icb8

by Desi Aryani

The Effectiveness of Rice Price Stabilization Policy In Indonesia

Desi Aryani[1,2], Ronnie Susman Natawidjaja[1], Trisna Insan Noor[1], Andy Mulyana[2]

[1]Padjadjaran University, Faculty of Agriculture, Bandung 45363, Indonesia

[2]Sriwijaya University, Faculty of Agriculture, Palembang 30862, Indonesia

Abstract: *Instability of rice prices in Indonesia is shown from the increasing price disparity between Indonesia's rice price and international rice price. Stabilization of food prices is one of the priority policies of the government. The instruments of rice price stabilization should be integrated and measurable. The purpose of this research is to analyze the effectiveness of rice price stabilization policies that have been implemented by the Indonesian government in the period 2010 to 2015. The data used in this study were monthly time series data from January 2010 to December 2015. Data were collected from Indonesia's Agency for Logistics Affairs and Indonesia's Ministry of Trade. This research used multiple regression analysis model. The results show that the three policy instruments of rice price stabilization ie rice HPP, market operation, and rice import are right to control rice price. However, market operation and import policy instruments have not been effective in stabilizing rice prices. To be effective, it is necessary to market operation and rice import policy right in timeliness and quantity in the implementation of the policy.*

Keywords: stabilization, rice HPP, market operation, rice import

1. Introduction

Rice is the biggest expense for the poor in Asia. Instability of rice prices leads to less prosperous communities unable to regulate their consumption levels at higher prices (Dawe and Timmer, 2012). High rice prices cause losses in most Indonesians, especially the poor (McCulloch, 2008). In 2013, the number of poor people in Indonesia is reached 28,553,930 people with a percentage of 11.47 percent (BPS, 2014).

Instability of rice prices in Indonesia is shown from the increasing price disparity between Indonesia's rice price and international rice price, where the price of Indonesian rice continues to rise every year while in mid 2013 the price of international rice tends to decrease. The average standard deviation of Indonesia's rice price for the 2010-2014 period of 1,002.62 is also higher than the international price (816.00). It is indicating that the rice price in Indonesia is more volatile than the international market.

Stabilization of food prices is one of the priority policies of the government. Accessibility to rice can be seen from the stability and price of rice. Affordable food prices do not mean that food prices should always be cheap, because the policy proves to be causing many losses to farmers and national food security capabilities (Husodo, 2003). According to Arifin (2015), the instruments of rice price stabilization should be integrated and measurable covering production performance, rice procurement, government purchase price reference (Harga Pembelian Pemerintah/ HPP), stock management, rice price subsidy for poor families, and market operations. One important question is whether the strategies undertaken to stabilize the price of rice or food in the price formation process are left to the market mechanism or whether there should be intervention from the government.

Countries with low per capita incomes still require government interventions towards food security that can reduce the threat of hunger and food insecurity (Timmer, 2004). Food security is one of the most strategic issues in the development of a country, especially for developing countries like Indonesia with large populations. The high price level and volatility of rice prices pose a serious threat to the people's access to food, especially for the poor and near-poor, which are still very large in Indonesia. In addition, the high level of food prices greatly contributes to the high rate of inflation, thus impacting the economy widely.

Based on the background, the purpose of this research is to analyze the effectiveness of rice price stabilization policies that have been implemented by the Indonesian government in the period 2010 to 2015.

2. Methodology

The data used in this study were monthly time series data from January 2010 to December 2015. Data were collected from Indonesia's Agency for Logistics Affairs (Bulog) and Indonesia's Ministry of Trade.

To analyze the effectiveness of the price stabilization policy that has been done by the government, it done based on Presidential Decree No.5/2015 which regulates the price stabilization policy conducted by the government, and refers to the research of the Ministry of Trade (2015). This research used multiple regression analysis model (Widarjono, 2007) with hypothesis stats:

H nul : statistically independent variables (rice HPP, market operations, rice imports) do not significantly affect the dependent variable (consumer rice price).

H alternatif : statistically independent variables (rice HPP, market operations, rice imports) significantly

affect the dependent variable (consumer rice price).

Then compiled the equation as follows:

$$PR\,Re = \beta_0 + \beta_1 HB + \beta_2 OP + \beta_3 IB + e \qquad (1)$$

The expected sign and parameters in the equation above are: β1 > 0 ; β2, β3 < 0

description:
PRRe = Consumer rice price (IDR/kg)
HB = Rice HPP (IDR/kg)
OP = Market operation (Ton/month)
IB = Import of rice (Ton/month)
e = Conversion variable

The effectiveness measure used by Sanim (1998) and Simatupang (2002), are the econometric approach of elasticity value and the level of significance of independent variables on the dependent variable. If the effect were significant and elastic with the direction of expectation, then the influence of independent variables on the dependent variable was effective.

3. Results and Discussion

Rice is a staple food for 98 percent of Indonesia's population. The highly volatile and inefficient condition of the Indonesian rice market requires government interference as it can not be fully left to market mechanisms. Rice policy in Indonesia has existed since the reign of Sunan Amangkurat I (1645-1677), where in 1655 the Government banned the export of rice to outside Java due to extraordinary drought. Rice policy has undergone many changes, in accordance with the economic and political situation occurring in Indonesia and the world. Broadly speaking the policy can be divided into three regimes that are based on aspects of essence and time period. The three policy regimes are: (1) Suportive Policy and Stabilization Policy (1971-1997), in this regime the price, import and distribution of rice in the country is entirely under the control of the Government (Bulog); (2) Liberalization Policy Regime (1998-2000), where rice imports are left free with zero percent import duty; and (3) Protected and Promotional Policy Regime (2001-present), where rice imports are "controlled" through tariff and non-tariff mechanisms (Arifin, 2006; McCulloch and Timmer, 2008; Ministry of Trade, 2015).

Based on Inpres No.2/2005 rice policy in Indonesia are divided into production policy, pricing policy, distribution policy, and import policy (Firdaus et.al., 2008). The national rice policy always aims to ensure the availability of national rice, both national and imported for government reserves. The three main objectives of the national rice policy are ensuring the availability of national rice, price stability, and protecting farmers' income levels (Darwanto, 2014).

Problem in applying pricing policies in Indonesia is the lack of political and economic commitment in support of established policies. It is make the implementation becomes less comprehensive, systematic and consistent. The number of policies issued by related Ministries/ Institutions sometimes are becomes a problem because of policies that are not mutually aligned and not harmonious so that hamper the implementation of policy. For example are the policy of increasing production and land conversion, the example cases are on rice, corn, soybeans and sugar. Another problem that also hampered the implementation of price policy is the problem of infrastructure. It is a bad logistics which causes price disparities between regions and the absence of food institutions as a leading agency in the implementation of price and food regulations in Indonesia. The institutional food system looks still less solid, not focused and tend to be partial (Ministry of Trade, 2015).

The effectiveness analysis of rice price stabilization policy conducted in this research is multiple regression analysis with dependent variable of consumer rice price with three independent variables ie rice HPP, volume of market operation, and volume of rice import. Based on regression analysis results obtained R^2 value of 0.821. It is means that 82.1 percent of available variations can be explained by the model while the remainder is explained by other variables that have not been included in the model. The greater value of R^2 means the model is getting better. The result of regression analysis on model is R^2 value, F test and t test can be seen in Table 1.

Table 1: Results of Multiple Linear Regression Analysis Model of Rice Price Stabilization Instrument Linkage in Indonesia

Model	Expected Sign	Coefficient	t	Sig.
(Constant)		.396	1.944	.056
Rice HPP	+	.907	17.585	.000
Market Operation	-	.003	5.059	.000
Rice Import	-	.027	4.815	.000
F = 103.782 / sig. 0.000				
R^2 = 0.821				

F test results show that together these three independent variables (rice HPP, market operation volume, and volume of rice import) are significantly affect the dependent variable (consumer price). It can be seen from the value of F Test 103.782 with a significance level of 0.000 which means the error rate of the test conducted by 0 percent. Partially, through t-test, it is known that the three independent variables ie rice HPP, market operation volume, and rice import volume are statistically significant to dependent variable. The results of partial analysis of each variable can be explained below.

3.1 Rice HPP

The HPP is a policy of replacing the basic price policy and roof price. The establishment HPP of paddy/ rice was made in 2002 as outlined in Presidential Instruction No. 9 Year 2002, this provision shall come into force in January 2003. Until 2017, there have been nine stipulated HPP policy of paddy/ rice to adjust domestic rice situation, mainly due to the increasing price growth every year. Determination of the last HPP was established in March 2015 through Presidential Instruction No. 5 Year 2015, this provision is valid until now

(2017). During that period, the increase in dry-harvest HPP (GKP) ranged from 8-30 percent or an average of 15.00 percent per year, the increase in dry milled HPP (GKG) ranged from 2-27 percent or an average of 13.34 percent per year, and HPP rice ranges from 0-30 percent or an average of 15.90 percent per year.

Based on regression analysis, it is known that rice HPP has significant effect to consumer price. Regression coefficient marked positive that has been in line with expectations, meaning direction of directional change. The increase in rice HPP will lead to increases in consumer rice prices and vice versa. Regression coefficient value of 0.907 can be interpreted that the increase of rice HPP by one unit will increase the rice price by 0.907 units. The significance level of 0,000 means that the rice HPP variables significantly influence the variable of consumer rice price with the trust rate reaches 100 percent. Rice HPP variable is significantly influence and fit to expected sign. It means that the rice HPP as an instrument of stabilization of consumer rice prices has been effectively applied. The results of this analysis are in line with previous studies which found that HPP affects consumer rice prices (Rahmasuciana, 2015).

3.2 Market Operation

Market operation policy is another form of price policy on rice consisting of Pure Market Operation (Operasi Pasar Murni/ OPM) and Special Market Operation (Operasi Pasar khusus/ OPK). OPM is part of the general price subsidy used when the price of rice is too high due to excess demand in the market. OPM is implemented through price cuts of 10 to 15 percent below market prices. OPK is the implementation of targeted price subsidy. Initially implemented, OPK aims to channel food aid to the food insecure poor after the 1998 crisis. Since 2002 OPK targeting the poor has been renamed Raskin (rice for poor families) (Firdaus et al., 2008).

The result of regression analysis shows that the market operation of rice has a significant effect on consumer price of rice. The value of the regression coefficient of 0.003 can be interpreted that the increase in the volume of market operations by one unit will raise the rice price by 0.004 units. The significance level of 0,000 means that the variable of market operation has a significant effect on the variable of consumer rice price in 100% confidence level of analysis. The value of coefficient is very small which means the influence of rice market operation is very small to changes in consumer rice prices. Coefficient value close to zero means the influence is not elastic.

The sign of regression coefficient analysis for market operation variable is positive, this is not in line to expectation, where should the coefficient sign is negative. Signs do not fit this hypothesis can be caused by the lack of precise time and quantity of rice distributed, market operations carried out when prices have increased so that the influence of market operations to be positive. Significant influence indicates that market operation policy instruments are appropriate in affecting rice prices, but positive and inelastic coefficients suggest that market operation policies have not been effective in stabilizing rice prices. It means

that the selection of policies is appropriate, but not exactly in the implementation.

The effectiveness of rice market operations is highly dependent on the area to be intervened. In the deficit areas, the need for rice volume to be distributed in market operations is greater than in surplus areas. Therefore, the most important is the effectiveness of market operations is not biased on the central region or not, but more biased in the area of deficit or surplus. In addition to local factors, the effectiveness of market operations also depends on the timing of the intervention. In this case the effective intervention time for market operation is the time of famine and National Religious Days which is around December - January and June - August. The effectiveness of rice market operations will be seen in one subsequent period, (Ministry of Trade, 2015).

3.3 Rice Import

The import policy is divided into import control policies and import rice procurement policies when the availability of domestic rice is insufficient, in the interest of sufficient the Government Rice Reserve, and or to maintain domestic price stability. In general, the policy of controlling rice imports are done by applying the import duty tariff, importer license and import timing.

Based on the result of regression analysis, it is known that the rice import has a significant effect on consumer rice price. Regression coefficient value of 0.027 can be interpreted that the increase of rice imports by one unit will raise the rice price by 0.027 units. The significance level of 0,000 means that the imported rice variable significantly affects the consumer price variables with the analytical trust rate of 100 percent. The value of coefficient is very small which means the influence of rice import volume is very small to changes in consumer rice prices. Coefficient value close to zero means the influence is not elastic.

The sign of regression coefficient analysis for the rice import variable is positive, this is not in line to expectations, where should the coefficient sign is negative. Signs that do not fit this hypothesis can be due to timing of improper importing because imports are often done when prices have increased. Similarly with market operation instruments, a significant influence indicates that rice import policy instruments are appropriately affecting rice prices, if done at the right time and amount. The positive and non-elastic coefficients show that import policy has not been effective in stabilizing rice prices.

The results of this study are in line with research conducted by Ministry of Trade (2015), where it results of the policy of food price stabilization also shows that rice import is significant and positive. Imports will be effective if done before price increase significantly, it can be anticipated in advance. Import times are often too late when prices have risen, while import response takes between two to three months to affect the volatility of a commodity price. In order for imports to be effective in reducing price fluctuations, the number of needs each month of the year should be predicted

and import permits granted at least three months prior to the season of potentially rising prices. Imports can be the right solution to control the price if done at the right time and with the right amount (Firdaus et al., 2008).

Based on the result of regression analysis on the effectiveness of rice price stabilization policy, it is found that the three policy instruments of rice price stabilization ie rice HPP, market operation, and rice import are right to control rice price. However, market operation and import policy instruments have not been effective in stabilizing rice prices.

4. Conclusions

The factors of price stabilization policy instruments that significantly affect the consumer rice price are rice HPP, market operations and rice imports. Variables of market operation and import of rice are not effective in stabilizing the rice price due to lack of timing and quantity in policy implementation. The government should maintain rice price stability by taking into account the policy factors that significantly affect the price of rice, namely HPP, market operations, and rice imports. To be effective, it is necessary to market operation and rice import policy right in timeliness and quantity in the implementation of the policy.

References

[1] B. Arifin, Suparmin, Sugiyono, "Analysis of Indonesia Rice Bussiness Policy," Jurnal Sosio Ekonomika, XII (2), pp. 85-102, 2006.
[2] B. Arifin, "The Foundation for Price Stabilization Strategies," Kompas, March 12, 2015.
[3] BPS (Central Bureau of Statistics), "Statistic of Indonesia," Jakarta, Indonesia, 2014.
[4] D.H. Darwanto, "Rice Varietal Improvement and Productivity Growth in Indonesia," IRRI, Los Banos, Philipine, 2001.
[5] D. Dawe, P. Timmer, "Why Stable Food Prices Are a Good Thing: Lesson from Stabilizing Rice Prices in Asia," Global Food Security, Vol. I, pp. 127-133, 2012.
[6] M. Firdaus, L. M. Baga and P. Pratiwi, "Rice Self-Sufficiency from Time to Time: A Review of the Effectiveness of Policies and Formulation of a National Strategy", Bogor Agricultural University Press, Bogor, 2008.
[7] S.Y. Husodo, "The Future of Indonesian Agriculture," Paper National Seminar and Deliberation Area II DPW Java POPMASEPI at Syarif Hidayatullah State Islamic University in Jakarta, 2003.
[8] N. McCulloch, "Rice Prices and Poverty in Indonesia," Bulletin of Indonesian Economic Studies, XLIV (1), pp. 45–63, 2008.
[9] N. McCulloch, C. P. Timmer, "Rice Policy In Indonesia: A Special Issue," Bulletin of Indonesian Economic Studies, XLIV (1), pp. 33–44, 2008.
[10] Ministry of Trade, "Final Report on the Study of the Effectiveness of Food Products Import in Order of Price Stabilization. Ministry of Trade," 2015.
[11] D. Y. Rahmasuciana, D. H. Darwanto, Masyhuri, "The Effect of Rice Procurement and Market Operation to Domestic Rice Price," Agro Ekonomi, XXVI (2), pp. 129-138, 2015.
[12] B. Sanim, "The Effectiveness of Distribution and Return of Special Pattern KUT," JAE, XVII (1), pp. 51-65. 1998.
[13] P. Simatupang, "Agricultural Feasibility As Sector Mainstay of Economic Development of Indonesia," Monograph Series, No 23, pp. 95-108, Center for Agricultural Social Economic Research and Development, Agency for Agricultural Research and Development, Ministry of Agriculture, Jakarta, 2001.
[14] C. P. Timmer, "Food Security in Indonesia: Current Challenges and the Long-Run Outlook," Working Paper Number 48 November 2004, Center for Global Development, Washington DC, USA, 2004.
[15] A. Widarjono, "Econometrics: Theory and Applications for Economics and Business," Publisher Ekonisia, Faculty of Economics Islamic University of Indonesia, Yogyakarta, 2007.

Author Profile

Desi Aryani received the B.S. degrees in Agribusiness from Sriwijaya University in 2003 and M.S. degrees in Agricultural Economics from Bogor Agricultural Institute in 2009. She is a Doctoral Candidate, continues her education at Padjadjaran University, at Postgraduate Program Doctoral Agricultural Science during 2014-now. From 2003-now she is a lecture at Sriwijaya University, Indonesia's Ministry of Technology Research and Higher Education.

icb8