The Bridge Research Article:

A Primer on Exchange-Traded Funds

January 22nd, 2019

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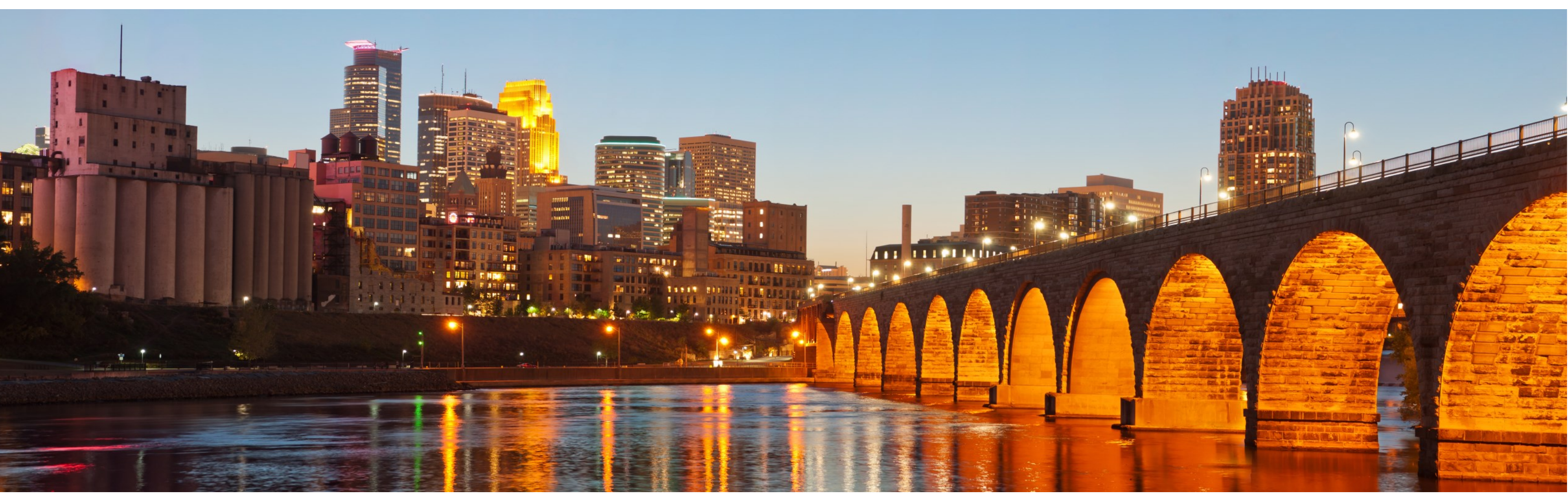

Exchange-Traded Funds are all the rage these days. There are thousands of them. Also known as ETFs, they account for over $1.8 trillion in assets under management domestically. ETFs have experienced tremendous growth over a relatively short amount of time - primarily becoming popular since 2009. Exchange-traded products have allowed access into the investment industry for many first-time investors and have accounted for over 30% of trading volume in U.S markets. However due to being a younger investment vehicle, the impacts of ETFs on the market are yet to be thoroughly understood.

Exchange-Traded Funds: What are They?

Let's start with the basics. An ETF is a basket of many securities – with anywhere from tens to thousands of underlying assets including, but not limited to, stocks and bonds. If you have ever owned a mutual fund, the structure of an ETF is very similar. But like stocks, ETFs are traded on an exchange throughout the day while the market is open; while mutual funds are purchased directly with the fund and only occur at the end of the day. ETFs have become a popular option for investors looking to access low-cost exposure to broad equity indices, industry sectors, geographic regions and other asset classes.

History: The Genesis of the ETF

The evolution of the exchange-traded fund is rooted in understanding how mutual funds came into existence. The first mutual fund was created by a Dutch merchant post the 1772 European Credit Crisis. It was developed for investors with smaller amounts of capital with the purpose to provide exposure to a breadth of investment opportunities while reducing risk through diversification. Lasting over 120 years, the fund has the longest tenure for an investment vehicle of its kind. However, it was not until the 1920's when mutual funds became popular domestically in the United States. The mutual fund industry continued to expand especially during periods of economic growth, but history has shown that the mutual fund market has generally taken a hit during economic downturns. For example, in the 1960s, hundreds of mutual funds entered the marketplace but the demand for them quickly dissipated during the bear market of 1969. Similar movements out of the mutual fund market occurred during the Tech Bubble and Great Recession.

As the creation of the mutual fund was motivated by the Crisis in 1772, the development of the ETF stemmed from the stock market crash of 1987. In an effort to protect their portfolios during the crash, institutional investors did a rapid sell-off of stocks that backfired resulting in prices going into a free fall. During the postmortem of the crash, investors realized the importance of the ability to trade large amounts of stock quickly resulting in the birth of the ETF. In 1993 the first U.S exchange-traded fund that represented the broad market, SPDR S&P 500 (SPY), was listed on the exchange.

Even after their introduction into the U.S. market, ETFs did not become popular for quite some time. The next ETF, SPDR MidCap 400 index (MDY), was not released until 1995 and the third ETF, SPDR Dow Jones Industrial Average (DIA), not until 1998. This is no longer the case as ETFs had a record-breaking growth year in 2017. According to data from State Street Global Advisors, inflows for exchange-traded funds had back to back record-breaking levels of $471 billion in 2017 and $288 billion in 2016. The growth of ETFs is especially telling compared to its peers, such as the mutual fund, which only had an inflow of $91 billion during a similar timeframe. ETFs are now tracking essentially every sector, region and asset class, and almost every fund category experienced growth in 2017.

Although the growth of ETFs as an investment vehicle has been obviously impressive over the last decade, the true test will be their ability to withstand a real market downturn.

Why did ETFs get so Popular?

Global ETF assets, as reported by Ernst & Young, has grown from just $417 billion in 2005 to $4.4 trillion in 2017. Why? A combination of factors, such as self-directed retirement accounts, historically low interest rates, technological developments and the shift to passive investment styles, have coalesced as catalysts for the growth of ETFs. Strong passive performance in conjunction with technological efficiencies that resulted in ETFs with low cost structures has made ETFs an attractive investment option for investors over the last 10 years.

In terms of pricing, the average U.S. equity mutual fund charges 1.42% in annual expenses, while the average equity ETF charges just 0.53%. ETFs are cheaper than the average mutual fund primarily because ETFs track the market and tracking the market is inherently more affordable than active management. In addition, ETFs operationally have much lower transactional costs than most mutual funds.

In terms of performance, we have been in an economic expansion for over 9 years, almost the longest on record, and active strategies have had difficulty keeping up with passive strategies. Until the end of 2017, the market has been experiencing very low volatility helping drive the momentum in passive investing. But 2018 introduced volatility back into the market with a 3x greater standard deviation of volatility compared to 2017. Everything from Brexit to the trade war to oil prices has ignited oversized moves in the market. Although passive investments have boded well during the bull market over the past decade, the question is whether it is still a prudent investment option going forward?

When are ETFs appropriate?

With exchange-traded funds, one can easily, quickly and cost-effectively build a diversified index portfolio as well as gain access to esoteric sectors or regions. The use of ETFs is best suited for investors with portfolios less than $500,000 as it may be difficult for those investors to achieve proper diversification effectively with individual securities. For example, the fixed income market can be challenging for individual investors when investing in bonds due to the minimum investment size required during purchase because the portfolio size may limit the level of diversification and liquidity that can be achieved. But with the introduction of bond ETFs, the fixed income market has become more accessible to these investors. In addition, due to transaction costs, it is generally cheaper to purchase a single bond ETF which represents multiple bonds rather than purchasing multiple individual bonds.

If a portfolio is constructed with ETFs, it is important to implement an active management strategy for the overall portfolio in which the funds are tracked, analyzed and reallocated at the portfolio level rather than a simple passive buy-hold portfolio strategy. This is important because an unanalyzed ETF portfolio may provide a false sense of diversification. For example, it is not uncommon for the top 5 stocks of the S&P 500 to make up more than 15% of the index. In addition, many exchange-traded funds hold similar names, thus an investor with an ETF portfolio may be holding a higher concentration in a single underlying stock than expected.

Another common investor mistake is to assume the make-up of an ETF based on its name. With the number of ETFs in the market today, investors have several choices within a single market segment. For instance, previously the difference between the top-performing "biotech" ETF and the worst-performing "biotech" ETF was greater than 18%. For a portfolio constructed of ETFs, an effective investment strategy will have a team analyzing and making investment decisions based on the underlying holdings of the ETFs.

Valuation

Okay, so now we know what ETFs are. How does one value an ETF? The value of the ETF is based on its underlying assets; hence, transparency of the ETF is critical in calculating its fair value. The ability to accurately calculate the value of an ETF allows for comparison amongst other funds. Most mutual funds provide a daily net asset value, however are not required to provide portfolio holdings on a daily basis. As shown below, an ETF's net asset value (NAV) is based on the underlying asset prices from the most recent closing, the fund's total cash value, and fund liabilities; the summation of these inputs is then divided by the number of outstanding shares.

$$NAV = \sum (\text{Assets} - \text{Liabilities})/(\text{Shares Outstanding})$$

Since ETFs can be continuously traded throughout the day, there is a greater probability for a divergence between their NAV and price resulting in potential arbitrage opportunities.

The Unintended Consequences – Volatility

Having unintended impacts on volatility, ETFs are suspected to exacerbate the volatility of their underlying securities resulting in market highs or lows that most likely wouldn't be reached if ETFs were not in play. Studies have been conducted that compare a security's ETF exposure relative to its individual volatility showing that stocks owned by ETFs exhibit significantly greater volatility. An enhancement in price discovery can occur from an increase in stock volatility if it represents changes in the security's fundamentals; however, a strong correlation exists between a decline of a stock's price efficiency and its level of ETF ownership, stipulating that ETFs are adding non-fundamental volatility to stocks.

The ability to exit the entire market or sector in a single trade can result in undue volatility for the ETFs' underlying holdings regardless of the basis of the sale - whether due to emotional triggers or tax liability reductions. Most recently, the S&P 500 was up or down more than 1% nine times in December alone compared to eight times in all of 2017. Between December 5th and 12th, there was over $46 billion in outflows in ETFs and mutual funds resulting in the largest weekly outflow since 1992. ETFs were originally created to quickly transition out of the market, however, the ease of this process is very likely a culprit for the exacerbated market drop in December. The stock market sell-off drove the S&P 500 past the correction threshold. Tax-related sales caused the drop-in value of poorly performing 2018 stocks, like Schlumberger (SLB), to be intensified due to compounding sales by investment managers realizing losses in their worst performing names. As evidence, SLB while being down -18.89% in December 2018 has rebounded by 15.42% within the first few weeks of 2019.

ETFs are also often used to conduct arbitrage. What is ETF arbitrage? In an efficient market, the price of an ETF should equal the price of its underlying portfolio because the two assets have the same fundamental value. Since new shares of ETFs can be created and redeemed almost continuously in a liquid market, the ETF price should not differ consistently and significantly from its net asset value (NAV). But ETFs are increasingly exposed to non-fundamental demand shocks because of their popularity among retail and institutional investors. If arbitrage is limited, these shocks can propagate from the ETF market to the underlying securities. Supporting studies have shown that volatility of underlying stocks increases when divergence between the ETF's price and NAV is greater.

Why Does Increased Non-Fundamental Volatility Matter?

When using a passive investment strategy, a key element for successful long-term investing is missing - which is fundamental analysis. Separately managed accounts structured with individual stocks allow for customization and a selection of stocks based on strong fundamentals. Due to the increase of non-fundamental volatility in the market, stocks with strong fundamentals are becoming more difficult to identify. Utilizing fundamental analysis, rather than index tracking, adds value by identifying those stocks that have a greater probability to survive through a down market. In addition, actively managed separate accounts have control over the amount of exposure a portfolio has to each investment unlike ETFs which are tied to the market. In September 2018, 3 stocks (AAPL, MSFT and AMZN) made up over 10% of the S&P 500.

Due to the recent volatility in the market, identifying the fundamental value of a stock is becoming more challenging. ETFs are exacerbating the overvaluation of stocks that have high momentum regardless of their fundamentals – meaning that bigger companies are just getting bigger without justification. The fear is that this will be true on the downside as well as meaning that risks will be amplified during a significant market downturn. As history has shown, the true value of fundamental analysis becomes apparent in challenging market environments.

The future of ETFs

Exchange-traded funds have a legitimate place in the investment world providing diversification to investors with a limited portfolio size or seeking exposure to an esoteric sector. Popularity of exchange-traded funds have grown with the support of low volatility in a bull market over the past decade, but their resilience has not truly been tested by any significant market challenges. As we are moving into more challenging markets that tend to reveal the true colors of a manager's investment strategy, the real question is: How popular will ETFs be after the next bear market? Only time will tell.

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