IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

A COMPARATIVE STUDY ON PHYSICAL GOLD AND GOLD ETFs

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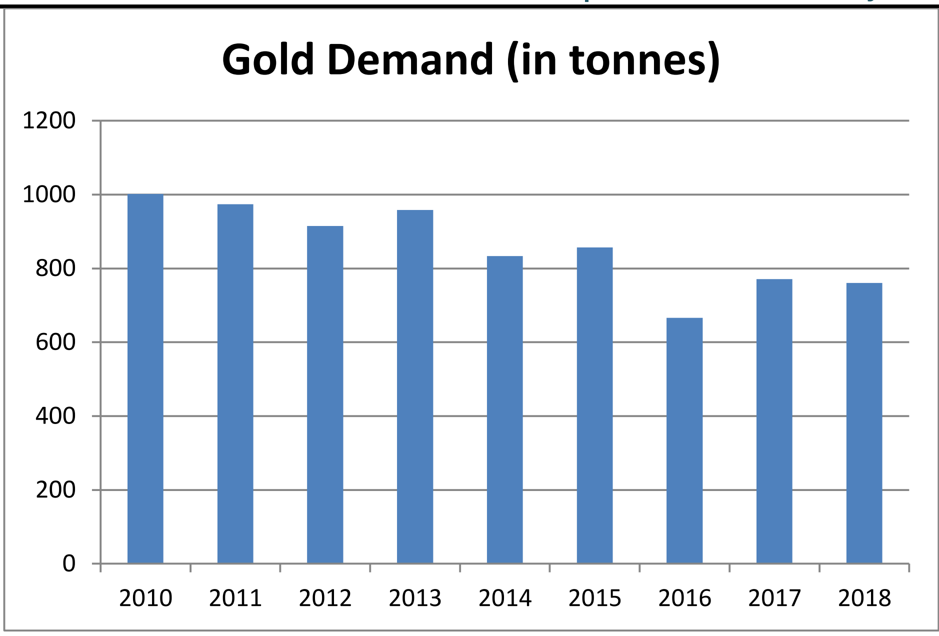
Abstract: Investment in gold is always a preferred choice for Indians. There is an unquenchable demand for gold among Indians and the demand for gold has increased over the years. Recently, the Indian government increased the import duty of gold and this can impact the demand for gold among consumers. However it is arguable that this could make any significant impact among the retail investors who want to possess gold for long term in non-physical form like gold ETFs. While physical gold has lot of costs involved such as cost of depreciation, pilferage and transaction, the retail investor can save on such costs and efficiently plough money back into gold ETFs. The investment on gold ETFs has gradually increased in the last decade. Market analysts suggest gold ETFs to be part of investment portfolio to mitigate market risks. As India has undergone radical changes in the economy for last few years, the research attempts to find how investment in gold ETFs have gained momentum from 2014 and how comparable are the risks and rewards of gold ETFs with physical gold. 5 popular gold ETFs are taken for the study and a SWOT analysis is made based on their efficiency and performance in comparison with physical gold. The analysis reveals that the gold ETFs lack in certain aspects which can affect investors' perception on gold ETFs and can enable them to carefully consider the option of investing in gold ETFs.

I. INTRODUCTION

Finance is the subject dealt with how people allocate their assets over certain period of time under different situations which can be both expected and unexpected. Financial market is where buyers and sellers participate in the trade of assets such as equities, bonds, currencies and derivatives. Financial markets follow transparent pricing and basic regulations for trading and thus helping various industrial sectors to grow and also helping investors to make money. Investment is method of injecting capital in a business with the aim of supporting the business to grow and gain profit. Financial investment is deploying money into the market with the expectation of gaining profit by doing proper analysis on the security for the principal amount as well as the security of return within an expected time period. Of many kind of investments, an option exits to investment on the precious metals. Gold is the most popular form of investment on precious metals by many investors in India. Gold is commonly considered as a hedge against economic, political, or social crises such as market volatility, increasing national debt, reducing currency rate, price inflation, trade wars, social unrest and, in a nutshell, an overall slowdown of economy. The gold market is subject to speculation as other markets, especially through the use of futures, contracts and derivatives. Gold is primarily a monetary asset, bought particularly in the developing countries as a vehicle for savings.

The difference between gold and other precious metals or commodities exists in the fact that gold has maintained its value in after-inflation terms over the long run, while the commodities have generally declined. The central bank and some of the international institutions have been the major holders of gold for over 100 years and they expect to retain large stocks in the future. The main difference between trading with gold and the equities is that gold is traded from a store-of-value point of view, while financial assets are traded in order to secure future income. Investment on gold has traditionally been considered for its special features such as it is a timeless and a timely investment, an effective portfolio diversifier, an ideal gift for the beloved ones and a highly liquid investment option.

The graph below explains the demand for gold across the world over the past 9 years. Overall there are ups and downs in the trend; however it is evident that there is huge demand for gold year on year by looking at the volume of gold purchased and transacted.



The following graph shows that India's demand for Gold which actually seems to have increased from 189.2 tonnes to 213.1 tonnes in the last one year. There is a rise in the demand for gold whenever the price of the gold declines. A major portion of India's gold demand comes from rural areas, where people consider gold jewelleries as the store of wealth.

INDIA'S GOLD ACCOUNT

Demand

In tonnes	Q2CY18	Q2CY19	% change
Jewellery	149.9	168.6	12.5
Bar & coin	39.3	44.5	13.2
Total	189.2	213.1	12.6

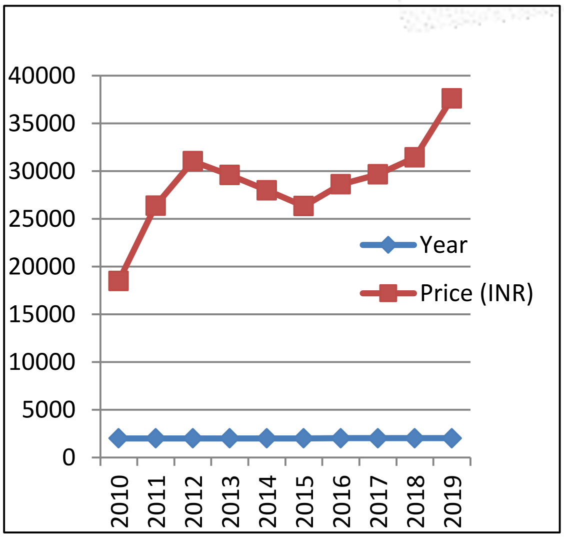
Supply

	Q2CY18	Q2CY19	% change
Net imports	193.1	247.4	28.1
Scrap	32.0	37.9	18.4
Domestic supply	2.6	3.2	23.1
Total	227.7	288.5	26.7

Source: World Gold Council Compiled by BS Research Bureau

The following graph shows the movement of gold price across the years from 2010 to 2019. It is evident that overall the gold price has been on an upward trend though there is slight decline on three consecutive years from 2012 to 2015.

Gold Price



When it comes to the method of buying gold there are many options that exist. It is not always that gold can be bought in a physical form such as jewellery, coins and bars. They can be bought in the form of gold Exchange Traded Funds (ETFs) and gold mutual funds. Gold mutual funds are known to invest in gold ETFs. A few gold mutual funds also invest in the shares of international gold mining companies.

An ETF is an investment fund traded on stock exchange much like a stock. Exchange Traded Funds (ETFs) hold the assets such as stock, commodities or bonds and trades close to its Net Asset Value over the course of trading day. In other words, it can be said that its prices and value depends upon the market value or prices of the underlying asset. Most of ETFs have an index such as stock index or bond index. ETFs have so many features (like low cost, tax efficiency, easy conversion in to cash, and stock like attributes) which make it most attractive. Because of this, Exchange Traded Funds (ETFs) are one of the most popular types of investment destination.

The following types of ETFs are available in India

- Index ETFs
- Commodity ETFs (as of now only Gold ETFs)
- Currency ETFs
- Sector ETFs
- Bond ETFs
- Global Index ETFs

The Gold ETFs are the exchange traded funds based upon the net asset value of the underlying asset gold. The gold ETFs are divided into units representing physical gold. These units may be in paper form or dematerialized form. These units are traded on the exchange like a single stock of a company. The gold ETFs provide the opportunity to the investors to participate in the gold bullion markets without the necessity of taking physical delivery of gold and to buy and sell that participation through the trading of a security on a stock exchange.

1.1. PHYSICAL GOLD and GOLD ETF

A comparison of physical gold and gold ETF is made below considering some of the common parameters that anyone would be willing look at.

Parameters	Physical Gold		Gold ETF
	Jewellers	Bank	
Mode of Purchase	Coins/Jewellery/Bars	Coins/Bars	Demat Account
Purchase Rate	Making charges and GST will be added additionally	GST will be added additionally	Brokerage charges will be added
Mode of Sell	On conditional basis	No buy back	Sell back to Exchange
Selling Rate	No standardised method for selling price. It can also vary based on the usage, where it was purchased and 916 Hallamarked or not	No standardised method for selling price. It can also vary based on the usage, where it was purchased and 916 Hallmarked or not	Market price
Responsible for Security	Individual	Individual	Asset Management Company (AMC)
Risk of Impurity	High	Low	No risk of impurity
Pricing	Not transparent and standard	Not standard	Transparent
Denomination	Any	Any	1 gram and multiples of 1 gram
Additional Charges	No additional charges	No additional charges	Asset management and brokerage fees
Other Risks	Risk of theft and burglary	Risk of theft and burglary	No such risks
Wealth Tax	Yes	Yes	No
Long Term Capital Gain Tax	Applicable after 3 years	Applicable after 3 years	Applicable after 1 year

The following graph implies the strong relationship that exists between gold prices and the amount of gold held by the gold ETFs.

II. RESEARCH METHODOLOGY

2.1 OBJECTIVE OF THE STUDY

The following are the objectives of the study

1. To analyze gold ETFs as an investment option
2. To understand the advantages and reasons for investing in gold and to do a comparative analysis on gold vs. gold ETFs
3. To evaluate the performance of 5 gold ETFs and understand whether gold ETF is a feasible investment option for retail investors
4. To deliver Strengths, Weaknesses, Opportunities and Threats of investing in gold ETFs

2.2 SCOPE OF THE STUDY

The study covers the importance of investing in gold, the difference between investing in gold and gold ETF, with reference to retail investors, and the meaning of gold ETFs as well as upcoming gold ETF's in India. Gold ETF's are a very lucrative and important tool for investing and the purpose of this study is to make them slightly more understandable

2.3 NATURE OF DATA

Only secondary data was considered for the study. The secondary data was collected articles, journals, books, eBooks and newspapers within the field. Historical data of gold were found on various web sites like Economic Times and Business Line. Data with regards to the gold exchange traded mutual funds was also acquired by surfing through Google and exploring the subsequent links. Investment websites like Yahoo Finance, Value Research, Money control, Funds India. For the historical background, where the information about the history and aspects of the gold and the gold ETF was presented, many different sources were used in order to avoid any sort of biases and special interests.

2.4 SAMPLING METHOD

The method of sampling used is convenient sampling. Convenience sampling is a non-probability sampling technique where subjects are selected because of their convenient accessibility and proximity to the researcher.

2.5 SAMPLE SIZE

Five gold ETF's have been chosen and have been analyzed. The schemes that have been chosen are among the most popular ones based on their asset value and CRISIL ratings.

2.6 APPROACH OF THE STUDY

The data collected from the above mentioned secondary sources were completely analyzed in order to conduct a comparative study on gold vs. gold ETF's and an analysis of upcoming gold ETF's as an effective Investment tool for Indian retail investors. Wherever possible, facts and graphical diagrams have been used. Such data has then been interpreted and recommendations have been developed.

2.7 STATISTICAL TOOLS

The following tools and formulas were used for analysing the secondary data collected.

- Standard deviation
- Beta
- Sharpe's Ratio
- Treynor's Ratio
- Expense ratio
- Trend analysis

2.8 LIMITATIONS OF THE STUDY

- The study is only limited to 5 gold ETFs that are available in India. Those 5 gold ETFs have been one of the top rated and have assets under management >100 crores.
- The period of data collected for the study are only for 5 years, 2014 to 2018. The conclusion hence is drawn only based on the performance of gold ETFs during that period.
- The data analysis is made only using the statistical tools mentioned above and the tools have been chosen by convenience. There are many other advanced measures and tools available to asses risk and reward of the stocks and portfolios.

III. DATA ANALYSIS AND INTERPRETATION

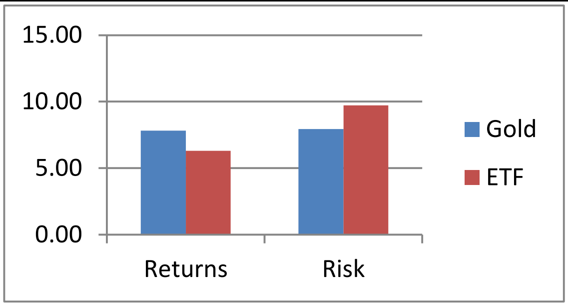
3.1 Absolute Returns and Standard Deviation

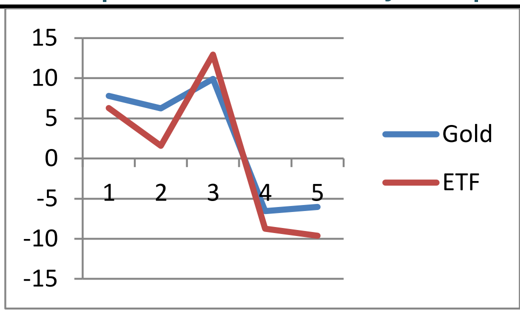
1. *ABSL Gold ETF v/s Physical Gold*

Particulars	Physical Gold	ABSL Gold ETF
Absolute Returns (2018)	7.81	6.30
Standard Deviation	7.94	9.72
Correlation	0.96	

<u>Analysis</u>

- From the table it can be inferred that while physical gold has a return of 7.81%, ABSL gold ETF has a return of 6.3%.
- The standard deviation of physical gold is 7.94 compared to 9.72 of ABSL gold ETF.
- The correlation between physical gold and ABSL gold ETF is 0.96.





Inference

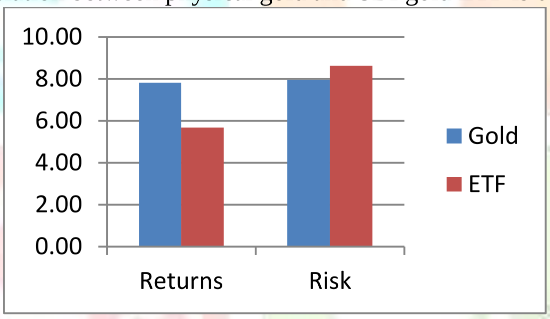
- The above data indicates that ABSL gold ETF has a lower return percentage over physical gold in 2018.
- The standard deviation of ABSL gold ETF is higher than that of physical gold, indicating ABSL gold ETF having a higher risk over physical gold.
- A correlation of 0.96 indicates positive correlation where both the ABSL gold ETF and physical gold move in the same direction given the similar market conditions.

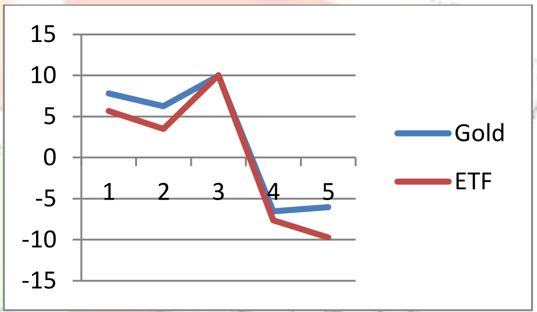
2. *SBI Gold ETF v/s Physical Gold*

Particulars	Physical Gold	SBI Gold ETF
Absolute Returns (2018)	7.81	5.67
Standard Deviation	7.94	8.62
Correlation	0.99	

Analysis

- From the table it can be inferred that while physical gold has a return of 7.81%, SBI gold ETF has a return of 5.67%.
- The standard deviation of physical gold is 7.94 compared to 8.62 of SBI gold ETF.
- The correlation between physical gold and SBI gold ETF is 0.99.





Inference

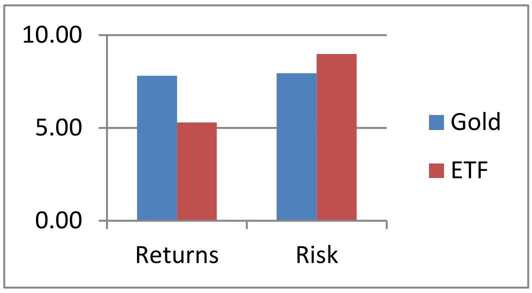
- The above data indicates that SBI gold ETF has a lower return percentage over physical gold in 2018.
- The standard deviation of SBI gold ETF is higher than that of physical gold, indicating SBI gold ETF having a higher risk over physical gold.
- A correlation of 0.96 indicates positive correlation where both the SBI gold ETF and physical gold move in the same direction given the similar market conditions.

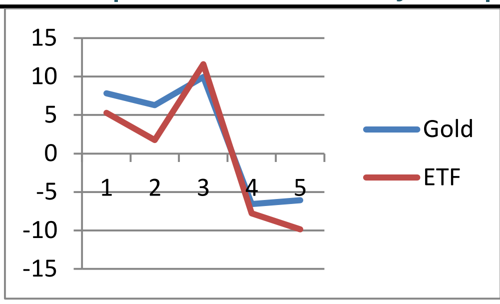
3. *Reliance Gold ETF v/s Physical Gold*

Particulars	Physical Gold	Reliance Gold ETF
Absolute Returns (2018)	7.81	5.30
Standard Deviation	7.94	8.98
Correlation	0.97	

Analysis

- From the table it can be inferred that while physical gold has a return of 7.81%, Reliance gold ETF has a return of 5.30%.
- The standard deviation of physical gold is 7.94 compared to 8.98 of Reliance gold ETF.
- The correlation between physical gold and Reliance gold ETF is 0.97.





Inference

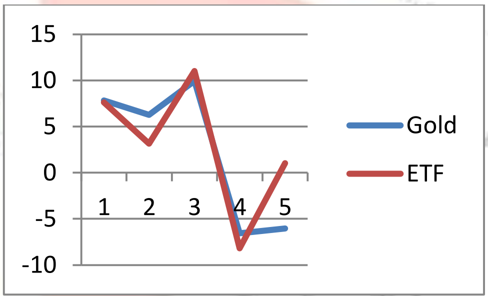
- The above data indicates that Reliance gold ETF has a lower return percentage over physical gold in 2018.
- The standard deviation of Reliance gold ETF is higher than that of physical gold, indicating Reliance gold ETF having a higher risk over physical gold.
- A correlation of 0.96 indicates positive correlation where both the Reliance gold ETF and physical gold move in the same direction given the similar market conditions.

4. UTI Gold ETF v/s Physical Gold

Particulars	Physical Gold	UTI Gold ETF
Absolute Returns (2018)	7.81	7.61
Standard Deviation	7.94	7.32
Correlation	0.87	

Analysis

- From the table it can be inferred that while physical gold has a return of 7.81%, UTI gold ETF has a return of 7.61%.
- The standard deviation of physical gold is 7.94 compared to 7.32 of UTI gold ETF.
- The correlation between physical gold and UTI gold ETF is 0.87.



Inference

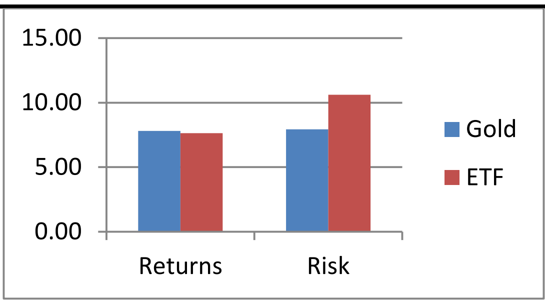
- The above data indicates that UTI gold ETF has a lower return percentage over physical gold in 2018.
- The standard deviation of UTI gold ETF is lower than that of physical gold, indicating UTI gold ETF having a lower risk over physical gold.
- A correlation of 0.87 indicates positive correlation where both the UTI gold ETF and physical gold move in the same direction given the similar market conditions.

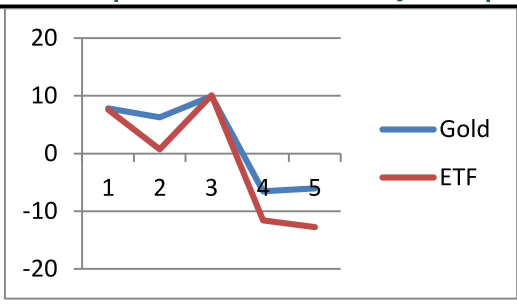
5. Axis Gold ETF v/s Physical Gold

Particulars	Physical Gold	Axis Gold ETF
Absolute Returns (2018)	7.81	7.63
Standard Deviation	7.94	10.61
Correlation	0.98	

Analysis

- From the table it can be inferred that while physical gold has a return of 7.81%, Axis gold ETF has a return of 7.63%.
- The standard deviation of physical gold is 7.94 compared to 10.61 of Axis gold ETF.
- The correlation between physical gold and Axis gold ETF is 0.98.

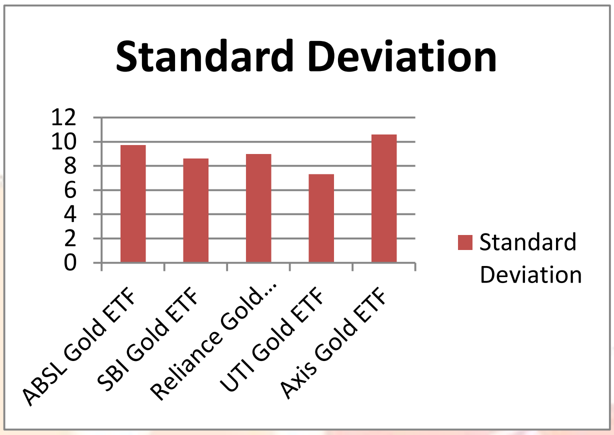




Inference

- The above data indicates that Axis gold ETF has a lower return percentage over physical gold in 2018.
- The standard deviation of Axis gold ETF is higher than that of physical gold, indicating Axis gold ETF having a higher risk over physical gold.
- A correlation of 0.96 indicates positive correlation where both the Axis gold ETF and physical gold move in the same direction given the similar market conditions.

3.2 Standard Deviation Comparison

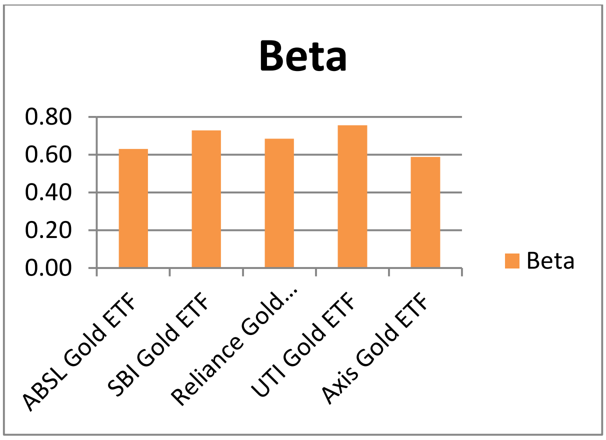


Inference

- From the above figure, it is clear that all the chosen gold ETF schemes have approximately similar standard deviation, While Axis gold ETF has the highest standard deviation of 10.6, and the lowest is of UTI gold ETF having a standard deviation of 7.3.
- As standard deviation indicates how volatile a fund is, among the chosen schemes the most risky investment is Axis gold ETF.The safest investment scheme among the group of funds is UTI gold ETF.

3.3 Beta Analysis

ETF	Beta
ABSL Gold ETF	0.63
SBI Gold ETF	0.73
Reliance Gold ETF	0.68
UTI Gold ETF	0.76
Axis Gold ETF	0.59

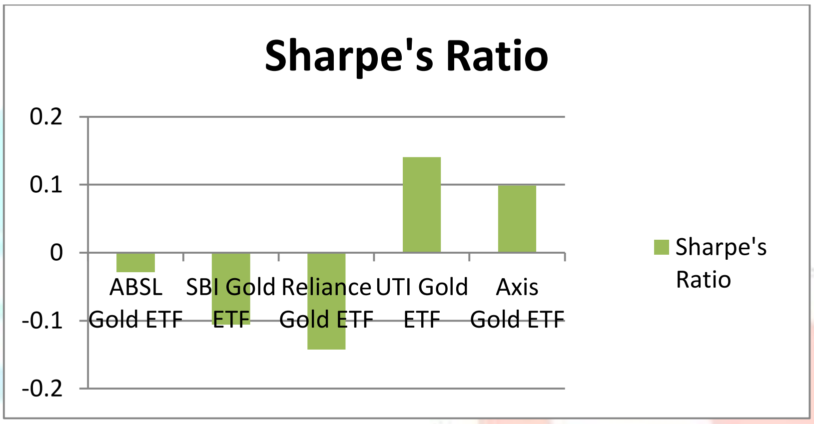


Inference

- The above data is clearly indicative that Axis gold ETF has the lowest beta of 0.59 that is the lowest volatility, or systematic risk in comparison to the market as a whole.
- UTI gold ETF on the other hand has the highest beta of 0.76, indicating that this fund is the most volatile amongst remaining ETFs taken for analysis. This is closely trailed by SBI gold ETF which has beta of 0.73 indicating that the volatility of this fund will be one of the highest.
- The other remaining funds have a beta of 0.63 and 0.68, which makes them less volatile when compared to UTI gold ETF or SBI gold ETF but more volatile than Axis gold ETF.

3.4 Sharpe's Ratio

ETF	Returns	SD	Risk Free Returns	Sharpe's Ratio
ABSL Gold ETF	6.3	9.72	6.58	-0.03
SBI Gold ETF	5.67	8.62	6.58	-0.11
Reliance Gold ETF	5.3	8.98	6.58	-0.14
UTI Gold ETF	7.61	7.32	6.58	0.14
Axis Gold ETF	7.63	10.61	6.58	0.10

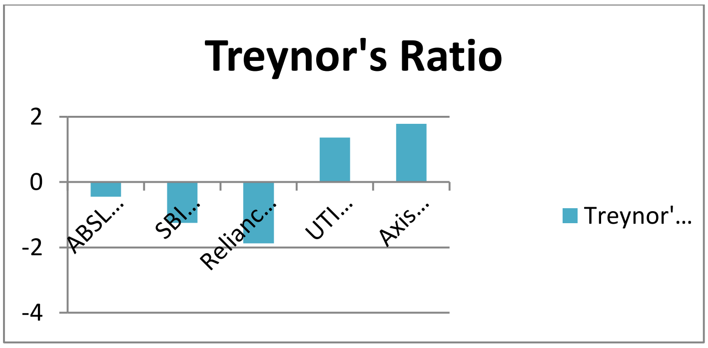


Inference

- UTI gold ETF (ETF) has the highest Sharpe's Ratio of 0.14 which indicates that its performance in risk adjusted terms has been better than its counterparts. This is closely trailed by Axis gold ETF.
- Reliance gold ETF has the lowest Sharpe's Ratio of -0.14 which indicates that its performance is lagging behind its peers in terms of risk adjusted returns. SBI gold ETF and ABSL gold ETFs also have negative Sharpe's Ration which also indicate that their performance is not quite good in terms of risk adjusted returns. They indicate that the Asset management company of the schemes have to pay some attention at least on the short term basis.

3.5 Treynor's Ratio

ETF	Returns	Beta	Risk Free Returns	Treynor's Ratio
ABSL Gold ETF	6.3	0.63	6.58	-0.44
SBI Gold ETF	5.67	0.73	6.58	-1.25
Reliance Gold ETF	5.3	0.68	6.58	-1.87
UTI Gold ETF	7.61	0.76	6.58	1.36
Axis Gold ETF	7.63	0.59	6.58	1.79

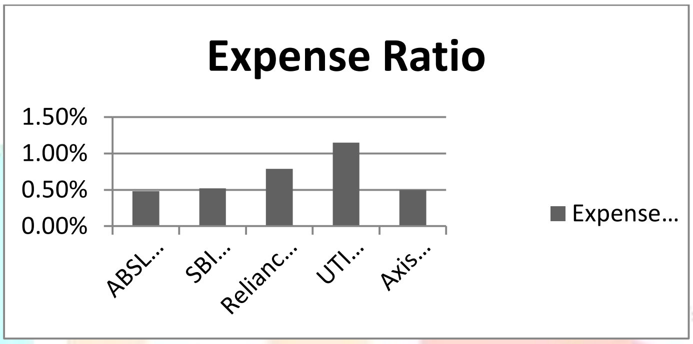


Inference

- From the data and figure, it can be pointed out that Axis gold ETF having a Treynor's ratio of 1.79 has the highest excess return over the risk-free rate to the additional risk taken. Therefore its performance is better than the other gold ETFs in the group. This is followed by UTI gold ETF which has Treynor's ratio of 1.36.
- The other gold ETFs have Treynor's ratio in negative value, indicating that they have the least scope and they have not made any significant performance.

3.6 Expense Ratio

ETF	Expense Ratio
ABSL Gold ETF	0.48%
SBI Gold ETF	0.52%
Reliance Gold ETF	0.79%
UTI Gold ETF	1.15%
Axis Gold ETF	0.50%



Inference

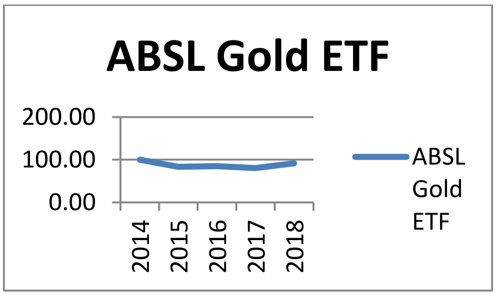
- ABSL gold ETF has the lowest expense ratio of 0.48, indicating better management of resources by the fund in order to reduce the expenses incurred while investing in the fund. This is closely followed by Axis gold ETF and SBI gold ETF.
- UTI gold ETF has the expense ratio of 1.15, indicating not very good management of resources by the fund, therefore leading to high expenditures incurred by the sum of these investors. Reliance gold ETF also exhibits a similar scenario but it is better than UTI gold ETF but worse than ABSL gold ETF, Axis gold ETF and SBI gold ETF.

3.7 Trend Analysis

The below graph indicate how the Asset Under Management (AUM) has grown over the time for the respective gold ETFs

1. *ABSL Gold ETF*

Year	AUM (in Crores)	Trend
2014	84.29	100.00
2015	69.97	83.01
2016	71.33	84.62
2017	67.81	80.45
2018	77.26	91.66

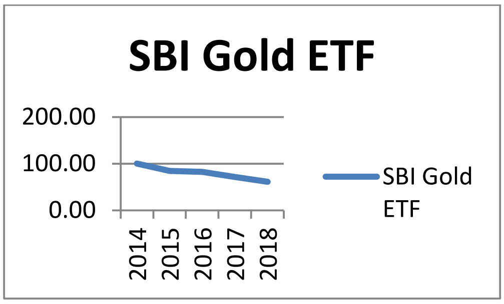


Inference

- In the above data 2014 has been taken as the base year to calculate the trend.
- The figure clearly depicts a gradual downward trend from 2014 to 2017 with slight upward trend in 2018 indicating 2018 as a recovery period.
- Therefore it can be concluded that ABSL gold ETF is a risky buy as the general trend through a spread of four years was downwards can pick up in the future and can perform better considering the upward push in 2018.

2. SBI Gold ETF

Year	AUM (in Crores)	Trend
2014	1038.85	100.00
2015	878.99	84.61
2016	852.95	82.11
2017	737.75	71.02
2018	631.97	60.83

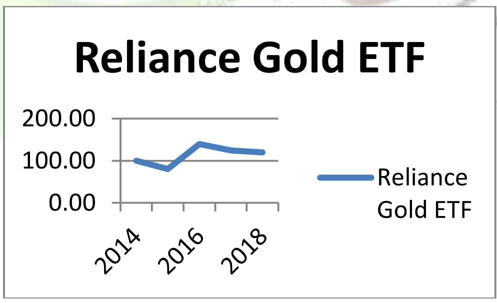


Inference

- In the above data 2014 has been taken as the base year to calculate the trend.
- The figure depicts a sharp downward trend from 2014 to 2018 with no upward trend at all.
- Therefore it can be concluded that SBI gold ETF is a very risky buy as compared to ABSL

3. Reliance Gold ETF

Year	AUM (in Crores)	Trend
2014	1951.96	100.00
2015	1563.24	80.09
2016	2730.01	139.86
2017	2434.57	124.72
2018	2337.42	119.75

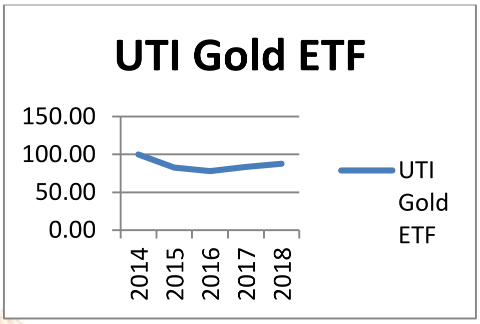


Inference

- In the above data 2014 has been taken as the base year to calculate the trend.
- The figure depicts an immediate downward trend the following year but with a sharp raise of 139.86% in the successive year 2016.
- The next two years it exhibits a gradual downward trend which appears to be averaging the performance
- Therefore it can be concluded that Reliance gold ETF is less risky as compared to the ABSL gold ETF and SBI gold ETF and the performance can be positive in the coming years.

4. UTI Gold ETF

Year	AUM (in Crores)	Trend
2014	514.34	100.00
2015	425.58	82.74
2016	401.63	78.09
2017	429.88	83.58
2018	452.09	87.90

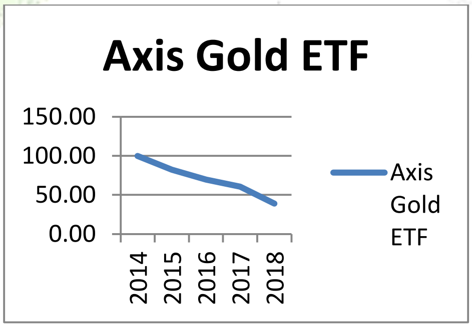


Inference

- In the above data 2014 has been taken as the base year to calculate the trend.
- The figure depicts a gradual downward trend from 2014 to 2016 and a very slow upward trend from 2017 to 2018. The fund is recovering the last 2 years by showing a positive trend forward.
- Therefore it can be concluded that UTI gold ETF is a moderate risky one and should be watched out in the future for no hint of decline.

5. Axis Gold ETF

Year	AUM (in Crores)	Trend
2014	281.76	100.00
2015	231.26	82.08
2016	195.85	69.51
2017	170.36	60.46
2018	110.06	39.06



Inference

- In the above data 2014 has been taken as the base year to calculate the trend.
- The figure depicts a very sharp downward trend from 2014 to 2018 with no upward trend.
- Therefore it can be concluded that Axis gold ETF is a very risky buy as compared to all other remaining ETFs that are taken for analysis.

IV. FINDINGS

From the data analysis made on the selective gold ETFs on physical gold, strength, weakness, opportunities and threats involved in investing on gold ETF's are arrived.

Strengths

1. The analysis of the gold ETFs shows that these funds are heavily influenced by gold prices and therefore give similar returns with some exceptions. Few gold ETFs have even surpassed returns of physical gold if the historical data is referred, for e.g. in the year 2016.
2. The AUM of gold ETFs is overall high and it directly reflects the number of clients and portfolios it handles. Even though some of the ETFs have shown a declining trend over the last few years, it is not overall with all the gold ETFs. From the analysis it is clear that some ETFs are in fact showing a positive trend which explains that the retail investors are not getting away from gold ETFs but they are choosy of what gold ETF funds they want to invest.
3. Some ETFs show very low risk as compared to physical gold and it can draw more retail investors to consider the gold ETF as a preferred option than physical gold even though they both exhibit similar returns.
4. Since there are no entry or exit charges in gold ETF and they having a very less expense ratio as found in the data collected, gold ETFs can be considered as one of the best investment options in the long term.
5. The standard deviation of most of the gold ETFs have not gone beyond 10 and some of them are even <9. This shows the gold ETFs have the strength of exhibiting a predictable performance since the volatility of returns will be less when the standard deviation shows a less value.
6. Beta value is another important parameter which indicates how volatile a fund performance could be. Most of the gold ETFs exhibit lower Beta value.

Weakness

1. While there are a number of gold ETFs available in India, still they are not in a sizable number considering the equity stocks and the interest of investing on gold is high among the Indians.
2. From the Sharpe's Ratio calculated for the 5 gold ETFs chosen, only 2 of them show a positive value and remaining ones negative value. It indicates that only those 2 gold ETFs have given high risk-adjust return and the others have not. This underlines the fact that there is not much risk being taken by the some of the gold ETFs to generate good returns over a period of time.
3. Another similar measure on risk-adjusted return analysed using Treynor's Ratio also shows the similar result. That again indicates that some of the gold ETFs are not able to give better results for the amount of risk taken.
4. The awareness of gold ETF and, in general, any form of ETF looks very low among the retail investors

Opportunities

1. From the analysis made, it can be concluded that gold ETF is indeed one of the other options available to the Indian Retail Investors to diversify their investment and it can very well expand in the future as the investment on gold ETF looks continuous every year.
2. Gold ETFs provide returns that reflect a market position which helps investors gain from the opportunities of the Bull and Bears of the Stock market.
3. General people as investors do not have the adequate information about the gold ETFs. There is a need of hour that investors should be well aware and informed about the scheme of gold ETFs which can help with their growth.
4. With the gold ETF market being relatively new in India, investing in any of the upcoming funds would not make much of a difference in the short term but in the long run. This can help the investors who want to build a balanced and safe portfolio considering long term returns.

Threat

1. Since the returns on gold ETFs in the selected years have not surpassed the returns of physical gold, retails investors may lose interest in gold ETFs and will start looking out for better investment options.
2. From the analysis made on the selected gold ETFs, it is evident that the returns are not quite attractive, at least in the short term perspective. So investors have to do a lot of scrutiny to choose the best gold ETF keeping their financial goal focussed on long term. This can make investors to consider other investment options than gold ETFs as a better choice

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