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Research Paper

A Study on Impact of Price Behaviour of Commodity Gold and Gold ETF

Management

KEYWORDS : price behavior, Gold ETF, EGARCH model and Unit root test

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ABSTRACT

The study looks after the rise of gold market in India. The future of the Gold and Gold price movements are determined by the perception of gold as a `store of value' rather than its fundamentals as a commodity. The precious metal's value is also determined by such factors as inflation, interest rates and the presence of lucrative alternative investment avenues in the economy. Many investors realize that the Commodity market is a volatile place to invest their money. Movement of volatility helps to identify tops and bottoms of the market.. The study was conducted by taking the gold price in commodity market and Gold ETF. The analysis is based on employing both EGARCH model and ADF Unit root test. This analysis shows the volatility and performance of selected product. It explain that how volatility affects investors returns and how to take advantage of it.

1. INTRODUCTION

1.1. Volatility

Volatility refers as relative rate at which the price of a security moves up and down. Volatility is found by calculating the annualized standard deviation of daily change in price. If the price of a stock moves up and down rapidly over short time periods, it has high volatility. If the price almost never changes, it has low volatility.

1.2. Capital Market

The capital market consists of primary and secondary markets. The primary market deals with the issue of new instruments by the corporate sector such as equity shares, preference shares and debt instruments. Central and state governments, various public sector industrial units (PSUs), statutory and other authorities such as state electricity boards and port trusts also issues bonds/debt instruments.

1.3. Gold

Gold is the oldest precious metal known to man and for thousands of years it has been valued as a global currency, a commodity, an investment and simply an object of beauty. Its beauty has made it popular in decoration. Gold has also become an increasingly important industrial metal. Because of its rarity and its durability, gold has been almost universally acceptable as money for thousands of years. Gold is the most prominent of the noble metals (gold, silver, platinum, and other platinum group metals), so termed because of their inertness, or reluctance to enter into chemical reactions.

1.4 Gold ETF

An Exchange Traded Fund is an instrument which tracks the underlying asset. It could be an index stocks or it could be a particular commodity like Gold. A Gold ETF is one which tracks the commodity gold. Price of the Gold ETF is directly affected with the change in the gold price. There is no big variance when you want to choose the best Gold ETF schemes as all such schemes track only gold as underlying asset. Gold Exchange Traded Fund is a financial product that is listed on a stock exchange and represents ownership of underlying gold assets. Gold ETFs is also known as paper gold. Buying gold ETF is purchasing gold in electronic form.

2. OBJECTIVE OF THE STUDY

1. To find relation between Gold ETF and Commodity Gold.

2. To analyse the price behaviour of Gold ETF and Commodity Gold using the conditional variance analysis

3 RESEARCH METHODOLOGY

The type of research used for the study is analytical research. The type of data used for this study is secondary data. Data from January 2013 to June 2013 of Gold price is used for the study. The type of sampling techniques used for the study is judgmental sampling.

3.1 Tools and techniques

EGARCH Model
Unit Root test

3.1.1 EGARCH Model

The exponential general autoregressive conditional heteroskedastic (EGARCH) model by Nelson (1991) is another form of the GARCH model. The EGARCH process is often preferred by financial modeling professionals because it provides a more real-world context than other forms when trying to predict the prices and rates of financial instruments. EGARCH model is the best model to explain the volatility and the asymmetric effect.

The formula used to find EGARCH is
LOG (GARCH) = C(1) +C(2) * ABS(RESID (-1) / @ SQRT(GARCH(-1))) + C(3)*RESID (-1) @ SQRT(GARCH(-1)) + C(4)*LOG(GARCH(-1))

3.1.2 Unit Root Test

A linear stochastic process has a unit root if 1 is a root of the process's characteristic equation. Such a process is non-stationary. If the other roots of the characteristic equation lie inside the unit circle — that is, have a modulus (absolute value) less than one — then the first difference of the process will be stationary.

AR(1) models
Model: $Y_t - \mu = \rho (Y_{t-1} - \mu) + e_t$

Where,
Y_t = observation at time t
e_t = error or "shock" at time t (assumed id normal)
μ = series mean (assumed constant over time)
ρ = Autoregressive coefficient.

4. REVIEW OF LITERATURE

Porwal and Gupta (2005), examine the hot issue of volatility in the Indian Stock Markets. The study is based on daily prices of S&P CNX Nifty for the period of 10 years. They found 1996 was the most volatile year in the past 10 years; this is due to the political instability and absence of proper regulation. **Kaur (2004)**, studied the extent and pattern of stock return volatility of the Indian Stock Market during the year 1990 to 2000. She found that among the months, April has been the most volatile followed by March and February. This could probably be due to effect of Union Budget, which is usually presented in the last month of February.

5. ANALYSIS AND INTERPRETATION

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Table No. - 1 Table showing the Volatility behaviour of Commodity Gold

Variable		Coefficient	Std. Error	z-Statistic	Prob.
Variance Equation					
C	Commodity Gold	0.000139	0.000341	0.406406	0.6844
	MCX	0.000730	0.014261	0.051220	0.9592
	Gold ETF	0.000175	0.000357	0.489294	0.6246
RESID (-1)^2	Commodity Gold	-0.454003	0.575517	-0.788861	0.4302
	MCX	-0.236981	3.660167	-0.064746	0.9484
	Gold ETF	-0.565398	1.319807	-0.428394	0.6684
GARCH (-1)	Commodity Gold	1.248685	0.537007	2.325266	0.0201
	MCX	0.671801	8.751069	0.076768	0.9388
	Gold ETF	1.202571	2.252959	0.533774	0.5935

Table No. - 2 Table showing the calculation of Unit Root Test

		t-Statistic		
		Commodity Gold	MCX	GOLD ETF
Augmented Dickey-Fuller test statistic		0.825737	-4.016872	-3.434543
Test critical values:	1% level	-4.420595	-4.420595	-4.200056
	5% level	-3.259808	-3.259808	-3.175352
	10% level	-2.771129	-2.771129	-2.728985
Prob.*		0.9871	0.0173	0.0333

.6. FINDINGS

Commodity Gold has given a high Return in the month of April 2013 compared to other months. It gives a good return to investor in this period. Gold ETF has a high Return in the month of January 2013 compared to other months. It gives a good return to investor in this period. Table 1 about here shows the LOG (GARCH) equation value of Commodity Gold is close to one i.e 0.794682. It experienced high volatility and risky for the investors during the study period. The LOG (GARCH) equation value of MCX is 0.434820. It experienced moderate volatility. So it is low risk for the investors during the study period. The LOG (GARCH) equation value of Gold ETF is close to one i.e 0.637173. It experienced moderate volatility and risk for the investors during the study period. The table 2 about here indicates the ADF test-statistics value of Commodity Gold is positive than value of significant level. So the null hypothesis of a unit root will be rejected. The ADF test-statistics value of Gold ETF is negative than the value of significant level. So the null hypothesis of a unit root will be accepted. The ADF test-statistics value of MCX is negative than the value of significant level. So the null hypothesis of a unit root will be accepted. Gold is an asset class that is historically very volatile. The price of gold is affected by supply and demand factors. The researcher find that the investor has tendency to switch to gold investment when they find the equity and debt market to be too risky. Volatility is also a source of information to which investors react and form new expectations regarding risk and return.

7. CONCLUSION

The study has used to find impact of volatility on Commodity Gold and Gold ETF. Gold price is included in the model as an additional variable, to examine whether gold price contain any additional significant information about price movements. It is analysed by Return analysis, Standard Deviation, Beta, EGARCH and Unit Root Test calculation evaluates the performance of the selected commodities. The study analyzed the returns of commodity for the period of one year. In addition return has been comparing with to market portfolios, namely MCX which considered being the benchmark. Based on the findings it concludes that Commodity Gold and Gold ETF have performed well over the selected period and Commodity Gold has high risk compared to Gold ETF. Volatility works well to help identify market bottoms based on high volatility. For long-term investors, it also does a pretty good job of helping to identify that the Commodity market is at or near a top, when volatility is very low. As the volatility increases, then the market's performance will tend to decrease. Though the commodities are less risk, the performance of the product depends on the volatility of the market. So one has to choose the product based on the returns and their performance.

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