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Abnormal Return of NSE Traded Gold ETFs in Crisis Settings: An Appraisal of Contrarian Versus Momentum Strategies

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ABSTRACT

This study aims to scan the efficiency of NSE gold ETFs in the context of the pandemic. The trading strategies such as the contrarian and the momentum tactics employed by the market participants towards gold ETFs in different time horizons were observed in detail. This study also attempt to check whether gold based funds is considered as a safe haven by the Indian investors in crisis settings. Daily return trend of gold ETFs and the broad market index for past four years were duly examined. The risk adjusted abnormal return method was employed for different time horizons as this technique observed to be more reliable for the topic and seems to be quite novel to the existing body of literature. The market participants were efficient in accommodating the pandemic news in their trading strategies. The analysis confirmed trading momentum attributed to gold ETFs despite the COVID-19 waves. This research points that fund managers should give more weightage for gold based ETFs in their portfolio along with common stock as the portfolios diversified with gold ETFs were able to marginalize its loss impacted by the COVID waves. From economic point of view gold ETFs enabled to divert more funds from domestic households to the corporate sector even during the crisis period.

Keywords: abnormal return; contrarian strategies; momentum strategies; COVID-19; gold ETFs

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ОРИГИНАЛЬНАЯ СТАТЬЯ

Аномальная доходность торгуемых золотых ETF в условиях кризиса: оценка контрстратегий против стратегий следования за трендом

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АННОТАЦИЯ

Данное исследование направлено на изучение эффективности золотых (ETF) на Национальной фондовой бирже (NSE) в условиях пандемии. Подробно изучены торговые стратегии, такие как контртрендовая и тактика импульса, применяемые участниками рынка к золотым ETF на разных временных горизонтах. В данном исследовании также предпринята попытка проверить, рассматривают ли индийские инвесторы фонды, основанные на золоте, в качестве безопасного убежища в условиях кризиса. В статье проанализированы тенденции ежедневной доходности золотых ETF и индекса широкого рынка за последние четыре года. Метод аномальной доходности с поправкой на риск применен на различных временных горизонтах, так как эта техника оказалась более надежной для данной темы и кажется довольно новаторской в существующей литературе. Участники рынка эффективно учитывали новости о пандемии в своих торговых стратегиях. Анализ подтвердил торговую активность, связанную с золотыми ETF, несмотря на волны COVID-19. Данное исследование указывает на то, что управляющие фондами должны уделять больше внимания золотым ETF в своих портфелях наряду с обыкновенными акциями, так как портфели, диверсифицированные золотыми ETF, смогли минимизировать свои потери, вызванные волнами COVID. С экономической точки зрения золотые ETF позволили перенаправить больше средств из домашних хозяйств в корпоративный сектор даже в период кризиса.

Ключевые слова: аномальная доходность; контрарные стратегии; импульсные стратегии; COVID-19; золотые ETF

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INTRODUCTION

The exchange traded gold funds allow the investors to trade on the basis of the domestic physical gold price in dematerialized form. The traders across the world consider gold ETFs as an alternative against the gold bullion investment. In terms of physical gold consumption, India ranks in the second position in the world after China. However, gold trading is not considered a safe haven by Indian investors for long run [1]. The Gold ETF segment in the Indian stock market has attracted an investment of Rs. 48.14 million in the financial year 2020–2021 [2]. The net assets under the management of Gold ETFs increased to Rs. 204.30 million in April 2022 from Rs.192.8 million in March 2022 [3]. This flow was reported on account of the risk aversion of the investors due to the COVID-19 pandemic. This trend signals that the gold assets are being considered by the investors as a diversification tool to mitigate the crisis.

The trading strategies of the stock market participants are fashioned primarily on the basis of parameters such as risk, return safety and liquidity. The fundamental stock analysts always suggest that an investor should examine Economy, Industry and Company (EIC) wide characteristics before trading, whereas the technical analysts believe that the market movements are fashioned by historical prices. In fact, the price movements are independent and no one is capable of predicting them, and based on this notion, the theory of efficient market hypothesis (EMH) emerged. The market is efficient in collecting and processing new pieces of information, thereby the price changes are rational and independent [4].

In view of efficient market theory, it is evident that the gold ETF prices are subject to change in accordance with the new piece of information. When the information spreads, the investors are expected to respond quickly, and the gold ETF price will move in accordance with the nature of the information [4]. If the information is favorable, people will invest in gold ETFs, and otherwise they will divest. In recent days, Indian investors were attracted towards gold ETFs due to two reasons. There are increasing numbers of COVID cases across the world due to inflationary concerns in the economy.[1]

If the investors are rational, they will act in accordance with the market information. Conversely, if the investors are irrational, they can create short term volatility in the price movements. It is believed that investors are adopting either a contrarian strategy or a momentum strategy in response to market news [5]. If the investors are discarding the market information, it results in contrarian strategies, whereas a steady response from investors to the market information results in momentum strategies. It is believed that irrational investors attempt to make a return by behaving opposite to the market information. For example, the investor will invest in a fund with probable loss in the future or withdraw from a fund with profit potential. Such behavior of investors will result in contrarian movement of fund to the general market trend. Indeed, buying loser stocks and selling winner stocks results in a contrarian strategy [6]. A momentum strategy indicates the confidence of investors in market information and they will act rationally [5]. Here the investors will purchase winner stocks and short-loser stocks.

This study examines the trading strategies in the Indian gold ETF market by using the daily return data of gold ETFs traded through the National Stock Exchange (NSE) for the past four financial years. The data was processed by structuring the study period into 90 days, 180 days, 365 days and 730 days, respectively, prior to and post-COVID-19 information spread. The research was carried out on the basis of the risk-adjusted abnormal return method proposed by De Jong and Rhee and Aravind [6, 8].

LITERATURE REVIEW

The initial seeds for the efficient market hypothesis were originated on the basis of the argument that the capital market will be dominated by the informed agents [8–10]. Later, Fama (1970) introduced three forms of efficiencies to observe movement of the security prices. In weak form of efficiency, the security prices are subject to the historical price movements. The semi-strong form intends to test how publicly available information can adjust to the price movement of stocks, and finally the strong form of efficiency focuses on how monopolistic access to information can affect the stock prices.

The critics of EMH pointed out that under this theory, investors need to take an above average risk for generating an abnormal return [11]. They argue that the return anomalies in EMH are arising in the context of some specific models, and variation in statistical approaches may bring different conclusions. It is further explained that the security prices are highly influenced by the behavior of the investors [12]. The investors can make extraordinary profit via wishful thinking, and attention errors can cause significant losses to their asset portfolio. It is pointed out the need for conducting more

[1] Economic Times. Gold ETFs attract Rs 4,814-cr in 2021 on firming inflation, higher mkt valuations. The Economic Times, 2022. URL: https://economictimes.indiatimes.com/markets/bonds/gold-etfs-attract-rs-4814-cr-in-2021-on-firming-inflation-higher-mkt-valuations/articleshow/89379520.cms (accessed on 30.10.2024).

studies to establish that the stock market is efficient, and if possible, new behavioral theories should be developed with new testing models [13].

Testing the efficiency of the market using ETF was found to be more effective than other passive benchmarks [14]. The ETF's encouraged the investors to have a short-lived approach to investment management, though it has enabled them to trade in huge volume [15]. The ETFs enabled the investors to manage their assets without paying any extra fee for asset management; thus, the exchange-traded fund became a favorable choice for the investors. From a market perspective, ETFs enabled to improve liquidity and bring price efficiency to the underlying assets. It helps to reduce anomalies in the form of short selling and other unfair trade practices [16].

1t is reviewed the market efficiency of gold exchange traded funds in India using the traditional run test and serial correlation test. The results report that the market efficiency is absent with the exchange traded gold funds [17]. The relative efficiency of gold ETFs in India was studied by Kaur and Singh by analyzing the role of ETFs against spot and future gold markets. It is found that the spot and future price of gold are integrated into gold ETF prices. However, some relative inefficiency is also observed with the price of gold ETFs [18].

The contrarian and momentum hypothesis argues that ETF portfolios will either sell the winners and purchase the losers or buy winners and short the losers [6]. A study conducted in the United States on ETFs reported that the contrarian strategies can provide abnormal returns to ETFs for a very short period, say a holding period from a day to one week. While testing the return trend for 4 weeks to 39 weeks demonstrates momentum strategies in asset allocation [7]. The buildup behavioral factors based on contrarian and momentum flows are relevant for asset pricing [19].

The abnormal return can be earned by using global investment strategies in long run. The world macroeconomic risk factors like industrial production and the momentum returns are highly integrated [20]. The momentum abnormal returns from ETF oriented industrial portfolios was further confirmed [21]. The price earnings ratio, price book ratio and net foreign inflow of funds are significant factors in maintaining market momentum in the Indian stock market [22]. A weak reversal pattern was reported in the Indian capital market for a short period, and a long continuation pattern was reported for an extended period. These results strongly support the market momentum in the long run [23].

During the COVID-19 outbreaks, the ETF returns behaved indifferent to market volatility by possessing an inverse relationship with the benchmarking indices, whereas ETFs are reported to have a positive and significant relationship with gold returns [24]. Gold based ETFs can be used to short cover the systematic risk arising due to COVID-19. The price of gold remains fairly stable during the period of pandemic, showing the traders trust over this yellow metal [25]. During these periods, gold funds established themselves as a reliable diversifier by reducing the shocks on other assets in the portfolio [26]. The effectiveness of gold as a hedging instrument was confirmed during the COVID-19 period, especially in the Asian markets. The return of portfolios during the COVID subperiod was driven by gold implied volatility [27]. The COVID-19 shocks on conditional variability of the gold price, oil rates, bitcoin, and exchange rates were deep-rooted [28]. However, more clarity is required on the diversification role of gold with other crypto currencies during the process of portfolio allocation [29].

The objective of this work is to examine the efficiency of the Indian gold EFT market during the pandemic period and to observe the trading strategies employed by the investors in these difficult times. Secondly, this research work attempts to check whether gold-based funds will be considered by Indian investors as a safe haven in crisis settings.

The following hypothesis were fixed for this research:

H01: the daily return data of gold ETFs and NIFTY is not stationary.

H02: the broad market index (NIFTY) return trend has no significant impact on gold ETF returns.

H03: the trading strategies (contrarian or momentum) in crisis settings are not significant.

METHOD

Research Design

The gold ETFs actively traded through the National Stock Exchange of India (NSE) were duly incorporated in this research. Presently eleven gold funds are active in NSE trading portal; they are AXIS Gold ETF (AXISGOLD), Aditya Birla Sun Life Gold ETF (BSLGOLDETF), Nippon India ETF Gold Bees (GOLDBEES), UTI Gold Exchange Traded Fund (GOLDSHARE), HDFC Gold Exchange Traded Fund (HDFCMFGETF), ICICI Prudential Gold ETF (ICICIGOLD), IDBI Gold Exchange traded fund (IDBIGOLD), Invesco India Gold Exchange Traded Fund (IVZINGOLD), Kotak Gold Exchange Traded Fund (KOTAKGOLD), Quantum Gold Exchange Traded Fund (QGOLDHALF) and SBI ETF Gold (SETFGOLD). For observing deviation of ETFs with the stock market, broad market index of the National Stock Exchange of India (NIFTY) was fixed as the benchmark.

Data and Sample

The daily closing price of EFTs and NSE index from 1st April 2018 to 31st March 2022 was collected from the NSE web portal www.nseindia.com. It extensively covers 992 daily observations each of eleven ETFs and NSE broad market index. Thus, the data coverage includes 12*992 price observations. The simple random sampling technique was employed on the ground that in a cross-sectional time series study, it is implicit that the time element is having a random effect that only produces variance, not bias [30]. The collected data was segregated in to formation and testing periods in view of the COVID-19 crisis. The data period was further structured into 90 days, 180 days 365 days and 730 days. This sample size was fixed on the basis of the power analysis protocol for linear bivariate regression models for examining the difference between intercepts featured in G*Power software [31, 32]. The power analysis protocol has suggested a minimum sample size of 90 for one group of data. Thus 90 days fixed as the minimum time criteria in this research.

The world health organization has declared COVID-19 as a pandemic during March 2020 [33]. Two years prior to March 2020 (from 1st April 2018 to 31st Match 2020) was set as formation period and two-year post to March 2020 (from 1st April 2020–31st March 2022) was fixed as testing period. In formation period data from 1st January 2020–31st March 2020, 1st October 2019–31st March 2020, 1st April 2019–31st March 2020 and 1st April 2018 to 31st March 2020 were placed separately for observing 90 days, 180 days, 365 days and 730 days return trend. Likewise for testing the impact of COVID crisis on gold ETFs, we have fixed 1st April 2020–30th June 2020, 1st April 2020–30th September 2020, 1st April 2020–31st March 2021 and 1st April 2020–31st March 2022 accordingly for observing the return trends of 90 days, 180 days, 365 days and 730 days.

Analytical Procedure

Using the closing prices of Gold ETFs and the broad market index the daily log return trends was computed.

$$R = Ln\,(P1 / P0). \quad (1)$$

Here $P1$ indicates new price, $P0$ denotes price of the day before and R stood for daily return. Through Ln it is assumed that the return trends are log normally distributed. The descriptive statistics of the daily return trend is duly exhibited in *Table 1*.

The Augmented Dickey Fuller Test was performed to ensure that the collected time series data is stationary [35–37].

$$\Delta Y_t = \alpha_{Yt-1} + X_t'\delta + \beta_1 \Delta Y_{t-1} + \beta_2 \Delta Y_{t-2} + \ldots + \beta_p \Delta Y_{t-p} + \gamma_t. \quad (2)$$

In equation (2) Y_t represents time series to be tested, α is an intercept constant called drift, β the coefficient on a time trend and p is the lag order difference of the autoregressive process and γ_t is the white noise error term. The result of ADF test is presented in *Table 2*.

Thereafter the systematic risk (β) and the risk adjusted abnormal returns (α) generated by the gold ETFs for the formation and the test periods were computed by using equations (3) and (4).

$$\beta = \{(n\Sigma xy) - (\Sigma x\,\Sigma y)\} / \{n\Sigma x^2 - (\Sigma x)^2\}, \quad (3)$$

$$\alpha = \bar{y} - (\beta * \bar{x}). \quad (4)$$

In the above equation, n denotes the number of observations; x indicates NIFTY returns and y points return from Gold ETFs. β is used to designate systematic risk and α represents the abnormal return over index returns.

Those gold ETFs produced a risk adjusted abnormal return over the broad market index were classified as winner funds (W) and the funds reported with abnormal losses after risk adjustments were classified as loser funds (L). The difference between weighted average risk adjusted abnormal return of all winner funds and loser funds were further computed for the test period. If the divergence score is positive in the test period then it signals momentum effect (Forner, 2000). Refer equations (5) and (6).

$$W\,[\bar{y}_t - (\beta t * \bar{x}_t)] - L[R\,\bar{y} - (\beta t * \bar{x}_t)] > 0 \text{ signals momentum effect}, \quad (5)$$

$$W\,[\bar{y}_t - (\beta t * \bar{x}_t)] - L[R\,\bar{y} - (\beta t * \bar{x}_t)] < 0 \text{ signals contrarian effect}. \quad (6)$$

Further T — statistics was employed for validating the results.

RESULTS

From *Table 1* it is evident that the benchmarking index NIFTY has reported to have the highest mean daily return of 0.062 percent. From Gold ETFs IVZINGOLD has produced the highest average daily return of 0.061 percent during the study period. The uppermost deviation in return trend was also reported for IVZINGOLD with a standard deviation of 1.34 percent. The distribution is positively skewed for the majority of the ETFs except `AXIS GOLD, IDBIGOLD and the broad market index NIFTY as these distributions are

Table 1

Descriptive Statistics

Fund	Mean	Median	Std. Dev.	Std. Error	Sample Var.	Largest	Smallest	Skewness	Kurtosis
AXISGOLD	0.036	0.014	1.020	0.038	1.043	7.950	−11.360	−0.587	21.810
BSLGOLDETF	0.056	0.035	1.203	0.038	1.447	12.169	9.998	0.619	17.120
GOLDBEES	0.052	0.047	0.900	0.029	0.811	4.780	−4.036	0.297	4.315
GOLDSHARE	0.051	0.030	0.853	0.027	0.728	5.922	−4.496	0.072	6.056
HDFCMFGETF	0.053	0.024	0.865	0.027	0.748	5.274	−3.496	0.535	5.000
ICICIGOLD	0.051	0.023	0.875	0.028	0.765	4.757	−4.159	0.276	4.116
IDBIGOLD	0.056	0.041	1.150	0.036	1.340	9.517	−12.560	−0.359	21.130
IVZINGOLD	0.061	0.014	1.340	0.042	1.802	6.875	−7.025	0.132	3.987
KOTAKGOLD	0.056	0.056	0.919	0.029	0.845	7.030	−3.438	0.993	7.589
QGOLDHALF	0.051	0.036	0.869	0.027	0.869	5.326	−3.718	0.413	4.699
SETFGOLD	0.053	0.125	0.916	0.029	0.839	7.613	−7.520	0.218	11.630
NIFTY	0.062	0.124	1.284	0.040	1.649	8.763	−12.980	−1.274	17.850

Source: Processed Data.

Note: N = 991, NIFTY is the benchmarking index of National Stock Exchange of India.

reported to have scores of −0.587,—0.359 and −1.274 respectively. Somehow a positive symmetry was reported in the return trend of the other ETFs. The kurtosis values of the ETF's and NIFTY observed to be above 3 hints that the distribution is leptokurtic.

Table 2 indicates the result of the ADF test. This test was conducted to check whether the time series distribution is stationary. The null hypothesis set for ADF test is that the time series data is not stationary. From *Table 2* it is evident that the probability value of the test statistics is falling within the respective levels of significance of 5% (prob. < 0.05). This result strongly confirms that the collected data set is stationary (H01 is rejected). If the data set is stationary, then the statistical properties will remain relatively constant over time.

The short run formation return trend for 90 days and 180 days is explained in *Table 3.* During this period, NIFTY has produced an average daily return of −0.497 and −0.206 respectively. For the 90-day formation period, all gold ETF funds have generated a positive risk adjusted abnormal return over the broad market index. Thereby these portfolios were classified as winner (*W*) funds. During the 180-day formation period, only GOLDBEES has reported a negative risk adjusted abnormal return (−0.675) compared to the market index. Thus, this fund is classified as a loser fund (*L*). The systematic risk of individual fund returns to the market index (β) was further validated using F-stat. The probability value of the test statistics is found to be significant at 5 percent level (Prob.<0.05) confirms the rejection of H02.

Table 4 explains the long run daily return trend for 365 days and 730 days. Interestingly, the average daily return of the market index was still negative, with mean scores of −0.107 and −0.026 respectively for 365 days and 730 days. The risk adjusted abnormal return of all gold ETFs other than GOLDBEES (−0.275 and −0.131) reported to be positive and significant. The F-stat. value confirmed the rejection of H02 by signifying the impact of NIFTY movement on gold ETF's (prob. <0.05).

The above exercises were repeated in the test period, and *Table 5* spells out the short run return trend in the test period. While observing a 90-day trend, the NIFTY strongly bounced back with an average positive daily return of 0.330. This positive trend was observed for the gold ETFs also and consequently generated a positive risk adjusted abnormal return over the market index. Thus, all funds can be categorized as winners for this period. AXISGOLD is categorized to be a loser (*L*) for 180 days as the risk adjusted return score (−0.029) reported to be negative. The β scores were further validated by using F-stat and found to be significant at the 5 percent level (H02 not supported).

While observing the long run trend for the testing period (*Table 6*) the ETFs such as AXISGOLD, GOLDSHARE and SETFGOLD (−0.065,—0.345 and −0.023) found to be losers compared to the market index

Table 2

Augmented Dickey-Fuller Test

Fund	T-Stat	Prob.
AXISGOLD	–31.907	0.000*
BSLGOLDETF	–37.291	0.000*
GOLDBEES	–32.562	0.000*
GOLDSHARE	–31.044	0.000*
HDFCMFGETF	–29.770	0.000*
ICICIGOLD	–31.674	0.000*
IDBIGOLD	–37.944	0.000*
IVZINGOLD	–43.148	0.000*
KOTAKGOLD	–32.946	0.000*
QGOLDHALF	–32.028	0.000*
SETFGOLD	–20.244	0.000*
NIFTY	–10.759	0.000*

Source: Data analysis.
Note: *Significant at 5% level.

for 365 days. With respect to 730 days trend GOLDSHARE and SETFGOLD reported to have a negative abnormal return after adjusting risk (0.154 and –0.193). All other ETFs produced a positive risk adjusted abnormal return linked to NIFTY. The systematic risk scores (β) further signified using F-stat. The results confirmed the rejection of H02.

Table 7 is prepared to compare the trading strategy of investors for various time horizons. Either the winner funds (*W*) in the formation period turned to be losers (*L*) in the test period or the loser funds in the formation period rotated to be winners (*W*) in the test period, then the trading strategy is said to be contrarian [6]. The trading strategy is said to be momentum if the winners (*W*) and losers (*L*) maintain a constant position in the formation and testing periods [5]. While comparing the trading strategy for 90 days, the general trading strategy found to be momentum. For 180 days, the AXISGOLD and GOLDBEES reported to have varied positions, which indicates a contrarian effect of the investors trading strategies. Other ETFs have maintained a trading momentum. For 365 days we can observe a strategic mix in trading pattern as four GTFs viz. AXISGOLD, GOLDBEES, GOLDSHARE and SETFGOLD exhibited a reversal trend in trading, though the traders in other ETFs maintained the momentum. Still, the position of the above four ETFs can question the general asset allocation assumptions set for this research. Interestingly, only the trading pattern of two gold ETFs (GOLDBEES and SETFGOLD) twisted to be contrarian for 730 days. To get an overview of gold ETF trading strategies in crisis settings, we have further examined the statistical significance of the study results using a paired sample T-test (H03).

The weighted average of risk adjusted return of all winners and losers were duly computed for the test period and duly presented in *Table 8*. The difference (δ) of the weighted average risk adjusted returns between winners and losers are positive then the trading strategy during the crisis settings can be considered as momentum [37]. If δ score is negative then we can assume that the contrarian strategies dominated during the crisis period. The δ values obtained for 90 days, 180 days and 730 days were 0.199, 0.110 and 0.05 (refer *Table 8*). These positive δ scores strongly signals momentum effect in gold ETFs trading. However for 365 days a negative δ mark of –0.024 was obtained. This result is signaling the contrarian trading strategies preferred by the investors for the 365 days zone. The above test results were validated by using paired sample T-stat. The probability value of T-stat for 90 days, 180 days and 730 days found to be significant at 5 percent level (prob. values are 0.000,0.000 and 0.002). Here we can reject H03 by concluding that the momentum strategy is evident for gold ETF trading in the time horizons of 90 days, 180 days and 730 days. With respect to 365 days the prob. value of the test statistics not found to be significant at 5 percent level (prob. value of 0.094 > 0.05). Thereby we can conclude that the contrarian strategy is not found to be evident for 365 days (here H03 is accepted).

DISCUSSION AND POLICY IMPLICATIONS

The study results confirmed momentum trading strategies preferred for gold ETFs during the crisis period. This phenomenon can be very much connected to the efficient market theory as the market participants were efficient in responding towards the pandemic information [4]. During the period of pandemic the Indian investors considered gold as a safe heaven. Form the study results it can be observed that the gold EFTs have generated a positive risk adjusted return over the broad market index in the formation period itself. During the pandemic period a positive flow of fund was observed from other assets to gold ETFs. Thus gold ETFs outperformed over the broad market index and momentum strategies have reported in these periods. This result adds to the existing literatures of [8, 20, 21, 23] by confirming the momentum of ETFs in long run.

Table 3

Short Run Return Trend in Formation Period

FUND	180 days						90 Days					
	Avg. Return	β	F-Stat	prob.	α	*W/L*	Avg. Return	β	F-Stat	prob.	α	*W/L*
AXISGOLD	0.134	−0.035	7.432	0.005*	0.127	*W*	0.191	−0.030	5.176	0.007*	0.177	*W*
BSLGOLDETF	0.145	−0.032	8.603	0.004*	0.138	*W*	0.195	−0.022	5.108	0.007*	0.185	*W*
GOLDBEES	−0.664	−0.051	11.51	0.000*	−0.675	*L*	0.177	0.048	6.398	0.005*	0.201	*W*
GOLDSHARE	0.119	−0.003	6.005	0.009*	0.118	*W*	0.190	0.002	5.002	0.010*	0.192	*W*
HDFCMFGETF	0.129	−0.094	13.80	0.001*	0.110	*W*	0.194	−0.088	7.820	0.002*	0.150	*W*
ICICIGOLD	0.123	0.014	6.108	0.007*	0.126	*W*	0.179	0.024	6.161	0.007*	0.191	*W*
IDBIGOLD	0.095	−0.020	7.115	0.007*	0.091	*W*	0.149	−0.030	7.187	0.007*	0.134	*W*
IVZINGOLD	0.106	0.115	12.92	0.001*	0.129	*W*	0.211	0.121	9.040	0.002*	0.271	*W*
KOTAKGOLD	0.123	0.022	7.199	0.001*	0.128	*W*	0.185	0.035	6.276	0.006*	0.203	*W*
QGOLDHALF	0.138	0.098	13.56	0.001*	0.158	*W*	0.198	0.115	12.755	0.000*	0.256	*W*
SETFGOLD	0.178	0.071	12.10	0.001*	0.193	*W*	0.286	0.082	6.592	0.002*	0.327	*W*
NIFTY	−0.206	1.000	–	–	–	–	−0.497	1.000	–	–	–	–

Source: Data analysis.

Note: * Significant at 5% level, W-Winner Fund, L–Loser Fund.

Table 4

Long Run Return Trend in Formation Period

Fund	730 Days						365 days					
	Avg. Return	β	F-Stat	prob.	α	W/L	Avg. Return	β	F-Stat	prob.	α	*W/L*
AXISGOLD	0..076	−0.083	6.594	0.010*	0.074	*W*	0.139	−0.061	6.114	0.015*	0.132	*W*
BSLGOLDETF	0.078	−0.004	6.012	0.013*	0.077	*W*	0.136	−0.022	6.216	0.006*	0.133	*W*
GOLDBEES	−0.129	−0.072	4.218	0.041*	−0.131	*L*	−0.269	−0.056	6.056	0.813*	−0.275	*L*
GOLDSHARE	0.074	−0.004	5.017	0.009*	0.073	*W*	0.129	−0.006	6.022	0.009*	0.129	*W*
HDFCMFGETF	0.073	0.070	18.93	0.000*	0.070	*W*	0.134	−0.105	7.464	0.007*	0.123	*W*
ICICIGOLD	0.069	−0.033	5.445	0.012*	0.068	*W*	0.131	−0.009	6.064	0.008*	0.130	*W*
IDBIGOLD	0.071	−0.009	6.854	0.010*	0.070	*W*	0.126	0.008	6.028	0.009*	0.127	*W*
IVZINGOLD	0.086	0.068	5.688	0.019*	0.087	*W*	0.113	0.078	6.504	0.002*	0.122	*W*
KOTAKGOLD	0.078	−0.051	5.744	0.010*	0.077	*W*	0.140	−0.030	6.490	0.005*	0.137	*W*
QGOLDHALF	0.074	0.019	7.420	0.005*	0.074	*W*	0.137	0.052	7.692	0.002*	0.143	*W*
SETFGOLD	0.085	0.046	6.666	0.010*	0.086	*W*	0.156	0.056	8.142	0.001*	0.162	*W*
NIFTY	−0.026	1.000	–	–	–	–	−0.107	1.000	–	–	–	–

Source: Data Analysis.

Note: *Significant at 5% level; *W* — Winner Fund, *L* — Loser Fund.

Interestingly the investor's overreaction the crisis news did not get reflected in the gold ETF market for the short run. This scenario is showing the investor's trust and confidence on commodity based indices. In the light of the efficient market theory we can confirm that negative market news results in the channelization of assets from common stocks to commodity based funds [4]. In India, gold is being considered as a primary commodity for asset allocation by the investors. Thereby any negative market news can result in a positive flow of fund to physical gold or towards gold ETFs.

Practical Implications

This study signals that investors and fund managers should include commodity-based funds in their asset portfolio. It is evident that the Indian investors have

Table 5

Short Run Return Trend in Testing Period

FUND	180 days						90 days					
	Avg. Return	β	F-Stat	prob.	α	*W/L*	Avg. Return	β	F-Stat	prob.	α	*W/L*
AXISGOLD	−0.023	0.023	5.057	0.008*	−0.029	*L*	0.179	−0.041	5.152	0.007*	0.192	*W*
BSLGOLDETF	0.135	−0.064	5.350	0.006*	0.150	*W*	0.205	−0.117	5.550	0.005*	0.243	*W*
GOLDBEES	0.123	0.018	5.073	0.008*	0.119	*W*	0.192	0.004	5.003	0.010*	0.191	*W*
GOLDSHARE	0.136	0.059	11.145	0.003*	0.122	*W*	0.228	0.042	5.516	0.005*	0.215	*W*
HDFCMFGETF	0.116	−0.098	12.030	0.002*	0.138	*W*	0.178	−0.118	11.77	0.002*	0.217	*W*
ICICIGOLD	0.114	−0.053	5.558	0.005*	0.126	*W*	0.176	−0.112	11.62	0.002*	0.213	*W*
IDBIGOLD	0.137	−0.046	5.176	0.007*	0.147	*W*	0.255	−0.041	5.071	0.008*	0.269	*W*
IVZINGOLD	0.140	0.020	5.073	0.008*	0.136	*W*	0.207	0.041	5.338	0.006*	0.194	*W*
KOTAKGOLD	0.114	−0.084	1.356	0.247*	0.133	*W*	0.178	−0.145	12.65	0.001*	0.226	*W*
QGOLDHALF	0.110	0.024	5.141	0.007*	0.104	*W*	0.162	0.003	5.002	0.010*	0.161	*W*
SETFGOLD	0.074	0.066	5.654	0.004*	0.059	*W*	0.087	0.038	0.114	0.737*	0.074	*W*
NIFTY	0.229	1.000	–	–	–	–	0.330	1.000	–	–	–	–

Source: Data analysis.

Note: *Significant at 5% level, W-Winner Fund, L–Loser Fund.

Table 6

Long Run Return Trend in Testing Period

Fund	730 Days						365 days					
	Avg. Return	β	F-Stat	prob.	α	*W/L*	Avg. Return	β	F-Stat	prob.	α	*W/L*
AXISGOLD	−0.004	−0.061	12.41	0.001*	0.006	*W*	−0.064	0.004	5.005	0.009*	−0.065	*L*
BSLGOLDETF	0.035	−0.098	4.833	0.028*	0.050	*W*	0.120	−0.064	5.864	0.004*	0.027	*W*
GOLDBEES	0.033	−0.072	4.889	0.027*	0.044	*W*	−0.005	−0.008	5.031	0.009*	0.007	*W*
GOLDSHARE	−0.170	−0.111	6.456	0.005*	−0.154	*L*	−0.382	−0.161	5.325	0.006*	−0.345	*L*
HDFCMFGETF	0.034	−0.124	14.75	0.000*	0.053	*W*	0.011	−0.086	13.35	0.001*	0.030	*W*
ICICIGOLD	0.032	−0.097	8.305	0.004*	0.047	*W*	0.006	−0.046	6.926	0.003*	0.017	*W*
IDBIGOLD	0.044	−0.117	6.324	0.012*	0.061	*W*	0.029	−0.065	6.907	0.003*	0.044	*W*
IVZINGOLD	0.037	−0.098	6.017	0.015*	0.052	*W*	0.017	−0.015	5.082	0.008*	0.021	*W*
KOTAKGOLD	0.034	−0.104	9.728	0.002*	0.049	*W*	0.071	−0.063	11.68	0.002*	0.021	*W*
QGOLDHALF	0.028	−0.057	13.21	0.001*	0.036	*W*	0.001	−0.005	5.014	0.009*	0.002	*W*
SETFGOLD	−0.176	0.111	0.449	0.503*	−0.193	*L*	−0.015	0.034	5.402	0.005*	−0.023	*L*
NIFTY	0.150	1.000	–	–	–	–	0.150	1.000	–	–	–	–

Source: Data analysis.

Note: *Significant at 5% level, W-Winner Fund, L–Loser Fund.

preferred gold-based funds during the crisis. This points out that fund managers should give more weightage to gold-based ETFs in their portfolio along with common stock. Secondly, portfolios diversified with gold ETFs were able to marginalize their losses impacted by the COVID waves. From the investors point of view of gold, ETFs can be considered as an alternative against physical gold. Compared to physical gold, the ETFs allow the investors to save expenses on account of designing, taxes and possession. Gold ETFs are found to be a suitable investment for those who are hesitated to take risk (risk-averse) and for long term investors. In India, the long term capital gains from ETFs are taxable at a rate of 20 percent, whereas it is practically difficult to levy tax on physical form of gold transactions. Thus, the government can accumulate more tax if the gold trading is carried out through an authorized exchange.

Table 7

GOLD ETF's Trading Strategy

Fund	90 Days			180 Days			365 Days			730 Days		
	F	*T*	Strategy	*F*	*T*	Strategy	*F*	*T*	Strategy	*F*	*T*	Strategy
AXISGOLD	*W*	*W*	Momentum	*W*	*L*	Contrarian	*W*	*L*	Contrarian	*W*	*W*	Momentum
BSLGOLDETF	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
GOLDBEES	*W*	*W*	Momentum	*L*	*W*	Contrarian	*L*	*W*	Contrarian	*L*	*W*	Contrarian
GOLDSHARE	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*L*	Contrarian	*W*	*L*	Contrarian
HDFCMFGETF	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
ICICIGOLD	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
IDBIGOLD	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
IVZINGOLD	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
KOTAKGOLD	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
QGOLDHALF	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*W*	Momentum
SETFGOLD	*W*	*W*	Momentum	*W*	*W*	Momentum	*W*	*L*	Contrarian	*W*	*L*	Contrarian

Source: Data analysis.

Note: F — Formation period, *T* — Testing period, *W* — Winner Fund, *L* — Loser Fund.

Table 8

T-Test Results

Indicator	90 Days	180 Days	365 Days	730 Days
Avg. Return on Winner Funds	0.199	0.112	0.015	0.036
Avg. Return on Loser Funds	Nil	–0.003	–0.039	–0.031
δ	0.199	0.110	–0.024	0.005
T-Value	13.095	10.028	1.848	4.095
prob.	0.000	0.000	0.094	0.002

Source: Data analysis.

Note: At *5% level of significance.

Social Implication

The companies act (Section 135) of India 2013; has mandated that the companies should spend at least 2 percent of their corporate profit for CSR activities. ETFs enabled to divert more funds from domestic households to the corporate sector. Accordingly the corporate profit will get heightened; in turn the society will be benefitted in the form of more CSR programs.

CONCLUSION

The purpose of the study was to observe the abnormal return trend attributed to gold-based ETFs traded in India and to analyze trading strategies adopted by the market participants during the COVID crisis. The trading strategies are further classified into contrarian and momentum strategies based on the concept put forth by Jegadeesh and Titman [6]. This study confirms that the pandemic news was well received by the Indian investors and they have acted rationally. The Indian gold market has maintained momentum and gold-based ETFs have generated a positive risk adjusted return over the broad market index. By opposing the argument of [1], this research reiterates that gold is being considered a safe haven by the Indian investors for a long time horizon. The scope of this research is limited only to gold ETFs as the data pertaining to physical gold trading is not accessible in a standard form. This limitation itself opens an avenue for future researchers in exploring the trading strategies adopted by the investors on physical exchange of gold during the pandemic settings.

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