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Factors Influencing the Prices of Red Chili and Shallots in Indonesia: Analysis of the Impact on the Global Market

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Keywords

World oil, Chili and Red Onions and World Shallots , Rupiah Exchange Rate, Food Security, Macroeconomics.

ABSTRACT

Movements in international commodity prices became significant when three stages of crisis occurred in the world economy, namely the world oil price crisis, the global financial crisis and the world food price crisis. This situation can have an impact on Indonesia's economic growth. The objectives of this research are: 1 Do fluctuations in world oil prices affect the prices of chilies and shallots in Indonesia (2) Do fluctuations in the rupiah exchange rate affect the prices of chilies and shallots in Indonesia (3) Do global prices of chilies and shallots influence the prices of chilies and shallots in Indonesi. The information used is secondary time series data from 1980 to 2019 . The food commodities being studied are : world price of chilies and shallots , value Rupiah exchange , price world oil as well price chilies and onions red Domestically , based on estimation results, it shows that international prices such as world oil prices have a significant positive effect on domestic prices of chilies and shallots . The Rupiah exchange rate has a significant positive effect on the price of chilies and shallots in Indonesia, while the world price of chilies and shallots has a negative effect and has no This is significant for the price of chilies and shallots in the country. This is because chilies and shallots are products that are widely produced domestically. Most of the Chilies and Shallots sold in Indonesia are domestically produced, so the prices of Chilies and Shallots in Indonesia are more influenced by production costs and government policies and supply and demand in the Indonesian market. This can be done by improving infrastructure, especially transportation networks and storage facilities. Empowering farmers by providing financial and technical support. Developing different food sources to reduce dependence on limited food sources, and consumer protection with fair prices for consumers as well as providing support for subsidy programs needed to help stabilize food prices

INTRODUCTION

International commodity price movements play an important role in the Indonesian economy, especially when three main crisis stages occur: world oil prices, the global financial crisis, and world food prices. Price movements in these three sectors can have a significant impact on Indonesia's economic growth.

Indonesia is one of the world's leading oil and gas producers. When world oil prices rise, state revenues from the energy sector increase, which can contribute to economic growth (2019). However,

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rising oil prices can also result in increased inflation and production costs, especially in the transportation and manufacturing sectors (2012). This can affect Indonesia's competitiveness in the global market and hinder economic growth.

The global financial crisis, such as the one that occurred in 2008, had an even impact throughout the world, including Indonesia. A drastic decline in global financial markets can affect foreign capital flows, currency exchange rates, and investor sentiment. This could hinder Indonesia's economic growth due to a decline in investment and overall economic activity (2007).

Rising world food prices could have a direct impact on Indonesian society, especially those who depend on food as a large part of their expenditure. High food prices can increase inflationary pressures and reduce consumer purchasing power. This can affect economic growth due to weak domestic consumption and decreased demand (2016).

Fluctuation price commodity horticulture own influence to condition economy a region so become something challenge for regions in Indonesia. This thing can seen from his contribution to inflation

Figure 1. Development of National Chili and Onion Prices

Price problem for chili and shallot commodities is still ongoing often happened in Indonesia. Fluctuation Price of Chili and Shallots can be happen in period short time , that can be cause uncertainty in taking decisions by market players (MI Riyadh, 2019) In addition , disparities The price of chilies and shallots between regions is also frequent occurs in Indonesia, where the price of chilies and shallots in a region can vary different with Prices of Chilies and Shallots in other regions (2012).

Policy stabilization the price of Chili and Shallots is one method For overcome problem fluctuations and disparities Price of Chili and Shallots in Indonesia. However , for formulate and implement policy is required _ accurate and up - to-date information about fluctuations and disparities the prices of chilies and shallots that occur in the market. This thing will possible government For take appropriate action _ in overcome problem that . Research objectives (1.)

What is fluctuation price world oil influences to Price of Chili and Shallots in Indonesia (2) Is fluctuations in the rupiah exchange rate have an influence to Prices of Chilies and Shallots in Indonesia (3) Does the world price of Chilies and Shallots matter ? to Price of Chili and Shallots in Indonesia

Basically, prices are the main signal that directs the decisions of economic actors in allocating the resources they have. This means that if price fluctuations occur in a perfectly competitive market (PPS), and they can be immediately captured by other PPS markets, then these changes can be used as a signal in making price decisions, both for producers and consumers.

Prices are considered to provide an overview of the market and are an indicator of the level of supply and demand for a commodity, so analyzing the prices of main foods such as rice is important for formulating policies to stabilize prices and increase food production as well as making price forecasts. One of the important issues in world trade in agricultural products is related to how the domestic agricultural commodity market responds to changes in world prices or vice versa.

Prices of some products, especially agricultural and livestock products, show certain fluctuations from season to season. One of the causes of fluctuation is the final reaction of producers to prices (1993). In the short term, prices of agricultural products tend to experience relatively high fluctuations. The price can reach very high levels in a certain period, but instead, it will experience a terrible decline in the next period. Price instability can be caused by inelasticity of supply and demand for agricultural products. these characteristics causes very large changes in the price level whenever there is supply or demand experiencing changes. Factors that trigger agricultural price instability can come from two sources, namely changes in supply and instability in demand (2012).

An open economy is a country's economy that is widely involved in trade between countries. Meanwhile, a closed economy does not recognize international trade. Almost all countries in the world adhere to an open economy. By participating in international trade, you can stimulate the national economy, because international trade will expand market share and increase the competitiveness of domestic production. International trade activities include exports and imports.

Fluctuation price world oil influences to price of red chilies and onions red in Indonesia, fluctuations in the rupiah exchange rate have an influence to price chilli red and onion red in Indonesia, fluctuation price chilli red and onion red world influence to price chilli red and onion red in Indonesia (2009)(2017).

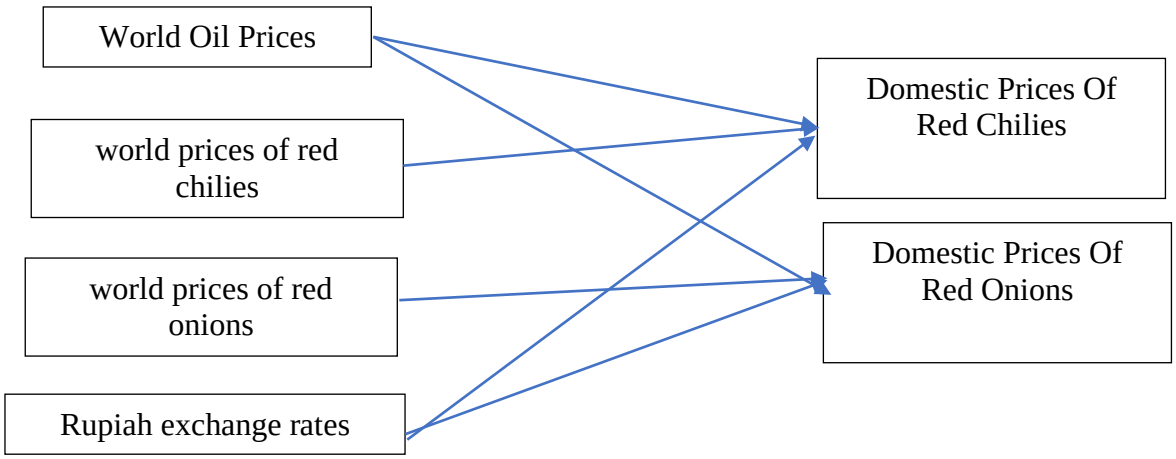

Figure 2. International Price Influence Scheme To Price of Chili and Onions Reddan Onion Reddi Domestic

METHODS

Type of data used sourced from International Financial Statistics (IFS), Central Statistics Agency (BPS), Bank Indonesia (BI), Ministry of Agriculture , World Development Indicator (WDI), and other institutions national nor international other related things . Time series data from 1980 to 2019. Study This focus to price data chilli red world , price onion world red Rupiah exchange rates and prices onion red and chili red in Indonesia (2017).

Data Processing Methods

Study This use approach multiple linear regression equation with the following model :

$$PCHD_t = \alpha_{11} + \beta_{12} FLUC\ OIL_{t-1} + \beta_{13} FLUC\ ER_{t-1} + \beta_{14} PCHW_{t-1} + \varepsilon_{1t}$$

$$POND_t = \alpha_{11} + \beta_{12} FLUC\ OIL_{t-1} + \beta_{13} FLUC\ ER_{t-1} + \beta_{14} PONW_{t-1} + \varepsilon_{1t}$$

Information :

$PCHD_t$ = *Independent Variable /* Domestic Chili Price

$POND_t$	=	Domestic Shallots
$FLUC\ OIL_{t-1}$	=	World Oil Prices
$FLUC\ ER_{t-1}$	=	Rupiah exchange rate
$PCHW_{t-1}$	=	World Chili Prices
$PONW_{t-1}$	=	World Red Onion Price
a_{11}	=	*Intercept* / Constant
β_{12}- β_{14}	=	Coefficient Regression
ε_{1t}	=	*Error Term*

Classic assumption test

Study This use VIF Which there is on program *statistical program for service solutions* (*SPSS) statistics* 21. According to (2004, p. 351)formulated as follows :

$$VIF = \frac{1}{1 - R_j^2}$$

R ^{2} h obtained from *auxiliary regression* between independent variables (Widarjono, 2005:118) or the coefficient of determination between the *jth independent variable* and the independent variable others (2006). Furthermore, if the VIF value is smaller than 10 so there is no multicollinearity.

According to (2006) if the VIF value is smaller than 10 then there is no multicollinearity.

According to Gujarati (2003) in Ghozali (2011), a regression model is said to not contain heteroscedasticity if the significance probability is above the 5% confidence level or > 0.05

Testing Hypothesis Test F And t

Testing hypothesis to coefficient regression in a way together used F-test with level trust certain, Which according to (2004, p. 85) can be formulated as follows:

$$F_{hit} = \frac{ESS/(k-1)}{RSS/(n-k)}$$

If prob < α where$\alpha = 0{,}05$ so the *ith* independent variables together have a significant effect on fluctuations Prices of chilies and onions red on the contrary If prob > α where$\alpha = 0{,}05$ then the independent variable to i No influential real about price fluctuations chilies and onions red in Indonesia

Furthermore testing to coefficient regression in a way individual (Partial) The t test is used with a certain level of confidence. According to Gujarati (1978:74) with formula

$$T_{hit} = \frac{\beta_i}{S\beta_i}$$

If prob < α where $\alpha = 0{,}05$, then variable independent i _ in a way individual influentialreal against price fluctuations chilies and onions red , whereas if prob > α where $\alpha = 0{,}05$, so independent i _ in a wayindividual no real effect to fluctuation price chilies and onions red .

RESULTS

Development price of Red Chili (PCHD) at level consumers in Indonesia during 1990-2019 shows tendency increases , over the period the price chilli red in level consumer amounting to 13.66 percent (2022). In the period 2015 to 2019 prices chilli red level consumer increase Enough sharp . Year In 2015, the price of red chilies at the consumer level was IDR 44,206 per kg, while in 2017 it was IDR 37,015 per kg. 2019 prices _ level consumer to Rp. 39,571,- The increase in the price of chilies from year to year shows that chilies are very popular with consumers in Indonesia and abroad (2023).

Whereas Development of Shallot Prices (POND) for price consumer in 10 years final show trend increases . In 2009-2018 the rate growth price level consumer amounting to 8.33 per year . In 2008 prices _ consumer experience ascension amounted to 54.89 percent , however increase in 2008 ii still more low from increase price consumer onion red in 2016 with _ an increase of 59.27 percent.

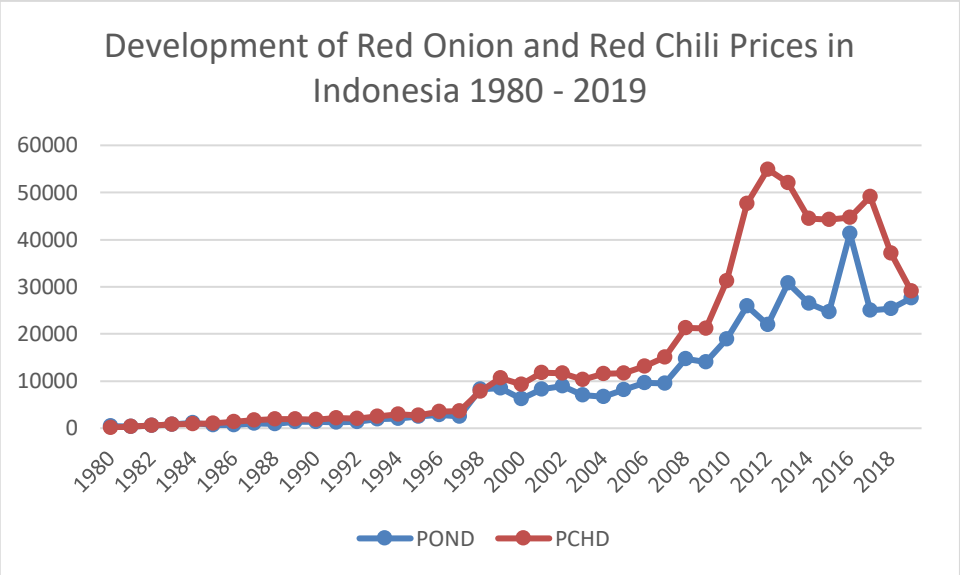

Figure 3. Development of Chili and Onion Prices Reddan Onion RedNational 1980 - 2022

The Influence of World Oil Prices, Rupiah Exchange Rates , World Prices of Chilies and Shallots on Domestic Prices of Chilies and Shallots

The price of chilies and shallots in Indonesia can be influenced by world oil prices, the Rupiah exchange rate and world prices of chilies and onions . This can seen in table 1.

Table 1 The Influence of World Oil Prices , Rupiah Exchange Rates and World Prices of Chilies and Onions on the Price of Red Chilies in Indonesia

	Red chili pepper		Decision
Variable	**Coef**	**T Prob**	
Constant	-3,648	0.0000	
World Oil	0.3946	0.0044	**Significant**
Rupiah Exchange Rate	1.3131	0.0000	**Significant**
World Chili Prices	-0.103	0.7052	Non Significant
Rsquared	0.9413		
Adj RSquared	0.9367		
Prob(fstatistics)	0.0000		

Table 2 The Influence of World Oil Prices , Rupiah Exchange Rates and World Red Onion Prices on Red Onion Prices in Indonesia.

	Shallots _		Decision
Variable	**Coef**	**T Prob**	
Constant	-2,871	0.0000	
World Oil	0.4416	0.0000	**Significant**
Rupiah Exchange Rate	1.1768	0.0000	**Significant**
World Onion Prices	0.0870	0.4888	Non Significant
Rsquared	0.9526		
Adj RSquared	0.9488		

Prob(fstatistics)	0.0000

Based on from results estimation above World oil prices have an influence positive to price domestic red chili prices Where value of 0.3946 and 0.4416 meaning every increase price world oil by 1 percent so will increase change the price of Chili and Shallots is 0.3946 and 0.4416 percent based on results prob (t) testing where prob < 0.05 then price world oil influences significant to domestic prices of chilies and shallots at the level 95 percent confidence (2015). This thing caused Because price world oil can influence cost chili and shallot production in the country Because oil used as material burn For machine machine agriculture It means If price world oil increases , costs Chili and Shallot production will also increase so that producer will raise Price of Chili and Shallots for cover more costs tall.

Rupiah exchange rate has an influence positive to domestic prices of chilies and shallots Where value equal to 1.3131 meaning every increase mark rupiah exchange rate of 1 percent so will increase change domestic prices of chilies and shallots amounting to 1.3131 and 1.1768 percent based on results prob (t) test where prob < 0.05 then the Rupiah exchange rate has an effect significant to domestic prices of chilies and shallots at the level 95 percent confidence . It means if mark exchange rupiah against foreign currency decreases (depreciation) then the price of chilies and shallots in rupiah will also be increase.

World price of red chili has an influence negative to domestic chili prices Where value of -0.103 meaning every increase the world price of red chilies is 1 percent so will lower change domestic red chili prices amounting to -0.103 percent matter This caused Because Red Chili supply in the Indonesian market is moderate tall Where exists subsidy fertilizer from government so that price of red chilies and onions red in Indonesia can be down although the price of red chilies on the world market has increased. On the other hand, onion prices world red influential positive to price onion red domestic Where value of 0.0870 , meaning every increase price onion world red by 1 percent so will increase change price onion red domestic amounting to 0.0870 percent based on results prob (t) testing where prob > 0.05 then The world's red Shallots are not influential significant to price Domestic Shallots at level _ 95 percent confidence . This thing caused because Chili and Shallots are Many products are produced domestically.

Most of the chilies and shallots sold in Indonesia are results production domestically , so The price of chilies and shallots in Indonesia is more influenced by cost production and policy government and supply as well as demand in the Indonesian market, however in a way general the price of chilies and shallots in Indonesia will increase if price material standard used For produces chilies and shallots such as fertilizers and pesticides experience increase.

Based on from prob test results (F) where prob < 0.05 then show that price world oil , Rupiah exchange rate and world prices of chilies and shallots simultaneously influential real to domestic prices of chilies and shallots at the level 95 percent confidence.

CONCLUSION

Based on from results analysis that has been done can concluded that world oil prices have an influence positive which is significant to Price of Chili and Shallots. Rupiah exchange rate has an influence significant positive against Chilies and Shallots and world food prices have an influence negative and not significant to Chili prices and vice versa price Shallots are influential in the world positive to price onion red domestic This is caused because Chili and Shallots are Many products are produced domestically. Most of the chilies and shallots sold in Indonesia are results production domestically, so The price of chilies and shallots in Indonesia is more influenced by cost production and policy government and supply as well as demand in the Indonesian market.

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