

Price Risk of Green and Red Bird's Eye Chili in the Old Market and New Market of Mamuju

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ABSTRACT

This study aims to analyze the price risk of green bird's eye chili and curly red chili in Pasar Lama and Pasar Baru Mamuju, with a focus on price fluctuations and the risks faced by traders and consumers. Price data collected over one week in January 2026 showed that the prices of both types of chili in both markets did not fluctuate, remaining stable throughout the observed period. Analysis using the Coefficient of Variation (CV) showed that the CV value for both types of chili in Pasar Lama and Pasar Baru was 0%, indicating that prices in both markets were very stable with no variation. Therefore, the price risk in both markets can be categorized as very low. The results of this study indicate that both markets have high price consistency, providing benefits for consumers and traders who seek price stability. This study provides important insights into understanding the factors that influence chili price stability in traditional markets and their implications for the local economy

INTRODUCTION

Green and red bird's eye chilies are important commodities in Indonesian traditional markets, including in the city of Mamuju, and play a significant role in daily life. The availability of chilies in traditional markets has a direct impact on the local economy, both for consumers and traders. However, chili prices in traditional markets often fluctuate, which can affect consumers' purchasing power and traders' income stability.

The price risk of green and red chili peppers in traditional markets is highly dependent on various factors, including quality, supply, and pricing policies in each market. Pasar Lama and Pasar Baru in Mamuju City have different characteristics, both in terms of prices and the quality of products sold. Pasar Lama, which is more centralized, often offers more stable prices, while Pasar Baru, which is more dispersed, can experience more fluctuating prices depending on supply and demand in the area.

These price fluctuations create risks that need to be further analyzed to determine the extent of their impact on consumers and traders. One method used to analyze price fluctuations is by using the Coefficient of Variation (CV), which measures the level of price variability relative to the average price. By using this method, we can determine the extent of chili price fluctuations in both markets and how this impacts price risk.

This study focuses on two types of chili peppers that are widely consumed, namely green bird's eye chili and red curly chili. These two types of chili peppers play an important role in the culinary industry in Indonesia, and therefore it is important to analyze the price risks arising from market fluctuations. The main objective of this study is to compare the price risks of green bird's eye chili and red curly chili between the Old Market and the New Market in Mamuju City, using Coefficient of Variation (CV) analysis.

LITERATURE REVIEW

1. Price Fluctuations in the Agricultural Sector

Fluctuations in agricultural commodity prices are a common phenomenon in traditional markets. Many factors affect price instability, including seasonal fluctuations, changes in supply and demand, and government pricing policies. In Indonesia, chili prices, as one of the important food commodities, often experience significant fluctuations due to their dependence on external factors such as weather and distribution disruptions (Syahyuti, 2003). Although chili prices are often highly volatile, studies on chili prices in traditional markets are still rarely conducted in depth, particularly regarding price risk analysis and market fluctuations (Saptana, 2004).

Significant price fluctuations often increase price risk, which can affect the stability of farmers' income. Therefore, it is important to conduct price risk analysis in traditional markets to provide a clearer picture of market conditions for farmers and traders. Price risk itself can be defined as the likelihood of price changes that can harm economic actors, including farmers and traders, who rely on stable prices for planning and decision-making (Haryanto, 2010).

2. Measuring Price Fluctuations with the Coefficient of Variation (CV)

The coefficient of variation (CV) is a statistical tool used to measure the level of price fluctuations relative to the average price. A higher CV value indicates that prices are more volatile, which can increase uncertainty and risk for traders and farmers. Conversely, a low CV indicates better price stability. CV is widely used in agricultural economic analysis to evaluate the price stability of various commodities, including chili, which is known to be highly susceptible to price fluctuations (Ghozali, 2005).

In this study, the use of CV to assess price fluctuations of green chili and red chili in Pasar Lama and Pasar Baru in Mamuju City is important because it can provide an overview of the price stability of both types of chili in these two markets. As has been found in several previous studies, traditional markets tend to have high price fluctuations, depending on the distribution and quality of the available products (Mardikanto, 2006). Therefore, by calculating the CV, we can identify markets with lower price fluctuations and provide more stable benefits for both consumers and traders.

3. Price Risk and Its Impact on Traditional Markets

Price risk in traditional markets is very important to understand because it directly affects the welfare of farmers and traders. High price fluctuations, which can be caused by external factors such as bad weather or distribution problems, often create uncertainty for farmers who have no control over market prices (Syahyuti, 2008). In markets with high price volatility, farmers often have difficulty planning their production and income.

On the other hand, markets with stable prices and lower fluctuations provide greater benefits for farmers because they can plan better and reduce the risk of losses. Therefore, price risk analysis in the context of traditional markets is very important to understand the extent of price uncertainty faced by traders and farmers (Saptana, 2004). Thus, the price risk analysis in Pasar Lama and Pasar Baru Mamuju, which have relatively stable prices during the observation period, indicates a very low price risk, which means price stability that can offer greater benefits for market participants.

4. Price Stability and Its Impact on Consumers and Merchants

Price stability not only benefits farmers and traders but also provides certainty for consumers. Consumers facing fluctuating prices often struggle to plan their expenses, especially for staple goods like chili peppers. As a commodity with high demand in the market, stable chili prices will benefit both parties, both consumers and traders, as it allows them to plan purchases and sales more effectively (Darmawan, 2010).

In this study, the prices of green chili and red chili in Pasar Lama and Pasar Baru Mamuju showed fairly high stability, which reduces the risk of uncertainty for both parties. This indicates that both markets have good mechanisms for regulating prices, either through stable pricing policies or efficient distribution. This is a relevant finding for market policy and agricultural sector development, especially in efforts to improve farmers' welfare and ensure the sustainability of chili supply in traditional markets.

METHODOLOGY

This study uses a quantitative descriptive approach, which aims to describe the characteristics of price fluctuations and price risks of green chili peppers and curly red chili peppers in two traditional markets in Mamuju City, namely Pasar Lama and Pasar Baru. The quantitative approach was chosen to allow numerical data analysis and provide a clear picture of price differences and the level of price fluctuations between markets. The type of data used is secondary weekly time series data for the period January 12 – January 15, 2026. The main data source was obtained from PIHPS (Center for Strategic Food Price Information).

Data analysis in this study uses the coefficient of variation (CV) analysis to measure price fluctuations relative to the average price. CV is calculated using the formula: $CV = \frac{\sigma}{\mu} \times 100\%$

Where:

- σ = Price standard deviation
- μ = Average price

CV is used to measure how much price variation there is compared to the average price.

RESEARCH RESULT

Here is the data on the prices of green bird's eye chili and curly red chili based on markets and weeks:

1. Price of Green Bird's Eye Chili:

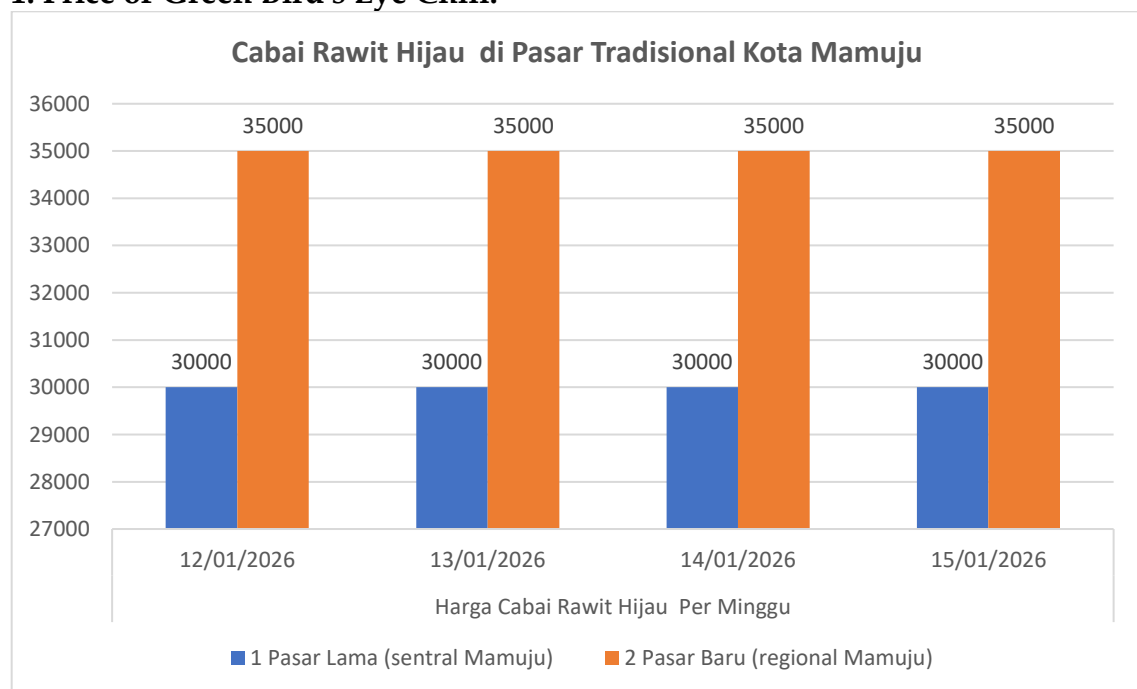


Figure 1. Fluctuations in Green Chili Prices at the Old Market & New Market in Mamuju City

A. Old Market

- **Average Price (mean)**

$$\text{Rata-rata} = \frac{30.000 + 30.000 + 30.000 + 30.000}{4} = 30.000$$

- **2. Standard Deviation (SD)**, Because the prices at the Old Market did not change, the standard deviation = 0.
- **3. Coefficient of Variation (CV)**

$$\text{CV} = \frac{0}{30.000} \times 100\% = 0\%$$

Interpretation: There are no price fluctuations, so the price risk in the Old Market for green chili peppers is zero.

B. New Market

- **Average Price (mean)**

$$\text{Rata-rata} = \frac{35.000 + 35.000 + 35.000 + 35.000}{4} = 35.000$$

Because the prices at Pasar Baru also did not change, the standard deviation = 0.

- **2. Coefficient of Variation (CV)**

$$\text{CV} = \frac{0}{35.000} \times 100\% = 0\%$$

Interpretation: There are no price fluctuations, so the price risk in the New Market for green bird's eye chilies is also zero.

Risk Analysis:

- **Price Fluctuation:** There were no price fluctuations for Green Chili Peppers in both markets during the observed period. Prices remained stable in both markets.
- **Price Risk:** Considering that prices in the Old Market and the New Market do not change, the price risk for Green Chili in both markets is very low. There is no uncertainty in prices because they remain stable during the observed period.

2. Curly Red Chili

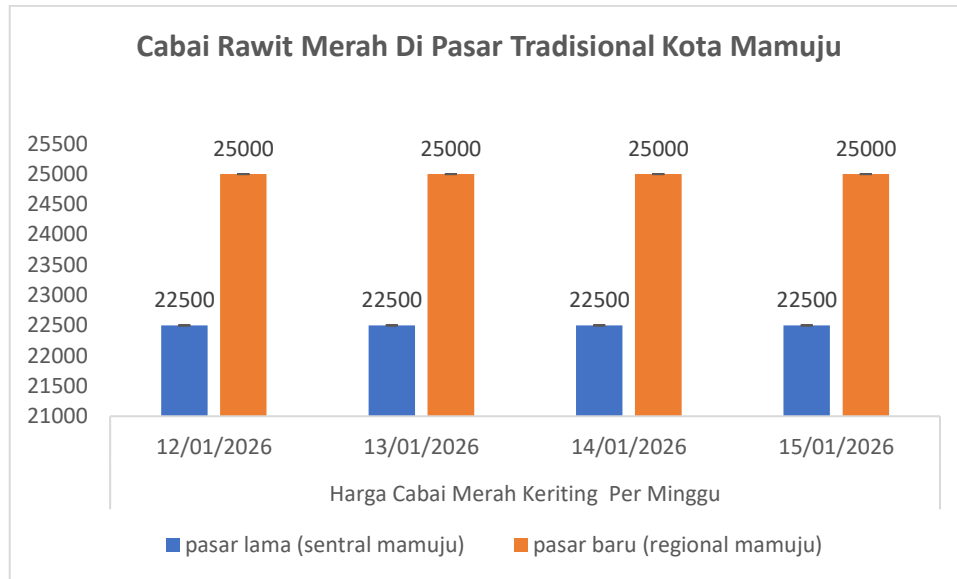


Figure 2. Fluctuations in Curly Chili Prices at the Old Market & New Market of Mamuju City

A. Old Market

- **Average Price (mean)**

$$\text{Rata-rata} = \frac{22.500 + 22.500 + 22.500 + 22.500}{4} = 22.500$$

- **Standard Deviation (SD)**

Because the price at the Old Market did not change, the standard deviation = 0.

- **Coefficient of Variation (CV)**

$$\text{CV} = \frac{0}{22.500} \times 100\% = 0\%$$

Interpretation: There are no price fluctuations, so the price risk in the Old Market for curly red chili peppers is zero.

B. New Market

- **Average Price (mean)**

$$\text{Rata-rata} = \frac{25.000 + 25.000 + 25.000 + 25.000}{4} = 25.000$$

- **2. Standard Deviation (SD)**

Karena harga di Pasar Baru tidak berubah, **standar deviasi** = 0.

- **3. Coefficient of Variation (CV)**

$$\text{CV} = \frac{0}{25.000} \times 100\% = 0\%$$

Interpretation: There are no price fluctuations, so the price risk in the New Market for curly red chili peppers is also zero.

Price Risk:

- **Price Fluctuation:** the price of Curly Red Chili also did not experience fluctuations during the observed period.
- **Price Risk:** The price risk for Curly Red Chili in both markets is also low, considering that prices remained stable in both markets during that period.

RESULT AND DISCUSSIONS

1. Coefficient of Variation (CV) for Green Chili Pepper Prices

Based on the recorded price data in both markets, namely Pasar Lama and Pasar Baru, the price of green bird's eye chilies shows very high price stability. In Pasar Lama, the price of green bird's eye chilies remained at Rp 30,000 per kilogram throughout the observed week. The same also occurred in Pasar Baru, where the price of green bird's eye chilies remained at Rp 35,000 per kilogram. With no price fluctuations, the standard deviation for both markets is 0, resulting in a coefficient of variation (CV) of 0%. The interpretation of this 0% CV value is that the price of green bird's eye chilies in both markets is very stable, with very low price risk. There are no price changes at all, which means there are no fluctuations that could affect uncertainty for traders and consumers.

2. Coefficient of Variation (CV) for Curly Red Chili Prices

The same goes for the price of curly red chili peppers, both at Pasar Lama and Pasar Baru, with prices remaining stable at Rp 22,500 per kilogram at Pasar Lama and Rp 25,000 per kilogram at Pasar Baru during the observed period. Just like with green bird's eye chilies, the price of curly red chilies did not change at all during the observed week. Therefore, the standard deviation for both markets is 0, resulting in a CV value of 0%.

Interpretation: As with green bird's eye chilies, the price stability of curly red chilies also indicates that the price risk in both markets is very low. The lack of price fluctuations suggests that the markets at both locations are very controlled, providing a sense of security for consumers who expect stable prices.

3. Price Risk Analysis in the Old Market and the New Market

Using the Coefficient of Variation (CV) as a measure of price fluctuation, it can be concluded that the price risk for both types of chili (green bird's eye and red curly) in the Old Market and the New Market is very low. Stable and unchanged prices indicate that both markets do not experience significant volatility in chili prices.

4. Factors That Affect Price Stability

Although there were no price fluctuations during the observed period, several factors contributed to creating this price stability:

- **Market Policy:** Traditional markets in Mamuju City may have more structured pricing policies, which prevent sharp increases or decreases in prices.
- **Consistent Demand:** Stable demand from consumers can prevent prices from experiencing major changes, as traders tend to adjust prices according to market demand.

5. Comparison of Price Risk Between the Old Market and the New Market

Although the prices at Pasar Lama are lower for both types of chili, namely Rp 30,000 for green bird's eye chili and Rp 22,500 for curly red chili, and Pasar Baru has slightly higher prices (Rp 35,000 for green bird's eye chili and Rp 25,000 for curly red chili), the price risk in both markets remains low. This indicates that the higher prices at Pasar Baru may not significantly affect consumer behavior due to the existing price stability in both markets. However, even without price fluctuations, vendors at Pasar Baru might be more inclined to find ways to attract more consumers with slightly higher prices, which are still stable, but at a slightly more profitable price for them.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the analysis of the Coefficient of Variation (CV) and Price Risk for green chili peppers and curly red chili peppers at Pasar Lama and Pasar Baru Mamuju, it can be concluded that:

- **The Coefficient of Variation (CV)** for both types of chili in both markets is 0%, indicating that there were no price fluctuations during the observed period. This means that prices remained stable in both markets for green chili and curly red chili.
- **Price risk** in both markets is very low, due to stable prices without significant variation. There is no visible price uncertainty, indicating that prices in both markets remain predictable during the observed period.

Recommendations

- **Stable Pricing Policy:** Considering the low price fluctuations, it is important to maintain a stable pricing policy in both markets, which can help preserve traders' profits and provide price certainty for consumers.
- **Increased Supply Monitoring:** Considering price stability, it is recommended to continue monitoring the chili supply to prevent shortages that could affect prices. The government or relevant parties can be more active in managing distribution to maintain price stability.

ADVANCED RESEARCH

1. Analysis of the Influence of Seasonal Factors on Chili Price Fluctuations
2. Comparative Analysis of Chili Price Risks with Other Agricultural Commodities in the Traditional Markets of Mamuju
3. Analysis of the Influence of Government Policies on Chili Price Stability in Traditional Markets

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REFERENCES

- Darmawan, E. (2010). *Analisis fluktuasi harga dan ketahanan pangan dalam sektor pertanian*. Jurnal Pembangunan Pertanian, 12(4), 45-56.
- Ghozali, I. (2005). *Analisis regresi dan statistik ekonometrika*. Semarang: Universitas Diponegoro.
- Ghozali, I. (2005). *Aplikasi analisis multivariante dengan program SPSS*. Semarang: Universitas Diponegoro Press.
- Haryanto, S. (2010). *Pengaruh fluktuasi harga terhadap ketidakpastian pendapatan petani*. Jurnal Ekonomi Pertanian, 8(2), 112-125.
- Kotler, P., & Keller, K. L. (2006). *Marketing management* (12th ed.). Prentice Hall.
- Mardikanto, S. (2006). *Pemasaran hasil pertanian dan stabilitas harga*. Jakarta: PT Pustaka Mandiri.
- Mulyadi, M. (2011). *Pengelolaan risiko harga dalam sektor pertanian*. Jurnal Agribisnis, 14(3), 76-89.
- North, D. C. (2005). *Institutions, institutional change, and economic performance*. Cambridge University Press.
- Putnam, R. D. (2005). *Bowling alone: The collapse and revival of American community*. New York: Simon & Schuster.
- Saptana, W. (2004). *Fluktuasi harga dan strategi pengelolaan risiko pada komoditas pertanian*. Jurnal Pembangunan Ekonomi, 19(2), 56-71.
- Saptana, W. (2004). *Kebijakan harga pangan di pasar tradisional*. Jakarta: Penerbit Pengetahuan.

- Suradisastra, K. (2001). *Kelompok tani dan peranannya dalam pembangunan pertanian*. Jakarta: Penerbit Ilmu Pertanian.
- Suryanto, P. (2010). *Stabilitas harga pangan dan pengaruhnya terhadap ketahanan pangan di Indonesia*. Jakarta: Penerbit Ilmu Ekonomi.
- Syahyuti, D. (2008). *Analisis risiko harga di pasar pertanian: Studi kasus cabai*. *Jurnal Ekonomi Pertanian*, 7(1), 88-99.
- Tapsell, S., & Serevina, R. (2010). *Economics of market price volatility and agricultural risk management*. *Journal of Agricultural Economics*, 40(3), 234-245.