A study on the relationship between Gold price and Gold ETFs price

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ABSTRACT

This paper examined the relationship between the gold prices and selected gold ETF price using simple regression model. In this study, the risk and return of gold and selected gold ETF was also examined. For the study, time series data of gold price and selected gold ETF price over a period of 5 years (April 2013 to March 2018) were collected. The results suggest that there exists a relationship between the gold prices and selected gold ETF price which is significant. However, gold ETF price is not only a result of gold price but there are also other factors which contribute to it. From risk and return point of view, the return generated by gold over a period of 5 years is more than the returns generated by gold ETF. ICICI Gold and UTI Gold have been able to generate returns considerably well and at the same time the risk associated with ICICI is the highest and UTI is lowest which signifies that in order to be able to obtain more returns, an investor will have to bear the risk associated with the fund.

Keywords: Simple regression, Gold price, Gold ETF price

INTRODUCTION

Precious metals are pliable and are of high lustre. One such metal is gold. It is considered unique because it was the base for gold standard which helped set value for all the money. As an alternative investment, gold in recent years has gained an importance. The reasons for investment could be as a hedge, a direct investment or a security. It is used as a hedge or a security during the disrupt times or financial crises and a direct investment for the purpose of savings in the future.

In order to gain exposure, the investors can invest in gold ETFs. Gold ETF is an open ended exchange traded fund which the investors can buy and sell on the stock exchange. While the assets in ETFs are backed by gold, the intent here is not to own physical gold. It enables the investors to track the price movements and analyze the performance of gold. When the price of gold appreciates, the value of gold etfs increases and when the price declines the fund loses its value. When the investors redeem the fund, they do not receive return in the form of physical gold but a cash equivalent to that.

OVERVIEW OF GOLD ETFs

Axis Gold ETF

Axis Gold ETF is an open ended mutual fund which came into existence on November 10, 2010. The current market capitalisation stands at 212.86 crores. The risk and return grade are classified as above average and below average respectively. The returns generated by the fund since launch is 4.35%.. The minimum investment in this fund is 5000.

UTI Gold ETF

UTI Gold ETF is an open ended mutual fund which came into existence on March 12, 2007. The current market capitalisation stands at 367.55 crores. The risk and return grade are classified as average and above average respectively. The returns generated by the fund since its launch is 10.01%. The minimum investment in this fund is 20000.

HDFC Gold ETF

HDFC Gold ETF is an open ended mutual fund which came into existence on August 31, 2010. The current market capitalisation stands at 445.77 crores. The risk and return grade are classified as average and above average respectively. The return since its launch is 5.59%. The minimum investment in this fund is 5000.

ICICI Gold ETF

ICICI Gold ETF is an open ended mutual fund which came into existence on August 24, 2010. The current market capitalisation stands at 13.46 crores. The risk and return grade are classified as average and below average respectively. The returns generated by the fund since its launch is 5.41%. The minimum investment in this fund is 5000.

Kotak Gold ETF

Kotak Gold ETF is an open ended mutual fund which came into existence on July 27, 2007. The current market capitalisation stands at 405.77 crores. The risk and return grade are classified as average and average respectively. The returns generated by the fund since its launch is 10.93%. The minimum investment in this fund is 5000.

REVIEW OF LITERATURE

(Jaffe, 1989)Though gold is a risky asset when seen individually, its returns are not dependent on the others. Thus, gold play an important role for portfolio diversification. The researcher tests four hypothetical portfolios with different risk each and states that addition of gold in each of the four portfolios increases the return and decreases risk. Also, when the gold stocks are added to the hypothetical portfolios increases the returns but also the risk increases. The return however increases in a proportion greater than risk.

(Sunkara, 2017) measures the performance of gold and gold etfs and are compared with gold bonds and deposits on the basis of absolute return, standard deviation and compounded annual growth rate (CAGR) taking monthly closing price from 1st April 2013 to 31st march 2017 into consideration and concludes that CAGR of physical gold is higher than that of gold ETF hence physical gold performs better than gold ETF. In contrast to that, (Aggarwal, 2014) measures the performance of Gold and gold etf. For the purpose, the risk and return of physical gold and gold etf for the period 2011 to 2014 are compared and concludes by saying

that gold etfs have lesser variability than physical gold and gold etfs performs better than physical gold.

(S Wagle & S Naik, 2014) attempted to study the performance of Gold ETFs listed on NSE and the Gold ETFs were analyzed in detail from the date of their launch till December 2012. They concluded that no single Gold ETF performed exceptionally when compared to each other and the market. However Gold ETF managed to achieve its aim of generating returns in line with the returns obtained from investment in physical gold. They try to achieve their objective by adopting a strategy passive in nature and the funds and the underlying asset tracking error was minimized. Also, (Goyal & Joshi, 2011) in their study attempt to analyze the performance of 5 gold etfs of all that are listed on NSE using various evaluation techniques by calculating alpha, beta and standard deviation of the selected etfs for the period March 2008 to November 2010 and concludes by saying that prices of ETFs vary less than the NSE index. (Eswara, 2009) in her study evaluates the performance of gold etfs and also evaluates the relationship of gold etfs to gold spot gold prices and gold etfs to nifty by employing techniques such as regression and correlation. According to the study conducted, the author concludes by saying that out of the 5 gold etfs chosen, GOLDSHARE is more correlated to spot gold price followed by GOLDBEES and the relationship of gold ETFS to NIFTY is found to be inverse ie) as nifty decreases Gold ETFs perform better.

(Athma & Mamatha, 2017) They attempt to reflect o the growth of ETFs from the time of its launch on the basis of secondary data using tools such as Net Asset Value, Return, Risk, Reward to Variability (Sharpe) and Treynors Performance Evaluation Ratio. They conclude that gold ETFs introduction and gradual increase in the gold prices contributed to the performance of exchange traded funds than index funds.

(Swain & Samal, 2017) The gold price returns volatility is studied on the basis of daily prices for the period starting from 1st January 2009 to 30th September 2011 using two models such as standard deviation and GARCH, the observation depicted that alpha and beta are far from 1 which means volatility exists in gold prices.

(Narang & Singh) They investigate the relationship between prices of gold and returns of sensex in india for the period 2002 to 2012 using granger causality test and johansens integration test and concludes that there is no significant relationship existing between price

of gold and returns of sensex index. Also, Sensex index returns do not contribute to increase in price of gold and vice versa.

(Najaf & Najaf, 2016) analyzes the impact of oil and gold prices on Bombay stock exchange using techniques such as granger causality, correlation, variance decomposition analysis and co-integration test and the results show that the relationship between stock market of india and oil and gold markets does not exist in a long run. On the contrary, (Mishra, Das, & Mishra, 2010) attempt to study the relationship between stock market returns and price of gold on the basis of BSE 100 index using various models and concluded that price of gold and returns of stock market in India are related.

(Samanta & Zadeh, 2012) In this paper the researcher brings in light the co-movements several macro economic variables over a period of 20 years by examining the co-integration, common trend factor and spill over index over these variables. The findings reveal that stock price and gold price do not move in the same direction while exchange rates and price of oil are probable to be affected by erstwhile variables.

RESEARCH GAP

There have been enough researches conducted whereby the performance of gold in terms of risk and returns is studied but the investment options presently are growing and not just limited to physical gold. Over the years, trading in gold ETFs has increased where the gold is the underlying asset. Thus, this study attempts to study the risk and returns of selected gold ETFs and impact of gold prices on selected gold ETFs.

STATEMENT OF THE PROBLEM

In India, the investment in gold is imbibed within the culture. Almost every household possess gold in some form which provides them security during disrupt times. However, the options to invest in gold have increased such as gold bonds, gold ETFs, etc but not just limited to physical gold. Over the years, trading in gold ETFs has increased whereby the gold is the underlying asset in most of the funds. There is no research which focuses on the impact of price of gold on the price of gold ETFs. The study attempts to examine the variation in the returns of physical gold and gold ETF.

Some of the studies in the literature suggest that there is an impact price of oil and gold on returns of the stock market, here an attempt is also made to analyze whether gold price as such has an impact on gold ETF.

OBJECTIVES OF THE STUDY

- To calculate the risk and returns of gold and selected gold ETFs.
- To study the impact of prices of gold on selected gold ETFs.

METHODOLOGY

This is secondary data based study. The daily prices of gold in India were obtained from whereas the daily prices of Gold ETFs were obtained from the website of National Stock Exchange. The period of the study was from 1st April, 2013 to 31st March, 2018 ie) 5 years. To study the risk and return attached to Gold ETFs, 5 Gold ETFs were selected. Based on Asset under management, gold ETFs were selected. They are Axis Gold ETF, Kotak Gold ETF and UTI Gold ETF. The return of gold and gold ETFs were calculated using the equation

$$Rt=\log (Pt) - \log (Pt-1)$$

Where Rt represents the daily return of gold and gold ETFs. Pt is the price of gold and gold ETF at the time t. Pt-1 is the price of gold at the time t-1. The logged difference represented the returns of Gold and Gold ETFS.

The impact of price of gold on gold etfs has been studied through simple regression model.

ANALYSIS

Objective 1: To calculate the risk and returns of gold and selected gold ETFs.

Particulars	Mean Returns	Risk
Gold	0.01	1.053
UTI Gold	0.0026	0.82
Axis Gold	-0.0013	0.95
HDFC Gold	0.0005747	0.83
ICICI Gold	0.0041	1.08
Kotak Gold	0.0016	0.86

Table 1

In the above table, risk and returns of gold and gold ETFs are computed. We can see that the return generated by gold over a period of 5 years is more than the returns generated by gold ETFs. ICICI Gold and UTI Gold have been able to generate returns considerably well and at the same time the risk associated with ICICI is the highest and UTI is lowest which signifies that in order to be able to obtain more returns, an investor will have to bear the risk associated with the fund.

Objective 2: To study the impact of gold price on selected Gold ETFs.

Particulars	Multiple R	R square	Coeff.	Prob.
UTI Gold	0.862044	0.743119	0.928649	0.000
Axis Gold	0.677534198	0.459052589	0.652542148	0.000
HDFC Gold	0.776443	0.602863	0.781482	0.000
ICICI Gold	0.782887	0.612912	0.789024	0.000
Kotak Gold	0.737027384	0.543209365	0.742762314	0.000

Table 2

UTI Gold ETF

- The correlation coefficient is 0.86 which implies a strong positive correlation exists between the Gold price and UTI Gold ETF.

- R square of 0.743119 means that 74.311% of the variation in the price of UTI Gold ETF can be explained by Gold price and the rest depends upon the other factors.
- Coefficient of 0.93 signifies that any change in gold price will have an impact of 93 % on the price of UTI Gold.
- The value of p is less than 0.05%, the null hypothesis is rejected which implies that the price of gold and UTI gold are unrelated. In other words, the price of gold and price of UTI Gold ETF is related.

Axis Gold ETF

- The correlation coefficient is 0.67 which implies a positive correlation exists between the Gold price and Axis Gold ETF but not as strong as other gold ETFs.
- R square of 0.602863 means that 60% of the variation in the price of Axis can be explained by Gold price and the rest depends upon the other factors.
- Coefficient of 0.65 signifies that any change in gold price will have an impact of 65 % on the price of Axis Gold ETF.
- The value of p is less than 0.05%, the null hypothesis is rejected that the price of gold and Axis gold ETF are unrelated. In other words, price of gold and price of Axis gold ETF are related.

HDFC Gold ETF

- The correlation coefficient is 0.73 which implies a positive correlation exists between the price of Gold and HDFC Gold ETF.
- R square of 0.602863 means that 46% of the variation in the price of HDFC Gold ETF can be explained by Gold price and the rest depends upon the other factors.
- Coefficient of 0.78 signifies that any change in gold price will have an impact of 78 % on the price of HDFC Gold ETF.
- The value of p is less than 0.05%, the null hypothesis is rejected that the price of gold and HDFC gold are unrelated. In other words, the price of gold and price of HDFC gold ETF are related.

ICICI Gold ETF

- The correlation coefficient is 0.78 which implies a positive correlation exists between the price of gold and ICICI Gold ETF.
- R square of 0.612912 means that 61% of the variation in the price of ICICI Gold ETF can be explained by Gold price and the rest depends upon the other factors.
- Coefficient of 0.78 signifies that any change in gold price will have an impact of 78 % on the price of ICICI Gold ETF.
- The value of p is less than 0.05%, the null hypothesis is rejected that the price of gold and ICICI Gold ETF are unrelated. In other words, the price of gold and price of ICICI gold ETF are related.

Kotak Gold ETF

- The correlation coefficient is 0.78 which implies a positive correlation exists between the price of gold and Kotak Gold ETF.
- R square of 0.54320 means that 54% of the variation in the price of Kotak Gold ETF can be explained by Gold price and the rest depends upon the other factors.
- Coefficient of 0.74 signifies that any change in gold price will have an impact of 74 % on the price of Kotak Gold ETF.
- The value of p is less than 0.05%, the null hypothesis is rejected that the price of gold and Kotak Gold ETF are unrelated. In other words, the price of gold and price of Kotak gold ETF are related.

CONCLUSION

Thus, the results of risk and return of gold and gold ETF signify that in order to obtain more returns an investor has to bear the risk associated with it which means that higher the risk higher the return. Such an investment is an ideal option for aggressive investors.

The results of each of the gold ETFs signify that is a relationship between the gold price and gold ETFs. However, the price of Gold ETFs is not only a result of gold prices but also other

factors contribute to it. The returns generated by gold over a period f 5 years is more than the returns generated by gold ETFs which means that investment in gold is an ideal option than investing in gold ETF even though gold is an underlying asset.

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