

ETFs & Passive Management - A Risk Perspective

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Abstract

This report aims to explore the basic structure and history of ETFs, and to analyse any potential risks that they might pose to the market. ETFs are financial instruments that can be traded on an exchange, not unlike a regular stock, and track an index or basket of assets. We believe that the structure and function of these instruments can potentially create over and or underpricing of specific assets or sectors by amplifying the herd-mentality on the market. There are however more research needed to draw any concrete conclusions.

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Introduction

The aim of this report is to give an introduction to Exchange Traded Funds (ETFs) and evaluate potential risks related to ETFs and, subsequently, the effects of passive management. The method used to obtain the result is a literature study of different sources. The focus of the report will be limited to the US market, due to its dominant role in the ETF industry. Furthermore, only passively managed ETFs will be analyzed.

First, a background will be presented, giving a short description of ETFs, the history and current market for ETFs. The second part of the report will be an analysis of any potential risks with the financial instrument, and from this analysis a conclusion will be drawn.

Background

What are ETFs?

Passive ETFs are financial instruments that track the value of an index or a basket of securities. When investing in passive ETFs, you invest in shares of a portfolio that mimics the return and yield of the underlying assets. Since the funds are not trying to outperform the market, the management of the fund is passive, meaning that the fund manager only makes minor adjustments on a periodical base. In general, ETFs based on major indices enjoy higher volumes than the underlying, individual stocks, resulting in greater liquidity (Nasdaq).

Just like a mutual fund, an ETF offers its investors a proportionate share in a pool of bonds, stocks or other assets. Shares of a mutual fund can only be bought or sold at a single price computed at the end of the day, whereas ETFs can be traded during the trading hours of a stock exchange, at a market-determined price. This liquidity feature, together with the fact that you can short-sell ETFs, and buy ETFs with leverage, make them an interesting alternative to mutual funds (ICI, 2014). In order to understand how an ETF price stabilizes at its net asset value (NAV) during temporary increases or decreases in demand for an ETF, one needs to understand the functioning of ETFs.

How do ETFs Work?

To create ETF shares, an ETF company turns to a so called Authorized Participant (AP) who usually is a large financial institution with substantial buying power. The AP acquires the securities that the ETF wants to hold, called a creation basket. The AP then delivers this creation basket to the ETF provider, and receives a block of ETF shares called creation unit. These shares are valued at the current NAV of the underlying assets of the ETF, and not by the current market price of the ETF. Likewise, the AP can redeem shares by acquiring enough ETF shares to form a creation unit,

and trade it for shares in the underlying assets of the ETF. These creation and redemption processes are referred to as primary market activity, shown in the left hand side of figure # (ETF).

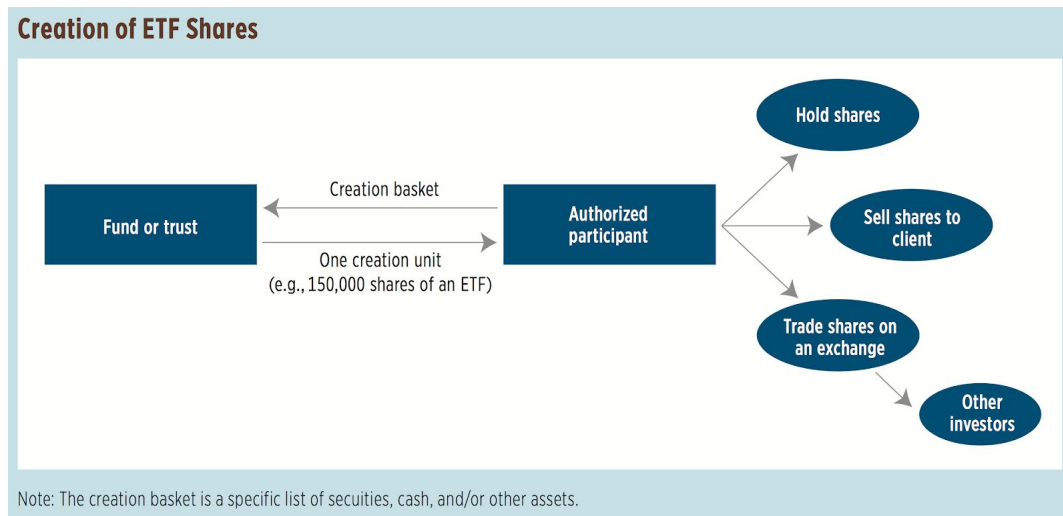


Figure #1: ICI, 2014.

The right hand side of figure #1 shows the secondary market activities where retail investors and institutional investors can trade ETF shares directly from the AP, or through a broker on an exchange market. A temporary increase or decrease in demand for an ETF might cause discrepancies between the NAV of the ETF and the actual market price of the ETF. When an ETF is traded at a discount to the net asset value, it is profitable to buy the ETF (making the ETF price increase) and sell the underlying assets (making the asset price decrease). When an ETF is traded at a premium, it is profitable to sell the ETF (making the ETF price decrease) and buy the underlying assets (making the asset price increase). This mechanism helps narrowing the gap between the net asset value and the current ETF price (ICI, 2014).

The development of ETFs

The history of ETFs began in the aftermath of a crisis. The market crash of 1987 brought the need of selling large amount of stock quickly to the surface, and institutional investors faced a great lack of liquidity on the market. Subsequently, the idea of an exchange traded basket of stocks was soon established, and in 1993 the first ETF was created by State Street Global Advisors, tracking the S&P 500 index. The fund was the first of its kind, and with a unique mechanism to handle arbitrage, the fund could be priced closer to the NAV and still be traded on an exchange. Lower than average price of mutual funds also meant that the fund was available for a larger amount of investors and made them more cost effective for institutions (Morningstar, 2012).

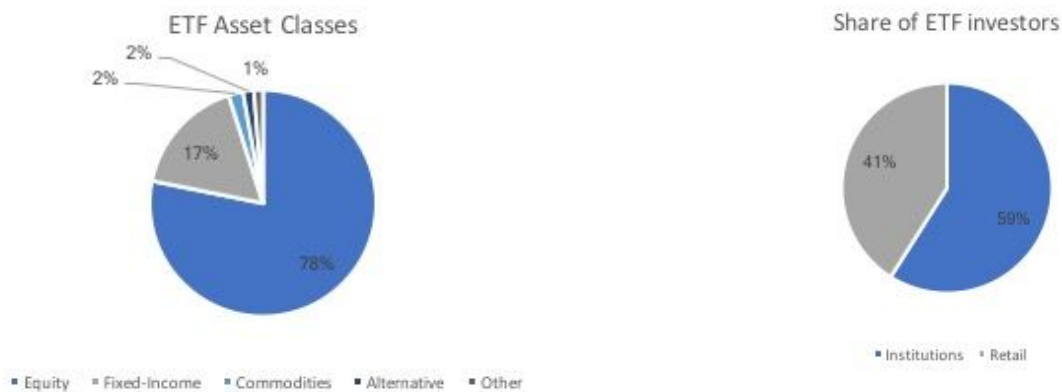


Diagram #1: Global X Funds, 2017.

Since the first introduction of ETFs, the demand for the financial vehicle has grown and found popularity with both retail and institutional investors. In 2017, the total asset under management (AUM) in ETFs on the US market was \$3.4 Trillion, which equals approximately one-fifth of the total AUM in actively managed long-term mutual funds (The Wall Street Journal, 2018, January). The total AUM has seen significant growth, since 2003 the compounded annual growth rate for US ETFs has been 24 % (Morningstar, 2013).

Today, there exist different ETFs that passively track a given basket of assets, or a single asset. Equity is however still the most common, though ETFs that track commodities or fixed-income portfolios are also available (Nasdaq). Equity represent 78 % of the total AuM, followed by fixed-income. The total AUM in the different asset classes can be seen in Diagram #1.

Historically, institutional investors have been the largest users of ETFs, and as of 2017, institutions represent 59 % of all US ETF asset ownership (Financial Times, 2017, April). ETFs play several roles, and institutions use the instruments to gain a strategic exposure and diversification as well as to make short-term tactical adjustments to portfolios. The use of ETFs have also been integrated into core functions, including risk and liquidity management. In particular, institutions use the financial vehicles to enhance their liquidity in the fixed-income market (Greenwich Associates, 2017). However, the ownership structure is changing and retail investors show growing interest in the financial instrument (Financial Times, 2017, April).

Analysis & Discussion

The large inflow in passively managed ETFs that track a specific index have brought change to the fund market. Today, more and more capital is being managed by algorithms rather than an active investor. When an investor buys shares of an ETF, the investor subsequently increase the demand

for the underlying asset and, if the demand is large enough, the price of the asset can increase. Take the example of an ETF that tracks the S&P 500 stock index. The structure of the given ETF is only dependent on the stocks that make up the index, and it invests in the stocks such that the value mimics the index. The fundamental factors behind the stocks are not taken into account, and the fund purchase and sells the stocks at the market price.

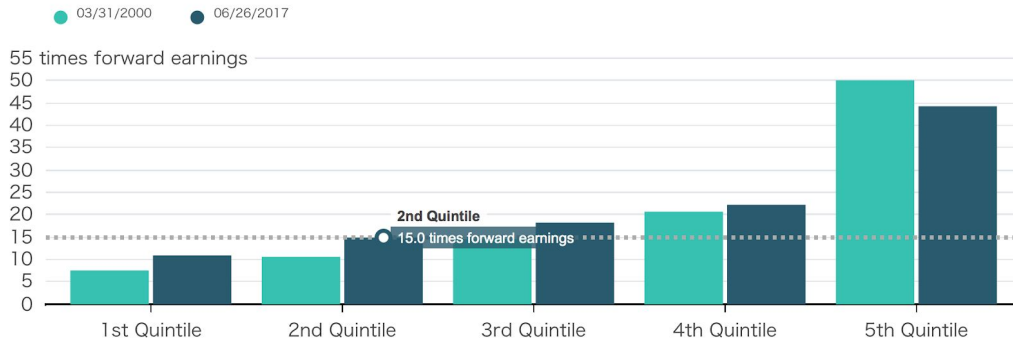
The precise effect on the market that ETFs have is difficult to determine, but if one were to look at the structure of the instrument, some remarks can be made. Buying or selling an asset without regard to fundamental factors can imply greater herd-mentality on the market and, consequently, amplify market consensus. In the example above, the given ETF tracked the S&P 500 stock index. Now suppose the demand for a certain share increase due to some catalyst (e.g. positive rumors or better than expected report) and the price goes up. The ETF must now buy shares of that stock, to adjust for the change of demand and track the index, resulting in even greater demand. The reverse would happen if the market sentiment was negative instead. The passive management of ETFs therefore imply market risk, in the sense that movements are amplified, creating over or underpricing of assets.

The effect mentioned above could be particularly prevalent in assets that are predominantly held by ETFs, or other large stake institutional investors that limits the assets liquidity. Suppose that ETFs focused on a specific industry (e.g. telecommunication or healthcare) are significant holders of shares in the respective company that makes up the given industry. In this case, the significant ownership of shares by the instruments results in a lack of available shares to the public and, ultimately, less liquidity. Limited liquidity makes the stocks more sensitive for change in demand, since the supply is limited by the ETFs holding large shares of the stock.

Furthermore, built-in stop losses in some ETFs (i.e. mechanisms that enables investors to automatically sell their stake if the loss reaches a predetermined level) can possibly create cascade effects in a market downturn, further amplifying the reaction. The cascade effect refers to the effect of accelerated losses due to ETFs reaching their own stop-loss, forcing a sell order, lowering the market and making more investors reach their stop-loss. The stop-loss function thereby oppose a risk to the market if a larger downward turn would occur (CNBC, 2017, April). Stop-losses are however not limited to ETFs, instead this function is available for a large number of financial instruments and even provided by certain brokers.

Cheap Is the New Expensive

Even compared with the early 2000 stock market bubble, the lowest P/E stocks in the S&P 500 look expensive



Source: Bloomberg

Note: Universe is the stocks in the S&P 500. Quintiles are ranked by forward 12 Month P/E multiples, lowest to highest.

Figure #2: Bloomberg, 2017.

While both passively managed funds and ETFs have been around for quite a while, ETFs have gained significant popularity in recent years. The common belief is that the low management fees, and the liquidity features are what appeals to investors. Consequently, many ETF providers actively market their ETFs, accentuating these advantages in order to attract more investors into their ETFs, and subsequently into the stock market. However, the passive set-it-and-forget-it approach could potentially affect the market. The continuous inflow of capital into passively managed ETFs cause the underlying stock prices to rise, unconditional of the fundamental values of the stock. In figure #2, the price/earnings levels mid 2017 are compared to the price/earnings levels during the stock market bubble in year 2000. Many people consider the S&P 500 to be overpriced, partly due to the trend of passive management.

Conclusion

We have found that the structure of ETFs can potentially contribute to amplified herd-mentality on the market, creating more risk of overvaluation and undervaluation of assets respectively. Low liquidity in specific assets could be particularly affected by this and are more sensitive to fluctuation in demand. Built-in mechanisms in some ETFs, i.e. stop-losses, can possible create a cascade effect in a market downturn, although these specific mechanisms can also be found in other financial instruments. Lastly, continuous inflow of capital in ETFs mean that assets, in particular stocks, are bought without regard to the fundamentals, possibly creating a mispricing of the market. However, more research is needed to make any substantial conclusions about the potential risks with ETFs and passive management.

Further Reading

[1] Although leveraged ETFs was not the main focus of this report, they could pose a risk for individual investors. In the following article, leveraged ETF risks are explored and discussed.

Robert A. Jarrow. (2010). “Understanding the risk of leveraged ETFs”. *Finance Research Letters*, volume 7 issue 3, pages 135 - 139.

[2] In the background chapter of this report, only a brief description of the creation/redemption processes was given. For interested readers who want learn more about the primary market, this website explains the rather complex subject in an intuitive way.

Antoniewicz, Rochelle, and Jane Heinrichs. (2014). “Understanding Exchange-Traded Funds: How ETFs Work.” *ICI Research Perspective* 20, no. 5 (September). Available at: www.ici.org/pdf/per20-05.pdf.

[3] How well informed retail investors are and how their behaviour in the ETF market could pose certain market risk is discussed in the following article.

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