

analyzed by Data Panel Regression Analysis using the E-views program. The results of the estimation are presented in Table 1.

C. Retail Price on The Previous Day (PC_{t-1})

The price at the retailer level on the previous day (PC_{t-1}) according to the estimation result has a significance value (probability) of 0.01. Since the value of significance is 0.0112 or less than 0.05, H_0 is rejected, and H_a is accepted. It means that the price at the retailer level on the previous day (PC_{t-1}) partially has a significant effect on the retail price on the current day (PC_t). This condition tends to happen because the price on the previous day will become information or reference of the pricing decision on the next day. The price difference between two consecutive times is also considered a variable in price formation in the electricity market [37]. The tendency of price increases in previous times will motivate traders to increase prices to a certain point to gain maximum profit continuously. Vice versa, the occurrence of price reduction, massively and periodically, on certain products will make traders inevitably reduce the price of these products. The decision to maintain price levels at fluctuating market conditions is precisely an unsuitable strategy.

D. Price at Collecting Traders (PO_t)

The price at the previous trader level or collecting traders (PO_t) according to the estimation result is significant at the significance value (probability) of 0.0000. If the value of the significance level is less than 0.05, so H_0 is rejected, and H_a is accepted. It means that the independent variable of the price at previous traders/collector traders (PO_t) has a significant effect on retailer price (PC_t) in Rejang Lebong Regency. This result corresponds with the research on the *Distribution channel and pricing of red chili commodities in Purwokerto* [2]. The finding of the research explains that the change in price received by the end consumer is influenced by the price formed in the transaction between collectors and retailers. It means that price formation at the retailer level is highly influenced by price decisions at the collecting trader level.

Based on the observation result in Rejang Lebong Regency, the reason for the effect at a retailer price largely comes from the previous trader or collecting trader is a direct impact of pricing strategy for gaining profit margin on sales. The retailer plays a normal reaction. When they must sell chili or other products, they must buy first, and this buying activity will cost them. Then, if they want to collect profit from it, they must sell it at a higher price than the buying price. Hereafter, the chili price will be higher and higher at the retailer level when they must pay higher than the previous trader. The pricing decision of collecting traders is caused by any changes or movements of price in the center market Kramat Jati in Jakarta, as the reference market of agricultural products in Indonesia. So, the result of changing the price is not associated with the cost increasing or decreasing at the farm level. That is why the transfer price is always unfair for farmers because it is stopped at traders (collecting traders or wholesalers). This situation reflects that the collecting traders play a significant role in the formation of curly red chili prices from farmers to end-consumers.

E. Difference between Supply and Demand of Curly Red Chili (QC_t)

The difference between the supply and demand of curly red chili (QC_t), according to the estimation result, is not significant (probability), because the value of significance is 0.28 (> 0.05), then H_0 is accepted, and H_a is rejected. It means that the independent variable of the gap between the supply and demand of curly red chili (QC_t) partially has no significant effect on the retail price (PC_t). This finding is also agreed by research which has been done in Purwokerto [2] In some cases, price change (fluctuation) in a market, mostly agricultural product market, is not driven by the end market needs, but it depends on the ability in transaction of chain traders to determine the sale and purchase price. Other inventions in European Union countries concluded that electricity use failed to show significant impacts on housing prices in 2014, but it was significant in 2016 [38]. Therefore, in a specific market situation, the result of curly red chili market system research could have a different conclusion.

F. F-Test

From the estimation results presented in Table I, the independent variables, such as retailer price on the previous day (PC_{t-1}), the price at a previous merchant (collecting trader) (PO_t), and the difference between the supply and demand of red chili (QC_t), simultaneously affect the price at the retailer level (PC_t). The significance value (probability) of the F-test is 0.0000, less than 0.05, then H_0 is rejected, and H_a is accepted. It can be concluded that any change (increase, constant, or decrease) in the value of the independent variable will also have an impact on the change in the price of curly red chili at the retailer level in Rejang Lebong Regency.

Furthermore, the number of R^2 is 0.8393, which means that the model can be explained by all the independent variables as much as 83.93 per cent, and 16.07 per cent is described by other variables which are out of the model, such as substitution good price, good complementary price, product quality, or the season. In macro study [39], some common factors of price formation include following: the number of sellers and buyers (less market participants are generally associated with decreased price competitiveness); the homogeneity of type, variety, quality, and characteristic of end-consumers (more significant product differentiation is mostly associated with greater price differences among products and markets); The number of close substitutes (more close substitutes means buyers have more choice and the price will be more sensitive); The storability of commodity (more incredible stock gives the traders more options in terms of when and under what conditions to sell their products); The transparency of price formation, e.g., open auction versus private contracts (greater transparency prevents price manipulation); The ease of commodity transfer between consumers and traders and among markets; and finally, Artificial restrictions on the market processes, such as government policies or market collusion from a major participant (more artificial restrictions tend to prevent the price from reaching its natural equilibrium point). Some restrictions (import barriers, limit supply, and keep prices high), while other types of restrictions, such as market collusion by a few large buyers, may suppress market prices. Further research can analyze those variables.

G. Retailer Behaviour in Pricing Strategy

Retailers play a crucial role in distributing food products, in this case, curly red chili, to the hands of consumers. This role certainly encourages retailers to conduct various strategies and to maintain a business profit. A strategy that can be performed is to determine the selling price of curly red chili. Based on the research findings, the selling price of curly red chili at the retailer's level on the current day is influenced by the selling price on the previous day. It is also influenced by the purchased price received from the collecting traders. The selling price of chili set by the retailer is solely to take profit margins from the difference between the purchase price (from the collecting trader) and the selling price (consumer). So, there is no specific strategy for pricing. Commonly, prices are formed due to the size of the supply and demand of goods on the market. However, for the curly red chili commodity in Rejang Lebong, the results of the research show that the formation of curly red chili prices at the retailer's level is more caused by price decisions at the level of the previous trader or collecting trader. Otherwise, the gap between demand and supply does not influence the retailer in deciding what price will be offered to end-use consumers. Other research informs the development of a structural model of the vertical market chain to study the relationship among retailers and producers in a prototypical fresh produce market. This research results show that alternative pricing strategies to markup pricing exacerbate farm prices and income volatility of retailers [40]. Another research from Italia exposes that price promotion is the best strategy to improve national pasta brands rather than intervening with regular price changes [41]. This research also used panel data which were analyzed by frequency approach.

H. Price Transmission Elasticity

Analysis of price transmission elasticity is an analysis that illustrates the extent to which changes in the price of an item at one level of the market change the price of goods in place or at another market level [23]. Based on the research observation, the average price of curly red chili at the consumer level is Rp 30,788.889, and at the level of collector, traders are Rp 25,055.556, in Rejang Lebong Regency. So, the elasticity of price transmission is:

$$Et = \frac{\delta Pr / Pr}{\delta Pf / Pf} \quad \text{or} \quad Et = \frac{\delta Pr}{\delta Pf} \times \frac{Pf}{Pr}$$

$$\begin{aligned} Et &= \frac{1}{b} \cdot \frac{Pf}{Pr} \\ &= \frac{1}{1,204} \cdot \frac{25055,556}{30788,889} \\ &= 0.675 \% \end{aligned}$$

From the results of the marketing elasticity analysis (Et) calculation above, the Et value of curly red chili in Rejang Lebong, Bengkulu, Indonesia is 0.675 per cent. Et value is less than 1. It means that if there is a change in the price of 1 per cent at the consumer level, it will cause a change in the price of 0.675 per cent at the level of collecting traders. This result follows [42] study stating that the price transmission on agricultural commodities marketing is relatively weak because the traders can control the purchase price of the farmer. So, although the price at the consumer level is fixed,

the trader can enforce the purchase price to farmers to maximize their profit.

Similarly, if there is a price increase at the consumer level, then, traders can forward the price increase to farmers imperfectly, in other words, the price increase received by farmers is lower than the price increase paid by consumers. This price transmission pattern is not beneficial to farmers, because the farmers do not fully enjoy the increasing price which occurs at the consumer level. Otherwise, if the price is declining, farmers will be directly forced to receive a lower price. The results of the price transmission of curly red chili in Rejang Lebong Regency are meaningful, and they prove that the prevailing marketing system is inefficient.

Furthermore, the market condition faced by all market participants is imperfect competition. Research on the price transmission of red chili also has been conducted in Europe [43]. The research concludes that the response of producer, wholesale, retail, and international trade prices shocks at prices in upstream or downstream stages in the Dutch onion and red chili supply chains. Another research focused on red chili prices also has been done in Banyumas Regency [44]. This research showed that the price of red chili pepper, onion, and garlic was volatile. Another research explaining the case in Europe in the 1990s concludes that the competition in the agricultural and food marketing system was driven by the growing market power of retailers [45]. However, the type of competition will depend on the market structure and performance [46]. The crucial point in this study is the concern about how imperfect competition at successive stages of the agricultural and food marketing system might interact with vertical linkages between different levels of traders [47, 48]. Therefore, it affects the transmission of exogenous changes in the price of raw agricultural products through to the prices of food products at retail [49, 50].

IV. CONCLUSIONS

The market behavior of curly red chili in Rejang Lebong Regency is described as chilies being purchased from farmers and then directly sold to retailers in nearby markets and neighboring districts. Meanwhile, the strategy of price-determining is negotiation. Farmers will have a bargaining position if there is no debt bondage to collecting traders or wholesalers. In addition, some cases are based on price agreements between farmers and collectors. For debt-tied farmers, the price is determined by the capital owner as mentioned in the contract. In a certain sense, prices are formed through two mechanisms, namely the market mechanism in general (the equilibrium point of demand and supply), and the price-fixing agreements.

Price formation is an information-gathering process that ensures that market participants (traders and consumers) know enough about the prices of the goods being traded in the market so that they can make well-informed decisions. The price of curly red chili at the retailer level is formed by following the retail price of the previous day. The retailer's price change is also influenced by the price at the previous trader/collecting trader level. It can be concluded that the marketing system has a vertical effect and backward linkage between its elements.

Last, the value of price transmission elasticity of curly red chili in Rejang Lebong Regency, Bengkulu Province,

Indonesia is less than 1 ($Et < 1$). As a result, the marketing system in this area is inefficient, and the market is competing imperfectly between its trading participants.

Curly red chili is one of the most popular ingredients in Indonesia, particularly in Bengkulu. Thus, this commodity has a strategic position in the local market. Every single point of price movement, normally, has an impact on economic circumstances, including inflation level. For that reason, in some cases, it is necessary to involve government aid to maintain the stability of the market condition of the agricultural product price and inventory.

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