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Analysis Of Marketing Margin And Farmer's Share Of Tomato Commodity Based On Price Differences At Producer And Consumer Levels In Teluk Bintuni Regency

Grace Stella S R Manusaway[1*], Herpina[2], Yudhit Restika Putri[3]

[1,2,3]Program Studi Agribisnis, Fakultas Sains dan Teknologi, Universitas Muhammadiyah Teluk Bintuni, Indonesia.

[*]Corresponding author: Gracemanusaway03@gmail.com

Abstract

Tomato (Solanum lycopersicum L.) is a strategic horticultural commodity with high perishability, requiring an efficient marketing system. This study aims to analyze the marketing margin and farmer's share of the tomato commodity using time-series data from 2021 to 2025. Data were gathered through 60 structured observations across a 5-year study period (12 routine data-points collected annually), capturing both producer and consumer price levels. Quantitative descriptive analysis was applied. The results showed that the average consumer price was Rp 35,539/kg and the producer price was Rp 14,671/kg, generating an average marketing margin of Rp 20,869/kg. The average farmer's share achieved was 41.28%, indicating that the marketing system is generally inefficient (below 50%) due to geographical barriers, long distribution chains, and high logistics costs. However, a significant efficiency spike occurred in 2025, reaching a farmer's share of 77.54% due to a tightening supply that drove up farm-gate prices.

Keywords: Marketing Margin, Farmer's Share, Producer Price, Consumer Price, Tomato

INTRODUCTION

Tomato (*Solanum lycopersicum* L.) is a strategic horticultural commodity with substantial economic value, serving both as a source of income for farmers and as a widely consumed food product. Tomatoes are highly perishable, have a high water content, and have a relatively short shelf life, requiring appropriate postharvest handling and rapid distribution (BPS, 2024). These characteristics indicate that the successful

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development of the tomato industry depends not only on production capacity but also on the effectiveness of the marketing system in preserving product quality and distributing tomatoes from farmers to consumers.

An effective marketing system is particularly important in Teluk Bintuni Regency due to its geographical conditions and limited infrastructure. Although the region has considerable potential for tomato production, its marketing system continues to face constraints related to accessibility, the distance between production centers and consumer markets, and inadequate transportation and distribution facilities. These constraints may prolong the marketing process, increase the risk of product damage and postharvest losses, and raise distribution costs. The accumulation of these costs consequently affects price formation at both the producer and consumer levels.

The difference between the price received by producers and the price paid by consumers is known as the marketing margin. This margin comprises the costs incurred in performing marketing functions-including transportation, storage, sorting, packaging, shrinkage, and risk-bearing-as well as the profits earned by institutions involved in the distribution process (Asmarantaka et al., 2017). The size of the marketing margin is influenced by the length of the marketing channel, the number of intermediaries, infrastructure conditions, and the efficiency with which marketing functions are performed. Ayomi and Zuhri (2023) demonstrated that differences in distribution channel structures result in variations in tomato marketing margins. Therefore, the distribution constraints encountered in Teluk Bintuni Regency may widen the price gap between producer and consumer markets.

The marketing margin is closely related to the proportion of the consumer price received by farmers, commonly referred to as the *farmer's share*. A high *farmer's share* indicates that farmers receive a substantial proportion of the price paid by consumers, whereas a low value reflects a wider price disparity between producers and consumers. The structure and length of marketing channels influence the proportion of the final price received by farmers (Yusuf, 2022). However, the *farmer's share* should not be used as the sole measure of marketing efficiency because the marketing margin also includes distribution costs and the risks associated with product deterioration. Therefore, the marketing margin and *farmer's share* should be analyzed simultaneously to provide a more balanced assessment of the distribution of economic value within the tomato marketing system.

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Studies examining tomato price trends and the distribution of economic value in Teluk Bintuni Regency remain limited, particularly those employing time-series data. Differences in geographical and infrastructural characteristics mean that findings from other regions may not fully represent the conditions of tomato marketing in this area. Accordingly, this study aims to analyze tomato price trends at the producer and consumer levels from 2021 to 2025, calculate the aggregate marketing margin for each year of observation, and determine the *farmer's share* received by producers. The findings are expected to provide a scientific basis for formulating more efficient horticultural marketing policies and strengthening the economic position of tomato farmers.

RESEARCH METHODS

Types and Sources of Data

This study was conducted in Teluk Bintuni Regency, West Papua Province. It employed quantitative time-series data covering the 2021-2025 period, consisting of tomato prices at the producer and final consumer levels. The analysis used a total of 60 structured observations, comprising 12 periodic observations for each year of the study. The data were obtained from primary sources through surveys and independent price monitoring to capture fluctuations in tomato prices at both the farm-gate and consumer retail market levels in Teluk Bintuni Regency.

Data Analysis Method

The data were analyzed using a quantitative descriptive approach to assess the performance and efficiency of the tomato marketing system. The economic parameters were calculated separately using two primary analytical measures: marketing margin and *farmer's share*.

Marketing Margin Analysis

The marketing margin was analyzed to measure the price disparity arising from accumulated distribution costs and profits earned by marketing intermediaries. Following Sudiyono (2004), the marketing margin was calculated using the following formula:

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$$Mp = Hk - Hp$$

Where:

M_p= Marketing margin of tomatoes (IDR/kg)

H_k= Average retail price of tomatoes paid by final consumers (IDR/kg)

H_p= Average farm-gate price of tomatoes received by producers/farmers (IDR/kg)

Farmer's Share Analysis

Farmer's share was used to measure the proportion of the final consumer price received by upstream producers, expressed as a percentage. Following the approach proposed by Kohls and Uhl (2002), farmer's share was calculated using the following formula:

$$Fs = \left(\frac{Hp}{Hk}\right) \times 100\%$$

Where:

F_s= Farmer's share, or the proportion of the final consumer price received by farmers(%)

H_p= Average farm-gate price of tomatoes received by producers/farmers (IDR/kg)

H_k= Average retail price of tomatoes paid by final consumers (IDR/kg)

The relative efficiency of the marketing system was assessed using criteria commonly applied in agricultural marketing studies. A *farmer's share* of more than 50% indicates a relatively efficient marketing system because farmers receive a larger proportion of the final consumer price. Conversely, a *farmer's share* of less than 50% indicates a relatively inefficient marketing system, which may be associated with price information asymmetry, long distribution chains, or high logistics and transaction costs (Sudiyono, 2004).

RESULTS AND DISCUSSION

Tomato Marketing Margin Analysis

Based on the analysis of annual average price data derived from 60 observations over the five-year study period, the dynamics of tomato marketing margins in Teluk Bintuni Regency are presented in Table 1.

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Table 1. Tomato Marketing Margin Analysis, 2021-2025

Year	Average Consumer Price (IDR/kg)	Average Farm-Gate Price (IDR/kg)	Marketing Margin (IDR/kg)
2021	30,701	13,124	17,577
2022	31,563	12,167	19,396
2023	48,592	10,817	37,776
2024	31,804	10,079	21,725
2025	35,035	27,167	7,869
Average	**35,539**	**14,671**	**20,869**

Source: Primary Data Processed (2026).

The average tomato marketing margin during the study period in Teluk Bintuni Regency was IDR 20,869/kg. As shown in Table 1, the marketing margin fluctuated considerably and reached its highest level in 2023 at IDR 37,776/kg. This sharp increase indicates a widening price disparity between the producer and consumer levels. It may also reflect higher distribution costs, marketing risks, or intermediary profits. Awaliyah and Rostwentivaivi (2021) reported that highly perishable horticultural commodities tend to incur greater logistical risk costs, particularly when poor road conditions and difficult terrain restrict market accessibility.

Conversely, in 2025, the marketing margin narrowed substantially, reaching its lowest level of IDR 7,869 per kg. This decline coincided with an increase in the farm-gate price to IDR 27,167 per kg, while the increase in the consumer price was relatively smaller. This indicates that the rise in the farm-gate price was not fully followed by a corresponding increase in the consumer price, thereby narrowing the price gap between the two market levels. This finding is consistent with Hirvonen et al. (2021), who demonstrated that changes in vegetable prices at the producer and consumer levels may occur disproportionately, resulting in narrower marketing margins for certain commodities.

Farmer's Share Analysis

Based on the ratio of farm-gate prices to consumer retail prices calculated from 60 time-series observations, the proportion of the final consumer price received by tomato

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farmers and the corresponding relative marketing efficiency classifications are presented in Table 2.

Table 2. Farmer's Share and Relative Marketing Efficiency, 2021-2025

Year	Average Farm-Gate Price (IDR/kg)	Average Consumer Price (IDR/kg)	Farmer's Share (%)	Marketing Efficiency Criterion
2021	13,124	30,701	42.75	Relatively inefficient (<50%)
2022	12,167	31,563	38.55	Relatively inefficient (<50%)
2023	10,817	48,592	22.26	Relatively inefficient (<50%)
2024	10,079	31,804	31.69	Relatively inefficient (<50%)
2025	27,167	35,035	77.54	Relatively efficient (>50%)
Average	**14,671**	**35,539**	**41.28**	**Relatively inefficient**

Source: Primary Data Processed (2026).

The average farmer's share for tomatoes in Teluk Bintuni Regency during the 2021-2025 period was 41.28%. Based on the 50% threshold adopted in this study, the tomato marketing system was classified as relatively inefficient. This finding is consistent with Nendissa et al. (2024), who reported that the low proportion of consumer prices received by horticultural farmers in developing regions is often associated with local monopsonistic market structures that weaken producers' bargaining power.

As shown in Table 2, the farmer's share declined to its lowest level in 2023, at only 22.26%. This wide price disparity indicates that farmers received a relatively small proportion of the final consumer price. Such a condition may be associated with multilayered marketing channels, high distribution costs, and the weak bargaining position of producers (Sari, 2025). However, the market situation improved substantially in 2025, when the farmer's share reached its highest level of 77.54%, resulting in a relatively efficient classification. Access to transparent price information and the strengthening of collective marketing through farmer organizations can reduce farmers' dependence on

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intermediaries and enhance their bargaining power when selecting more profitable marketing channels (Ibikoule et al., 2024).

CONCLUSIONS

Based on the analysis of 60 structured time-series observations of tomato prices from 2021 to 2025, producer and consumer prices in Teluk Bintuni Regency exhibited considerable fluctuations. The annual average farm-gate price ranged from IDR 10,079 to IDR 27,167/kg, while the annual average consumer price ranged from IDR 30,701 to IDR 48,592/kg. The overall average marketing margin was IDR 20,869/kg, with the highest margin recorded in 2023 at IDR 37,776/kg and the lowest in 2025 at IDR 7,869/kg.

Overall, the tomato marketing system in Teluk Bintuni Regency was classified as relatively inefficient because the aggregate *farmer's share* was only 41.28%, below the 50% efficiency threshold. Geographical constraints, long intermediary chains, and high postharvest loss risks may contribute to the relatively small proportion of the final consumer price received by farmers. The recommended strategic policies include shortening distribution channels, developing cold-chain and storage facilities, and strengthening farmer organizations by improving access to digital price information. Digital technology can broaden farmers' access to market information and strengthen their bargaining position within the marketing chain (Herpina et al., 2026).

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