



Investigating Kaldor's Theory in ASEAN-5 Countries

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Abstract

Manufacturing is a strategic key sector in driving a country's productivity, which will increase per capita income. However, manufacturing has lost its relative role in both developed and developing countries. Five countries in the Southeast Asia region, namely Malaysia, Thailand, Indonesia, the Philippines, and Vietnam are five countries in the middle-income category that have the largest Gross Domestic Product (GDP) in the Southeast Asia region. Based on World Bank data 2023 states that GNI per capita in 2023, namely Indonesia is ranked 112th, Thailand is ranked 80th, Malaysia is ranked 60th, the Philippines is ranked 113th, and Vietnam is ranked 131st. This study aims to analyze the influence of the variables Manufacturing, Foreign Direct Investment, Liner Shipping Connectivity Index, Mobile-cellular Telephone Subscriptions, and Education Index on Gross National Income per capita in five Southeast Asia countries from 2013 to 2022. Using panel data analysis, it is explained that the panel data regression estimation model Fixed Effect Model (FEM) shows an adjusted R^2 value of 0.9833. The variables in this study have a significant effect on GNI per capita, namely the variables Manufacturing, Foreign Direct Investment, Liner Shipping Connectivity Index, Mobile-cellular Telephone Subscriptions, Education Index.

Keywords: Middle Income Trap, Economic Development, Gross National Income, Per Capita

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INTRODUCTION

Stagnation in economic growth and the inability of a middle-income country to increase its per capita income into the high-income

country category is called the Middle Income Trap (MIT) (Aiyar, et al, 2018). Economic growth with a certain barometer is needed to avoid the middle income trap (Brueckner et al, 2017).

Several countries in Asia that are in their position as upper middle income or lower middle income countries must pay attention to various policies to take advantage of opportunities to get out of middle income countries (MICs).

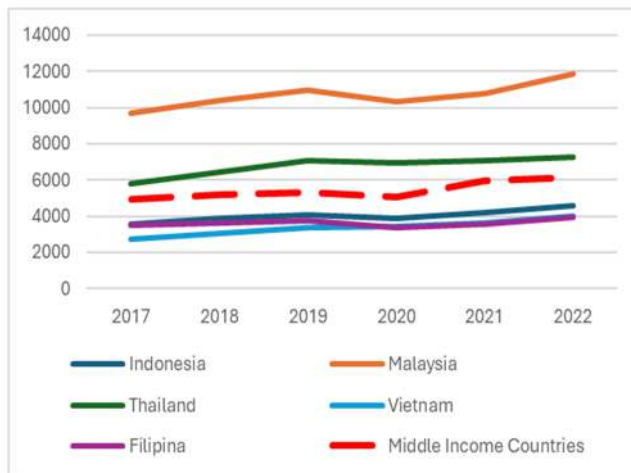


Figure 1. Gross National Income (GNI) per Capita 2017-2022 (US Dollar)

Source : World Bank, 2023

Figure 1 shows several countries in Southeast Asia are currently still in the low middle income and upper middle income classification with gross national income per capita between USD 2720 - USD 4580 and between USD 5820 - USD 11,835, trying to move towards countries with the upper middle income and high income categories. Some of them are Indonesia, Vietnam, and the Philippines are in the lower middle income position, while Thailand and Malaysia are in the upper middle income position.

Various risks and challenges must be faced immediately by any country in order to be free from the middle income trap. A country can be said to be in the middle income trap if the country does not have the ability to compete with low income countries in various matters

such as labor wages in the manufacturing industry, as well as the inability to innovate in the development of science and technology with high income countries (Gaulard, 2015).

In Kaldor's Law theory, it states that the relationship between per capita income and the manufacturing sector industry is positively correlated, where an increase in per capita income will be able to drive demand for manufactured products so that the number of workers needed will increase. In the research of Dasgupta and Singh (2006), developing countries that have low or medium per capita income have a fairly high income elasticity of demand for goods produced by the manufacturing sector, developing countries that experience pathological deindustrialization should evaluate industrialization policies so that economic growth is more sustainable.

In the Harrod-Domar theory (Sukirno, 2016), it states that the role of capital growth is able to drive the economy with steady growth in the long term. Capital formation in this theory is considered as an expenditure that can increase the ability to produce goods and services in an economy, so that this expenditure will increase effective demand in society.

Where if in a certain period capital formation has reached full capacity, then in the next period it will result in a higher capital goods capacity. Thus, investment made in a certain period will increase capital capacity in the following period, so this will encourage economic growth in a country in the long term, that is why investment is needed both domestically and abroad in a country (Sukirno, 2016).

The Big Push theory explains that development in the infrastructure sector with large investments as a driver will increase the

economy of a country, so that other sectors can develop by themselves or what is called the trickle-down effect. This theory illustrates that the term or way of working "little by little" will

not be able to drive the economy rapidly, so that the absolute requirement that the absorption of large amounts of investment in various leading sectors is needed in a country (Jhingan, 2014).

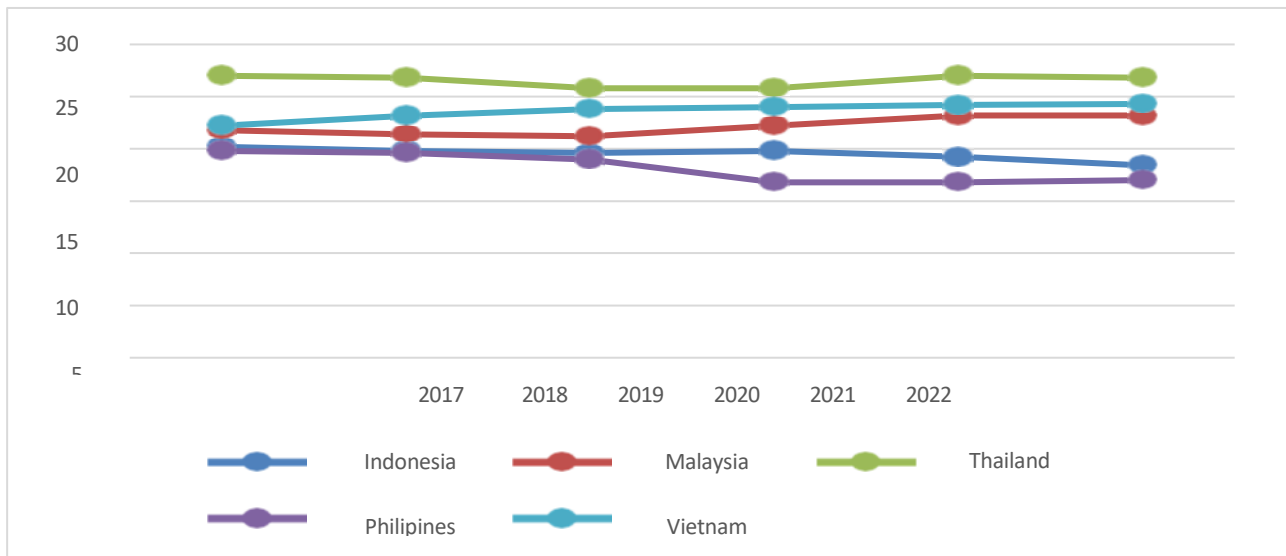


Figure 2. Manufacturing (% of GDP) 2017 -2022

Source : World Bank, 2023

Infrastructure is one of the determining factors if a country wants to be free from the middle income trap. Infrastructure development reflects the country's success in providing support for both the community and stakeholders so that it is easy to connect from large areas to remote areas, thereby encouraging productivity and increasing output and the distribution of economic growth in each region.

The provision of adequate infrastructure in a country will also encourage the level of investment in areas that are classified as good and quite adequate. Linear Shipping Connectivity Index score indicates how well countries are connected to global shipping networks based on the status of their maritime transport sector. Abramovitz's theory explains that the contribution of technology is able to produce more output with the same input,

without any influence of new investment in the production.

Solow's theory states that there are three factors of production that can increase economic growth in a country. These factors in this theory are capital growth. Population growth, and technological growth. Based on these three factors, the one that has an important role in determining or increasing economic growth is the technological factor.

The development of infrastructure and services for the use of technology, especially mobile-cellular, can help facilitate individuals in every job they do, so that they can encourage the productivity of the individual, so that they can increase individual income.

The human capital theory states that education has a positive influence on economic growth, people who have a high level of

education, which is measured by the length of school time will be able to have better jobs and wages compared to people who have low education. The Education Index uses mean years of schooling and expected years of schooling, this can explain the condition of education in a country.

These five ASEAN countries have a high average education index globally. This study analyzes the variables - Manufacturing, Foreign Direct Investment, Liner Shipping Connectivity Index, Mobile-cellular Telephone Subscriptions, and Education Index affecting Gross National Income (GNI) per Capita of five countries in the Southeast Asia region, with the research time limit being 2013-2022.

RESEARCH METHODS

Type of this research is quantitative research, and use secondary data from World Bank and Central Bureau of Statistics, the data is from 2013 – 2022 at five countries in South East Asian. This research uses panel data, which is a combination of cross section and time series, then processed using panel data regression analysis.

The dependant variable in this research is Gross National Income per capita (GNI), and the independent variables are Manufacturing, Foreign Direct Investment, Liner Shipping Connectivity Index, Mobile-cellular Telephone Subscriptions, dan Education Index. Model transformation formulated in the following equation :

$$\text{LN}GNI(Y)_{it} = \beta_0 + \beta_1 \text{MANU}(X_1)_{it} + \beta_2 \text{LN}FDI(X_2)_{it} + \beta_3 \text{LSC}(X_3)_{it} + \beta_4 \text{LN}MCS(X_4)_{it} + \beta_5 \text{EDU}(X_5)_{it} + e$$

Where GNI (Y) is Gross National Income per Capita; MANU (X₁) is Manufacturing; FDI

(X₂) is Foreign Direct Investment; LSC (X₃) is Liner Shipping Connectivity Index; MCS (X₄) is Mobile-cellular Subscriptions; EDU (X₅) is Education Index; LN is Logaritma natural; β is coefficients; i is five countries; t is year 2013 – 2022 and e is error.

RESULTS AND DISCUSSION

Based on the tests that have been conducted thoroughly, it is known that the best model selection in this study is the fixed effect model (FEM). The regression model equation for this study is as follows:

$$\text{LN}GNIY = - 5.843 + 0.246 * \text{MANU} + 0.823 * \text{LN}FDI + 0.131 * \text{LSC} - 0.452 * \text{LN}MSC + 3.586 * \text{EDU} + \varepsilon$$

Manufacturing has a significant and positive influence on gross national income (GNI) per capita in the five countries. In the results of the t-test between the manufacturing variable and GNI per capita, the t-statistic value of 4.12 is greater than the t-table value of 1.67, this indicates that the manufacturing variable on GNI per capita partially has a positive significant influence.

The results of the panel data regression coefficient of this independent variable are - 0.246, which indicates that an increase in the manufacturing variable by one percent can increas GNI per capita value by 0.246 percent. Accordance with the Rosenstein-Rodan theory, states that rapid industrialization, especially in the manufacturing sector, can encourage economic growth and achieve economic development, thereby increasing per capita income in a country.

Previous research results that support the statement that the manufacturing sector industry in the long term will have a positive influence on per capita income (Hotmaria, et al,

2018). This result is also in line with Sevilaj (2017) who showed that there is causality between the manufacturing industry and per capita income level.

Table 1. Results of The Panel Data Regression

Variable	Coefficient	t-statistics	Probability
Manufacturing	0.246	4,12	0,00
Foreign Direct Investment	0.823	3,04	0,00
Linear Shipping Connectivity	0.131	2,12	0,04
Mobile-cellular Telephone Subscription	-0.452	-2,07	0,04
Education Index	3.586	3,27	0,00
R-Squared	0.983		

Source : data processed, 2024

Foreign direct investment has a significant positive influence on gross national income (GNI) per capita in the five countries. The results of the panel data regression coefficient of this independent variable are 0.823, which shows that an increase in the foreign direct investment variable by one percent can increase the GNI per capita value by 0.823 percent. This is in accordance with the results of the output of this study which shows the same results.

Rostow's theory states that increasing income in a country in the take-off conditions requirements that the investment value must have 10 percent. According to Harrod-Domar's theory (Jhingan, 2014), it states that the accumulation of capital / investment in the previous year will drive economic growth in the following year. Based on previous research that

supports it, namely Mifti, et al (2019) explains that FDI variable has a significant and positive effect on per capita income. According to Shankar et al (2018) shows that FDI has a positive relationship with per capita income.

Linear shipping connectivity has a significant and positive influence on gross national income (GNI) per capita in the five countries. In the t-test results between the linear shipping connectivity variable and GNI per capita. The results of the panel data regression coefficient of this independent variable are 0.131, which shows that an increase in the linear shipping connectivity variable by one percent can increase the GNI per capita by 0.13108 percent with the ceteris paribus assumption.

The big push theory is explained in achieving the success of economic development and increasing per capita income must be accompanied by the effects of infrastructure, where the existence of infrastructure development in a country can accelerate the process of industrialization and absorption of labor, with this will increase per capita income in a country.

Mobile-cellular telephone subscription has a significant and positive influence on gross national income (GNI) per capita in the five countries. Panel data regression coefficient of this independent variable are -0.452, indicating that an increase in the cellular telephone subscription variable by one percent can reduce the GNI per capita value by 0.452 percent.

In previous research, Shankar, et al (2018) stated that this technology variable has a positive relationship but its influence is slightly weak, even in lower middle income it is stated that its influence is not significant enough on per capita income. The theory of technological dualism can strengthen output results, where it

is explained that high-tech progress will actually limit the growth of employment opportunities so that it will hamper the rate of per capita income in a country (Sadono, 2014).

The formation of human capital is a process to obtain people who have skills, education, and experience that determine the sustainability of economic and political development in a country. Based on Schultz's theory, one of the successes of economic development is determined by the formation of human capital through education. In Romer's theory, higher education will encourage a person's skills and ultimately increase per capita income, so that economic development in the country.

In previous research, education has a significant and positive influence on per capita income, according to Mirjalili, et al (2018) stated that education and productivity are interrelated and have a significant influence on per capita income and avoid the middle income trap.

CONCLUSION

Based on the results and discussion of the analysis that has been done in this study in a case study examining the determinants of the middle income trap in five Southeast Asian countries, namely Indonesia, Thailand, Malaysia, the Philippines, and Vietnam in the period 2008 to 2017 using panel data regression, the conclusions that can be drawn from this study are as follows : Manufacturing, FDI, Linear Shipping Connectivity Index, and Education Index have a significant positive effect on Gross National Income (GNI) per capita.

However, Mobile- cellular Telephone Subscriptions have a significant negative effect on Gross National Income (GNI) per capita. Each country in this study, especially the

government in these countries, not only increases technological development rapidly, but also evaluates whether the development has given a positive effect on the economy.

That in reality high technology will sometimes create limited job opportunities because the workforce cannot adapt to technological developments. Thus, it is necessary to hold training in creating skilled workers or using and developing intermediate technology, where this technology has the ability to improve products while creating job opportunities. Thus, the absorption of this workforce will increase per capita income in these countries.

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