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Exchange Traded Funds (ETFs): An Effective Alternative to Traditional Mutual Funds

Swati Garg
Research Scholar, Department of Commerce, Delhi School of Economics, University of Delhi, India
Prerna Sehgal
Alumni, Institute of Chartered Accountants of India

Abstract:
In the dynamic financial world where investors are often rethinking asset allocation and reevaluating the merits of various investment products, Exchange Traded Funds (ETFs) have opened up a whole new range of investment opportunities and appear to be a creative solution to many investing queries. An alternative to index mutual funds, ETFs offer investors a low cost, tax efficient way to track their favorite market segments. This paper attempts to provide a conceptual framework of ETFs, so as to build awareness among investors about this relatively new financial product available to them.

Key words: *Exchange Traded Funds (ETFs), Index Funds*

1. Introduction

In the past few decades many performance evaluation studies indicated that actively managed mutual funds, which seek to obtain excess returns than the market by actively forecasting returns on individual stocks, do not actually obtain statistically significant excess returns (Jensen, 1968; Grinblatt and Titman, 1989; Malkiel, 1995; Gruber, 1996). This was consistent with the 'Efficient Market Hypothesis' which suggests that due to the availability of all kinds of information, obtaining excess returns should be difficult in a competitive market. These researches suggested a superior investment strategy: the index fund. Instead of actively engaging in stock picking, an index fund passively replicates the risks and returns of an underlying market index by investing in the securities constituting the index in the same weightage as represented in the index.

Since the first index fund launched in early 1970s, investors all over the world have discovered that there are substantial benefits from utilizing index funds as an alternative to actively managed funds. Some such benefits of indexing includes lower management expense ratio (due to passive management of fund), lower turnover and its related expenses due to buy and hold nature of most index funds and tax efficiency when compared to actively managed funds.

Like any other mutual fund, index funds may be structured as either open-ended funds or close-ended funds. Open-ended funds, as the name suggests, are open for subscription and redemption for all the investors throughout the year. However, one of the limitations of such funds is that they are priced only once a day, after the close of business. Since all the trades in such funds during the business day are executed at the closing Net Asset Value (NAV), investors are unable to react expeditiously to dramatic changes in a market during the business day.

Close-ended funds on the other hand, are open for subscription only once, and can be redeemed only on the fixed date of redemption. Moreover, in order to provide liquidity to such funds, these are listed on stock exchanges (like corporate security) and traded throughout the business day on real time basis. Though the continuous trading of such funds overcome the pricing limitation of open-ended funds, but at the same time also raises the issue of deviation between the trading price and NAV of such funds. Since the overall corpus of close-ended funds remain constant, the daily demand and supply forces often leads to significant premiums or discounts on such funds in the secondary market.

Recognizing both the appeals of open-ended index funds (continuous creation and redemption of fund units) as well as of close-ended index funds (continuous trading on exchange like a stock), an innovative financial product named Exchange Traded Fund (ETF) was designed in the early 1990s, which combines the beneficial features of both these types of funds. The present paper aims at providing a descriptive and conceptual framework of this relatively new financial product available to the investors.

2. Exchange Traded Funds - Defined

Exchange Traded Funds, popularly known as ETFs, are *hybrid investment instruments, which combine the main characteristics of open-ended index funds and ordinary corporate stocks*. Like index fund, ETFs contain basket of securities designed to track specific indices. And like stocks, ETFs can be bought and sold on a stock exchange during trading hours on a real time basis, can be short sold, bought on margin and can be purchased in as little as one share.

Thus, ETFs can be referred to as open-ended index funds with the tradability of stocks. They enable investors to trade 'the market' with a single investment as easily as if they were buying an individual stock. The main features of index mutual funds and stock combined by an ETF are summarized in Table 1.

Attribute	Index mutual fund	Individual stock	ETF
Diversification of investment	Yes	No	Yes
Priced continuously throughout the day	No	Yes	Yes
Can be short sold, bought on margin or limit order	No	Yes	Yes
Tracks an index	Yes	No	Yes
Tax efficient as turnover is low	Possible	No	Yes
Low expense ratio	Yes	Not a factor	Yes

Table 1: ETF - A Combination of Index Mutual Fund and Individual Stock

2.1. Types of ETFs

On the basis of their underlying benchmark indices, ETFs can be broadly classified as follows:

- Equity Index ETF: Such an ETF represent ownership of a basket of shares, which attempts to replicate closely the performance and risk levels of a specific equity index. Such index could be a broad based market index like nifty, a sector specific index like bank index or an index based on the securities of some other country or region. Most ETFs today fall in this category.
- Commodity ETFs: Commodity ETFs enables investors to gain exposure to a variety of commodities such as gold, silver, oil or broad based commodities index. Among the first commodity ETFs were gold ETFs, which have been offered in a number of countries and are gaining popularity in India as well. These gold ETFs attempt to replicate the returns of gold without requiring the physical trade of gold on the part of investors. Broad based commodity index include commodities from sectors as diverse as energy, metals, agriculture and livestock.
- Other ETFs: With the growth of the ETF market, many new categories of ETFs are coming into existence. Some of these include fixed income ETFs, currency ETFs, real-estate ETFs, actively managed ETFs, leveraged ETF etc.

3. ETF Trading Mechanism

The ETF trading process is characterized by a dual structure, with a primary market open to institutional investors for the creation and redemption of ETF shares in lots directly from the fund, and a secondary market where ETF shares can be traded with no limitation on order size. This structure has been illustrated in figure 1.

In the primary market, only Authorized Participants (APs), typically large institutional investors who have an agreement with the fund sponsor, are allowed to create new shares, in blocks of specified minimal amounts called creation units. Creation units vary in size from one fund to another, ranging from 25,000 up to 3,00,000 ETF shares. The creation of these new shares is done "in-kind" by requiring the AP to deposit a portfolio of shares that closely approximates the proportion of the stocks in the underlying index at that time, together with a specified amount of cash component to make up for the difference between the applicable NAV of the fund and the market value of the portfolio deposits. A similar "in-kind" process is followed in case of redemption of outstanding ETF shares whereby the redeemers (APs) are offered the portfolio of stocks that make up the underlying index plus a cash amount in return for creation units.

The number of outstanding shares tradable on the secondary market varies over time according to creation and redemption operations carried out on the primary market. Both institutional and individual investors can buy and sell shares in the secondary market like ordinary stocks at any time during the trading day. As such, there is no fee payable for secondary market purchases or sales, but secondary market transactions are subject to regular brokerage commissions.

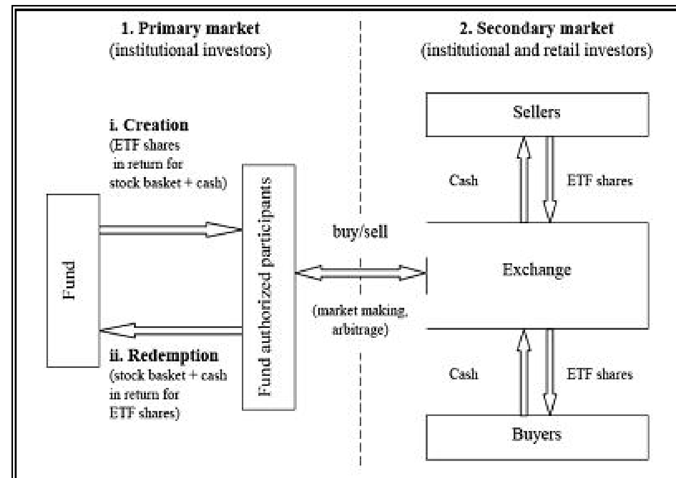

Figure 1: Primary and Secondary ETF Market Structure
Source: Deville L (2008)

Since an ETF may be negotiated on two markets, it has two prices: the NAV of the shares and their market price. The first price is the value per share of the funds holdings computed at the end of each trading day. The second depends on the supply and demand for shares on the exchange. If selling or buying pressure is high, these two prices may deviate one from the other. However, the possibility of "in-kind" creation and redemption ensures that departures are not too large. For instance, if the value of the underlying index is higher than the price of the ETF, the authorized participants may redeem the units to the Sponsor in exchange for the higher priced securities. Conversely, if the price of the underlying securities is lower than the ETF, the APs may create ETF units by depositing the lower-priced securities. This arbitrage mechanism eliminates the problem associated with closed-end mutual funds viz. the premium or discount to the NAV.

4. Benefits and Costs of ETFs
As discussed earlier, ETFs combine the benefits of an index mutual fund and a corporate security with the help of a unique trading mechanism. Such an innovative structure and trading mechanism of ETFs bestows a number of benefits and inflicts certain costs on such funds.

4.1. Positive Attributes of ETFs

4.1.1. Passive Management and Transparency of Portfolio
The purpose of an ETF is to match a particular market index, leading to a fund management style known as passive management. Essentially, passive management means the fund manager makes only minor, periodic adjustments to keep the fund in line with its index, thereby mitigating the element of "managerial risk" that can make choosing the right fund difficult. Rather than investing in a fund manager, an investor buying shares of an ETF would thus be harnessing the power of the market itself.
Moreover, the passive nature of the funds also facilitates transparency of portfolio since there is little desire on the part of fund manager to maintain secrecy over his/her investment strategy. Indeed, by enabling investors to know the underlying portfolio combination on a daily basis, ETFs are even more transparent than the index funds which disclose such portfolio composition on a monthly basis.

4.1.2. Exchange Trading
Perhaps the most immediately striking characteristic of ETFs is their eponymous innovation: the ability to trade like a typical security throughout the business day at real-time prices on a stock exchange. Prior to the advent of ETFs, an investor seeking broad market or sector diversification via a single investment instrument would be limited to mutual funds, which are priced just once a day. Investors in mutual funds thus, have no way of reacting to positive or negative news during the business day. With ETFs, however, investors can *react immediately to positive or negative news* by purchasing or selling ETF shares as soon as they receive the information. A savvy and responsive ETF investor may thus be able to profit from rises or to avoid declines in the market through swift ETF transactions.

4.1.3. Flexibility
ETF shares resemble stocks and provide flexibility to investors in other ways as well. Investors can, for example, place market, stop, or limit orders on ETF shares, thereby exerting a good deal of precise control over the purchases and dispositions of the holdings in their portfolios. In the same way, investors may also sell ETF shares short in order to bet against the movements of broad market indices or to hedge against the performance of other holdings in their portfolios. Similarly, investors may purchase

ETF shares on margin and buy or sell options on ETF shares. Such flexibility in trading is however missing in case of mutual funds.

4.1.4. Lower Costs

Because of the nature of their structure and management, ETFs generally charge low fees and expense ratios, which further endear them to investors. ETFs that passively track broad market indices have relatively little need for management by human portfolio managers. Accordingly, ETFs suffer very *few of the transaction costs associated with the turnover of portfolio securities*. Even when compared to passively managed index mutual funds, ETFs experience relatively less turnover of portfolio securities due to its unique in-kind creation and redemption process. This in-kind process also saves ETFs from the *cash-drag* experienced by index fund that need to keep a certain proportion of assets un-invested to meet redemption needs. Moreover, being exchange traded products, ETFs incurs lower expenses in terms of shareholder's accounting, marketing and distribution as compared with many traditional mutual funds.

4.1.5. Tax Advantage

Passive management is also an advantage in terms of tax efficiency. ETFs are less likely than actively managed portfolios to experience the trading of securities, which can create potentially high capital gains distributions. Fewer trades into and out of the trust mean fewer taxable distributions, and a more efficient overall return on investment. Moreover, since in-kind redemption is not considered a taxable event, no capital gain tax accrues at the time of redemption.

4.1.6. Suitable for Broad Class of Investors

ETFs are suitable for a broad class of investors; be it a short term investor looking to cash in on intraday volatility, a long term investor who wants to be insulated from short term trading activities of other investors, a retail investor looking for low initial investment, or a large investor looking for low cost, liquidity and all the benefits of index tracking.

4.2. Limitations of ETFs

The unique structure of ETFs provides an edge over its mutual fund counterparts in many aspects, as discussed. However, like any other financial innovation, ETFs too have its share of criticism. These are discussed as follows.

4.2.1. Investor Transaction Cost

Although, the most striking feature of ETFs of being traded at stock exchanges has many advantages, the fact that retail investors must buy and sell ETFs on exchanges means that such investors will have to pay *brokerage fee* and also bear the burden of absorbing costs that results from *bid and ask spread* - that is, the gap between the price buyers are willing to pay and sellers are willing to accept. These trading costs may be amortized into relative insignificance if an investment is held for many years. However, for more active traders, or for the investors following a saving strategy that involves purchasing a relatively small amount of investment at regular intervals, such ETF transaction cost may work out to be high enough to eat up much of their expense advantage over mutual funds.

4.2.2. Short-Term Speculations

Critics of ETFs argue that the flexible trading rules of these funds creates an environment that fosters a short-term trading mentality using indexed instruments that were designed for long term investment, and that investors use the trading features of ETFs to chase the hot funds or sectors, not to match the performance of an index.

4.2.3. Tracking Error

Perhaps the most fundamental shortcoming of an ETF or an index fund is its failure to perfectly replicate the returns of the index to which it is benchmarked. The extent to which the fund performance differs from the underlying benchmark index is assessed by quantifying the level of tracking error. These results from factors such as transaction costs, fund cash flows, dividends, benchmark volatility, corporate activity and index composition changes.

4.3. Comparison of ETFs and Index Mutual Funds

This section provides a comparison between the two alternative passive investment products namely ETFs and index funds by briefly summarizing the points of similarities and differences between them, as are apparent from the evaluation of ETFs in the previous subsections.

The most significant similarity of ETFs and index funds is the *passive character* of their investing strategy. Both of them track specific and known indexes; broad market, sector or international, offering a considerably great degree of *diversification* of portfolio non-systematic risk. Passive strategy reflects *low managerial costs* both for ETFs and index mutual funds, since the managers simply follow the index and they are not obliged to develop costly and complicated investing policies. However, ETFs are charged with transaction costs and broker house commissions, while the index funds are not. On the other side, index mutual funds are loaded with redemption and purchase fees, except if they are no load funds. They both bestow investors with easy and direct access to professional and specialized portfolio management, with a complete *transparency* of portfolio under management.

Besides the principal similarities of ETFs and index funds, basic differences among them also exist. The main difference is that ETFs are *purchased and shelled at the exchange* markets for prices, which closely fit their net asset value any time during the trading day. The initial and the secondary markets of ETFs are connected, giving the ability to institutional investors for *arbitrage*,

which reduce the premium or the discount of their net asset value. On the contrary, index funds can be purchased or redeemed only at the end of the day at the value of their net assets. Even though the close- ended fund structure facilitates continuous pricing, they are not characterized of arbitrage possibility. Also, index fund shares can be *purchased from the fund* directly by the shareholder or through a financial intermediary. In contrast, shares of an ETF cannot be purchased from, or redeemed by the issuing fund, except in large denominations by an authorized participant for an in-kind basket of securities. Moreover, ETFs, like stocks, are permitted to be shelled or purchased in margin or be short sold while index funds don't have this *flexibility*. Another significant disparity is the *tax efficiency* of ETFs, which derives of their in-kind creation and, especially, redemption mechanism. Index funds on the other hand are redeemed in money and this is a taxable event.
The following table further classifies index funds into close-ended and open-ended funds and summarizes the basic distinctions between these funds and the ETFs.

Parameter	Open Ended Fund	Closed Ended Fund	Exchange Traded Fund
Fund Size	Flexible	Fixed	Flexible
NAV	Daily	Daily	Real Time
Sale Price	At NAV plus load, if any	Significant Premium / Discount to NAV	Very close to actual NAV of Scheme
Availability	Fund itself	Through Exchange where listed	Through Exchange where listed / Fund itself.
Portfolio Disclosure	Monthly	Monthly	Daily/Real-time
Intra -Day Trading	Not possible	Expensive	Possible at low cost

Table 2: ETFs vs. Open-Ended Index Funds vs. Close-Ended Index Funds
Source: National Stock Exchange website

5. History and Development of ETFs

These innovative financial products were first introduced on the U.S. and Canadian exchanges in the early 90s. Officially, the Standard and Poor's Depository Receipts (SPDRs) is considered to be the first ETF which was created in 1993 in order to replicate the performance of S&P 500 Index. In the first several years, ETFs represented a small fraction of the assets under management in index funds. However the launching of an ETF named cubes (or QQQQ) in 1999 which follows the return of NASDAQ 100 Index was accompanied by a spectacular growth in trading volume, making ETFs the most actively traded equity securities on the U.S. stock exchanges. Since then, ETF markets have continued to grow, not only in the number and variety of products, but also in terms of assets and market value. Initially, they aimed at replicating broad-based stock indices; however, new ETFs extended their fields to sectors, international markets, fixed-income instruments and lately commodities. Today ETFs have proliferated across global financial markets both in terms of their number and the market value of total assets under management. By the end of May 2011, there were over 2,747 ETFs with assets worth US$ 1,446.6 billion, managed by 142 providers across 49 exchanges around the world. (ETF Landscape Industry Preview (Quarter 1, 2011), Blackrock, Bloomberg.)
In India, the first ETF was launched on National Stock Exchange in January 2002 by Benchmark Mutual Funds under the name Nifty Benchmark Exchange-traded Scheme (Nifty BeES) which tracks the S&P CNX Nifty index. Since then the ETF segment has grown slowly but steadily in India with a total of 31 ETFs being listed on Indian stock exchanges with net assets of Rs. 9641.83 crores as on 31st August 2011 as per SEBI estimates. Of these, the ETFs that are gaining popularity among the Indian investors recently are the gold ETFs which attempt to replicate the returns of gold without requiring the physical trade of gold on the part of investors.
Despite such a short history of ETFs in India, they have performed quite well over these years. As per the findings of a study conducted by Singh and Gupta (2011) to analyse the performance of ETFs in India, most of the ETFs have been able to achieve their stated objective of nearly replicating the underlying index composition. Though they have been found to experience statistically significant daily tracking errors, there is no significant under or out performance over long term investment horizon of half year or more. When compared against their index funds counterparts, ETFs were found to perform better than index funds in all respects, namely portfolio replication strategy, tracking ability and effectiveness over long term.
The study also analyzed the trading characteristics of ETFs and found significant daily deviations between the trading price and NAV of ETFs which persists over a number of days, presenting ample arbitrage opportunities for market makers. Also, Indian ETF market was found to be shallow in terms of the percentage of outstanding shares traded each day, which averaged less than 1% for most ETFs. This could possibly be due to lack of investor awareness regarding this relatively new financial product available to them and is likely to be one of the important factors explaining the significant pricing inefficiency in the Indian ETF market.
Thus, there is a need to build awareness among Indian investors regarding this innovative investment product, which as an alternative to index mutual funds offer investors a low cost, flexible and tax efficient way to track their favorite market segment.

6. Conclusion

One of the most dynamic, new investment vehicles in the market today are Exchange Traded Funds (ETFs), securities tradable on stock exchanges, which derive their value from a pre-defined basket of securities which are constituents of an index. They combine the features of open-ended and close-ended index mutual funds since new shares can be continuously created or redeemed, and outstanding shares can be traded throughout the day on stock exchanges. They represent a recent financial market innovation, and are instruments that can provide investors with diversification benefits through one investment arrangement, improved tax efficiency relative to active portfolio management, lower expenses, and the ability to transact such instruments on stock exchanges.

Essentially index funds that are listed and traded on exchange like stocks, ETFs have opened a whole new range of investment opportunities to both individual and institutional investors. In a world in which new financial products come and go at the blink of an eye, ETFs may well be considered the leading financial innovation of the last decade and have proved to be an effective alternative to traditional mutual funds.

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