, statistical significance was not achieved, indicating that other factors also play a role in influencing the market during the period of uncertainty (Hassan et al., 2022). In this case, while the BI rate role in stimulating economic growth might be crucial under normal circumstances, the extraordinary conditions created by the pandemic likely diminished its effectiveness. Therefore, while the BI rate is an important tool for economic management, its direct influence on growth, particularly during periods of crisis, may require further exploration with a broader range of variables or a longer time horizon.

4. CONCLUSION

In conclusion, this study highlights the significant role of foreign investment and the COVID-19 pandemic in shaping economic growth across Indonesian provinces. While foreign investment positively influences economic growth, its impact was somewhat diminished during the pandemic, likely due to market uncertainties. Furthermore, the interest rate, though often considered a tool for economic stability, did not significantly affect economic growth during COVID-19. These findings suggest that while investment inflows can drive economic progress, the broader economic environment, such as global crises like COVID-19, and monetary policies such as interest rates, play crucial roles in determining economic growth trajectory. Further research could delve into more granular factors affecting economic recovery post-pandemic and the long-term effects of interest rate policies on growth.

ACKNOWLEDGMENT

The author declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article

REFERENCES

Akbar, K., Irsad, I., Kembaren, E. T., Tanjung, A. F., & Harahap, A. R. (2022). Dampak Pandemi Covid 19 pada Pertumbuhan Perekonomian Indonesia. *Jurnal Agriuma*, *4*(2), 88–96. https://doi.org/10.31289/agri.v4i2.8247.

Al-Hallaq, S. S., Athamneh, A. B., & Suleiman, H. M. (2020). The impact of foreign direct investment on the growth of the tourism sector in Jordan (1980–2016). *Journal of Public Affairs*,

20(2). https://doi.org/10.1002/pa.2005.

Aminda, R. S., & Rinda, R. T. (2019). Analisis Penanaman Modal Asing dan Penanaman Modal Dalam Negeri dan Pengaruhnya terhadap Pertumbuhan Ekonomi (Tahun 2010-2018). *Proceeding Seminar Nasional dan Call for Papers 2019 Isu-Isu Riset Bisnis dan Ekonomi di Era Disrupsi: Strategi Publikasi di Jurnal Bereputasi*, 103–109.

Ani, K. J., & Onu, C. (2022). Effect of Foreign Direct Investment on Gross National Income In Nigeria, 2006-2017. *Independent Journal of Management & Production*, *13*(1), 056–071. https://doi.org/10.14807/ijmp.v13i1.1484.

Arta, Y. K. (2013). Pengaruh Penanaman Modal Asing (PMA), Penanaman Modal Dalam Negeri (PMDN), dan Angkatan Kerja terhadap Pertumbuhan Ekonomi di Jawa Tengah. *Economics Development Analysis Journal*, *2*(2), 1–8. http://journal.unnes.ac.id/sju/index.php/edaj.

Bank Indonesia. (2023a). *Bank Indonesia's Monetary Policy Response to the COVID-19 Pandemic*. https://www.bi.go.id/en/publikasi/ruang-media/news-release/pages/sp_2415922.aspx.

Bank Indonesia. (2023b). *BI Rate*. https://www.bi.go.id/id/statistik/indikator/bi-rate.aspx.

Bhujabal, P., Sethi, N., & Padhan, P. C. (2024). Effect of institutional quality on FDI inflows in South Asian and Southeast Asian countries. *Heliyon*, *10*(5). https://doi.org/10.1016/j.heliyon.2024.e27060.

Budiono, S., & Purba, J. T. (2023). Factors of Foreign Direct Investment Flows to Indonesia in the Era of COVID-19 Pandemic. *Heliyon*, *9*(4). https://doi.org/10.1016/j.heliyon.2023.e15429.

Central Bureau of Statistics. (2023). *https://www.bps.go.id/*.

Cheng, W., Dilanchiev, A., Mammadov, E., & Wanjun, S. (2024). The Impact of Natural Resource Extensive on Green Economic Growth Policies. *Resources Policy*, *92*, 104980. https://doi.org/10.1016/j.resourpol.2024.104980.

DJKN Kemenkeu. (2020). *Strategi Kebijakan Pemulihan Ekonomi Nasional (PEN)*. https://www.djkn.kemenkeu.go.id/artikel/baca/13287/strategi-kebijakan-pemulihan-ekonomi-nasional.html.

Durrah, D. F., Cahyandari, R., & Awalluddin, A. S. (2020). Model Regresi Data Panel Terbaik untuk Faktor Penentu Laba Neto Perusahaan Asuransi Umum Syariah di Indonesia. *Kubik: Jurnal Publikasi Ilmiah Matematika*, *5*(1), 28–34. https://doi.org/10.15575/kubik.v5i1.8488.

Ganda, F. (2024). The Influence Of Democracy, Corruption, Economic Growth and ICT on Carbon Emissions in Sub-Saharan African Countries: Does FDI matter? *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(3). https://doi.org/10.1016/j.joitmc.2024.100324.

Georgescu, I., & Kinnunen, J. (2024). Effects of FDI, GDP and energy use on ecological footprint in Finland: An ARDL approach. *World Development Sustainability*, *4*. https://doi.org/10.1016/j.wds.2024.100157.

Gujarati, D. N. (2012). *Econometrics by Example*. Palgrave Macmillan.

Hariyanti, D., & Soeharjoto, V. (2022). Impact of Monetary Policy on Indonesia's Economic Growth, Case Studies before and during the Covid-19 Pandemic. *Proceedings of the First Lekantara Annual Conference on Public Administration, Literature, Social Sciences, Humanities, and Education, LePALISSHE 2021, August 3, 2021, Malang, Indonesia*. https://doi.org/10.4108/eai.3-8-2021.2315159.

Hassan, N. N. N. M., Romli, N., & Aljoefry, M. J. I. (2022). The Effect of Macro Economy Variables on Stock Market Performance During Pandemic. *International Journal of Academic Research in Economics and Management Sciences*, *11*(3). https://doi.org/10.6007/IJAREMS/v11-i3/14695.

Henukh, C., & Atti, A. (2022). Metode Regresi Data Panel untuk Pemodelan Indeks Pembangunan Manusia (IPM) di Provinsi Nusa Tenggara Timur. *Jurnal Diferensial*, *4*(2), 103–113. https://doi.org/10.35508/jd.v4i2.8188.

IMF. (2024). *World Economic Outlook 2024*. https://www.imf.org/en/Publications/WEO/Issues/2024/10/22/world-economic-outlook-october-2024

Indra, I. (2019). Macro Stress Test Model Risiko Kredit: Studi Empiris Perbankan Konvensional dan Syariah di Indonesia. *Jurnal Ekonomi Dan Kebijakan Publik*, *9*(2), 113–130. https://doi.org/10.22212/jekp.v9i2.1063.

Jui, F. N., Hossain, M. J., Das, A., Sultana, N., & Islam, M. K. (2024). Analyzing the Impact of Remittance, FDI and Inflation Rate on GDP: A comparative study of Bangladesh, Pakistan and Sri-Lanka using VAR and BEKK-GARCH approach. *Heliyon*, *10*(11). https://doi.org/10.1016/j.heliyon.2024.e31381.

Labiaga, J. F., & Karl P. Campos. (2024). Philippine MSMEs after The Covid-19 Pandemic: A Systematic Review of Pandemic Impacts and Coping Strategies. *Jurnal Ekonomi Dan Bisnis*, *28*(1), 13–22. https://doi.org/10.24123/jeb.v28i1.6357.

Magazzino, C., & Mele, M. (2022). Can a change in FDI accelerate GDP growth? Time-series and ANNs evidence on Malta. *Journal of Economic Asymmetries*, *25*. https://doi.org/10.1016/j.jeca.2022.e00243.

Purwanto, H., & Siswahadi, S. (2021). Paradigm Of National Income in Islamic Economy. *Syariati: Jurnal Studi Al-Qur'an Dan Hukum*, *7*(1), 93–102. https://doi.org/10.32699/syariati.v7i1.1851.

R, W. W., Haryono, S., & Tahir, Muh. (2023). Macroeconomic Effect on Sukuk Growth with Inflation as A Moderation Variable. *Jurnal Ilmu Keuangan Dan Perbankan (JIKA)*, *12*(2), 223–234. https://doi.org/10.34010/jika.v12i2.6119.

Rahmadeni, R., & Nurjannah, N. (2022). Model Tingkat Kemiskinan di Kabupaten/Kota Provinsi Riau: Menggunakan Regresi Data Panel. *KUBIK: Jurnal Publikasi Ilmiah Matematika*, *6*(2), 98–109. https://doi.org/10.15575/kubik.v6i2.13598.

Raphael, M., & Carlos, T. (2024). Analyzing Factors Affecting Economic Growth and Evaluating The Macroeconomic Model in Zambia. *Флагман Науки*, *11(11)*. https://doi.org/10.37539/2949-1991.2023.11.11.011.

Rawat, B. (2012). Impact of FDI on India's GDP: An Inter-Comparative Study Between USA, UK and Japan. In *Transnational Corporations Review* (Vol. 4, Issue 3). www.tnc-online.net.

Rizky, R. L., Agustin, G., & Mukhlis, I. (2016). Pengaruh Penanaman Modal Asing, Penanaman Modal Dalam Negeri dan Belanja Modal Terhadap Pertumbuhan Ekonomi Provinsi di Indonesia. *JESP*, *8*(1), 9–16.

Saragih, C. A. M., Haryadi, H., & Emilia, E. (2021). Pengaruh Produk Domestik Bruto, Suku Bunga, dan Inflasi terhadap Foreign Direct Investment di Indonesia Periode 2000-2017. *Jurnal Ekonomi Aktual*, *1*(1), 35–44. https://doi.org/10.53867/jea.v1i1.4

Sebayang, J., Albar Tanjung, A., & Sukardi, S. (2022). Monetary Policy and Innovation During Recession in Indonesia. *Jurnal Ekonomi Pembangunan*, *20*(01), 21–33. https://doi.org/10.22219/jep.v20i01.18896.

Siregar, R. P., Tanjung, A. A., & Syafii, M. (2023). Analysis of Monetary Policy Mechanism Through Interest Rate Path to Stock Market (IHSG) in Indonesia. *International Journal of Research and Review*, *10*(1), 284–303. https://doi.org/10.52403/ijrr.20230132.

Susanto, S. (2018). Pengaruh Inflasi, Tingkat Suku Bunga, dan Nilai Tukar terhadap Pertumbuhan Ekonomi Indonesia. *JEBI | Jurnal Ekonomi Bisnis Indonesia*, *12*(01), 52–68. https://doi.org/10.36310/jebi.v12i01.27.

Wihda, B. M., & Poerwono, D. (2014). Analisis Pengaruh Penanaman Modal dalam Negeri (PMDN), Penanaman Modal Asing (PMA), Pengeluaran Pemerintah dan Tenaga Kerja terhadap Pertumbuhan Ekonomi di Yogyakarta (Tahun 1996–2012). *Diponegoro Journal of Economics*, *3*(1), 210–221. http://ejournal-s1.undip.ac.id/index.php/jme.

Yasmin. (2023). Analisis Pertumbuhan Ekonomi Melalui Jalur Transmisi Current Account dan Capital Inflow di Indonesia. *Jurnal Ilmiah Ekonomi Bisnis*, *28*(1), 25–41. https://doi.org/10.35760/eb.2023.v28i1.6624.

Zahara, E. L., & Octavia, E. (2021). *Perkembangan PMDN dan PMA di Indonesia Tahun 2016-2020*.

Zhao, J., & Lee, S.-Y. (2024). Key Factors Affecting Sustainable Economic Growth in the New Normal Era: An Empirical Analysis of Country Data. *Journal of Korea Trade*, *28*(3), 47–69. https://doi.org/10.35611/jkt.2024.28.3.47.

Zhorayev, O., & He, H. (2022). Macroeconomic, Political and Institutional Factors of Economic Growth. *Economics: The Strategy and Practice*, *17*(2), 190–205. https://doi.org/10.51176/1997-9967-2022-2-190-205.