

RATIONALIZATION PRICE ANALYSIS OF SALT ON MADURA ISLAND

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This study aims to determine the equilibrium price of the salt commodity in Madura Island. If the equilibrium price formed is higher than the price set by the Indonesian government then the production of salt can be said to be prospective, vice versa. The population in this study were all salt farmers in Madura Island as many as 9,217 people. The sample in this research is 384 people spread in 4 districts in Madura Island. To determine the equilibrium price, the method of analyzing the price of salt balance in Madura Island is IDR 2.553. While the price of salt set by the government through coordination with PT Garam (Persero) amounting to IDR 1,500. In other words the price of salt balance is above the price set by the government so that the salt business can be said to be prospective.

Keyword: Salt, Price Balance

INTRODUCTION

Salt is one of the results of marine wealth that is beneficial to human life. Salt is known as flavoring cuisine by almost the entire community. In addition, salt also has other uses that are usefulness in the field of health, food industry and other benefits. In the future development of science it is likely to be found other uses of salt and the need for salt will not stop as long as other products have not been found in place of salt. This is a potential for geographic areas close to the coast to develop the salt commodity which is a commodity of fisheries and marine sector.

One of salt producing regions in Indonesia is Madura Island. The island is located at the eastern end of East Java Province which consists of four districts namely Bangkalan, Pamekasan, Sampang and Sumenep.

The production of salt in Madura is large. Farm salt farmland in the region is also widespread. At least until 2016, Madura owns an area of more than 11,695 hectares for its salt farming. This land is divided into land for salt people and belongs to PT Garam. This is the largest salt production area in Indonesia.

In national percentage, salt production from Madura Island is very big because it can reach 60% of total production from all over the archipelago. The figure of 11,695 hectares is considered not a small land area. However, compared to the total area of land on the second largest island after Bali in the Java region, the number is very small. Yes, only 2.26% of land in Madura is actually cultivated into salt farming areas.

With such a large area of land and salt production, it is natural for many to think that salt is a very crucial commodity on the island. It is also clear that salt is the answer to various economic problems in Madura, from labor to infrastructure. The reality is not so. The amount of salt potential in Madura is still far from the

fire. Especially on the life of the salt farmers themselves. There are still many poor people living on the coast of Madura Island.

One factor that is suspected to be the cause of this phenomenon is that salt prices sold by salt farmers are well below the price they deserve. According to the government in 2018 the selling price feasibility of salt that will bring prosperity for salt farmers of IDR 1,500 / Kg . However, many salt farmers on this island of Madura are selling salt under that price. Although there are some salt farmers who sell salt above that price.

Based on the above conditions, it is worth questioning how much is the market balance price for salt commodity in Madura Island?

THEORETICAL FRAMEWORK

Price is the unit of value assigned to a commodity as the counterpart information of the producer / owner of the commodity. In economic theory mentioned that the price of a good or service that the market is competitive, then the high and low price is determined by demand and market supply. Therefore in this study the market price of salt will be reviewed from the supply and demand side of the market.

The request is always in contact with the buyer, while the offer is associated with the seller. If between the seller and the buyer interact, then there was buying and selling activity. At the time of buying and selling activities in the market, between the seller and the buyer will bargain to reach a price agreement. Buyers always want a cheap price, so with the money it has to get a lot of goods. Instead, the seller wants a high price, in the hope that he can earn a lot of money. That difference can lead to price bargaining. The price agreed by both parties is called the market price. At that price the amount of goods offered is equal to the quantity of goods requested. Thus the market price is called the equilibrium price.

The most important factor in price formation is the power of demand and supply. Demand and supply will be in equilibrium at market price if the requested amount is equal to the amount offered.

Based on the above description can be concluded that the process of formation of market prices if there are things below.

- (a) Between the seller and the buyer happens to be a bargain.
- (b) The existence of a price agreement when the quantity of goods requested equals the quantity of goods offered.

The price formed for a commodity is the result of the interaction between the seller and the buyer. The price is very influenced by the quantity of goods transacted. From the buyer side (demand, D) the more goods to buy will increase the price, while from the seller side (supply, S) the more goods to be sold will lower the price. Many factors can influence the behavior of demand or supply in the interaction

of price formation. But for food / agricultural commodities, the formation of prices is allegedly more influenced by the supply side (supply shock) because the demand side tends to be stable following the trend.

Factors affecting the supply side of food or agricultural commodities tend to be difficult to control. Empirical studies conducted by Deaton and Laroque (1992), Chambers and Bailey (1996) and Tomek (2000) conclude two factors that greatly affect the formation of food or agricultural commodity prices, namely harvest disturbance and storage behavior (storage / inventory behavior). Although the success of the harvest is strongly influenced by uncontrollable weather conditions, the effect of cropping patterns on agricultural commodity prices in the United States is very dominant. There is a systematic cyclical pattern between cropping pattern and commodity price variance. The price variance enlarges during the growing season and shrinks during the harvest season. While the existence of storage technology for agricultural products, especially for durable products, will reduce the price fluctuation pressure of the commodity.

Alfred Marshall (1842-1924) in his *Principles of Economics* (Nicholsan, 2002), published in 1890 explains that demand and supply simultaneously determine prices. Marshall believes that demand and supply collectively determine the price (P) and the quantity of the balance of a good (Q). The most famous contribution of Marshall's thought in value theory is the sitetis between the novice thinking of marginalists and Classical thinking. According to him, the work of both forces, namely demand and supply, is like the work of two scissors eyes. Thus, production cost analysis is a supply-side support and marginal satisfaction theory as the core of demand discussion. To facilitate partial balance discussions, the use of *ceteris paribus* assumptions is used, while to take account of time elements into its analysis, the market is classified into very short, short, and long term terms. In discussing marginal satisfaction is another assumption, the fixed, marginal satisfaction of money.

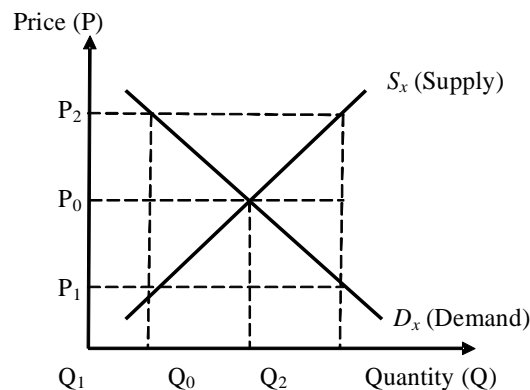


Figure 1: Price Formation Based Demand and Supply Interaction

According to the classical price of goods is determined by the amount of sacrifice to produce the goods. So that determines the price is the supply side (manufacturer). But the classical opinion is about by Jevons, Menger and Walras (neoclassical figures). They agree that what determines the price is the condition of demand, or the marginalists see it from the consumer side, that is from the marginal utility of consuming one unit of last item.

In the demand-side discussion, Marshall has calculated the coefficient of goods demanded due to relative price changes. The value of this coefficient can be equal to one, larger and smaller than one. However, there are two issues that have not been settled in terms of the demand side, ie aspects of replacement goods and income effects.

With regard to the opinions of these two streams, Marshall does not blame the two concepts above, but combines them. According to Marshall, in addition to costs, prices are also influenced by other subjective customers, both from the consumer and the producers. The subjective element of the consumer is the income (purchasing power) and the subjective element of the producer is the financial condition of the company. If corporate finances are in difficult circumstances, for example, companies may accept low prices but if the financial situation is strong enough, they will also be more brave in maintaining the price. So the price theory according to Alfred Marshall is as follows: "The price is formed as an integration of two market forces: supply from producers and demand from the consumer. The higher the national income (the welfare of a country), the higher the demand for money for the purpose of the transaction, and vice versa.

The characteristics of supply and demand for agricultural commodities are 'unique' as they tend to be inelastic with respect to price changes. Farmers as producers can not necessarily increase their production when prices increase. Consumers also can not reduce the demand when the price increases because the food / agricultural commodities become the basic needs. This condition makes commodity prices very sensitive to stock, both from supply and demand side, including indirect stock which *indirectly* influences such as distribution disturbance.

Demand side pressure also has the potential to increase the price of agricultural commodities even though the degree is relatively low compared to supply-side pressure. The main source of increasing demand for food commodities is the increase in population and income (Tomek, 2000). However, for developed countries, income effect on agricultural commodity demand is relatively small compared to developing countries that have higher income elasticity. While Borensztein et al (1994) argue that demand for agricultural commodities is more influenced by economic activity (economic growth). Improved economic growth will increase people's incomes that further encourage consumption. This condition spurred the industrial sector to increase food production so that demand for agricultural commodities as raw materials increased.

RESEARCH METHODS

The population in this study were salt farmers in Madura Island, amounting to 9,217 people in 2017. Based on Slovin method with error rate of 5%, then the number of samples is 384 people. By proportional random sampling technique, the sample in each regency is 10 people in Bangkalan District, 34 people in Pamekasan District, 153 people in Sumenep Regency, and 187 people in Sampang Regency.

To determine the price of salt balance in this study, the method of analysis used is simultaneous equations. The salt demand and supply equations in the study are:

$$Q_d = \alpha_0 + \alpha_1 P + \alpha_2 JT + \alpha_3 I + \mu_1 \quad (1)$$

$$Q_s = \beta_0 + \beta_1 P + \beta_2 K + \beta_3 L + \beta_4 T + \mu_2 \quad (2)$$

Where, Q_d = the quantity of salt demanded by the salt farmer in Kg / month , Q_s = the amount of salt sold by the salt farmer in units of Kg / Month , P = the price of salt obtained by the salt farmer in accordance with the quality of the salt produced and measured in units of Rupiah , JT = the amount of tanggungan salt farmers in units of people, I = salt farmer income in units IDR / investments made in production by salt farmers in units of IDR / month, L = number of hours worked in producing measurable salt with Hours / Months , and T = used by salt farmers in production. This variable is measured in dummy form. If the salt farmers use traditional filter technology then it is given a value of 0, whereas if the salt farmer uses Geoisembator / Geomembran technology or Prisma / Rumah Salt is given a value of 1 .

Before we get the equilibrium price estimation parameters through the reduced form process, we must first test the identification to know whether the simultaneous equations are classified as underidentified, exactly identified or overidentified. Terms of identification test:

$$K - k \geq m - 1 \quad (3)$$

Where, K = the number of exogenous variables in the system, k = number of exogenous variables in the equation, m = number of endogenous variables.

Based on the requirements of the identification test then the demand equation is an overidentified equation because $5 - 3 > 2 - 1$ ($K - k > m - 1$). The same is true of the supply equation for $5 - 2 > 2 - 1$. Thus, it can be said that the salt demand and supply equation in this study is overidentified. After the identification test is done then the process is reduced form. From the results obtained from the structural equations reduced prices eimbang's case as follows:

$$P = \Pi_0 + \Pi_1 JT + \Pi_2 I + \Pi_3 K + \Pi_4 L + \Pi_5 T + \varepsilon_t \quad (4)$$

RESULTS AND DISCUSSION

The result of the research to determine the salinity equilibrium price based on the simultaneous equation can be seen in Table 1 below. From the equation it is seen

that all exogenous variables of the reduced form result influence the price significantly. This condition is evident from the probability value of each small variable of $\alpha = 0.05$. In other words, the rise and fall of salt prices on Madura Island is determined by the number of dependents, income, capital, labor and technology.

$$\begin{aligned}
 P = & 3478.410 - 0.982267 JT - 8.60 \times 10^{-04} I + 7.30 \times 10^{-04} K + 0.911958 L \\
 & (0.0000) \quad (0.0159) \quad (0.0000) \quad (0.0000) \quad (0.0011) \\
 & + 0.912631 T \quad (5) \\
 & (0.0000)
 \end{aligned}$$

$$\begin{aligned}
 R^2 &= 0.425402 \\
 \text{Prob } F_{\text{statistic}} &= 0.0000
 \end{aligned}$$

To determine the actual salinity equilibrium price formed on Madura Island, the average value of each exogenous variable is included in equation 5 then multiplied by each coefficient of estimate. The value of the price of the salt balance looks like the following equation:

$$\begin{aligned}
 P = & 3478.410 - \{0.982267 \times 2\} - \{8.60 \times 10^{-04} \times 5.237.919\} \\
 & + \{7.30 \times 10^{-04} \times 4.568.303\} + \{0.911958 \times 269\} + \{0.912631 \times 1\} \quad (6) \\
 & P = 2.553 \quad (7)
 \end{aligned}$$

From equation 7 above shows that the price of salt balance in Madura Island is IDR 2,553. While the price of salt set by the government through coordination with PT Garam (Persero) of IDR 1,500. In other words, the price of salt balance is above the price set by the government. It means that salt farmers live prosperous because the price is higher than the price of government policies and regulations.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results above, this study concludes that the price of salt balance in Madura Island is IDR 2.553. While the price of salt set by the government through coordination with PT Garam (Persero) of IDR 1,500. In other words, the price of salt balance is above the price set by the government.

From these conclusions it can be suggested that the government should always maintain the stability and certainty of salt prices on the island of Madura. The stability and certainty of this price is needed by salt farmers because stable prices will keep the business and welfare of their families alive. In addition, the government through related parties in order to pay attention to the phenomenon of salt imports because salt imports will be able to reduce the price of salt in the market so that salt farmers increasingly difficult to compete.

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