# 19 The Crucial Factor Affecting Poverty and Inequality in ASEAN

*by* Suharno Suharno

# The Crucial Factors Affecting Poverty and Inequality in ASEAN: A Case Study of Cambodia, Malaysia, Indonesia, and Thailand

Sarah Ningtyas Rachman [1], Suharno [2] and Lilis Siti Badriah [31]

[1,2,3] Faculty of Economics and Business, Jenderal Soedirman University

**Abstract.** Poverty and inequality are problems that still have to be overcome by every state in the world, including the members of the Association of Southeast Asian Nations (ASEAN). The theoritical and empirical studies showed accelerating economic growth would have reduced poverty due to structural changes, even though it did not always happen. Meanwhile, Corruption had hampered the process of economic development. It increased inequality and poverty. This study is aimed to analyse the impact of economic growth and corruption partially and simultaneously to poverty and inequality and the most significant impact between economic growth and corruption toward poverty and inequality by using panel data regression through fixed effect model in 4 ASEAN Member Countries (Cambodia, Indonesia, Malaysia, and Thailand). Based on analysis process and collected data, economic growth and the level of corruption affected poverty rates and the level of inequality simultaneously. While partially, when economic growth rose, the poverty rated decreased but the level of inequality rose. On the other hand, when the level of corruption rose, the poverty rates also rose but the inequality decreased. There needs an agreement between stakeholders, so, institutions can be unchained from corruption without obstructing equity efforts and poverty alleviation.

**Keywords:** Poor Category, Access of Credit, Access of Education, Opportunities to Financial, Structural Changes Introduction

## 1. INTRODUCTION

(Association of Southeast Asian Nations) or commonly called as ASEAN have complex problems including economy. In this research, there are 4 countries which will be discussed, they are Cambodia, Indonesia, Malaysia, and Thailand. These four countries belong to the middle countries group and are focused on to alleviate poverty and inequality issues. Poverty is a multidimensional problem and can be seen as a condition where some individuals experience hunger, do not have shelter, do not have the ability to access health facilities and education , also there is unemployment. In general definition, poor is a condition that is not economically sufficient, especially in relation to basic consumption needs such as food, clothing, and boards. However, in the wider definition, poverty also has the meaning of inability to meet other basic needs such as nutrition, medical services, education, clean water. Poverty emerges as a result of inequality in the factors of production ownership, imbalance in mindset among society , culture and environment. This is a graphic of poverty rates in Southeast Asia during 2012-2017 periods.

[1] Corresponding Author email: sarahnrachman@gmail.com[1], harno78@yahoo.com[2], ummililis@yahoo.co.id[3]

**Figure 1**. Poverty Rates in Southeast Asia During 2012-2017. *Source: World Bank.*
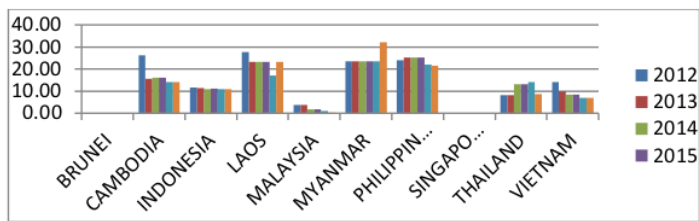
Based on the picture, it could be seen that Cambodia was on the 3rd rank as a state which had the highest poverty rates among ASEAN member countries in the last 6 years, It was about 17%. Indonesia and Thailand were around 11%, and Malaysia were 2%.

A headway in technology, globalization, and market-oriented reforms increased the ratio imbalance among human resources with unskilled and skilled human resources, a decreasing in wage rates, and an increasing of inequality in Southeast Asia after 1997's monetary crisis. Inequality in Southeast Asia was mostly driven by income disparities and different access of education levels. Changes in structural patterns and economic growth of ASEAN countries did not help reduce inequality and fix the problem of income distribution and poverty amid the globalization process. Increased inequality eroded the middle class which was the backbone of the community's economy, reducing the incentives and motivation of employees who worked in fallen sectors, obstructing investment activities because the middle and lower classes did not have access to credit, and disrupt social harmony. The following picture was an overview of inequality rates of Cambodia, Indonesia, Malaysia, Thailand based on the Gini Index due 2012-2017.



**Figure 2**. Inequality Rates of Cambodia, Indonesia, Malaysia, Thailand Based on The Gini Index due 2012-2017. *Source: World Bank*

Overall, the inequality rates among Cambodia, Indonesia, Malaysia, and Thailand over the past 6 years were below 5%, it meant the distribution of ownership assets were still unequal.

Economic growth will increase the economic capacity. In other words, it will increase the Gross Domestic Product (GDP). When GDP increases, it is expected to have a trickle down effect on society, such as increasing a community welfare then reducing poverty rates. GDP growth does not improve the community welfare instantly. There is a dilemma to select economic development strategy attempts to alleviate poverty. First, prioritizing a high economic growth by overriding income distribution. Second, prioritizing equal income distribution than boosting economic growth. Those things cause inequality when economic growth held its own. The following graphic was an overview of the economic growth of ASEAN member states during 2012-2018.

**Figure 3**. Economic Growth of ASEAN Member States during 2012-2018.*Source: World Bank*

Overall, the economic growth of ASEAN member countries was fluctuating, since each member country had a different leading sector in supporting the economy. Like Singapore which relied on the manufacturing industry sector, then Malaysia and Indonesia in the household consumption sectors (food, beverages, communications, restaurants and hotels, and housing) According to the United Nations on its report entitled World Economic Situation and Prospect 2018, in the short term, export growth in Asian countries would slow down due to declining import demand.

Public institutions in many ASEAN member states had weak transparency and accountability, this is due to the absence of strict anti-corruption laws and the involvement of restricted civil society (Transparency International, 2015). So far, only Thailand and Indonesia had passed a law on information freedom, but the authorities of corruption eradication were still weak and not optimal due to the high operational dependence on the government and limited resources capacity. According to the results of the 2014 Corruption Perception Index which was published by the International Transparency Organization, only Malaysia and Singapore scored above 50 out of 100 (where 100 means very clean and 0 is very corrupt). However, corruption has hampered economic development, misallocated resources, economic inefficiencies, reduced competitiveness of a state, deteriorated economic growth, hampered the distribution of government spending on education and health, increased income disparities, distorted market mechanisms and resources allocation. The following picture was an overview of the Corruption Perception Index during 2012-2017 period of 4 ASEAN member countries (Cambodia, Indonesia, Malaysia, Thailand).
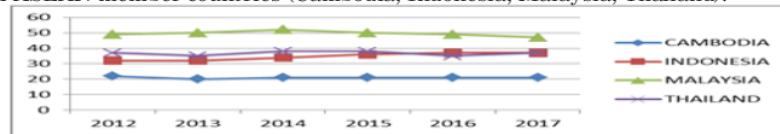


**Figure 4**. Economic Growth of ASEAN Member States during 2012-2018.Source: World Bank. Corruption Perception Index of 4 ASEAN Member Countrie (Cambodia, Indonesia, Malaysia, Thailand) During 2012-2017. *Source: Transparency International.*

Based on the graph, it can be understood that Malaysia had the lowest level of corruption between the 4 ASEAN member countries in the past six years and Cambodia was the most corrupt country. The purpose of this study was to analyze how the effect of economic growth and corruption level in 4 ASEAN member countries on poverty and inequality of income distribution, and to analyze which variable that had the most impact towards poverty and inequality of income distribution.

## 2 MATERIALS AND METHODS

In order to achieve the research objectives, data analysis technique which used was panel data regression with fixed effect model. Data was a secondary, sourced from related institutions and processed through *Eviews* software.

### Data Panel Regression

Panel data which was a combination of time series and cross section data was able to present more data. So, it would produce a greater degree of freedom and can overcome problems that arise such as omitted variables (Widarjono, 2013). Regression model could be written as follows:

$$lnY1_{it} = \beta_0 + \beta_1 lnX_{1it} + \beta_2 lnX_{2it} + e_{it} \quad (1)$$

Information :
$Y1$     : Poverty Rates
$X_1$     : Economic Growth
$X_2$     : Corruption Perception Index
$\beta$     : Coefficient of Regression
$e_{it}$     : *error term*
i     : Country

t      : Time

$$lnY2_{it} = \beta_0 + \beta_1 lnX_{1it} + \beta_2 lnX_{2it} + e_{it} \quad (2)$$

Information :
$Y2$      : Inequality Level
$X_1$      : Economic Growth
$X_2$      : Corruption Perception Index
$\beta$      : Coefficient of Regression
$e_{it}$      : *error term*
i      : Country
t      : Time

### Fixed Effect Model

According to Gujarati (2003), a way to pay attention to the heterogeneity of cross section units in the panel data regression model was to allow different intercept values for each cross section unit but still assuming a constant slope.

### Weighted Least Square

According to (Montgomery, et al., 2012), in overcoming a regression model with error variants not constant could be done with the WLS method. Since the WLS had the ability to neutralize the consequences of violations of heteroscedasticity assumptions and could eliminate the nature of irregularities on OLS model. The WLS method was a special case of Generalized Least Square (GLS). It was called as Weighted Least Square because in this method, we used a weight that was proportional to the inverse of the response variable variance. So, the new error that has characteristics such as regression with OLS was obtained.

## 3. RESULTS

Dependent Variable: Y1?
Method: Pooled EGLS (Cross-section weights)
Date: 06/21/19   Time: 17:17
Sample: 2012 2017
Included observations: 6
Cross-sections included: 4
Total pool (balanced) observations: 24
Linear estimation after one-step weighting matrix

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | -6.202298 | 4.144156 | -1.496637 | 0.1518 |
| X1? | -0.146056 | 0.068278 | -2.139140 | 0.0464 |
| X2? | 2.395560 | 1.192435 | 2.008965 | 0.0598 |
| Fixed Effects (Cross) | | | | |
| _CAM--C | 2.043424 | | | |
| _INA--C | 0.280234 | | | |
| _MAL--C | -2.463311 | | | |
| _THAI--C | 0.139653 | | | |

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.790762 | Mean dependent var | 4.498445 |
| Adjusted R-squared | 0.732640 | S.D. dependent var | 2.695591 |
| S.E. of regression | 0.432599 | Sum squared residu | 3.368547 |
| F-statistic | 13.60525 | Durbin-Watson stat | 1.275152 |
| Prob(F-statistic) | 0.000014 | | |

Unweighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.838271 | Mean dependent var | 2.011131 |
| Sum squared resid | 3.884744 | Durbin-Watson stat | 0.726616 |

If the analysis result was written on the equation in the country of Cambodia, it was:
$$Y1_{CAMt} = -4{,}159 - 0{,}146X1_{CAMt} + 2{,}395X2_{CAMt} + e_{CAMt}$$
[1] Meanwhile for intercept of Indonesia: -5,922, Malaysia: -8,665, and Thailand : -6,063.

Dependent Variable: Y2?
Method: Pooled EGLS (Cross-section weights)
Date: 06/21/19   Time: 18:05
Sample: 2012 2017
Included observations: 6
Cross-sections included: 4
Total pool (balanced) observations: 24
Linear estimation after one-step weighting matrix

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 0.303853 | 0.529147 | 0.574232 | 0.5729 |
| X1? | 0.004406 | 0.008030 | 0.548659 | 0.5900 |
| X2? | -0.363827 | 0.152475 | -2.386146 | 0.0282 |
| Fixed Effects (Cross) | | | | |
| _CAM--C | -0.363877 | | | |
| _INA--C | 0.112706 | | | |
| _MAL--C | 0.239074 | | | |
| _THAI--C | 0.012097 | | | |

Effects Specification

Cross-section fixed (dummy variables)

Weighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.844103 | Mean dependent var | -1.978251 |
| Adjusted R-squared | 0.800798 | S.D. dependent var | 1.087106 |
| S.E. of regression | 0.075058 | Sum squared resid | 0.101407 |
| F-statistic | 19.49213 | Durbin-Watson stat | 1.236653 |
| Prob(F-statistic) | 0.000001 | | |

Unweighted Statistics

| | | | |
|---|---|---|---|
| R-squared | 0.767911 | Mean dependent var | -0.971000 |
| Sum squared resid | 0.102903 | Durbin-Watson stat | 0.733137 |

If the analysis result was written on the equation in the country of Cambodia, it was:
$$Y2_{CAMt} = -0{,}060 + 0{,}004X1_{CAMt} - 0{,}363X2_{CAMt} + e_{CAMt}$$
Meanwhile,  for the intercept of the Indonesia : -0,112; Malaysia: 0239; and Thailand: 0.012. Both of these regressions have heterocedasticity problems, therefore, the WLS (Weight Least Square) method was used to overcome them.

# 4 DISCUSSION

The regression results showed that economic growth (X1) had a significant negative effect on the poverty rates (Y1), it could be seen from the p-value X1 0,046 <0.05 (α = 5%). This result was similar with the research conducted by Balakrishnan et al (2013) which stated that the occurrence of economic growth would reduce poverty. Economic growth would increase minimum wages, with increased minimum wages the welfare of workers would also increase, so, in the long term, poverty reduction will be achieved. Meanwhile, the corruption level (X2) had non-significant positive effect on the poverty level (Y1), it could be seen from the p-value of X2 0.059> 0.05. This result was in accordance with the result of a study conducted by Abed & Gupta (2002) which stated that corruption caused increased poverty, because the existence of corruption would eliminate the potential income that should be received by the poor. In this equation, it could also be seen the economic growth variable was a variable that had biggest effect on poverty level since the p-value X1 was more significant than X2 even though the X2 coefficient> X1. Every 1% increasing in economic growth would reduce the poverty rates by 14.6% and every 1% increasing in corruption would increase the poverty rates by 239.5%. The independent variables in the model can explain the dependent variable by 79.07%, while the remainders were explained by other variables outside the model were are not examined. Value S.E of regression <value of S.D dependent var, it meant the regression model was valid as a predictor model. P-value of F-statistic <5%, it meant simultaneously both independent variables affect the dependent variable.

Furthermore, the second regression showed that economic growth (X1) had a positive effect that was not significant to the level of inequality (Y2), it could be seen from p-value X1 0.590> 5%. It was in accordance with Huang's (2012) research which stated that an increasing economic growth would increase the inequality of income distribution. In fact, the economic growth was enjoyed by the small number group of people who had contributed to the development. Whereas, the level of corruption (X2) had a significant negative effect on the inequality (Y2), this could be seen from the p-value X2 0.02 <5%. These results were consistent with the research that conducted by Stephen Dabson and Carlyn Dobson (2012), it stated the occurrence of corrupt practices would suprisingly reduce the inequality. When the corruption was occurred, the informal sectors would indirectly grow, it was due to the large number of enterprises in informal sector, so, the income which flew to the community indirectly increased and distributed. Even though, an institutional performance was ineffective or the quality of governance was bad. In this equation, it could also be seen, the level of corruption variable was the most influential variable which effect on inequality level since p-value X2 was more significant than X1 and coefficient of X2 > X1. Each 1% increasing in economic growth would increase the level of inequality by 0.44% and increasing in corruption of 1% would reduce the level of inequality by 36.38%. The independent variables in the model could explain dependent variable by 84.41%, while the remainder was explained by the other variables outside the model which was not examined. Value S.E of regression <value of S.D dependent var, it meant the regression model was valid as a predictor model. P-value of F-statistic <5%, meant both independent variables affect the dependent variable simultaneously.

## 5  CONCLUSION

In this study, we analyzed how the effect of economic growth and the corruption level on poverty rates and inequality of income distribution level which existed in 4 ASEAN member countries, there were Cambodia, Malaysia, Indonesia and Thailand and analyzed which independent variable had the greatest impact both on poverty rates and inequality during 2012-2017 periods.

Economic growth (X1) had a significant negative effect on poverty level (Y1), the corruption (X2) had non-significant positive effect on the poverty level (Y1), In this equation, it could also be seen that economic growth variable was the most influential variable towards poverty rates since the p-value X1 was more significant than X2 even though the X2 coefficient> X1. Furthermore, economic growth (X1) had a positive effect that was not significant on inequality (Y2), the corruption level (X2) had a significant negative effect on the inequality of income distribution level (Y2). In this equation, it could also be seen, the corruption level was the most influential variable towards inequality of income distribution level since p-value X2 was more significant than X1 and coefficient of X2 > X1.

Based on the research, we could imply that economic growth provide positive impact towards poverty alleviation. Because through economic growth, the community welfare could be achieved by increasing of minimum wages policy. But, it must be accompanied by institutional reform and law enforcement. This action might create counterproductive, because in one side, it might reduce the profits of entrepreneurs who worked in informal sectors since the business continuity could be obstructed caused by rules tightening, such as: increasing of conditions number for business open permission, progressive tax that reducing profits, and also policies related environmental sustainability. Therefore, it needs an agreement between stakeholders, so, institutions could be free from corruption without obstructing equity efforts and poverty alleviation.

This study had several limitations, such as the lack of length of the study period which only ranged from the last 6 years and the number of research samples which was taken in only 4 countries from the total of 10 ASEAN member countries. It was caused the researchers were not able to find the availability of data that should be on the websites of related institutions and could not conduct a direct observation to the related states. However, the research had predominance if compared to previous studies. This study was more researching specifically in the Southeast Asian region or more precisely in ASEAN member countries. Whereas, the previous studies were conducted in Asia continent's countries, both in developing and developed countries. ASEAN member countries were countries that dominated by developing countries, so, there was a need of study which able to encourage efforts to alleviate poverty and inequality in income distribution. As a whole, the countries in this study were developing countries.

## References

[1] Balakrishnan, Steinberg, and Syed. The Elusive Quest for Inclusive Growth: Growth, Poverty, and Inequality in Asia. *IMF Working Paper.* Pages: 24. (2013)

[2] Chiung – Ju Huang. Corruption, Economic Growth, and Income Inequality: Evidence from Ten Countries in Asia. *International Journal of Economics and Management Engineering.* Vol. 6. No.6. (2012).

[3] Department of Economic and Social Affairs. *World Economic Situation & Prospect as of Mid-2018.* New York: United Nations. (2018).

[4] Dobson, S & Dobson, C.R. Why is Corruption Less Harmful to Income Inequality in Latin America?. *World Development.* Vol. 40. No. 8. Pp: 1534-1545. (2012).

[5] George. T. Abed & Sanjeev Gupta.. *Governance, Corruption,  & Economic Performance.* IMF Publisher. Washington DC. (2002).

[6] Gujarati, D. *Basic Econometrics (Translation).* Jakarta: Erlangga. (2003).

[7] Montgomery & Runger. *Applied Statistics and Probability for Engineers 6th Edition.* Danvers: Wiley & Sons, Inc. (2012).

[8] Transparency International Secretariat. *Transparency International Calls on ASEAN to Make Anti-Corruption Major Part of Economic Community.* Berlin: Transparency International Organization. (2015).

[9] Transparency International Secretariat. *World Corruption Perception Index.* Berlin: Transparency International Organization. (2018).

[10] World Bank. *The World Data of Poverty Rates, Gini Index, and GDP during 2012-2018 Periods.* Washington DC. (2019).

# 19 The Crucial Factor Affecting Poverty and Inequality in ASEAN

**11**% SIMILARITY INDEX

**9**% INTERNET SOURCES

**6**% PUBLICATIONS

**8**% STUDENT PAPERS

PRIMARY SOURCES

| 1 | edoc.pub<br>Internet Source | 3% |
|---|---|---|
| 2 | www.suomenpankki.fi<br>Internet Source | 2% |
| 3 | id.scribd.com<br>Internet Source | 1% |
| 4 | repository.upy.ac.id<br>Internet Source | 1% |
| 5 | Submitted to President University<br>Student Paper | 1% |
| 6 | N Dewi, Kusnandar, E S Rahayu. "Risk mitigation of climate change impacts on rice farming through crop insurance: an analysis of farmer's willingness to participate (a case study in Karawang Regency, Indonesia)", IOP Conference Series: Earth and Environmental Science, 2018<br>Publication | <1% |
| 7 | www.scribd.com<br>Internet Source | <1% |

**8** Donald E. Weatherbee. "Asean and evolving patterns of regionalism in Southeast Asia", Asian Journal of Political Science, 1993
Publication

<1 %

**9** journal.student.uny.ac.id
Internet Source

<1 %

**10** mafiadoc.com
Internet Source

<1 %

**11** Kankesu Jayanthakumaran. "Industrialization and Challenges in Asia", Springer Science and Business Media LLC, 2016
Publication

<1 %

**12** hdl.handle.net
Internet Source

<1 %