Factors Affecting the Price of Gold in Malaysia

Hanif Zakaria, Nabilah Abdul Shukur, Salwani Affandi, Wan Mansor Wan Mahmood

Faculty of Business Management
Universiti Teknologi MARA, Dungun, Terengganu, Malaysia

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ABSTRACT

Gold is a precious metal which serves as both financial and real assets. The value of gold in the society goes more than just economic, as it is also treasured as a storage and display of mammon and culture. Of late, the price of gold is not stable in which it tends to oscillate contingent on the economic condition. In the long-run, its prices keep increasing due to high demand and inadequate supply worldwide. However, in the short-run, its price seems to be volatile due to various potential reasons. Therefore, this study was conducted to determine the factors influencing gold prices in Malaysia. In order to achieve the objective, Stata software was used to assess the prospective relationships between the gold prices as the dependent variable and the inflation rate, interest rate and exchange rate as independent variables by using Pooled Ordinary Least Squares (POLS) methodology. The monthly data employed in this study spans across a 14 years period from year 2000 until 2013. The results revealed that the rates of inflation, exchange and interest were significantly related with gold prices in Malaysia in different magnitude and direction. It is empirically proven that any change in the rates of these three variables will likely pose a change of gold prices in the country. The results also solidify the importance of gold as a store of wealth and portfolio construction.

KEYWORDS: Gold prices, Exchange Rate, Inflation Rate, Interest Rate.

INTRODUCTION

The World Gold Council reported five countries namely the United States, South Africa, China, Canada and Australia as the main producers of gold. Other producers of gold include India, Turkey, United Arab Emirates (UAE), Indonesia, Thailand, Vietnam, Egypt, Korea, European countries and Malaysia. The gold prices is by standard, quoted in United States Dollar (USD) due to its importance as the world’s reserve currency. Recently, the gold prices is unstable as it tends to fluctuate on every month, which is being attributed to the volatility of economic and financial conditions [1].

A remark by the president of Malaysian Indian Goldsmiths and Jewelers Association, Abdul Rasull Abdul Razak has highlighted the point that the price of gold was at the lowest for the past three months as it dropped from RM180 per gram into merely RM130 [2]. According to him, the falling trend in the prices of gold has been made a windfall to the public, who are scrambling to buy gold from the market and increase their holdings. In addition, oversupply is one of the main factor behind the fall in gold prices as many new gold mines are being discovered all around the world. As the impact, local jewellers recorded a 30% increase in sales due to the public shopping rush. Nowadays, most of the gold investors keep a close eye on the price of gold with the motivation to grab the first opportunity to buy low and sell high in the future. This gives rise to the need for a set of indicators which serve as a benchmark in predicting the future movement of prices of the commodity.

Recently, a broad study of gold prices had been conducted by applying an MGARCH model. Previous researchers found that oil prices, exchange rate, inflation rate and real interest rate are some of the factors that influence the gold prices [3]. Prior study also proved that oil prices is the strongest factor that explains the variation in the price of gold [4].

The primary objective of this research is to analyze the trend of gold prices for 14 years, which covering periods starting from year 2000 until year 2013. Specifically, this study examines the relationships between the price of gold against three independent variables namely inflation rate, exchange rate and interest rate. This study also aims to identify the most influential factor that predicts the prices of gold.

LITERATURE REVIEW

Gold prices

Gold is a precious metal that is valuable for the keeper. Since it has a long life and extreme durability, gold can be melted and reconstructed to fit for multiple kinds of use. According to [5], the price of gold was stable for 20
years after mid 1980. However, it has been on the rise after the Washington Agreement on Gold in 1999 which restricted sales by central bank until the year 2011. The price of gold has floated freely ever since, and seems to be determined by the interaction of many factors at once. This makes it hard to predict its future movement. Therefore, more research is needed to pin-point the factors that influencing the fluctuation of gold prices.

**Inflation**

Inflation is an increase in the general price level. It is considered as one of the macroeconomic problems since it can reduce the purchasing power of people. Several researches have looked into this variable as a potential predictor of gold prices changes. For example, in [6] found that inflation does not have any significant impact on the gold prices in Vietnam. The result is consistent with the study which conducted in the US by [7, 8]. They argue that gold is not widely used as a store of value against inflation, where people prefer to hedge their wealth by investing in other assets such as houses, stock and etc.

On the other hand, in contrary to the previously mentioned findings, several studies claimed that continuous inflation may boost the gold prices in the future [2]. This is where people think that they can protect and improve their value of wealth by investing in stocks, houses and other assets. However, they do not realize that their action will further increase the prices of those assets. Consequently, it will boost up the general price levels. Further investment made in those assets may cause problems of asset bubble due to speculation made by arbitrageurs. In turn, the money will flow into the gold market as investors are pulling their money away from the risky assets into safer alternatives (including gold). Hence, it will put upward pressure on the commodity’s price. Higher demand of gold under a limited supply will lead to an increase of the gold prices. This argument is consistent with a study which conducted by [9], who found that the gold prices can be influenced by inflation hedge. In addition, in [10] found a positive relationship between the Consumer Price Index (CPI) movement and return on gold.

**Exchange Rates**

The exchange rate is the price when a currency is converted to another. Based on the study that conducted by [11], there is a relationship between gold prices and major exchange rates such as USD, Sterling Pound (GBP) and the Australian Dollar (AUD). Past researchers also suggest that the floating exchange rate regime which employed by those countries is one of the main sources of instability in the world gold prices. According to [4], exchange rates have an inverse relationship with gold prices where an increase in the exchange rate tends to amplify the gold prices as well.

In addition, a study by [12] in South Africa found similar results where there was an excessive volatility of the South African Rand due to the volatility of the prices of gold. The main reasons might be due to the role of South Africa itself as the main producers of gold in the world. Consequently, from the short-run results, there seems to be speculative inflows of the South African Rand. It is definitely helping to boost up its economic growth after period of capital account liberalization. In addition, the findings also showed that the gold market at that time was dominated by the US where any changes in the USD would definitely lead to a significant influence on the prices of gold in other countries.

Furthermore, in [5] conducted a study based on daily and weekly data by using USD, Yen, Euro and Pound. The result showed that there is a negative relationship between gold prices and the currencies of concern. This statement is supported by [13] who examined the relationship between Yen, USD and Euro with gold prices. Both researchers conclude that it would be beneficial to invest in gold in order to avoid losses due to the depreciation of exchange rates as a fall in currency value would be cancelled out by the gain from a rise in the price of gold.

**Interest Rates**

The real interest rate is known as the rate that is adjusted to remove the effects of inflation. This is to reflect the real cost of funds to the borrower, and real yield to the lender. Therefore, real interest rate of an investment is calculated by subtracting the inflation from the nominal interest rate. Previous studies show that there is a negative relationship between the real interest rate and gold prices [8]. According to [6], real interest rates in the US may lose some of their traditionally strong influence over gold prices in the coming decade or so, as inflation rates and physical demand in emerging markets are getting higher. In [14] conducted a study in the US between 1973 (when the gold market became free of government operations and “genuine” market price was reached) and 1984 (when their study ended) which results in a highly significant negative relationship between the real interest rate and the price of gold. The researchers argue that the willingness of investors to hold gold varies according to the anticipated real returns for other assets. In order to reap better return, when the interest rate is high, investors will hold less gold and more financial (interest-bearing) assets. And vice versa, thus will negatively affecting the gold prices.

Contrary to the above findings, in [3] postulates that there is no significant relationship between interest rate and gold prices in the US. It argues that investors tend to regard gold and bond as complementary goods. Thus, any increase in the yield of the bond will not give any impact to the price of gold. The stability of gold prices is crucial to ensure resilient macroeconomic conditions for a country. There is a chance for an economy to fall into a recession...
due to a commodity shock such as what happened in 1985. In order to prevent such occurrences, an unfathomable understanding on the determining factor of gold prices fluctuations is required. Therefore, there is a need to investigate the relationship between the prices of gold against several Malaysian macroeconomic variables such as exchange rates, inflation and interest rate.

RESEARCH OBJECTIVES

1. To examine the influence of inflation rate, exchange rate and interest rate towards the price of gold in Malaysia.
2. To examine the most influential factor in determining the price of gold in Malaysia.

RESEARCH HYPOTHESIS

Hypothesis 1 (H₁): There is a relationship between the exchange rate and the price of gold.
Hypothesis 2 (H₂): There is a relationship between the inflation rate and the price of gold.
Hypothesis 3 (H₃): There is a relationship between the real interest rate and the price of gold.

THEORETICAL FRAMEWORK

<table>
<thead>
<tr>
<th>Independent Variables (X)</th>
<th>Dependent Variable (Y)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inflation Rate</td>
<td>Price of Gold</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td></td>
</tr>
<tr>
<td>Real Interest Rate</td>
<td></td>
</tr>
</tbody>
</table>

Figure 1: Theoretical framework

METHODOLOGY

Specifically, this research looks for some empirical evidence that could be used for explaining the relationship between the macroeconomic variables and the prices of gold in Malaysia. Secondary data were gathered through various databases, reports and websites. All data analysis processes were conducted using Stata program, which involved 14 years of monthly time-series data starting from January 2000 until December 2013, which add up into a total of 672 observations. Data were transformed into a log form to satisfy normality assumption and to ensure that the distributional variance and mean are constant. In order to meet the research objectives, the logged values of independent variables; exchange rate (lnexchange rate), inflation (linflation), and interest rate (lninterest) were regressed against the logged values of gold prices (lngold) using a pooled Ordinary least Squares method.

RESULTS AND DISCUSSION

Table 1 shows the descriptive statistics for the variables of concern. The statistics comprise of measure of central tendency (mean and median), as well as measures of data distribution (skewness, kurtosis and p-value of normality test).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Median</th>
<th>Skewness</th>
<th>Kurtosis</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold</td>
<td>4.30</td>
<td>4.30</td>
<td>0.00</td>
<td>1.59</td>
<td>0.33</td>
</tr>
<tr>
<td>Inflation Rate (CPI)</td>
<td>4.52</td>
<td>4.52</td>
<td>0.088</td>
<td>1.55</td>
<td>0.50</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>1.25</td>
<td>1.29</td>
<td>-0.52</td>
<td>1.70</td>
<td>0.43</td>
</tr>
<tr>
<td>Real Interest Rate</td>
<td>1.03</td>
<td>1.04</td>
<td>-0.91</td>
<td>3.73</td>
<td>0.11</td>
</tr>
</tbody>
</table>

The mean and medium value of gold is 4.30, which is essentially identical to one another. This suggests that the data distribution is almost at the center of the curve. The distribution of gold prices data follows a normal form, as evident by the 0.00 skewness which implies that the data is balanced in left and right. The 1.59 value of kurtosis which implies that the distribution is only slightly peaked, and p-value of 0.33 which suggests that the variable is insignificant in non-normality test. This statement is supported by previous research [7], which stated that the price of gold was in a stable mode.
Inflation rate also recorded the same value of mean and median (4.52). It suggests a mild rate of inflation in Malaysia, while the distribution of data is slightly skewed to the right with a low peak. Similarly, the data on this variable are also found to be normally distributed.

The mean and median for exchange rate are 1.25 and 1.29 respectively. The skewness value (-0.52) suggests a negatively skewed distribution of data, while the kurtosis (1.70) suggests a low peak. Normality is confirmed as the probability value (0.43) is more than 0.05.

Last but not least, interest rates recorded a mean and median of 1.03 and 1.04 respectively. The data is slightly skewed to the left as evident by the -0.91 value of skewness, and moderately peaked as shown by the 3.73 value of kurtosis. However, the distribution of data is still normal and acceptable.

**Stationery Test**

To employ time-series tests, there is a need to ensure that all variables are stationary [7]. The research employs Augmented Dickey Fuller (ADF) test for all variables at level and the first difference in order to assess the stationarity status of the data. The unit root test is conducted against a null hypothesis that “variable is not stationary”. Table 2 summarizes the test results.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Level I(0)</th>
<th>1st difference I(1)</th>
<th>Stationary at</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gold Prices</td>
<td>0.7673</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Inflation Rate (CPI)</td>
<td>0.9871</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Exchange Rate</td>
<td>0.6728</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
<tr>
<td>Real Interest Rate</td>
<td>0.1502</td>
<td>0.0000</td>
<td>I(1)</td>
</tr>
</tbody>
</table>

Table 2 shows the level I(0) where all variables are not stationary, since the respective p-values are greater than 0.05. The data are hence transformed into first level of differentiation and retested for unit root. The resulting p-values of the ADF test were found to be significant at I(1), which indicates that the data are now in stationary form.

**Pooled Ordinary Least Squares (POLS) Regression**

Table 3 shows the results of the pooled ordinary least squares (POLS). The independent variables chosen have shown an excellent explanatory power towards the gold prices as indicated by the 0.9694 value of the adjusted R-square. The three variables are able to explain 96.94% of the variation in the dependent variable, while leaving only approximately 3% of the variation unexplained. In addition to that, the F-stat registered at 0.0000 p-value reading. It implies that the model is fitted, and the independent variables are significant in collectively explaining the price of gold. These results suggest that the rates of interest, inflation and exchange possess a very strong power to dictate the movement of gold prices.

To obtain more details on that, the individual significance of the variables does support the findings from R-square and F-stat. All of the variables are significant at the 1% level in explaining the price of gold, as evident from the respective p-values of 0.0000. The respective null hypothesis is hence rejected.

Interest and exchange rates exhibited a negative relationship with gold prices, whereas a positive relationship is seen in the case of inflation rate. The findings of interest and exchange rate come to an agreement with those found in [4-6, 11-13]. Holding all else equal, any 1% increase in interest rate will likely result in 0.22% fall in the price of gold, while the same percentage of escalation in exchange rate will lead to a 1.23% fall in the price.

On the other hand, the coefficient suggests that any 1% change in the inflation rate will be followed by a 4.79% change in price of gold in the same direction. This result is in accordance to [10], where it implies that gold is a good hedge for inflation as any percentage hike in price levels will always be defeated by a higher growth rate in the price of gold. In other words, the price of gold tends to rise in a sharper percentage in response to a unit increase in the rate of inflation. Hence, it serves as a protection mechanism against rising price levels of goods and services.
CONCLUSION AND RECOMMENDATIONS

The importance of this study stems from the determination of the impact of macroeconomic variables onto the price of gold. The study found that the macro variables namely interest, inflation and exchange rates do possess significant predictive power against the price of gold. It can be used as indicators of future price movements.

In tandem with many of the prior research results such as [1-2], inflation rate serves as the most efficient determinant of gold prices changes. Since the resulting coefficient is positive, this implies that continuous inflation may boost the gold prices in the future. This also suggests that investors can rely on gold as a hedge against rising price levels, as any unit of change in inflation will be outdone by a higher-percentage change in gold prices.

Exchange and interest rates have a negative bearing onto the price of gold. The results advocated that gold is a counter-cyclical investment alternative against interest-bearing financial assets. As the economy gets better and interest rate rises, investors will cash out their investment in gold and flee with the money or capital market in search for a greater rate of return. In contrary, gold will be the preferred alternative when the economy hits the bottom and interest rate is cut. The investors use the commodity as a lock of value to prepare for the next uptrend in economic condition. As the net effect, these in-and-out movements of investors' demand will negatively affect the prices of gold.

In terms of the impact of exchange rate movements, the gold prices seems to disagree with the price of the currency. As the currency value appreciates, the price of gold will plunge. As a mater of implication, it is argued that investment in gold would be beneficial to avoid losses due to depreciation in the exchange rate. In other words, a depreciation of the exchange rate which erodes the purchasing power of the locals against the imported goods will be neutralized by a rise in the price of gold. It ultimately protects the wealth and purchasing power of the holder. Therefore, these facts amplify the importance of investing in gold as a part of the portfolio diversification measure.

Aspiring future researchers are advised to incorporate more regressors such as crude oil price, government spending, the unemployment rate and Gross Domestic Products (GDP) into their study. As an alternative to the proxies used to represent the variables in this study, future researchers could use T-bill rates, based lending rate and overnight policy rate to measure interest rate, real inflation and producer price index to measure inflation rate, and USD or Euro currency to measure exchange rate. Expanding the period of study would also be advised, besides by using a higher-frequency observation to capture more actions under the mechanics of gold prices changes. Lastly, it would be great to employ a panel data of several countries in order to validate the findings found here in Malaysia. These would help to broaden the understanding on gold prices changes as well as enriching the body of literature itself.

REFERENCES


