

Escaping the Middle-Income Trap: Indonesia's Path Toward Golden Indonesia 2045

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Abstract

Middle Income Trap (MIT) describes a situation in which middle-income countries are unable to transition into high-income countries. This occurs due to low labor productivity, high production costs, and the production of goods that lack high added value, making them uncompetitive in international markets. MIT results in slowing economic growth, stagnant per capita income, and a lack of improvement in the living standards of the population. The following steps require strong and continuous political commitment, as building a conducive investment climate and competitive innovation demands a long process and sufficient time, involving various stakeholders. In addition to investment and innovation, the optimization of resources must continue to be encouraged, including both natural resources (NR) and human resources (HR). In the era of Industry 4.0, the use of advanced technology is essential to increase the added value of production goods and reduce production costs. Abundant resources, both NR and HR, must be fully optimized. Therefore, high-tech research and the development of competitive human resources need adequate support from various stakeholders. In line with these efforts, the Indonesian government has implemented several strategies to escape the middle-income trap, including massive infrastructure development across various regions.

Keywords: Middle Income Trap, Productivity, Innovation, Human Resources, Infrastructure.

Introduction

The Middle Income Trap (MIT) describes a situation in which middle-income countries are unable to transition into high-income countries. This condition arises due to low labor productivity, high production costs, and the production of goods with low added value, making them uncompetitive internationally. MIT leads to slowing economic growth, stagnant per capita income, and a lack of improvement in the population's standard of living. Over the past decades, only a few middle-income countries in the Asia-Pacific region—such as Japan, South Korea, Singapore, and Taiwan—have successfully reached high-income status. Indonesia is currently accelerating its development efforts and aims to achieve high-income status between 2036 and 2038, in alignment with the Golden Indonesia 2045 vision.

The key to escaping MIT lies in investment and innovation, which enhance productivity and added value to drive economic performance (Griffith, 2011). Therefore, middle-income countries must undertake transformation by preparing strategies that focus on increasing investment and innovation. In addition, high-quality human resources capable of producing high-value-added goods must be developed. Countries that successfully encourage investment and cultivate innovation ecosystems have a greater chance of escaping the MIT.

Efforts must include reducing production and logistics costs, simplifying regulations to improve ease of doing business, strengthening industrial downstreaming to increase added value, and cooperating with global industry players so Indonesia can be more integrated into global value chains. These initiatives require strong synergy between the government, business actors, and other stakeholders.

Thus, the purpose of this study is to analyze per capita income and the Human Development Index (HDI) in relation to Gross Domestic Product (GDP) as key variables for overcoming the Middle Income Trap (MIT) toward Golden Indonesia 2045.

Human resource readiness for Golden Indonesia 2045 is a multifaceted issue involving education reform, vocational training, and the alignment of workforce skills with industrial needs. Various studies highlight the importance of enhancing education and vocational training quality to prepare competent workers capable of supporting national development and economic growth.

Human resource readiness among development planners is also crucial to achieving the Golden Indonesia 2045 vision, emphasizing the importance of improving both the quantity and quality of planners as enablers for accelerating national development targets (Maolana, 2024).

Likewise, human resource readiness for Indonesia Emas 2045 depends on education reform, vocational training, and strategic capacity building. As Indonesia seeks to strengthen its human capital to meet future challenges, several key aspects emerge in the literature (Jedlińska, 2024). Human resource readiness also relies on holistic education that instills Pancasila values—integrity, truth, and justice—while addressing character crises through balanced intellectual, emotional, and spiritual development (Abi, 2017).

Research Problem Formulation

This study aims to analyze strategies for overcoming the middle-income trap in the pursuit of a Golden Indonesia 2045, including how to address this issue and how the role of national defense contributes to resolving it—an area that has not yet been fully realized. As achieving the Golden Indonesia 2045 vision requires continuous research and up-to-date data aligned with the variables being examined, this topic is highly relevant. Meanwhile, the role of Indonesia's national defense in realizing the Golden Indonesia 2045 Vision includes the implementation of defense diplomacy within the context of international cooperation to maintain regional security, strengthen national resilience, and respond to non-conventional threats such as terrorism, separatism, cyberattacks, and climate change (Ahmad Fanani et al., 2024).

To overcome the Middle-Income Trap (MIT) and achieve Indonesia Gold 2045, Indonesia needs to accelerate capital accumulation through infrastructure investment to boost economic growth above 6%. In the medium term, the development of innovation and technology is required to increase Total Factor Productivity (TFP). Focusing on key drivers and the four “Global Megatrends” is essential. Building human resources, strengthening digitalization, and improving institutions are also key steps to escaping the MIT challenges (Maryanti et al., 2023).

Collaboration between the government and stakeholders is equally important to create policies that support productive transformation and economic sustainability, enabling Indonesia to become an advanced, inclusive, and sustainable nation (Suyitno, 2023).

To overcome the Middle-Income Trap (MIT) and achieve Indonesia Gold 2045, the government must also focus on improving the service sector, investing in human resources, and enhancing the agricultural and manufacturing sectors. Effective economic transformation should involve these three sectors simultaneously. Improvements in education and workforce skills will support sustainable growth, while appropriate policies can help Indonesia transition from a middle-income to a high-income country (Lumbangaol & Pasaribu, 2019).

Research Questions

1. How can Indonesia overcome the Middle Income Trap (MIT) to achieve Golden Indonesia 2045?
2. What are the major challenges in overcoming MIT toward Golden Indonesia 2045?
3. What is the role of national defense in addressing MIT and achieving Golden Indonesia 2045?

Research Objectives

1. To identify strategies for overcoming the Middle-Income Trap (MIT) in achieving the Golden Indonesia 2045 vision.
2. To examine the key challenges in addressing the Middle-Income Trap (MIT) toward realizing the Golden Indonesia 2045.
3. To analyze the role of national defense in overcoming the Middle-Income Trap (MIT) in the context of achieving the Golden Indonesia 2045.

Logical Framework (Rationale)

Indonesia is currently experiencing a demographic bonus, characterized by a dominance of the productive-age population (15–64 years), which will reach its peak between 2030 and 2040. However, without high-quality human resources, this demographic bonus may instead turn into a demographic burden in the form of mass unemployment, poverty, and difficulties in rescuing the nation from the Middle-Income Trap (MIT). The theoretical contributions of this study include the following:

Middle-Income Trap (MIT)

The Middle-Income Trap is based on the idea that an economy that begins its development journey to reach middle-income status may become chronically unable to progress further toward high-income status. This inability is often caused by low innovation capacity or an inability to absorb advanced technologies, and may be worsened by high inequality. The term *Middle-Income Trap* was introduced

by Gill and Kharas in their book *An East Asian Renaissance: Ideas for Economic Growth* (Todaro & Smith, 2011:191; Gill & Kharas, 2007). According to Gill and Kharas (2007), the Middle-Income Trap refers to growth slowdown and stagnation in middle-income status. The concept emerged after observing the sudden decline in economic growth performance of East Asian countries that were previously regarded as miracle economies.

Based on these explanations, it can be concluded that the Middle-Income Trap reflects a country's inability to compete in labor costs for manufacturing exports and failure to produce innovative and high-technology products. Tran Van Tho (2013:4) further illustrates the concept graphically through stages of a country's development observed via changes in per capita GDP over time.

One measure of a country's national income is Gross Domestic Product (GDP). GDP can be calculated using various approaches, with the expenditure approach being one of the most commonly used. In this approach, GDP is influenced by household consumption, investment expenditure in the form of Gross Fixed Capital Formation (GFCF), government expenditure, and net exports—systematically presented in the following equation (Mankiw, 2019):

$$Y = C + I + G + NX \quad Y = C + I + G + NX$$

A negative net export value indicates a trade deficit that can be offset by a surplus in capital flows (Zhao et al., 2022). Thus, net exports in the GDP equation can be approximated by the capital inflow (ΔF) entering an economy:

$$NX = -\Delta F \quad NX = -\Delta F \quad Y = C + I + G - \Delta F \quad Y = C + I + G - \Delta F$$

Per Capita Income

Per capita income is the initial benchmark for determining whether a country is trapped in the Middle-Income Trap (Agenor, 2015). It serves as an indicator of development to distinguish between advanced countries and developing countries. As explained earlier, GDP per capita reflects per capita income and is thus an indicator for assessing and improving a country's economic performance.

According to Leibenstein (in Lincoln Arsyad, 2004:81), most developing countries face a vicious cycle of poverty that keeps them at a low-level equilibrium of per capita income. The Middle-Income Trap occurs when a country fails to improve its economy and transition to a high-income status. This failure is rooted in the inability to increase per capita income due to a lack of competitiveness resulting from insufficient innovation, inadequate human capital, and limited high-value-added activities.

Human Development Index (HDI)

The Human Development Index (HDI) is a comparative measure of life expectancy, education, and standard of living across countries. HDI is used as an indicator to evaluate the quality dimensions of

development and to classify countries as developed, developing, or underdeveloped. It also measures the effects of economic policies on the quality of life (Directorate of Statistics Analysis and Development, BPS, 2015)

Research Method and Design

This study employs a **quantitative descriptive method**, examining exchange rate conditions (fiat money) based on various theories through data collection and review of previous research. The data used consist of time-series data on the exchange rate and economic growth in Indonesia from 1980 to 2022, obtained from the World Bank (worldbank.org). The following are the model tests used in this research

Unit Root Test

The Augmented Dickey-Fuller (ADF) test is a formal method used to identify stationarity. This test determines whether a model contains a unit root. A stationarity test can thus be applied to examine the presence of a unit root because, at its fundamental level, the ADF test evaluates whether certain coefficients in an autoregressive model are equal to 1 or not. The test statistic for assessing stationarity is obtained using the ADF calculation. The following are the hypothesis testing steps used in the ADF test:

Hypotheses

$H_0 : \rho = 1$ (there is a unit root or the data are non-stationary)

$H_1 : |\rho| < 1$ (there is no unit root or the data are stationary)

H_0 is rejected if the calculated ADF test statistic is less than the 5% ADF Critical Value, or if the ADF probability value is smaller than the significance level. If H_0 is rejected, the data are considered stationary.

Optimum Lag Determination

Lag selection is used to determine the ideal lag length for subsequent tests and to establish the appropriate order for the Vector Autoregressive (VAR) model. The number of degrees of freedom is represented by the lag length in the VAR model. The model with the smallest Akaike Information Criterion (AIC) value is considered the best model. These models can be described as follows:

Vector Error Correction Model (VECM)

The VAR model for non-stationary time series with one or more cointegration relationships is extended through the Vector Error Correction Model (VECM). The unique behavior of VECM can be observed through the reaction of each dependent variable to shocks in that variable and other environmental factors. The impulse response function and variance decomposition provide two perspectives on the characteristics of the VECM model.

Each variable (as a dependent variable) in the VECM model is represented by an equation. The inclusion of the Error Correction Term (ECT) in the model characterizes VECM. The following is a general representation of the VECM model with a lag length of one:

Explanation:

ΔY_t : vector of first differences of the dependent variables

ΔY_{t-1} : vector of first differences of the dependent variables with lag 1

ECT : error term obtained from the cointegration regression equation

ε_t : residual vector

Π : cointegration coefficient matrix

Impulse Response Function

Because the coefficients in the VECM equations are difficult to interpret, the impulse response function is used to interpret the VECM model. The impulse response function describes the extent to which a shock in one variable affects another over a certain period. This function makes it possible to observe how long the effect of one variable's shock persists before it dissipates or returns to its equilibrium point.

Theoretical Significance

To contribute to the development of development economics, particularly in understanding the dynamics and challenges of transitioning from a middle-income to a high-income country. It enriches the scientific literature on the causes and solutions for escaping the Middle-Income Trap (MIT), whether from policy, institutional, or human capital perspectives. To serve as a reference for long-term strategic development studies, especially those related to macroeconomic planning, national productivity, and Indonesia's structural economic transformation.

Practical / Policy Significance

To provide a basis for recommendations to the government in formulating inclusive economic policies oriented toward high-quality and sustainable growth.

To offer strategic directions for strengthening priority sectors (such as manufacturing, the digital economy, and the green economy) as new engines of growth capable of increasing per capita income.

To encourage the strengthening of human resources through education reform and adaptive vocational training that meets market demands and the needs of the Industrial Revolution 4.0.

To support the creation of a healthy investment and innovation climate in order to strengthen national competitiveness in the global economy.

Conclusion and Recommendations

Conclusion

These efforts require strong and continuous political commitment, as building a conducive investment climate and competitive innovation ecosystem demands a long and complex process involving various stakeholders. In addition to investment and innovation, the optimization of resources—both natural resources (NR) and human resources (HR)—must continue to be pursued. In the era of Industry 4.0, the use of advanced technology is essential to increase the added value of production goods and reduce production costs. Indonesia's abundant resources, both NR and HR, must be optimized effectively.

Therefore, advanced technological research and the development of competitive human resources must receive adequate support from all stakeholders. In line with these efforts, the Indonesian government has implemented a number of strategies to escape the middle-income trap, including massive infrastructure development in various regions.

Recommendations

1.Improving the Quality of Human Resources (HR).

2.Promoting Innovation-Based Economic Transformation.

3.Conducting Regular Monitoring and Evaluation of MIT Strategies.

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