The Impact of Monetary and Fiscal Policy on Poverty in Indonesia

3 authors, including:

Ahmad Albar Tanjung
State University of Medan
23 PUBLICATIONS   36 CITATIONS

Some of the authors of this publication are also working on these related projects:

Project   Relationship Between Monetary Policy, Fiscal, Country Risk and Macroeconomic Variable in Indonesia   View project

The Impact of Monetary and Fiscal Policy on Poverty in Indonesia

Ahmad Albar TANJUNG
Sekolah Tinggi Ilmu Manajemen Sukma, Medan, Indonesia
alb4rt4njung@gmail.com

Murni DAULAY
Faculty of Economics and Business
Universitas Sumatera Utara, Sumatera Utara, Indonesia
murnidaulay@yahoo.co.id

IRSAD
Faculty of Economics and Business
Universitas Sumatera Utara, Sumatera Utara, Indonesia
irsyadhusin@yahoo.co.id

Dede RUSLAN
Faculty of Economics and Business
Universitas Negeri Medan, Sumatera Utara, Indonesia
dras_ruslan@yahoo.com

Abstract:

The aim of this research is to analyze monetary and fiscal policy impacts on poverty in Indonesia. The data used are secondary data from World Bank, BPS, and Indonesia Bank from 1980 to 2017. The estimation method used is the two-step Error Correction Model. The research results in showing that the economic growth has a significant negative impact on poverty; monetary policy proxied with interest rate has a significant negative impact on poverty; fiscal policy proxied with government expenditure has insignificantly impacted on poverty. Exchange depreciation positively and significantly impacts on poverty; inflation has a positive and significant impact on poverty; the economic crisis has a positive and significant impact on poverty. Indonesian poverty decrease is dominated by the monetary policy while fiscal policy insignificantly drops poverty number compared to the impact of monetary policy.

Keywords: monetary policy; fiscal policy; inflation; poverty.

JEL Classification: E31; E52; E62; I32.

Introduction

The main objective of Indonesian development is to provide wealth for all Indonesian people (Tanjung *et al.* 2017). It needs a policy which is able to decrease people's life rate, especially poor people. Poverty is the main problem for all countries. The high and unresolved poverty number has a negative impact on the country's government. High poverty is the reflection is of the high unemployment rate. If let it be it brings social fluctuation that impacts the security, economy, even politic aspect. Therefore, it really needs a comprehensive solution to poverty issues. It can include monetary and fiscal policy and other macroeconomy policies.

Some experts view that only a few kinds of literature study on the monetary impact on poverty unlike other studies on inequity and poverty causes and trends (Goshit and Longdut 2016). Monetary policy only focuses on the analysis of macroeconomy data aggregately and ignores the intervention on poverty decrease (Fielding 2004).

Many researchers only study on poverty from the government's fiscal policy. Fiscal policy is one of government expenditure that also plays an important role in decreasing poverty (Mehmood and Sadiq 2010). Meanwhile, poverty problem solving needs all of the stakeholder's synergy. So, to see deeply about the monetary policy impact, fiscal and other macroeconomy variables on poverty in Indonesia, it needs a deeper study on monetary and fiscal policy impact on poverty in Indonesia.

1. Research Background

Poverty is a condition in which people are below the poverty line. Poverty can be seen as structural violence out of the public policy that considers poverty only as a side product that can be solved by one country's development strategy. Most analyses follow the conventional view of poverty as a result of insufficient income for securing basic goods and services (Ajakaiye and Adeyeye 2001). Some literature that has studied poverty showed that there are many impacting factors on poverty decrease.

Fielding (2004) tests whether monetary policy has an impact on poverty in East Timur from 1994,4 to 2002,7. His analysis uses the estimation technique of Full Information Maximum Likelihood (FIML). This study empirically observes that the impact of one monetary instrument, which is the number of spread money or interest rate, will bring about possible poverty.

Mehmood and Sadiq (2010) test the connection between government expenses for poor people from 1976 to 2010. The analysis uses the estimation technique of the ECM model and Johnson Cointegration Test. This study empirically observes that government expenses have a negative significant connection with poverty.

Chani *et al.* (2011) tests the connection between poverty, inflation and economy growth in Pakistan from 1972 to 2008. The analysis uses an estimation technique ARDL. The study empirically observes that economic growth and investigation have a negative impact on poverty, while inflation has a positive impact on poverty and trade has no significant impact on poverty.

Dahmardeh and Tabar (2013) test the impact of government expenses on poverty decrease in Sistan Province and Baluchestan, Iran from 1978 to 2008. The analysis uses an estimation technique ARDL. The study shows that government expenses have a positive impact on poverty decrease.

Kashi and Tash (2014) test the impact of macroeconomy on poverty in Iran from 1985 to 2007. The analysis uses the Bootstrap estimation technique. The study recommended that economic growth has a negative and significant impact on poverty, unemployment and inflation have a positive impact on poverty while expenses of social guarantee related to government expense have no impact on poverty.

Teweldemedhin (2014) tests the impact of macroeconomy on poverty in Sub Sahara Country, Africa in 2009. The analysis uses the Weighted Least Square (WLS) technique. The study shows that the ratio of government expenses on GDP, the agriculture ratio on GDP, the direct foreign investment ratio, and the GINI coefficient have no significant impact on the poverty rate in Sub-Sahara Africa. Meanwhile, external debt stocks, GDP Growth, and Population Growth have a positive and significant impact on the poverty rate. However, Gross Domestic savings, Domestic credit to the private sector, military expenditure, and health expenditure have a negative and significant impact on the poverty rate in Sub-Sahara Africa.

This study recommends focussing on an effective human capital policy by education and health investment to the baseline of a poor community, infrastructure development to make poor people have a chance and possibility for trade liberalization as well as good government implementation focusing on other institutions and factors heading to poor people.

Khatibu and Cheyo (2014) test the impact of government expenses on strategic growth and poverty decrease in Tanzania from 2005 to 2013. The study shows that government expenses to raise growth do not help decreasing poverty because the expenses are for social investment and therefore the response of poverty decreasing needs time to take place.

Nwosa (2016) tests the impact of macroeconomic on the poverty rate and unemployment in Nigeria as well as its implication on inclusive growth from 1980 to 2013. The analysis uses the Ordinary Least Square (OSL) estimation technique. The study recommends that fiscal policy and inflation rate significantly has an impact on the poverty rate in Nigeria, while monetary policy needs revising due to interest rate to improve non-fuel growth by giving low-interest lend to investors.

Akhtar *et al.* (2017) test some factors influencing poverty in Pakistan from 1974 to 2014. The analysis uses the estimation technique of Co-integration Analysis for the long term and ECM for the short term. The independent variable used is the ratio of agriculture on the Gross domestic product (PDB), the ratio of Direct Foreign Investment (FDI) to PDB, basic education ratio, domestic credit ratio to private sectors and military expenditure percentage of PDB. The study result shows that all variables have a significant impact on poverty. In the case of agriculture ratio to PDB, the agriculture output growth results in poverty decrease. Education registration also has a negative and significant impact on long-term poverty. It helps to decrease poverty and improving the economy social status of both individuals and the community. Domestic credit also has a negative and significant impact on poverty but military expenditure has a positive and significant impact on poverty in Pakistan.

Afandi *et al.* (2017) test the policy that increases the poverty rate in Indonesia from 1981 to 2013. The analysis used is the Error Correction Model (ECM) estimation technique. The study shows that economic growth has no impact on poverty decrease, inflation has a positive impact on the poverty rate, Foreign Direct Investment has a negative and significant impact on poverty rate, Gini ratio as the proxy of unequal income has no significant impact on the poverty rate. The study result also shows that the poverty rate depends on macroeconomy instability such as price rate.

Oriavwote and Ukawe (2018) examine the effect of government spending on poverty reduction in Nigeria in the 1980 to 2016 period. The analysis used the Error Correction Model (ECM) and Cointegration models estimation technique. and shows the results that government spending on health has a significant effect on income per capita but not elastic while government spending in education in the positive and significant effect on income per capita in Nigeria. Other results show that government spending on buildings and construction has a positive and significant effect on income per capita and there is no causal relationship between government spending in education and government spending in health.

2. Methodology

2.1. Data

Using annual data from 1980 to 2017 in the form of time-series data. annual data based on constant values with the base year in 2000, except for the data in the form of index values and percentages. The data comes from Financial Statistics (IFS) published by Bank Indonesia, Central Bureau of Statistics (BPS). Other data sourced from the International Monetary Fund and the World Bank. Data is tested through unit root test and cointegration test, while the methods for estimating equations using the *Two-Step Error Correction Model* (ECM) in short-term and Ordinary Least Square (OLS) in long-term. The definition of research operational can be explained as follows:

- the poverty rate (*POV*) is measured by poverty incidence;
- monetary policy (*MON*) is measured by interest rate;
- fiscal policy (*FIS*) is measured by aggregate government expenditure;
- exchange rate policy (*EXC*) is measured by the average official US Dollar/Rupiah exchange rate;
- economic growth (*PDB*) is measured by the real gross domestic product;
- inflation rate (*INF*) is measured by the annual inflation rate and;
- a dummy variable is measured by the Indonesian economy term (crisis = dummy 1), not a crisis (dummy=0).

2.2. The model

The aim of this research is to analyze the long run and short run between monetary policy, fiscal policy, other macroeconomic variables, and poverty. The model of this research is developed from Nwosa (2016):

Long-Run model:

$$\text{Log}(POV_t) = \beta_0 + \beta_1 \log(MON_t) + \beta_2 \log(FIS_t) + \beta_3 EXC_t + \beta_4 \log(PDB_t) + \beta_5 INF_t + \beta_6 KRISRI_t + \beta_7 ECM\_POV_t \qquad (1)$$

Short- Run model:

$$d(\log(POV_t)) = \alpha_0 ECM\_POV_{t-1} + \alpha_1 d(\log(MON_t)) + \alpha_2 d(\log(FIS_t)) + \alpha_3 d(\log(EXC_t) + \alpha_4 d(\log(PDB_t)) + \alpha_5 d(\log(INF_t)) + \alpha_6 d(KRISRI_t) \qquad (2)$$

3. Case Studies

A stationarity test can be done by testing the unit squares developed by Dickey-Fuller. The alternative of the Dickey-Fuller test is Augmented Dickey-Fuller (ADF) which tried to minimize autocorrelation. This test consists of regression of the first difference of time-series data on the lag variable, lagged difference terms, constant and trend variable. The stationarity test result of time series for all studied variables can be seen in the estimation result described by the following Table 1.

Table 1 mentioned above shows that there is one stationarity variable datum on level INF because the value of *Augmented Dickey-Fuller* is bigger than the critical value of *McKinnon* on a belief degree of one percent. Some other variables are not stationary yet on the level because the statistic value of Augmented Dickey-Fuller is smaller than the critical value of *McKinnon*, such as POV, MON, FIS, EXC, PDB, and KRISRI.

The solution for this in stationary issue is by performing a test on the *first difference* level and retest on ADF. Based on table 1 above, it is shown that POV, MON, FIS, EXC, and KRISRI variables are stationary on the *first-*

difference level because the value of *Augmented Dickey fuller* is bigger than the critical value of *McKinnon* on belief degree of one percent. However, PDB variable is stationary on 2nd Difference.

Table.1 Stationarity test results

No	Variable	ADF Value	Critical Value*)	Probability	Stasionary
1	POV	-5.214762	-3.622900	0.0001<0.01	1 st Difference
2	MON	-3.897747	-3.653730	0.0054<0.01	1 st Difference
3	FIS	-3.859152	3.661661	0.0061<0.01	1 st Difference
5	EXC	-5.250286	-3.626784	0.0001<0.01	1 st Difference
6	PDB	-7.704635	-4.243644	0.0000<0.01	2nd Difference
7	INF	-5.002677	-3.621023	0.0002<0.01	Level
8	KRISRI	-5.830952	-3.626784	0.0000<0.01	1 st Difference

Note: *) trend
Source: Authors' estimation using e-views 6.0

3.1. Cointegration test

Cointegration test is aimed at testing whether the residual regression is stationary or not and also to know whether in the long term there is a connection between the independent variable and dependent variable (by using Engle-Granger test). The cointegration test is performed as a following up of nonstationary data on the level rate. The cointegration test result with e-views 6.0 auxiliary is shown in the following Table 2.

Table 2. Cointegration test

No.	Equatio	ADF TEST	Probability
1	Log(PDBRI)	-5,480484	0,0001*

Note: * Meaningful at α=1%; ** meaningful at α=5%
Source: Authors' estimations using e-views 6.0

Based on Table 2 above, it can be seen that all behavior equations in the research are statistically proven by the ADF-TEST approach with a cointegration test on 1% risk. With this cointegration test result, it can be summed up that long-term equation or ECM is valid to apply.

Table 3. Long-run model

Dependent Variable: Log(Pov)				
Variable	Coefficient	Std.Error	T-Statistic	Prob.
C	13.66442	1.483327	9.212003	0.0000
Log (PDB)	-0.838631	0.143080	-5.861258	0.0000
Log(MON)	-0.320840	0.070214	-4.569480	0.0001
Log(FIS)	-0.038675	0.061660	-0.627235	0.5351
Log(EXC)	0.225490	0.074326	3.033788	0.0049
Log(INF)	0.159950	0.036814	4.344774	0.0001
KRISRI	0.133941	0.054866	2.441240	0.0205

Source: Authors' estimation using e-views 6.0

Table 4. Short-run model

Dependent Variable: D(Log(Pov))				
Variable	Coefficient	Std.Error	T-Statistic	Prob.
ECM_POV(-1)	-0.526202	0.171307	-3.071695	0.0045
D(Log(PDB))	-1.027169	0.237515	-4.324642	0.0002
D(Log(MON))	-0.112270	0.065262	-1.720286	0.0957
D(Log(FIS))	-0.052629	0.037271	-1.412065	0.1682
D(Log(EXC))	0.329304	0.083055	3.964908	0.0004
D(Log(INF))	0.062258	0.023717	2.625055	0.0135
D(KRISRI)	0.105291	0.040941	2.571797	0.0153

Source: Authors' estimation using e-views 6.0

In the ECM model, the independent variable change is not only described by dependent variable change but also by past inequal variable (ECM_POV$_{t-1}$), where ECM_POV(-1) shows past inequal adjustment pace to recent equality. The change of poverty rate is determined by economic growth, monetary policy, fiscal policy,

exchange rate, economic crisis, and inflation, as well as adjustment due to past inequality. Every percent of past inequality will be responded by poverty rate adjustment of 52.6202% for the first year so that all inequalities will be covered in two years.

The impact of economic growth (PDB) on poverty is negative. In the short term, one percent of economic growth will decrease the poverty of 1.08% and 0.84% in the long term. This study is in line with Kashi and Tash (2014) but in contrast with the study result of Teweldemedhin (2014).

The connection of interest rate (MON) and the poverty rate is negative. The increase of interest rate (MON) as monetary policy proxy will lead to the decrease of poverty rate 0.11% in the short term and 0.32% in the long term. The monetary authority must be able to give low loan-interest rates for the community, especially for micro businessmen. Those micro businessmen are usually poor people. If the loan interest is low they are able to get the loan for their business, but if the loan interest is high they cannot return it and then they quit their business and become poor.

The impact of government expenditure (FIS) on poverty is negative and insignificant on poverty decrease. The increase of government expenditure as the fiscal policy proxy will lead to the decrease of poverty rate 0.05% in the short term and 0.03% in the long term. It shows that government expenditure to resolve poverty is not yet able to significantly contribute to poverty decrease. On the other hand, government programs, such as village fund allocation, productive family programs, electricity for poor, social security cards and others at the beginning of 2014, still need time to see the impact on the poverty rate decrease. It is in line with Khatibu and Cheyo (2014) finding that invested government expenditure needs time to apply in decreasing the poverty rate. The above results are also in line with the results of Oriavwote and Ukawe (2018) which found that fiscal policy with government expenditure instruments with a focus on spending on education had a significant effect on poverty reduction.

The impact of the exchange rate (EXC) on poverty is positive. The increase in exchange rate (EXC)/depreciation will improve the poverty rate of 0.33% in the short term and 0.24% in the long term. This study is in line with Supriyadi and Kausar (2016) findings stating that there is a significant impact of Rupiah Rate depreciation on poverty.

The impact of inflation (INF) on poverty is positive and insignificant both in the short and long term. The inflation increase (INF) will lead to an increase in the poverty rate of 0.06% in the short term and 0.16% in the long term. Monetarily this shows that poverty decrease in Indonesia is mostly caused by inflation. Because, if the price grows people's affordability will go down if the price goes up the previously non-poor people will be in the poor community. This is in line with the finding of Kashi and Tash (2014), Supriyadi and Kausar (2016), and Afandi *et al.* (2017).

This study also sees that the economic crisis (KRISRI) has a positive impact on poverty. The economic crisis also leads to poverty increased by 0.11% in the short term and 0.13% in the long term. This shows that the government's ability to keep stable and conducive economy condition without economic crisis and the social-political crisis will be one of the pillars to decrease poverty. Economy stability, domestically social and political stability will invite foreign and domestic investors to invest in Indonesia. The investment will bring about employment and goods and service demands. The employment availability will lead to people's income so they can fulfill their lively needs and in the end, it will decrease the poverty rate.

Conclusion

This research is to empirically test the impact of monetary and fiscal policy as well as other macroeconomy variables on poverty in Indonesia from 1980 to 2017. This study also tests the inflation and interest rate as monetary policy proxy and government expenditure used as fiscal policy proxy. The result shows that the impact of economic growth (PDB) on poverty is negative. The impact of interest rate (MON) on poverty is negative. The impact of government expenditure (FIS) on poverty is negative. The impact of (EXC) on poverty is positive. Inflation (INF) has a positive impact on poverty increase. The economic crisis (KRISRI) has a positive impact on poverty. The poverty decrease in Indonesia is still dominated by monetary policy, *i.e.* the inflation stability as one indicator of Indonesian macroeconomy stability. However, fiscal policy doesn't really contribute to the poverty rate decrease even though the government budget for community empowerment programs is huge but it misses the target.

Based on the findings of this study, some policies are recommended as follows:
- there must be a synergy between central government, local government, and monetary authority in making poverty exoneration program to make it run well and support each other instead of diminishing each other;
- the government needs to improve the quality of government expenditure. It must focus on education and health investment reaching out to poor people both in cities and villages. It also must focus on

infrastructure development improving poor people participate in the economy of the 4.0 industrial revolution era;

▪ monetary authority should keep low loan-interest rate especially for Micro Businessmen as well as keeping inflation stability.

References

[1] Afandi, A., *et al.* 2017. Policies to eliminate poverty rate in Indonesia. *International Journal of Economics and Financial Issues,* 7(1): 435–441.

[2] Ajakaiye, D.O., and Adeyeye, V.A. 2001. Concepts, measurement, and causes of poverty. *CBN Economic & Financial Review,* 39(4): 13–17.

[3] Akhtar, R., *et al.* 2017. Influencing factors of poverty in Pakistan: Time series analysis. *International Journal of Economics and Financial Issues,* 7(2): 215–22.

[4] Chani, M.I., *et al.* 2011. Poverty, inflation and economic growth : Empirical evidence from Pakistan. *World Applied Sciences Journal,* 14(7): 1058–63.

[5] Dahmardeh, N., and Tabar, M.H.2013. Government expenditures and its impact on poverty reduction (Empirical from Sistan and Baluchestan province of Iran). *International Journal of Academic Research in Economics and Management Sciences,* 2(1): 251–60.

[6] Fielding, D. 2004. How does monetary policy affect the poor? Evidence from the West African economic and monetary union. *Journal of African Economies*, 13(4): 563–93. DOI: http://jae.oupjournals.org/cgi/doi/10.1093/jae/ejh036

[7] Goshit, G.G., and Longduut, T.D. 2016. Indirect monetary policy instruments and poverty reduction in Nigeria: An empirical evidence from time series data. *International Journal of Academic Research in Business and Social Sciences,* 6(4): 86–101. DOI: http://dx.doi.org/10.6007/IJARBSS/v6-i4/2083

[8] Kashi, F.K., and Tash, M.N.S. 2014. Effects of macroeconomic variables on poverty in Iran (Application of bootstrap technique), *Theoritical and Applied Economics*, Volume XXI, 5: 85–96.

[9] Khatibu, G.M.K., and Cheyo, M.B. 2014. Government expenditure on growth strategies and poverty reduction in Tanzania. What have we learned? *African Journal of Economic Review, Volume* II, 1: 38–47.

[10] Mehmood, R., and Sadiq, S. 2010. The relationship between government expenditure and poverty: A cointegration analysis. *Romanian Journal of Fiscal Policy,* 1(1): 29–37.

[11] Nwosa, P. 2016. Financial institutions and services impact of macroeconomic policies on poverty and unemployment rates in Nigeria, implications for attaining inclusive growth. *Acta Universitatis Danubius,* 12(2): 114–26.

[12] Oriavwote, V.E, and Ukawe, A. 2018. Government expenditure and poverty reduction in Nigeria. *Journal of Economics and Public Finance*, 4(2): 156-163. DOI: http://dx.doi.org/10.22158/jepf.v4n2p156

[13] Supriyadi, E., and Kausar, D.R.K. 2016. Impact of inflation and exchange rate rupiah toward poverty and unemployment in Indonesia (Case study: Small industry in the tourist area of Lombok), *Journal of EST,* 2(3): 204–12.

[14] Tanjung, A.A., *et al.* 2017. Relationship between monetary policy, fiscal, country risk and macroeconomic variable in Indonesia. *International Journal of Economic Research,* 14(15): 207–20.

[15] Teweldemedhin, M. 2014. Impact of macroeconomic policies on poverty alleviation in Sub-Saharan African countries. *Journal of Development and Agricultural Economics*, 6(8): 363–75.