ANALYSIS OF EFFECT OF PRICE AND NON PRICE DETERMINANTS TOWARD PROCUREMENT OF RICE FROM REGIONAL RICE PRODUCTION BY BADAN URUSAN LOGISTIK DIVISI REGIONAL OF SOUTH SUMATRA INDONESIA

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ABSTRACT

The research objectives are: to descriptive analyze the results of the statistic test econometric model of determinants of procurement of rice from reginal rice production by Logistic Affairs Agency (Bulog) Regional Division (Divre) South Sumatra which had been built.Research methods: using a multiple regression statistical analysis of secondary data span of 48 months from January 2008 until December 2011, where the procurement determinant of rice from regional rice production by Bulog of Shouth Sumatera (ADt) as an endogenous variable, and determinants of regional rice production previous time period (PBt-1), the distribution of rice to the poor or *raskin rice*previous time period (RKt-1), the distribution of rice for the social needs of *non raskin rice*previous time period (DLt-1), time trend or dummy season (DMt), the availability of rice in South Sumatra Bulog (XXt), and the price of rice (HBGt), and other unpredictable factors (U) defined as exogenous variables. In equation form: $ADt = e0 + e1\ PBt\text{-}1 + e2\ RK\text{-}1 + e3\ DLt\text{-}1 + e4\ DMt\text{-}1 + e5\ XXT + e6\ HBGt + U$. Prediction model using a computer application program SAS (statistical analysis system) by the method of prediction models: a method 3SLS (three-stage least squares). Research hypothesis: $e3 > 0$; and $e1, e2, e4, e5, e6 < 0$. The results showed: The value of $R^2 = 0.6137$ in equation of estimators response of rice procurement from regional rice production by Bulog Divre South Sumatera demonstrated the ability of various determinants to explain the behavior of each response to the procurement of rice from the regional rice production is quite good. The sign and magnitude of each parameter presumably quite rational. F-statisticsvalue is also quite high. Thus, in general it can be said that all factors estimate in the equation of the behavior of rice procurement from regional rice production by Bulog Divre South Sumatera have used perform such as expected in this study.The determinant of regional rice production period t-1 (PBt-1) and the distribution of rice to the poor (*raskin rice*) time period t-1 (RKt-1) less effect on the procurement of rice from the regional rice production by Bulog Divre Shouth Sumatera. Distribution of rice for the purposes of social (*non raskin rice*) time period t-1 (DLt-1) have a significant positive effect according to the hypothesis. Time trend (DMt-1), the availability of rice in Bulog (XXt) and rice prices prevailing in the market (HBGt) have a significant negative effect consistent with the hypothesis.

 Key words: determinants, procurement of rice, the regression

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I.   INTRODUCTION
A.   Background and problems
Rice is the main food of Indonesia with the participation 90 percent of Indonesia's population consumes rice. Availability of rice in the region is reflected in various aspects, namely from the region's own rice production, from rice in (import) and rice out of region (exports), as well as of rice stocks in Logistic Affair Agency or Badan Urusan Logistik (Bulog) regions.

Procurement of rice by the Logistics affair Agency (Bulog) Regional Division (Divre) South Sumatra as an institution supporting the availability of the regional rice comes from several sources,the move of the national rice runoff, runoff of national import rice, and most of the purchase of rice from regional rice production(the production of local rice farmers). Procurement of rice from local rice production is influenced by a number of factors (variables), the price and the other than price factors. Therefore, the question is how the influence of that various variables on the provision of rice from the regional rice production by Bulog of South Sumatra ?. Need to study.

B.   Research purposes
Corresponding problems, research objectives are: to descriptive analyze the results of the statistic test econometric model of determinants of procurement of rice from reginal rice production by Logistic Affairs Agency (Bulog) Regional Division (Divre) South Sumatra which had been built.

II. METHODS
Research: using multiple regression statistical analysis of secondary data span of 48 months from January 2008 until December 2011, where the procurement determinant of rice from regional rice production by Bulog of South Sumatra (ADt) as an endogenous variable, and determinants of regional rice production period the previous time (PBt-1), distribution of rice to the poor or *raskin*rice previous time period (RKt-1), distribution of rice for the other social needs or*non raskin* rice previous time period (DLt-1), time trend or dummy season (DM), the availability of rice in South Sumatra Bulog (XXt), and the price of rice in the market or at the agent/wholesaler (HBGt), and other unpredictable factors (U) defined as exogenous variables.Use of price and non price variables in the equation refers to Mulyana (1998) in his study on the supply and demand of Indonesian rice, and Taufiq (2001) in his study about the response of rice commodity market agents in South Sumatera Province.Thus the model of procurement of rice from the regional rice production by Bulog Divre of South Sumatera on this research, in the form of a function can be formulated as:

ADT = f (PBt-1, RKt-1, DLt-1, DMt-1, XXt, HBGt, U)
On the operational functions of the above can be reformulated into:
ADT = e0 + e1 PBt-1 + e2 RKt-1 + e3 DLt-1 + e4 DMt-1 + e5 XXt +
        e6 HBGt + U
Where:
AD = procurement of rice in Bulog (ton)
PB = total of regional rice production in South Sumatera (ton)
RK = distribution of *raskin* rice (ton)
DL = distribution of social purposes of *non raskin* rice (ton)

DM = time trend/dummy season, in which:
     rainy season (MH) = 1, the dry season (MK) = 0
XX = the availability of rice in Bulog (ton)
HBG = rice price in the dealer/wholesale (Rp/kg)
U   = unpredictable factors/error.

Development of the econometric model of rice procurement which is from regional rice production by Bulog above, was built very fit with the available data. HBG is used for example: instead of prices at farm level which are not available and the government's benchmark price or Harga Patokan Pemerintah (HPP) which is defined only once a year by the President, so it does not fit the needs analysis based on monthly timescales. In the monthly purchase of rice which from farmers rice production, Bulog price adjustment. So in this case HBG is considered closest to the price at the farm level and the price of HPP.
Prediction model using a computer application program SAS (statistical analysis system) by the method of prediction models: a method 3SLS (three-stage least squares). The sign and magnitude of the expected parameters of the alleged (hypotheses) in the equation of rice procurement by Bulog of South Sumatera above is :: e3> 0; and e1, e2, e4, e5, e6 <0.

III. RESULTS AND DISCUSSION
Determinants of response to the alleged results of the procurement of local rice purchases (AD) by the Logistics Affair Agency or Badan Urusan Logistik (Bulog) Divisi Regional (Divre) of South Sumatra, as shown in Table 1. Value of R^2 = 0.6137 in equation of estimators response of rice procurement from regional rice production by Bulog Divre South Sumatera demonstrated the ability of various determinants to explain the behavior of each response to the procurement of rice from the regional rice production is quite good. The sign and magnitude of each parameter presumably quite rational. F-statistics value is also quite high. Thus, in general it can be said that all factors estimate in the equation of the behavior of rice procurement from regional rice production by Bulog Divre South Sumatera have used perform such as expected in this study.

Table 1. The results of estimation of determinants of procurement of rice from regional rice production by the Badan Urusan Logistik (Bulog) Divisi Regional (Divre) of South Sumatera. 2012

No.	.Regressors	Coefficient	t-ratio	Prob.	Short-term elasticity
1.	Intercept	72838	8,855	0,0001	
2.	PBt-1	-0,037	-4,187	0,0002	-0,77367
3.	RKt-1	-0,585	-2,305	0,0260	-0,53382
4.	DLt-1	3,439	2,278	0,0280	0,14035
5.	DMt-1	-16,210	-7,119	0,0001	-0,97429
6.	XXt	-0,583	-7,453	0,0001	-2,97967
7.	HBGt	-3,837	-4,880	0,0001	-2,82498
8.	R^2 = 0,6137; F-statistic = 10,592; DW = 1,040				

The regional rice production period t-1 (PBt-1) has real negative effect to procurement of rice from the regional rice production by Bulog of South Sumatra, but the magnitude of the alleged value of the parameter is very small. The elasticity is also inelastic, that is - 0.77368. The value of parameter is very small and the allegation is inelastic, it shows that the overall of regional rice production, relatively less effect on the regional rice procurement by Bulog. In the procurement of rice from regional rice production, Bulog partnership activities with the Village Unit Cooperatives or Koperasi Unit Desa (KUD) and with surrogate farmers. Hence also, include the regional rice by Bulog no or less influencedby the regional rice production.

Distribution of rice to the poor (*raskin rice*) time period t-1 (RKt-1) also has real negative effect for the procurement of regional rice by Bulog Divre South Sumatera, with the amount of the alleged parameter value is relatively small. The level of short-term elasticity is also inelastic, that is - 0.53382. Means to influence the realization of rice to the poor t-1 to the procurement of regional rice by Bulog in the short term is not too strong. This may be caused by the availability of rice in Bulog is relatively in a secure state

Distribution of rice to social needs in addition to *raskin (non raskin rice)*, ie for the needs of prisoners, transmigrants, and so disastrous period of time t-1 (DLt-1); positive significant effect on pengadan rice from regional rice production by Bulog Divre South Sumatera. The value parameter determinant of the realization of the alleged influence of rice for the social needs of *non raskin* t-1 to the procurement of regional rice in Bulog is sizable, showing that the effect is quite significant. That significant influence is unidirectional; means any addition of *non raskin*rice distribution, procurement of rice in Bulog is improved also. But the elasticity of *non raskin* rice distribution for the social needs t-1 by Bulog Divre South Sumatera is inelastic in the short term, that is 0.14035. This situation can be interpreted that even the effect of distribution of non raskin rice for social needstoward procurement of rice in Bulog of South Sumatera significant but slow response. It may be that this reinforces the previous statement, namely that such a situation due to the availability of rice in Bulog in a secure state.

Time trend or dummy season (rainy season/dry season) period of time t-1 (DMT-1) a real negative effect on the procurement of rice from the regional rice production by Bulog Divre South Sumatera. The value parameter determinan is very big. This means that the influence of time trends or dummy season is very significant influence on the procurement of rice from the regional rice production by Bulog. It shows the time trend or dummy season Bulog forced to increase the procurement of rice or add to the inventory as a reserve against the possibility of a lack of regional rice production due to seasonal changes from rainy to dry season. Vice versa the purchase of rice will be reduced due to changes in the dry season to wet season that causing the regional rice production is abundant. Elasticity effect of time trend or dummy season against the procurement of rice from regional rice production by Bulog of South Sumatera in the short run close to one, that is - 0.97429, further strengthens the above interpretation, namely that the effect of time trend or dummy season against the rice procurement by South Sumatera Bulog significant in the short term.

Availability of rice (XX) in Bulog Divre South Sumatera, which is a summation of the initial stock, plus runoff rice from national rice move, coupled with the runoff rice from national rice import. The results indicate the availability of rice has real negative effect on the procurement of rice from the regional rice production by Bulog Divre South Sumatera. The value parameter is less than one, but the elasticity effect of the

availability of rice to the procurement of rice from the regional rice production by Bulog of South Sumatera is elastic, that is -2.97967. This suggests that the effect of the availability of procurement of rice from the regional rice production by Bulog strong enough. This means that in terms of procurement, the availability of rice in Bulog could have a positive effect: the greater availability of it will reduce the burden of procurement. But otherwise if the availability is less, then the effect becomes negative due to the procurement should be increased.

Rice prices prevailing in the market or at the agent/wholesaler (HBG) has real negative effect on the procurement of rice from the regional rice production by Bulog Divre South Sumatera. Means to decrease or reverse the price increase will be responded such as reversed by the procurement. The value parameter indicates the alleged substantial significant effect. This can be understood as changes in rice prices prevailing in the market (at the level of agents/wholesalers) will be further away from the government's benchmark price scale or harga patokan pemerintah (HPP). Short-term price elasticity of rice prevailing in the market to procurement of rice from regionl rice production by Bulog Divre South Sumatera is elastic, that is -2.82498. Once again this shows the strong influence of the prevailing price of rice in the market for procurement of rice from the regional rice production by Bulog.

IV.RESEARCH CONCLUSION

Based on this research, it can be concluded that:

1. The regional rice production period t-1 (PBT-1) and the distribution of rice to the poor (*raskin rice*) time period t-1 (RKt-1) less effect on the procurement of rice from the regional rice production by Bulog of South Sumatera.

2. Distribution of rice for the purposes of social *non raskin* time period t-1 (DLt-1) has significant effect according to the hypothesison the procurement of rice from the regional rice production by Bulog Divre South Sumatera, although the response rate of procurement is not too large.

3. Time trend (DMt-1), the availability of rice in Bulog (XXt), and rice prices prevailing in the market (HBGt) have a significant negative according to the hypothesis of the procurement of rice from the regional rice production by Bulog Divre South Sumatera.

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