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How macroeconomic performance affects farmer's term of trade: Evidence from East Java Province, Indonesia

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ABSTRACT

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Keywords

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JEL Classification E31; J43; O11 This paper attempts to show that causality of the impact of macroeconomic factors in the form of inflation and gross domestic product on the farmer term of trade in East Java Province, Indonesia. This research was carried out over eleven years quarterly, starting from 2010-2021, and was analyzed using the Vector Error Correction Model (VECM). The finding of this study indicated that, in the short and long term, inflation has a negative impact but not a significant effect. A 1% increase in inflation in the current period would have the impact of decreasing the term of trade of farmers by 0.0009% in the future period. This often happens due to the decline in the value of the currency which is mostly caused by speculator buyers who buy products from farmers. Meanwhile, a 1% increase in gross regional domestic product in the current period would have an increase in the farmer term of trade by 0.02% in the next period. This finding shows that inflation cannot be seen as extraordinary, affecting to the farmer's term of trade. Rising inflation can lead to the decreasing level of farmers' welfare due to costs that must be paid by farmers.

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INTRODUCTION

The impact of macroeconomic performance factors on the level of farmers' welfare is questionable in the current modern era. Most of the transition from the agricultural to industrialization era can threaten the existence of the welfare of the farmers (Lee et al., 2020). Agriculture is one of the backbones of the national economy that has been empirically proven to be able to provide extraordinary resilience in 1997-1998 and during the COVID-19 pandemic crisis. It proves that the agriculture, forestry, and fisheries sectors can provide economic stimulus for the national economy (Junaidi & Jannah, 2020). Also, it is hoped that agriculture will continue to have a positive impact on the farmers' welfare. That way, even though the conventional way of life tends to be increasingly abandoned, the existence of farmers in this case is still needed to meet the demand of Indonesian people, the majority of which are main consumer of agricultural commodities, especially rice (Goulet, 2020).

Rice commodity is one of the staple needs for the majority of people in Indonesia (Nelly et al., 2018). The high level of public demand has an impact on the pattern of rice commodity availability. Some people who have a habit of consuming food other than rice might even switch to white rice. This is why rice is considered as the main source of carbohydrates and protein (Hermanto, 2017). In addition, rice also has a

unique social image, people are not easy to stop the habit of consuming rice for their basic needs.

Based on these conditions, the rice commodity has a large influence, especially on the stability of the national economy (Wibowo, 2020). This situation may impact the rice price stability in the market. According to Firdhani & Ulama (2016), an increase in the price of rice by 10%, it will have an impact on increasing the total poverty rate by one percent. This issue will cause a structural impact if not controlled both by creating a fitting policy and by increasing the welfare of farmers to produce maximum agricultural products (Murdy, 2017).

Farmers' welfare can be described in an index of the farmers' term of trade (Wibowo, 2020). Although considered not being able to fully represent farmer welfare, this formula is still used today (Sugiana et al., 2018). According to BPS (2021b), The food crop farmers' term of trade in East Java Province in December 2021 increased by 1.33% from 100.88 to 102.22. This is because the price index received by farmers (It) had a higher increase than the price index paid by farmers (Ib). The index of the price received by farmers (It) increased by 2.14% and the index of the price paid by farmers (Ib) increase when compared to that of December 2020, year on year.

The level of farmer welfare is related to the level of supply of rice commodity, making it very influential to the price stability of rice commodity in East Java (Plummer et al., 2012). The rice commodity is also closely related to the current inflation. Volatility in commodity prices since the early 2000s has led the policymakers to update their policies to pay attention to its effect on inflation (McCormack, 2015). Economic activity is identical to activity in the agricultural sector, because it can describe domestic supply and demand pressures and has a driving effect on inflation (Chopra et al., 2018; Joshi & Acharya, 2011). Agricultural commodities are the main input in the process of mass production of goods. Changes in the price of rice commodity are reflected in the marginal production costs, which are ultimately transmitted to the aggregate price level (Rather et al., 2015)

The term of trade of food crop farmers in general in August 2021 was 101.06 (Table 1). This increased by 3.33% when compared to July 2021, which was 97.81. This happens because the price index received by farmers increased higher than the paid index. The index of prices received by farmers increased by 3.37%, while the index of prices paid by farmers only increased by 0.04%. Whereas, the farmers' term of trade in August 2021 compared to December 2020 decreased by 1.38%. However, when compared year on year, it decreased by 0.87%.

The instability of rice prices does not always have impact on the welfare of rice farmers (Just, 1974). Identical poverty levels pinned on farmers make this a separate question, economic growth for whom? (Adejumo & Adejumo, 2019) This has become a debate when economic growth continues to increase annually but the welfare level of farmers still tends to be low. This is especially the case for rice farmers in some areas, including one in East Java Province.

Economic growth which is described in the figures for the Gross Regional Domestic Product of East Java Province must also be in favor of the welfare of rice farmers (Turok & McGranahan, 2019) so that the increase in economic growth provides an increase in the level of welfare of rice farmers. Through various matters related to input factors in the commodity sector, it is hoped that rice farming will not burden farmers to continue to produce rice sustainably. So, the hope is that in the industrial era, which tends to be abandoned, the agricultural sector can still exist and provide a level of welfare for farmers, especially in East Java Province.

		Period				Change		
Term of Trade					Aug'21 to	Aug'21 to	Aug'21 to	
	Dec'20	Aug'20	Jul'21	Aug'21	Des'20	Aug'20	Jul'21	
					(cum)	(yoy)	(mtm)	
						%		
Accepted Index (It)	110.33	108.45	106.37	109.96	-0.33	1.39	3.37	
Paid Index (lb)	107.65	106.37	108.76	108.80	1.07	2.28	0.04	
Farmer term of trade (TOT)	102.48	101.95	97.35	101.06	-1.38	-0.87	3.33	

Table 1. Farmer Term of Trade in East Java Province, 2020-2021

Source: BPS (2021a)

The purpose of this article is to look at the impact and influence of macroeconomic variables on the level of farmers' welfare. It inspects whether the current economic growth has reflected an alignment with the level of welfare of the farmers, as well as how the impact occurs in future conditions both in the short and long term. Of course, this is very interesting to examine considering the existence of rice commodities which will continue to be needed along with the increasing population.

The level of welfare of farmers' is reflected in the level of the farmers' term of trade. Farmers' term of trade is a main indicator of the approach to the level of farmer welfare (BPS, 2021a). Farmers' term of trade in this case can be interpreted as a comparison between the index of prices received by farmers (lt) with the index of prices paid by farmers (lb). If the farmer's term of trade is greater than 100, it means in this case there is a surplus. In other words, farmers' incomes experience a break even point. This means that the increase or decrease in the price of production is equal to the percentage increase or decrease in the price of goods consumed by farmers. The farmer's income is equal to his expenditure. However, if previously the farmer's income was less than 100, it means that the farmer had a deficit. This means that farmers' income is less than their expenditure.

Price Index Received by Farmers (It) is an index that reflects volatility in the price of goods produced by farmers. It is can used as supporting data for calculating in agricultural sector income.

The definition of the price received by the farmer himself is the average producer price of the farmer's production before adding transportation costs and packing costs to the selling price, which is called the farm rate (Departemen Pertanian, 2013). Meanwhile, the Price Paid Farmers Index (Ib) can be described as the volatility of prices of goods consumed by farmer households and the prices of goods needed to produce agricultural products (Patiung, 2019). Price paid by farmers can simply be interpreted as the average retail price of goods/services consumed or purchased by farmers, both to meet their own household needs and for agricultural production costs.

Inflation is a condition where there is an absolute (sharp) price increase that occurs continuously in the long term and also over a long period (Solaymani & Yusma Bt Mohamed Yusoff, 2017). Inflation is the tendency of a general and continuous increase in prices. This does not mean that every item increases by the same percentage, but that there is a different increase in each product.

Inflation itself is an indicator of changes in prices that tend to increase continuously. To measure the general price level or the inflation rate, a price index is used whose measurement can be carried out in three ways, namely the Consumer Price Index (CPI), Wholesaler Price Index (IHPB), and the Gross National Product (GNP) deflator.

According to Wibowo (2020), the most widely used calculation of inflation is by using consumer price index (CPI). This is because consumer price index data can be obtained monthly, quarterly, or yearly. For Indonesia, consumer price index data is quite easy to obtain either from reports from the Badan Pusat Statistik (BPS), Bank Indonesia (BI), or other institutions.

According to Joshi & Acharya (2011), inflation results in several social costs, both the expected cost of inflation and the cost of unexpected inflation. Meanwhile, according to Bodhanwala et al. (2020), inflation will have influence on the macroeconomic condition in any country. The bad effects of inflation are distinguished in two aspects, namely those on the economy and those on individuals or society. A high inflation rate reduces production where inflation results in an increase of raw material prices and labor wages, so the calculation of the cost of goods will increase the selling price of local products (Wulandari et al., 2020)

Furthermore, the concept of Gross Regional Domestic Product (GRDP) is the market value of a finished good or service produced by a region within a certain period (Mubarak & Nugroho, 2020). One of gross domestic products is from agriculture, which is one of the main sectors among others.

The agricultural sector holds dominance compared to several other sectors (Safuridar, 2012). This is because some regions still depend on agriculture rather than industry. Agricultural development in East Java Province can be interpreted as a development of advanced, efficient, and resilient agriculture in covering macro-concepts, i.e., about the agricultural sector itself and with sectors other than agriculture (Arianto et al., 2018). The indicators used in evaluating and monitoring the performance of agricultural sector development in the regions include the GRDP of the agricultural sector, absorption of labor, and its role in reducing poverty. In the agrarian East Java Province, the sector that gets the most priority in economic development is agriculture because it is viewed as the dominant sector in the economy when viewed from various contributions made.

RESEARCH METHOD

This research employed quantitative approach to provide insight into the correlation between variables. The data were obtained from the Badan Pusat Statistik of East Java Province. This research was carried out

consists long-run cointegration equation, (yt-1) is Variabel in level, (Γ ik) is regression coefficient matrix, (k-1) is ordo VECM from VAR, and (ϵ t) is error term.

The following is the modeling of the Vector error correction model according to the variables used:

$$\Delta NTP = a + \sum_{i=1}^{n} \beta i \Delta NTP_{t-i} + \sum_{i=1}^{n} \beta i \Delta INF_{t-i} + \sum_{i=1}^{n} \beta i \Delta PDRB_{t-i} + \lambda EC_{t-1} + \varepsilon_t$$

This can be interpreted that a_0 is a constant, t is a deterministic trend, and is the error term. If the autoregressive of Y (Y_ (t-1)) contains a unit root (unit root), then the ratio t (t ratio) for a_1 should be consistent with the hypothesis a_1 = 0.

RESULT AND DISCUSSION

Macroeconomic Conditions of East Java

Economic growth in East Java Province in the fourth quarter of 2021 grew by 4.95% year on year (BPS, 2022). Macroeconomic conditions are influenced by several main factors, where the main ones are agriculture, forestry, and fishery. In 2021, this sector had a share of 11% overall. Until now, the sector still occupies the top three contributors to economic growth in East Java Province.

However, this is not in accordance with what happened with the increase in the farmers' term of trade in East Java province (BPS, 2022). It was recorded that the farmers' term of trade decreased from 107.13 in 2019 to 100.69 in 2021. The current study found that the farmers' term of trade in 2021 decreased by 0.75% if compared to that in 2020. This decrease was due to an increase in the price index received by farmers as many as 1.23%. It is lower than the increase of the price index paid by farmers,

over eleven years quarterly, starting from 2010-2021. The data were analyzed using the Vector Error Correction Model with E-Views software.

As mentioned in the literature review, variables in this research are the farmers' term of trade (TOT); inflation (INF); and GRDP. The data processing software was the E-Views (version 12).

 $d\Delta yt = \mu 0x + \mu 1xt + \Pi xyt-1 + \Sigma ik \Delta yt-1 + \epsilon td$

where (yt) = The vectors contained in the variables in this research, (μ 0x) represented by intercept vector, (μ 1x) is Regression coefficient vector, (t) represented time trend, (Π x) is (α x β) where (b)

which was overall 2%. This is lower when compared to the data and earlier findings shown previously.

This can represent the relationship that tends to be positive between the average term of trade of agricultural commodities for household consumption goods and production costs. Even so, it can be said that in 2021 it was generally lower than in 2020. Another factor that contributed to this was the increase of the inflation rate that occurred in all cities and regencies in East Java Province (BPS, 2021b).

The highest inflation happened in Sumenep Regency at 1.17% and the lowest inflation occurred in Surabaya at 0.65%. Inflation occurred due to a fairly high price increase, as increasing in most indexes of the expenditure group. Of the eleven expenditure groups, eight groups experienced inflation, two groups experienced deflation and one group experienced no change. The expenditure group that experienced the highest inflation was the food, beverage, and tobacco group at 2.12%, followed by the transportation group at 0.81%, the personal care and other services group at 0.54%, the food and beverage supply at 0.32%, household equipment, equipment and routine maintenance group by 0.17%, electricity, water, housing, and household fuel group by 0.11%, clothing, and footwear group by 0.09%, and the health group by 0.07%, while the expenditure groups that experienced deflation were the information, communication and financial services group by 0.06% and the recreation, sports and culture group by 0.02%. In this case, the education sector did not change.

The inflation rate in December 2021 was 2.45% and the year-on-year inflation rate (December 2021 to December 2020) which is also known as the inflation rate throughout 2021 was recorded at 2.45%.



Figure 1. Change of farmer terms of trade, 2019-2021

Farmer's Term of Trade

Referring to the data, it was found that all the variables were stationary at the standard level. Specifically, the term of trade had a coefficient value of 0.00. The variables of Inflation and Regional Domestic Product were also stationary at the standard level with a coefficient of 0.00 (Table 2).

Table 2. Data stationary Test Results using the Augmented Dickey Fuller Test

Variables	Decision	Coefficient Value		
тот	Stationer in the Level	0.00		
INF	Stationer in the Level	0.00		
GRDP	Stationer in the Level	0.00		
TOT (farmer term of trade): INE (inflation): GRDP (gross				

domestic regional bruto)

In this study, the lag test method used was the Schwarz Information Criterion (SIC) method. Based on the results, it was concluded that the Farmer's term of trade was initially in the first Lag (Table 3).

The cointegration test is intended to classify groups of variables that are not stationary in the standard integration process requirements; Johansen's trace statistical test cointegration test was also used in this study. The main thing in this (ui) was testing criterion based on trace statistics. If it is found that the trace statistic value is greater than the critical value of 5%, it can be concluded that the alternative hypothesis is accepted (Table 4).

It was found that the trace test value gave an indication of the presence of all equations cointegrated with the others. Max eigen value indicated that there was one cointegrated equation. There are, however, other possible explanations for the farmer term of trade that can be found in a long-run relationship. From the analysis carried out using the Vector Error Correction Model test, it shows that there was a relationship between the farmers' term of trade (TOT), Inflation (INF), and GRDP (Table 5).

The Cointeq1 coefficient of variable value was 2.321007. The significant meaning is if both inflation variables and gross domestic product remain unchanged in the previous period, the farmer term of trade will have been negatively affected by -2.32% in the current period. This becomes a serious matter when economic growth must also remain in favor of the welfare level of the farmers. Seeing that the results of its production which is a main commodity requirement for the majority of Indonesian people, the farmers should also enjoy more yields from the commodities that they have produced.

Table 3. The Optimum Lag Test for Farmer Term of Trade

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-191.9250	NA	1.737892	9.066279	9.189153	9.111591
1	-165.8123	47.36721*	0.785313*	8.270340*	8.761838*	8.451589*
2	-158.7002	11.90857	0.863542	8.358151	9.218272	8.675337

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**		
None*	0.551957	57.04430	29.79707	0.0000		
At most 1*	0.300311	22.52102	15.49471	0.0037		
At most 2*	0.153483	7.164873	3.841465	0.0074		
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)						
None	0.551957	34.52328	21.13162	0.0004		
At most 1*	0.300311	15.35615	14.26460	0.0335		
At most 2*	0.153483	7.164873	3.841465	0.0074		

Table 4. Estimation of Cointegration Test Results between Variables

These relationships may partly be explained by analysis results, i.e., farmers' term of trade had increasing effect on the coefficient of 0.6. This implies that, if there is a 1% increase in the farmer term of trade in the previous month, it will raise the farmers' term of trade by 0.6% in the current month. This is related to policies for improving the welfare of farmers. Especially for rice farmers, the government has provided fertilizer subsidies which are distributed to villages in East Java Province. But whether this is a benefit that can be felt by farmers is still a debate among the opinions of farmers personally (Maulana, 2016; Viswanathan et al., 2020).

Table 5. Variable Estimation Results Affecting Farmers' Term of Trade

Variables	Coefficient	t-statistics			
Cointeq1	-2.321007	-5.18099			
Short-term					
D(TOT(-1))	0.616020	1.70782			
D(INF(-1))	-0.000920	-0.22581			
D(GRDP(-1))	0.026908	3.22110			
Long-run					
INF(-1)	-0.000521	-0.21805			
GRDP(-1)	0.002528	1.23424			
Coefficient of Determination (R ²): 0.81					

In the short-term, inflation in this case has a negative effect. Seen from the results of the analysis of the inflation variable, it had a coefficient value of 0.0009. That means that every 1% increase in inflation in the previous period, will have a decreasing impact on the farmer term of trade of farmers by 0.0009% in the current period.

Likewise, if viewed in the long term, inflation in this case has a negative effect on the farmer term of trade in East Java Province. This is following the results of the analysis where the inflation variable had a negative effect although not significant, with a coefficient value of 0.0005. This means that every 1% increase in inflation in the previous period will have a

decreasing impact on the farmer term of trade rate of 0.0005% in the current period.

The results are not much different in effect. This is because the level of farmers' needs also increases when inflation occurs (Suryana et al., 2014). The diverse needs of farmers with inflation cause the index of the cost of living felt by farmers to also increase so that the index that must be paid by farmers also increases. The higher the index that must be paid by farmers, the more farmer's term of trade decreases. In addition, the inelastic nature of agricultural products (the elasticity of demand is less than one) causes agricultural production to be less responsive to price increases (Just, 1974; Saputra et al., 2014). Even if there is an increase of prices (inflation), the increase of the price of agricultural products is not proportional to the increase of prices for goods and services in the non-agricultural sector. With the inelastic nature of agricultural products, the index received is relatively lower than the index paid, so farmers are unable to cover the entire cost of living and as a result, FTT decreases (Miller, 2015). The declining farmers' term of trade will ultimately affect the welfare of farmers. It can be concluded that inflation can reduce the farmers' term of trade because it causes the index to be paid greater than the index received so that the welfare of farmers decreases.

If traced further, the farmers' term of trade in the means of production receipt is smaller than the farmers' term of trade in labor acceptance (Gupta & Mishra, 2018). This shows that food crop farming is a capital-intensive farming business with a higher level of expenditure for purchasing inputs than for paying labor wages. From the description of the term of trade of revenue for production inputs, it appears that the behavior of the farmers' term of trade of revenues on the costs of seeds, fertilizers, and medicines varied based on the area of arable land. The farmer's term of trade of receipt of fertilizers was relatively smaller than

the purchase of seeds and medicines. On the other hand, there was a tendency to narrow the area of arable land, causing the level of fertilizer use to tend to be higher. This fact is different from the farmers' term of trade of medicine acceptance, where with the increasing area of arable land, there was a tendency to use relatively fewer medicine.

The price index paid by farmers depends on two household consumption things, namely and production costs (Ong et al., 2013). Therefore, the policy related to lowering the most likely to be done is lowering production costs. In other words, for FTT to increase from year to year, the rate of increase in the index received by farmers must be faster (large) compared to the rate of price index paid by farmers, in this case, the production input of the agricultural sector. This means that the quantity and price of goods produced by the agricultural sector are attempted to increase, while the price of production inputs is attempted to increase at a slow rate. Meanwhile, the increase in the index paid by farmers is influenced by 1) a large increase in fertilizer prices, and 2) increased costs for labor both at the time of planting, maintenance, and harvesting, and postharvest.

So, what can be said about the negative effect of inflation on the farmers' term of trade is the problem of price transmission (Lastinawati et al., 2019). The index that must be paid by farmers tends to be higher when inflation occurs. When inflation occurs, price increases at the retail level cannot be perfectly transmitted to the farmer level. This means that during inflation, retailers get a bigger price increase than farmers (Siahaan et al., 2018). Therefore, the index that must be paid by farmers is higher than the index of prices received. As a result of the price increase, the cost-of-living index that must be paid by farmers will even be greater and will ultimately affect the welfare of farmers.

The price increase that occurs tends to reduce the amount of the farmer term of trade. So, for conditions like this, it seems that letting prices rise is not a good way to improve farmers' welfare (Hermanto, 2017). In the future, the government must think of ways to make the increase in the price of agricultural products gives more benefits to farmers (this can be done, among other things, by improving farmers' access to markets). If this situation has been achieved, it is hoped that in the future the increase in agricultural prices produced by farmers will be able to improve the welfare of our farmers.

In contrast to the variable level of gross domestic product, in the short term, the level of Gross Domestic Product in this case had a positive and significant effect on the farmer term of trade. Gross domestic product had a coefficient value of 0.02. That means that every 1% increase in the gross domestic product of East Java province in the previous period, will have an added impact on the farmer term of trade of 0.02% in the current period.

Likewise, if viewed in the long term, the level of gross domestic product had a positive but not significant effect. The coefficient value of the long-run gross domestic growth rate variable was 0.0025. This can be interpreted that every 1% increase in the level of gross domestic product in the previous period will have an additional impact on the farmer term of trade rate of 0.0025% in the current period. This condition is caused by an imbalance in the implementation of economic development, especially in the agricultural sector where the majority of the benefits are still very small and can be felt by farmers (Sari, 2020). Especially in the long term, the guarantee of a prosperous and decent life is highly expected for the farmers despite the onslaught of the industrialization era that continues to be echoed (Ma et al., 2008). This is the cause of the small influence of regional gross domestic product on the level of welfare of farmers in the province of East Java.

The agricultural sector also contributes significantly to the growth of gross domestic product in the province of East Java (Wibowo, 2020). It is noted in this case that the agricultural sector as a whole contributes 10% of the gross Regional Domestic Product (BPS, 2020). East Java province, the majority of which still depends on the agricultural sector, makes this an advantage for regional income and also a positive economic existence in the future (Bappeda Provinsi Jawa Timur, 2015). Even so, the magnitude of this contribution does not have a significant effect on the welfare of the farmers (Patiung, 2019). This is due to the imbalance between the level of farmer input and the output issued. This causes farmers to spend more on consumption compared to their production, while the selling value of the products produced by farmers is still not able to offset consumption costs. As with lowland rice agricultural products, when they are sold by farmers, the price will be different when they are purchased for consumption in the form of rice, so

One of the policies in the agricultural sector that can be implemented is how to make farmers want to try to grow food crops with guaranteed prices after harvesting. Generally, farmers will automatically produce goods if the price of these goods is guaranteed to increase. Many things contribute to the low prices received by farmers, including the length of the trade chain so that the margins obtained by farmers are small. Therefore, it is necessary to cut the chain of commerce. For example, by increasing the role of Regional Business Cooperatives as a buffer stock by buying agricultural commodities at harvest time according to the government purchase price and selling goods during a famine. Another effort that can be made by local governments to stabilize prices or even increase prices of agricultural products is to provide knowledge to farmers on how to handle agricultural products or post-harvest handling so that there is added value received by farmers, especially for the rice sub-sector whose conditions are vulnerable to fluctuations. The real role of the government in this matter can be done by ensuring that production factors at affordable prices must be carried out. The availability of fertilizer during the growing season must be done so that farmers can easily get it. This needs to be done because the scarcity of production factors when needed will make the prices of production factors rise.

Mathematically, to increase the farmers' term of trade is the expectation of increasing the price index received by farmers and decreasing the price paid by farmers. Policies related to increasing the index received by farmers are increasing the quantity of production and increasing the prices of agricultural commodities. This means that agricultural policies are not only meant to spur production growth, but also income growth or farmer welfare. Increasing the quantity of production can be done with three alternatives, namely intensification (increase in productivity), extensification (expansion of planting area), and increasing cropping intensity for seasonal crops.

In addition, a program to improve the welfare of farmers is made. This program aims to increase the capacity and competitiveness of the agricultural community, especially farmers who cannot have access to agricultural business resources. The main activities to be carried out in this program are (i) revitalization of the agricultural extension system, which needs to be intensively coordinated with local governments, both provincial and district; (ii) improvement in terms of strengthening agricultural institutions. Geographically, the majority of farmers are in rural areas to increase growth in order to increase the bargaining position of local farmers' products; (iii) simplification of support mechanisms for farmers and reducing agricultural business barriers; (iv) education and training of agricultural human resources; (v) protection of farmers from the unfair business competition and unfair trade; and (vi) development of poverty alleviation efforts.

Looking at the indicators of GRDP in the Agricultural Sector and farmers' term of trade is not enough to see the level of farmers' welfare because they are still on the macro-level (Septiadi et al., 2016). The problem of farmers' welfare cannot be solved simply by increasing the economic growth of the agricultural sector alone; it requires equitable development in all sub-sectors of agriculture so that the results can be enjoyed by farmers.

Research Implication

In this case, one of the macroeconomic indicators, namely inflation, has the largest proportion and has a long-run impact on influencing the term of trade of farmers in East Java Province. Compared to the costs found by farmers received by farmers' inability to meet agricultural needs based on agricultural commodities. If the farmer's term of trade is low, the ability of farmers to carry out household consumption will also be low. It is can be an obstacle for our farmers. This can be seen in the last three years when the annual decline in the term of trade of farmers experienced. The COVID-19 pandemic and global economic uncertainty must be paid attention to maintain the economy, especially inflation. Besides impacting many sectors in general, this can threaten the level of farmers' term of trade. Assistance is necessary in terms of the production factor or social community, especially for people who work as farmers. It aims to provide full protection to farmers in improving their welfare.

Efforts can be made in the form of agricultural development with various policies and programs such as increasing production and stabilizing food supply

and prices to improve welfare. Policies in the context of agricultural development have been believed to be an effort to increase production output, increase the rural economy and fulfill the needs of rural consumers.

Economic growth that is based on the agricultural sector for the sake of increasing the goal, i.e., the welfare of farmers will be very useful to measure the impact of development that has been carried and intended to increase the welfare of farmers so that it can be an input for the implementation of further agricultural development. Detailed knowledge of the behavior of the farmers' term of trade, including the factors that determine how much the farmer's term of trade is in the short and long term, will be very useful for planning agricultural development policies in the future.

In addition to this, global uncertainty has further clouded the harmonization of the agricultural sector. The agricultural sector can be used as support for economic growth. There is an advantage when compared to other regions. Therefore, economic growth must be based on the welfare of the farmers so that the agricultural sector can contribute to facing the current economic uncertainty. In addition, economic growth which has been leading to the industrialization sector by leaving the agricultural sector a little will be a challenge in the future. The need for millennial farmers, for example, is one indicator of the decline in the agricultural sector in the future. Many actors in the agricultural sector are dominated by the baby boomers, who were born from 1946 to 1964. S,o it is very difficult to find regeneration as the successor to the baton in the agricultural sector today.

Even so, East Java Province will not be separated from the main role of the agricultural sector in increasing economic growth. Although the direction of economic growth is not always dominated by the agricultural sector alone. This is one of the objectives of changing the structure of the economy that leads to an increase in the share of the non-agricultural sector. The implication of this effort is in the form of a decrease in the farmers' term of trade in the agricultural sector.

The impact of the decline in the farmers' term of trade will be overcome by synergizing the industrial sector with the agricultural sector. The industrial sector will have an impact on increasing demand for the agricultural sector through quality improvement and product diversification. In addition, processed agricultural products also have a greater elasticity of demand for income when compared to primary agricultural products. Thus, the development of industrialization will be able to prevent the downward trend or even increase the demand for agricultural products. Until the hope is to increase the farmer term of trade even better.

Once again, to increase farmers' income, the government must intervene to prevent or at least slow down the secular decline of farmers' term of trade in the agricultural sector. One way that is considered the most appropriate for this is to develop the agroindustry. The development of the industrialization which is not closely related to the agricultural sector will accelerate the decline in the rupiah term of trade in the agricultural sector, which means that it will worsen in farmers' income.

This finds a finding where inflation is an indicator of the welfare of farmers in East Java Province. Economic improvement, it turns out that can provide a solution to the low welfare of farmers.

CONCLUSION AND SUGGESTION

Inflation in both the short and long term has a negative effect on farmers' terms of trade. Agricultural commodities, especially rice, are oriented to the supply and demand side, so they are very vulnerable to the impact of inflation. The resilience of the welfare of farmers must be prioritized by ensuring that production costs are affordable and the cost of necessities is controlled to ensure that inflation does not have a negative impact on the welfare of farmers. This is different from the growth rate of regional gross domestic product which has a positive impact on increasing farmers' term of trade. Existing economic growth must still be in favor of the level of farmers' welfare by providing affordable input factors and trimming the distribution channel of these commodities so that the cost factor incurred can be smaller so that profits can be more in favor of the farmers.

A decrease in the farmer's term of trade certainly has an influence on the ability of farmers to meet their daily needs. This is exacerbated by the COVID-19 pandemic and global economic uncertainty which must also be paid attention to in maintaining economic stability and inflation. Besides impacting many sectors in general, this crisis can threaten the level of farmers' term of trade. Policies in the form of protection both

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in terms of production inputs must continue to be encouraged in ensuring the welfare of farmers, in which it aims to provide full protection to farmers in increasing production and welfare levels.

The role of the government is to prevent or slow down the secular decline in the farmer's term of trade in the agricultural sector, by developing agro-industry which is closely related to the agricultural sector.

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