

Investment Analysis of Gold Exchange Traded Funds in India

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ABSTRACT

Gold ETFs entered into Indian investment market effectively in the year 2006 with the objective to improve liquidity and to enhance market efficiency in virtual gold investment market. Investors of this segment should consider these two factors while taking their investment decisions. The liquidity aspect can be judged by considering the flexibility available with various schemes of gold ETF, whereas the efficiency can be evaluated by comparing the average return and Net Asset Value (NAV) of gold ETFs in India. Gold Exchange Traded Funds (or Gold ETFs) invest only in gold and gold based securities. The gold ETFs are backed by gold, for example 1 unit of Gold ETF is equal to buying equivalent quantity of Gold. For example if one gold ETF = 1 gm of 24 carat gold, then buying, gold-ETF unit every month for 10 years an investor gets 120 gm of gold after 10 years. Thus after the end of the 10th year the investor can convert the gold - ETFs into gold by selling the gold ETFs at the prevailing price of the gold in the market and can take physical delivery of gold.

Gold Exchange Traded Funds are traded on the major Stock Exchanges like the shares of a Company. In India these are traded on both National Stock Exchange of India (NSE) and Bombay Stock Exchange Ltd. (BSE). Like the shares of any listed company stock these are also transacted daily based on their market price. Thus it becomes necessary to have an Analysis on Gold Exchange Traded Funds to understand whether their returns are better than the market returns. This study will help an investor to decide whether to go for these types of investments.

Keywords

Gold, Gold ETF, Stock Market

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Introduction

Exchange Traded Funds (ETFs) are a kind of passive scheme used by fund managers of Mutual Funds to offer low cost low risk investment options to investors. They represent a basket of securities and are traded in a stock exchange like an individual stock. However unlike an open ended or close ended schemes of mutual fund ETFs can be traded on any trading day. ETFs were first launched in USA in the year 1993.

Gold Exchange Traded Funds invest in gold and securities where the underlying assets are gold. Investors can buy gold ETFs through new fund offerings as well as from the stock market as these are listed and traded through the stock exchanges. The units of these gold ETFs represent equivalent quantities of gold and the Investors have the option of redeeming these ETFs into physical units of gold at the time of redemption.

As an investment option in Gold Exchange Traded Funds (ETFs) combine the flexibility of the stock market investment where the buying and selling of stocks are easy as well as the simplicity of investing in the physical units of gold. Gold ETFs are traded on a continuous basis on the cash segment of both BSE and NSE and like the traded shares of any other company can be bought and sold at market prices during any trading day at traded hours.

Gold ETFs follow the passive investment strategy and are based on the price of the gold. Because of its direct link with the price of gold, it is possible to maintain a transparency on the holdings of these ETFs.

In India Exchange Traded Funds were traded effectively since 2006. This being a relatively new financial instrument hence it is important to make an investment analysis on these funds. Further in order to make a selection of Gold

ETFs amongst the available Gold ETFs offered by the various fund houses to investors an analysis of returns, risk and performance of the available Gold ETFs becomes necessary.

Table 1. List of Sample Gold ETFs taken for the purpose of Study

Sl No .	Name of the Fund House	Fund Name	Symbol of the Fund in NSE	Launch Date
1	Axis Mutual Fund	Axis Gold Exchange Traded Fund	AXISGOLD	November 2010
2	Birla Sunlife Mutual Fund	Birla Sunlife Gold Exchange Traded Fund	BSLGOLDETF	May 2011
3	HDFC Mutual Fund	HDFC Gold Exchange Traded	HDFCMFGET F	August 2010

		Fund		
4	ICICI Prudential Mutual Fund	ICICI Prudential Gold Exchange Traded Fund	IPGETF	August 2010
5	IDBI AMC	IDBI Gold Exchange Traded Fund	IDBIGOLD	November 2011
6	Kotak Mutual Fund	Kotak Gold Exchange Traded Fund	KOTAKGOLD	July 2007
7	Quantum Mutual Fund	Quantum Gold Fund	QGOLDHALF	February 2008
8	Reliance Mutual Fund	Reliance Gold Exchange Traded Fund	RELGOLD	November 2007
9	Religare Mutual Fund	Religare Gold Exchange Traded Fund	RELIGAREGO	March 2010
10	SBI Mutual Fund	SBI Gold Exchange Traded Scheme	SBIGETS	April 2009
11	UTI Mutual Fund	UTI Gold Exchange Traded Fund	GOLDSHARE	March 2007
12	Reliance Nippon Life	Reliance ETF Gold	GOLDBEES	March 2007

Asset Managent Ltd.	BeES		
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Investments in Gold ETFs in India is less as compared to Gold and other financial assets due to low awareness among the investors and the cravings to hold more gold in physical form rather than in any other format. During the years 2015 and 2016 Central Government has introduced another investment option in Gold the form of Sovereign Gold Bonds where underlying asset is gold. Table 2 makes a comparative analysis of the investment options in Gold and Gold based assets.

Table 2. Comparative Chart for Gold ETFs, Sovereign Gold Bond, 2016 and Physical Gold

S L	Criteria	Gold ETFs	Sovereign Gold Bond Scheme 2016	Physical Gold	
				Jewellers	Banks
1	Purchase	Demat form	Demat form	Ornaments	Coins/ Bars
2	Sale	Sale back on Exchange	Through Banks & designated post offices	Conditional	Conditional
3	Security	Responsibility of the Fund	Responsibility of the Govt	Responsibility of the Investor	Responsibility of the Investor
4	Transparency	Very High	Very High	Low	High
5	Impurity Risk	Nil	Nil	High	Nil
6	Pricing	Transparent	Transparent	Not Transparent	Transparent
7	Denomination	Standardised (1 gram or multiple of 1	Standardised (1 gram or multiple of 1	Not standardised	Standardised

		gram)	gram)		
8	Maximu m Holding	No Limit	500gm per person	No limit	No limit
9	Tenure	No limit	8 years	No limit	No limit
1 0	Exit option	At any time	After 5 years	At Any time	At Any time
1 1	Long Term Capital Gain Tax	After 1 year holding period	After 3 year holding period	After 3 year holding period	After 3 year holding period
1 2	Wealth Tax	Nil	Nil	Nil	Nil

Literature Review

ALOK GOYAL AND AMIT JOSHI(2011) in their study on Performance appraisal of gold ETFs in India has analysed the risk in the Gold ETFs. Their study also aims at the financial performance, variations and make an analysis in the risk behaviour of the selected Gold ETFs as compared to the NSE Nifty.

Mukesh Kumar Mukul , Vikrant Kumar and Sougata Ray (2012) made a study on "Gold ETF Performance: A Comparative Analysis of Monthly Returns". Their study reveals that Gold as an investment asset has been a very important aspect for ages across the world. Their study also examines the role of gold in hedging the risks involved in equity shares.

SHEFALISINHA AND MAHUA DUTTA(2013) in their study on Performance Analysis of Returns of Goldman Sachs Gold ETF has analysed the performance of the Goldman Sachs Gold ETF between 2007-2012. The study also explains the performance of the domestic price of Gold in comparison to gold ETF during the same period.

Adjei Frederick (2009) has observed that the difference between the performances of ETFs and the S&P 500 index is not very significant .

Prasantaathma(2011) in his study on the Gold ETFs has expressed the role of Gold ETF as an emerging option of investment alternatives available to the investors. According to him Gold ETFs has emerged as a strong financial asset because of the low volatility of gold prices as compared to equity market, weakening of Indian Rupee against US Dollar and growing uncertainty about global economy. According to him it is possible to diversify the portfolio risk by allocating a portion of available fund to the Gold ETFs.

Garg and Singh (2013) in their research examined the performance of ETF and Index Funds over the period from June 2006 to December 2009 and found that ETFs performs better in the long run as compared to the index funds.

According to the study made by Dr. P Vidyapriya and Dr. M. Mohanasundari (2014) fluctuations in the equity market, weakening of Indian Rupee against US Dollar and growing uncertainty about global economy are the main reasons behind the growth and emergence of Gold ETFs . The study Provide a strong evidence for the investment in Gold for the institutional and long term investors through ETFs.

Statement of The Problem

Over the years Indians prefer to buy Gold both for investment purposes and also for using it as ornaments and there has not been much investment in Gold ETFs, being a newer financial instrument and lack of awareness amongst people regarding it as an investment option. However in recent years, investment in gold ETFs has increased because of change of perception in the mind of the people. India has always been one of the largest consumers of gold. In addition to the conventional investment options like gold jewellery, gold bars and gold coins Gold ETFs are another effective way to invest in gold.

The study is undertaken keeping in mind the following objectives.

1. To analyse the returns of gold ETF offered by fund houses
2. To pick Gold ETFs which provide Superior returns as Compared to Stock Market
3. For the purpose of this study secondary data of the Gold ETFs are collected from the website of NSE. The period for which data is obtained is from 1st April 2012 to 31st Jan 2019.

Research Methodology

The research design adopted is analytical design the secondary data (the Net Asset Value) was collected from the websites of the Asset Management Companies. One year average interest rate has been considered as risk free return. The period of study is from 1st April 2012 to 31st Jan 2019. Based on the availability of data 12 Gold ETF's were selected and their comparison has been made over a period of last seven year against the performance of the benchmark, which in this case is taken as the NSE Nifty. The returns are computed on the basis of the daily Net Asset Values of the Sample Gold ETFs taken in the study and market returns are computed from the daily data of the NSE Nifty.

(i) Computation of Return

The returns are computed using the formula:

$$R_p = \frac{NAV_{t+1} - NAV_t}{NAV_t}$$

Where NAV stands for Net Asset Value, t is the time period and R_p is the return of the portfolio.

The average return of the ETF is determined using the

$$\text{formula: } R_p = \sum_{t=1}^n R_p / n$$

Where R_p is the return of the ETF.

Similarly, return on index is computed using the formula:

$$R_{mt} = \frac{Index_{t+1} - Index_t}{Index_t}$$

Where R_{mt} is the returns on the basis of Index.

The average return on market index (R_m) is computed using

the formula : $R_m = \sum_{t=1}^n R_{mt} / n$

(ii) Computation of Risk

Standard deviation (σ_p) of monthly returns are taken as risk.

$$\sigma_p = \left\{ \frac{1}{n} \sum_{t=1}^n (R_{pt} - R_p)^2 \right\}^{\frac{1}{2}}$$

The total risk of market portfolios (σ_m) can be determined as follows :

$$\sigma_m = \left\{ \frac{1}{n} \sum_{t=1}^n (R_{mt} - R_m)^2 \right\}^{\frac{1}{2}}$$

(iii) Systematic Risk

β is a measure of systematic risk which can be found by the use of the CAPM model. According to CAPM

$$R_p = \alpha + \beta R_m$$

R_m = Average Return of the market index

R_p = Return of the Gold ETF

α = constant term

β = Measure of Systematic Risk

(iv) Performance Evaluation Measures

The Analysis of the sample Gold ETFs has been made by using the following performance measures. A brief outline of these measures are discussed below.

A. Sharpe measure

William Sharpe choose the Standard Deviation (total risk) as the measure of risk. The Sharpe measure is the ratio of the realized portfolio return in excess of risk free rate of return to the standard deviation of return.

$$\text{i.e. } RVAR_p = (R_p - R_f) / \sigma_p$$

$$RVAR_m = (R_m - R_f) / \sigma_m$$

$RVAR_m$ = Reward to variability Measure of the Market

$RVAR_p$ = Reward to variability Measure of portfolio

Where R_p = Return of the Gold ETF, R_f is the risk free rate,

R_m = Average Return of the market index, σ_p = Total risk of the scheme σ_m = Standard Deviation of the Market index

B. Treynor Measure

Jack Treynor used the beta (systematic risk) as his measure of risk. Treynor used systematic risk as denominator in equation because when only negative diversification is used the unsystematic risk of a portfolio is averaged out of zero and the portfolio is left with only systematic risk.

Treynor measure is the ratio of the additional return in excess of risk free rate of return to the market risk measured by Beta. This is called as reward to volatility measure ($RVOL_p$).

$$RVOL_p = (R_p - R_f) / \beta_p$$

$$RVOL_m = (R_m - R_f) / \beta_p$$

Where R_p = Return of the Gold ETF, R_f is the risk free rate, R_m = Average Return of the market index β = Measure of Systematic Risk and σ_m = Standard Deviation of the Market index

C. Jensen Measure

The method developed by Jensen measures the absolute performance on a risk adjusted basis.

The basic model is:

$$R_p - R_f = \alpha + \beta (R_m - R_f)$$

Where R_p = Return of the Gold ETF, R_f is the risk free rate, R_m = Average Return of the market index, α = constant term measuring the forecasting ability of the Fund Manager, And β = Measure of Systematic Risk

If α is positive, the portfolio has performed better otherwise it is to be assumed that it has not performed up to the market Index.

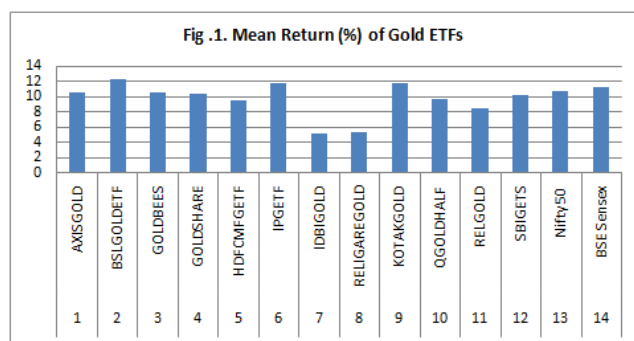
Analysis Of Performance Of Gold Exchange Traded Funds

A. Comparison of the Mean Rate of Fund Return:

The comparison of mean rate of returns of the investment options revealed that three out of twelve Gold ETFs provide returns higher than the mean rate of return of stock market. The comparisons are presented in Table 3.

Table 3. Comparison of Mean Rate of Return of Gold ETFs and Stock Market

SL	Investment Options	Mean Return (%)	Better than NSE
1	AXISGOLD	10.453	
2	BSLGOLDETF	12.323	✓
3	GOLDBEES	10.54	
4	GOLDSHARE	10.30	
5	HDFCFMGETF	9.462	
6	IPGETF	11.755	✓
7	IDBIGOLD	5.034	
8	RELIGAREGOLD	5.297	
9	KOTAKGOLD	11.664	✓
10	QGOLDHALF	9.601	
11	RELGOLD	8.384	
12	SBIGETS	10.079	
13	Nifty 50	10.639	
14	BSE Sensex	11.282	

Fig.1.Portrays the mean returns graphically.

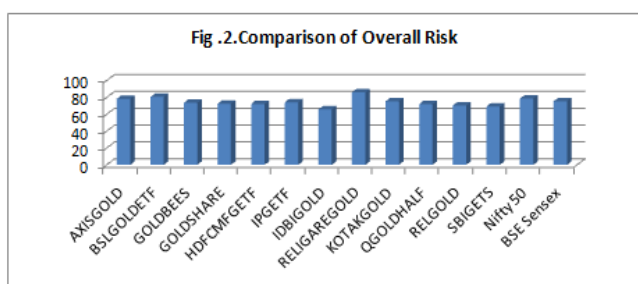
B. Comparison of Risk

The comparison of overall risk of the investment options reveals that ten out twelve Gold ETFs (83.33%) have risk lower than stock market risk. The comparison is presented in Table 4.

Table 4. Comparison of Overall Risk ($\square$)

SL	Investment Options	Overall Risk ($\square$)	Lower than NSE
1	AXISGOLD	78.277	✓
2	BSLGOLDETF	80.510	
3	GOLDSHARE	73.666	✓
4	GOLDBEES	72.550	✓
5	HDFCFMGETF	72.197	✓
6	IPGETF	74.046	✓
7	IDBIGOLD	65.681	✓
8	RELIGAREGO	85.931	
9	KOTAKGOLD	75.367	✓
10	QGOLDHALF	71.895	✓
11	RELGOLD	70.314	✓
12	SBIGETS	69.040	✓
13	Nifty-50	78.635	

The comparison of overall risk ($\square$) is graphically presented in Fig 2.



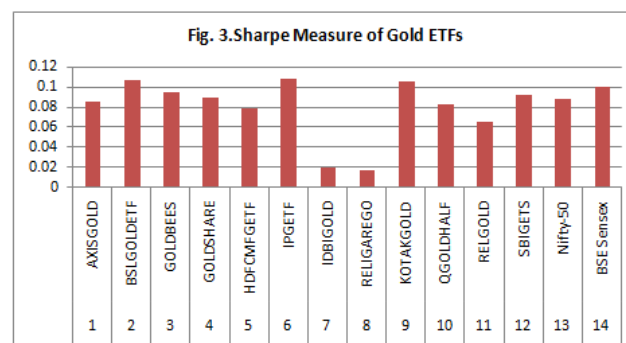
The analysis of the mean returns reveals that all the Gold ETFs, except one (IDBIGOLD) offers a rate of return above the risk free rate of return. This excess return, called as risk premium induces investors to accept risk and invest in Gold ETFs. The mean return of IDBIGOLD is insufficient to offer any risk premium. The results of performance evaluation models applied on the sample Gold ETFs and benchmarks are summarised at Table 5.

Table 5. Performance Evaluation of Gold ETFs

SL	Investment	Sharpe Ratio	Treynor's Measure (With NSE)	Jensen α (With NSE)
1	AXISGOLD	0.086	-25.09	8.61
2	BSLGOLDETF	0.107	-32.04	10.17
3	GOLDBEES	0.094	-22.42	8.95
4	GOLDSHARE	0.089	-22.83	8.60
5	HDFCFMGETF	0.079	-19.46	7.81
6	IPGETF	0.108	-30.26	9.89
7	IDBIGOLD	0.020	-7.77	2.51
8	RELIGAREGO	0.018	-9.14	2.81
9	KOTAKGOLD	0.105	-32.75	9.64
10	QGOLDHALF	0.82	-20.92	7.85
11	RELGOLD	0.066	-20.61	6.28
12	SBIGETS	0.092	-25.01	8.15
13	Nifty-50	0.088	6.94	0.00
14	BSE-Sensex	0.100	0.00	0.00

C. Results of Sharpe Ratio

Sharpe ratio computes risk adjusted rate of return on the basis of total risk. This total risk or overall risk includes both systematic and unsystematic risk

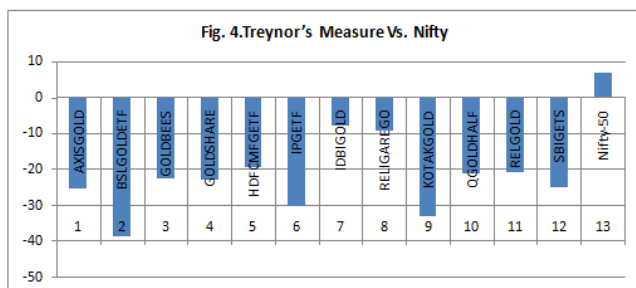


The results of Sharpe model confirm that when total risk is considered, some of the Gold ETFs perform superior to equity market .On this basis it may be concluded that Gold ETFs perform better than stock market. The performances are depicted in Fig 3.

D. Results of Treynor's Measure

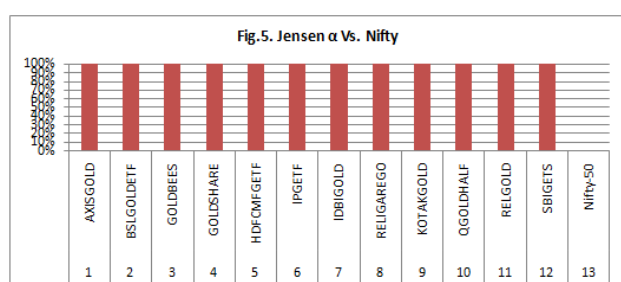
Under Treynor's measure, systematic risks are considered to compute risk adjusted rate of return. It is observed that in most of the cases the performances of Gold ETFs are poorer to stock market . The performances are depicted in Fig .4. This research suggests that Treynor's measure shall not be a suitable performance evaluation model for Gold ETFs as it considers systematic risk which is computed with reference to stock market. In this model the beta of the stock market is taken as 1, meaning the stock market is assumed to have no systematic risk. As discussed earlier the Gold ETFs are

negatively correlated with the stock market and consequently their beta factors are negative. This method of performance analysis is not suitable where the beta factor of investment is negative and it gives distorted results. The researcher suggests not applying Treynor's model for performance evaluation of Gold ETFs.



E. Results of Jensen Alpha

Jensen's measure is a risk-adjusted performance evaluation model which measures the average return on an investment, in excess of the return predicted on the basis of investment's beta and the average market return. As per Jensen's measure the performances of Gold ETFs are superior equity share market. The performances are depicted in Fig 5.



Conclusion

From the analysis of results of the performance evaluation models it can be concluded that Gold ETFs are indeed the best investment options available to investors. They provide high returns and always reflect the market trend of gold. They also provide high return when the stock market is bearish.

The risks associated with investment in Gold ETF are low in comparison to Stock Market. Investors can invest on Gold ETF without the worry of risk. This is an innovative investment option introduced in Indian investment market that helps investors to maximize their wealth and also helps the asset management companies to widen their product and customer base.

The analysis suggests that the value of Gold ETFs fluctuates in the short run, but that it has consistently maintained its value comparable with real gold in long run. Hence, over a long period, Gold ETFs are effective tools for preserving and maximizing wealth.

On the basis of performance evaluation investors should select the Gold ETFs that would offer best risk adjusted return. Gold ETFs form a highly attractive investment tool and investors should include Gold ETFs in their portfolio.

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