



Regional Fiscal Policy and The Phenomenon of Poverty in Indonesia

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Abstract

The poor population in Indonesia is unevenly distributed across districts and cities. This research aims to measure the impact of regional fiscal policy on reducing poverty levels. Regional financial transfers (TKD) serve as an instrument for central government intervention. The study also focuses on the classification of regional government spending and its relationship to poverty levels. Data were collected from 2016 to 2022 across Indonesian districts and cities, excluding regions with divergent data trends. The hypothesis posits that the impact of expenditure allocation across sectors varies in its effectiveness in alleviating poverty. To test this, the study employs a panel ARDL analysis to capture potential lag effects in the predictors. The main finding reveals the consistent influence of regional income on poverty reduction in both the short and long term. Meanwhile, TKD has a positive impact, as part of its fiscal gap component targets assistance to areas with high poverty levels. However, regional spending from various sources also shows a positive correlation with poverty rates, although with relatively low coefficient values. This suggests that poverty reduction is not yet a central focus of regional government spending.

Abstrak

Penduduk miskin di Indonesia tersebar tidak merata di setiap kabupaten dan kota. Tujuan penelitian ini adalah untuk mengukur dampak kebijakan fiskal daerah terhadap penurunan jumlah penduduk miskin. Transfer keuangan daerah (TKD) merupakan instrumen keterlibatan pemerintah pusat. Selanjutnya, penelitian ini difokuskan pada klasifikasi belanja pemerintah daerah terhadap tingkat kemiskinan. Pengumpulan data dilakukan pada periode 2016-2022 di kabupaten/kota di Indonesia, dengan mengabaikan data daerah yang memiliki karakteristik berbeda. Hipotesis yang dibangun adalah terdapat perbedaan dampak klasifikasi alokasi belanja per sektor terhadap penanggulangan kemiskinan. Pembuktian fenomena tersebut dilakukan dengan menggunakan alat analisis panel ARDL untuk menangkap adanya lag pada prediktor. Temuan utama adalah konsistensi pendapatan asli daerah terhadap dampak penurunan angka kemiskinan dalam jangka panjang dan jangka pendek. Di sisi lain, TKD berpengaruh positif karena salah satu komponen dari kesenjangan fiskal adalah pemberian bantuan kepada daerah yang tingkat kemiskinannya tinggi. Namun, belanja daerah pada beberapa fungsi berdampak positif terhadap angka kemiskinan, meskipun nilai koefisiennya relatif rendah. Kondisi ini membenarkan bahwa fokus penanggulangan kemiskinan belum menjadi fokus utama pemerintah daerah.

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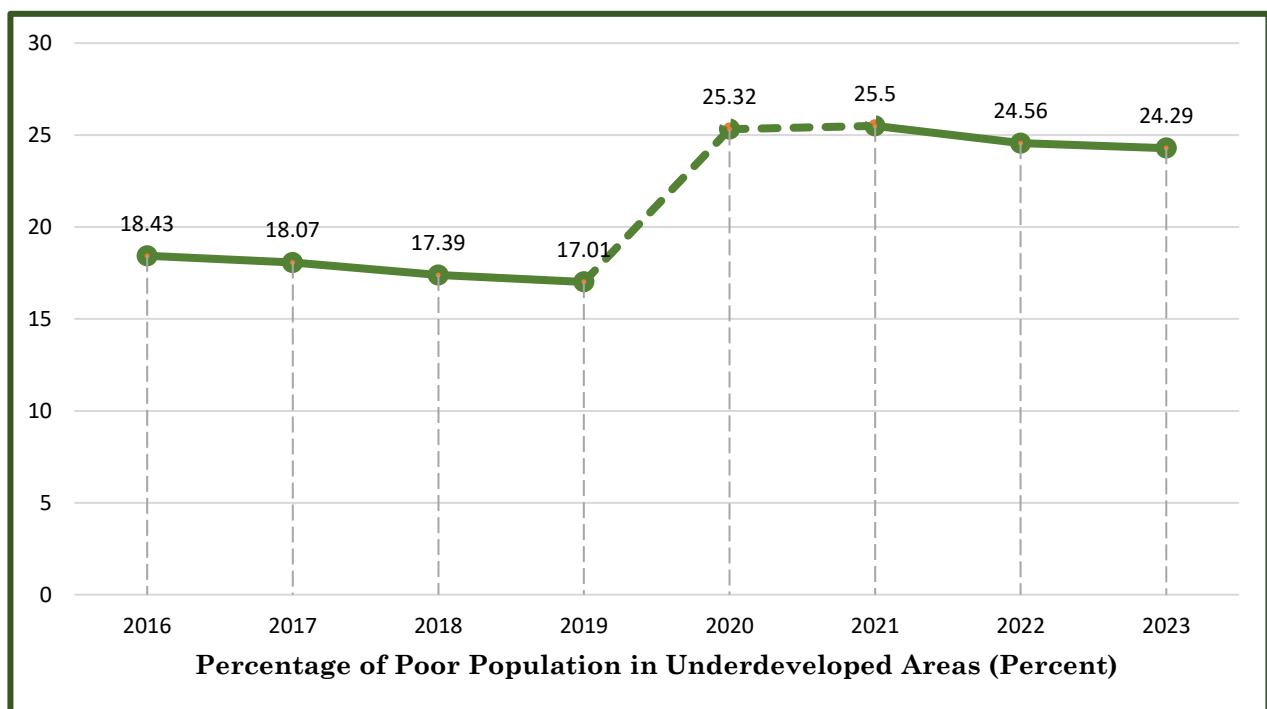
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INTRODUCTION

The government plays a crucial role in fulfilling needs that cannot be met by households or the private sector. Ensuring public welfare is one of its core functions. Previous studies have commonly linked welfare with economic indicators. For instance, Aisyah, Set.al, (2024); Aprianti et al., (2023); and Hapipah et al., (2021) which states that generally the government and economy use economic growth as seen from Gross Domestic Product (GDP) as a representation of consumption and productivity which have an influence on people's welfare (Dalimunthe & Imsar, 2023). These findings are also supported by a study conducted by Arin et al., (2019), the Bayesian Model Averaging (BMA) approach states that OECD countries have potential economic growth due to public spending by the government. By using Gross Regional Domestic Product (GRDP), welfare can be represented through a person's income level (Todaro & Smith, 2020). This assessment is also in accordance with the Central Statistics Agency (BPS) and the National Family Planning Coordinating Board (BKKBN) which assess welfare on the basis of the ability to meet basic needs, material capabilities, knowledge and health (Cahyat et al., 2007).

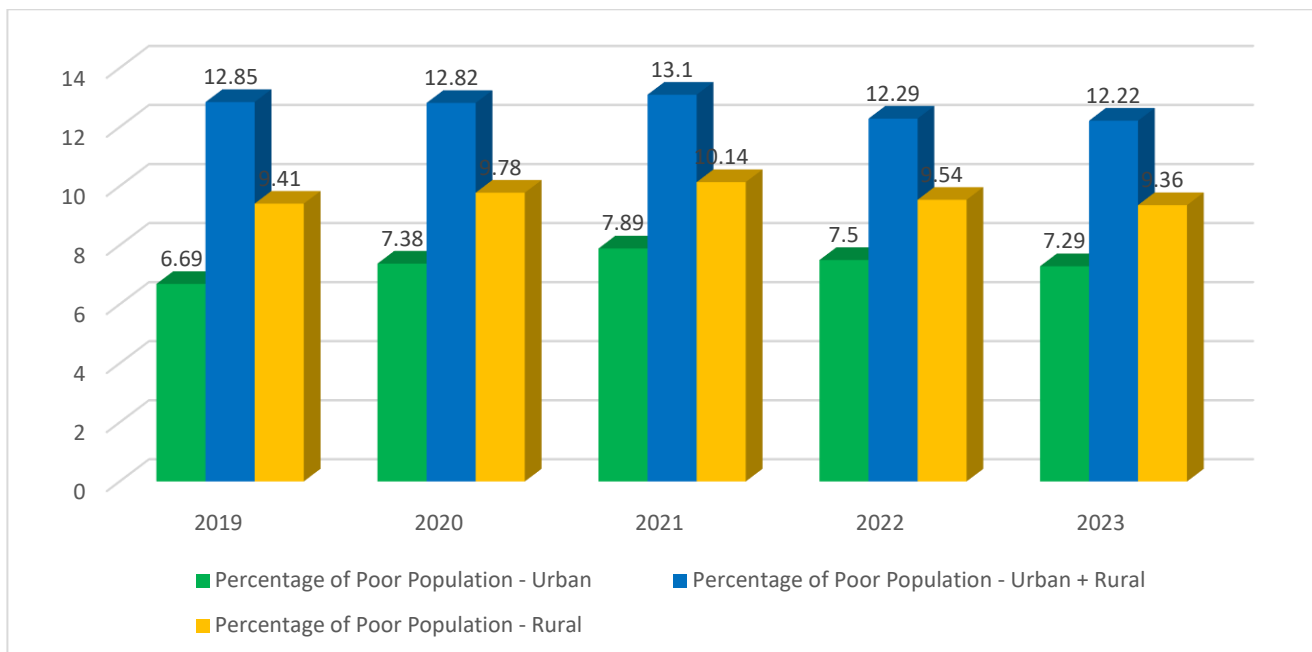
Based on the description above, Pigou revealed that welfare is the implication of the poverty variable which is assessed objectively, which is implicitly measured by a person's expenditure to meet their living needs (Busro, 2018), so that an objective assessment of well-being is actually the same as looking at someone's poverty (Prasetyo, 2023). In Indonesia, there is still a positive trend in the development of the number of poor people. Focusing on poverty in disadvantaged areas, it is visually shown as follows.



Source: BPS (2024)

Figure 1. Development of the Percentage of Poor Population in Disadvantaged Regions of Indonesia

Data indicate that the Covid-19 pandemic had a significant impact on the poor population in Indonesia. Even in underdeveloped regions, where residents primarily engage in traditional economic activities, the effects of the pandemic were strongly felt. In 2020, there was a notable increase of more than 5% in the population categorized as poor. This upward trend persisted into 2021. Although a gradual decline in poverty levels has been observed from 2022 to 2023, the overall situation has yet to return to pre-pandemic levels. To gain a clearer understanding of this dynamic, we compared poverty data across urban and rural areas. The results are presented as follows:



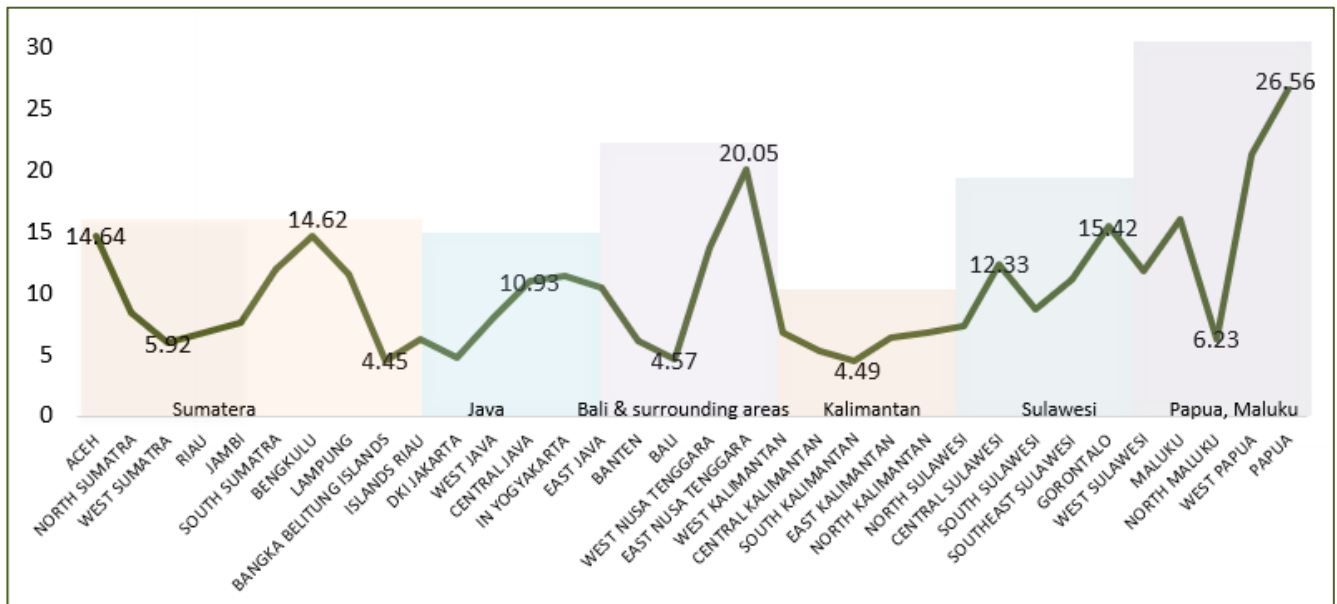
Source: BPS (2024)

Figure 2. Comparison of the Percentage of Poor Population in Urban and Rural Areas in Indonesia

According to Statistics Indonesia (BPS), the percentage of poverty tends to be higher in rural areas, averaging around 12% over the past five years, compared to approximately 7% in urban areas. However, the higher the population will affect the percentage value. In 2023, BPS reported that 14,162 thousand people live in villages, and 11,736 live in urban areas. This implies that there are differences in the distribution of poor people based on regional status.

The regional-based phenomenon of the poor population in Indonesia is also shown by the distribution of the poor population at the provincial level in Indonesia. Poverty between regions, focused on the eastern and western regions of Indonesia. Several regions in Indonesia with the highest percentage of poor people are Aceh, Bengkulu, Gorontalo, East Nusa Tenggara, Maluku, West Papua and Papua. Meanwhile, Java and Kalimantan have lower poverty rates compared to the national figure of 9.36% in 2023. This condition shows that poverty alleviation efforts can be carried out at the regional level. Where since 1998 the first regulation on regional autonomy was ratified with the Republic of Indonesia MPRI Decree No. XV/MPR/1998 as regional autonomy legislation in Indonesia, which was updated with Law no. 23 of 2014 concerning regional government.

In response to these poverty phenomena, there are previous studies that link fiscal policy to poverty. This study focuses on the classification of government expenditure, intentionally excluding tax-related variables based on recommendations from Heshmati & Kim, (2014) with a qualitative approach to the scope of countries in Asia as well as Adelowokan et al., (2020) in the scope of studies of countries in Africa. The latest spending classification-based study was carried out by, Nurias et al., (2023) using poverty data at the provincial level, it is stated that government spending on health and education has an impact on reducing poverty in Indonesia. On a smaller level, Arham et al., (2024) formulate fiscal policy with data on transfer funds for poverty alleviation in Gorontalo, Indonesia. Globally, Celikay & Gumus (2017) conducted a study in Turkey and found inconsistencies in the relationship between government spending and poverty—specifically, that government expenditure had a negative impact on poverty in the short term but a positive one in the long term. The inconsistency of fiscal impacts is also shown by a study Asaju et al., (2014) which examined the effects of fiscal policy over 9 years in Nigeria, finding that fiscal policy had a low effect on reducing poverty levels and other macro achievements.



Source: BPS (2024)

Figure 3. Distribution of the Percentage of Poor Population in Indonesia

This study refines the existing literature by expanding the conceptual scope of fiscal policy. In Indonesia, the government adheres to the principle of a balanced budget. The impact is that areas with high income will have a certain amount of funds to allocate to various programs. The government may experience a budget deficit, which will have an impact on determining the priority scale. Therefore, the government's role in financial balance between regions is needed. Income transfer policies have a positive impact on increasing rural household income and reducing poverty (Maipita et al., 2010). This finding is also supported by Enami et al. (2019); Jouini et al. (2018) which also states that transfer funds affect poverty.

This study aims to analyze the phenomenon and the impact of fiscal policy on poverty levels in Indonesia. Specifically, it focuses on the situation in which government spending continues to increase each year, yet poverty conditions remain volatile and tend to rise, particularly during crises such as the Covid-19 pandemic. Therefore, this research also contributes to examining the government's more complex role in poverty alleviation through regional fiscal policy. Adelowokan et al. (2020) also investigated the regional impact of fiscal policy and found that its effects vary across different areas in the Sub-Saharan Africa (SSA) region. The role of the central government in the distribution of transfer funds is also considered a key parameter in this study. Another contribution of this research is the use of panel data from Indonesian districts and cities over the past seven years, which enables the provision of more valid fiscal policy recommendations

METHOD

This study utilizes secondary data. In this regard, the research also gathers several variables to determine the best statistical model. The data used in this study include the number of people living in poverty, transfer funds, local own-source revenue, and expenditures on various government affairs, covering the period from 2016 to 2022. The use of data from 2016 to 2022 is based on the availability of relevant data during that time frame. From another perspective, the data sources used in the study analyzing the fiscal policy phenomenon and its impact on poverty levels in Indonesia include the Central Statistics Agency (BPS) and the Directorate General of Fiscal Balance (DJPK), Ministry of Finance of the Republic of Indonesia, covering the period from 2016 to 2022. The selection of using "number of poor people" data to project poverty is based on the assumption that the data can describe the number of people who are unable to meet their economic needs per region, without the influence of population density such as data on the percentage of poor people. However, in the data tabulation and analysis, we examine fiscal policy and poverty levels based on

districts and cities in Indonesia, consisting of 514 data points, excluding DKI Jakarta. The exclusion of districts and cities in the DKI Jakarta Province is due to the presence of outliers with values that are significantly higher compared to other regions in Indonesia.

To identify the effect of fiscal policy intervention on poverty levels in Indonesia, it was analyzed using the ARDL panel regression method approach. In this case, data analysis refers to several recommendations from previous studies. For example, a study conducted by Brook (2013) in his research in New Zealand, he stated that the fiscal policy framework had a more stable effect in the future. This is the basis for considering using analytical tools autoregressive. However, considering that the scope of fiscal policy and poverty levels in this research covers districts and cities throughout Indonesia, the model was developed using the ARDL panel method.

Panel Autoregressive Distributed Lag (ARDL Panel) is an econometric analysis method used to analyze short-term and long-term relationships between variables in panel data (Im et al., 2003). This method combines approaches Autoregressive Distributed Lag (ARDL) with panel data, thereby enabling dynamic analysis that takes into account heterogeneity across individuals. The ARDL panel has several advantages, especially in terms of the ability to identify short-term and long-term relationships between variables. On the other hand, Pesaran et al., (2001) stated that one of the advantages of using the ARDL Panel model is its ability to capture long-term relationships without having to ensure that all variables have the same level of integration, that is, it can be used for variables with integration $I(0)$ or $I(1)$, but not for $I(2)$. The ARDL panel is also considered to be able to overcome problems related to endogeneity. This is because the model is assumed to have included lags from the independent and dependent variables as regressors, thereby reducing simultaneity bias in the estimation (Nkoro & Uko, 2016).

Finally, the method is also considered realistic for use with data involving small samples and short time periods. The ARDL Panel regression approach does not require a large number of observations to produce consistent estimation results, making it more suitable compared to other methods such as VAR or VECM (Blackburne & Frank, 2007). In addition, Panel ARDL can handle heterogeneity across individuals in panel data well through estimation Mean Group (MG), Pooled Mean Group (PMG), as well as Dynamic Fixed Effect (DFE) which allows a more flexible approach to variations between units within a panel (Chudik & Pesaran, 2015). Therefore, this method is often used in economic and financial research, including studies of energy consumption, investment, international trade relations as well as the impact of fiscal policy on economic indicators. The most appropriate method for analyzing the impact of fiscal policy on poverty levels in Indonesia is the Pooled Mean Group (PMG). This method allows for heterogeneity in short-term relationships across regions while assuming homogeneity in the long-term relationship, which aligns with Indonesia's characteristics as a country with diverse regional socio-economic conditions but uniform national fiscal policies. PMG is more efficient than the Mean Group (MG), which is too flexible, and more adaptable than the Dynamic Fixed Effect (DFE), which is overly restrictive. Therefore, PMG provides more accurate estimates in the context of regional variations in Indonesia.

Based on the description above Several studies have used ARDL Panel analysis to examine the impact of fiscal policy on poverty levels, namely research conducted by Dudek et al., (2024) and Bashar & Khan (2012). In this case Dudek et al., (2024), analyzes how fiscal consolidation affects poverty levels in 24 developing countries. Meanwhile, Choundary & Ejaz (2018) applied the ARDL Panel method to examine the relationship between the composition of public expenditure and poverty levels in 15 European countries. Whereas Bashar & Khan (2012) uses ARDL Panel analysis to examine the effect of fiscal decentralization on poverty levels in South Asian countries. These three studies found that fiscal autonomy at the local level when combined with focused poverty alleviation programs has the potential to provide more effective results in reducing the poverty indeks.

This research model refers to the three models above. However, to obtain the model and the reality of the influence of each independent variable on the poverty level, the model was modified. These modifications include adjustments to the variables used, the estimation methods applied, as well as the period and scope of the data analyzed. In addition, the approach used also considers specific structural and policy factors that can influence the relationship between independent

variables and poverty levels, so that research results can provide more accurate and relevant insights for policy formulation. Based on the description above, mathematically the ARDL Panel model equation used to analyze the short-term and long-term relationship between regional fiscal policy and poverty levels in Indonesia is as follows.

$$Pov_{i,t} = \alpha_i + \sum_{j=1}^p \beta_1 Pov_{i,t-j} + \sum_{j=1}^p \beta_j Fiskal_{i,t-K} + \varepsilon_{it} \dots \dots \dots (1)$$

The description of each model is as follows.

- POV_{it} : Poverty level by district/city in Indonesia in year t
- POV_{i,t-j} : Lag of poverty level as dependent variable
- FISCAL_{i, t-k} : Regional fiscal policy variables, which include regional income, environmental transfer funds, housing and public facilities, health, social and economic protection
- A_i : Individual fixed effects for each province
- ε_i : Error term

Meanwhile, for the long term, mathematically, the ARDL panel model equation in this research is as follows.

$$POV_{i,t} = \theta_0 + \theta_1 Fiskal_{i,t} + \varepsilon_{11t} \dots \dots \dots (2)$$

Where:

- θ₁ : shows the long-term effect of fiscal policy on poverty levels.
- FISKAL_{i, t-k} : Regional fiscal policy variables, which include regional income, environmental transfer funds, housing and public facilities, health, social and economic protection

If θ₁<0, then increasing government spending or fiscal transfers can reduce poverty in the long term.

$$POV_{i,t} = \lambda (POV_{i,t-1} - \theta_0 - \theta_1 Fiskal_{i,t-K} + \sum_{j=1}^p \beta_1 Pov_{i,t-j} + \sum_{j=1}^p \beta_j Fiskal_{i,t-K} + \varepsilon_{it} \dots \dots \dots (3)$$

If in the ARDL panel regression a cointegration relationship is found between variables, then the error correction model (ECM) for the short term is mathematically written as in equation three (3) above. Where:

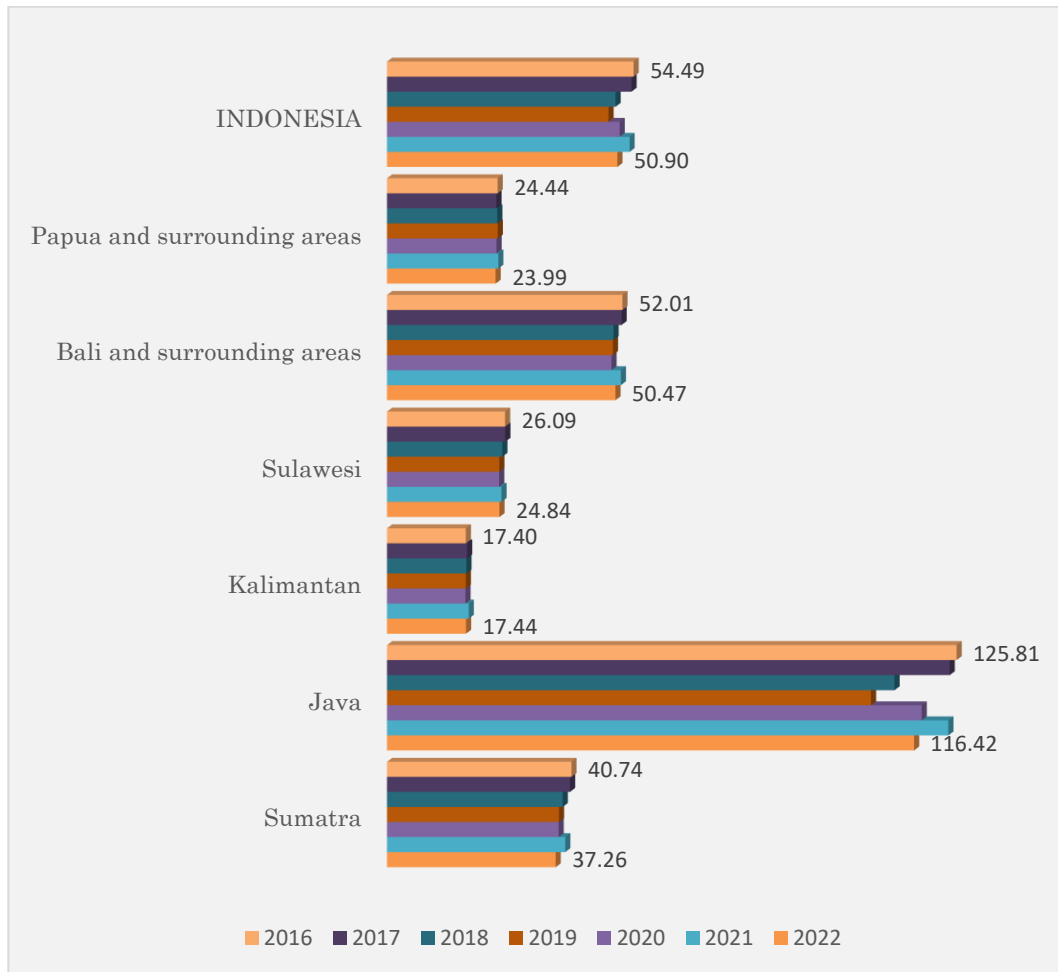
- λ : error correction term (ECT) which shows how quickly the variable returns to long-term equilibrium. If λ<0 and significant, means there is a long-term relationship, and errors will be corrected towards equilibrium over time.
- Δ : shows changes from the previous period.

Based on the description above, the data processing for analyzing and identifying the impact of regionally based fiscal policy interventions on poverty levels in Indonesia was carried out using Stata software and Microsoft Excel 2016.

RESULTS AND DISCUSSION

Poverty in Indonesia has shown a declining trend over the last 7 years. In 2026, BPS recorded that in 2016 there were around 28,005.41 thousand poor people. This value decreased to 26,161.48 thousand people at the end of the research period. If it is assumed that the population in Indonesia has increased, then there will be a decrease in the percentage of the poor population. More specifically, during the Covid-19 situation, there was an increase in the poverty rate in Indonesia by around 5.09% in 2020 and 4.23% in 2021, but the poverty rate decreased again in 2022. Visually, the average distribution of poverty in Indonesia is as follows.

Based on jurisdiction, the Java region still has the largest number of poor people in Indonesia. In 2022, around 52.93% will live on the island of Java. The Kalimantan region is an archipelago with the lowest average poor population in Indonesia, followed by Papua and its surroundings. However, on the island of Kalimantan, there has been an increase in the number of poor people, where in 2016 the average was 17.40 thousand people, rising to 17.44 thousand people in 2022.



Source: BPS (2024)

Figure 4. Poverty in Indonesia (Thousand People)

To address the problem of poverty, this study tests the influence of fiscal variables by projecting them as instruments for reducing poverty rates. Regional fiscal policy and the phenomenon of poverty in Indonesia are analyzed using a panel model approach Autoregressive Distributed Lag (ARDL). Regional fiscal policy is part of economic policy which aims to manage regional government revenues and expenditures in order to achieve community welfare and support local economic development (Guo et al., 2021). From the perspective of the level of welfare and economic development, regional fiscal policy is considered to play an important role in influencing poverty levels in Indonesia. Regional budget management such as social spending allocations, fiscal transfers and local original income has the potential to significantly influence a region's ability to reduce and eradicate poverty levels. (Suwanan & Sulistiani, 2009). In the Indonesian context, fiscal inequality between regions often becomes an obstacle to achieving inclusive economic growth and sustainable poverty reduction (Guo et al., 2021). To understand the relationship between regional fiscal policy and the phenomenon of poverty, approach Panel Autoregressive Distributed Lag (ARDL) is considered relevant to use because the model is able to analyze short-term and long-term relationships simultaneously in panel data. This model also considers lag dynamics and cross-unit heterogeneity in panel data so that it can identify the direct and indirect effects of fiscal policy on

poverty at the regional level (Pesaran et al., 2001; Levin et al., 2002).

From another perspective, the reason underlying the ARDL Panel approach is considered very relevant for analyzing Indonesian data on the impact of fiscal policy on poverty because the model allows analysis of heterogeneity between regions considering differences in fiscal capacity and poverty levels in various regions. Through this analysis, the causal relationship between variables such as social spending, fiscal transfers and regional income and poverty levels can be explained empirically in both the short and long term. In ARDL panel modeling, the first step taken is to prepare the data by ensuring its stationarity using a unit root test such as (Im et al., 2003; Levin et al., 2002)

The results of the stationarity test analysis show that the variables in the model have been tested using three panel methods unit root test, namely Im, Pesaran and Shin (IPS), Breitung, and Levin, Lin, Chu (LLC). At the level, variables such as regional income, housing and public facilities, health, social protection and poverty are declared stationary because they have *p*-value significant (<0.05) for all methods. On the other hand, the results of the stationarity analysis at level level show that the transfer, environmental and economic variables are not significant at level level so they are not stationary. Although at the level there are several variables that are not stationary or have unit roots, but the results of the analysis on first difference it is indicated that all variables have a value of *p*-value < 0.05) for all three methods. These results indicate that the variables used in this research together have met the requirements for stationarity at level first difference. Thus, the ARDL Panel model can be used to analyze and identify short-term and long-term relationships between fiscal policy and the phenomenon of poverty in Indonesia.

Table 1. Results of Stationary Test analysis at Level and 1 levelst Difference Panel ARDL

Variable	Panel Unit Root Tests					
	Level			1st Difference		
	Lm. Pesaran and Shin	Spreading	Levin, Lin, Chu	Lm. Pesaran and Shin	Spreading	Levin, Lin, Chu
Regional income	0.0000**	0.0000**	0.0000**	0.0000**	0.0000**	0.0000**
Transfer	1.0000	0.0000**	1.0000	0.0000**	0.0000**	0.0000**
Environment	1.0000	1.0000	0.0000**	0.0000**	0.0000**	0.0000**
Housing and public facilities	0.0000**	0.0051**	0.0000**	0.0000**	0.0000**	0.0000**
Health	0.0000**	0.0041**	0.0000**	0.0000**	0.0550*	0.0000**
Social protection	0.0000**	0.0000**	0.0000**	0.0000**	0.0789*	0.0000**
Economy	1.0000	0.4832	0.0000**	0.0000**	0.0114*	0.0000**
Poverty	0.0000**	0.0002**	0.0000**	0.0000**	0.0000**	0.0000**

Source: Processed Results

Description: significant at the 1% real level, *significant at the 5%-10% real level*

The next analysis in panel data modeling is the cointegration test. The cointegration test is an analytical approach used to identify or test the existence of long-term relationships between variables in panel data. Results Kao Test for Cointegration shows that there is a significant long-term relationship between the variables in the panel data model. Based on the results in the table below, it is identified that all test statistics are good using the approach Modified Dickey-Fuller t, Dickey-Fuller t, Augmented Dickey-Fuller t as well as two versions of the Unadjusted Dickey-Fuller t have *p*-value < 0.05. Thus, it can be concluded that the variables in this model have been significantly cointegrated. The results of this analysis also provide the basis that identifying the relationship between fiscal policy and poverty levels in Indonesia, both short and long term, can be

approached using the ARDL Panel approach.

Table 2. Kao Test for Cointegration results on the ARDL Panel Model

Statistic	Value	p-value
Modified Dickey-Fuller t	13.9526	0.0000**
Dickey-Fuller t	2.6035	0.0046**
Augmented Dickey-Fuller t	-8.5134	0.0000**
Unadjusted Modified Dickey-Fuller t	-7.4134	0.0000**
Unadjusted Dickey-Fuller t	-20.6992	0.0000**

Source: Processed Results

Note: significant at 1% real level

In econometric analysis, classical assumption tests such as multicollinearity, heteroscedasticity and autocorrelation are important to ensure that the model meets the requirements of the Best Linear Unbiased Estimator (BLUE). This is based on the Gauss-Markov assumption which requires that the error term in the regression model is homoscedastic, has no autocorrelation, and the independent variables are not perfectly linearly correlated (Gujarati & Porter, 2013). Based on the description above, the results of multicollinearity analysis in the model using the Variance Inflation Factor (VIF) approach are shown in the table below. In general, according to (Gujarati & Porter, 2013) and Kutner et al., (2005) states that a VIF value below 10 is considered not to indicate a multicollinearity problem in the model. Based on the description above, the variables with the highest VIF values are transfers (7.28) and regional income (7.02). Even though both VIF values are close to the limit of 10, both are still below the critical threshold, so they do not indicate significant multicollinearity. Other variables, such as the economy, environment, health, social protection and housing and public facilities have lower VIF values ranging from 1.06 to 1.34. Thus the results of this analysis indicate that the linear relationship between variables is free from multicollinearity problems.

Table 3. Multicollinearity Test Results

Variable	VIF	1/VIF
transfer	7.28	0.137290
regional income	7.02	0.142433
economy	1.34	0.743547
environment	1.13	0.883837
health	1.09	0.920438
social protection	1.08	0.922705
housing and public facilities	1.06	0.945274
Mean VIF	2.86	

Source: Processed Results

The results of the heteroscedasticity test using the Breusch-Pagan method show that the probability value (P-Value) is 0.0000, which is smaller than the significance level of 0.05. This indicates that there is a heteroscedasticity problem in the ARDL panel model used. The existence of heteroscedasticity can cause the standard error in the model to be inconsistent, so that the interpretation of the results of the significance test can be biased (Baltagi, 1975). Apart from that, the results of the autocorrelation test using the Wooldridge method show a probability value (P-Value) of 0.0000, which is also smaller than the significance level of 0.05. This indicates the presence of autocorrelation in the model residuals, where the residuals between time periods in the same cross-section unit are correlated with each other. This condition can affect the consistency and efficiency of parameter estimation in the model (Arellano, 2003).

Table 4. Test Results Table Heteroskedasticity (Breush-Pagan) and Autocorrelation (Wooldridge)

Test	P-Value	Conclusion
Heteroscedasticity (Breush-Pagan)	0.0000	There is heteroscedasticity
Autocorrelation (Wooldridge)	0.0000	There is autocorrelation

Source: Processed Results

To overcome this problem, the ARDL panel model has used a robust standard error approach. This method is effective in accommodating heteroscedasticity and autocorrelation, so that the standard error becomes more reliable and the coefficient estimation results are no longer biased. (Wooldridge, 2010). Then, Arellano (2003) also states that weighting by approach robust standard error The model produces a more reliable standard error so that it can overcome violations of classical assumptions, both heteroscedasticity and autocorrelation. Thus, even though the test results show heteroscedasticity and autocorrelation, both have been addressed in the model, so that the interpretation of the results remains valid and reliable.

Table 5. ARDL Panel Analysis Results of the Effect of Short Run and Long Run Fiscal Policy on Poverty in Indonesia

Variable	Coefficient	Std. Error	t-Statistics	p-Value
Long-run Coefficients (ECM)				
Regional Income	-28.6377	4.1675	-6.870	0.000**
Transfer	14.1561	2.4674	5.740	0.000**
Economy	0.5285	0.2943	1.800	0.073*
Environment	0.4408	0.1292	3.410	0.001**
Housing and Public Facilities	-0.4621	0.0797	-5.800	0.000**
Health	1.4714	0.5655	2.600	0.009**
Social Protection	-0.1510	0.2334	-0.650	0.158
Short-run Coefficients (SR)				
ECT	0.4939	0.0189	26.140	0.000**
D1. Regional Income	-14.8500	1.4918	-9.420	0.000**
D1. Transfer	7.9418	1.1219	7.080	0.000**
D1. Economics	0.1218	0.1024	1.190	0.234
D1. Environment	0.1891	0.0446	4.240	0.000**
D1. Housing and Public Facilities	-0.1768	0.0248	-7.130	0.000**
D1. Health	0.1126	0.2179	0.520	0.605
D1. Social Protection	0.0344	0.0800	0.430	0.667
CONS	-205.0055	48.0630	-4.270	0.000**

Source: Processed Results

Description: significant at the 1% real level, *significant at the 5%-10% real level

The table below shows the impact of fiscal policy variables on poverty in Indonesia in the short term (short run) and long term (long run) using the ARDL panel approach (Suwanan & Sulistiani, 2009). In the short term, the regional income variable has a significant influence with a negative coefficient of -14.84996. This indicates that if there is an increase in original regional income by 1 percent it will reduce the poverty level in Indonesia by 14.84996 percent assumed equal to the table. In the long term, the regional income variable also consistently has a negative and significant effect on poverty levels in Indonesia with a coefficient of 28.63765. The results of the

analysis show that the direct impact of increasing regional income has the potential to reduce poverty significantly in both the short and long term because regional fiscal policies tend to be more adaptive and responsive to the needs of local communities (Guo et al., 2021). Increased regional revenues also enable local governments to strengthen local economic stability through investment in sectors that provide direct benefits to poor communities, such as health, education, and transportation. With more adequate fiscal resources, local governments can reduce dependence on fiscal transfers from the central government and increase local economic independence (Suwanan & Sulistiani, 2009). The increase in regional income shows that better fiscal capacity allows regional governments to fund social programs and provide infrastructure, facilities and infrastructure that are very relevant to the needs of the poor. This condition can also be interpreted that original regional income (PAD), which is obtained from taxes and levies, will function as a tool to finance poverty alleviation projects independently without relying much on funding from the center. Meanwhile, in the short term, the government can use surplus income to reduce the expenses of poor households through the direct cash assistance (BLT) program and subsidies.

The calculation results show that in the long term and short term the transfer variable with coefficients of 14.1561 and 7.9418 has a significant influence with a positive relationship on poverty in Indonesia, meaning that increasing transfers from the center to the regions will increase poverty in Indonesia. This shows that the transfer allocation is not optimal or efficient and not on target and the management of transfers such as the general allocation fund (DAU) and special allocation fund (DAK) is less effective. If it is not used in accordance with local needs, the benefits cannot be felt by the poor. Regional dependence on transfers can weaken local initiatives in increasing regional income. Where in Law no. 33 of 2004, DAU is intended for employee expenditure. Meanwhile, DAK is specifically for regional development which is the central government's priority program in the regions. Impact of transfer funds: In order for fiscal transfers to be used for effective programs in reducing poverty, it is very necessary that monitoring and evaluation mechanisms must be truly strengthened.

The economic variable on poverty in the long term has a coefficient of 0.5285 which has an influence that is close to significant and positive, meaning that economic growth has not been able to completely reduce poverty in the long term. It is assumed that the existing economic growth is less inclusive because it benefits more of the rich (well-off) without providing significant benefits for the poor. High income inequality will reduce the positive implications of growth for poverty alleviation. This condition can encourage the government to prioritize inclusive development strategies such as developing MSMEs, investing to create employment opportunities for the poor and providing basic infrastructure in underdeveloped areas. This is done to reduce development inequality which leads to income inequality so as to reduce poverty. Meanwhile, in the short term, the coefficient value of 0.1218 shows that economic conditions do not have a real impact on poverty. This happens because economic growth is assumed to not be felt directly by the poor because the distribution of benefits often requires complex stages such as creating jobs or strengthening the purchasing power of the poor.

The calculation results using the ARDL panel approach have coefficients of 0.4408 and 0.1891 for the long term and short term, indicating that increasing government spending on the environment will increase the amount of poverty. This happens because investment in the environment takes longer and requires costs that do not directly provide benefits to the poor. An example is an environmental conservation or disaster mitigation project that cannot immediately create jobs or increase the purchasing power of the poor. Another example is that the costs of implementing environmental projects can shift budget allocations away from programs that more directly impact the poor. In order for environmental programs to have a greater impact on poverty alleviation, the government needs to integrate this program with community empowerment, such as providing incentives to poor people involved in environmental projects.

Meanwhile, the results of the analysis also identified that fiscal policy, which is denoted through the variable approach of government spending on housing and public facilities, has a consistently negative and significant effect on poverty in both the short and long term with respective coefficients of 0.1768 and 0.4621. This position states that a 1 percent increase in

government spending or spending on housing and public facilities is predicted to reduce the poverty rate by 0.1768 percent in the short term and 0.4621 percent in the long term. The results of this research are in line with research conducted Wang & Zou, (2014) which states that increasing spending on housing and public facilities can reduce poverty because this sector contributes to increasing people's access to basic needs such as housing and public infrastructure. On the other hand, the results of this analysis are also strengthened by a study by Mustaqimah, (2022) which states that efficient government spending on public facilities not only has a direct impact on reducing poverty but also strengthens the long-term impact by increasing the economic productivity of the poor.

In contrast to the coefficient results for regional income variables and government expenditure for housing and public facilities, regional transfer variables consistently have a positive effect on poverty levels in both the short and long term with coefficients of 7.9418 and 14.1561 respectively. Regional transfers, as part of fiscal decentralization in Indonesia, have consistently been found to have a positive influence on poverty levels in both the short and long term. This happens because transfer fund allocations, such as the general allocation fund (DAU) and special allocation fund (DAK), are often not used effectively for programs that truly target poverty alleviation. Study by Atkinson et al., (2017) shows that in many regions, transfer funds tend to be used to finance routine expenditure, such as employee salaries, rather than being allocated to sectors that have a direct impact on poverty reduction. As a result, the benefits of regional transfers are not fully felt by the poor.

In addition, the effectiveness of regional transfers is often disrupted by the weak capacity of regional governments in planning and implementing poverty alleviation programs (Pambudi & Nurvia, 2023). In the short term, this results in budget allocations that are not on target, while in the long term, regional transfers actually contribute to regional fiscal dependence on the central government without strengthening local economic capacity. Furthermore, a study by Ervina et al., (2022) and Stephanus et al., (2024) stated that in Indonesia, inequality between regions also exacerbates the impact of regional transfers on poverty. Many underdeveloped regions do not have the capacity to utilize transfers optimally, so they are unable to create inclusive economic growth. Thus, although regional transfers have the potential to reduce poverty, their effectiveness depends on how these funds are managed at the local level.

The effect of government spending on health in the long term has a coefficient of 1.4714 which has a significant and positive effect on poverty in Indonesia. This means that government spending on health has not succeeded in suppressing and reducing poverty in Indonesia. It can be assumed that there is inefficiency in the allocation of the health budget, health programs that are not on target, meaning that existing programs do not directly reach the poor and they are still facing high health costs even though there is an increase in public spending in this sector. It is assumed that the government will focus more on building hospitals in urban areas rather than providing basic health services which are more relevant for the poor in Indonesia. Apart from that, the government is also expected to improve targeted health programs such as BPJS for the poor and ensure equitable quality of health services, especially in remote areas. In the long term, high health spending can also put pressure on budget allocations for other sectors that have a greater influence on poverty alleviation, such as education and infrastructure provision. If the health program carried out by the government is right on target then problems such as stunting, malnutrition and MCK facilities (bathrooms, toilets) as well as the supply of clean water can be distributed well then the poor people will be able to utilize and enjoy it well, this will have an impact on physical health and can increase the productivity of the poor people, which in the end they can look for work and work well because they have healthy bodies so that the poor people will be able to have the purchasing power to overcome this poverty.

Meanwhile, in the short term, government spending on health with a coefficient of 0.1126 does not have a significant effect on poverty in Indonesia. This means that government spending on health does not have any impact on poverty in Indonesia. In the short term, government spending on health is assumed to not directly reduce poverty, especially if there are barriers to access or quality of services. The impact of government spending on health takes time to become visible

because investment in the health sector is usually indirect but gradual with the assumption that all programs on health are right on target and the benefits can be immediately felt by the poor. Most of the spending on health focuses on providing infrastructure whose impact on the poor can only be felt in the long term. Short-term health programs such as drug subsidies or health campaigns, although important, are often not sufficient to change the economic status of the poor directly. The majority of poor people in Indonesia work in the informal sector so direct benefits from health expenditures such as subsidies may not directly lift them out of poverty. Government spending on health is not significant to poverty in Indonesia in the short term, but that does not mean this spending is not important. Reforms in spending, increasing program efficiency and integration with other sectors are needed to increase the effectiveness of health spending in reducing poverty in Indonesia in both the short and long term.

The results of the ARDL panel regression indicate that government spending on social protection, both in the long term and short term with coefficients of -0.1510 and 0.0344 does not have a statistically significant effect on poverty levels in Indonesia. This suggests that social protection expenditures have not been effective in reducing poverty within the observed period. Although social protection is widely regarded as a key policy instrument in poverty alleviation, the lack of significant impact in this study may stem from several possible factors. First, ineffective program implementation may lead to poor targeting, where assistance does not directly reach the intended groups—namely, the poor and vulnerable populations. Second, social protection programs in Indonesia may be overly focused on consumptive assistance, such as subsidies, rather than on productive interventions that can sustainably increase incomes for low-income households. Furthermore, the unequal distribution of social protection funds may result in a disproportionate benefit for non-poor groups, reducing the program's overall effectiveness. Administrative inefficiencies, such as bureaucratic delays or technical obstacles, may further limit access for poor communities. In some cases, leakages due to corruption may also undermine the delivery of social protection benefits. It is also important to consider that poverty in Indonesia is often structural, linked to limited access to quality education, employment opportunities, and infrastructure. In such a context, social protection alone is insufficient to address the underlying causes of poverty. Therefore, the finding that social protection spending has no significant impact on poverty reduction underscores the need for a thorough evaluation of both the design and implementation of these programs. A cross-sectoral and integrated approach is essential to improve the targeting, efficiency, and effectiveness of social protection policies, so that they can play a more substantial role in alleviating poverty in Indonesia.

CONCLUSIONS AND SUGGESTIONS

Simultaneously, the fiscal policies implemented by the government have had an impact on poverty. Increasing regional income is the main variable to reduce the number of poor people, not only in the short term but also in the long term. Increasing regional income allows regional heads to strengthen regional potential with regional economic independence, with regional economic stability, improving basic services (education and health), as well as developing transportation to increase inter-regional connectivity. On the other hand, central transfer funds to the regions have a positive impact, namely because the number of poor people is still one component of closing the fiscal gap.

More specifically, in terms of function-based government spending, statistically there is no impact of social protection spending on the number of poor people, even though it has a negative coefficient in the long term. Spending on housing and public facilities has a negative impact on poor people, in the short and long term. This confirms that increasing spending in settlement and development area programs has had an impact on reducing the number of poor people. Meanwhile, economic spending, environmental spending and health spending have not been able to overcome the decline in the number of poor people. The limitation of this study is that we ignore the theory of convergence in the context of inter-regional poverty, so that further studies can be directed at inter-regional diversity, by considering macro variables and regional inequality.

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