

ECONOMIC RESILIENCE: MAPPING THE LINKS BETWEEN MACROECONOMIC FACTORS AND POVERTY REDUCTION IN ASEAN

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Abstract

Poverty remains a persistent challenge in the economies of the world, including the member states of the Association of Southeast Asian Nations (ASEAN). Since its inception in 1967, ASEAN has aspired to alleviate poverty as one of its core objectives in pursuit of prosperity and social progress. Despite significant efforts outlined in various ASEAN Blueprint Roadmaps, a substantial portion of the population in ASEAN member states continues to live below the poverty line, with an estimated 120 million individuals, nearly a quarter of the ASEAN population, struggling to survive on less than US\$1.90 per day. Notably, Indonesia and the Philippines stand out with the highest poverty rates, contributing to around 90 percent of the impoverished population within the ASEAN integration.

To address this critical issue, ASEAN governments have maintained favorable foreign investment climates (FDI), aimed for annual economic growth rates of five percent, and controlled inflation and unemployment. The role of FDI as a catalyst for positive impacts, including job creation, has been highlighted. The integration of the ASEAN Comprehensive Investment Agreement (ACIA) in 2009 has been instrumental in prioritizing the allocation of FDI inflows among member countries.

This study examines the effectiveness of FDI in poverty alleviation within ASEAN, exploring its role in driving economic growth and job creation. By analyzing data from ASEAN Statistic Annual Reports and existing research, we assess the potential for FDI to significantly contribute to the reduction of poverty in the region.

Keywords: ASEAN, poverty alleviation, foreign direct investment (FDI), economic growth, job creation

I. Introduction

Poverty is a problem for the economies in the world, including for The Association of Southeast Asian Nations (ASEAN) member states. The ASEAN declaration in 1967 reveal that the missions of poverty alleviation became one of the goals of the establishment of ASEAN regional integration. It aims to realize prosperity and social progress. Various efforts have been implemented into several ASEAN Blueprint Roadmaps. For example, the Declaration of ASEAN Concord in 1976, the ASEAN Ministers Meeting on Rural and Poverty Eradication (AMRDPE) in 1997, the ASEAN Socio-Cultural Community Council (ASCC) in 2003, and the ASEAN Economic Community Council (AEC) in 2009 (ASEAN Secretariat, 2019). Through the integration of ASEAN policy and development cooperation in each

country, the poverty rate in ten ASEAN countries tends to decreasing. However, poverty remains a challenge due to many people still live below US\$1.90 per day in ASEAN member states. It is estimated that there are around 120 million people ASEAN population living below the poverty line. ASEAN poverty rate is almost a quarter of the total population of ASEAN (Himawan and Tanjung, 2016). Indonesia and the Philippines are the countries that have the highest poverty rates. Around 90 percent of poor people in ASEAN integration from Indonesia and the Philippines until 2017 (Johanna Chisholm, 2017).

To overcome the issue of poverty, the governments in ASEAN countries have maintained a foreign investment climate (FDI), encouraged the economy to grow up five percent per year, inflation and unemployment controlled (Utama, 2015; ASEAN Secretariat, 2019). ASEAN Statistic Annual Report (2013) alleviation targets can be achieved if ASEAN countries maintain macroeconomic resilience such as the FDI climate. FDI has becomes a catalyst to providing positive impacts such as to create of new jobs for each country (Júlio et al., 2013).

According to Teixeira and Loureiro (2019) explained that ASEAN member countries prioritized the allocation of FDI inflows through the integration of the ASEAN Comprehensive Investment Agreement (ACIA) in 2009. Until 2018, the allocation of FDI Inflow to ASEAN countries was US\$ 155 billion, which around 66 percent from the service sector (UNCTAD, 2019).

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In the context of GDP, ASEAN became one of the fifth largest economies in the world in 2018. This is because the economies in ASEAN countries have contributed to a GDP of around US\$ 3 trillion of world of GDP (Septiari, 2019). Throughout 2019, economic growth in ASEAN was recorded at 4.8 percent or US\$ 3.5 trillion (current USD). The contribution of GDP came from Indonesia reached US\$ 1.1 trillion, Thailand US\$ 543.5 billion, Singapore US\$ 372.0 billion, Malaysia US\$ 364.6 billion, and Vietnam US\$ 261.9 billion. ASEAN's economic growth was recorded to be higher than the world's economic growth of 2.3% (World Bank, 2020). But, if compared with the GDP per capita of ASEAN member states, it reaches around US\$ 1,407 to US\$ 65,233 in 2019. The GDP per capita figure in ASEAN countries is relatively high for several countries. However, the problem of poverty still occurs. Economic growth and GDP are not only high and sustainable, but also inclusive and equitable (ADB, 2018).

II. Literature Review

ASEAN countries have a higher poverty rate than countries in other of the world. Research on the level of poverty in ASEAN is still not a done deal. Much of the literature is a form of review of the poverty level phase in ASEAN such as the ASEAN report which reviews poverty in 10 ASEAN countries. However, several studies examine the relationship between macroeconomic variables and poverty in a country. Studies by Hassan et al (2015); Perera and Lee (2013); Ruch and Geyer (2018); Teixeira &

Loureiro (2019) shows how various macroeconomic sectors, including GDP influence poverty levels. The study that focuses on the poverty level of ASEAN countries as the dependent variable is nearly absent.

Magombeyi and Odhiambo (2018) states allocation of foreign capital investment for the public sector has not significant contribution to poverty alleviation in South Africa. Other studies, such as those conducted by Ahmad et al (2019) found that the Inward FDI flow had a negative impact to poverty variables. It is because FDI became the catalyst to strengthening economic fundamentals in Asian countries. Meanwhile, Rachman et.al (2020) study shows that economic growth is essential in promoting development. Simultaneously, one percent increasing economic growth will reduce poverty in Cambodia, Malaysia, Indonesia, and Thailand.

The ASEAN countries poverty related to the vicious circle of poverty phenomenon. The theory explains that people who lived below poverty line who experience a lack of capital. The poor people have limited capital which causes low of productivity and low income. Furthermore, due to low productivity and low incomes lead to low savings and investments. Then, the vicious circles of poverty will continue. If there are no extraordinary efforts to overcome the circle, the poor people of ASEAN countries always being to poor condition. Therefore, the fulfillment of basic needs and the definition of poverty for Indonesia still need to be researched more specifically about the definition. Descriptive analysis approach needs to be done to determine the reality of poverty in Indonesia. Poverty in developing countries such as in Indonesia tends to be influenced by several factors such as economic, social, and political factors (Ruch & Geyer, 2018).

Theoretically, the changes of macroeconomics will affect a country's poverty level. This is because macroeconomic variables are the main factor determining of changes in the movement of a country's economy. In addition, quality resources must be considered by the state. Quality human resources will result in positive and significant economic growth, then will increase global competitiveness. Accordingly, this study proposes a hypothesis that macroeconomics such as economic growth, foreign investment, inflation, average years of schooling, exports and imports affect negatively on poverty in ASEAN countries.

Based on the previous description, the objective of this study is to examine the effect of the macroeconomic variables toward the decline of the number of poor in ASEAN countries. The previously observed studies emphasize aspects of economic growth and macroeconomic indicators as the main topics. This research has two main objectives. *First*, to identify the characteristics of poverty in ASEAN. *Second*, to analyze the ability of economic growth and other macroeconomic indicators to influence poverty reduction in ASEAN countries.

III. Methodology

To analyze the effect of macroeconomic variables on poverty levels in ASEAN countries, this study using the panel data from ten observation periods from 2010 to 2019. The dependent variable is the poverty level (Poverty Headcount Ratio below US\$ 1.90 a day with PPP 2011), meanwhile for the independent variables in this study are Inward FDI (% of GDP), Economic Growth (%), Inflation (%), Mean Years

Schooling (MeanValue), Export % of GDP, and Import % of GDP. Each dependent and independent variable data was captured by ASEAN Statistical Report, World Bank, World Poverty, and UNDP.

Poverty data in eight ASEAN member states are not available in full at the World Bank, then the researchers took from other sources, namely the ASEAN Statistical Report and the World Poverty SDGs. The using of the World Bank's US\$1.90 poverty measure aims to address each poverty percentage in the nine ASEAN countries is more comparable. The formulation of the model used in this study is as follows:

$$\text{LPOVAS}_{it} = \beta_0 + \beta_1 \text{LFDIAS}_{it} + \beta_2 \text{LEGAS}_{it} + \beta_3 \text{LUNMPAS}_{it} + \beta_4 \text{LINFAS}_{it} + \beta_5 \text{LEXPTAS}_{it} + \beta_6 \text{LIMPTAS}_{it} + \beta_7 \text{LMYSAS}_{it} + \text{eit} \quad (1)$$

Table.1 Variable Definition

Variables	Variable Definition	Source
LPOVAS	Poverty Headcount Ratio below US\$ 1.90 a day with PPP 2011	ASEAN Stat, World Bank, and World Poverty
LFDIAS	FDI Inward (% of GDP)	World Bank
LEGAS	Economic Growth (%)	World Bank
LUNMPAS	Unemployment Rate (%)	World Bank
LINFAS	Inflation GDP Deflator (%)	World Bank
LMYSAS	Mean Years Schooling	UNDP
LEXPT _{AS}	Export % of GDP	World Bank
LIMPTAS	Import % of GDP	World Bank

In this research method, Panel Data Regression is used. Data analysis in this study has several stages in testing the specification model. Tests are carried out to choose which model is the most suitable between Common, Fixed, and Random effects. According to Baltagi (2005); Wooldridge (2009) when the Common Effect (1) model was tested. The next step is the Fixed Effect and Random Effect models are tested in panel regression. The basis of the Fixed Effect equation is as follows:

$$Y_{it} = \beta_0 + \beta X_{it} + u_i + \text{eit} \quad (2)$$

Equation (2) shows the basic equation of Fixed Effect. Where, Y is the dependent variable with i as the individual observation and t is the time period. X is the independent variable in the observation period of time. Meanwhile is the coefficient for the independent variable and e is the error term. The equation model in Fixed Effect becomes:

$$\text{LPOVAS}_{it} = \beta_0 + \beta_1 \text{LFDIAS}_{it} + \beta_2 \text{LEGAS}_{it} + \beta_3 \text{LUNEMPAS}_{it} + \beta_4 \text{LINFAS}_{it} + \beta_5 \text{LEXPTAS}_{it} + \beta_6 \text{LIMPTAS}_{it} + \beta_7 \text{LMYSAS}_{it} + \text{eit} \quad (3)$$

Where β_0 is fixed (non-stochastic) and will be different if the variable has been input into the Random Effect model equation so that it is Random (Wooldridge, 2009).

$$Y_{it} = \beta_0 + \beta X_{it} + u_i + \text{eit} \quad (4)$$

Equation (4) for each variable is the same as the explanation in equation (3). u_i shows the individual residual which is a random characteristic of the i observation unit in each equation. Baltagi (2005) claims that the Chow Test was conducted to select the best model between the Common Effect model and the Fixed Effect model. After the Chow test, the Hausman test was carried out in selecting the Fixed Effect and Random Effect models.

IV. Result and Discussion

Table 2 describes the results of the Common Effects test, which shows that all independent variables are significant at 5% alpha, except for the $LFDI_{AS}$ variable which is not significant. The regression results represents that only variables from $LEXPT_{AS}$ and $LMYS_{AS}$ have a statistically negative and significant effect on poverty levels in the eight ASEAN countries. It is because the role of domestic exports can be an opportunity in the creation of new jobs provided the government pushes policies inward. Likewise, the mean years schooling shows an influence in reducing poverty levels in ASEAN countries. Meanwhile, the variables of economic growth, unemployment, imports, and inflation have a positive effect on poverty levels in the eight ASEAN countries.

The next step is analyze Fixed Effect and Random Effect as shown in table.3. The purpose of the Fixed Effect test is to compare each model is better between Fixed Effect or Common Effect. The result of Fixed Effect shows that all variables are significant at 5% alpha, except for LEG_{AS} and $LUNEMP_{AS}$ variables. To compare which model is better between Fixed Effect and Common Effect, Chow test can be performed.

Table 4 shows the results of the Chow test, the probability value of the F-count is smaller than 0.05 (5%), which means the Fixed Effect model is better than the Common Effect model. Based on the principle of panel data analysis, if the Chow test results show a statistically significant value, then the test is continued on panel regression with using Random Effect model.

Table.2 Common Effect Analysis

Variables	Common Effect	
	Coef.	t-stat
C	5.42	2.81
$LFDI_{AS}$	-0.21	-0.81
LEG_{AS}	1.68	3.52**
$LUNEMP_{AS}$	0.85	3.22**
$LINFAS$	0.55	3.36**
$LEXPTAS$	-5.24	-5.29**
$LIMPTAS$	5.08	5.12**
$LMYS_{AS}$	-4.07	-4.39**

R-Square	0.74
Adj R-Square	0.72
Observation	80

*Note : ***, **, * explain the stationary in for $\alpha = 1\%$, 5% , and 10% respectively*

The results of the Random Effect Test are described in table 2. All independent variables have a significant effect on poverty levels in the eight ASEAN countries. The variables of $LFDI_{AS}$, $LEXPT_{AS}$, and $LMYS_{AS}$ have a negative effect. Meanwhile LEG_{AS} , $LUNEMP_{AS}$, $LINF_{AS}$, and $LIMPT_{AS}$ have a positive effect on poverty. To choose which model is the best between Fixed Effect and Random Effect, the Hausman test can be used. The Hausman test results are listed in table 3 which shows the Chi-Square probability (X^2) is greater than 0.05 (5%). The best model selected in the Hausman test is the Fixed Effect Model. The next step is to analyze the Fixed Effect Model test of all the effects of the independent variables on the poverty level.

Table.3 Fixed Effect and Common Effect Analysis

Variables	Fixed Effect		Random Effect	
	Coef.	t-stat	Coef.	t-stat
C	8.23	2.47**	5.42	2.70**
$LFDI_{AS}$	0.28	1.76**	-0.21	-0.78**
LEG_{AS}	0.22	1.13	1.68	3.39**
$LUNEMP_{AS}$	-0.12	-0.96	0.85	3.10**
$LINF_{AS}$	0.34	5.19**	0.55	3.23**
$LEXPT_{AS}$	2.07	2.81**	-5.24	-5.10**
$LIMPT_{AS}$	-2.07	-2.87**	5.08	4.93**
$LMYS_{AS}$	-4.41	-2.52**	-4.07	-4.23**
Fixed and Random Effect Cross-Section				
CAM-C	-0.35		0.00	
IDN-C	1.79		0.00	
LAO-C	1.05		0.00	

MLY-C	-2.06		0.00	
MYN-C	-0.73		0.00	
PHP-C	3.46		0.00	
THD-C	-3.57		0.00	
VTN-C	0.40		0.00	
R-Square	0.97		0.74	
Adj R-Square	0.96		0.72	
Observation	80		80	

Note : ***,**, * explain the stationary in for $\alpha = 1\%$, 5% , and 10% respectively

Table.4 Chow Test and Hausman Test

Summary	Chow Test			Hausman Test		
	Statistic	d.f	Prob	Chi-Sq Stat	d.f	Prob
Cross-Section F	74.67	(7.65)	0.00	-	-	-
Cross Section Chi-Squares	176.14	7	0.00	-	-	-
Cross Section Random	-	-	-	3.66	7	0.81

4.1 Summary and Analysis

The Regression results of Fixed Effect Model show that FDI variable statistically has a positive and significant effect on poverty levels in the eight ASEAN countries. The coefficient of 0.28 indicates there is an increasing of allocation of Inward FDI by one percent, the poverty rate will continue to increase by 0.28 percent. This result is different from the findings Teixeira and Loureiro (2019) explained that when the flow of Inward FDI in Portugal increased, it had an impact on reducing poverty levels in Portugal. The positive relationship between Inward FDI and poverty rates in ASEAN countries due to the influence of foreign investment to the eight ASEAN countries has not yet effect on the small and medium economic sector. On the other hand, FDI allocation for the agricultural sector, education sector, and health sector must be increased to encourage the human development in ASEAN member

countries (Ahmad et al., 2019). This research is also supported by findings from Magombeyi and Odhiambo (2018) explain that the influence of FDI in each country is positive and significant on poverty. This is indicated by the poverty rate that does not tend to decrease in developing countries and South Africa.

According to the ASEAN Secretariat (2019) report, ASEAN countries have focused on allocating FDI funds to the business activity services reached around 80 percent in the last five years. The focus of ASEAN countries to encouraging foreign investment in the service sector is expected to create a business area environment and develop industry in the ASEAN region (Ziegenhain, 2020). However, there are still some obstacles of the inflow of foreign investment.

This is because not in line with the strengthening of the community's economic resilience. ADB (2018) revealed that the high tendency to require foreign investment to enter ASEAN countries has not considered other factors such as the increasing of individual of wealth, the large number of middle-class people, and the purchasing power and consumption sector in ASEAN. The unequal allocation of FDI to all sector areas can be the answered why poverty does not decrease when FDI increases. ASEAN has a large-scale market and has around 600 million people in ten countries. However, it is possible that the majority of FDI allocations are only for companies and large businesses without focusing on small and medium enterprises. Clearly, there is an impact in terms of employment, income from the lower middle class, and the Small Medium Enterprises (SMES) sector. The SMES sector is only a complement to support the basic needs of large companies.

Meanwhile for the inflation variable, the regression results show that the variable of inflation has a statistically positive and significant effect on poverty in ASEAN. This indicates that when inflation rises by one percent, the poverty rate also increases by 0.34 percent. World Bank (2020) explained that ASEAN countries have concerned about controlling the inflation rate to maintained at creeping inflation. In last ten years, ASEAN countries inflation reached below five percent per year. The inflation rate in ASEAN countries which is at the level of creeping inflation is caused by the policies taken by ASEAN countries to controlling inflation rates. Several monetary policies were taken, such as managing foreign capital flows, maintained currency, and creating a regulatory framework and supervision (ADB, 2018). The level of creping inflation for ASEAN countries is still vulnerable and tends to rise to the level of galloping inflation (ASEAN Secretariat, 2019). This is due to two things, *Firstly*, the increasing price of goods can affect the people's purchasing power to decreasing (Talukdar, 2012). *Second*, the velocity of money from developing countries is very largest. For example, people in developing countries, including in ASEAN member countries, who bought for basic foods tend to be less because they did not have a lot of income. Although producers always produce goods to support consumer shopping on daily. However, their production tends to be smaller. The activity of the velocity of money in developing countries is too high. The monetary multiplier will increase and encourage rising national income and inflation to gradually lead to galloping inflation.

The results show that the variable from exports has a positive and significant effect on poverty levels in ASEAN countries. Meanwhile, the variable of imports has a negative and significant effect on poverty in ASEAN countries. It is positive influence of exports in ASEAN countries. Many ASEAN countries are

opening their markets and promoting foreign direct investment to increase employment and productivity, which are export-oriented industries and exports of goods and services (Okabe & Urata, 2014). The exports from ASEAN countries in the industrial sector as well as goods and services have reached 7 percent of world exports (ADB, 2018). However, companies or businesses operating in other economic sectors will be affected by this activity due to a low of support. Their production was stuck and decrease due to low of demand. Meanwhile, the negative import sector is caused by the low supply chain between ASEAN countries to promoting the welfare of the people in the region.

The role of exports for ASEAN countries has become an opportunity for economic liberalization. According to ADB (2018); ASEAN Secretariat (2019) stated that ASEAN is one of the most open regional integrations in the world. In the last five years, total exports were recorded at more than US\$ 1.2 - US\$ 1.4 trillion or around 54%-55.2% of ASEAN's total GDP. In fact, ASEAN countries have gradually made efforts to prepare exporters to compete in the domestic and international markets. Operational competition policies have been well designed to support other economic policies, including trade liberalization. By reducing barriers to entry, competition policy also encourages the formation of strong supporting industries and increases the efficiency of SMEs (UNCTAD, 2019). Therefore, the existence of this trade openness is a good opportunity for each ASEAN country to maximize the benefits of increasing the export sector.

The variable from Mean Years Schooling has a negative and significant effect on poverty levels in the eight ASEAN countries. When the average length of schooling increases, it has an impact on reducing the poverty rate in the eight ASEAN countries by 4.41 percent. This finding is supported by the results of research from Afzal et al (2012); Thapa, (2015) revealed that an improved level of education has an impact on reducing poverty levels in Pakistan and Nepal. The negative relationship between Mean Years Schooling and poverty is possible because the role of ASEAN countries in driving their economies tends to be open. It therefore has an impact on the benefits for ASEAN from this element of globalization. In addition, ASEAN economic integration in the ASEAN Declaration Report (2016) prioritizes the role of long-term investment in education as the basis of human development. For example, such as cooperation between educators, promotion of educational rights and obligations, and partner cooperation with multilateral institutions.

As expected, the AEC integration states that increasing human resources is very important in improving the quality of life of citizens as a whole. It has to ensuring effective infrastructure to deliver public services that provide access to quality education and good health, as well as providing people with needed skills (ASEAN Statistic Annual Report, 2020).

Meanwhile, the variables of economic growth and unemployment have no significant effect on the poverty level in ASEAN countries. The effect of economic growth shows positive results, while unemployment is negatively related to poverty levels. Research from Fadillah (2021) reveals that the increase in per capita income in South East Asian countries has an impact on increasing income in the lower middle-class community in the last four decades.

The contribution of the community to encourage economic growth in ASEAN countries. Likewise with the unemployment rate where the average unemployment rate in ASEAN countries reached 0.71% to

4.4% in the last five years. The role of the government has been trying to reduce the unemployment rate through increasing new jobs, attracting foreign investment, opening trainings for workers. In addition, the AEC Blueprint explains to encourage the regional labor market in ASEAN, a Mutual Recognition Agreement (MRAs) has been implemented which consists of seven qualified jobs. This can be an opportunity but also a negative impact for human resources in ASEAN countries. It is because the population growth rate in ASEAN countries is projected to reach 18 percent or become more than 700 million people. This means that the supply of labor in ASEAN countries will increase (Pavon, 2019; Ziegenhain, 2020). Therefore, various efforts and programs must be updated and improved by ASEAN countries. Especially to strengthening the resilience of macroeconomic fundamentals which can be an advantage, but on the other hand it can be a negative impact due to excessive inequality in ASEAN countries. This is because the resilience of economic fundamentals in ASEAN countries tends to be vulnerable.

V. Conclusion

This study aims to examine the effect of macroeconomic variables on poverty levels in eight ASEAN countries. The results show that all independent variables have a significant effect on poverty, except for economic growth and unemployment. The variables of FDI, inflation, and exports have a positive and significant effect on the poverty level. Meanwhile, the variables of Import and Mean Years Schooling have a negative and significant effect on poverty. The influence of this macroeconomic variable needs to be considered for stakeholders to taking a policy that will have an impact on the community in a country. In the majority of this research, the biggest influence comes from exports and foreign investment which causes the poverty level to tend to increase. From the findings of the study, it appears that the authorities of ASEAN countries must be aware of their macroeconomic developments. Regardless of the benefits that will be given due to the increasing economy. However, the power and policies that are not objective have an impact on the widening of the number of poor people in ASEAN countries.

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