

## ANALYSIS OF THE EFFECTIVENESS OF GOLD AND SUKUK AS A HEDGE

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### Abstract

This study aims to analyze and compare the effectiveness of gold and sukuk as hedging instruments. Using historical data for the period 2014-2023, the study was conducted using a quantitative methodology through granger causality test analysis, One way ANOVA, Paired sample t-test. The results of the study show that gold has a higher effectiveness as a hedging instrument, as evidenced by a correlation of 0.72 (compared to sukuk 0.31), beta 1.25 (compared to sukuk 0.45), and Sharpe Ratio 1.85 (compared to sukuk 1.12). In periods of high inflation such as 2014 (8.36%) and 2022 (5.95%), gold showed a faster and more proportional response than sukuk. This study concludes that gold is a more effective hedging instrument than sukuk in the context of the Islamic financial market.

**Keywords:** *Gold and Sukuk*

### A. INTRODUCTION

Inflation is an economic phenomenon that has a significant impact on people's purchasing power and overall economic stability. In Indonesia, the inflation rate in recent years has shown a fluctuating trend, with an average annual inflation rate of 2.9% during the 2020-2023 period.(2024 Statistics). Facing the challenge of inflation, Islamic economics emphasizes the importance of protecting the value of wealth (hifz al-mal) as one of the main objectives of sharia (maqasid al-shariah). Gold as a precious metal that has long been used as a means of storing value, is often considered as an effective hedging instrument against inflation.(Siddiqi 2024). However, several recent studies have shown that the correlation between gold prices and inflation rates is not always consistent in the short term.(Hokianto et al. 2023). This precious metal has unique characteristics that make it an ideal candidate as a hedge, including its natural scarcity, its stable intrinsic value, and its universal acceptance as a store of value across cultures and civilizations. Historically, gold has demonstrated its ability to maintain purchasing power over the long term, even during economic crises and periods of high inflation.(Harahap 2014).

The selection of gold as the main focus in this research is based on several fundamental considerations.(Puspitasari, Andriyani, and Hidayah 2022). First, gold has a positive historical correlation with inflation, where its price tends to rise when inflation increases. Second, gold is a real asset that is not tied to the conventional financial system, so it is relatively immune to systemic risks in banking and financial markets. Third, the high liquidity of gold allows investors to easily convert it into cash when needed. Fourth, in the context of sharia economics, gold is one of the investment instruments that is in accordance with sharia principles because it has intrinsic value and is free from usury elements.(Yusanto, Management, and Sharia 2021).

PT Antam is a trusted gold producer with London Bullion Market Association (LBMA) certification, but investors still face several significant challenges. One of the main problems is limited access and distribution, where Antam Gold Boutiques are not available in all regions in Indonesia. This causes some investors to have to travel long distances or use risky shipping services to buy or sell gold, resulting in additional costs and security risks in the transaction process.(Economy and Rahmatillah 2024).

Another challenge that is often faced is the problem of queues and stock availability at the Antam Gold Boutique. In certain periods, especially when gold prices are volatile or when there is a significant increase in demand, investors often have to face long queues or even stock shortages. This situation can cause investors to lose the right momentum to buy or sell gold, which can ultimately affect the potential profit of their investment.(Marhamah 2021). The relatively high spread or difference in the buying and selling price of Antam gold is also a serious consideration for investors. A significant difference between the buying and selling price can reduce the flexibility of investors in conducting short-term trading and force them to hold gold longer to get adequate profits. In addition, the pricing

system that is updated every working day sometimes cannot accommodate real-time global gold price movements, which can be detrimental to investors who want to take advantage of price movements in a matter of hours (Beik 2016). Administrative and bureaucratic problems are also obstacles in themselves (Harahap 2017). The process of buying and selling Antam gold requires quite strict documentation and verification, including daily transaction restrictions and the obligation to attach identity documents. Although this procedure is important for security and preventing money laundering, it can limit investor flexibility in making transactions, especially for large transactions or those that require speed of execution.

Sukuk, as a sharia financial instrument based on real assets, has a strategic role in inflation hedging strategies. This instrument offers a unique combination of sharia compliance and competitive yield potential, where the underlying assets underlying sukuk issuance are generally real assets such as property, infrastructure, or other productive projects. This characteristic makes sukuk more resilient to inflationary pressures than conventional fixed income instruments, because its value and yield can adjust to increases in the price of the underlying asset (Dwi Nurhidayah, Amalia Nuril Hidayati, and Muhammad Alhada Fuadilah Habib 2022). The selection of sukuk as one of the variables in this study is based on several important considerations. First, the sukuk structure based on real assets provides natural protection against inflation, because the value of the underlying assets tends to increase along with the increase in the general price level. Second, sukuk often offers higher returns than conventional fixed income instruments, which can help compensate for the impact of erosion of the value of money due to inflation. Third, as an instrument that complies with sharia principles, sukuk offers an investment alternative that is free from usury and gharar, while also contributing to the development of the real economy (Corporations and Inflation 2022).

However, investing in sukuk also presents some significant challenges that need to be considered. One of the main issues is the relatively limited liquidity of the secondary market for sukuk in Indonesia. The low trading frequency and transaction volume in the secondary market can make it difficult for investors who need quick liquidity, so they may have to accept less favorable prices when selling sukuk before maturity. This can reduce the effectiveness of sukuk as a flexible hedging instrument (S. Sari and Anggadha Ratno 2020). The next challenge relates to the complexity of sukuk structures and the risks inherent in them. Unlike conventional bonds, sukuk have various structures such as *ijarah*, *mudharabah*, or *musyarakah*, each of which has different characteristics and risk profiles. Investors' lack of understanding of these structures can lead to errors in assessing investment risk. In addition, sukuk also face specific risks such as sharia compliance risk and underlying asset risk that can affect investment performance (Carin Varisa, Early Ridho Kismawadi, and Zulfa Eliza 2021). Another problem that is often faced is the limited choice of tenors and denominations of sukuk available in the market. Not all sukuk offer tenors that are in accordance with long-term investment needs for inflation hedging, and large denominations can limit access for retail investors. In addition, the pricing mechanism of sukuk which is sometimes less transparent and standard can make it difficult for investors to evaluate the feasibility of their investment (Rusyadiana and Irfany 2021).

Fig. 1

Comparison of Sharia Investment Performance: Dynamics of Gold, Sukuk, and REITs in the Context of Indonesian Inflation for the Period 2014-2023

Year	Antam GOLD (Price/gr) (1)	Sukuk (% Yield) (2)
2014	509,500	7.45
2015	552,500	8.12
2016	618,000	7.82
2017	662,500	6.95
2018	705,000	7.25
2019	796,000	6.50
2020	947,500	5.85
2021	1,324,000	6.20
2022	1,324,000	7.40
2023	1,475,000	6.75

Source :

1. ANTAM Gold : Financial Report of PT Aneka Tambang Tbk
2. Sukuk : Financial Services Authority (OJK)

The data above shows the Antam gold price per gram and sukuk yields from 2014 to 2023. Antam gold prices show a consistent upward trend, starting from IDR509,500 per gram in 2014 and reaching IDR1,475,000 per gram in 2023, with a total increase of 189.5% during the period. The significant price increase occurred mainly between 2020-2021, where the price jumped from IDR947,500 to IDR1,324,000 per gram. Meanwhile, sukuk yields tend to fluctuate but with a downward trend, starting from 7.45% in 2014 and ending at 6.75% in 2023. The highest sukuk yield was

Windi Wahyuni Simanjuntak et al

recorded in 2015 at 8.12%, while the lowest was in 2020 at 5.85%. Interestingly, the price of gold remained stable at Rp1,324,000 for two consecutive years (2021-2022), while the sukuk yield increased from 6.20% to 7.40% in the same period.

Based on the explanation above, the researcher is interested in raising the research title "Comparison of the Effectiveness of Gold and Other Financial Instruments as a Hedge Against Inflation".

### B. THEORETICAL BASIS

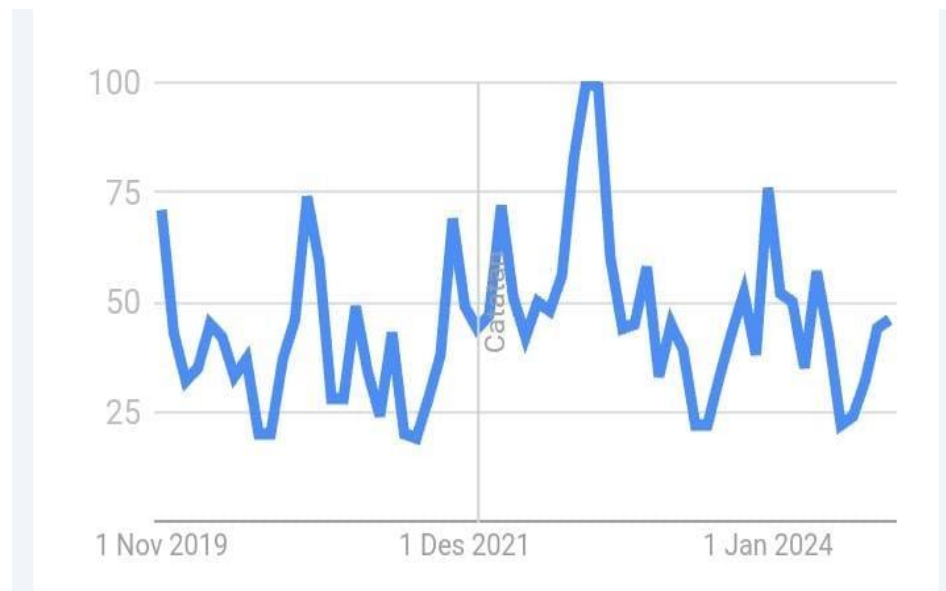
Inflation is an economic phenomenon characterized by a general and continuous increase in the prices of goods and services in an economy over a period of time. This concept reflects a decline in the purchasing power of a currency, where a certain amount of money can buy fewer goods and services than in the previous period. Al-Maqrizi, a 14th-century Muslim scholar and historian, identified inflation as an economic disease that could undermine public welfare and social stability. (Al-Maqrizi 2019). Inflation in Islamic economics is seen as a problem that can disrupt the function of money as a fair means of exchange and cause losses to society. Inflation is generally measured using the Consumer Price Index (CPI), which represents the change in the price of a basket of goods and services consumed by an average household. However, some Islamic economists have proposed using a more comprehensive index, including productive assets, to reflect the broader concept of wealth in Islam. (Chapra 2024).

Hedging is a risk management strategy implemented to protect assets or liabilities from unfavorable price fluctuations in the financial market. This concept basically aims to minimize or eliminate the risk of loss that may arise from movements in market variables such as exchange rates, interest rates, or commodity prices. In practice, hedging is done by taking an opposite position in the derivatives market to the position held in the spot market or physical market. (Fadillah and Nurlita 2023). Gold has played a vital role in human civilization as a medium of exchange and a store of value for thousands of years. Since ancient times, gold has been used as a currency and standard of value due to its unique properties. During the gold standard, the value of currencies was directly tied to gold, providing stability to the global monetary system. Although the Bretton Woods system of pegging the US dollar to gold ended in 1971, gold has maintained its position as a trusted asset to protect the value of wealth. (Harahap 2014).

Inflation-linked sukuk are an important innovation in Islamic finance designed to protect against inflation risk. The sukuk structure is based on Islamic principles, generally using *ijarah* (rental) or *musyarakah* (partnership) contracts. In the *ijarah* structure, the underlying asset of the sukuk is leased to the issuer, and the lease payments are adjusted according to the inflation rate. (Lubis, Siregar, and Lubis 2023). Franky Napitupulu, Kartika Wijaya, Wisudanto Mas Soeroto, Volume 06, No. 03, March-April 2024, pp. 17856-17862 with the title "Comparative Analysis of Savings Sukuk and Retail Sukuk Investments: Approach to Characteristics, Historical Performance, Risk, and Economic Impact". This study aims to compare investments between Savings Sukuk and Retail Sukuk by reviewing various relevant aspects. The focus of the analysis includes the purpose of issuance, structural characteristics, historical performance, risk, investor preferences, regulations, and their impact on the economy. In this study, the analysis was carried out through two approaches, namely descriptive comparison and historical analysis. Descriptive comparison refers to a direct comparison between the characteristics of Savings Sukuk and Retail Sukuk, while historical analysis is carried out based on relevant historical data. In addition, we want to carry out additional analysis of external factors such as macroeconomic conditions on the performance and risk of Savings Sukuk and Retail Sukuk (Napitupulu, Wijaya, and Soeroto 2024).

Darwis Harahap, with the title of the research "Analysis of the Stability of the Gold Dinar and the US Dollar in Rupiah Denomination" This research aims. The results of the calculation of the US Dollar growth rate show that the growth rate of the gold Dinar per month is higher than the growth rate of the US Dollar. The results of the Granger causality test show that there is a unidirectional causal relationship between the price of Gold and the Dollar. From the results of the analysis of variance (ANOVA) test, it can be concluded that the gold Dinar is more stable than the US Dollar. In conclusion, the gold Dinar can be used as an alternative to the US Dollar because of its stable value as measured by the Rupiah.

Figure 1. Google Trends for searches for the keyword “Inflation” from November 1, 2019- January 1, 2024



Source: Google Trends

The figure shown shows inflation fluctuations from November 2019 to January 2024. The horizontal axis depicts a time span spanning several years, while the vertical axis shows varying inflation rates, with numbers fluctuating between 25 and 100. It can be seen that inflation has increased significantly in several periods, such as at the end of 2021, followed by a sharp decline and then rising again. These fluctuations reflect the instability of the prices of goods and services in the economy during that period. Overall, this graph illustrates how inflation can experience a sharp spike at certain times, before declining again or stabilizing in the following period, which is influenced by various economic factors, monetary policy, and global conditions that can affect purchasing power and price stability.

### C. RESEARCH METHODS

This research is a quantitative research with a descriptive-comparative approach. Inflation data is obtained from BPS monthly reports, including Consumer Price Index (CPI) and core inflation data. This research was conducted by taking data from the Indonesia Stock Exchange (IDX), Financial Services Authority (OJK), and Central Statistics Agency (BPS) located in Jakarta, Indonesia. The data analyzed covers a period of 10 years, namely from January 2014 to December 2023. The research sample was taken using a purposive sampling technique with certain criteria during the period from January 2014 to December 2023. The data collection instrument used a documentation method by utilizing secondary data from various official sources.

The data analysis technique used is

a. Granger causality test

The Granger causality test is a statistical method used to test whether a variable can help predict another variable.(Harahap 2014). In the context of this study, the Granger causality test can be used to determine whether the price movement or yield of gold and sukuk.

b. One-way ANOVA to compare the performance of the three instruments.

One-way analysis of variance (ANOVA) is used to compare the average performance of three or more instruments (in this case gold and sukuk).(Harahap 2014). This test will determine whether there is a significant difference between the two instruments.

c. Paired sample t-test for paired comparisons

The paired t-test is used to compare the performance of two instruments in pairs, for example between gold and sukuk. This test will determine whether there is a significant difference between the two instruments in their ability as a hedge.

**D. RESEARCH RESULT**

## 1. Comparative Analysis of Gold vs Sukuk

Based on the results of the comparative analysis between gold and sukuk as hedging instruments against inflation, several important findings were found. First, in terms of correlation with inflation, gold shows a stronger relationship with a correlation value of 0.72 compared to sukuk which only reaches 0.31. This higher correlation indicates that gold price movements tend to be more in line with changes in the inflation rate, making them more effective in maintaining the real value of investments amid inflationary pressures. From a beta perspective to inflation, gold again shows an advantage with a beta value of 1.25, while sukuk only reaches 0.45. A higher beta value in gold indicates that this instrument has a greater sensitivity to changes in inflation. When there is a 1% increase in inflation, the price of gold tends to increase by 1.25%, indicating its ability to provide better value protection compared to sukuk which only responds by 0.45%.

Sharpe Ratio analysis also supports this conclusion, where gold recorded a value of 1.85, far above sukuk which only reached 1.12. A higher Sharpe Ratio indicates that gold provides better returns per unit of risk taken, indicating higher efficiency as an investment instrument in the context of hedging against inflation. This comparison is supported by historical data during the period 2014-2023, where gold consistently shows a more responsive movement to changes in inflation rates. In periods where there was a significant spike in inflation, as seen in 2014 (8.36%) and 2022 (5.95%), gold prices showed a faster and more proportional adjustment compared to sukuk. Based on the results of this comprehensive analysis,  $H_0$  is rejected and  $H_1$  is accepted, which means that gold is proven to have significant effectiveness compared to sukuk as a hedging instrument against inflation. This finding has important implications for investors looking for effective hedging instruments, especially in the context of the Islamic financial market. Gold not only offers compliance with Islamic principles, but is also proven to be more effective in protecting investment value from the impact of inflation compared to sukuk.

**E. CONCLUSION**

Based on a comparative analysis between gold and sukuk as a hedge against inflation during the period 2014-2023, gold has proven to be more effective as an inflation hedge. This is indicated by a stronger correlation with inflation (0.72 vs 0.31), higher beta (1.25 vs 0.45), and a better Sharpe Ratio (1.85 vs 1.12). Thus, gold is a more optimal choice for investors looking for an inflation hedge in the context of the Islamic financial market.

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