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The Roles of Export of Coffee Commodity and Macroeconomics Factors on Unemployment in Indonesia

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ABSTRACT

Coffee as the second largest agricultural commodity export has contributed to the economies of various countries, including Indonesia. In addition to looking at the role of coffee commodity exports, an analysis of macroeconomic factors' impact on Indonesia's unemployment rate is also analyzed. Because it is known that the unemployment rate is not only caused by one sector but some things influence it, including macroeconomic factors. This study analyzes the role of coffee commodity exports and macroeconomic factors, including GDP, inflation, and interest rates, on Indonesia's unemployment rate. The data used in this study is interpolated secondary data for the period 2000 to 2021. The estimation method used in this study is Robust Least Square (ROBUSTLS) which will then be estimated again using the Autoregressive Distributed Lag (ARDL) method as a robustness test. The estimation results using the ROBUSTLS method prove that coffee commodity exports and macroeconomic factors significantly affect Indonesia's unemployment rate in aggregate. This form of influence is negative for coffee commodity exports (ExpCof), gross domestic product (GDP), and interest rate (IR). While inflation (Inf) has a positive impact on the unemployment rate (Ump). These findings are reinforced by the estimation results using the ARDL method with the result that ExpCof, GDP, and Inf have a significant relationship to Ump, while Inf is not significant as the findings from the estimation results using the ROBUSTLS method.

Keywords: Export, Coffee commodity, Macroeconomics factors, Unemployment

INTRODUCTION

Coffee as the second largest agricultural commodity export has contributed to the economies of various countries, including Indonesia (Baroh et al., 2014). Even history records that coffee has a fairly central role in the economic and political development of countries in the world. Through the development of coffee commodities, various countries can develop infrastructure, technology, and employment opportunities. However, history has also recorded some dark things behind the industrialization of this commodity, such as the forced relocation of millions of people from Africa as slaves who were intended to manage coffee plantations in Latin America (Tuchscherer, 2009). This shows the high interest in this commodity in the past.

The beginning of the use of coffee as a drink was carried out by the people of the Middle East in the 15th century. In Souza (2008) it is explained that coffee originates from Ethiopia and was brought to Yemen via the Red Sea trade route. This commodity was first exported to Yemen by a trader from Somalia. History records that coffee is regularly exported from Mokha to Yemen to reach two-thirds of the total production in that country (Gavin, 1975).

In the 16th century, coffee commodities spread throughout the Middle East, Persia, and North Africa, then spread to Europe, Indonesia, and America (Meyers, 2005; Wild, 2004). The circulation of coffee commodities in exports as one of the drivers of the economic sector in agriculture is still ongoing in these countries.

Buying and selling coffee continues to grow in various types of markets. Even in America, coffee is sold in commodity and fund markets. Grade 3 Arabica coffee is traded on the New York Mercantile Exchange, while high and low-grade Arabica coffee is sold through other channels. Meanwhile, Robusta coffee is traded on the London International Financial Futures and Options Exchange. In addition, for developing countries, coffee is the mainstay of exports to support the country's economy. One of these countries is Indonesia.

The coffee commodity has a central role in the Indonesian economy, especially for non-oil and gas foreign exchange sources (Drajat et al., 2007). It is even noted that Indonesia is the third largest coffee exporter after Brazil and Colombia, and the third coffee producer following Brazil and Vietnam (Baroh et al., 2014). This shows the concentration of the Indonesian state in the export of coffee commodities. This concentration can be seen from the Indonesian coffee commodity export data as presented in Figure 1.
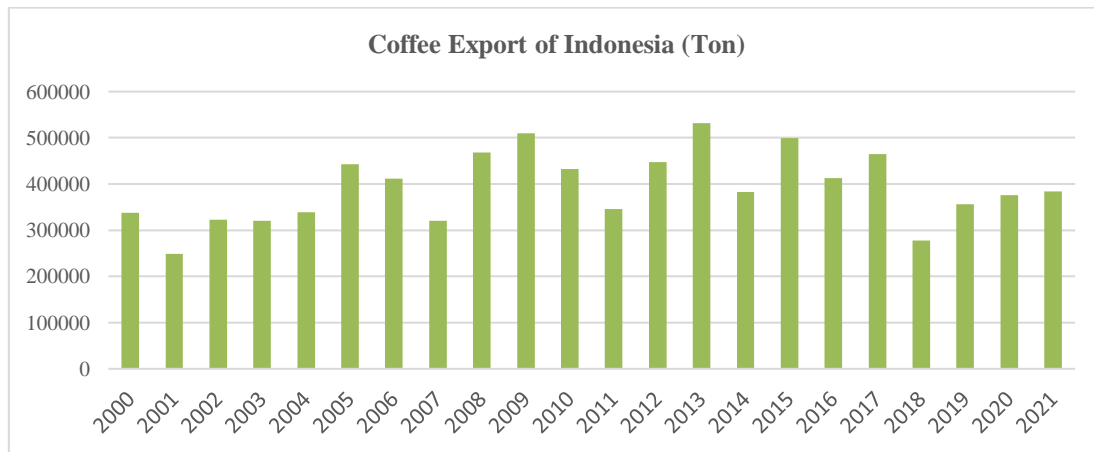

Figure 1. Indonesian Coffee Commodity Export Statistics
Source: BPS (2022)

In addition to the data presented in Figure 1, Indonesia's coffee exports have been shown to grow progressively based on the analysis results from Fitriani et al. (2021). There has been a development in the destination countries for coffee exports from Indonesia broadly and price integration between the Indonesian coffee market and the global market, which in this study is the London terminal. In brief, Fitriani et al. (2021) proves that the Indonesian coffee market has significant integration with the global coffee market in the long term. The increase in coffee export volume in Indonesia is also influenced by production levels, domestic and world coffee prices, and the prevailing exchange rate (Prajanti et al., 2020).

Exports of these commodities also play a role in the economy. Not only in Indonesia, but in various countries. As proven by Murindahabi et al. (2019) who analyzed the impact of coffee exports on economic growth from 32 coffee exporting countries in the world using the Autoregressive Distributed Lag (ARDL) method. The findings in this study indicate a significant positive effect on economic growth. Among the 32 countries, Indonesia is one of the research objects. It is empirically proven that coffee exports have an effect on economic growth in Indonesia. In the case of this research, the role of coffee

commodity exports will be analyzed in the unemployment rate in Indonesia. When traced, economic growth plays a role in reducing the unemployment rate in Indonesia. This has been tested by several studies, including Suryono et al. (2020) which proves that there is a negative relationship between economic growth and unemployment in Indonesia.

These findings show an indirect relationship between coffee exports and reductions in unemployment in Indonesia. Because referring to the research of Murindahabi et al. (2019) and Suryono et al. (2020) that coffee exports have an effect on Indonesia's economic growth, and in the path of economic growth it has a role in reducing unemployment in Indonesia. Therefore, it is interesting to study the role of coffee exports in reducing the unemployment rate in Indonesia. In a more general case, exports have a significant positive impact on unemployment in the sub-sample of (1) developed countries consisting of; Australia, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Iceland, Ireland, Israel, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Slovakia, Slovenia, Spain, Sweden, Switzerland and England, (2) low industrial ratio countries consisting of; Australia, Belgium, Brazil, Bulgaria, Costa Rica, Croatia, Cyprus, Denmark, Estonia, Finland, France, Greece, Hong Kong, Israel, Italy, Latvia, Luxembourg, Malta, Netherlands, Slovenia, Spain, Switzerland, United Kingdom and Uruguay, as well as (3) high service ratio countries consisting of; Austria, Canada, Germany, Iceland, Japan, Lithuania, Norway, South Africa and Sweden. Meanwhile, the opposite occurred in developing countries, among which the samples were Albania, Argentina, Bolivia, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Croatia, Dominican Republic, Ecuador, Egypt, El Salvador, Guatemala, Honduras, Hungary, Indonesia, Macedonia, Malaysia, Mexico, Republic of Moldova, Mongolia, Pakistan, Paraguay, Peru, Poland, Romania, Russian Federation, South Africa, Thailand, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Uruguay and Vietnam. This was proven in the research of Jin et al. (2019). Among the sub-samples analyzed there is Indonesia as one of the research objects. This research proves that exports have a role in reducing the unemployment rate in Indonesia. In contrast to the results of previous research in 2017 which stated that exports in Indonesia did not reduce the unemployment rate as did Yolanda (2017). So this is interesting to study especially in a more specific case, namely the export of coffee commodities in Indonesia. Therefore, this research examines the role of coffee commodity exports on the unemployment rate in Indonesia.

In addition to looking at the role of coffee commodity exports, an analysis of the impact of macroeconomic factors on the unemployment rate in Indonesia is also analyzed. Because it is known that the unemployment rate is not only caused by one sector, but there are also things that influence it, including macroeconomic factors. As explained in Vladi & Hysa (2019), that macroeconomic factors and the unemployment rate have a significant relationship. Where in Vladi & Hysa's research (2019), these macroeconomic factors are in the form of inflation, interest rates, GDP and FDI. With research objects in Western Balkan countries, such as Albania, Serbia, Macedonia, Montenegro, Bosnia-Herzegovina, and Kosovo.

As for research that discusses similar matters with different research objects, namely India. The research was compiled by Sahoo & Sahoo (2019). The variables used in this study are GDP, CPI, literacy rate, and gross fixed capital formation. Sahoo & Sahoo (2019) proved that all of these macroeconomic factor variables have a long-term relationship and can predict the unemployment rate in India. To overcome this problem, this research has implications for the Indian government to create jobs in order to reduce the unemployment rate. In addition, Sahoo & Sahoo (2019) also suggest that the government facilitate business in the agricultural sector with modern equipment to attract the interest of the Indian people to develop the agricultural sector. For West Africa researched by Folawewo & Adeboje (2017). The research was structured with Okun's

legal framework and the Phillips Curve. The macroeconomic factors studied in Folawewo & Adeboje (2017) are GDP, inflation, labor productivity, and FDI. The findings are shown separately. Where GDP and FDI have no significant impact on the unemployment rate in West Africa. Inflation has proven to have a significant positive impact on the unemployment rate in West Africa.

In the current research, the macroeconomic factor variables that will be examined are GDP, inflation, and interest rates as was done by previous studies. This research is expected to be able to identify whether there is a correlation between the volume of coffee exports and the unemployment rate and to provide information on macroeconomic factors that influence the unemployment rate so that it can assist the government and policy makers, and formulate effective strategies in overcoming the problem of unemployment in Indonesia. In addition, this research is expected to contribute to the academic literature on unemployment and the coffee commodity can be a reference for future researchers, as well as to understand the complexity of the problem of unemployment and the factors that influence it.

METHODS

Data Resources

The data in this study is time series data spread from the period 2000 to 2021 which is sourced from the official website of the Central Bureau of Statistics of the Republic of Indonesia. Originally, this data is annual data, however, it is interpolated from annual to monthly data for the needs of econometric estimation. Likewise with data on macroeconomic factor variables represented by GDP, inflation, and interest rates.. In this analysis, the data will also be interpolated for the needs of econometric analysis into monthly data.

Robust Least Square (ROBUSTLS)

Linear regression is an estimation method used to predict the values of the dependent variable (Y) by providing predictive or independent variables (X1, X2, X3, X..., Xt). Estimation in linear regression using OLS as an econometric tool. So that it can estimate the relationship between the independent variables and the dependent variable (Schmidheiny, 2022). In this method, attempts are made to calculate the variation of the independent variables in the dependent variable synchronously.

The model in this linear regression assumes a linear relationship between the dependent variable (Y) and a set of independent variables (X1, X.., Xt). The first regressor xi0 = 1 is a constant unless otherwise specified. The regression formulation in this study consists of 4 independent variables and 1 dependent variable.

1. X1 is the interpretation variable for export of coffee commodity.
2. X2 is the interpretation variable for Gross Domestic Product (GDP).
3. X3 is the interpretation variable for inflation.
4. X4 is the interpretation variable for interest rate.

The following is a formulation derived from the above research framework;

$$Ump = \alpha + \beta_1 ExpCof + \beta_2 GDP + \beta_2 Inf + \beta_3 IR + e \ \dots\dots\dots\dots\dots\dots\dots\dots \ (1)$$

However, for this study, the OLS method used is a development of linear regression, namely robust least squares (ROBUSTLS). Although the modeling in this method is not

different, there are specific specifications for this method compared to simple or multiple linear regression. In other OLS-based methods, such as simple or multiple linear regression, there are several norms that must be met before carrying out a regression test. But in ROBUSTLS, the least squares estimator is more sensitive to the existence of observations. Simple or multiple linear regression methods have sensitivity to outlier observations which result in inaccurate coefficient estimates. Whereas ROBUSTLS refers to various regression methods designed to be robust, or less sensitive, to outliers by offering three different methods for strong least squares: M-estimation (Huber, 1973), S-estimation (Rousseeuw & Yohai, 1984), and MM-estimation (Yohai, 1987). But in this study, the estimation method used is MM. The MM method was chosen because it is a combination of the M and S methods, so it is considered to overcome outliers in both the dependent and independent variables.

Autoregressive Distributed Lag (ARDL)

Autoregressive distributed lag or called ARDL is a method introduced by Pesaran & Shin (1995) which is used in a single dynamic regression equation. And it has the job of analyzing time series data in a long run econometrics approach. This method is suitable for estimating variable cointegration. It can capture the dynamic relationship of variables in the presence of lag. So that it will lead to flexibility in the different variable lags in endogenous and exogenous variables. The model can also analyze the effect of exogenous variables on each lag in different time intervals Ibrahim & Indra (2021).

This research will look at the long-term and short-term effects on the variables analyzed, namely coffee commodity exports and the unemployment rate in Indonesia. So, to analyze the long-term relationship, an appropriate method is needed. In this study, to determine the long-term effect of these variables, the ARDL method was used. ARDL itself is a method used in cases where the variable in the long-term interest relationship is a stationary trend, common practice is to de-trend the series and model the de-trend series as a stationary distributed lag or autoregressive distributed lag model (ARDL). Estimation and inference regarding the long-term properties of the model are then carried out using standard asymptotic normal theory. However, traditional ARDL is considered no longer effective considering the long-term relationship analysis between variable I(1) and its basic premise, thus proving that with variable I(1), the traditional ARDL approach can no longer be applied. So in this study, the ARDL method applied is the ARDL model as developed in Varquez et al. (2012) and also applied in Ibrahim & Indra (2021).

Based on this, it is known that the ARDL model in this study is as follows;

$$\boldsymbol{LUmp^{i,t} = \alpha + \sum_{j=1}^{p1} \beta_{i,j} LUmp_{i=t,j} + \sum_{j=0}^{q1} \emptyset_{1j} lnExCof_{t-j} + \sum_{j=0}^{q2} \emptyset_{2j} lnMF_{t-j}} \dots (2)$$

The definition of model (1) is Lumpi,t means the natural logarithm of the unemployment rate derived from the estimate $ln\left[\frac{Ump_{i,t}}{1-Ump_{i,t}}\right]$. While lnExCof is the natural logarithm of Indonesian coffee commodity export data, so is lnMF which is the natural logarithm of macroeconomics factors data in Indonesia. Then the cointegration of each exogenous variable in the long term and short term is determined, and the representative variables of inclusive growth are summed with the estimated coefficient value ($\emptyset i$) of each exogenous variable. Then the chain rule will be used to determine the cointegration of the shock of each exogenous variable due to the untransformed unemployment rate.

By a specification of macroeconomics factors, as follows;

$$\sum_{j=0}^{q2} \emptyset_{2j} lnMF_{t-j} = \sum_{j=0}^{q1} \emptyset_{1j} lnGDP_{t-j}, \sum_{j=0}^{q2} \emptyset_{2j} lnInf_{t-j}, \sum_{j=0}^{q3} \emptyset_{3j} lnIR_{t-j}$$

Research Framework & Hypothesis

This research will examine the role of coffee commodity exports and macroeconomic factors on the unemployment rate in Indonesia. This research is a development of previous studies such as Jin et al. (2019), Yolanda (2017), Sahoo & Sahoo (2019), Vladi & Hysa (2019), Folawewo & Adeboje (2017) with the Indonesia as a locus. The framework for this research is as follows;
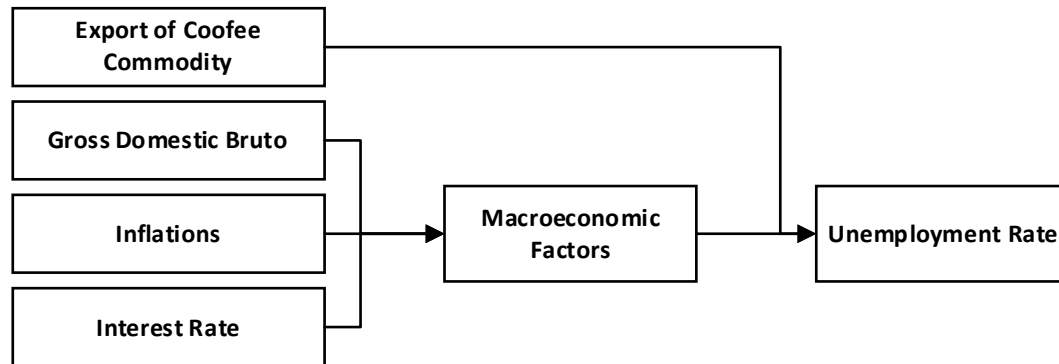

Figure 2. Research Framework

Referring to Figure 2, it is known that this study will analyze the role of coffee commodity exports and macroeconomic factors consisting of GDP, inflation, interest rates and FDI on the unemployment rate in Indonesia. So that there are 6 hypotheses, namely 4 hypotheses (0) and hypotheses (1) partially and 1 hypothesis (0) and hypotheses (1) in aggregate from the independent variables studied on the unemployment rate, as follows;

Hypotheses for patial analysis

1. H0(1); export of coffee commodity has no influence on unemployment rate.
2. H0(2); GDP has no influence on unemployment rate.
3. H0(3); Inflation has no influence on unemployment rate.
4. H0(4); Interest rate has no influence on unemployment rate.

Hypotheses for aggregate analysis, H0(5); export of coffee commodity, GDP, inflation, interest rates and FDI has no influence on unemployment rate. While H1 means the opposite, that is, it affects the unemployment rate in cases (1, 2, 3, 4 and 5).

RESULTS AND DISCUSSION

Result of Robust Least Square (ROBUSTLS) Estimation

Based on the estimation results using E-views 10, the ROBUSTLS test results are obtained as presented in table 1.

Table 1. Result of ROBUSTLS Estimation

Dependent Variable: UMP
Method: Robust Least Squares
Date: 06/11/23   Time: 10:26
Sample: 2000M01 2021M12
Included observations: 264
Method: MM-estimation
S settings: tuning= 1.547645, breakdown=0.5, trials=200, subsmpl=5,
    refine=2, compare=5

M settings: weight=Bisquare, tuning=4.684
Random number generator: rng=kn, seed=1200537362
Huber Type I Standard Errors & Covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	1.853654	0.442870	4.185551	0.0000
EXPCOF	-0.158769	0.401571	-0.395369	0.6926
GDP	-0.948075	0.136989	-6.920822	0.0000
INF	0.231593	0.030429	7.610985	0.0000
IR	-0.013471	0.019616	-0.686702	0.4923

Robust Statistics				
R-squared	0.515727	Adjusted R-squared		0.508248
Rw-squared	0.644329	Adjust Rw-squared		0.644329
Akaike info criterion	303.2299	Schwarz criterion		321.3017
Deviance	2.268738	Scale		0.087932
Rn-squared statistic	320.1404	Prob(Rn-squared stat.)		0.000000

Non-robust Statistics				
Mean dependent var	0.618447	S.D. dependent var		0.158427
S.E. of regression	0.103006	Sum squared resid		2.748052

Table 1 shows various settings for ROBUSTLS estimation. It is known that the S-tunning value in the findings above is 1.547645 with a breakdown value of 0.1 from the results of 200 S-estimation trials. The initial coefficients were obtained from the initial random sample size of 5 and 2 pre-refinement steps. The final comparison involves refining up to 5 sets of scale estimates and choosing the smallest scale estimate.

After performing an S-estimation (scale), an M-estimation with a scale is performed using a parameter setting of 4,684. The random number generator used to obtain the random subsample, and the method used to obtain the estimated covariance coefficients. Despite the differences in the robustness estimation method, the relative efficiency setting, and the computational standard error method, the results from the MM Estimation and the estimation are similar. Estimates show statistically significant coefficients of GDP and Inf around --0.948075(GDP) and 0.231593 (Inf). Whereas the ExpCof and IR coefficients are not significant with statistical values -0.158769(ExpCof) and -0.013471(IR).

Based on these findings, the hypothesis is concluded that H0(1) and H0(4) are accepted, while H0(2) and H0(3) are rejected. Meanwhile, in aggregate H0(5) is rejected or ExpCof, GDP, Inf, and IR in aggregate have an effect on the unemployment rate as evidenced by the findings which show a significant influence of all independent variables as evidenced by the Prob(Rn-squared stat.) value of $0.00 <$ critical point 0.1 with a coefficient value of R-Square 0.515727. In addition, the Adjusted R-Square value in this finding is 0.508248 with the S.E. of regression 0.103006 which is $<$ the standard deviation value of the response variable shown in SD. dependent var of 0.158427 proves the regression model is valid as a predictor model.

Therefore, the model is derived from the formulation of the hypothesis and the findings are as follows;

$$Ump = 1.853654 - 0.158769 ExpCof - 0.948075 GDP + 0.231593 Inf - 0.013471 IR + 0.1e$$

Result of Robustness Test Using ARDL

The findings on the ROBUSTLS estimation have proven the hypothesis partially and in the aggregate. However, at this stage, a robust test was carried out to strengthen the findings using the ARDL method. ARDL method itself, has a several condition to fulfilled before estimated. The following is the estimation result of ARDL per step;
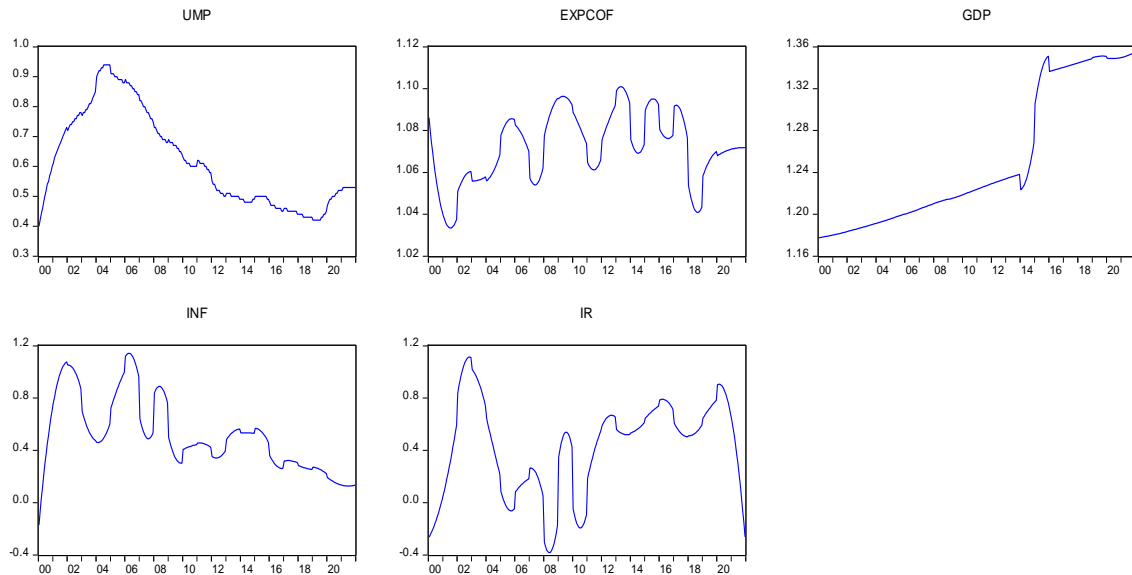
1. Data Summary

Figure 3. Data Summary

Figure 3 is a data summary of the variables analyzed in this study. The main independent variable in this study is the export of coffee commodities indicated by the ExpCof label which shows a horizontal trend from 2000 to 2021. Meanwhile, the unemployment rate variable (Ump) has a downward trend such as inflation (Inf) and interest rate (IR). Meanwhile, the trend for gross domestic product (GDP) is upward.

2. Unit Root Test to Test An Integration Orders

For the first estimation step, it is necessary to carry out a unit root test to ensure there are no integrated series of order 2 or higher. Where in this study, the estimation method used in the unit root test was Augmented Dickey-Fuller (ADF) with the results as shown in table 2.

Table 2. Result of Unit Root Test

Series	Prob. (Level)	Lag (Level)	Prob. (1st Difference)	Lag (1st Difference)
Ump	0.6347	4	0.0026	3
ExpCof	0.0979	14	0.0000	12
GDP	0.9370	14	0.0010	13
Inf	0.4482	14	0.0000	13
IR	0.1481	14	0.0023	13

Based on table 2 it is known that the prob. stationary at the 1st difference. Therefore, each series in this analysis is I(0) and I(1). It was also concluded that based on the results of the unit root test on the first difference, it was stated that there was no unit root problem in the model. So that the analysis can proceed to the next stage. The specification of the lag to be used in the ARDL estimation is carried out according to the lag at the stationarity of each variable at the first difference level. So there is no search for optimum lag or lag automation in this analysis.

3. Serial Correlation LM Test Partial

Table 3. Result of Serial Correlation LM Test

	F-Statistic	Obs*R-squared	Prob. F	Prob. Chi-Square
ExpCof	7.725271	12.38270	0.1606	0.0620
GDP	132.6194	20.52941	0.4064	0.4012
Inf	0.645208	1.399141	0.5357	0.4968
IR	12.15817	12.35006	0.9420	0.2102

Based on the results of the Serial Correlation LM Test, it is known that the Prob. F on each variable > critical point 0.1. So it is concluded that the residuals in each ExpCof to Ump, GDP to Ump, Inf to Ump, and IR to Ump models are not correlated sequentially.

4. Heteroskedasticity Test

Table 4. Result of Heteroskedasticity Test

	F-Statistic	Obs*R-squared	Scaled Explained SS	Prob. F	Prob. Chi-Square Obs*R-Squared	Prob. Chi-Square Scaled Explained SS
ExpCof	0.449504	0.483586	0.240600	0.5102	0.4868	0.6238
GDP	0.985306	5.936586	68.51486	0.4356	0.4303	0.0000
Inf	2.450285	9.624104	102.4681	0.4666	0.4737	0.0000
IR	1.324414	9.225972	118.9416	0.2390	0.2368	0.0000

Prob Value Chi-Square Obs*R-Squared in table 4 is known > critical point 0.1 which means there is no heteroscedasticity problem or rejects the hypothesis that the residue in each analyzed variable is homoscedasticity. Therefore, it is stated that the model has passed the requirements analysis test using ARDL. Therefore, this research can be continued to the Long Run Form and Bounds Test to see the relationship between the variables analyzed in the form of coffee commodity exports (ExpCof), gross domestic product (GDP), inflation (Inf), and interest rate (IR). on the unemployment rate (IR) in the case of Indonesia.

5. Long Run Form and Bounds Test

Table 5. Result of F-Bound Test

	F-Statistic Value	
ExpCof to Ump	3.44052	
GDP to Ump	3.20480	
Inf to Ump	5.21878	
IR to Ump	6.98037	
Asymptotic: n=1000		
Signif.	**I(0)**	**I(1)**
10%	3.02	3.51
5%	3.62	4.16
2.5%	4.18	4.79
1%	4.94	5.58

Table 5 shows the various F-statistic values and it is proven that all the variables analyzed have a significant relationship except for the interest rate (IR) to the unemployment rate (Ump). This is evidenced by the statistical f values for each variable analyzed which are between the values I(0) and I(1) with various significance. For coffee commodity exports (ExpCof) and Gross Domestic Product (GDP) are significant at the 10%. The inflation variable (Inf) is significant at the 1%, while the F-statistic value for the interest rate variable (IR) > I(1) means that IR has no significant relationship or role with the unemployment rate (IR) in Indonesia. This finding is in line with the results of the ROBUSTLS test, which means it strengthens the previous findings. Likewise with the other ARDL estimation results which are in line with the findings on the ROBUSTLS estimation test results with differences in the coffee commodity export variable (ExpCof)

which are stated to be significant to Ump on the ARDL test results. However, it is proven that the estimation results using ROBUSTLS are appropriate and are strengthened by the findings of the ARDL test.

CONCLUSION

Based on the findings it was concluded that the role of coffee commodity exports and macroeconomic factors in aggregate is significant to the unemployment rate in Indonesia. That is, changes that occur in the independent variables analyzed affect the unemployment rate.

Partially concluded that coffee commodity exports have a negative influence on the unemployment rate. If the export volume increases, the unemployment rate will decrease, but this effect is not significant. It is assumed that the coffee commodity is not the main concern for the government as an export commodity. So that labor absorption does not occur in this commodity because the planting area and harvest area do not require more labor. What's more, technological developments are added so that there are smartfarming proposals. This is thought to have an impact on employment in the agricultural sector, including coffee.

Therefore, support is needed through government policies specifically for the agricultural sector. To absorb labor in the limited agricultural sector, it is necessary to target increased exports and domestic sales, especially in the coffee commodity sector. Accompanied by the addition of sales value in terms of quality and quantity to the global market. Policies in the financial sector to support the agricultural sector need to be considered as green investment instruments. To support this, inflation and interest rates need to be regulated in such a way that green investment increases, so that the agricultural sector does not experience financial constraints. So that farmers can increase the planting area which has an impact on the harvested area. Where the downstream of this is increased production and sales, which will then be developed to be marketed internationally.

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