

VOLATILITY OF GOLD PRICE IN MALAYSIA: DOES SEASONAL PATTERN MATTER?

Zuriyati Ahmad¹
Norazamina Mohamed²

Abstract

The UK based research in 2015 reported that the demand for gold will not give any impact to the price because there is no strong seasonal pattern for the gold price. New findings however show that the Chinese New Year festival and Eid celebration influence the gold price volatility in China and Middle East countries. Thus, this study aims to ascertain whether there is impact of seasonal pattern on the volatility of gold price in Malaysia. Monthly time series data spanning from 1995 to 2014 is applied to the multivariate model with inclusion of dummy variable of seasonal pattern. Using the OLS method the finding indicates a strong seasonal pattern is not found. Nonetheless, when tested in the long run equilibrium, the seasonal pattern represents by the month of Eid celebration is highly significant with the volatility of gold price in Malaysia.

Keywords: Gold Price; Seasonal Pattern; Cointegration

2016 GBSE Journal

Introduction

Seasonal pattern in gold prices is due to the recurring cultural events. Such events may be the festival season of Chinese New Year, Deepavali and Eid, the wedding season and the Christmas season. If consumers tend to purchase gold in the form of jewellery for festival or wedding, seasonal pattern can evolve which potentially becomes evident in monthly gold price changes (Baur, 2013). The UK based research in 2015 argued that the demand for gold will not give any impact to the price because there is no strong seasonal pattern for the gold price. They listed out two reasons as to why there is no strong seasonal pattern for the gold price. First, gold is already priced into the market. Thus, it is not a season driver. Secondly, stockpiles in gold can arbitrage away any seasonal patterns in price and investment.

Malaysian Reserve (2013) however reported that gold jewellery business is economic sensitive and a seasonal oriented trade. In fact, the Malaysian gold market has recently create a lot of attention as the price of gold is volatile than its historical trend. For example, in 2015 the highest gold price was recorded RM150.35/g in January and the lowest price was at RM135/g in mid March. Despite its growing prominence as investment during recent years, gold as jewellery still

¹ Senior Lecturer, Faculty of Business Management, Universiti Teknologi MARA (Terengganu), 23000 Dungun Terengganu. Tel: +6098403866 E-mail: zuriy271@tganu.uitm.edu.my

² Senior Lecturer, Faculty of Accounting, Universiti Teknologi MARA (Terengganu), 23000 Dungun Terengganu. Tel: +6098400289 E-mail: norazami@tganu.uitm.edu.my

accounts as attraction to Malaysian consumers. New findings also show that the Chinese New Year festival and Eid celebration influence the gold price volatility in China and Middle East countries. Rosch and Shimidbauer (2012) for example listed the selection of festivals which can be related to the purchases of gold. These festivals prove over the last two decades to have clear impact on gold price volatility. While, Rosch and Shimidbauer (2013) expand the study and found the Chinese New Year festival gives impact on gold price volatility using GARCH model. In addition, the WGC (2002) reported in Saudi Arabia the wedding season in May and June stimulated the jewellery demand with high fluctuating gold price during these months. Thus, with the contradicted reports and findings, this study aims to ascertain whether there is impact of seasonal pattern on the volatility of gold price in Malaysia.

The remaining of the paper is organized as follows. Section 2 explains the methodology under consideration. Section 3 discusses result and discussion. Finally, section 4 offers conclusion.

Methodology

The monthly data set covering from 1996 to 2014 ($n=228$) is applied in this study. The sample is restricted to this time span in order to get uniformness of the data set and considering the availability of the data. Data is obtained from Index Mundi and BNM Monthly Statistical Bulletin of Bank Negara Malaysia.

For modelling framework, the impact of seasonal pattern which is the dummy variable of the month of Eid is included in the equation model. This approach is based on the conception that the month of Eid may affect the volatility of gold price. The month of Eid is chosen to represent the seasonal pattern as gold is a norm and widely worn by Malay women during the month of Eid. The dummy variable (DE) indicates the month of Eid. In its original form, it is set 1 if Eid is celebrated in that month. Otherwise it is set 0, yielding a sequence isolated 1s, surrounded by 0s. Dummy variable indicates the month of celebration is shown below;

$$DE = \begin{cases} 1 & \text{if the month of Eid is celebrated} \\ 0 & \text{otherwise} \end{cases}$$

Even though the main focus is to ascertain the impact of seasonal pattern (the month of Eid celebration), price of gold can also be influenced by various macroeconomic factors. In order for a linear equation model to be more realistic, the macroeconomic factors are taken as control variables. These control variables are GDP which represents economic condition, exchange rate (EXR), interest rate (INT). Hence, the estimated equation model is as follows;

$$GP = \alpha_0 + \alpha_1 GDP + \alpha_2 EXR + \alpha_3 INT + \alpha_4 DE + \varepsilon_t$$

The dummy variable (DE) is the major focus in this study. As it was found from the past researchers (Baur, 2013; Rosch and Shimidbauer, 2012 & 2013) a direct relationship is expected. Appear of one season will create higher gold price.

With the expected magnitude, the Ordinary Least square (OLS) method is applied to check the relationship between variables. The dummy variable (DE) will be included in this test together with other control variables.

As OLS is subjected to spurious result thus, it is imperative to test for the presence of the unit root test. Subsequently, cointegration test which aims in dealing with the relationship between non stationary time series will be applied.

Result and Discussion

Table 1 presents the result of estimation for coefficient and the significance of the model. In ordinary least square (OLS) method, all the control variables can reject the hypothesis where there is no relationship between the control variables and the volatility of gold price.

Table 1: Summary of the OLS output

Dependent variable: Gold Price (GP)			
No of observation: 228			
Period: Jan1996 – Dec2014			
Variable	Coefficient	T statistics	Probability
Constant	9010.685	12.9627***	0.0000
GDP	0.0202	8.2120***	0.0000
EXR	-1800.041	-10.7710***	0.0000
INT	-513.4087	-10.7625***	0.0000
DE	6.519	0.038	0.9697

*** Denote significant at 0.01

A significant relationship with a positive sign is obtained in GDP. The Exchange rate (EXR) is found to be highly significant in the estimation with the value of 99 percent level of confidence. While, interest rate (INT) is negatively influence the gold price shows a high significant level with less than 5% alpha. The significant of this variable reveals that interest rate is a substitute of gold price. An increase in interest rate will lead to a lower gold price.

The study however has to accept the hypothesis that there is no relationship between seasonal pattern which represents by dummy variable (month of Eid celebration) and the volatility of gold price. In other words, the major focus of this study the month of Eid is not found to have significant relationship with the volatility of price even though the magnitude is expected.

Table 2: Stationary Test

Variable	Level I(0)	First differences I(1)	ADF Value
GP	0.2941	13.7451	3.4594
GDP	0.0575	9.0641	3.4594
EXR	2.6503	15.2618	3.4594
INT	2.3368	10.4154	3.4594

Table 2 provides the summary of stationary test. Using 5% significance level, all variables fail to reject the null hypothesis of non stationary at the level form. Conversely, all variables are stationary at their first difference form, since the null hypothesis of non stationary can be rejected. All variables are I(1) or integrated of order 1. The dummy variable of month of Eid is not included in the Stationary Test as it was argued in Glynn and Perera (2007).

The maximum eigenvalue and trace tests are obtained with one cointegrating equation is found (full result will be provided upon request). The null hypothesis of no cointegration can be rejected. The existence of cointegration implies variables are cointegrated and there is a meaningful long run relationship. Testing with provision of four lags, the model exhibits no serial correlation and no normality problem. The study has proceeded to the next step to find out the magnitude the long run relationship. Estimated long run cointegration model is as follows;

$$\text{GP} = 0.2623\text{GDP} - 4327.706\text{EXR} - 177.044\text{INT} + 406101.8\text{DE}^{***}$$

(0.3536) (21084.8) (6170.63) (47197.8)

* Std error in the parenthesis

*** Denote significant at 0.01

From the equation, the finding indicates that the seasonal pattern it is found to be highly significant. Interestingly, this seasonal pattern which represents by dummy variable for the month of Eid is significant at less than 1% alpha in the long run equilibrium. The positive magnitude also indicates to follow the hypothesis. This finding is clearly shown that there is a strong seasonal pattern on the gold price volatility as found in previous literature (Rosch and Shimidbauer 2013; Baur, 2013). Thus, in Malaysia the gold price is seasonal oriented in the long run equilibrium.

Conclusion

The purpose of the study is to ascertain whether there is impact of seasonal pattern (month of Eid) on the volatility of price of gold. It was found that the seasonal pattern (month of Eid) does not influence the volatility of price using the OLS method. While all the macroeconomic variables which work as control variables are significant with the expected signs as found in the previous research. These macroeconomic factors are really important in influencing the volatility of gold price in Malaysia. Nonetheless, the result is contrary when testing with a more dynamic cointegration method. In the long run equilibrium a highly significant relationship is found. Thus, the finding of the study supports the report by Malaysian Reserve (2013) that business on the gold jewellery is economic sensitive and a seasonal oriented trade. Even though, Malaysian gold market is small compared to the large demand in Asia countries such China, India, Saudi Arabia and Egypt the gold price tend to increase during the period of Eid celebration. A strong purchasing power in gold leads to the changes in its price. In conclusion, the seasonal pattern matter in influencing the gold price volatility in Malaysia.

References

- Baur, D.G. 2013. The autumn effect of gold. *Research in International Business and Finance*, 27, 1-11
- Glynn, J. & Perera. N. 2007. Unit root test and structural break: a survey with applications retrieved from <http://www.upo.es/RevMetCuant/art11.pdf>
- Nawaz, A. & Moomal, S. 2012. Volatility in gold price returns. *Journal of Commerce, Management and Social Science*, 1(2), 195-207
- Rosch, A., Schmidbauer, H. 2012. Impact of festivals on gold price expectation and volatility. In International Institute for forecasters (ed), Proceedings of the 32nd International Symposium on Forecasting ISF 2012, Boston (MA) , USA, June 24-27.
- Rosch, A., Schmidbauer, H.& Donghui, J. 2013. Chinese New Year and international gold market. 2013. Retrieved from ecomod.net/system/files/gold_and_china_ecomod2013.pdf
- The Malaysian Reserve. 2013. Malaysian exquisite gold jewellery dazzles global market. Retrieved from www.freemalaysiatoday.com/category/business/2013/09/19
- World Gold Council, 2010. Gold demand trend Full Year 2010, <http://www.gold.org>
- World Gold Council, 2015. Gold demand trend 2015 Full Year 2015, <http://www.gold.org>