check for updates

IMPACT OF ECONOMIC AND NON-ECONOMIC FACTORS ON INCOME INEQUALITY IN ASEAN COUNTRIES

Check for updates

Makmun
Syadullah[1+]
Benny Gunawan
Adriansyah[2]
Tri Wibowo[3]

[1,3]Fiscal Policy Agency, Ministry of Finance, Republic of Indonesia.
[1]Email: makmunsyadullah@yahoo.com
[2]State College of Accountancy, State Polytechnic of Finance (PKN–STAN), Ministry of Finance, Republic of Indonesia.

(+ Corresponding author)

ABSTRACT

This study examined the impact of economic and non-economic factors on income inequality in several ASEAN countries: Indonesia, Malaysia, Thailand, Vietnam, and the Philippines. The macroeconomic determinants of income inequality in certain countries were empirically modeled and panel data analysis undertaken for the 2012–2016 period. In light of previous studies, non-economic variables, such as the democratic and corruption perceptions indices, that can increase income inequality were examined. The results revealed that income inequality in ASEAN countries was influenced by the contribution of the agricultural sector to GDP, number of automatic teller machines per 100,000 adults, depth of credit information index, dependency ratio, corruption perceptions index, democracy index, and unemployment rate. Based on these results, it is recommended that governments of ASEAN countries reduce income inequality by encouraging: investment to create a formal labor market and subsequent informal employment; and the provision of more bank services in rural areas and design innovative products for the lower middle class, improving access to banks for not only savings but also credit.

Contribution/Originality: This study contributes to the existing literature by examining the impact of economic and non-economic factors on income inequality in several ASEAN countries: Indonesia, Malaysia, Thailand, Vietnam, and the Philippines.

1. BACKGROUND

According to the Asian Development Bank (2013), the gap between rich and poor has been growing worldwide over the last two decades. In fact, the level of income inequality in developing countries, which could have had higher economic growth, also worsened.

Income inequality in ASEAN countries is also high; only the Southeast Asian countries have failed to prevent the income gap widening in the Asia Pacific region. In Thailand, 1% of the wealthiest people control 58% of the country's wealth, with 10% earning 35 times more than the poorest 10%. In Indonesia, the top 1% similarly holds around 50% of the country's wealth, while the four wealthiest people hold more wealth than 100 million of the poorest. In Vietnam, 210 superrich citizens earn more than enough per to raise 3.2 million of the country's people out of poverty; the wealthy earn more in a 1 day than the poor can in 10 years. While only 0.6% of the 31 million people living in Malaysia fall below the poverty line, in actuality, it is 34% of the native population and 7% of

children living in low-cost urban housing projects who live in poverty. Finally, according to Ismail (2018), the average annual income of the top 10% Filipino families, estimated at 14,708 USD in 2015, was nine times more than the lowest 10%, at 1,609 USD.

Usually, income inequality is closely related to other forms of inequality, including access to education, health services, and public services, or inequality of opportunity overall. Such forms of inequality are considered to affect economic growth and poverty reduction significantly, and even sociopolitical stability: several studies from across the world have revealed that high levels of inequality do negatively affect long-term economic growth and sustainable welfare improvements (Yumma et al., 2017).

The increasing inequality in many countries has attracted the attention of the public and policy-makers and the two factors considered impact on income inequality are economic and non-economic. Extensive research has been conducted into the influence of the former, including Dabla-Norris et al. (2015), Easterly (2007), Ostry et al. (2014), Aghion et al. (1999), Kuznets (1995), Reinhart and Rogoff (2010), Sheng (2012), Helpman et al. (2010), Feldkircher and Kakamu (2018), Coibion et al. (2017), Mumtaz and Theophilopoulou (2017), and Furceri et al. (2017). In particular, greater income inequality can affect investment in health and education, which hinders economic growth (Aghion et al., 1999).

Recent studies have shown that political and institutional transformations are significant in understanding the changes in a country's income inequality (Acemoglu and Robinson, 2002); therefore, this study analyzes the impact of both economic and non-economic factors on income inequality. The economic factors relate to the contribution made by agriculture to gross domestic product (GDP), the impact of which has never been investigated despite most of the workforce in ASEAN countries being employed in that sector. The non-economic factors comprise the number of automated teller machines (ATMs) per 100,000 adults, depth of credit information index, dependency ratio, proportion of contributing family workers, democracy index, corruption perceptions index, and unemployment rate.

2. LITERATURE REVIEW

2.1. Economic Factors

Many economic factors correlate with changes in income inequality, of which the first is globalization. The main analytical relationship between trade liberalization and income inequality is provided by the Stolper–Samuelson theorem. Specific aspects of globalization, such as inadequate financial integration and the process of trade liberalization, the benefits of which are unevenly distributed throughout a country, have played an important role in determining the trends observed over the past decade (Asian Development Bank, 2013).

Second, income per capita also correlates with income inequality. According to Kuznets (1995), after reaching a certain level of development, in the long term, income will be evenly distributed. Analyzing cross-sectional data from different countries and time series data from surveys or observations conducted in each country, Kuznets discovered that the relationship between income inequality and income per capita could be represented as an inverted U curve.

Kuznets' findings are supported by others, such as Ahluwalia (1976) and Ravallion and Datt (1996); however, there were those whose findings did not, such as Anand and Kanbur (1993), Deininger and Squire (1996), and Barro (1999), which found no systematic relationship between income growth and distribution.

Third, with regard to public debt, some studies have shown a negative correlation between public debt and income inequality: as the public debt increases, so does income inequality in the United States (Stiglitz, 2015). Furthermore, according to Reinhart and Rogoff (2010), a negative correlation existed between public debt and economic growth, but only when reaching 90% and above of GDP, although according to Minea and Parent (2012), the margin lies between 90% and 115%.

However, public debt, when used prudently, is one policy instrument that can improve social welfare. Sanyal and Mark (2017) examined the relationship between debt, income inequality, and economic growth in US states during the period 1987–2011, when both public debt and income inequality started to increase in most. Their results showed that the coefficient of the product of the public debt to GDP ratio and income inequality had a positive effect on the GDP growth rate per capita.

Fourth, the problem of the unemployment rate affects income inequality, as proven Sheng (2012) empirical analysis of the United States from 1941 to 2010revealing a strong positive correlation between unemployment and income inequality. These results supported those of Helpman *et al.* (2010), who developed a new framework for examining the determinants of wage distribution, in which within-industry reallocation, labor market friction, and differences in firms' workforce composition were emphasized. Their findings showed how, for a given level of output and exports, more productive firms will pay higher wages. However, trade liberalization can increase wage inequality and either raise or lower unemployment; moreover, wage inequality is greater in a trade equilibrium than an autarky. If trade liberalization is gradual, though, wage inequality will initially rise but later drop.

Fifth, monetary policy again correlates with income inequality: the more restrictive a monetary policy, the greater the income inequality. Feldkircher and Kakamu (2018) used three different measures to examine the impact in Japan and found that monetary tightening led to short-term wage inequality for workers' households (i.e., where the head of the household is employed). Similar results were obtained by Coibion *et al.* (2017) in the United States, Mumtaz and Theophilopoulou (2017) in the UK, and Furceri *et al.* (2017) in a range of countries.

Sixth, financial inclusion, according to Sarma (2008), guarantees convenient access, availability, and use of formal finance systems for all members of the economy. In this study, the number of ATMs per 100,000 adults and the depth of the credit information index, sourced from the World Bank, act as a proxy for financial inclusion.

Some studies have examined the impact of financial inclusion on income inequality, including Burgess and Pande (2005), who found that the expansion of rural-led state bank branches in India helped reduce poverty, and Honahan (2007), who discovered that access to financial institutions, as measured by the Gini coefficient, could lower income inequality.

In addition, Brune *et al.* (2011) found that offering "commitment" savings accounts to rural Malawian smallholders increased the welfare of poor households, since selective access to their savings enabled agricultural inputs. Furthermore, Park *et al.* (2015) revealed that financial inclusion significantly reduced poverty and income inequality. In part contrast, though, Neaime and Gaysset (2018) discovered that although financial inclusion reduced income inequality, it was increased by population size and inflation. Other empirical results similarly show that poverty is not affected by financial inclusion but is significantly increased by population and inflation.

The seventh and final factor is the role played by the agricultural sector in reducing poverty and income inequality, especially in developing countries. Agriculture contributes to economic growth in various ways, such as providing food and employment (World Development Report, 2008); Bresciani and Valdés (2007) identified three main connections between agriculture with poverty: (1) the labor market, (2) agricultural income, and (3) food prices. They demonstrated how the contribution of agriculture, through the labor market, to poverty reduction was consistently greater than the agriculture's share of GDP in the countries studied. In developing countries, agricultural exports together with trade liberalization can generate important sources of income, while in terms of poverty reduction, a higher return is generally experienced from agricultural growth than equivalent growth in other sectors, as this is where the majority of poor people live (Christiaensen and Demery, 2007).

2.2. Non-Economic Factors

This study considers several non-economic factors thought to influence income inequality: democracy, corruption perceptions, dependency, and family workers. First, despite the existence of the democracy index, there is no consensus on how to measure democracy, the definition of which is even contested (Kekic, 2007).

As such, the topic is quite interesting, particularly as the heated debate about how it influences economic growth continues. On the one hand, some studies have found that democracy might impact the economy, but on the other hand, there is no consensus on whether it enhances economic growth (Syadullah, 2016).

Some policy makers and academics believe an authoritarian regime is needed to encourage economic development, especially in relatively poor countries which is referred to as the Lee Thesis (Sen, 1999). This view is based on observations of rapidly developing economies under dictatorships, especially in East Asia, such as China, and under Pinochet in Chile, and confirmed by the findings of Tsebelis (2002) that found no evidence of democracy encouraging economic development. Meanwhile, there are several studies supporting those of the opposing view that democracy probably does influence economic growth.

Diamond (2008) found that democracy did promote economic development, as does some recent statistical studies and global data. Democracy in itself, however, is not a positive impact on economic growth, as other factors, such as type of regime and various political institutions, have to be considered in the analysis. When analyzing economic growth factors, it is also necessary to consider, for example, the pattern of economic growth and whether geographical factors exert any influence (see Acemoglu *et al.* (2008)). Conversely, economic growth affects the prospects of democratization and democratic stability (Przeworski and Limongi, 1997).

Finally, one study on the relationship between democracy and economic growth, conducted by Munck and Verkuilen (2002), used Freedom House's Index (FHI), which uses civil liberties as a measure of the broader concept of democracy.

Second, corruption perceptions can be identified through Transparency International's corruption perception, which is a composite of opinion surveys and performance assessments conducted by leading national institutions and analysts—none of which Transparency International commissioned (Transparency International Secretariat, 2017).

The relationship between corruption and income inequality, although indirect, is fascinating, especially when the budgeting mechanism was involved (Syadullah, 2016). Where corruption exists, public sector development stagnates: government budget allocations for projects to benefit the people, such as building public facilities, may not correspond to the proposed budget, which can ultimately result in a domino effect and have a systemic impact on the public. For instance, a broken-down transport system that is never repaired can create mobility difficulties for people and their ability to fulfill their economic activities. Consequently, corruption disrupts the economy not only on a macro but also disrupt the micro scale by hampering the supply of goods and services and reducing people's potential income. According to Tanzi and Hamid (2002) it is small companies that are subject to unofficial levies, which can reach around 20% of a company's total costs.

There is a paradox in the relationship between corruption and economic growth: rapid growth and high levels of corruption perceived in many Asian countries, while the opposite is discerned in African countries. During the period from 1996 to 2011, the GDP growth rate in an average Asian country exceeded that of countries experiencing a similar level of corruption in Africa.

Rock and Bonnett (2004) statistical analysis of the impact of corruption on economic growth and investment in five major Asian countries verified this observation: a positive and significant relationship existed between the level of corruption and GDP growth per capita growth. Various analysts tried to explain this phenomenon: Mazzara (2006) and Ugur and Dasgupta (2011) combined several characteristics derived from theories developed earlier by other analysts, but rather than reviewing the positive contribution of corruption to economic efficiency and growth, they merely argued it did not damage the economy.

Third, dependency refers to the ratio of those aged both 0–14 and 65 and over (i.e., non-labor force) to those aged 15–64 (i.e., workforce), which indicates the economic situation of a country, developed and developing; thus, the dependency ratio is a demographic indicator. A higher dependency ratio means those who are currently

productive people bear a heavier financial burden to support those who are not yet or no longer productive in the economy, and vice versa.

Social scientists have long been interested in how population processes influence socioeconomic inequalities, within countries (Zhao, 2009) and between countries (Firebaugh and Goesling, 2004). Applying the neoclassical growth theory, the effect of the dependency ratio on savings can be related to economic performance. Fayissa and Paulos (2010) showed that an increase in the dependency ratio adversely affects the GDP growth per capita in African countries, with a marginal effect almost double that in the rest of world. Therefore, an increased dependency ratio implies that a lower equilibrium position, which can be achieved quickly, leads to stability. Meanwhile, Rougoor and Charles (2014) revealed that rapid population increases are associated with a higher youth dependency ratio. As a result, countries with very high population growth rates are often surpassed economically by those with lower rates.

Fourth, there is the contribution of family workers. The role of men as the family's main earner is dominant, but over the last 40 years, the role of women has grown. In the early 1970s, the 43.3% of the total female population was estimated to be working, while by 2011, the proportion had risen to around 60%; however, the proportion of working men fell from 79.7% to 70.6 fell over the same period (Urahn et al., 2014).

The same study found that daughters working full time contributed more than half of their families' income, strengthening their financial security. However, the extent of this contribution varied according to the family structure: married or cohabiting daughters provided 45%, while single daughters provided 81%, with nonwage sources supplying the remaining income. Moreover, women in rural areas act as catalysts for the transformative, environmental, and socioeconomic changes needed for sustainable development. According to the Food and Agriculture Organization of the United Nations (2011) estimates if women, who comprised on average 43% of the agricultural workforce in developing countries were allowed equal access resources and opportunities as men, then agricultural output could on average increase by up to 4% in developing countries. As a result, the number of malnourished people would be reduced by up to17%, or up to 150 million fewer people starving.

2.3. Research Methodology and Data

The methodology adopted for this study was developed from earlier studies with regard to the correlation between income inequality and various economic factors, such as: the contribution of the agricultural sector to GDP (Bresciani and Valdés, 2007; Christiaensen and Demery, 2007); WDR, 2008), monetary policy (Burgess and Pande, 2005; Honahan, 2007; Brune et al., 2011; Coibion et al., 2017; Furceri et al., 2017; Mumtaz and Theophilopoulou, 2017), and the contribution of family workers, especially women (Helpman et al., 2010; Sheng, 2012); as well as with various non-economic factors, such as democracy, corruption perceptions, and dependency ratios (Przeworski and Limongi, 1997; Sen, 1999; Munck and Verkuilen, 2002; Rock and Bonnett, 2004; Mazzara, 2006; Diamond, 2008; Ugur and Dasgupta, 2011).

Longitudinal data was extracted from various sources, including the Word Bank, ASEAN Statistics Division, Transparency International, and The Economist Intelligence Unit's Democracy Index. Based on the availability of data for selected variables, 5 ASEAN countries—Indonesia, Malaysia, Thailand, Vietnam, and the Philippines— were studied over the 2012–2016 period.

The macroeconomic determinants of income inequality were empirically modeled and panel data analysis undertaken. Income inequality (II) was taken as the dependent variable, along with a set of explanatory variables, described in Table 1:

$$II = \beta_0 + \beta_1'AGR2GDP + \beta_2'ATM + \beta_3DCREDIT + \beta_4DEPENDRAT + \beta_5FEM2WORK + \beta_6'CORUPT\_I + \beta_7'DEMOC\_I + \beta_8'UR$$

Table-1. Explanatory variables in the regression equation.

II	:	Income inequality
AGR2GDP	:	Contribution of the agricultural sector to GDP
AT	:	Number of automated Teller Machines per 100,000 adults
DCREDIT	:	Depth of credit information index (0 = low, 8 = high)
DEPENDRAT	:	Dependency ratio (proportion of non-labor force in total population)
FEM2WORK	:	Contribution of female family workers, (proportion of women in workforce)
CORUPT_I	:	Corruption perceptions index
DEMOC_I	:	Democracy index
UR	:	Unemployment rate

3. MODEL ANALYSIS AND DISCUSSION

Adopting the panel data regression model, the Chow test proved that of the best stabilization technique for the finite element method (FEM) to be Galerkin least squares (GLS) rather than pooled least squares (PLS).

Table-2. Model income inequality.

Variable	GLS	PLS
AGR2GDP	0.519020*	0.222539
ATM	0.142402*	0.006348
DCREDIT	-1.062299*	-0.226949
DEPENDRAT	0.452209**	0.235678
FEM2WORK	0.310138*	0.187443
CORUPT_I	-0.289885*	0.348476*
DEMOC_I	1.074969**	0.905511
UR	1.159093**	0.176969
Constant	5.034448	3.919486
R-squared	0.979905	0.878136

Description: *significant at level 5%; **significant at level 10%.

Interpretation of the regression results shown in Table 2 must be undertaken carefully, since as income inequality is the dependent variable, the higher the value, the greater the inequality; therefore, positive regression coefficients must be regarded as negative, and negative as positive.

Based on these calculations, it was inferred that income inequality in ASEAN countries is determined by the contribution of the agricultural sector to GDP, number of ATMs per 100,000 adults, depth of the credit information index, dependency ratio, contribution of family workers, corruption perceptions index, democracy index, and unemployment rate.

The positive coefficient for the agricultural sector–income inequality relationship reveals that the greater the contribution to the economy, the wider the income gap within the community, which contradicts the findings of Bresciani and Valdés (2007) and Christiaensen and Demery (2007). However, Gardner (2000) also found that poverty declined in 1960s America people's income from the non-agricultural sector increased while an econometric analysis by Warr (2002) in Indonesia, Thailand, Malaysia, and the Philippines discovered that the rise of the service sector lowered the poverty rate.

Consequently, the agricultural sector began to be abandoned in ASEAN countries, as indicated in Table 3 by the drop in the proportion of the productive population working in it. However, the paradox of the agricultural sector's contribution increasing while the workforce declines is likely due to the modern agricultural subsector—private and state-owned plantations—being relatively more capital intensive, whereas the traditional methods lost added value and became unattractive.

Table-3. Percentage of the productive population working in the agricultural sector.

Country	2012	2013	2014	2015	2016
Indonesia	35.93	34.97	34.28	33.04	31.82
Malaysia	12.70	12.99	12.23	12.47	11.37
The Philippines	32.16	31.01	30.53	29.15	26.99
Thailand	42.14	39.60	33.44	32.28	33.29
Vietnam	47.86	46.81	46.34	43.93	41.87

Source: International Labor Organization (ILO).

The role played by the number of ATMs per 100,000 adults, used as a proxy for financial inclusion, in reducing income inequality in ASEAN countries was not proved. The positive coefficient shown in Table 2 indicates that the more ATMs provided, the wider the income gap, as well as suggesting that more are accessing financial services through ATMs and mobile banking. However, these services are only used by people in middle to upper-income groups, while the poor and vulnerable groups do not generally enjoy access to financial services. These results the WDR's (2008) conclusion that half of households worldwide have no access to bank accounts, with the World Bank stating that up to 50% of people deposit their savings in banks in the formal financial sector, while 18% use the informal financial sector, such as savings clubs and revolving funds, and 32% have no savings.

The findings of this study are also supported by Wahid et al. (2012), who used the autoregressive distributed lag (ARDL) methodology to examine the relationship between financial development and income inequality in Bangladesh between 1985 and 2006, finding that the former increased the latter. As such, a new direction for reducing income inequality and redistributing the fruits of economic growth more widely is suggested to policy makers.

As a financial sector proxy, the role of the depth of credit information index produced a negative coefficient, meaning that the easier it became to obtain better quality credit information, the narrower became the income gap (Honahan, 2007; Brune et al., 2011; Zhang, 2014).

Facilitating access to bank loans for the poor is in accordance with the financial inclusion development program in ASEAN countries. According to the Asian Development Bank Institute (2014), policies to effect financial inclusion are not misplaced when aiming to prioritize and maintain inclusive growth and development. As financial inclusion is also expected to lead to greater stability and financial growth, many Asian countries have implemented specific initiatives for its promotion.

Being positively correlated, the higher the dependency ratio, the wider the income gap; in fact, dependency ratios can trigger income inequality, substantively and mechanically. Substantively, population growth and the age structure of the population could exert an impact on savings, investment, and especially economic growth (National Research Council (NRC), 1986; Bloom et al., 2002). Mechanically, the size and structure of the national population will affect the calculation of per capita income and worker productivity. Nevertheless, studies on how to influence income inequality globally are hindered by problems with theory and design, several of which have been posited to explain the global trend of global, (Birdsall, 2002; Stiglitz, 2003; Bhagwati, 2004; Firebaugh and Goesling, 2004), unlike at the national level (Kuznets, 1995).

Likewise, the greater the contribution of female workers, the more the income gap widens, as indicated by the positive coefficient. Thus, women are working to maintain the family's livelihood rather than achieve a sustainable improvement in its long-term prosperity. This contrasts with research undertaken by Urahn et al. (2014) but agrees with Seebens (2009). In addition, Walle and Cratty (2004) also revealed that women's employment in Vietnam was intended to improve household income, if only in the short term due to significant labor market fluctuations in the non-agricultural sector.

The corruption perceptions index is negatively correlated with income inequality: a higher level of perception signifies a lower income gap, which contradicts the general opinion. However, corruption perceptions do present a paradox: while rapid economic growth exists alongside high levels of corruption in many Asian countries, the

opposite occurs in African ones. For those countries with a similar level of corruption, Rock and Bonnett's (2004) statistical analysis discovered the average GDP growth rate in Asia exceeded Africa between 1996 and 2011.

Other analysts in addition to Rock and Bonnett, have tried to explain this phenomenon (Mazzara, 2006; Ugur and Dasgupta, 2011) by combining several characteristics of corruption derived from earlier analysts' theories. They provide reasons for corruption not damaging national economies but do not consider how it contributes to economic efficiency and growth.

Income inequality is also greater when the democracy index is higher—when the relationship is positively correlated. There is a view that democracy should produce income equality and inequality results in the failure of democracy, but this is not borne out by the evidence.

According to Acemoglu et al. (2013) the impact of any political system on income distribution depends on its laws, institutions, and policies, which depend in turn on the distribution of power in society and how political institutions and mobilized interests collate preferences. For example, when power is concentrated in a narrow segment of the population, which is indicative of a non-democratic regime, then greater inequality is expected. Furthermore, Acemoglu reveals a significant and strong influence of democracy on income tax as a percentage of GDP, although not on inequality.

Between 2013 and 2016, the democracy index of ASEAN countries, except for Thailand, was relatively stable. In Thailand, it declined from 6.29 in 2013 to 4.92 in 2016 because democracy never functioned properly, due to endemic corruption, including vote buying in rural areas (Berstein, 2010).

Finally, the positive correlation between the unemployment rate and income inequality means that a high unemployment rate will widen income inequality. Moreover, when the unemployment rate rises, in theory, economic growth will drop.

Asian countries continue to lead economic growth globally. Until 1990, growth was rapid, poverty alleviated, and a fairer society achieved. Between 2013 and 2016, growth remained relatively stable in ASEAN countries, however, whereas the unemployment rate declined in several, such as Indonesia, Vietnam, and the Philippines, and narrowed the income gap, it increased substantially in some of the larger ones, such as China and India, due to spatial differences, especially between rural and urban areas. Since 1990, the Chinese economy has recorded not only the steepest growth but also greater income inequality, which has also increased significantly in India.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1. Conclusions

Seven conclusions can be drawn from this study. First, in the selected ASEAN countries, as the traditional agricultural sector lost its added value, people began to abandon it. Nevertheless, the contribution of the sector to GDP increased, probably due to the modern agricultural subsector of private and state-owned plantations, which are relatively more capital intensive. However, income inequality still increased.

Second, the role played by financial inclusion in reducing the income inequality could not be proved: the ATM proxy variable indicated that despite the availability of more ATMs, the income gap widened. Although it appears more in ASEAN countries are accessing financial services through ATMs and mobile banking, in reality, it is only the middle to upper-income groups. Meanwhile the impact of the financial sector on income inequality was represented by the depth of credit information index and revealed that improving the access to and quality of credit information narrowed the income gap.

Third, the dependency ratio can trigger income inequality. Substantively, population growth and the age structure of the national population could affect savings, investment, and especially economic growth. Mechanically, the size and structure of the national population will influence the calculation of per capita income and worker productivity.

Fourth, the number of women in employment does not guarantee that income inequality will be reduced. In fact, women work to maintain the family's livelihood rather than trying to achieve a sustainable improvement in long-term prosperity.

Fifth, the existence of corruption does not necessarily affect income inequality negatively: as long as corruption in ASEAN countries does not damage the economy, it will not hinder economic growth and worsen income inequality.

Sixth, despite the assumption that democracy should produce wealth equality, and wealth inequality leads to the failure of democracy, higher democracy index values and greater wealth inequality can occur simultaneously. Even in the majority of ASEAN countries in which the democracy index values were relatively stable, income inequality was worsening.

Seventh, in certain ASEAN countries, the economic growth rate was relatively high between 2013 and 2016, with a decline in the unemployment rate and corresponding improvement in income inequality.

4.2. Recommendations

Based on the aforementioned conclusions, some recommendations can be made to reduce income inequality in ASEAN countries. First, with the agricultural sector becoming more unattractive, governments in ASEAN countries, especially Indonesia, Malaysia, Vietnam, the Philippines, and Thailand, should encourage investment in a formal labor market, which can help create informal employment. Of course, such a labor market that is open to women as well as men will be more stable in the long term.

Second, governments should encourage banks to provide more services in rural areas and design innovative products that appeal to the lower middle class, facilitating access to banks for not only saving money but also obtaining credit. Thus, financial inclusion needs to be developed to facilitate commerce, such as money transfers, between different rural communities and access to credit to improve local businesses.

REFERENCES

Acemoglu, D., S. Naidu, P. Restrepo and J.A. Robinson, 2013. Democracy, Redistribution and Inequality (No. 19746). National Bureau of Economic Research, Inc.

Acemoglu, D. and J.A. Robinson, 2002. The political economy of the Kuznets curve. Review of Development Economics, 6(2): 183-203.

Acemoglu, D., J. Simon, A.R. James and Y. Pierre, 2008. Income and democracy. American Economic Review, 98(3): 808–842.

Aghion, P., E. Caroli and C. Garcia-Penalosa, 1999. Inequality and economic growth: The perspective of the new growth theories. Journal of Economic Literature, 37(4): 1615-1660.Available at: https://doi.org/10.1257/jel.37.4.1615.

Ahluwalia, M.S., 1976. Income distribution and development: Some stylized facts. The American Economic Review, 66(2): 128-135.

Anand, S. and S.R. Kanbur, 1993. The Kuznets process and the inequality—development relationship. Journal of Development Economics, 40(1): 25-52.Available at: https://doi.org/10.1016/0304-3878(93)90103-t.

Asian Development Bank, 2013. Key indicators for Asia and the pacific 2013. Asian Development Bank, Philippines.

Asian Development Bank Institute, 2014. Financial inclusion in Asia: Country surveys. Asian Development Bank InstituteKasumigaseki Building 8F 3-2-5 Kasumigaseki, Chiyoda-ku Tokyo 100-6008, Japan. Available from www.adbi.org.

Barro, R.J., 1999. Inequality, growth, and investment. NBER Working Paper No. 7038.

Berstein, R., 2010. The failure of Thailand's democracy. The New York Times, May 25.

Bhagwati, J., 2004. In defense of globalization: With a new afterword. Oxford University Press.

Birdsall, N., 2002. That silly inequality debate. Finance and Development, 38(4): 92-94.

Bloom, D., D. Canning and J. Sevilla, 2002. The demographic dividend. A new perspective on the economic consequences of population change. Santa Monica, CA: Rand Corporation.

Bresciani, F. and A. Valdés, 2007. Beyond food production: The role of agriculture in poverty reduction. Rome: FAO.

Brune, L., X. Gine, J. Goldberg and D. Yang, 2011. Commitments to save: A field experiment in rural Malawi. World Bank Policy Research Working Paper No. 5748. Washington, DC.

Burgess, R. and R. Pande, 2005. Do rural banks matter? Evidence from the Indian social banking experiment. American Economic Review, 95(3): 780-795.Available at: https://doi.org/10.1257/0002828054201242.

Christiaensen, L. and L. Demery, 2007. Down to earth: Agriculture and poverty reduction in Africa. The International Bank for Reconstruction and Development / The World Bank1818 H Street NWWashington DC 20433.

Coibion, O., Y. Gorodnichenko, L. Kueng and J. Silvia, 2017. Innocent bystanders? Monetary policy and inequality. Journal of Monetary Economics, 88(C): 70-89.Available at: https://doi.org/10.1016/j.jmoneco.2017.05.005.

Dabla-Norris, E., K. Kochhar, N. Suphaphiphat, F. Ricka and E. Tsounta, 2015. Causes and consequences of income inequality: International Monetary Fund International Monetary Fund.

Deininger, K. and L. Squire, 1996. A new data set measuring income inequality. The World Bank Economic Review, 10(3): 565-591.Available at: https://doi.org/10.1093/wber/10.3.565.

Diamond, L., 2008. The spirit of democracy. New York: Times Books.

Easterly, W., 2007. Inequality does cause underdevelopment: Insights from a new instrument. Journal of Development Economics, 84(2): 755-776.Available at: https://doi.org/10.1016/j.jdeveco.2006.11.002.

Fayissa, B. and G. Paulos, 2010. Dependency ratio and the economic growth puzzle in Sub-Saharan Africa. Working Papers 201010, Middle Tennessee State University, Department of Economics and Finance.

Feldkircher, M. and K. Kakamu, 2018. How does monetary policy affect income inequality in Japan? Evidence from grouped data.Working Papers in Regional Science 6215, WU Vienna University of Economics and Business.

Firebaugh, G. and B. Goesling, 2004. Accounting for the recent decline in global income inequality. American Journal of Sociology, 110(2): 283-312.Available at: https://doi.org/10.1086/421541.

Food and Agriculture Organization of the United Nations, 2011. The state of food and agriculture: Woman in africultural closing the gender gap for development.

Furceri, D., M.P. Loungani and M.A. Zdzienicka, 2017. The effects of monetary policy shocks on inequality. International Monetary Fund Working Paper WP/ 16/245.

Gardner, B.L., 2000. Economic growth and low incomes in agriculture. American Journal of Agricultural Economics, 82(5): 1059-1074.Available at: https://doi.org/10.1111/0002-9092.00104.

Helpman, E., O. Itskhoki and S. Redding, 2010. Inequality and unemployment in a global economy. Econometrica, 78(4): 1239-1283.Available at: https://doi.org/10.3982/ecta8640.

Honahan, P., 2007. Cross-country variation in household access to financial services. World Bank Paper Conference on Access to Finance, Washington, DC.

Ismail, M., 2018. Southeast Asia's widening inequalities. The ASEAN Post.

Kekic, L., 2007. The economist intelligence unit's index of democracy. The Economist. The World in 2007. London.

Kuznets, S., 1995. Economic growth and income inequality. The American Economic Review, 45(1): 1-28.

Mazzara, A., 2006. Political corruption and economic growth: Explaining the East Asian growth paradox. Carleton College, Senior Comps Project. Available from: http://people.carleton.edu/~amontero/Alicia%20Mazzara.pdf.

Minea, A. and A. Parent, 2012. Is high public debt always harmful to economic growth? Reinhart and Rogoff and some complex nonlinearities, Working Papers No 201218, CERDI.

Mumtaz, H. and A. Theophilopoulou, 2017. The impact of monetary policy on inequality in the UK. An empirical analysis. European Economic Review, 98: 410-423.Available at: https://doi.org/10.1016/j.euroecorev.2017.07.008.

Munck, G.L. and J. Verkuilen, 2002. Conceptualizing and measuring democracy: Evaluating alternative indices. Comparative Political Studies, 35(1): 5-34.Available at: https://doi.org/10.1177/0010414002035001001.

National Research Council (NRC), 1986. Population growth and economic development: Policy questions. Washington, D.C: National Academy Press.

Neaime, S. and I. Gaysset, 2018. Financial inclusion and stability in MENA: Evidence from poverty and inequality. Finance Research Letters, 24: 230-237.Available at: https://doi.org/10.1016/j.frl.2017.09.007.

Ostry, M.J.D., M.A. Berg and M.C.G. Tsangarides, 2014. Redistribution, inequality, and growth. International Monetary Fund Staff Discussion Note, SDN\14\02.

Park, Cyn-Young and V.M.J. Rogelio, 2015. Financial inclusion, poverty, and income inequality in developing Asia. Asian Development Bank Economics Working Paper Series No. 426.

Przeworski, A. and F. Limongi, 1997. Modernization: Theories and facts. World Politics, 49(2): 155-183.Available at: https://doi.org/10.1353/wp.1997.0004.

Ravallion, M. and G. Datt, 1996. How important to India's poor is the sectoral composition of economic growth? The World Bank Economic Review, 10(1): 1-25.Available at: https://doi.org/10.1093/wber/10.1.1.

Reinhart, C.M. and K.S. Rogoff, 2010. Growth in a time of debt. American Economic Review, 100(2): 573-578.

Rock, M.T. and H. Bonnett, 2004. The comparative politics of corruption: Accounting for the East Asian paradox in empirical studies of corruption, growth and investment. World Development, 32(6): 999-1017.Available at: https://doi.org/10.1016/j.worlddev.2003.12.002.

Rougoor, W. and V.M. Charles, 2014. Demography and growth: Two forces leading to rising global income inequality. Amsterdam, SEO Economic Research.

Sanyal, P. and E. Mark, 2017. The interactions of public debt, income inequality and economic growth for U.S. States: A Bayesian non-parametric analysis. Empirical Economics Review, 7(1): 57-101.

Sarma, M., 2008. Index of financial inclusion. Indian Council for Research on International Economic Relations Working Paper No. 215.

Seebens, H., 2009. The contribution of female non-farm income to poverty reduction. Contributed Paper Prepared for presentation at the International Association of Agricultural Economists Conference, Beijing, China, August 16-22.

Sen, A., 1999. Development as freedom. New York: Anchor Books.

Sheng, Y., 2012. Unemployment and income inequality: A puzzling finding from the US in 1941-2010. Available from https://ssrn.com/abstract=2020744.

Stiglitz, J.E., 2003. Globalization and its discontents. New York: Norton & Cie.

Stiglitz, J.E., 2015. He great divide: Unequal societies and what we can do about them? , New York: TW.W. Norton and Company.

Syadullah, M., 2016. Oversees economic development reform: Study of governance in various countries. Institur Pertanian Bogor Press.

Tanzi, V. and D.R. Hamid, 2002. Corruption, public investment, and growth. IMF Working Paper No. 97/139.

Transparency International Secretariat, 2017. Explanation of how individual country scores of the corruption perceptions index are calculated. Available from https://www.transparency.org/news/pressrelease/explanation_of_how_individual_country_scores_of_the_corruption_perceptions.

Tsebelis, G., 2002. Veto players how political institutions work. Princeton: Princeton University Press.

Ugur, M. and N. Dasgupta, 2011. Evidence on the economic growth impacts of corruption in low-income countries and beyond: A systematic review. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.

Urahn, S.K., P. Travis, C. Erin, E. Diana, S. Sarah and W. Denise, 2014. Women's work: The economic mobility of women across a generation. A Report from: The Pew Charitable Trusts, April.

Wahid, A., M. Shahbaz, M. Shah and M. Salahuddin, 2012. Does financial sector development increase income inequality? Some econometric evidence from Bangladesh. Indian Economic Review, 47(1): 89-107.

Walle, V.D.D. and D. Cratty, 2004. Is the emerging non-farm market economy the route out of poverty in Vietnam? Economics of Transition, 12(2): 237-274.Available at: https://doi.org/10.1111/j.0967-0750.2004.00178.x.

Warr, P.G., 2002. Poverty incidence and sectoral growth: Evidence from Southeast Asia. WIDER Discussion Paper No. 2002/20, United Nations University – World Institute for Development Economics Research, Helsinki.

World Development Report, 2008. Agricultural for development. Washington DC: World Bank.

Yumma, A., M.R. Fajar, H.M. Firman, E.G. Sarah and S. Asep, 2017. Estimating the impact of inequality on growth and unemployment in Indonesia. Working Paper, The SMERU Research Institute.

Zhang, Q., 2014. The effects of financial deepening on income inequality based on grey incidence analysis: Empirical evidence from China. Grey Systems: Theory and Application, 4(3): 495-504.Available at: https://doi.org/10.1108/gs-02-2014-0005.

Zhao, K., 2009. Social security, differential fertility and the dynamics of earnings distribution. Research Report Series, Department of Economics, University of Western Ontario, Canada.