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Research article

How Escaping the Middle-Income Trap: Key Factors for Indonesia's Growth?

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ABSTRACT

This study investigates the complex interplay between human development index, foreign direct investment, and investment efficiency in driving economic growth. Utilized time-series data during 2000 to 2022, sourced from the World Bank and the Asian Development Bank. Employing the ARDL model. The findings reveal a strong positive correlation between HDI and economic growth, highlighting the critical role of investments in education, health, and social welfare. While FDI significantly contributes to economic growth through technology transfer and productivity enhancement, the study surprisingly finds limited evidence of a direct link between investment efficiency and economic growth. This suggests that factors such as institutional quality and innovation play a more dominant role. These findings have crucial implications for Indonesia, which faces the challenge of escaping the middle-income trap. Prioritizing human development, attracting high-quality FDI, and fostering a conducive investment climate through institutional reforms are crucial for sustainable and inclusive growth. By investing in human capital, promoting technological innovation, and effectively leveraging FDI, Indonesia can overcome the middle-income trap and achieve long-term economic prosperity.

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1. INTRODUCTION

Economic growth in the world has complex dynamics, not just stable trend fluctuations. This complex growth can cause prolonged periods of stagnation or recession, these periods are a challenge for governments or regulators to overcome. One of the impacts of this period is the emergence of the "Middle Income Trap" phenomenon. This phenomenon is a condition in which economic growth increases but is not accompanied by a strategy to continue to encourage an increase in per capita income. Stagnant economic growth and middle-income per capita are trapped and difficult to match the income of developed countries (Aiyar et al., 2018). The Middle-Income Trap phenomenon occurs when countries are unable to match their growth strategies with the structural characteristics that apply to their economies (Glawe & Wagner, 2020). Further explanation of the middle-income trap phenomenon by Eichengreen et al. (2014) uses another term, namely growth slowdown, this term is used as an indication that a country can be trapped in the middle-income trap stage. Slowing growth is a condition where the rate of per capita income growth does not experience a significant increase even though the country is already in the middle-income trap stage.

Indonesia has been stuck in the middle-income trap since 1985, then entered lower income when the crisis occurred, and returned to middle-income in the 2000s until now. The government

has attempted various policies to encourage Indonesia to get out of this phenomenon following other Asian countries such as South Korea, Hong Kong, and Singapore which have transitioned to high-income status countries. One way to escape the middle-income country trap is with an average economic growth of 6% per year so that it can be followed by an increase in per capita income. Briefly in Figure 1, in the period 1990-2022 Indonesia experienced growth with an average of 5.05%, so it can still be said that Indonesia's economic growth is still stagnant in the range of 5%.

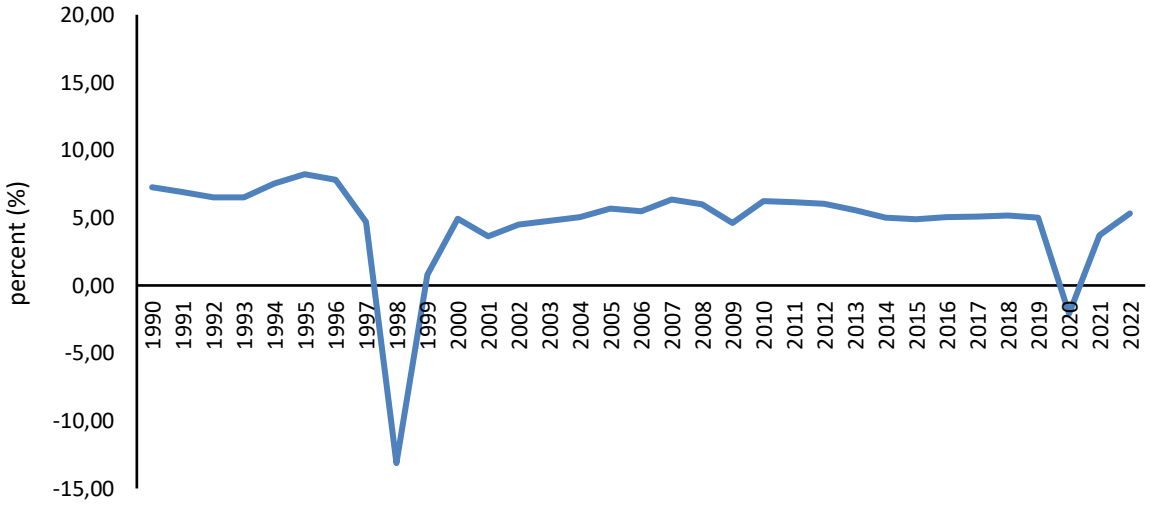

Figure 1. Trend of Economic Growth in Indonesia, 1990-2022

The opportunity to take advantage of the demographic bonus in 2030 to 2040 as one way to increase economic growth in Indonesia (Andriani & Yustini, 2021). Based on World Bank data (2023), Indonesia has great potential to have high economic growth because it has a population of more than 270 million people. However, a large population does not fully guarantee that it will support the economy because everything depends on the quality of human resources which in this case can be measured through the human development index. Sarwar et al. (2021) stated that development in human resources is one of the contributors to the process of stable economic growth over time. The influence of the Human Development Index on economic growth was highlighted by Rivera (2017) who found that HDI has a positive sign and has a significant effect on economic growth.

In reality, improving the quality of human resources alone is not enough to be a driving force for growth without being followed by high government spending for development programs and policies effectively and efficiently. Limited revenue from taxes and others can complicate and hinder economic development and in turn slow economic growth. The government's priority in addressing these limitations is through government efforts that can simultaneously encourage the inflow of foreign direct investment (FDI), this can be an alternative source of funding and technology transfer (Ridha & Budi, 2020). According to Eichengreen et al. (2013), FDI is very necessary for developing countries to increase the number of jobs, develop cutting-edge technology, and equitable development which will ultimately increase economic growth. The role of FDI is very important in supporting the Indonesian economy. However, research conducted by Bagas et al. (2022) shows different results from previous research where the HDI does not have a significant effect on economic growth. This is evidenced by the development of the HDI value in Indonesia which is not in line with economic growth in Indonesia. This debate encourages us to fill the research gap regarding the impact of FDI, HDI, and investment efficiency on economic growth in Indonesia.

Highlighting economic development without considering the efficiency in the use of investment in resources is impossible. Efficient investment is an important thing that can be a driving force for real economic growth, without efficiency per capita income will remain stagnant. The Harold-Domar model links the effect of additional capital stock to output known as the Incremental Capital-Output Ratio (ICOR), this implies that the lower the ICOR value, the more efficient the investment made. This means that with less investment, greater output can be produced. Conversely, a high ICOR indicates that greater investment is needed to produce the same output.

(Marissa et al., 2019; and Taguchi & Lowhachai, 2014). Furthermore, several studies have discussed the existence of the middle-income trap in Indonesia, such as those conducted by Malale & Sutikno (2014); and Lumbagol & Pasaribu (2018) found that Indonesia has been trapped in the middle-income trap. Economic conditions that are not supported jointly make Indonesia stagnate and trapped in this phenomenon. Referring to the results of research conducted by Ristianarko et al. (2021) found that there is a negative relationship between the middle class and economic growth.

The urgency is to highlight Indonesia which has been trapped as a middle-income country for more than 29 years. Highlighting this and referring to the 2045 vision, there are only 23 years left for Indonesia to be free from the middle-income country trap phenomenon. Therefore, this study seeks to complement the findings of previous studies in investigating the impact of human development, foreign direct investment, and efficiency in investment on economic growth in Indonesia and formulate several policy alternatives to push Indonesia out of the middle-income country category. Here is a compilation of the remainder of this paper. In the second section, we will give a summary based on the methodology and data framework. In the third section, we focus on filtering the results and empirical analysis. In the meantime, we will offer a conclusion in the final section.

2. RESEARCH METHODS

2.1. Data Collection

This study investigates the impact of human development, foreign direct investment, and investment efficiency on economic growth in Indonesia. Using time series data for the period 1990 to 2022. This data is sourced from the World Bank and the Asian Development Bank. Economic growth is measured by the real GDP growth rate which is an endogenous variable denoted by GDP. The HDI is measured based on indicators of the life expectancy index, education index, and decent living index. According to Dinh et al. (2019) the term foreign investment refers to the inflow of international capital by companies in a country to build or expand their businesses in other countries. In this study, the foreign investment variable uses FDI in dollars. The investment efficiency variable in this study is measured using the Incremental Capital Output Ratio (ICOR). The ICOR value is calculated to determine the investment needs at a certain level of economic growth. In addition, the ICOR value reflects the efficiency of investment made in a region (Mazllami, 2021). The lower the ICOR value, the more efficient the investment made. This means that with less investment, greater output can be produced. Conversely, a high ICOR indicates that a larger investment is required to produce the same output.

2.3. Model Specification

The analysis model in this study refers to the ARDL analysis model. This ARDL analysis model consists of short-term and long-term equation models. The ARDL test is used to overcome models with different levels of stationarity. The ARDL estimation will produce consistent long-term coefficients. The advantage of ARDL is that it produces estimates that are consistent with long-term coefficients asymptotically normal. The ARDL model has been developed by Pesaran & Shin (1999). The steps for performing the ARDL model are the same as the ECM model, first the data stationarity test, the cointegration test, and the ARDL estimation (Hansen, 2022).

The advantages of this model are that ARDL does not consider the small number of samples or observations in its operation (can be used on short series data) and can handle cases when the two variables analyzed have different degrees of integration. The ARDL model that is suitable for situations where y_t and x_t are non-stationary and cointegrated is as follows.

$$y_t = \alpha_0 + \phi_1 y_{t-1} + \ldots + \phi_p y_{t-p} + \beta_0 x_{1_t} + \beta_1 x_{n_{t-1}} + \ldots + \beta_q x_{1_{t-q}} + \beta_0 X_{2_t} + \beta_1 x_{2_{t-1}} + \ldots + \beta_q x_{2_{t-q}} + \varepsilon_t \quad (1)$$

Following research model from Herzer & Nowak-Lehnmann (2006); and Maryanti (2023) on the same topic, the variables are expressed in the form of log-linear regression to investigate the long-

term relationship between diversification between economic growth and HDI, FDI and investment efficiency (EFF). The following is the research model:

$$GDP_t = \alpha_0 + \beta_1 GDP_{t-1} + \lambda_0 HDI_t + \lambda_1 HDI_{t-1} + \lambda_0 lnFDI_t + \lambda_1 lnFDI_{t-1} + \delta_0 EFF_t + \delta_0 EFF_{t-1} + \epsilon_t \quad (2)$$

The variables in this ARDL model are defined as follows, GDP is the real GDP growth rate as the dependent variable (%); HDI is the human development index; FDI is foreign direct investment; and EFF is investment efficiency measured by ICOR. The timespan in this study is from 1990 to 2022.

3. RESULT AND DISCUSSIONS

3.1. Results

Table 1 reports the results of descriptive statistics, the average (Mean) on GDP is 4.704, which shows the middle value of all GDP data. The median GDP of 5.174 indicates that half of the countries have GDP above this value and half below. The fairly high standard deviation (Std. Dev.) on all variables indicates a large variation between countries. The range of values (Minimum to Maximum) is also quite wide, for example for GDP, the lowest value is very negative (-13.127) and the highest reaches 8.220. Meanwhile, the negative skewness value on the GDP variable indicates a distribution that is skewed to the right (positive), meaning that most countries have low GDP values. Conversely, the positive skewness on the EFF variable indicates a distribution that is skewed to the left, with most countries having low EFF values. Meanwhile, the high kurtosis values on the GDP and EFF variables indicate a distribution that is more pointed than the normal distribution.

Table 1. The Result of Descriptive Statistics and Correlation

Descriptive	GDP	HDI	FDI	EFF
Mean	4.704	63.603	1.287	1.025
Median	5.174	64.300	1.788	0.734
Maximum	8.220	71.800	2.916	7.963
Minimum	-13.127	52.600	-2.757	-0.043
Std. Dev.	3.721	6.013	1.338	1.312
Skewness	-3.624	-0.237	-1.393	4.660
Kurtosis	17.441	1.803	4.542	25.226
Jarque-Bera	3.045	2.279	3.956	2.746
Probability	0.220	0.319	0.121	0.301
GDP	1.000	-	-	-
HDI	-0.075	1.000	-	-
FDI	0.327	0.353	1.000	-
EFF	0.083	0.039	-0.102	1.000

Additionally, the results report that there is a positive correlation between GDP and FDI, it is mean that high GDP tend to have high FDI as well. This indicates that FDI tends to flow into countries with stronger economies. A weak negative correlation was found between GDP and HDI. This indicates that there is no strong relationship between economic growth rate and human development index. This result may be a bit surprising, since it is generally assumed that countries with high economic growth will also have high HDI.

Table 2 reports the results of the unit root test using the Im, Pesaran, and Shin (IPS-W-stat) method to examine whether a time series is stationary or not. If a time series is stationary, it means that the mean and variance tend to remain constant over time. The test results show that the W-stat value of -4.84986 is significant, indicating that we can statistically reject the null hypothesis, which states that the time series has a unit root (non-stationary). In other words, we can conclude that the overall time series is stationary.

Table 2. The Result of Unit Root test

Im, Pesaran and Shin W-stat = -4.84986**				
Intermediate ADF test results				
Variables	**Level**		**1st differences**	
	t-Stat	**Prob.**	**t-Stat**	**Prob.**
GDP	-4.1579	0.0028	-4.0109**	0.0046
HDI	-2.5416	0.1156	-4.4631**	0.0013
FDI	-2.2014	0.2097	-5.3605**	0.0001
EFF	-5.7958	0.0000	-7.2532**	0.0000
Mean	**-3.6742**			

Note: ** Probabilities are computed assuming the asympotic normality

The results of the individual Augmented Dickey-Fuller (ADF) tests for each variable (GDP, HDI, FDI, and EFF) at the original level show mixed outcomes. Some variables, such as EFF, are already stationary at the level, while others require first differencing to achieve stationarity.

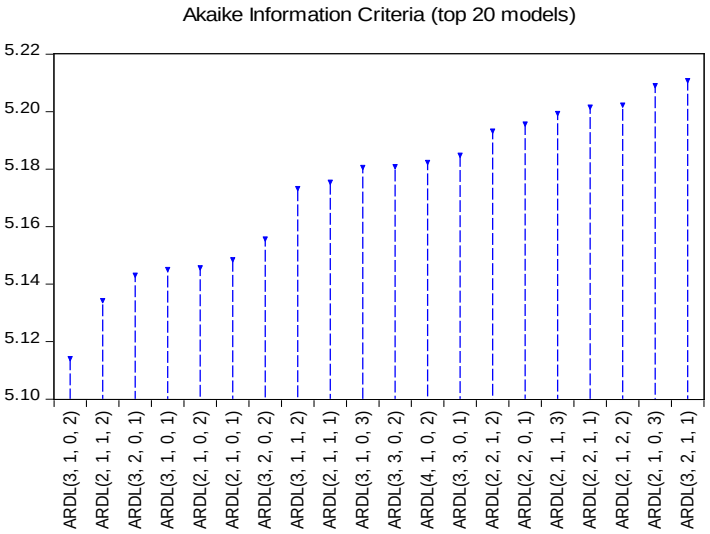

Figure 2. The Result of Lag Model Selection Summary

Figure 2 shows the Akaike Information Criteria (AIC) values for the 20 best ARDL models. AIC is a model selection criterion used to select the model that best fits the data. The model with the lowest AIC value is generally considered the best model. Variation in AIC Values: The AIC values in Figure 1 very significantly across models, indicating that different lag selections produce models of varying quality. The model with the lowest AIC value (the bottom point on the graph) is the model considered the best. In this case, the ARDL (3,1,0,2) model has the lowest AIC value, and can therefore be considered the best fit to the data. Comparison of the performance of different models by looking at the relative position of their AIC values. Models that are closer to the lowest AIC value generally perform better than models with higher AIC values.

Table 3. The Result of ARDL Bounds F-test

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	**Value**	**Signif.**	***I*(0)**	***I*(1)**
			Asymptotic: n=1000	
F-statistic	9.587	10%	2.37	3.2
k	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	30		Finite Sample: n=30	
		10%	2.676	3.586
		5%	3.272	4.306
		1%	4.614	5.966

Table 3 show the results of the F-Bound test which is used to test the existence of a long-run relationship (cointegration) between variables in the econometric model. The results of this test provide information on whether the variables move together in the long run. Based on Table 3, the F-statistic value obtained is 9.587. This value can be compared with the critical value that has been determined based on the level of significance and sample size. The critical value is good for very large samples (asymptotic: n = 1000) and for the actual sample size (finite sample: n = 30). In this case, the F-statistic value of 9.587 is much larger than all critical values for both large and small samples at all levels of significance. This indicates that we can reject the null hypothesis. In other words, there is strong evidence indicating the existence of cointegration between the variables.

Table 4. The Result of ARDL Model Estimation

Dependent variable = GDP				
Selected Model: ARDL (3, 1, 0, 2)				
Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.***
Long run				
Constant	8.500	10.643	0.798	0.433
HDI	5.051	1.544	3.271	0.003
FDI	2.553	0.861	2.962	0.007
EFF	0.805	0.399	2.018	0.057
Short run				
Δ(HDI)	5.051	0.813	6.210	0.000
Δ(FDI)	0.315	0.267	1.179	0.252
Δ(EFF)	0.606	0.275	2.199	0.039
ECT_{t-1} *	-2.027	0.267	-7.584	0.000
Goodness of fit				
R^2	0.6565			
Adj. R^2	0.5019			
F-statistic	4.2477			
Prob(F-statistic)	0.0033			
Diagnostic test				
Normal	1.304			
Serial	0.149			
ARCH	0.065			
Ramsey	1.069			

*Note: p-values and any subsequent tests do not account for the model

Table 4 reports the results of the goodness of fit of the model, seen from the R2 value of 0.6565, this implies that around 65.65% of the variability in the dependent variable (GDP) can be explained by the independent variables (HDI, FDI, and EFF) in the ARDL model that has been built. This means that the model is quite good at explaining the relationship between these variables. The Adjusted R^2 obtained is 0.5019, this considers the number of independent variables in the model. This value is slightly lower than R^2, but still shows that the model has quite good explanatory power. Statistically, the F-statistic value is 4.2477, this shows that overall, the ARDL model that was built is statistically significant. This implies that at least there are independent variables in the model that have a significant effect on the dependent variable (GDP). The results of the residual diagnostic test show that the residuals follow a normal distribution, the variance of the residuals is constant over time, the correlation between the residuals in different periods, and the Ramsey test also accepts the null hypothesis, this indicates that the linear regression model has the correct specifications, especially in terms of linearity.

Table 4 also reports the best estimation results in applying the ARDL model is ARDL (3,1,0,2) with the dependent variable is GDP. This model is used to analyze the long-term and short-term relationships between GDP and independent variables, namely HDI, FDI, and EFF. Table 4 reports our findings in applying the ARDL model, statistically our findings show that the HDI coefficient value obtained is 5.051 and is statistically significant (p-value <0.05) indicating that in the long term, a 1 unit increase in HDI will increase GDP by 5.051%. This indicates that there is a positive and significant

relationship between the level of human development and economic growth in the long term. The FDI coefficient value is 2.553 and is also statistically significant indicating that a 1% increase in FDI will increase GDP by 2.553% in the long term. This shows that foreign direct investment has a positive contribution to economic growth. The EFF coefficient value of 0.805 is not statistically significant (p-value > 0.05), indicating that in the long term, there is not enough strong evidence to state that the EFF variable has a significant effect on GDP.

Changes in HDI have a positive and significant impact on changes in GDP in the short term. Similarly, changes in EFF have a positive and significant impact on changes in GDP in the short term. Meanwhile, changes in FDI have a positive but not significant impact on changes in GDP in the short term. The results also show that the coefficient of the Error Correction Term (ECT) is negative and statistically significant, indicating a strong error correction mechanism. This means that if there is a deviation from the long-term equilibrium, the variables tend to return to the long-term equilibrium.

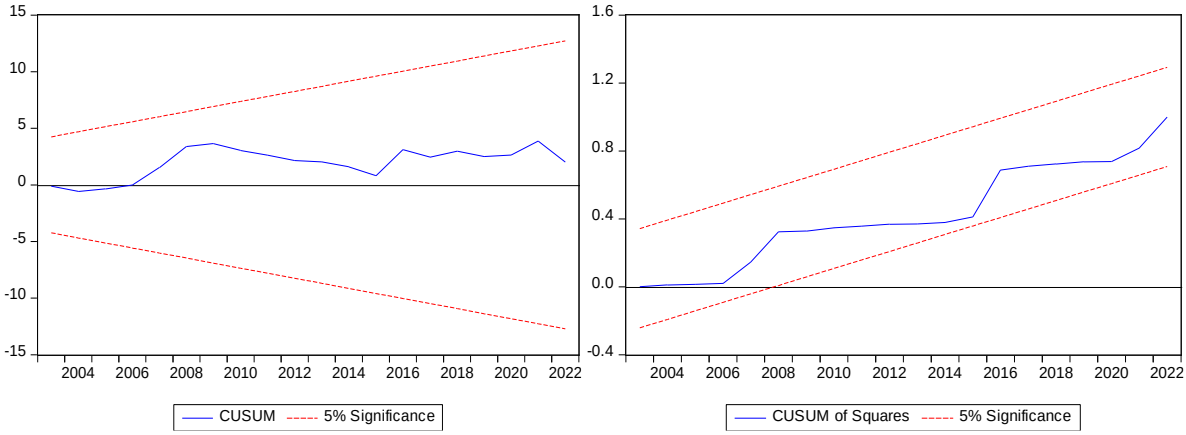

Figure 3. The Result of CUSUM and CUSUM of Square Stability

Figure 3 shows the results of the CUSUM test, during the observation period, there is no strong evidence indicating significant structural changes in the process or model that being analyzed. In other words, the model or process being tested tends to be stable and consistent during the period. The results of this CUSUM test support the conclusion that the model used to generate the data is still valid and can be used for forecasting or further analysis. Furthermore, the results of the CUSUM of Square test show that there is strong evidence indicating changes in the residual variance of the regression model being analyzed. In other words, the assumption of homoscedasticity (constant error variance) may not be met throughout the observation period. Changes in residual variance indicate that the regression model used may not be stable over time. Model coefficients may change over time, so that the estimated results in a particular period may not apply to other periods.

3.2. Discussions

This study shows an interesting relationship between various factors on economic growth in the long run. First, the positive and significant relationship between the Human Development Index (HDI) and economic growth indicates that improving the quality of life of people through improvements in health, education, and general living standards contributes positively to long-term economic growth. This supports the perspective that investing in human development is a productive endeavor and can drive sustainable economic growth. Human capital theory is the main foundation in explaining this relationship. This theory argues that investment in education, health, and skills of workers (which are included in the HDI) will increase the individual productivity, which ultimately drives economic growth. Better educated and healthier workers tend to be more innovative, more adaptive to technological change, and have higher productivity. In addition, endogenous growth theory also provides a relevant explanation. This theory emphasizes the important role of internal factors such as innovation, knowledge, and human capital in driving long-term economic growth. An increase in HDI can trigger the process of innovation and development of new technologies, which in turn will drive economic growth. Previous empirical research

conducted by Aspotol *et al*. (2022); Dasic *et al*. (2020); Nainggolan *et al*. (2022) and Nababan *et al*. (2024) consistently shows a positive relationship between HDI and economic growth. Many cross-country studies and case studies of specific countries have found that countries with high HDI tend to have higher economic growth rates. This suggests that investment in human development is a key factor in achieving sustainable economic growth. However, it is important to note that the relationship between HDI and economic growth is complex and influenced by a variety of other factors. Factors such as political stability, institutional quality, economic openness, and natural resources can also affect economic growth. In addition, the direction of causality between HDI and economic growth is still debated. Some studies suggest that economic growth can increase HDI, while others suggest that high HDI can boost economic growth. These findings imply that policymakers need to continue to prioritize human development in the national development agenda. Investments in education, health, and community empowerment will provide long-term dividends in the form of higher and more inclusive economic growth.

Second, the finding that FDI positively contributes to economic growth is also consistent with previous empirical literature, such as a study conducted by Carbonel & Werner (2018); Elistia & Syahzuni (2018); Irawati & Setiawan (2022); and Le, *et al*. (2022) that FDI can bring new technology, increase productivity, and create new jobs, thus providing a boost to economic growth. This study finds that FDI positively contributes to economic growth, which has become a consensus in the economic literature. Modernization theory is one of the strong theoretical foundations to explain this relationship. This theory argues that developing countries can accelerate the process of industrialization and modernization by attracting FDI. FDI brings better capital, technology, and management, which can close the productivity gap between developing and developed countries. In addition, the product life cycle theory is also relevant in explaining the role of FDI. This theory states that multinational companies tend to invest in developing countries at a more mature stage of production, where technology is more established. This allows the recipient country of FDI to jump directly to a more advanced stage of production without having to go through the entire innovation process from the beginning. Several studies conducted by Pegkas (2015) and Mahembe & Odhiambo (2014) have found that countries that successfully attracting large amounts of FDI tend to experience higher economic growth compared to those attracting less FDI. Additionally, FDI can contribute to economic diversification, increased exports, and job creation. The policy implications of these findings suggest that policymakers should design strategies to maximize the benefits of FDI while minimizing its negative impacts. Such strategies may include providing incentives for foreign investors, improving workforce quality, and developing infrastructure that supports investment activities.

Third, a surprising result is the lack of strong evidence supporting a significant effect of investment efficiency (EFF) on long-term economic growth. This finding may seem counterintuitive, given the common assumption that increased investment efficiency should accelerate economic growth. However, several complex factors could explain this outcome. First, the concept of investment efficiency is inherently challenging to define and measure accurately. Various metrics, such as the capital-to-output ratio, the rate of return on investment, or the growth rate of total factor productivity, can be used to assess investment efficiency. Differences in these definitions and measurement approaches may lead to varying results in empirical studies. Second, the relationship between investment efficiency and economic growth may be non-linear or subject to certain thresholds. For instance, increased investment efficiency might only significantly impact economic growth after reaching a specific level. Below that threshold, other factors—such as institutional quality, political stability, and the availability of natural resources—may play a more dominant role in determining economic growth. Third, previous research conducted by Shinta & Solikin (2022); and Amin *et al*. (2024) has demonstrated that the effectiveness of investment is highly context dependent. Factors such as industrial structure, technological development, and government policies can moderate the relationship between investment efficiency and economic growth. For example, in countries with low levels of innovation, improving investment efficiency may not significantly boost economic growth unless accompanied by increased investment in research and development. The results of this study are also in line with research conducted by Ohno (2009); and

Opoku et al. (2024) which states that the strategy to make a country more independent, the country must have the ability to absorb technology that brought by investors so that it can create new innovations. If it fails, the country will remain trapped as a middle-income nation forever. This condition can be seen in Figure 4 as follows.

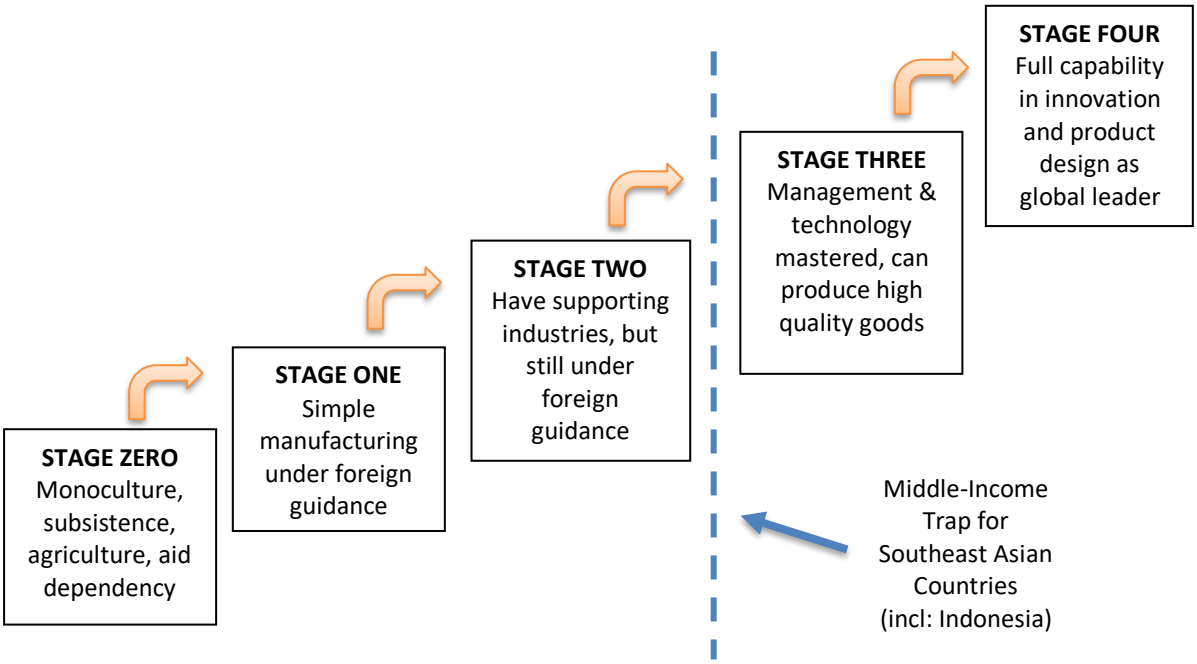

Figure 4. Stages of Development Pattern of Countries Towards High Income Nations

Indonesia is currently still in stage two. This condition shows that Indonesia needs to improve its ability to absorb and adapt technology effectively to create relevant and competitive product innovations. This innovation is expected to have a significant positive impact on national economic growth. With the ability to develop technology-based products, Indonesia also has the opportunity to increase its competitiveness in the global market, while supporting the vision of becoming a high-income country in the future.

Empirical studies on the relationship between investment efficiency and economic growth remain relatively limited, with some inconsistencies in their findings. While certain studies report a significant positive relationship, others find no significant connection or even a negative relationship (Mazllami, 2021; and Mazllami & Azari, 2019). This highlights the need for further research to better understand the mechanisms underlying this relationship. The policy implications of these findings suggest that policymakers should exercise caution when designing policies aimed at enhancing investment efficiency. Policies overly focused on improving investment efficiency without considering contextual factors may prove ineffective in driving economic growth. Governments should undertake a comprehensive evaluation of their economic and social conditions before formulating investment policies.

4. CONCLUSIONS

The conclusion of this study provides in-depth insights into the relationship between the Human Development Index (HDI), Foreign Direct Investment (FDI), and investment efficiency, while illustrating the complex dynamics of economic growth. A higher HDI is shown to be positively correlated with stronger economic growth. This suggests that investment in education, health, and general public welfare forms a solid foundation for building a competitive economy. FDI also plays a significant role in driving economic growth, particularly through technology transfer, productivity enhancement, and job creation. However, a surprising finding of this study is the lack of strong evidence regarding the direct effect of investment efficiency on economic growth. This suggests that investment efficiency may not always be the primary determinant of growth. Instead, factors such

as institutional quality, political stability, and levels of innovation play a critical role.

This finding is particularly relevant to Indonesia's current situation, as the country faces the challenge of escaping the middle-income trap. In this context, investment in human development becomes crucial. Indonesia needs to improve the quality of education and healthcare to create a highly competitive workforce. Furthermore, FDI has a strategic role in assisting Indonesia to overcome the middle-income trap, particularly through technology transfer and the development of a more competitive industrial ecosystem. However, to fully capitalize on these benefits, efforts must be made to enhance domestic capacity for technology absorption. This includes improving the quality of human resources and developing infrastructure that supports investment activities. For policymakers, the results of this study emphasize the importance of designing policies that balance physical investment with human development. Additionally, creating a conducive investment climate by reducing bureaucratic barriers and strengthening institutions will be essential for attracting high-quality FDI. Overall, to escape the middle-income trap, Indonesia must adopt a long-term strategy that prioritizes improving the HDI, managing FDI effectively, and upgrading technology to drive innovation as a key pillar of sustainable economic growth.

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Conflict of interest: The authors declare no conflict of interest.

REFERENCES

Aiyar, S., Duval, R., Puy, D., Wu, Y., & Zhang, L. (2018). Growth Slowdowns and the Middle-Income Trap. *Japan and the World Economy, 48*(71), 22–37. https://doi.org/10.1016/j.japwor.2018.07.001

Amin, S. A., Samia, B. I., & Khan, F. (2024). Does Capital Efficiiency Influence Economic Growth in Bangladesh? Application of the Harrod-Domar Model. *Journal of Economics, Finance, and Administrative Science, 29*(58), 326-345. https://doi.org/10.1108/JEFAS-06-2021-0096

Andriani, D. & Yustini, T. (2021). Anticipating The Demographic Bonus from The Perspective of Human Capital in Indonesia. *International Journal of Research in Business and Social Science, 10*(6), 141-152. https://doi.org/10.20525/ijrbs.v10i6.1377

Carbonel, J. B., & Werner, R, A. (2018). Does Foreign Direct Investment Generate Economic Growth? A New Empirical Approach Applied to Spain. *Economic Geography, 94*(08), 425-456. https://doi.org/10.1080/00130095.2017.1393312

Dasic, B., Devic, Z., Denic, N., Zlatkovic, D., Ilic, I. D., Cao, Y., Jermsittiparsert, K., & Le, H. Van. (2020). Human Development Index In A Context Of Human Development. Review On the Western Balkans Countries. *Brain and Behavior, 10*(9), e01755. https://doi.org/10.1002/brb3.1755

Dinh, T. T. H., Vo, D. H., The Vo, A., & Nguyen, T. C. (2019). Foreign direct investment and economic growth in the short run and long run: Empirical evidence from developing countries. *Journal of Risk and Financial Management*, *12*(4), 176. https://doi.org/10.3390/jrfm12040176

Eichengreen, B., Donghyun, P., & Kwanho S. (2014). Growth Slowdowns Redux. *Japan and the World Economy, 32*, 65–84. https://doi.org/10.1016/j.japwor.2014.07.003

Elistia & Syahzuni, B., A. (2018). The Correlation of The Human Development Index (HDI) towards Economics Growth (GDP Per Capita) in 10 ASEAN Member Countries. *Journal of Humanities and Social Studies, 2*(2), 40-46. https://doi.org/10.33751/jhss.v2i2.949

Gill, I., Kharas,H., and Deepak B. (2007). *An East Asian Renaissance: Ideas for Economic Growth.* World Bank. https://doi.org/10.1596/978-0-8213-6747-6

Glawe, L., & Wagner, H. (2020). China in the middle-income trap?. China Economic Review, 60,

101264. https://doi.org/10.1016/j.chieco.2019.01.003

Hansen, B. (2022). *Econometrics*. Princeton University Press.

Herzer, D., & Nowak-Lehnmann D, F. (2006). What does export diversification do for growth? An econometric analysis. *Applied economics, 38*(15), 1825-1838. https://doi.org/10.1080/00036840500426983

Irawati, H. M., & Setiawan, R. (2022). Pengaruh Indeks Pembangunan Manusia Terhadap Pertumbuhan Ekonomi di Kalimantan Utara Tahun 2017-2021. *Jurnal Ekonomi Pembangunan. 1*(1), 16-24.

Le, H. T. P., Pham, H., Do, N. T. T., & Duong, K. D. (2024). Foreign Direct Investment, Total Factor Productivity, and Economic Growth: Evidence in Middle Income Countries. *Humanities & Social Sciences Communications. 11,* 1-11. https://doi.org/10.1057/s41599-024-03462-y

Mahembe, E. & Odhiambo, N. M. (2014). Foreign Direct Investment and Economic Growth: A Theoretical Framework. *Journal of Governance and Regulation. 3*(2), 63-70. https://doi.org/10.22495/jgr_v3_i2_p6

Marissa, F., Yulianita, A., & Fitriyah, A. (2019). The Effect of Investment Efficiency toward Economic Growth in South Sumatera and Jambi Province. *Jurnal Ekonomi Pembangunan. 17*(2). 71-80. https://doi.org/10.29259/jep.v17i2.9399

Maryanti, S., Widayat, P., & Lubis, N. (2023). Economic transformation to get out of the middle income trap condition to reach Indonesia Gold 2045. *ADPEBI International Journal of Business and Social Science, 3*(1), 63-78. https://doi.org/10.54099/aijbs.v3i1.356

Mazllami, J. (2021). The Invesments Efficiency Toward Economic Growth: ICOR of the Republic of Croatia and Slovenia – Comparative Analysis. *Journal of Economic and Social Studies, 8*(1), 0-14. https://doi.org/10.14706/jecoss21815

Mazllami, J., & Aziri, B. (2019). Investments efficiency and economic growth: a comparative analysis of North Macedonia and Albania. *Knowledge International Journal, 31*(5), 1381-1389. DOI:https://doi.org/10.35120/kij31051381m

Nababan, T. S., Panjaitan, R., Panjaitan, F., Napitupulu, S. (2024). Investigating The Relationship Between Economic Growth and Development Index: are They Simultaneously Related?. *Sultanist: Jurnal Manajemen dan Keuangan, 12*(2), 319-330.

Nainggolan, L. E., Lie, D., Siregar, R. T., Nainggolan, N. T. (2022). Relationship Between Human Development Index and Economic Growth in Indonesia Using Simultaneous Model. *Journal of Positive Scholl Psychology*, 6(6), 695-706.

Onho, K. (2009). Avoiding the Middle-Income Trap: Renovating Industrial Policy Formulation in Vietnam. *ASEAN Economic Bulletin. 26*(1), 25-43. https://doi.org/10.1353/ase.0.0035

Opoku, E. E. O., Acheampong, A. O., Dogah, K. E., & Koomson, I. (2024). Energy innovation investment and renewable energy in OECD countries. *Energy Strategy Reviews, 54*, 101462. https://doi.org/10.1016/j.esr.2024.101462

Pegkas, P. (2015). The impact of FDI on economic growth in Eurozone countries. *The Journal of Economic Asymmetries*, *12*(2), 124-132. https://doi.org/10.1016/j.jeca.2015.05.001

Pesaran, M. H., & Shin, Y. (1999). An autoregressive distributed lag modeling approach to cointegration analysis. In S. Strom (Ed.), *Econometrics and economic theory in the 20th century: The Ragnar Frisch Centennial Symposium* (Chapter 11). Cambridge University Press. https://doi.org/10.1017/CCOL521633230.011

Ridha, M. R., & Budi, N. (2020). The Effect of Foreign Direct Investment, Human Development and Macroeconomics Condition on Economic Growth: Evidence from Indonesia. *Journal of Indonesian Applied Economics 8*(2), 46-54. https://doi.org/10.21776/ub.jiae.2020.008.02.5

Rivera, M. A. (2017). The synergies between human development, economic growth, and tourism within a developing country: An empirical model for Ecuador. *Journal of destination marketing & management*, *6*(3), 221-232. https://doi.org/10.1016/j.jdmm.2016.04.002

Sarwar, A., Khan, M. A., Sarwar, Z., & Khan, W. (2021). Financial development, human capital and its impact on economic growth of emerging countries. *Asian Journal of Economics and Banking, 5*(1), 86-100. https://doi.org/10.1108/AJEB-06-2020-0015

Shinta, I. C., Solikin, A. (2022). The Influence of Capital Efficiency and Education Spending on

Indonesia's Economic Growth. *International Journal of Economics, Business and Accounting Research. 6*(2), 817-830.

Taguchi, H., & Lowhachai, S. (2014). A Revisit to the Incremental Capital-Output Ratio: The Case of Asian Economies and Thailand. *International Journal of Economic Policy in Emerging Economies 7*(1), 35–54. https://doi.org/10.1504/IJEPEE.2014.059891.

World Bank. (2023). *Indonesia Overview: Development news, research data*. World Bank. https://www.worldbank.org/en/country/indonesia/overview