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Dynamic Panel Data Modeling of Indonesia's Poverty Level 2013-2022

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DYNAMIC PANEL DATA MODELING OF INDONESIA'S POVERTY LEVEL 2013-2022

Abstract

Poverty is one of several issues that require the government's attention in Indonesia. This is because it has an impact on society's social economy. This study was conducted to identify and analyze inconsistencies or endogenous and exogenous variables that influence poverty levels in Indonesia. A descriptive quantitative analytic methodology was applied using data from secondary sources that was gathered from the Indonesian Central Statistics Agency Indonesia over ten years, from 2013 to 2022. The model used in this study is dynamic panel data regression analysis based on *Arellano-Bond's Generalized Method of Moment (GMM) method. First-Difference (FD) GMM* and *System (SYS) GMM* are the two best models. To ascertain both immediate and long-term consequences, GMM develops a model that is impartial, reliable, and effective. The study's conclusions indicate that the short- and long-term relationships between poverty levels and the index of human development have been significantly affected negatively. Exports significantly lower poverty rates both immediately and over time. Both the short- and long-term levels of poverty are significantly improved by imports. The prob value or p-value significance level alpha (α) = 5% indicates that this has a significant effect. It is hoped that the research findings will be used as reference material for future macroeconomic developments in order to overcome poverty alleviation by focusing on research weaknesses and limitations.

Keywords: Econometrics, Macroeconomics, Poverty, GMM
**JEL Classification: C01; O1; O11**

Introduction

In general, developing countries frequently face economic difficulties. On the other hand, developing countries, including Indonesia, continue to struggle with poverty. Poverty is a major issue in Indonesia, not only because it is on the rise, but also because of its economic scope and impact. Poverty is defined as a person's level of material deprivation in comparison to society's overall standard of living. Low living standards have an impact on the quality of social life (Andrean et al., 2023). The problems are complex and multifaceted, and one of them is poverty, which must be prioritized for development. The poverty line is an indicator used to assess the success and effectiveness of government-implemented development services (Nyoman et al., 2021).

One of the causes of the current poverty problem in Indonesia is the high level of inequality in various regions and community groups, which is caused by unequal income distribution, and the number of poor people continues to rise until it reaches the poverty line. (Buheji et al., 2020) Poverty is defined as a very low standard of living, a level of material deprivation experienced by a group of people in comparison to society's overall standard of living, which has an impact on health, education, and social life.

Despite the government's promotion of a strategy to reduce poverty rates from year to year, the Central Statistics Agency (BPS, 2022) reports that the poverty rate has not changed and has not experienced a significant decline. Although there has been a qualitative decline, the impact of the change has yet to be determined. In fact, the situation is becoming increasingly concerning. Poverty can also be seen through other dimensions, such as health, nutrition, education, and low literacy rates, which are used to calculate the poverty line.Instead of using a single dimension, the overall welfare index is simply a combination of consumption (economic), education, and health spending (A. Wibowo & B, 2021). There are several things that lead to poverty, including inadequate minimum wages, low living standards, and an unemployment rate that rises year after year despite the fact that no jobs are available. According to the Central Statistics Agency, the poverty level in 2018-2022 is as follows.

Figure.1 Poverty Level in Indonesia
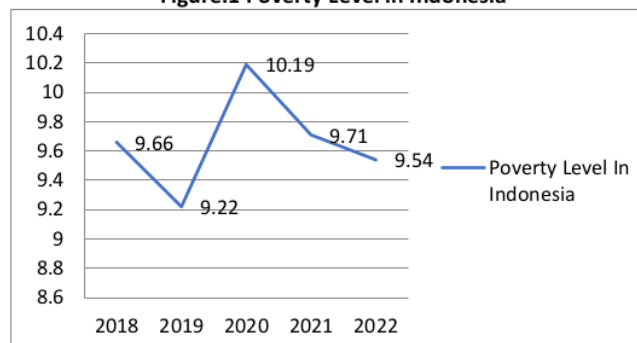
Source: Indonesian Central Statistics Agency (2023)

According to Figure 1, poverty has always fluctuated year after year, but the poverty rate in Indonesia from 2018 to 2019 has decreased in the last five years. Poverty rates in Indonesia fell from 9.66 percent in 2018 to 9.22 percent in 2019. Furthermore, there is a 10.19 percent increase from 2019 to 2020. The global impact of the Covid-19 pandemic is responsible for this rise. The poverty rate will then fall by another 9.09% by 2020, from 2021 to 2022. The Central Statistical Authority classifies poverty reduction as fairly good and stable in all provinces in Indonesia, but the current poverty level is unlikely to change. each region's poor communities are changing. As a result, the Indonesian government must devote more attention to efforts to combat the emergence of new poverty. Poverty is a major issue in Indonesia's underdeveloped rural areas (Wau, 2022).

According to the Central Statistics Agency (2023), the poverty rate has dropped to pre-pandemic levels, and the trade balance surplus is still running. According to BPS (2016), the

incapacity to meet fundamental needs can be characterized as poverty from a financial standpoint. This is determined by calculating the typical monthly amount per person expenditure below the poverty line for food and non-food goods. As stated by (Davis & Sanchez-martinez, 2014) poverty is a very relative main concept that can be used to analyze a problem, according to the author.

The HDI measures countries' progress in a variety of areas, including health, education, and living standards (Athirah & Mohamad, 2015). Poverty is also exacerbated by a large population due to high unemployment. If we do not help the poor by providing decent job opportunities, the proportion of the impoverished will increase, and thus the level of social welfare will fall (Hidayat & Anwar, 2023). One way to increase capital is to improve the quality of human resources (Yusuf et al., 2020). Employees are people who can successfully carry out work inside or outside of the workplace to produce goods and services that are used on a daily basis (Zid et al., 2020). Labor force mobility creates pockets of individuals who are innovative and mutually interested in each other, with the goal of building innovative cities that lead to economic prosperity (Grebski, 2021). The experience of unemployment, the job placement process, and poverty on groups of people who are still disadvantaged are all examples of social influences (Thompson & Dahling, 2019).

The state sets a minimum salary to maintain a level of living as defined by policy, capable of assisting low-income workers, and capable of reducing poverty and maintaining a minimum standard of living (A. S. & W. H. Wibowo, 2017). The Regional Minimum Wage has restrictions when establishing it across all Indonesian areas which have their Minimal Wage laws, although it is applicable across all areas—both Regency and City (Sari, n.d.). The phenomenon of household consumption patterns that occurs in Indonesia is still low, but it is showing signs of improvement. The low household consumption was caused by the global Covid-19 pandemic, which impacted people's income (Central Bureau of Statistics, 2020). Disposable income is the primary determinant of consumer spending, permanent and life cycle income, wealth, and other determining factors such as societal expectations and future conditions (Hardiani et al., 2018). Consumption or household income measured in the survey shows that household consumption or aggregate income needs okto be normalized to determine differences in the cost of living standards (Ravallion, 2012)

The open unemployment rate indicates the proportion of jobless people in the workforce is an indicator of labor supply productivity (Rohmah & Articles, 2021). (Agustina et al., 2023) stated that the unemployment rate in Indonesia tends to be flat or has not increased. But from 2020 to 2021, the Covid-19 pandemic significantly increased unemployment, making it impossible for it to continue keeping up with the amount of employment that were available. Unemployment arises as a result of an imbalance in the number of workers and a lack of job opportunities (Endang, 2022). Foreign investment and poverty alleviation are viewed from two perspectives: growth on the one hand and poverty alleviation growth on the other. In general, FDI has accelerated the country's economic growth and raised its standard of living, resulting in greater poverty reduction (Shamim, 2014). There is a paradox of foreign investment inflows reducing poverty by producing the impact of FDI inflows over a longer period of time (Israel, 2014).

There is some export potential that can be used for long-term growth and development, but there are some countries where growth is almost stagnant or even negative. Agriculture and petroleum exports are its main products, and they are anticipated to be quite important in driving the economy (Ofeh, 2014). Indonesia's export stability is still capable of maintaining and controlling price stability (Novalina & Rusiadi, 2018). Import tariffs in a country can affect imports, but they can also affect exports in that country. If exports to trading partners increase, export freight rates to trading partners will be reduced as import rates fall (Hayakawa et al., 2020). Exports are efforts to sell goods to foreign countries that can expect payment in a different currency (Susilo, 2022).

Previous research has also found a link between macroeconomic variables such as HDI, Regional Minimum Wage, and Unemployment and poverty levels (Subanidja & Suharto, 2014). Endang (2023) illustrates how Indonesia's poverty levels are significantly impacted by the HDI. His research also shows some factors can have a big impact on the connection between unemployment and poverty. Prior studies have shown that the number of unemployed people has a beneficial

effect on the number of poor people (Budhi, 2019). The HDI variable, which significantly affects poverty and the rate of joblessness and apparently has no detrimental effects on poverty, seem to be related, according to Nabila's (2021) research as cited in (Faharuddin Endrawati, 2022). This demonstrates that household consumption significantly contributes to poverty in Indonesia. Participation in the labor force significantly reduces poverty (Adha et al., 2018). Nonetheless, a study claimed that there is no proportionality connection between poverty and the HDI both of which concurrently affect growth in the economy (Rohmand, Kholi, 2020).

There remain a lot of empirical studies and researchers who haven't focused on the connection between the macroeconomic dimensions of poverty in Indonesia and their short- and long-term impacts, as well as how each shock affects the nation's poverty level. These investigations have been done to ascertain the effect of the macroeconomic factors on the level of poverty in Indonesia. Numerous earlier research used panel data combined with a model based on the multiple linear regression technique with the SPSS 25 analysis tool to create a static model. They discovered that the HDI, GRDP, and unemployment all affected poverty levels. Empirically, the majority of economic variables are dynamic in nature, but there are also dynamic relationships between economic variables that are influenced not only at the same time, but also earlier in time. Explore and analyze several factors that determine the magnitude of poverty in Indonesia based on the results of previous research examining the problem of poverty in Indonesia. According to the findings of the study (Setiawan & Adzim, 2017) There are several exogenous variables that represent the determinants of poverty in Indonesia, namely average expenditure and foreign investment, both of which can have a significant impact on poverty in Indonesia in 2014. The reason for this is that political and economic conditions in countries are changing, as are global economic conditions, which are gradually improving. (Silva et al., 2015) demonstrates that poor areas frequently do not have the same opportunities for immunization protection as non-poor areas. As a result of poor health conditions and the benefits of educational capacity level opportunities, their abilities deteriorate. In reality, human resources have a significant impact on poverty, but human resources will contribute to poverty alleviation, increasing the rate of economic growth.

This study employs interactive panel data analysis using a modeling method, following the research background to determine the extent to which the degree of poverty has a lag influence relationship between endogenous variables and exogenous variables using dynamic panel data regression with the *Generalized Methods Of Moment (Gmm)* approach model *by Arellano -Bond* to find the best model in econometric testing of Poverty Levels, the goal is to clarify and analyze wid. The model used also generates unbiased, consistent, and efficient estimates that will be used to interpret the simultaneous equation model parameters in determining the relationship between short-term and long-term impacts, as well as the positive response of each variable to shocks to other variables. Arellano and Bond (1991) GMM is a dynamic panel data technique that is commonly used to analyze relationships between dynamic variables, according to its description . Many external variables are used in this assessment, such as the population size, the open rate of unemployment, the area's minimum salary, the index of human development, foreign investment, exports, and imports. It is quickly noted that, when utilizing the Multiple Linear Regression model technique, there is a balanced link between the index of human development and unemployment variables that affect poverty, to fill a gap in previous studies (Nabila, 2021). The most recent study examined the short-term and long-term relationship of Poverty Level as a dynamic variable using two *Arellano-Bond Generalized Methods of Moment (GMM) models, namely First-Difference (FD) GMM* and *System (SYS)-GMM*, in order to determine the best model as macroeconomic variables. This study, however focuses on a subset of poor people in each region. Because the poverty rate in Indonesia is relatively high and cannot be balanced by the level of income, it is interesting to conduct research to reduce the poverty rate. The results of this study are expected to be a valuable additional resource for decision-makers in Indonesia's battle against poverty.

Research Method

Descriptive quantitative evaluation using samples and statistical information is used in this research. Quantitative descriptive research focuses on numerically measuring or analyzing research variables using statistical analysis tools. With 340 observations sourced from 34 provinces in Indonesia over a 10-year period from 2013 to 2022. Equation (1) describes the dynamic panel data model:

$$y_{i,t} = \delta y_{i,t-1} + x_{i,t}\beta + u_{i,t}$$

The following are the specifications for the poverty level model:

$$Pov_{i,t} = \alpha_1 IPM_{i,t} + \alpha_2 JP_{i,t} + \alpha_3 JAK_{i,t} + \alpha_4 UMR_{i,t} + \alpha_5 KRT_{i,t} + \alpha_6 TPT_{i,t} + \alpha_7 PMA_{i,t} + \alpha_8 EX_{i,t} + \alpha_9 IM_{i,t}$$

Where δ is a toggle $x_{i,t}$ represents a matrix with dimensions $1xk$ and β with a size matrix $kx1$ it is expected that $u_{i,t}$ is the component of one-way error. The assumption is that $\mu_i \sim$ IIDN $(0, \sigma_v^2)$ and $v_{i,t} \sim$ IIDN $(0, \sigma_v^2)$. The coefficient in dynamic panel data regression represents the short-term start of change x_{dfa} β is known as the short-run multiplier. In the meantime, $\left(\frac{\beta}{(1-\beta)}\right)$ is the long-term consequence of change $x_{dia.}$ Alternatively, a long-term multiplier. The lag-dependent variable is the sole variable that is independent in the following the fundamental model for flexible panel regression, forming a dynamic panel data model:

$$y_{i,t} = \delta Y_{i,t} - 1 + u_{i,t}$$

The initial disparity in order to calculate dynamic panel data regression models, two approaches are used: GMM (FD-GMM) and System GMM (Sys-GMM). FD-GMM was invented by Arellano-Bond. This method is used to generate a dynamic panel data model with the best GMM estimates that are unbiased, valid, and unchanged. The first distinction is illustrated by the following equation.

$$y_{i,t} - y_{i,t-1} = \delta \left(y_{i,t} - y_{i,t-2}\right) + \left(x_{i,t} - x_{i,t-1}\right)$$

Arellano and Bond's estimation of variables method uses the GMM principle to get unchanged predictions. δ is derived from the GMM estimator by reducing a quadratic function in such a way that;

$$\hat{\delta} = \left[\left(N^{-1}\sum_{i=1}^{N} Z_i \Delta y'_{i,t} - 1\right) \widehat{W} \left(N^{-1}\sum_{1=1}^{N} z_i \Delta y'_{i,t-1}\right)\right]^{-1}$$
$$\left[\left(N^{-1}\sum_{i=1}^{N} Z_i \Delta y'_{i,t-1}\right) \widehat{W} \left(N^{-1}\sum_{i=1}^{N}(Z'_i \Delta y_i)\right)\right]$$

As a result, a rough estimate is produced δ a two-step efficient estimator that is substitution-compatible $\widehat{W}$ weight $\widehat{\Lambda}^{-1}$ The Arellano-Bond GMM estimate is then calculated in equation 4 as follows:

$$\hat{\delta} = \left[\left(N^{-1}\sum_{i=1}^{N}\left(\Delta y_{i,t-1}Z_{diff}\right)\right) \widehat{\Lambda}^{-1} \left(N^{-1}\sum_{i=1}^{N}\left(\Delta y_{i,t-1}Z_{diff}\right)\right)\right]^{-1}$$
$$\left[\left(N^{-1}\sum_{i=1}^{N}\left(\Delta y_{i,t-1}Z_{diff}\right)\right) \widehat{\Lambda}^{-1} \left(N^{-1}\sum_{i=1}^{N}\left(Z_{diff}\Delta y_i\right)\right)\right]$$

The equation provides an unbiased, consistent, and efficient estimate of the Arellano-Bond GMM. First difference moments and level state moments are utilized to calculate the structure of equations using the Blundel-Bond System Generalized Method of Moment or the SYS-GMM. The following is a one-step estimation system for Eq.

$$\hat{\delta} = \left[\left(N^{-1}\sum_{i=1}^{N}\varphi'_{i,-1}Z_{sys}\right)\hat{W}\left(N^{-1}\sum_{i=1}^{N}Z'_{sys}\varphi_I\right)\right]^{-1}$$
$$\left[\left(N^{-1}\sum_{i=1}^{N}\varphi'_{i,-1}Z_{sys}\right)\hat{W}\left(N^{-1}\sum_{I=1}^{N}z'_{SYS}\varphi_i\right)\right]$$

Estimates $\hat{\delta}$ is a constant estimator that does not change with weights $\hat{W}$. Blundell dan Bond adapt $\hat{\delta}$ obtained through replacement from the estimator $\hat{W} = \varphi^{-1}$ on:

$$\hat{\Psi}^{-1=N^{-1}}\sum_{i=1}^{N}\hat{q}\ \hat{q}'_i\hat{\varphi}'_{i,-1}Z_{sys}$$

As a result, a *two-step efficient system estimator* can be generated, as shown in equation 5:

$$\hat{\delta} = \left[\left(N^{-1}\sum_{i=1}^{N}\varphi'_{i,-1}Z_{sys}\right)\hat{\Psi}^{-1}\left(N^{-1}\sum_{i-1}^{N}Z'_{sys}\varphi_{I-1}\right)\right]^{-1}$$
$$\left[\left(N^{-1}\sum_{i=1}^{N}\varphi'_{i,-1}Z_{sys}\right)\hat{\Psi}^{-1}\sum_{i=1}^{N}Z'_{sys}\ q_i\right]$$

The above-discussed *two-step efficient system estimator* yields greater effectiveness in estimation outcomes compared with the *one-step efficient system estimator.*

The process of estimating the coefficients for intricate econometric models using the Arellano-Bond generalized method of moments (GMM) assessment using data that is accessible. This allows the GMM model to help comprehend the connection between multiple parameters and how they affect the outcome, which may assist with decision-making processes.

Result and Discussion
Estimasi Model Regresi Data Panel Dinamis
This study compares the first-difference GMM and system GMM approaches for dynamic panel data regression estimation. The intercept and slope values for each independent variable calculated using the first-difference GMM and system GMM approaches are shown in the table below.

Table.1 FD-GMM Arellano-Bond Model

Predictor	Coefficient	Standart error	Z	P-Value
POV L1.	0.00000000896	0.0000000452	0.20	0.843
IPM	-0.0798176	0.3552985	-0.22	0.822
JP	-0.8715838	3.859787	-0.23	0.821
JAK	-0.000000418	0.0000000532	-0.80	0.425
UMR	-0.000000271	0.000000454	-0.60	0.550
KRT	-0.00000000143	0.00000000537	-0.27	0.790
TPT	-0.8260852	0.1396161	-5.92	0.000
PMA	0.0003779	0.0003212	1.18	0.239

EXP	-0.1768614	0.1758201	-1.01	0.314
IMP	1	0.000000446	0.00000022	0.000

Source: processed data (2023)

The intercept and slope values for each exogenous variable using the FD-GMM approach model are shown in table.1.

Tabel.2 Model SYS-GMM Blundell and Bond

Predictor	Coefficient	Standart error	Z	P-value
POV L1.	0.000000338	0.000000263	1.28	0.199
IPM	0.1442297	0.1448081	1.00	0.319
JP	1.694976	1.134243	1.49	0.135
JAK	-0.000000044	0.000000374	-1.18	0.239
UMR	-0.000000689	0.00000433	-1.59	0.111
KRT	0.000000489	0.000000543	0.09	0.928
TPT	-0.6009039	0.1223426	-4.91	0.000
PMA	0.0007572	0.00005776	1.31	0.190
EXPr	-0.6265283	0.2985689	-2.10	0.036
MPr	1.000001	0.000000473	2.10	0.000

Source: Processed Data (2023)

The intercept and slope values for each exogenous variable are calculated using the SYS-GMM approach model in table.2.

Dynamic Panel Data Regression Model Spesification Test

The Arellano-Bond and Sargan tests were used for model spesification, as shown below;

Arellano-Bond Test

Table.3 Arellano-Bond Spesification Test

Model	Statistik Value	P-value
FD-GMM	-1.1117	0.1707
SYS-GMM	-1.1052	0.2691

Source: Processed Data (2023)

The fluid panel data regression model employs the Arellano-Bond test to ascertain and validate the consistency of the estimation findings. This indicates whether or not there is a relationship between the remaining components and other residual components. The way the examination is run is by examining the second order p-value with (α) = 5%, and if the p-value is greater than or 5%, there is no autocorrelation. Based on the Arellano-Bond test results, the second order p-value on FD-GMM is 0.1707, indicating that there is no autocorrelation on FD-GMM. In contrast, SYS-GMM's second order p-value of 0.2691 demonstrates that the framework is devoid of synchronization.

Sargan Test

Table.4 Sargan Test

Model	Statistic Value	P-Value
FD-GMM	2.420312	1.0000
SYS-GMM	6.960213	1.0000

Source: Processed Data (2023)

A Sargan test is necessary for the flexible regression panel data model to determine the reliability of the instrumental parameters that were included. The Sargan test is carried out by comparing probability values and significance level values (α) = 5% if p-value > alpha, then there is

a valid instrument variable. The likelihood ratio for FD-GMM and SYS-GMM is 1.0000, which indicates that the value of probability is above the significance level value of α = 5%, indicating that the tested variables are not experiencing autocorrelation, according to the outcome of the Sargan test in the above table. It can be said that the Sargan test for FD-GMM and SYS-GMM can be fulfilled or declared valid.

Unbiased Estimation Test

Table.5 Unbiased Parameter Estimation

Predictor	FEM	FD-GMM	SYS-GMM	PLS
POV L1.	0.5683	0.1671	0.3383	0.2835

Source: Processed Data (2023)

According to the table, the FD-GMM model's coefficient value is between the FEM and PLS models, but it is less than the FEM and PLS models' coefficients with a dependent variable lag value of 0.1671. This means that the FD-GMM model cannot be met in an unbiased test and suffers from bias. The Sys-GMM coefficient value is greater than the FD-GMM coefficient value, which is intermediate between the FEM and PLS models. Thus, the SyS-gmm model with a dependent variable *lag* value of 0.3383 meets the criteria for unbiasedness.

Selection Of Dynamic Panel Data Models

In light of the hypothesis test findings, which are shown in the table below, the optimal model is selected based on the table below.

Table.6 Summary of Test Result

Criteria	FD-GMM	SYS-GMM
Sargan Test	Fulfailled	Fulfailled
Arellano-Bond Test	Fulfailled	Fulfailled
Unbiased	Not Fulfailled	Fulfailled

Source: Processed Data (2023)

According to table.6, the best model with the best model test result is the SYS-GMM model because all assumption test criteria are met.

Regression Elasticity Coefficient

Table.7 Test Long Term And Short Term Parameters

Predictor	Short-Term Elasticity Coefficient	P value	Long-Term Elasticity Coefficient	P value
POV	-	-	-	-
IPM	0.1442297	0.319	-0.0219491	0.734
JP	1.694976	0.135	1.694976	0.135
JAK	-0.000000044	0.239	-0.000000855	0.319
UMR	-0.000000689	0.111	-0.000000964	0.099
KRT	-0.000000000486	0.928	-0.00000000295	0.281
TPT	-0.6009039	0.000	-0.7705214	0.000
PMA	0.0007572	0.190	0.0009167	0.069
Ekspor	-0.6265283	0.026	-0.6265285	0.036
Impor	1.000001	0.000	1.000001	0.000

Source: Processed Data (2023)

Two steps of SYS-GMM model estimate—short-term prediction and long-term prediction—are established according to the information's processing findings.

The index of human development variable has a short-term elastic value of 0.1442297 and a p-value of 0.319, according to the test findings displayed in the above table. In the meantime, the long-term elasticity is -0.0219491 and the p value is 0.734. To put it another way, a 1% increase in the index of human development lowers poverty but does not have a statistically significant negative impact on it because the p-value is higher than the significance level (α) = 5% both in the short and long term. This occurs because the Human Development Index remains low, hampered development that will not be guaranteed for the following year and will be affected in a specific year, implying that there is no short-term impact elasticity, but no long-term effect or impact on the Human Development Index itself.

The population's short-term elasticity is 1.694976 with a p-value of 0.135, while the long-term elasticity is 1.694976 with a p-value of 0.135. This suggests that 1% of the population is added annually. Because the long-term and short-term p-values are both higher than the significance level (α) = 5%, it just slightly reduces poverty. This occurs because the population is currently increasing to the point where the current level of employment is insufficient and will occur at the next stage, implying that there is no short-term effect and no long-term effect on poverty.

The number of workers has a short-term elasticity of -0.000000044 and a p-value of 0.239. While the long-term elasticity value is -0.000000855, and the p-value is 0.319, it can be concluded that the variable workforce grows by 1% per year. As a result, poverty declines; nevertheless, since the p-value is higher than the significance level in both the short and long terms, poverty is not significantly impacted negatively. (α) equals five percent. This is due to a decrease in the labor force and a lack of job opportunities, which will not be guaranteed in the following year, implying that there will be no short-term or long-term impact on poverty.

Short-term elasticity of -0.000000689 and p-value of 0.111. The long-term elasticity value, on the other hand, is -0.000000964 with a p-value of 0.099. It has been determined that the Regional Minimum Wage increases by 1% each year. which will reduce poverty, but has a minor negative impact on poverty because the p-value in the short and long term is greater than the significance level (α) = 5%. This is because the Regional Minimum Wage remains insufficient in comparison to the existing workforce, so it will not be guaranteed in the following year and will have an impact in certain years. This means that there are no immediate or long-term effects on poverty.

The short-term elasticity of household consumption is -0.000000000486 and the p-value is 0.928. The long-term elasticity value is -0.00000000295, and the p-value is 0.281, implying that every year, household consumption increases by 1%, increasing poverty. However, there is no significant negative effect on poverty because the p-value in both short-term and long-term elasticity is greater than the significance level alpha (α) = 5%. This is due to the relatively high level of expenditure in a group of households, which is not commensurate with the level of income obtained, so that the level of household consumption is not in line with the level of income, which will not guarantee the following year. This means that there is no immediate or long-term impact on poverty levels.

The p-value for the current rate of unemployment is 0.000, and its short-term value is -0.6009039. This then demonstrates that open joblessness rises by 1% annually and hence increases poverty, the long-term value is -0.7705214 with a p-value of 0.000. The short-term and long-term p-values are 1 level of significance alpha, which has a significant negative impact on poverty levels. Because of the large population and limited employment opportunities, the published unemployment rate continues to rise year after year, and the published unemployment rate is now rising. As a result, the TPT level is guaranteed for next year, with short-term and long-term effects on poverty rates. As a result, this is consistent with research by (Pertiwi & Purnomo, 2022). This clarifies the reason why there is a notable beneficial relationship between the open jobless rate and the impoverished rate in Lampung Province.

The short-term elasticity value is 0.0007572 and the p-value is 0.069 when Foreign Models are embedded, while the long-term elasticity value is 0.0009167 and the p-value is 0.069. It is concluded that poverty is decreased by a 1% annual increase in FDI. It does not, however, significantly reduce poverty because the p-value in the immediate and distant futures is higher than the significance

level alpha of 5%. This happens because, generally speaking, foreign investment significantly lowers poverty rates. However, according to limited research, foreign investment does not have an impact on poverty, consequently there is no assurance that it won't have a direct or indirect impact on poverty levels over the next year.

Exports are expected to be worth -0.6265283 in the immediate future and -0.6265285 in the long haul, both with a p-value of 0.026. It can be concluded that if exports increase by 1% per year, poverty will decrease. Poverty may be significantly impacted negatively because the p-value is substantial level alpha 5% in the short term as well as the long term. As a consequence of export diversification is linked to the export product innovation process, which is part of the strategy for increasing economic growth and efforts to reduce poverty levels in a region, so that at the export level, it will guarantee at the next stage short-term and long-term impacts on poverty. This assertion is supported by research (Edriss & Chiunda, 2017) state that exports can influence the level of poverty in the country of Malawi.

According to this study, imports have an ongoing elasticity value of 1.000001 and a p-value of 0.000, while their short-term flexibility value is 1.000001. As a result, the Import variable grows by 1% annually and has the potential to significantly reduce poverty because the p-value for both short- and long-term elasticity is 5%. This occurs because the rate of increase in prices in import activities is increasing and becoming more diverse, causing people's purchasing power to decrease and making it difficult to obtain or produce goods and services. Furthermore, this will ensure that it has an impact in the following year, both in the short and long term.

Conclusion

We can infer from the information provided in the analysis and discussion of this study that widespread unemployment has a substantial detrimental effect on the prevalence of poverty between 2013 and 2022. These findings suggest that the level of open unemployment is rising, which is insufficient to balance the number of available jobs. The open jobless rate's and the impoverished rate's correlation in the short and long term is significantly inversely related. From 2013 to 2022, exports have a significant negative impact on poverty levelsThese findings can be used to demonstrate that as exports increase, poverty levels decrease. Export elasticity and poverty levels have a significant negative relationship in the short and long term. Between 2013 to 2022, imports have a significant positive effect on poverty levels. These results can be used to show that poverty will increase in proportion to the value of imports. Additionally, there is a definite favorable association between import elasticity and the level of poverty over the short and long terms.

Many economic parameters are fluid, meaning that their value can be affected by other factors as well as by their value in past times. For this reason, Arellano-Bond is implemented based on the bond's value at the moment. Using the Fixed Effect Model, the results of this analysis show that the unemployment variable, minimum wage, can influence poverty alleviation. Several exogenous variables were found to influence the poverty level in this study. The research has a limitation in that it only has ten variables, seven of which have no effect and only three of which have an effect. This can provide suggestions for the Indonesian government to make breakthroughs in decision making to reduce poverty levels and improve people's welfare.

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