

# Elasticity of Demand to Increase in Gold Prices from an Islamic Economic Perspective

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## ARTICLE INFO

### Keywords:

Demand Elasticity;  
Gold Price;  
Islamic Economics

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### Article history:

Received 2026-04-10

Revised 2026-05-14

Accepted 2026-06-18

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## ABSTRACT

The phenomenon of rising global gold prices that does not proportionally reduce the volume of demand among the Indonesian Muslim community, possibly the demand is inelastic, with the aim of analyzing the level of elasticity and interpreting it from an Islamic economic perspective. The method used is a literature study by analyzing secondary data on prices and sales of gold bullion from PT Antam Tbk, which is analyzed using the calculation of the price elasticity coefficient of demand ( $E_d = \frac{\% \Delta Q}{\% \Delta P}$ ) and interpreted through the principles of Islamic economics. The results show that a drastic annual gold price surge of 65.08% was only followed by a minor contraction in domestic demand volume of 14.64%, resulting in an  $E_d$  value of -0.22502 which confirms the inelastic nature of gold demand. This study reveals that this inelastic nature is consistent with the characteristics of gold as a safe-haven asset whose demand is more influenced by macroeconomic factors, and from an Islamic perspective this finding aligns with maqasid al-shari'ah, specifically hifz al-mal (preservation of wealth), where gold functions justly ('adl) and balancedly (tawazun) in maintaining public purchasing power while still fulfilling the principle of mutual consent (an-taradin) in transactions. This study recommends further research using multiple regression or data panel econometrics analysis by integrating other external macroeconomic variables.

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## 1. INTRODUCTION

The rise in global gold prices has not disproportionately reduced demand for gold among Indonesian Muslims. Gold is considered stable, safe, and Sharia-compliant, making demand relatively inelastic to price increases. Muslims continue to purchase gold to preserve wealth and meet Sharia-compliant investment needs (Risman et al., 2024). Gold acts as a hedge and safe haven, especially during times of economic uncertainty or inflation. However, gold's safe-haven role tends to weaken during extreme stock market declines (Andriani et al., 2024).

Date	Antam Gold Price (per 1 gram)	Gold Sales Volume (Kg)
December 31, 2019	Rp 762.000	34.023 kg
December 31, 2020	Rp 950.000	21.797 kg
December 31, 2021	Rp 938.000	29.775 kg
December 31, 2022	Rp 1.026.000	34.970 kg
December 31, 2023	Rp 1.130.000	26.129 kg
December 31, 2024	Rp 1.515.000	43.776 kg
December 31, 2025	Rp 2.501.000	37.365 Kg

Source: [www.idx.co.id](http://www.idx.co.id) (Data processed), 2026

A comparison of gold bullion price and demand data from PT Aneka Tambang Tbk. (Antam) between 2019 and 2025 shows a correlation between global macroeconomic volatility, which increased due to the pandemic, and shifts in domestic investor behavior. Antam's gold price experienced a substantial increase in value, soaring from around IDR 762,000.00 per gram at the end of 2019 to IDR 2,501,000.00 on November 19, 2025. It even reached an all-time high on October 20, 2025, reaching IDR 2,501,000.00 per gram, representing a 228.22% increase in five years. This price increase reinforces gold's crucial role as a safe-haven asset amid inflation concerns and geopolitical uncertainty.

However, inter-annual analysis for the short period (2024–2025) shows opposing dynamics due to pressures on domestic purchasing power. Throughout 2025, Antam's gold price jumped drastically by 65.08% from IDR 1,515,000.00 per gram (December 31, 2024) to IDR 2,501,000.00 per gram at the close of December 30, 2025, after previously touching a similar peak level in mid-October and November 2025. This extreme price surge in one year was responded negatively by the volume of domestic demand which was corrected by 14.64%, namely falling from a record high of 43,776 kg in 2024 to 37,365 kg in 2025. This phenomenon indicates that although the motive for owning safe-haven assets remains high due to global uncertainty and central bank buying actions, domestic investor behavior in 2025 tends to be more selective and restrained (wait and see) due to the soaring commodity prices to the highest level (PT Aneka Tambang Tbk., 2026; Indonesia Stock Exchange, 2026).

Demand elasticity is a measure of the sensitivity of changes in the quantity demanded of a good to changes in price (Mankiw, 2020). According to the World Gold Council (2024), the demand for gold in developing countries, including Indonesia, is driven by psychological, cultural, and religious factors. Price increases do not always reduce demand because gold is considered a safe haven. In Islam, prices and demand are subject to the principles of justice ('adl) and an-taraḍīn (consent between seller and buyer) as mentioned in QS. An-Nisā': 29. Islam also emphasizes *hifz al-mal* (preservation of wealth) in the *maqāṣid al-sharī'ah*, which makes investment in real assets such as gold part of ethical and productive wealth management (Chapra, 1992).

In conventional economic theory, demand elasticity measures the magnitude of changes in the quantity demanded of a good due to price changes, with the primary goal of maximizing material satisfaction (utility). However, in Islamic economics, consumption and investment decisions are based not only on material considerations, but also on spiritual and ethical values of Sharia law, such as justice ('adl), balance (tawazun), and willingness (an-taraḍīn) (Arnoldy & Mariyanti, 2021).

Empirical research shows that gold demand tends to be elastic to price changes, although the degree of elasticity can vary across countries and time periods. In Iran, for example, a 1% increase in gold prices causes a 1.17% decrease in gold demand, indicating relatively elastic demand. Furthermore, consumer sensitivity to gold prices increases over time, indicating that consumers are increasingly responsive to

price fluctuations (Bandepy et al., 2022). In India, gold demand also exhibits negative price elasticity in the long run, but is more elastic in the short run, indicating a rapid consumer reaction to price changes before stabilizing (Immanuvel & Lazăr, 2020). The purpose of this study is to examine the level of price elasticity of gold demand in Indonesia and interpret it from an Islamic economic perspective.

## 2. METHODS

This study uses a descriptive quantitative approach with a library research method. According to Sugiyono (2019), library research is a data collection technique through a review of books, scientific articles, literature, official reports, and other document records relevant to the topic being studied. The data used in this study are secondary time series data covering a full year period in 2024 and 2025. The data inclusion criteria in this study include: (1) Closing price data for PT Aneka Tambang Tbk gold bullion converted into Rupiah per gram (Rp/gram); and (2) Full year physical sales volume data for Antam gold bullion expressed in kilograms (kg). All secondary data are validly obtained from the Annual Consolidated Financial Report (Audited) officially published by PT Aneka Tambang Tbk and the Indonesia Stock Exchange (IDX). The data analysis stages in this study were carried out through two integrated approaches, starting with a quantitative analysis to calculate the level of market sensitivity using the point elasticity of demand formula  $E_d$ . The next step was to conduct a qualitative analysis using content analysis techniques based on Islamic economic epistemology to interpret the obtained  $E_d$  coefficient value, by focusing the interpretation on the alignment of market dynamics with the pillars of justice ('adl), balance (tawazun), mutual willingness (an-taradin), and the corridor of maqasid al-shari'ah in the aspect of maintaining assets (hifz al-mal).

## 3. FINDINGS AND DISCUSSION

### The Concept of Demand Elasticity

One of the elasticity of demand is price elasticity. Price elasticity is used to calculate the total demand for a product due to a change in its price. The formula for calculating price elasticity of demand for a product is:

$$E_d = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P} \text{ atau } E_d = \frac{\% \Delta Q}{\% \Delta P}$$

Explanation:

E: Elasticity

P: Price

Q: Quantity

$\Delta Q$ : Change in quantity demanded ( $Q_2 - Q_1$ )

$\Delta P$ : Change in price ( $P_2 - P_1$ )

In economic studies, the ratio  $\frac{\% \Delta Q}{\% \Delta P}$  is a mathematical representation of the first derivative in the demand function, either as  $f(Q_d)$  or  $f(P)$ , often denoted as  $Q'_d$  or  $f'(P)$ . The characteristics of demand elasticity are determined by the value of the coefficient  $E_d$ . A demand is categorized as elastic if the absolute value of  $E_d$  is greater than 1  $|E_d| > 1$ , which is inherently negative due to the inverse relationship between price and quantity demanded. Conversely, demand is inelastic when the absolute value of  $E_d$  is less than 1  $|E_d| < 1$ . This inelastic condition indicates that the percentage response to changes in the quantity of products demanded is relatively smaller compared to the percentage change in the price of the product in question (Suryati, 2022).

### Price Elasticity of Demand in Islamic Economics

From an Islamic economic perspective, price elasticity of demand is not only understood as a consumer response to price changes, but must also align with spiritual and ethical values of Sharia, such as justice ('adl), balance (tawazun), and consent (an-taradin), as well as the principle of hifz al-mal

(preservation of wealth) within the maqāṣid al-shari'ah. The principle of justice requires that pricing and economic transactions do not lead to exploitation or injustice. Therefore, prices must reflect fair value for all parties and avoid fraudulent or manipulative practices (Albar et al., 2024). Balance (tawazun) emphasizes the importance of harmony between the interests of producers and consumers, as well as between economic growth and social sustainability. Therefore, demand elasticity must be considered in the context of equitable distribution of benefits and avoid harm or inequality (Klongrua et al., 2025; Anwar et al., 2025; Karimullah, 2023). Willingness (an-taraḍin) underscores the importance of voluntary consent in transactions, but in Islamic economics, this consent is insufficient if there is information inequality or a bargaining position that is detrimental to the weak party, so regulation and education are needed to ensure truly fair consent (Arifin et al., 2025; Karimullah, 2023). Hifz al-mal as part of the maqāṣid al-shari'ah demands the protection of individual and societal wealth, so that price mechanisms and demand elasticity must be directed to prevent waste, encourage moderate consumption, and ensure economic sustainability and shared prosperity (Klongrua et al., 2025; Zailani et al., 2022; Syahriani et al., 2024). Thus, the elasticity of demand for prices in Islamic economics is not only a tool for economic analysis, but also an instrument for realizing justice, balance, and protection of assets within the framework of maqāṣid al-syarī'ah, thereby creating a more ethical, inclusive, and sustainable economic system.

### Gold Demand Elasticity

Based on official data published by the Indonesia Stock Exchange (IDX) and the annual performance report of PT Aneka Tambang Tbk, a comparison of macro indicators for the domestic gold market for the full period of 2024 and 2025 shows a significant negative correlation between commodity price movements and retail demand volume. Regarding commodity exchange rates, the price of Antam gold bullion recorded a drastic surge of 65.08% within one year. The asset value skyrocketed from IDR 1,515,000.00 per gram at the close of December 31, 2024, to IDR 2,501,000.00 per gram on December 30, 2025. This aggressive price escalation, reaching a new all-time high, was triggered by accumulated global geopolitical uncertainty, rising inflation, and large-scale buying by global central banks as a strategy to diversify foreign exchange reserves.

However, the price surge to extreme levels throughout 2025 triggered significant behavioral changes among domestic investors. In contrast to the previous growth period, Antam's gold demand or sales volume throughout January–December 2025 actually contracted by 14.64% []. Sales volume was corrected from the company's historical high of 43,776 kilograms in 2024 to 37,365 kilograms at the close of 2025. This phenomenon indicates the application of conventional demand law in the retail market, where the soaring gold price to a new psychological level triggers a wait-and-see attitude and limits people's purchasing power []. Nevertheless, the persistence of sales figures in the range of 37 tons still confirms that gold bullion is still viewed as an absolute safe-haven instrument by domestic investors in the face of macroeconomic volatility (PT Aneka Tambang Tbk., 2026; Indonesia Stock Exchange, 2026).

To calculate the price elasticity of demand ( $E_d$ ) Known data:

$$P = \text{Rp } 1.515.000$$

$$Q = 43.776 \text{ kg}$$

$$P_{2025} = 2.501.000$$

$$Q_{2025} = 37.365 \text{ Kg}$$

$$\Delta P = \text{Rp } 2.501.000 - \text{Rp } 1.515.000 = \text{Rp } 986.000$$

$$\Delta Q = 37.365 \text{ Kg} - 43.776 \text{ kg} = -4.411 \text{ kg}$$

$$E_d = \frac{P}{Q} \times \frac{\Delta Q}{\Delta P}$$

$$E_d = \frac{Rp1.515.000}{43.776 \text{ kg}} \times \frac{-6.411 \text{ kg}}{Rp986.000}$$

$$E_d = -0,22502$$

Based on a quantitative analysis using the point elasticity method for the short-term period (2024–2025), the demand elasticity coefficient ( $E_d$ ) for Antam gold was obtained as -0.22502. The negative sign in this coefficient empirically confirms the law of demand, which states that there is an inverse relationship (negative correlation) between commodity prices and demand volume in the domestic market.

Economically, the value ( $E_d < 1$ ) indicates that short-term retail gold bullion demand is inelastic. This figure indicates that every 100% increase in gold prices will only trigger a contraction or decrease in domestic demand volume of 22.50%. Despite the extreme 65.08% increase in the closing price of Antam gold due to global inflationary pressures and geopolitical uncertainty, retail demand volume only decreased by 14.64% (down from a record 43,776 kg to 37,365 kg). This inelasticity characteristic demonstrates the relatively low price sensitivity of domestic investors. The market tends to continue to absorb large amounts of gold commodities (~37 tons) because the urgency of the need for asset protection (wealth protection) is considered much higher than the burden of nominal price increases during times of economic uncertainty (PT Aneka Tambang Tbk., 2026; Indonesia Stock Exchange, 2026).

### Islamic Economic Interpretation

From an Islamic economic perspective, the analysis of the price elasticity of demand for gold at PT Aneka Tambang Tbk, which indicates inelasticity ( $E_d = -0.22502$ ), is interpreted in depth through the lens of spiritual values and Sharia ethics, particularly regarding justice ('adl), balance (tawazun), willingness (an-taraḍin), and the primary objective of Islamic law (maqāṣid al-syarī'ah) in the preservation of wealth.

First, the values of justice ('adl) and balance (tawazun) are reflected in gold's intrinsic function, which has proven stable as a store of value. The inelastic demand characteristics indicate that the public views gold as a fair instrument to mitigate the risk of purchasing power erosion due to inflation and uncertainty in the conventional monetary system. Amid a 65.08% surge in nominal prices, domestic demand proved resilient, experiencing only a minor contraction of 14.64%. This proves that gold bullion effectively acts as a hedge against macroeconomic risk (tawazun). Domestic investors' actions in maintaining gold ownership align with the principle of *hifz al-mal* (preservation of wealth), where Sharia strongly emphasizes protecting individual productive assets from detrimental value distortions.

Second, the principle of mutual consent (an-taraḍin) in transactions (muamalah) remains intact. Despite extreme short-term market price spikes, the principle of mutual consent (an-taraḍin) in muamalah contracts between producers and retail consumers remains absolutely intact. The steadfastness of annual sales figures, which consistently exceeded 37,365 kilograms in 2025, confirms that price adjustments are driven by natural market forces, not by market manipulation (talaqqi al-rukban or najash). Transparency in data published regularly by PT Aneka Tambang Tbk minimizes information asymmetry (gharar) and fraud (tadlis). Thus, the decision of domestic buyers to absorb gold at the price level of Rp2,501,000.00 per gram is based on full awareness (ikhtiyar) of the commodity's fundamental value as a safe haven, so that the transaction is free from pure speculative motives (maysir).

Through this approach, Islamic economics views the inelasticity of demand for Antam gold as more than a reflection of conventional economic phenomena. Rather, it represents a concrete manifestation of Islamic rationality, where real commodity instruments are used ethically and fairly to safeguard the welfare of the people (maslahah) from corrosive global economic fluctuations.

#### 4. CONCLUSION

The full-year price elasticity of demand for gold bullion for the 2024 and 2025 periods indicates that demand for this commodity is inelastic, with a price elasticity coefficient of demand  $E_d$  of -0.22502. This negative sign empirically confirms the law of demand, where a drastic annual price surge of 65.08% (from Rp1,515,000.00 to Rp2,501,000.00 per gram) was responded to by a 14.64% contraction in domestic demand (down from a record 43,776 kg to 37,365 kg). This inelastic characteristic underscores gold's crucial function as a safe-haven asset, where investment decisions are driven more by global macroeconomic uncertainty and inflation concerns, rather than by short-term price sensitivity. From an Islamic economic perspective, this inelastic nature aligns with the objectives of maqasid al-shari'ah, particularly in the aspect of wealth preservation (hifz al-mal). Gold bullion has been proven to function fairly ('adl) and equitably (tawazun) as a store of value, mitigating the risk of wealth erosion due to monetary distortions. Furthermore, natural price adjustments based on market mechanisms, supported by transparent data publication by issuers, successfully uphold the principle of mutual consent (an-taradin), while eliminating elements of uncertainty (gharar) and prohibited speculation (maysir).

While this study successfully analyzed the elasticity of demand for Antam gold from an Islamic economic perspective, several methodological limitations must be acknowledged. These include reliance on aggregate secondary data that fails to capture individual consumer preferences, the use of a point elasticity approach that fails to reflect short-term dynamics, and the omission of other macroeconomic variables such as inflation and exchange rates that influence gold demand. Therefore, future research is recommended to adopt a more comprehensive approach, such as panel data regression analysis that integrates these macroeconomic variables, expanding the scope of the study to other Islamic gold instruments, and applying the arc elasticity method to more accurately capture demand responses to significant price changes. For investors, these findings reinforce the need to view gold as a long-term hedging instrument. For relevant authorities, the research findings can serve as a basis for strengthening public education regarding Sharia-compliant gold investments.

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