

A STUDY ON BEST PERFORMING SELECTED GOLD ETFs IN INDIA

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Abstract: The main purpose of the study is to know gold ETFs performance in India. Investment is good opportunity to increase the liquidity for the better market efficiency. Investor can choose Gold ETFs to increase the liquidity. Mutual Fund is a trust that pools money from a group of investors sharing common financial goals. This study is to determine and analyze risk in the emerging security in the stock market i.e. Gold ETFs. This research study on Gold ETFs brings a strong and attractive investment option for investor. Performance evaluation techniques like Treynor's performance index, Sharpe's performance index and Jensen's performance index are used to calculate alpha, beta and standard deviation of the selected ETFs.

Keywords: Gold Exchange traded funds, Net Asset Value, Rate of return, Standard deviation, MF performance evaluation techniques.

INTRODUCTION:

An ETF is termed as an Exchange Traded Fund and is traded in stock Exchanges just like normal shares. There exists different types of ETFs in the market to invest but the one we are focusing on is Gold ETF's. Gold ETFs are open-ended mutual fund schemes that will invest the money collected from investors in the standard gold bullion of 99.5% purity.

From 2007 the Gold ETFs are traded in stock exchange and the Gold ETFs Net Asset Value (NAV) is decided on the price of gold. Here the investor can purchase 1gm or 10gm or even more gold based on his acquiring needs. For investing in gold ETFs the investor should and must have a De-mat account in order to do so. He can sell/buy gold ETFs just like a normal share. In gold ETF we have an option of taking the gold (physical delivery), but with few conditions. Mostly the holding position of gold should be 1 kg for the delivery of gold. In gold ETF the purity standards are 99% thus the investor has no theft concern or storage concerns if one decides to invest in gold ETF.

The investor has option of doing SIP (Systematic Investment Planning) on gold ETFs through gold funds and even the gold market prices fluctuates thus giving more opportunity to the investor in reaping out benefit of intraday trading of gold ETF shares just like normal equity shares.

“A safer portfolio is considered when 10% - 15% of capital investment value is invested in gold”

IMPORTANCE OF THE STUDY

The topic is mainly focused on Gold Exchange Traded Fund which are issued by Mutual Fund companies and are listed in National Stock Exchange (NSE). Gold ETFs is one of the way of investing in Gold, though they are offered under Mutual Fund but they provide facility of trading the Gold ETFs just like a normal share in securities market or Stock Exchanges. So, the study of performance evaluation of Gold ETFs is undertaken to know which performs better using performance measure index and to know which Gold ETF yields more return.

OBJECTIVES OF THE STUDY

- To understand the concept of Gold Exchange Traded Funds in the securities market.
- To evaluate returns of Gold ETFs on daily basis and to study the Risk-Return relation.
- To rank the Gold ETFs based on their performance measure index i.e. Sharpe, Treynor and Jensen.
- To find out which Gold ETFs is performing better in order to assist the investors in selecting best Gold ETF based on their investment decision.

PROBLEM STATEMENT

In India investment in Gold happens mainly through physical purchase. People are not known to various ways to invest in Gold and very few know about Gold Exchange Traded Funds. In recent times Gold ETFs are becoming popular as the investors evolved and showed more interest in digital gold to get more benefit out of their trade.

The main purpose of this study is to provide more awareness about Gold ETFs performance and their returns and make investors to invest in it or include Gold ETFs in their portfolio for diversification of risk.

SCOPE FOR THE STUDY

The main reason for having constant demand for Gold is because of its security, liquidity and its ability to build a diversified portfolio. A detailed study has been undertaken to analyze daily returns of 1 year period for the NSE listed Gold ETF companies

and to evaluate their performance using Sharpe, Treynor and Jensen measure. This study has a scope for an investor to choose a better Gold ETF fund by comparing with other Gold ETFs offered by Mutual Fund companies.

RESEARCH METHODOLOGY

RESEARCH METHOD:

The data used for this study is secondary data and descriptive in nature. The required NAV (Net Asset Value) data of Gold Exchange Traded Funds listed in NSE is collected and compiled from official website of National Stock Exchange. This study is used to calculate their risk and return of each Gold ETF using performance evaluation measures and also ranking them. The conclusions are made by suggesting better Gold ETFs after evaluating them.

SOURCES OF DATA COLLECTION:

The study uses secondary data of NAV (Net Asset Value) of Gold ETFs which are offered by mutual fund companies and are traded at NSE. The secondary data is taken from NSE (National Stock Exchange) official website. The study period taken is financial year i.e. 1/4/2019 to 31/3/2020.

TOOLS AND TECHNIQUES:

Statistical tools

Standard deviation: A standard deviation is a statistical tool used to measure the dispersion of a given data from its mean. Basically, it is applied on the annual returns of an investment to evaluate its volatility (risk).

$$SD(\sigma) = \sqrt{\frac{\sum_{i=1}^n (xi - \text{mean})^2}{n-1}}$$

Mean: Mean is used to calculate an average returns on a portfolio. These returns are evaluated on net asset value (NAV) on a selected scheme.

$$\text{MEAN} = \frac{\text{Total of returns}}{\text{number of returns}}$$

Beta: beta is used to measure systematic risk of selected fund which is compared to market returns. Beta values are calculated through using slope function in excel.

Risk Free Rate of Return: The risk free rate of return is denoted as (Rf). It represents as a zero risk on portfolio. In present study, the risk free rate is 0.0614 or 6.14% as per 31st march 2020 taken from countryeconomy.com of India-10-Year Government Bond Yield.

Portfolio Return: A Portfolio return is a type of return which is obtained from the gains or loss on an invested portfolio. If the portfolio return in daily basis, then the formula is

$$\text{Portfolio return (Rp)} = (\text{NAVt} - \text{NAVt-1}) / \text{NAVt-1}$$

Where, NAVt = Net Asset value of present day, NAVt-1 = Net Asset Value of previous day.

Financial tools

- **Sharpe measure/ratio:** The Sharpe ratio is used to measure the risk-adjusted performance of a portfolio. It uses Standard Deviation to measure risk. The portfolio with highest Sharpe ratio is treated as best performing. It is calculated by using following formula

$$\text{Sharpe ratio} = (Rp - Rf) / \sigma p$$

Where,

Rp = portfolio Return, Rf = risk free rate of return, σp = standard deviation of portfolio return.

- **Treynor measure/ratio:** The Treynor ratio is a performance evaluation measure which is an extension to Sharpe ratio which uses systematic risk (Beta) instead of Standard Deviation in the denominator. Here also the higher ratio is considered as best performance of funds.

$$\text{Treynor ratio} = (Rp - Rf) / \beta p$$

Where, Rp = portfolio Return, Rf = risk free rate of return, βp = portfolio beta.

- **Jensen measure/ratio:** this measure helps in finding out the funds whether they outperformed or underperformed the market index. It is calculated by using following formula

$$\text{Jensen Alpha ratio} = Rp - [Rf + \beta p * (Rm - Rf)]$$

Where, Rp = portfolio Return, Rf = risk free rate of return, βp = portfolio beta
Rm = return on market index.

REVIEW OF LITERATURE

- **Sathish Kumar B and Ram Raj G (2019):** In the article, titled “Gold vs. Gold Exchange Traded Funds: An Empirical Study in India”, of the journal *Economic Affairs*, Vol. 64, No. 4, pp. 703-710, December 2019 tells that: Gold ETFs has more returns than the physical gold. It conducted a correlation analysis between physical gold and Gold ETFs and showed a strong positive relationship among them. So the investor may opt for investing in ETF than holding physical gold which is considered riskier.
- **Dr. J K Raju, Mr. Manjunath B R and Mr. Rehaman M (2018):** In the article, titled “A Study on Performance Evaluation of Gold ETFs in India”, of the journal *IJEMR – February 2018 – Volume: 8, Issue 02 - Online – ‘ISSN 2249-2585’ Print - ISSN 2249-8672* tells that: The performance evaluation techniques like Sharpe, Treynor and Jensen have been used for analyzing the selected Gold ETFs in India. The study gives ranking to ETFs based on their performance measure so it gives an idea to the investors to take effective decision on investment of funds.

- **Sudindra V R (2015):** In the article, titled “**Performance Evaluation of NSE Listed Gold ETF**”, of the journal ‘**Research gate**’, | **October 2015** | tells that: in their paper the analysis shows that ICICI and Religare Gold ETF performing fairly good according to Sharpe’s model and Treynors model. The study tell that Jensen’s alpha is positive only for Religare Gold fund, which means that Religare Gold ETF fund have been able to provide excess returns over the spot gold market. Overall, the study disclose that it is not suggested for investment in ETF funds as only 2 of 9 Gold ETF have done better than market performance.
- **Dr. M.Jayanthi, Ms. S.Malathy and Ms. T. Radhulya (2013):** In the article, titled “**A Study On Performance Of Gold ETF Companies In India**”, of the journal ‘**International Research Journal of Business and Management – IRJBM**’, **December 2013, Volume: 6, Online – ‘ISSN 2322-083X’** tells that: studied performance of Gold ETF funds using returns, AUM and NAV. At the same time, the research indicated that many of the gold ETFs currently available deviates from actual gold returns. This means that as gold prices increases or decreases, the gold ETF value should also increase or decrease to that extent. However, very often, the NAV of the gold ETF gives a skewed picture. Hence, Gold ETFs turn out to be a good investment option for investors to hedge their assets against the uncertain global market scenario.

DATA ANALYSIS & INTERPRETATIONS

DESCRIPTIVE STATISTICS:

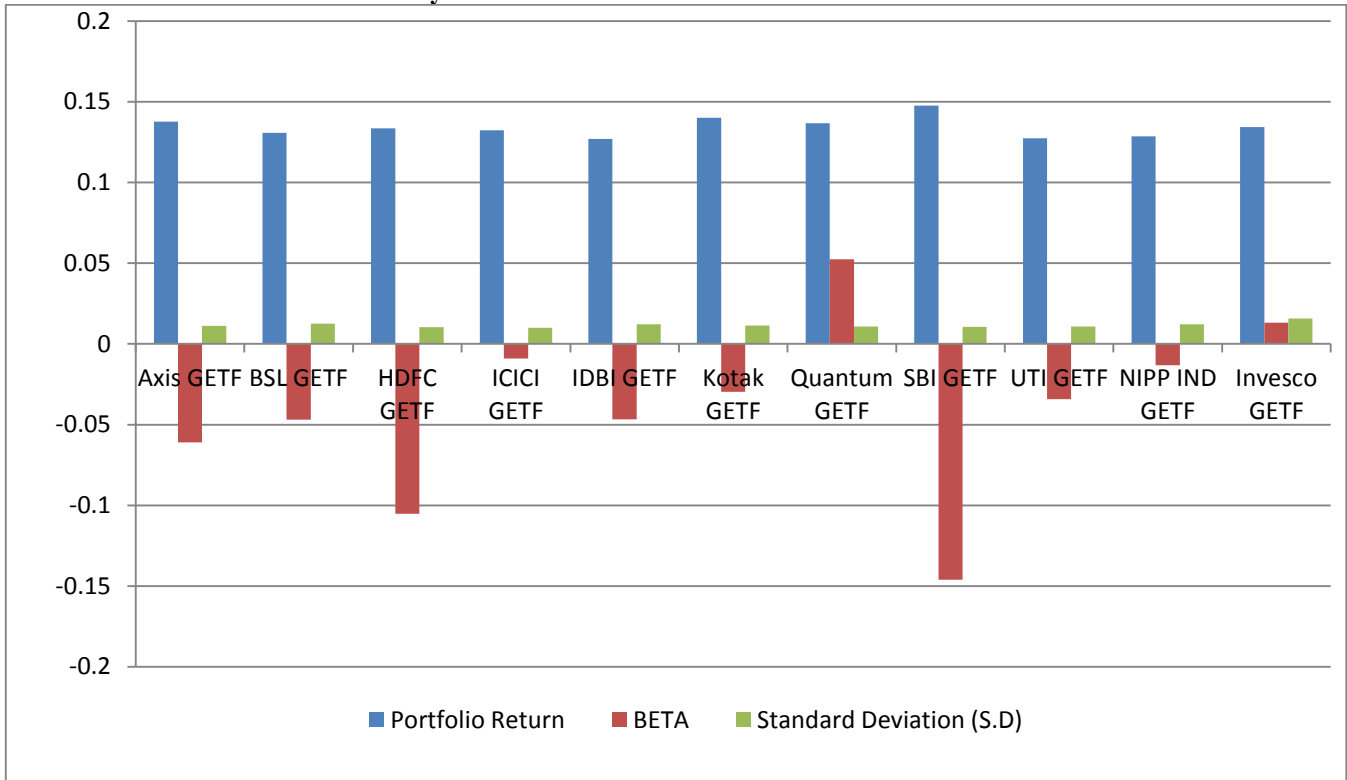
	Axis Gold ETF	BSL Gold ETF	HDFC Gold ETF	ICICI Gold ETF	IDBI Gold ETF	Kotak Gold ETF
Mean	0.0013761	0.0013064	0.00133611	0.00132254	0.0012701	0.00140018
Total Returns	0.33911548	0.321389147	0.328683872	0.325346733	0.312444555	0.344445681
Standard Deviation	0.011238343	0.012667026	0.010469612	0.009917925	0.012101642	0.0113922245

	Quantum Gold ETF	SETF Gold ETF	GOLDSHARE Gold ETF	Gold Bees Gold ETF	IVZIN Gold ETF
Mean	0.001366772	0.00147599	0.00127421	0.00128512	0.00134342
Total Returns	0.336460466	0.363094339	0.313456794	0.316140244	0.330483349
Standard Deviation	0.010856337	0.010572311	0.010797079	0.012182587	0.015806137

Risk-Return Relationship:

Funds	Beta	Standard Deviation (S.D)	Portfolio Returns
Axis Gold Exchange Traded Fund	-0.06094205	0.011238343	0.137616
Birla Sun Life Gold Exchange Traded Fund	-0.046992707	0.012667026	0.130646
HDFC Gold Exchange Traded Fund	-0.10510195	0.010469612	0.1336113
ICICI Prudential Gold Iwin Exchange Traded Fund	-0.009101357	0.009917925	0.1322548
IDBI Gold Exchange Traded Fund	-0.046635659	0.012101642	0.12701
KOTAK Gold Exchange Traded Fund	-0.02966978	0.011392245	0.1400186
Quantum Gold Fund - Exchange Traded Fund	0.052380741	0.010856337	0.1367725
SBI Gold Exchange Traded Fund	-0.146065708	0.010572311	0.1475993
UTI Gold Exchange Traded Fund	-0.034183195	0.010797079	0.1274215
NIPP IND-Gold Exchange Traded Fund	-0.013131314	0.012182587	0.1285123
INVESCO IND-Gold Exchange Traded Fund	0.013120945	0.015806137	0.1343428

Performance of Risk and Return analysis.



Interpretation: From the above table it is observed that Portfolio returns, Standard deviation(S.D) and Beta are presented in a graph form above. From the graph it is seen that portfolio returns of SBI Gold ETF, Kotak Gold ETF, Axis Gold ETF and Quantum Gold ETF produce higher returns in comparing with other Gold ETF funds with slight margin. This Risk Free Rate is taken from website (countryeconomy.com) which is issued on the Government Bonds for 10 years viz., 6.14% or 0.0614. Basing on these portfolio returns, risk free rate, standard deviation and beta further calculations like Sharpe, Treynor and Jensen Alpha performance measure is evaluated.

Total Returns shows a detailed view of the funds Average return (mean), Total returns and Standard deviation which are evaluated from previous tables. Total returns are derived from the sum of the daily return of the funds. Among the total returns earned by each fund, the SBI Gold ETF (0.363), Kotak Gold ETF (0.344) and Axis Gold ETF (0.339) are producing more return in comparison with other funds.

Portfolio returns of Gold Exchange Traded Fund schemes. The portfolio returns are calculated when Average return (mean) is multiplied by 100. The graph shows that SBI Gold ETF and Kotak Gold ETF give a good return in comparing with rest of the Gold ETFs.

Interpretation: Standard deviation is used to measure the amount of variation or dispersion of a set of values. we can see the Standard deviations of all the Gold ETFs which shows fluctuations/volatility in the average returns. Generally a lesser standard deviation indicates closeness to the mean and higher standard deviation indicates values are spread out over a wide range. INVESCO IND Gold ETF has higher standard deviation which represents higher volatility rate among other Gold ETFs.

Beta values of Gold ETFs which are evaluated from excel function calculation (slope) in which NIFTY 50 is taken as market index to compare. The market index has a beta of 1 which is compared with individual Gold ETF in order to know which fund is deviating more with the market. Beta is also known as systematic risk or Market risk. Seeing the graph we have only two funds which have positive beta and less than 1 which indicates lesser volatility in Quantum Gold ETF and INVESCO Gold ETF. Though a negative beta is mostly unlikely, but few investors suggest that in case of gold stocks they tend to perform better when stock market declines. Here most negative beta is SBI Gold ETF which means more volatile to the market but it also gives higher return.

Sharpe Performance Measure Index:

Funds	Sharpe	Rank	SD
SBI Gold Exchange Traded Fund	8.153307257	1	0.01057
ICICI Prudential Gold Iwin Exchange Traded Fund	7.144115327	2	0.00991
Quantum Gold Fund - Exchange Traded Fund	6.942719262	3	0.01085
KOTAK Gold Exchange Traded Fund	6.90106296	4	0.01139
HDFC Gold Exchange Traded Fund	6.897227901	5	0.01046
Axis Gold Exchange Traded Fund	6.768040456	6	0.01126
UTI Gold Exchange Traded Fund	6.114755667	7	0.01079
NIPP IND-Gold Exchange Traded Fund	5.508870981	8	0.01218
Birla Sun Life Gold Exchange Traded Fund	5.466634394	9	0.01266
IDBI Gold Exchange Traded Fund	5.421578328	10	0.01210
INVESCO IND-Gold Exchange Traded Fund	4.614840426	11	0.01580

INTERPRETATION: From the above table it is clear that by using the Sharpe performance index, all the 11 Gold ETF funds are positive and among them the best performance of ETF are SBI Gold ETF (8.153) with rank 1, ICICI Prudential Gold ETF (7.144) with rank 2, Quantum Gold ETF(6.942) with rank 3 and has lesser variation in their best performance. The least performance ETFs are Invesco IND Gold ETF (4.164) with rank 11 and IDBI Gold ETF(5.421) with rank 10. While selecting Gold ETFs, the investor should go with that fund which has less variation and more returns. There is more variation in IDBI Gold ETF(0.0121) and Invesco IND Gold ETF(0.0158). There is less variation in SBI Gold ETF(0.0105) and ICICI Prudential Gold ETF(0.0099). The investor's investment decision should be made basing upon the best three performance ETFs as per Sharpe performance index.

Treynor Performance Measure Index:

Funds	Treynor	Rank	Beta
INVESCO IND-Gold Exchange Traded Fund	5.559264215	1	0.01312
Quantum Gold Fund - Exchange Traded Fund	1.438935352	2	0.05238
SBI Gold Exchange Traded Fund	-0.590140569	3	-0.14606
HDFC Gold Exchange Traded Fund	-0.687059565	4	-0.10510
Axis Gold Exchange Traded Fund	-1.250630722	5	-0.06094
IDBI Gold Exchange Traded Fund	-1.406863362	6	-0.04663
Birla Sun Life Gold Exchange Traded Fund	-1.4735478	7	-0.04699
UTI Gold Exchange Traded Fund	-1.931402258	8	-0.03418
KOTAK Gold Exchange Traded Fund	-2.64978709	9	-0.02966
NIPP IND-Gold Exchange Traded Fund	-5.110859431	10	-0.01313
ICICI Prudential Gold Iwin Exchange Traded Fund	-7.78508084	11	-0.00910

INTERPRETATION: The Treynor Performance Index will measure the fund's performance in relation to the market performance of risk involved in funds. From the above table it is clear that by using the Treynor performance index only two funds are positive i.e. Invesco Gold ETF(5.559) with rank 1 and Quantum Gold ETF(1.438) with rank 2 and rest all funds are negative among them ICICI Prudential Gold ETF(-7.785) with rank 11 and NIPP IND Gold ETF(-5.110) with rank 10 are worst performers. If funds are showing negative Treynor values that means the funds are dependent on market performance i.e. stock market performance. A positive beta indicates that asset's returns generally follow the market returns and the negative beta indicates that asset's returns generally move opposite to the market returns.

Jensen (Alpha) Performance Measure Index:

Funds	Jensen	Rank	Beta
Quantum Gold Fund - Exchange Traded Fund	0.092375812	1	0.05238
INVESCO IND Gold Exchange Traded Fund	0.07720199	2	0.01312
KOTAK Gold Exchange Traded Fund	0.068987493	3	-0.02966
ICICI Prudential Gold Iwin Exchange Traded Fund	0.067900409	4	-0.00910
NIPP IND Gold Exchange Traded Fund	0.062849799	5	-0.01313
Axis Gold Exchange Traded Fund	0.056433601	6	-0.06094
UTI Gold Exchange Traded Fund	0.054925293	7	-0.03418
Birla Sun Life Gold Exchange Traded Fund	0.053991697	8	-0.04699
IDBI Gold Exchange Traded Fund	0.050471599	9	-0.04663
SBI Gold Exchange Traded Fund	0.038784911	10	-0.14606
HDFC Gold Exchange Traded Fund	0.038094156	11	-0.10510

INTERPRETATION: From the above table it is clear that by using Jensen performance ratio all funds show positive values and among these 11 ETF funds the Quantum Gold ETF(0.092) has rank 1, Invesco India Gold ETF(0.077) has rank 2 and Kotak Gold ETF(0.068) with rank 3 are the best performance of funds. The least performance funds are HDFC Gold ETF (0.0380) with rank 11 and SBI Gold ETF (0.0387) with rank 10. In calculation of Jensen measure return on market (R_m) is taken from NIFTY 50.

Coming to betas only Quantum Gold ETF and INVESCO Gold ETF have lesser positive beta which indicates funds following market returns and rest other ETFs has a negative beta which shows returns opposite to the market return.

SUMMARY

The Gold Exchange Traded Fund is one of the fastest growing areas in the investment world as India is one of the largest buyers of Gold. The study is mainly focused on Gold Exchange Traded Fund which is issued by Mutual Fund companies and is listed in National Stock Exchange (NSE). Gold ETFs are traded in Stock Exchanges just like normal equity shares. The study of performance evaluation of Gold ETFs is undertaken to know which performs better using performance measure index and to know which Gold ETF yields more return. For this performance evaluation measures like Sharpe, Treynor and Jensen had been used and also ranks has been given based on these measures to each Gold ETF scheme. The study uses secondary data of NAV (Net Asset Value) of Gold ETFs which are offered by mutual fund companies and are traded at NSE. The secondary data is taken from NSE (National Stock Exchange) official website. The study period taken is financial year i.e. 1/4/2019 to 31/3/2020.

- In this analysis of 11 Gold ETFs, the highest Total Return is from SBI Gold ETF and followed by Kotak Gold ETF and Axis Gold ETF in comparison with rest of ETFs
- From table no 3.8 we see that Portfolio Returns, Standard Deviation and Beta are classified and been presented in a graph form to explain each ETF fund with respect to Risk-Return relationship. Invesco India Gold ETF has higher standard deviation which represents higher volatility rate among other Gold ETFs.
- Beta is positive only for two funds i.e. Quantum and Invesco Gold ETFs it means favorable and moves with the market. The most negative beta value is for SBI Gold ETF which means it deviates from the market at the same time it provides higher return in comparison.
- Results from Sharpe measure found that all funds had performed better and among them SBI Gold ETF is given rank 1 and it is most preferable fund to choose for investment.
- Under Treynor performance measure beta is considered for evaluation of funds as beta values are positive for two funds, only two Gold ETFs have positive Treynor value and the rest are negative. The two positive Treynor values are for Quantum and Invesco Gold ETF.
- Performance measure of Jensen shown all positive values for funds which means funds performed well but among them Quantum, Invesco and Kotak Gold ETFs are top 3 performers in comparison with other Gold ETFs.

SUGGESTIONS

- Investing in Gold ETF is the best way of risk diversifier in a portfolio and thus investment in Gold ETFs is encouraged by this study.
- The study makes clear that by using Sharpe measure the top 3 performing funds (SBI, ICICI and Quantum Gold ETFs) are suggested for investing in it. By Treynor measure the best performing funds Invesco and Quantum Gold ETFs are suggested for investments and from Jensen measure Quantum, Invesco and Kotak Gold ETFs are suggested.
- The study by using these performance evaluation measures, identify and measure the performance of each Gold ETF and apply ranks to them so that it will be easy for the investor in taking the investment decisions.
- I recommend investors in choosing the Gold Exchange Traded Fund basing on his preference in taking risk and the return he aimed for. From study the lesser risky fund is Invesco Gold ETF and the higher return fund is SBI Gold ETF.
- Gold ETF provides the ability to start with smaller amount of investment and there is no exit load and expense ratio is also less thus proving a best way to invest in gold such that investors get attracted to Gold Exchange Traded Funds.
- Gold ETF is one the way of investing in Gold which is offered by mutual funds and the study suggests that more awareness about Gold ETFs is necessary and educating the investors about online trading of Gold ETFs in exchanges will improve more growth in Gold ETF.

CONCLUSION

The closing prices of 11 Gold ETFs listed in the National Stock Exchange have been studied and analyzed. The study examines the performance of gold ETFs through using Sharpe, Treynor and Jensen performance evaluation measures/ratios. The trading in Gold ETFs is increasing over the recent years as the prices of gold are regularly touching new high so the investors are investing in these ETFs.

The Sharpe performance measure helps investors to analyze the volatility level of each Gold ETF, Treynor measure will help an investor to decide about assessment of risk over the rate of return through systematic risk or market risk and Jensen measure shows the investor whether the funds are outperformed or underperformed the market index. These three performance measures will help investors in taking effective decisions.

From the study I can say that Gold Exchange Traded Fund has a scope in the market for investment. The study concludes that investor can choose the best Gold ETFs for investment. The investor makes choice by taking into consideration the return and risk and also based on the performance evaluation measures. From Sharpe measure the SBI Gold ETF is top performing with higher returns for this the investor need to take higher risk also. From Treynor measure Invesco and Quantum Gold ETFs are recommended for investors when considering market risk aspect and finally Jensen measure shows that all 11 Gold ETFs have positive values which mean all funds outperformed the market index.

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