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Risk and Return dynamics of ETF and Index Funds: A Review of Existing Literature

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Abstract

In Last 10 years, ETFs or Exchange Trade Funds have gained a lot of popularity in terms of a passive investment vehicle amongst the professional and retail investors due to low costs of transactions as well as high liquidity. The ETF industry has crossed $7 trillion mark in 2020. ETFs have completely revolutionized asset management segment by taking the share of the market from vehicles of traditional investment like index future and mutual fund. Lower transaction cost is one of the key advantage of ETFs over index funds. Index funds are type of mutual funds which replicate an index and have same stocks in their portfolio that are present in an index. Index funds are managed by fund managers and past studies have also evaluated performance of fund managers of index funds. This literature review helps in evaluating how ETFs & Index funds perform by analyzing the past academic studies.

Keywords: exchange trade fund, ETFs, mutual funds, stock market, index funds

Introduction

An Exchange traded Fund (ETF) is listed on stock exchange and are traded like stocks. ETFs provide investors passive way to stay invested in market. ETFs are considered to be one of the most innovative asset class of modern financial market. Notwithstanding proceeded with political and monetary disturbance, the ETF business has kept on encountering development and prevalence since the creation of the main ETF. Simultaneously, all new records in the quantity of ETFs and resources under administration were broken. Resources suggests ETFs or exchange traded funds are expected to continuously grow with increasing awareness among investors for this asset class. Toward the finish of 1997, there were just 2 ETFs previously. In India Nifty Bees was the first ETF launched in

the year 2002. Since then, there has been a steady growth in numbers. The Total Asset under management in ETFs crossed $7 trillion mark in 2020. The Figure 1 shows how in past few years ETF funds AUM has rapidly grown.

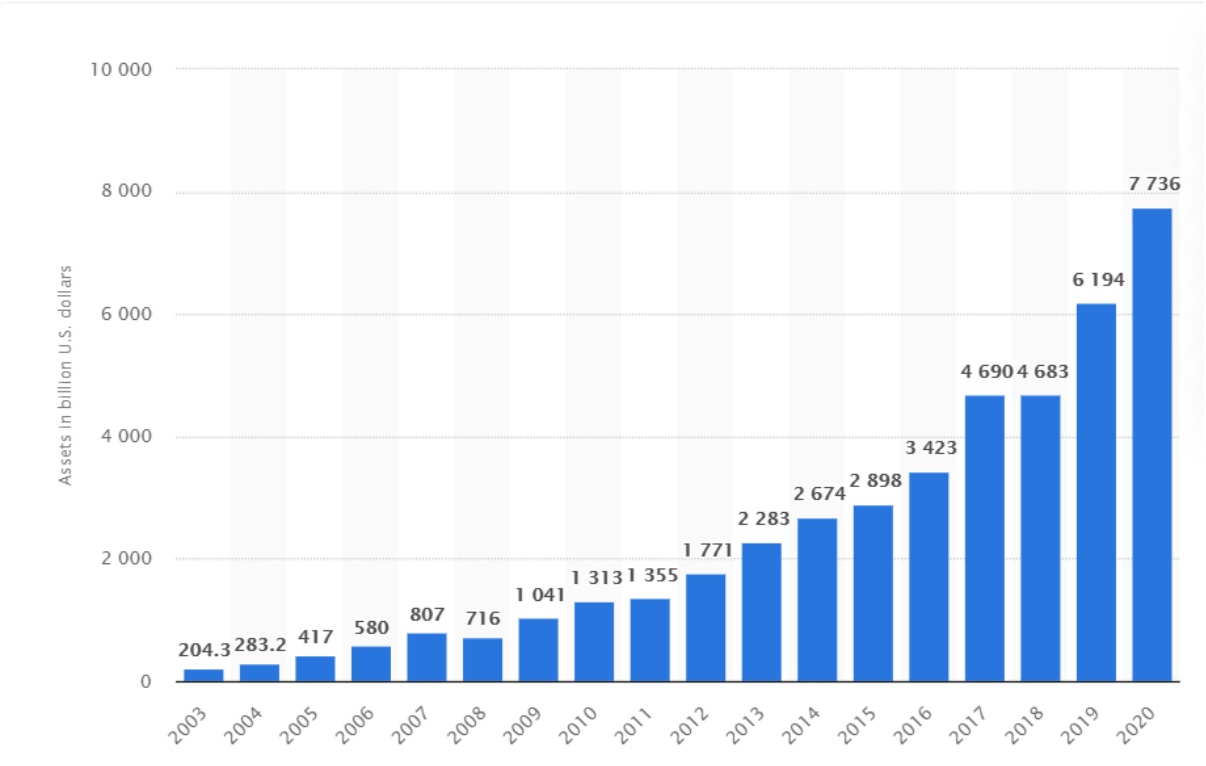

Figure 1. ETFs' AUM development, world, bln. USD

Source: Deutsche Bank ETF industry annual report 2020.

The development of the business isn't just reflected in scale, yet additionally in intricacy. There are currently an assortment of ETFs that can meet the diverse venture needs of worldwide financial backers and global ETFs. These ETFs are probably the most unpredictable. The global ETF was first launched in 1996 by Black Rock Inc., the world's biggest ETF supplier. The principle objective of worldwide ETFs is to offer helpful types of assistance for all financial backers, including retail and institutional financial backers. Its motivation is to contribute straightforwardly and acquire openness to chance to get the worldwide capital market file of your public value market. Beforehand, because of different limitations on worldwide capital streams, for example, trade rules, guidelines, capital business sectors, outrageous exchange expenses, and high data costs, it was hard for financial backers to put straightforwardly in some unfamiliar business sectors. For instance, global financial backers need QFII or Qualified Foreign Institutional Investor licenses to exchange on the Chinese financial exchange. It addresses around 75% of the complete market capital of in excess of 2,000 organizations. These boundaries advance the development of different speculation items to advance global venture. These items are ADR or American Depositary Receipts, common assets, CECF or shut public assets, global ETFs, and so forth These are the most mainstream ETFs. This is mostly in light of the fact that the extraordinary mixture framework has the attributes of shared assets and stocks simultaneously (**Bahadar, Gan and Nguyen, 2020)**.

An index fund is a special stock mutual fund whose investment portfolio includes all stocks that are included in the relevant market index in terms of value and structure. Simply put, an index fund can be said to be a perfect replica of a benchmark index. These types of funds combine the advantages of variable capital mutual funds and investment funds that are variable capital investment companies or investment trusts. Dividends earned on individual constituent shares are reinvested in portfolio shares respecting the share based on index weighting. Ensures that the fund and the benchmark perform similarly. It is precisely because of the so-called tracking error that it measures the deviation of the index performance. Deviations mainly comes from different brokerage fees and fund operating costs or operating expenses and other technical components.

One of the biggest assets of index fund is the passive management and as a result, low costs of operations. The sole operations that are conducted by the fund managers are the ones which need to preserve the right structure of portfolio. It means that they just buy securities that are added in the index or sell the ones that drop out. Index fund companies have a very small staff and as there's no need of analysing securities, there are no bills of analyst as well. The statistical and empirical data depicts that index fund actually outperforms the total number of actively managed funds. As their cost is low, the customers pay the minimum to no fee. Index fund is different from type of the index that they track. A lot of them copy or target the broad market and the indices of the market. Some of the funds mirror dynamics of the specific sector, international indices and industry.

The performance of the ETFs is assessed based on their risk and return characteristics. The measures of performance include average annual return and the excess returns that are measured by the alpha values. The risks are measured by the risk adjusted returns and standard deviation which is measured by Sharpe ratio (**Rompotis, 2015)**.

Literature Review

Since first international Exchange Trade Funds were introduced in the year 1996, a lot of studies have been endeavored for assessing the efficiency and performance of the international ETFs. These studies consider their intraday, daily and the overnight volatilities and returns, pricing efficiency and tracking efficiency. The volatilities and the returns of the international ETFs are mainly calculated regarding the trade price. Earlier studies compared the return volatilities and returns of the ETFs which are estimated with the help of NAV or the trade prices. It has been reported that mean NAV returns is higher as compared to closing the pricing return. Whereas, closing price returns variance is higher as compared to NAV returns variance (**Bano & Shanmugam, 2017)**.

To accurately understand the profitability and volatility behavior of international ETFs, a lot of research has been done. They compare and measure overnight and intraday returns and volatility of international ETFs. Some studies have also found that the average overnight performance is higher than the average daily performance. Average return on trade time has been found to be higher compared to no trade time. The average return variation of international ETFs during one day and intraday is approximately 62% and 77%, respectively (**Rao, Rama Krishna and Banana, 2016)**.

Compared with the volatility of intraday returns that track Asian ETF indexes, overnight returns are more volatile. The author attributes these findings to the disclosure of public information when trading for the underlying market. In addition, some authors have evaluated 15 stock ETFs and found

that compared with intraday returns, overnight fund returns have a higher mean, lower variance, and thick-tailed distribution. Experts emphasized the importance of other important performance indicators of the international ETF. They also claim that the pricing inefficiency among international ETFs is more persistent and is difficult to eliminate from the redemption and creation process (**Lettau & Madhavan, 2018)**.

Previous studies have shown that, compared to other ETFs, the deviation of the international ETF's transaction price from the NAV is significant, continuous and frequent. The price efficiencies of 16 international and 21 domestic ETFs are compared periodically and intraday. It can be seen that the premium for domestic ETFs is small and lasts only a few minutes, while the premium for international ETFs is relatively large, lasting about 3 hours or more for adjustment. The study examined the price efficiencies of 21 international and 7 domestic ETFs, and concluded that compared to domestic ETFs, international ETFs have higher transaction premiums. (**Kumara, 2016)**.

Some studies has also assessed the 17 US international ETFs and it was found that price of the ETFs are driven mainly by NAVs during synchronized trade hours. The tracking abilities are important performance metrics of international ETFs. The tracking abilities are the abilities of the international ETFs for replicating the performance of the foreign track indices. Various studies report tracking errors of the international ETFs. A comparison of the tracking efficiencies of the international ETFs tracking of the developed as well as the developing indices of the market report that errors in tracking of the international ETFs with benchmark of the indices of the developing markets are greater as compared to indices of tracking errors of the developed markets. However, the highest error in tracking for the international ETFs in comparison to domestic ETFs was noted. It suggests higher cost of transition to be reason behind this (**Reepu, 2017)**.

Not at all like ETFs that track US records, ETFs that track unfamiliar market files have additionally been observed to be straightforwardly presented to cash hazards. This is the reason the following mistake of worldwide ETFs is higher than that of homegrown ETFs. The accomplishment of the ETF has drawn in the consideration of scientists who have started to foster the ETF writing. The current writing on ETFs can be isolated into 4 sections, every one of which manages 4 unique parts of ETF exchanging attributes. The primary line of past research for the most part centered around the value proficiency of ETFs. The motivation behind these examinations is to research the effectiveness of the salvage and creation cycle to mediate the contrast between the market cost of NAV and the benchmark ETF. Section 2 assesses the exhibition of ETFs, that is, their level of achievement in assessing the presentation of benchmark lists. This is normally because of the estimation of the ETF's following mistake (**Petrova, 2015)**.

Prior examinations utilize 5 unique variations for registering the following mistakes of the ETFs. The third gatherings centers around the impact of the ETF exchange on the connected resources like constituent value of benchmark records and the monetary subordinates on these benchmark lists. They target examining in case there's an adjustment of the exchange attributes of constituent value of benchmark records whenever ETFs have been presented. The adjustment of exchange attributes of the hidden stocks demonstrate the relocation of the financial backers. Further, these examinations likewise evaluate presentation of the ETFs which help the exchange exercises that cause subsidiary cost all the more productively. A discussion on looking at ETFs and the file reserves draws in broad

premium since the 2 venture items are viewed as contenders. The fourth set looks at the items dependent on the exhibition, cost just as following capacities (**Baron Et.al., 2018)**.

The worldwide ETFs delete worldwide limits for the financial backers across the world and help them in getting an openness to the unfamiliar protections from home trade. The cross-line ventures of the worldwide financial backers through the global ETFs have been expanded essentially over recent years. In equal inquiries with respect to showcase productivity and the elements of the presentation of worldwide ETFs turned into an issue of worry for financial backers. Scientists target resolving such issues of financial backers of the global ETFs by furnishing them solid responses for the key inquiries.

Some studies have also assessed different types of schemes of mutual funds which make investment in the overseas securities. They categorise the schemes based on the investment portfolio. They compare returns on the overseas mutual funds schemes as compared to the similar portfolio schemes and returns on them. They also compare the returns of mutual fund schemes which invest abroad with the average returns that are generated from similar portfolio schemes.

Researchers have also evaluated performance of the mutual funds schemes. They also study the characteristics as well as pattern of growth of the Exchange Trade Schemes. These schemes are traded as well as floated on the stock markets in India. They analyse the performance with the help of Data Development Analysis or the DEA method. The findings reveal that overseas funds and gold funds can mobilise greater resources and they can also impress investors (**Biais, Foucault and Moinas, 2015)**.

A comparative study has been presented which assesses the index funds and ETFs. It mainly used 3 parameters for analysing the performance like tracking errors, active returns and Jensen Alpha. It shows that the ETFs perform better as compared to index mutual fund schemes.

Also a framework for assessing the performance of the mutual funds has been studied in a study. The objectives of the study include findings about the way investors assess performance of mutual funds which work on the basis of not only quantitative but also qualitative criteria. It also represents the fact that most of these funds outperform. It assesses Gold ETF and also compares historical data of different types of Gold ETFs in available options in India. They also track the performance of the ETFs regularly. They also show that many Gold ETFs that are currently available in the stock market show bigger deviation from actual gold ETF returns. The issue is quite prominent in our country. The performance of these selected funds is assessed on the basis of risk and return. They also compare the performance of the mutual funds with benchmark index. Addressing multiple challenges of research, they rank these funds on the basis of performance and suggest different strategies for the purpose of investment in mutual funds. The planned behaviour has also been studied. It states the attitude, the impact of awareness level and socio economic conditions of investors on investment behaviour for the mutual funds. It has been concluded that investment behaviour can be explained through awareness, perception and socio-economic attributes of an individual investor. In another study, the performance of investment options was studied which include market, savings deposits, fixed deposits, PPF, etc. through absolute and relative performance measures. It has been suggested that the Gold ETFs offer high average returns at low risk. Also, systematic risks for Gold ETF are negative which implies that the inclusion of the Gold ETFs in the portfolio of the investor would

make it riskless and diversified. An investment in Gold ETFs may prove to be beneficial for retail as well as institutional investors. The difference between the two has been analysed. Difference has been seen amongst the two popular forms of ETFs i.e. Equity ETF and Gold ETF. Their aim is understanding the difference since performance is considered to one of the major factors affecting popularity of all the options of investment (**Boehmer, Li and Saar, 2018)**.

One of the most common characteristics of Exchange Traded Funds is that, generally they are traded on the organised exchange. Even though simple, the description ignores a lot of important differences that are there between the ETFs and the other vehicles of investment. Specifically speaking, ETFs share the elements of closed as well as open ended mutual funds. For the open end mutual funds, the transactions happen just at end of each day and just at NAV. On the contrary, for closed end mutual funds, the ETFs trade during day in secondary markets at the price which might deviate from the NAV. Also, unlike the open end mutual funds, the ETFs issue as well as redeem shares just in the minimum size and just with the markets making the firms popular as the Aps or the Authorised Participants. The redemption or creation mechanism in structure of ETF helps the shares outstanding in ETF for expanding or contracting on the basis of the demand from the investors. The mechanism of creation and redemption signifies that liquidity may be accessed through the transacts of the primary market in underlying assets and that too beyond the visible secondary markets. The additional elements of liquidity signifies that the trade costs of ETF are fixed by lower bound of the cost of execution in either the primary or the secondary markets, a component which is significantly important for the large scale investors (**Brogaard et.al., 2015)**.

Straightforwardness is significant for evaluating. The current financing and container of the protections that ETF is prepared to acknowledge for the in kind recoveries and manifestations the exceptionally following day are distributed at end of each exchanging day. The exchanges occurring between the ETF chief and AP are either for money or kind where AP conveys and gets the pool of protections indistinguishable from property of the ETF. Like different financial backers, APs could sell or purchase the ETF share in auxiliary stock trade, however they can likewise purchase or recover the offers straightforwardly from ETF in the event that they believe that there is a chance for benefit. Even though the ETFs are redeemed or created at end of every trading day, it's an issue of accounting since AP typically locks in profit intraday by just selling the high priced assets while purchasing low priced assets simultaneously. For instance, when ETFs are trading at premium to APs estimated value, the AP could deliver creation of the pool of securities for exchanging the ETF shares and in turn it may choose to keep or sell the stock (**Budish, Cramton and Shim, 2015)**.

Buying the shares of some particular company restricts you to performance of that particular company. This also subjects the investors to a high risk. On the contrary, investment in the exchange trade funds helps the investors in keeping the finance spread over equity of different organisations which helps in diluting the risk. Even if an asset does not perform well in pool of the resources in the ETF, it could be compensated by an exceptional growth of the other assets **(Bowes and Ausloos, 2021)**.

Difference between cost of ETFs and index funds is modelled in terms of taxation efficiency, management fees and transaction fees. While comparing reasons for underperformance in both ETFs

and index funds as compared to benchmark index the sources were not common, they differ due to operational and structural formation of both investment assets **(Kostovetsky, 2003)**.

Conclusion

For passive investors ETFs have become an asset class that provide high liquidity with low transaction cost. Consistent growth of ETF industry has caught eyes of researchers and it has become a new important area of Research. Most studies finds that ETFs provide added advantage of high liquidity and lower transaction cost as compared to its competitor asset classes. To evaluate the risk and return associated with ETF and index funds most studies evaluated them through tracking error, risk adjusted returns and various financial ratios. Jensen's alpha is commonly used ratio to examine the performance of fund managers in index funds. In majority of cases ETFs has outperformed underlying index. With low tracking error they replicate the performance of benchmark index. Researchers evaluate the presentation of the global ETFs by surveying their normal, intraday and overnight return and returns volatilities, following of the exhibition just as constancy of evaluating the mistakes, valuing productivity alongside tirelessness of the limits and expenses. It has been seen that NAV returns or the volatilities are better as far as execution relative than exchange value returns of the European or the Asia Pacific ETFs. Then, a correlation of the intraday returns or the volatilities and the overnight returns uncover that short-term execution of the European and the Asia Pacific ETFS is better when contrasted with the presentation of Intraday.

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