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Research Paper

Performance Evaluation of Gold Exchange Traded Funds in Indian Stock Market

Management

KEYWORDS :

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ABSTRACT

Gold ETFs provide investors a means of participating in the gold bullion market, without the necessity of taking physical delivery of gold, and to buy and sell by participating through the trading of security on stock exchange. The gold ETF would be a passive investment. When the price of gold rises up, the ETF enhances its value, and when the price comes down, the ETF losses its value. The measures taken by the SEBI and gold exchange traded funds enable the investors to make prudent investment decisions and to overcome the problems with regard to making investment in GETFs.

INTRODUCTION

Over the past few years, there has been a significant development in Indian gold ETF market. Even though the size of the industry is small Indian investors seek wider access to more liquid gold investments. Hence ETFs have gained more popularity among them. The Indian gold ETF industry offers 14 gold ETFs and 11 gold fund of funds (FoFs). The total AUM of Gold ETF as of June 30, 2014, was of Rs. 8,093 crore while the AUM of Gold FoF was of Rs.3,226 crore. As of December, 2013, the collective holding by Indian ETFs in gold was of 30.2 tones (approx).

Gold ETF is an open ended exchange traded funds, listed in the stock exchange, available for trading with an intention of offering to investors a means of participating in the gold bullion market without the necessity of taking physical delivery of gold. However, the performance of the scheme may differ from that of the domestic prices of gold due to the expenses or other related factors. All gold bullion held in the scheme is an allocated account with the custodian which shall have the purity of 99.5%. A demat account and registration with the broker (member of NSE/BSE) are mandatory for the investors who are willing to invest in Gold ETFs.

SIGNIFICANCE OF THE STUDY

Every investor has a different perception regarding the risk and return. There is a general rule of risk and return where "higher the risk, higher the returns and lower the risk and lower returns". The return and risk combination depend upon the investors choices and his or her actions.

There are so many destinations for investment, as already discussed in the introduction, such as equity shares, bonds, debentures, bank deposits, gold, silver and many more and their "risk and return" relation always differs from each other. But investment should be of such type that may produce high return with minimum risk and that is convenient to do. At these criteria, gold is much attractive and most productive in terms of return in present scenario. India is one of the largest consumers of gold. The most important point is that everyone is not able to invest or purchase the gold. The investors who have less amount of savings or funds to invest, are unable to do this because of the prices and scarcity nature of gold. Gold investment requires a large amount to get adequate growth and return on investments. To make investment in gold, which is possible for such investors, there is the most popular type of investment called "Gold Exchange Traded Funds (GETFs), where the investors can invest large amount. Gold ETFs provide investors a means of participating in the gold bullion market, without the necessity of taking physical delivery of gold, and to buy and sell by participating through the trading of security on stock exchange. The gold ETF would be a passive investment. When the price of gold rises up, the ETF enhances its value, and when the price comes down, the ETF losses its value.

STATEMENT OF THE PROBLEM

There is a range of charges, such as management and advisory fees, marketing and distribution of expenses, custodian charges and other operational expenses. The expense ratio of Gold ETFs is around 1%. Apart from the charges, tracking error also brings down the returns of Gold ETF's to small extent.

Another drawback is that sometime GETFs are illiquid, which imparts the buying and selling flexibility of these ETFs. Further Gold ETFs require demat account and the conversion option is possible only if the investors hold 1000 units (1kg) gold of GETFs. Based on the above issues, the following questions were probed:

1. Whether GETFs provide safety of investment for investors?
2. Is the principal amount really protected in GETFs?
3. Whether the risks are covered in GETFs investment for investors?

OBJECTIVES OF THE STUDY

The following are the objectives of the study

1. To study the risk and return of gold exchange traded funds.
2. To evaluate the risk-adjusted performance of gold exchange traded funds.

RESEARCH METHODOLOGY

The research design applied for this study is empirical, analytical and descriptive in nature.

Nature of the Data

The secondary data were collected from reports published by the Gold Exchange Traded Funds, SEBI and association of Mutual Funds in India. The secondary data were also collected from journals, magazines, periodicals and dailies.

Financial Tools Used for Analysing Secondary Data

The financial tools employed for analysis secondary data are Sharpe ratio, Treynor ratio, Jenson Measure, Sharpe differential return and Fama's components.

LIMITATIONS OF THE STUDY

1. The study is confined to 10 city corporations of Tamil Nadu only. The various alternatives of gold investment such as physical form (jewellery, coin and bar), Gold savings fund, E-Gold and Gold futures are excluded from the study.

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2. The study is confined to Gold Exchange Traded Funds (GETFs) only. The study is excluded from other gold investment avenues.

Risks and Returns of Gold ETFs Vs Spot Gold Price

There were 14 funds coming under GETFs. The models developed by Sharpe (1966), Treynor (1965), Jenson (1968) and Fama's decomposition model were used to assess the returns and risks of these funds. The Standard Deviations of the monthly returns were used to measure the risk. Hence risks associated with the market and risks associated with the fund were calculated.

Table 1: Risk and Return of GETFs VS Spot Gold Price (April 2009 to March 2014)

Funds	Fund Return	Fund Risk	Market return (Spot Gold Price)	Market Risk	Risk Free Return
GOLD MAN SACHS GETF	1.138	5.166	1.254	4.536	0.681
AXIS GETF	0.789	5.570	0.946	4.565	0.720
BSL GETF	0.827	6.139	0.852	4.800	0.720
CRMF GETF	0.120	6.076	0.092	3.820	0.711
HDFC GETF	0.934	5.432	1.073	4.444	0.718
ICICI GETF	0.938	5.433	1.073	4.444	0.718
IDBI GETF	-0.064	5.549	0.279	4.055	0.715
KOTAK GETF	1.151	5.206	1.254	4.536	0.681
MOTILAL GETF	-0.069	5.797	0.092	3.820	0.711
UTI GETF	1.150	5.206	1.254	4.536	0.681
RELIANCE GETF	1.199	5.165	1.254	4.536	0.681
RELIGARE GETF	1.234	5.535	1.298	4.550	0.713
SBI GETF	1.124	5.258	1.254	4.575	0.684
QUANTUM GETF	1.147	5.232	1.254	4.536	0.681
AVERAGE	0.830	5.483	0.945	4.411	0.701

(Source: Compiled from Secondary Data)

Among the 14 GETFs, the Religare GETF ranked first and is giving best return to its investors with a value of 1.234 per cent monthly returns. However, it is little lesser than the returns received from the Benchmark index namely, Spot Gold Price (1.298%). The risk associated with its returns in respect of Religare also found to be higher (5.535%) than other Benchmark Index. The highest risk is associated with the fund BSL (6.139%) followed by CRMF (6.076%). All the funds are found to have higher risk than risk of the bench mark index, i.e., Spot Gold Price. Among the 14 GETFs, IDBI and Motilal have given negative return ie., a loss of 0.064% and 0.069% respectively. Among the 14 funds, half of the funds have given returns more than 1%. As far as the fund risk is concerned, the Reliance ETF and Goldman Sachs ETF were found to have least risk of 5.165% and 5.166% respectively.

Fund return, fund risk, fund beta and beta (t) for all the gold exchange traded funds are given in the table 2.

Table 2: Risk and Return of Gold ETFs (April 2009 to March 2014)

Funds	Fund Return	Fund Risk	Fund Beta (.)	Beta (t)	Significance
GOLD MAN SACHS GETF	1.138	5.166	1.018	15.034	**
AXIS GETF	0.789	5.570	1.084	11.912	**
BSL GETF	0.827	6.139	1.106	9.753	**
CRMF GETF	0.120	6.076	1.272	6.601	**
HDFC GETF	0.934	5.432	1.084	12.311	**
ICICI GETF	0.938	5.433	1.083	12.238	**
IDBI GETF	-0.064	5.549	1.192	7.988	**
KOTAK GETF	1.151	5.206	1.026	15.095	**
MOTILAL GETF	-0.069	5.797	1.257	7.378	**
UTI GETF	1.150	5.206	1.033	15.580	**
RELIANCE GETF	1.199	5.165	1.024	15.527	**
RELIGARE GETF	1.234	5.535	1.073	12.700	**
SBI GETF	1.124	5.258	1.035	15.504	**
QUANTUM GETF	1.147	5.232	1.038	15.574	**
AVERAGE	0.830	5.483	1.095	12.371	

(Source: Compiled from Secondary Data)

The Beta of Goldman Sachs is 1.018 which indicates that when the market return is increased by an unit, the corresponding increase in the fund is 1.138. Beta (t) is calculated to test whether the effect of Beta on fund is significant or not. All the funds have significant betas.

Unique Risk and Diversification of GETFs

The unique risk and diversification of gold exchange traded funds are given the following table 3.

Table 3: Unique Risk and Diversification of GETFs (April 2009 to March 2014)

Funds	Unique risk	Diversification
GOLD MAN SACHS GETF	0.081	0.799
AXIS GETF	0.387	0.789
BSL GETF	0.519	0.748
CRMF GETF	1.062	0.664
HDFC GETF	0.380	0.787
ICICI GETF	0.375	0.785
IDBI GETF	0.792	0.711
KOTAK GETF	0.121	0.799
MOTILAL GETF	1.001	0.712
UTI GETF	0.150	0.810
RELIANCE GETF	0.110	0.808
RELIGARE GETF	0.337	0.778
SBI GETF	0.162	0.812
QUANTUM GETF	0.173	0.811
AVERAGE	0.404	0.772

(Source: Compiled from Secondary Data)

Table 3 shows the unique risk and the extent of diversification of selected gold exchange traded funds. The average unique risk was found to be 0.404 and the extent of diversification was found to be 0.772 ie., 77.2%. From this table, it can be seen that the highest unique risk of CRMF and Motilal is 1.062 and 1.001 respectively. Out of fourteen funds, only four funds namely, CRMF, BSL, IDBI and Motilal, i.e., nearly one third of them, have more diversifiable risk than average.

Risk-Return Grid of GETFs (Benchmark: Spot Gold Price)

A risk-return grid of GETFs with respect to Benchmark index namely, Spot Gold Price is given the following table.

Table 4: Risk – Return Grid of Gold ETFs (Benchmark: Spot Gold Price)

		Risk	
Low		High	
Return	Low	ARf < ARm : sf < sm	ARf < ARm : sf > sm GOLD MAN SACHS AXIS BSL HDFC ICICI IDBI KOTAK MOTILAL UTI RELIANCE RELIGARE SBI QUANTUM
	High	ARf > ARm : sf < sm	ARf > ARm : sf > sm CRMF

(Source: Compiled from Secondary Data)

A risk return grid has been formed to assess the performance of the selected gold ETFs with respect to Bench mark index namely, Spot Gold Price. It is found that, out of 14 ETFs, 13 funds were classified under low return – high risk category and only one fund, namely CRMF, has high return but also high risk category when compared to Spot Gold Price. None of the funds could be classified under high return and low risk category. Also, none of the funds could be classified under low return and low risk categories. The return-risk grid shows that these funds could not outperform the bench mark index. i.e., market price of spot gold. The results show that risks associated with the ETFs are much higher than the risk associated with the purchase of gold and at the same time the returns on average, is lesser, when compared to buying spot gold in the market.

Sharpe Measure Vs Spot Gold Price

This measure indicates the extent of additional returns the portfolio can give to its investors for increase in its risk, in addition to risk free returns. Higher the ratio indicates higher additional returns for increased risk.

Table 5: Sharpe measure of GETFs (April 2009 to March 2014)

Funds	Sharpe Measure	
	Gold ETF	Spot Gold Price
GOLD MAN SACHS GETF	0.089	0.126
AXIS GETF	0.012	0.049
BSL GETF	0.017	0.028
CRMF GETF	-0.097	-0.162
HDFC GETF	0.040	0.080
ICICI GETF	0.040	0.080
IDBI GETF	-0.140	-0.108
KOTAK GETF	0.090	0.126
MOTILAL GETF	-0.135	-0.162
UTI GETF	0.090	0.126
RELIANCE GETF	0.100	0.126
RELIGARE GETF	0.094	0.129
SBI GETF	0.084	0.125
QUANTUM GETF	0.089	0.126
AVERAGE	0.027	0.049

(Source: Compiled from Secondary Data)

Table 5 compares the Sharpe's measure of reward to variability between GETFs and the Benchmark index namely Spot Gold Price (SPR). It is seen from the table that many of the funds could not outperform their corresponding Benchmark index of the same period. The average Sharpe measure of the funds is 0.027 which has lesser than the Benchmark Sharpe of 0.049, in terms of additional returns, the GETFs fetched to its investors. Reliance has the highest Sharpe measure (0.100) indicating highest additional returns for the increased risk, but corresponding Benchmark index is 0.126.

Treynor Measures for GETFs and Spot Gold Price

This ratio or measure is also known as Reward to Volatility Ratio (RVOL). This ratio evaluates the performance of the systematic risk. Table 6 presents Treynor ratio of the schemes and benchmark portfolios.

Table 6: Treynor Measure of GETFs (April 2009 to March 2014)

Funds	Treynor Measure	
	Gold ETF	Spot Gold Price
GOLD MAN SACHS GETF	5.005	0.573
AXIS GETF	5.124	0.226
BSL GETF	5.537	0.132
CRMF GETF	4.769	-0.619
HDFC GETF	4.996	0.355
ICICI GETF	5.002	0.355
IDBI GETF	4.644	-0.436
KOTAK GETF	5.004	0.573
MOTILAL GETF	4.604	-0.619
UTI GETF	4.971	0.573
RELIANCE GETF	4.974	0.573
RELIGARE GETF	5.139	0.585
SBI GETF	5.015	0.571
QUANTUM GETF	4.972	0.573
AVERAGE	4.982	0.244

(Source: Compiled from Secondary Data)

Treynor ratio is the additional return earned by the fund over its systematic risk that is Beta. It is seen from the table 6 that the average returns of GETFs per unit of systematic risk are 4.982 times in addition to risk free returns. This is much higher than that of Benchmark index. All the funds have given positive returns indicating additional cover for increased systematic risk. The highest return is given by BSL and Religare (5.537 and 5.139) followed by Axis (5.124). The excess returns earned by the Funds were comparatively higher than their corresponding Benchmark index in the respective periods.

Jenson Measure of Differential Return on GETFs and Spot Gold Price

The Jenson measure basically identifies the ability of the fund manager to earn higher returns for the fund.

Table 7: Jensen Measure of GETF (April 2009 to March 2014)

Funds	Fund Return	Alpha Value	Equilibrium Return
GOLD MAN SACHS GETF	1.138	-0.126	1.264
AXIS GETF	0.789	-0.175	0.964
BSL GETF	0.827	-0.039	0.866
CRMF GETF	0.120	0.139	-0.019
HDFC GETF	0.934	-0.169	1.103

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Funds	Fund Return	Alpha Value	Equilibrium Return
ICICI GETF	0.938	-0.165	1.103
IDBI GETF	-0.064	0.024	-0.088
KOTAK GETF	1.151	-0.118	1.269
MOTILAL GETF	-0.069	-0.059	-0.010
UTI GETF	1.150	-0.122	1.272
RELIANCE GETF	1.199	-0.069	1.268
RELIGARE GETF	1.234	-0.107	1.341
SBI GETF	1.124	-0.150	1.274
QUANTUM GETF	1.147	-0.129	1.276
AVERAGE	0.830	-0.090	0.920

(Source: Compiled from Secondary Data)

Out of 14 gold exchange traded funds, all funds except CRMF and IDBI yielded negative returns. On average the funds had made a loss, that is, of -0.09 times less than what they should have earned in the given level of systematic risk of all the funds, CRMF has earned higher returns (0.139) than other funds. Since all these funds are GETFs and primarily depend on Spot Gold Price market, the fund manager's ability to earn higher returns is almost zero as evidenced from its alpha.

Sharpe's Differential Return of GETFs and Spot Gold Price

Sharpe's differential return measures the ability of the fund manager in diversifying the portfolio. This indicates that higher the Sharpe's differential return, well diversified will be the portfolio.

Table 8: Sharpe Differential Return of GETFs (April 2009 to March 2014)

Funds	Actual Fund Return	Expected Return	Sharpe's Differential return
GOLD MAN SACHS GETF	1.138	1.334	-0.196
AXIS GETF	0.789	0.995	-0.206
BSL GETF	0.827	0.889	-0.062
CRMF GETF	0.120	-0.273	0.393
HDFC GETF	0.934	1.152	-0.218
ICICI GETF	0.938	1.152	-0.214
IDBI GETF	-0.064	0.118	-0.182
KOTAK GETF	1.151	1.339	-0.188
MOTILAL GETF	-0.069	-0.228	0.159
UTI GETF	1.150	1.339	-0.189
RELIANCE GETF	1.199	1.333	-0.134
RELIGARE GETF	1.234	1.425	-0.191
SBI GETF	1.124	1.340	-0.216
QUANTUM GETF	1.147	1.342	-0.195
AVERAGE	0.830	0.947	-0.117

(Source: Compiled from Secondary Data)

Table 8 gives Sharpe measure for 14 gold exchange traded funds included in the study. The average Sharpe measure is found to be –0.117 indicating a negative return or a loss on returns, which indicates that an average of these funds have given no additional returns for any given level of fund–market risk ratio. It is also seen from the table that the diversification of the portfolio was poor among many funds except CRMF (0.393) which is found to be highest among all the funds, followed by Motilal (0.159).

Fama's Break up of GETFs and Spot Gold Price

In order to analyse the sample schemes' return under Fama's components of investment performance, the returns are grouped into four components and their value under each component for the sample GETF schemes are computed and presented in table 9.

Table 9: Fama's Components of Investment Performance (April 2009 to March 2014)

Funds	Actual fund Return	Risk free Return	Impact of Beta	Imperfect Diversification	Net Selectivity
GOLD MAN SACHS GETF	1.138	0.681	0.583	0.069	-0.195
AXIS GETF	0.789	0.720	0.244	0.031	-0.206
BSL GETF	0.827	0.720	0.147	0.023	-0.062
CRMF GETF	0.120	0.711	-0.787	-0.197	0.393
HDFC GETF	0.934	0.718	0.385	0.049	-0.218
ICICI GETF	0.938	0.718	0.385	0.049	-0.214
IDBI GETF	-0.064	0.715	-0.520	-0.077	-0.182
KOTAK GETF	1.151	0.681	0.589	0.069	-0.187
MOTILAL GETF	-0.069	0.711	-0.778	-0.161	0.159
UTI GETF	1.150	0.681	0.592	0.066	-0.188
RELIANCE GETF	1.199	0.681	0.587	0.066	-0.134
RELIGARE GETF	1.234	0.713	0.627	0.084	-0.191
SBI GETF	1.124	0.684	0.591	0.065	-0.216
QUANTUM GETF	1.147	0.681	0.595	0.066	-0.195
AVERAGE	0.830	0.701	0.231	0.014	-0.117

(Source: Compiled from Secondary Data)

Table 9 gives details of Fama's break up of components of fund return for GETFs. Among the 14 funds, only 2 funds have positive net selectivity values and remaining 12 funds have negative values in net selectivity, and 11 funds have positive values and 3 funds have negative values in impact of Beta and imperfect diversification, which are components of Fama's break up. Among these 14 funds, Religare has earned higher returns due to impact of Beta (0.627) rather than diversification and net selectivity. Similarly Quantum (0.595) and UTI (0.592) have earned higher returns due to impact of Beta rather than diversification and net selectivity. Overall, some funds have earned higher returns due to impact of Beta and some funds have earned higher returns due to well diversified portfolio, rather than Beta and Net selectivity.

FINDINGS

1. The risk free returns for the study period works out of 0.701% on average per month. The average return of GETFs is found to be 0.830% per month which is less than the market return of 0.945%. Also the average fund risk (5.483%) is found to be higher than the market average risk of 4.411%. Among the 14 GETFs, IDBI and Motilal have given negative return ie., a loss of 0.064% and 0.069% respectively. Among the 14 funds, half of the funds have given returns more than 1%. As far as the fund risk is concerned, the Reliance and Goldman Sachs were found to have least risk of 5.165% and 5.166% respectively. The risk and return of each fund were compared with the risk and return of Benchmark index ie., spot gold price.
2. Beta (t) is calculated to test whether the effect of Beta on fund is significant or not. All the funds have significant betas.
3. It is observed that the average unique risk was found with 0.404 and the extent of diversification was found 0.772 ie., 77.2%. The highest unique risk of CRMF and Motilal is 1.062 and 1.001 respectively. At the same time their di-

versification comparatively lesser than other funds. These values place the CRMF and Motilal fund into more riskier place than other GETFs. Out of 14 funds, only four funds namely, CRMF, BSL, IDBI and Motilal i.e., nearly one third of them, have more diversifiable risk than average.

4. It is found from the risk-return grid that none of the funds have fell in low risk and low return category. Only one fund namely, CRMF has high risk and high return.
5. It is observed that the average Sharpe measure of the funds was 0.027 which has lesser than the Benchmark Sharpe of 0.049, in terms of additional returns, the GETFs fetched to its investors. Reliance has the highest Sharpe measure (0.100) indicating the highest additional returns for the increased risk, but corresponding benchmark index are 0.126.
6. It is learnt from the Treynor measure of GETFs that all the funds have given positive returns indicating additional cover for increased systematic risk. The highest return is given by BSL and Religare (5.537 and 5.139) followed by AXIS (5.124). The excess returns earned by the funds were comparatively higher than their corresponding benchmark index in the respective periods.
7. It is observed from the Jenson measure that out of 14 GETFs, all the 12 funds except CRMF and IDBI yielded negative returns. On average the funds had made a loss, ie., of 0.09 times less than what they should have earned in the given level of systematic risk of all the funds, CRMF has earned higher returns (0.139) than other funds. Since all these funds are GETFs and primarily depend on spot gold price market, the fund manager's ability to earn returns is almost zero as evidenced from its alpha.
8. It is evinced from the Sharpe differential measure of GETFs that the average Sharpe measure was found to be -0.117 indicating a negative return or a loss on returns, which indicates that an average of these funds have given no additional returns for any given level of fund-market risk ratio. It is indicated that the diversification of the portfolio was poor among many funds except CRMF (0.393) which is found to be highest among all the funds, followed by Motilal (0.159).
9. It is observed from the Fama's components of investment performance that among the 14 funds, Religare has earned higher returns due to impact of Beta (0.627) rather than diversification and net selectivity. Similarly Quantum (0.595) and UTI (0.592) have earned higher returns due to impact of Beta rather than diversification and net selectivity. However, CRMF (-0.197) and Motilal (-0.161) funds have failed in their ability to select stocks with superior returns as its net selectivity is negative.

CONCLUSION

The Securities and Exchange Board of India (SEBI) should provide necessary guidelines to the gold exchange traded funds for disclosing transparent and reliable informations to the investors from time to time with regard to risk and return of GETF schemes. The regulating authority ought to take necessary measures to reduce cumbersome formalities. In turn, these measures will help the GETFs to enhance the funds' manager ability for devising suitable reinvestment schemes and earning superior return. Eventually, the measures taken by the SEBI and gold exchange traded funds enable the investors to make prudent investment decisions and to overcome the problems with regard to making investment in GETFs.

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