

EXPLORING THE GROWTH TRAJECTORY AND TRENDS OF GLOBAL AND INDIAN EQUITY ETFs

Author *

Dr. BODA RENUKA

M. Com, M. Phil., Ph. D.

Assistant. Professor.

ABSTRACT

Purpose: The study examines the growth trends and interrelations of Global Equity ETFs and Indian ETFs from 2012-13 to 2022-23, focusing on the independence of the two markets and the influence of global market dynamics on Indian ETFs' performance.

Methodology: The research uses secondary data and applies quantitative methods, including correlation analysis, regression modeling, and time-series analysis, to explore the relationship between the two markets.

Findings: The study identifies a significant long-term relationship between Global Equity ETFs and Indian ETFs, as global ETFs positively impact the performance of Indian ETFs. The results highlight the influence of global market movements on Indian ETFs while reflecting stability and recovery patterns in both markets.

Conclusions: The findings provide valuable insights for investors and policymakers, emphasizing the role of global trends in shaping Indian ETF performance and aiding strategic decision-making in the Indian financial market.

INTRODUCTION

Exchange-Traded Funds (ETFs) have emerged as a dynamic investment vehicle, offering the advantages of diversification, liquidity, and cost efficiency. Over the past two decades, ETFs have witnessed exponential growth globally, fueled by increasing investor demand for transparent and flexible investment products. Among the myriad categories of ETFs, equity ETFs hold a prominent position as they track the performance of specific indices and sectors, enabling investors to gain exposure to various markets with relative ease.

In the global context, Equity ETFs have revolutionized the investment landscape by providing access to diverse geographies, including emerging and developed markets. Their appeal lies in their ability to mirror broader market trends while offering lower expense ratios compared to traditional mutual funds. Concurrently, the Indian ETF market has evolved significantly, driven by increasing retail participation, government-backed initiatives such as Bharat Bond ETFs, and growing awareness of passive investment strategies.

This study seeks to explore the trajectory and trends of Global Equity ETFs and Indian ETFs, emphasizing their historical performance and the factors influencing their growth. The analysis is particularly relevant as ETFs continue to play a pivotal role in portfolio diversification strategies amid volatile global economic conditions. By examining growth patterns, market dynamics, and performance indicators, this study aims to provide a comprehensive understanding of how Global and Indian Equity ETFs have evolved over time. The findings will offer insights into the key drivers shaping their development and their implications for investors and market stakeholders alike.

Economic and Market Integration: Impact on ETFs: The performance and trends of Exchange-Traded Funds (ETFs) are deeply influenced by the interconnectedness of global financial markets. As financial systems become increasingly integrated, the dynamics of one market can ripple across others, shaping the trajectory of ETFs globally and locally. This phenomenon is particularly evident in the relationship between Global Equity ETFs and Indian ETFs.

REVIEW OF LITERATURE

Wen-Chih Tsai, An-Pin Chen (2008) investigate the evolution of the Extended Classification System (XCS) for global asset allocation using country-specific ETFs. The authors simulate global asset allocation strategies using XCS, focusing on country-specific ETFs. The study shows that XCS adapts well to unpredictable market fluctuations and supports international diversification through country-specific ETFs. XCS offers a low-cost, efficient method for global asset allocation, demonstrating the advantages of diversification via country-specific ETFs.

Pankaj Agrawal et al. (2014) examine the liquidity migration of ETFs in the U.S. market over time. A four-factor liquidity scoring algorithm is applied to assess the liquidity of ETFs,

considering factors such as bid-ask spreads and market capitalization. The study reveals that liquidity migration, influenced by factors like trading volume and expense ratios, is significant in shaping the liquidity of ETFs in the U.S. market. The paper highlights the growing ETF market and the complexities of liquidity migration, suggesting implications for market participants and regulators.

Deepa, R. Umarani (2014) examine the growth and trends of ETFs in the Indian market, focusing on key ETFs like NIFTY BEES and SPICE. The study reviews ETF market dynamics in India, considering regulatory, structural, and adoption trends from 2007 to 2011. The article highlights the rise of Gold ETFs and the decline in activity of other ETFs, emphasizing the regulatory challenges and differences between Indian and global ETF markets. The paper provides insights into the evolving ETF landscape in India, underlining the role of regulatory and structural factors in shaping market trends.

Leon S. Robertson (2015) evaluates the optimal ETF trading limits for maximizing returns using simple moving averages (SMA). The author employs a split-half research design, comparing the effectiveness of SMA against exponential moving averages (EMA) in ETF trading. The research shows that simple moving averages provide more reliable results for older ETFs, particularly in maximizing returns. The study demonstrates that using moving averages based on unemployment claims can enhance ETF trading strategies, offering superior returns over traditional approaches.

Adam Marszk (2016) assesses the structural changes in Exchange Traded Products (ETPs), particularly ETFs, and their impact on global financial systems. The study examines the transition from traditional physical ETFs to more complex synthetic ETFs and their associated risks. The research reveals that the rise of synthetic ETFs poses new risks, particularly in terms of market transparency and potential instability. The study concludes that the increasing complexity of ETFs may have implications for global financial systems, with a particular focus on the potential risks posed by synthetic ETPs in the Polish market.

Amit Tewari (2020) investigates the movement of India's Nifty 50 index to understand ETF and structured product trends. Seasonal Auto Regressive Integrated Moving Average (SARIMA) models are applied to forecast the Nifty 50 index, evaluating various parameter combinations. The study identifies the optimal forecasting models based on AIC criteria, providing insights into Nifty 50's role as a benchmark for ETF-based investments. The research

demonstrates the potential of SARIMA models in predicting market trends, highlighting Nifty 50's importance in the Indian ETF market.

Xiaokang Zhao et al. (2022) investigate the effect of ETF activities on the U.S. and A-share markets, focusing on stock price volatility. The study analyzes the influence of ETFs on market volatility, distinguishing between idiosyncratic and systemic volatility. It finds that while ETFs reduce idiosyncratic volatility, they increase systemic volatility. The research uncovers the mechanisms by which ETFs integrate information faster and mitigate noise in market signals. ETFs play a significant role in shaping volatility dynamics in diverse market environments, offering insights into their broader impact on stock price fluctuations.

Inani, Vaishali Pagaria et al. (2023) analyze the literature on Exchange Traded Funds (ETFs) using bibliometric and structural topic modeling techniques. A comprehensive survey of 964 journal articles indexed in Scopus between 2003 and 2023 is conducted to identify thematic clusters and trends in ETF research. The study uncovers five key thematic clusters: ETF as an investment vehicle, trading opportunities, volatility spillover, liquidity, and ETF returns forecasting. The research provides an overview of the global ETF research landscape, offering insights into publication trends and identifying areas for future research.

Kuksov A. S. (2023) investigates the influence of ESG (Environmental, Social, and Governance) investments on the Russian ETF market. A review of national regulatory policies and market developments related to ESG investing is conducted, with a focus on the Russian market. The research identifies growing interest in ESG investments driven by national regulations, highlighting how these policies are reshaping the Russian ETF market. The study provides valuable insights into the growth trajectory of ESG-focused ETFs in Russia, offering implications for future market developments.

Waleed Mahmoud Soliman et al. (2023) predict ETF market trends by integrating economic indicators from various ETF markets using the Deep AR model. The authors apply probabilistic autoregressive recurrent networks (Deep AR) to US indicators and regional factors, comparing its performance with LSTM and GRU models. The study demonstrates that the Deep AR model improves prediction accuracy over LSTM and GRU, providing superior trend forecasts for the ETF market. A web platform is developed for real-time ETF trend predictions, facilitating more informed decision-making for investors and market analysts.

Horta N et al. (2023) explore the interrelationship between the Energy Fuels Index, S&P Global Clean Energy Index, iShares Global Clean Energy ETF, iShares Global Energy (SWX) ETF, crude oil, gold, and natural gas, particularly post-2020 and 2022. The study conducts a statistical analysis of co-movements among these financial instruments, focusing on the period after 2020. It identifies increased co-movements between these markets, indicating reduced portfolio diversification opportunities. The study highlights how clean energy markets are impacting both gold and traditional energy sectors. These findings provide crucial insights for investors, suggesting that the interconnections between clean energy and traditional energy markets are growing, which may influence portfolio strategies and diversification.

Elroi Hadad et al. (2024) analyze the risk-adjusted performance of commodity ETFs across different market conditions from December 2004 to June 2022. A risk-adjusted performance analysis is conducted on commodity ETFs, with a focus on market conditions such as the COVID-19 crisis. The research finds that commodity ETFs generally underperform U.S. stocks, except during periods of market turbulence like the COVID-19 crisis. The study highlights the influence of global commodity price shifts and disposable income on commodity ETF returns, emphasizing the risks involved in commodity-based investing.

NEED FOR THE STUDY

The need for the study arises from the increasing interconnectedness of global and Indian financial markets, particularly in the context of Exchange-Traded Funds (ETFs). While global ETF trends have been widely studied, there is limited research specifically examining how these trends influence the growth, performance, and dynamics of the Indian ETF market. As global markets continue to affect domestic financial systems, understanding the long-term relationship between global and Indian Equity ETFs becomes crucial for investors, policymakers, and market participants. The study seeks to address the gap by analyzing the impact of global equity ETFs on the Indian ETF market, offering valuable insights that will help stakeholders navigate the evolving market aspect, optimize investment strategies, and develop policies that promote a more resilient and diversified ETF ecosystem in India.

RESEARCH GAP

While extensive research has been conducted on the broader impact of global ETF trends on international markets, there is a significant gap in understanding how these global trends

specifically influence the Indian ETF market. Although some studies have examined the general dynamics of ETFs in emerging markets, few have delved into the intricate transmission mechanisms through which global ETF movements shape the behavior of investors, market liquidity, and the development of ETF products within India's distinct financial and regulatory landscape. As the Indian ETF market becomes increasingly integrated with global markets, it is essential to understand the unique factors that govern this interaction. This research aims to fill this gap by exploring how global ETF trends affect the Indian ETF market, providing valuable insights for investors, policymakers, and financial institutions seeking to navigate the evolving market environment.

OBJECTIVES OF THE STUDY

1. To examine the long-term relationship between Global Equity ETFs and Indian ETFs.
2. To evaluate the impact of Global Equity ETFs on the performance and dynamics of Indian ETFs.

HYPOTHESES OF THE STUDY

H₀: There is no significant long-term relationship between Global Equity ETFs and Indian ETFs.

H₀: There is no significant Impact of Global Equity ETFs on the performance and dynamics of Indian ETFs.

SCOPE OF THE STUDY

The study explores the relationship between global equity market ETFs and the growth of Indian ETFs, focusing on their interdependence and the impact of global ETF trends on the development of the Indian ETF market. Covering the period from 2012-13 to 2022-23, the research utilizes secondary data to identify trends, patterns, and correlations between the performance of global and Indian ETFs. The study aims not only to examine the impact of global ETF movements on the Indian market but also to uncover the underlying mechanisms and factors that drive this relationship. By offering a detailed analysis of how global market dynamics influence Indian ETFs, the findings are expected to provide valuable insights for investors, policymakers, and market participants seeking to better understand the complexities of the Indian ETF market within the global financial context.

RESEARCH METHODOLOGY

The study employs a quantitative research design to address its three key objectives. The research relies on secondary data sourced from credible and relevant databases, including financial reports, market indices, and ETF performance records. Statistical tools and quantitative analysis methods, such as correlation analysis, regression modeling, and time-series analysis, will be utilized to examine the relationships and trends between global and Indian equity ETFs. By systematically analyzing the data, the study aims to uncover patterns, assess the long-term impact, and evaluate the dynamics that drive the performance of Indian ETFs in response to global market trends. The use of secondary data ensures a comprehensive analysis while maintaining efficiency, allowing the study to draw reliable and robust conclusions that contribute valuable insights to the field.

STATISTICAL TOOL

ADF (Augmented Dickey-Fuller) Test: The ADF test in EViews will assess the stationarity of the time series data for global and Indian ETFs, ensuring that the data is suitable for further analysis by identifying non-stationary behavior.

Trend Analysis: Trend analysis will identify performance patterns and growth trajectories of both global and Indian ETFs over time. Using graphical methods and statistical techniques, this analysis will highlight key trends and market behaviors influencing ETF growth.

VECM (Vector Error Correction Model): VECM in EViews will examine the long-term and short-term relationships between global and Indian ETFs, detecting cointegration and how quickly the Indian ETF market adjusts to changes in global market trends.

OLS (Ordinary Least Squares) Regression: OLS regression will quantify the impact of global ETFs on the growth of Indian ETFs. This method will determine the magnitude and significance of global ETF changes on Indian ETF dynamics.

TABULATION OF DATA ANALYSIS

Objective-1: To examine the long-term relationship between Global Equity ETFs and Indian ETFs.

The objective involves employing Vector Error Correction Model (VECM) analysis to investigate the long-term relationship between Global Equity ETF and Indian ETFs. VECM allows for the examination of how deviations from equilibrium in one market affect adjustments in the other, thereby exploring whether there exists a stable and significant relationship between these ETFs over time.

H0: There is no significant long-term relationship between Global Equity ETFs and Indian ETFs.

H1: There is a significant long-term relationship between Global Equity ETFs and Indian ETFs.

Table -1: VAR lag order selection

VAR lag order selection criteria						
Endogenous variables: INDIAN ETF GLOBAL ETF						
Exogenous variables: C						
Sample: 2014M04 2024M03						
Included observations: 112						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-774.4845	NA	3604.871	13.86579	13.91434	13.88549
1	-452.8449	626.0485	12.40290	8.193659	8.339293	8.252747
2	-431.3107	41.14564*	9.069466*	7.880549*	8.123272*	7.979029*
3	-430.9870	0.606995	9.686843	7.946196	8.286009	8.084069
4	-430.4923	0.909932	10.31636	8.008791	8.445692	8.186056
5	-429.2752	2.195143	10.84823	8.058485	8.592476	8.275142
6	-427.0202	3.986405	11.20091	8.089647	8.720727	8.345696
7	-423.1118	6.770030	11.23198	8.091282	8.819451	8.386723
8	-420.8309	3.869341	11.59941	8.121980	8.947239	8.456814

Source: Secondary Data

The VAR lag order selection criteria table provides insights into the optimal lag length for analyzing the long-term relationship between Global Equity ETFs and Indian ETFs. The table shows that the lowest values for key statistical criteria, such as the AIC (Akaike Information Criterion), SC (Schwarz Criterion), and HQ (Hannan-Quinn Criterion), occur at a lag of 2. Specifically, the AIC, SC, and HQ values are minimized at lag 2, with AIC at 7.8805, SC at

8.1233, and HQ at 7.9790, indicating that a lag of 2 is the most appropriate for capturing the long-term relationship between the two variables. In contrast, higher lags (3-8) show relatively higher values for these criteria, suggesting that including more lags would lead to less efficient models. Therefore, the findings suggest that a 2-lag specification provides the best fit for examining the relationship between Global Equity ETFs and Indian ETFs in this context.

Table – 2: Vector Error Correction Estimates

Vector Error Correction Estimates		
Sample (adjusted): 2014M07 2024M03		
Included observations: 117 after adjustments		
Cointegrating Eq:	CointEq1	
INDIAN_ETF(-1)	1.000000	
GLOBAL_ETF(-1)	1.619614	
	(0.47130)	
	[3.43649]	
C	-82.08582	
Error Correction:	D(INDIAN_ETF)	D(GLOBAL_ETF)
CointEq1	-0.031748	0.031948
	(0.00977)	(0.01169)
	[-3.25105]	[2.73262]
D(INDIAN_ETF(-1))	1.11292	1.15616
	(0.19289)	(0.31120)
	[5.76971]	[3.71516]
D(INDIAN_ETF(-2))	-0.023958	0.001417
	(0.07874)	(0.09426)
	[-0.30428]	[0.01503]

D(GLOBAL_ETF(-1))	0.678880	0.075139
	(0.09037)	(0.10819)
	[7.51194]	[0.69448]
D(GLOBAL_ETF(-2))	0.086473	0.064587
	(0.10899)	(0.13048)
	[0.79340]	[0.49499]
C	-0.140056	0.423593
	(0.15650)	(0.18736)
	[-0.89491]	[2.26084]
R-squared	0.648200	0.187553
Adj. R-squared	0.618840	0.150956
Sum sq. resid	266.0283	381.2848
S.E. equation	1.548112	1.853375
F-statistic	11.85955	5.124856
Log likelihood	-214.0694	-235.1261
Akaike AIC	3.761870	4.121814
Schwarz SC	3.903520	4.263464
Mean dependent	0.195128	0.456325
S.D. dependent	1.875763	2.011399
Determinant resid covariance (dof adj.)		8.021987
Determinant resid covariance		7.220315
Log likelihood		-447.6802
Akaike information criterion		7.891969
Schwarz criterion		8.222486
Number of coefficients		14

Source: Secondary Data

The Vector Error Correction Model (VECM) results indicate a significant long-term relationship between Global Equity ETFs and Indian ETFs. The coefficient of Indian Etf (1) is 0.1562, with a t-statistic of 3.7152, indicating that Indian ETFs positively influence Global

Equity ETFs in the long run. The positive coefficient implies that changes in the performance of Indian ETFs have a constructive impact on the adjustments in Global ETFs towards equilibrium. The statistical significance of the relationship, reflected by the high t-statistic, indicates that deviations from equilibrium are corrected over time, confirming the presence of cointegration between these two markets. This finding supports the rejection of the null hypothesis, demonstrating a meaningful long-term interdependence between Indian and Global ETFs, likely driven by increasing market integration and shared global investment dynamics.

SYSTEM EQUATION

$$D(\text{INDIAN_ETF}) = C(1)*(\text{INDIAN_ETF}(-1) + 1.61961371158*\text{GLOBAL_ETF}(-1) - 82.0858221488) + C(2)*D(\text{INDIAN_ETF}(-1)) + C(3)*D(\text{GLOBAL_ETF}(-1)) + C(4)*D(\text{INDIAN_ETF}(-2)) + C(5)*D(\text{GLOBAL_ETF}(-2)) + C(6)$$

C(1)= c(3)= c(5)=0

Wald Test

Wald Test:			
System: %system			
Test Statistic	Value	df	Probability
Chi-square	57.91561	3	0.0000

Source: Secondary Data

The Wald test results provide robust evidence of a significant long-run relationship between Global Equity ETFs and Indian ETFs. With a Chi-square test statistic of 57.916, 3 degrees of freedom, and a probability value of 0.0000, the null hypothesis of no long-run relationship is strongly rejected at any conventional level of significance. These results confirm that the coefficients of the variables in the system are jointly significant, indicating that Global Equity ETFs and Indian ETFs are intricately linked over the long term. This underscores the critical influence of global trends on the Indian ETF market, offering valuable insights for investors and policymakers navigating these interconnected markets.

Objective-2: To Assess the impact of Global Equity ETFs on the performance and dynamics of Indian ETFs.

The objective focuses on using Ordinary Least Squares (OLS) regression analysis to quantify the impact of Global ETF on the Indian ETF. By identifying significant coefficients and their economic significance, the study aims to elucidate how changes or movements in the Global ETF influence corresponding movements in the Indian ETF.

H0: There is no significant Impact of Global ETF on the Indian ETF

H1: There is a significant Impact of Global ETF on the Indian ETF

The study applied the OLS to test the framed above hypothesis with the support of secondary data.

Impact of global ETF and Indian ETF

Dependent Variable: INDIAN ETF				
Method: Least Squares				
Sample: 2014M04 2024M03				
Included observations: 120				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.10534	1.226342	19.65629	0.0000
GLOBAL ETF	1.391631	0.239146	5.819169	0.0000
R-squared	0.658932	Mean dependent var		35.50167
Adjusted R-squared	0.654347	S.D. dependent var		6.735435
S.E. of regression	4.975355	Akaike info criterion		6.063397
Sum squared resid	2920.991	Schwarz criterion		6.109855
Log likelihood	-361.8038	Hannan-Quinn criter.		6.082264
F-statistic	100.0872	Durbin-Watson stat		0.144130
Prob(F-statistic)	0.000000			

The table results from the Ordinary Least Squares (OLS) regression analysis indicate a significant impact of Global Equity ETFs on the performance and dynamics of Indian ETFs. The coefficient for the Global Equity ETF variable is 1.3916, with a standard error of 0.2391 and a highly significant t-statistic of 5.8192 (0.0000). This indicates that for every unit increase in the value of Global Equity ETFs, Indian ETFs are expected to increase by approximately 1.39 units, holding other factors constant. The low p-value strongly rejects the null hypothesis,

confirming a statistically significant relationship between the two variables. However, the Durbin-Watson statistic of 0.1441 indicates potential autocorrelation in the residuals, which could affect the reliability of the results. The study results underscore the strong influence of global ETF trends on the Indian ETF market, reflecting interconnected market dynamics.

FINDINGS AND CONCLUSIONS OF THE STUDY

The study underscores the significant influence of global market movements on Indian ETFs, highlighting their stability and recovery trends over the years. A long-term relationship between Global Equity ETFs and Indian ETFs is evident, as reflected by the positive coefficient (0.1562) of Indian ETFs in the VECM analysis. Moreover, the findings reveal a substantial positive impact of Global Equity ETFs on Indian ETFs, with a coefficient of 1.3916, suggesting that a unit increase in Global Equity ETFs leads to a 1.39-unit rise in Indian ETFs. This demonstrates the interconnectedness of global and Indian markets, emphasizing the critical role of global trends in shaping Indian ETF performance.

The study stated that there is a significant relationship between the performance of Global Equity ETFs and Indian ETFs, with global market dynamics playing a crucial role in shaping the growth of Indian ETFs. Furthermore, the findings from the Vector Error Correction Model (VECM) and Ordinary Least Squares (OLS) regression analysis confirm a meaningful long-term relationship between the two markets. Global Equity ETFs not only influence Indian ETFs positively but also play a vital role in driving the performance of the Indian market. The study thus highlights the interconnectedness of global and Indian equity markets and provides valuable insights into how global financial trends impact the growth and development of Indian ETFs.

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