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Industry Update

KBW ETF Spotlight: An Introduction to ETFs

Summary

Exchange-traded funds (ETFs) have both captivated and mystified investors since their introduction 27 years ago. We explore ETFs in greater detail, with a focus on their relevance for institutional investors and importance in today's market.

- **ETFs are relatively new investment options**, with the first ETF launched in 1990 in Canada. The first U.S.-listed ETF came to market in 1993 when State Street Global Advisors launched the Standard & Poor's Depository Receipts (SPDRs) tracking the S&P 500 Index. The SPDR S&P 500 ETF Trust (SPY) is now the largest ETF by assets under management (AUM).
- **What exactly is an ETF?** ETFs provide investors with exposure to many different asset classes including equities, commodities, bonds, currencies and options.
  - **ETFs have characteristics of both mutual funds and equity securities**. Similar to mutual funds, an ETF is a pooled investment vehicle that owns a basket of securities.
  - **ETFs are tradable securities**, and different from mutual funds in how their shares are either issued and redeemed or traded.
  - **ETFs trade on both primary and secondary markets**. In the secondary market, ETFs and equities trade alike as investors buy and sell existing issued shares. ETFs are unique in that they can also trade on the primary market whereby new shares can be created at any given time.
  - The concept of a primary marketplace for ETFs also drives a key difference between ETFs and mutual funds - ETFs can take in and distribute assets through the creation and redemption process in the primary market.
- **Growth in the ETF Industry has been strong and steady.**
  - **Over the past decade, U.S. listed ETFs grew their combined AUM by 497% and the number of U.S. listed ETFs skyrocketed 378%**. As of December 2016, there were 1,716 U.S.-listed ETFs with a combined $2.5 trillion in AUM.
  - **ETFs have grown in usage across all asset classes.** While domestic equity funds account for 47% of total U.S. Listed ETF AUM, asset allocation ETFs have seen the greatest growth over the past decade, with a compounded annual growth rate of 67%.
  - **The transition from actively managed to passively managed funds over the past decade has benefited ETFs.** While actively-managed equity mutual funds had cumulative outflows of nearly $867 million, passive equity mutual funds and ETFs received a combined $1.0 trillion in cumulative inflows. Of this $1.0 trillion, nearly $586 billion flowed directly into ETFs.
  - **ETFs are an integral part of today's marketplace and are some of the most widely traded equities.** The most traded U.S.-listed equity in 2016, in terms of dollar volume traded was an ETF. SPY saw $5.5 trillion trade in 2016, over 5x more traded than the next highest ranking security, AAPL. In total, five ETFs ranked among the top 10 securities by dollar volume traded in 2016.
  - **ETF trading is a consistent contributor to consolidated trading volumes.** In Nov. 2016, U.S.-listed ETFs traded about $91 billion worth of shares per day, or 29% of consolidated dollar volume traded on U.S. exchanges. On average, since 2009, U.S. listed ETF dollar volume represented 28% of consolidated total dollar volume traded.
  - **While ETFs began as purely retail investment products, institutional investors are utilizing ETFs at higher rates.** Among the 25 largest ETFs, 58% of all investors were institutional, while retail investors accounted for the remaining 42%.
- **ETFs offer investors many advantages.** ETFs earned global prominence because of their transparency, liquidity, tax efficiency, and access to unique markets and diversified asset classes that would typically be more costly to investors. These factors contributed to the steady and substantial growth of ETF AUM since the launch of the first ETF.
- ***Please view pages 2 - 14 for our full analysis.***

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Glossary of Terms

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Introduction

Exchange-traded funds (ETFs) garner a great deal of attention in the marketplace and have been both intriguing and mystifying investors since their introduction 27 years ago. The most recent industry data as of December 2016 indicates that there are 1,716 U.S.-listed ETFs with a combined $2.5 trillion in assets under management (AUM). In addition, ***ETFs are growing in popularity and usage with five ETFs ranking among the top 10 most traded U.S. listed equities in 2016, in terms of dollar volume traded.***

Similar to a mutual fund, an ETF is a pooled investment vehicle that owns a basket of securities. ETFs provide investors with exposure to a wide range of assets that include equities (domestic and international), commodities, bonds, currencies and options. In addition, ETFs can offer investors specialized exposure to a particular sector or industry group.

Both the retail and institutional investment communities utilize ETFs. ETFs offer a number of advantages relative to other similar types of investment vehicles, including low costs, liquidity, tax efficiency, transparency and diversification. While much of the research on ETFs has focused on their impact for retail investors, institutions are relying on ETFs for many different purposes. Institutional usage of ETFs is growing, and sparking increased liquidity in ETFs as an asset class.

We will explore ETFs in greater detail, with a focus on their relevance for institutional investors, as well as demonstrate their relevance in today's market.

What Exactly Are ETFs?

ETFs are relatively new investment options with the first ETF launched in Canada in 1990, tracking the TSE 35. The first U.S.-listed ETF came to market in 1993 when State Street Global Advisors launched the Standard & Poor's Depository Receipts (SPDRs) tracking the S&P 500 Index. This ETF is now the largest ETF by AUM in the world and also launched an entire family of ETFs under the SPDRs moniker. Yet, it was really not until Barclays developed iShares in 1996 that the ETF marketplace began to prosper both in terms of new funds and new fund providers.

Similar to a mutual fund, most ETFs are structured as open-end investment companies and are registered under the Investment Company Act of 1940. A smaller number of ETFs are registered as unit investment trusts (UITs). ETFs are regulated by the Securities and Exchange Commission (SEC). Since most ETFs are regulated under the Investment Company Act of 1940, they are required to have an independent board of directors.

ETFs are different from mutual funds in how their shares or units are issued, redeemed and traded. Unlike mutual funds, ETFs are similar to equities and are tradable securities bought and sold on the stock exchanges with real-time pricing and trading. ETFs have characteristics of both open-end mutual funds and closed-end funds.

Therefore, ***an ETF is a traded security either actively or passively representing a basket of securities bundled together, tracking the performance of a segment.*** This underlying basket represents a specific investment objective and could be a broad-based group of securities or a more focused segment of the market. In fact, a large number of ETFs are constructed to passively track a specific market index.

The key difference, however, between an ETF and a stock is that an ETF trades on both the primary and secondary markets. In the secondary market, ETFs and equities trade alike as investors buy and sell existing issued shares. ***However, ETFs are unique from equities in that they can trade on the primary market whereby new shares can be created at any given time.***

This concept of a primary marketplace for ETFs drives the other key difference between an ETF and a mutual fund; an ETF takes in and distributes assets through the creation and redemption process in the primary market. ETFs are sponsored by a provider that files with the SEC to create a new ETF based on a particular fund structure (ex: domestic large-cap equities). Once the SEC approves the plan, the sponsor can receive assets. The ETF sponsor then designates large self-clearing broker/dealers as authorized participants (APs). APs begin creating "Creation Units" in the ETF. While Creation Units vary from fund to fund, the typical Creation Unit size is 50,000 shares. APs deliver the underlying basket of assets to the ETF sponsor in exchange for ETF shares. This is known as the "creation process." These new shares are reflected in the ETF shares outstanding and consequently, the ETF's increases. APs are then free to sell the ETF shares in the open market.

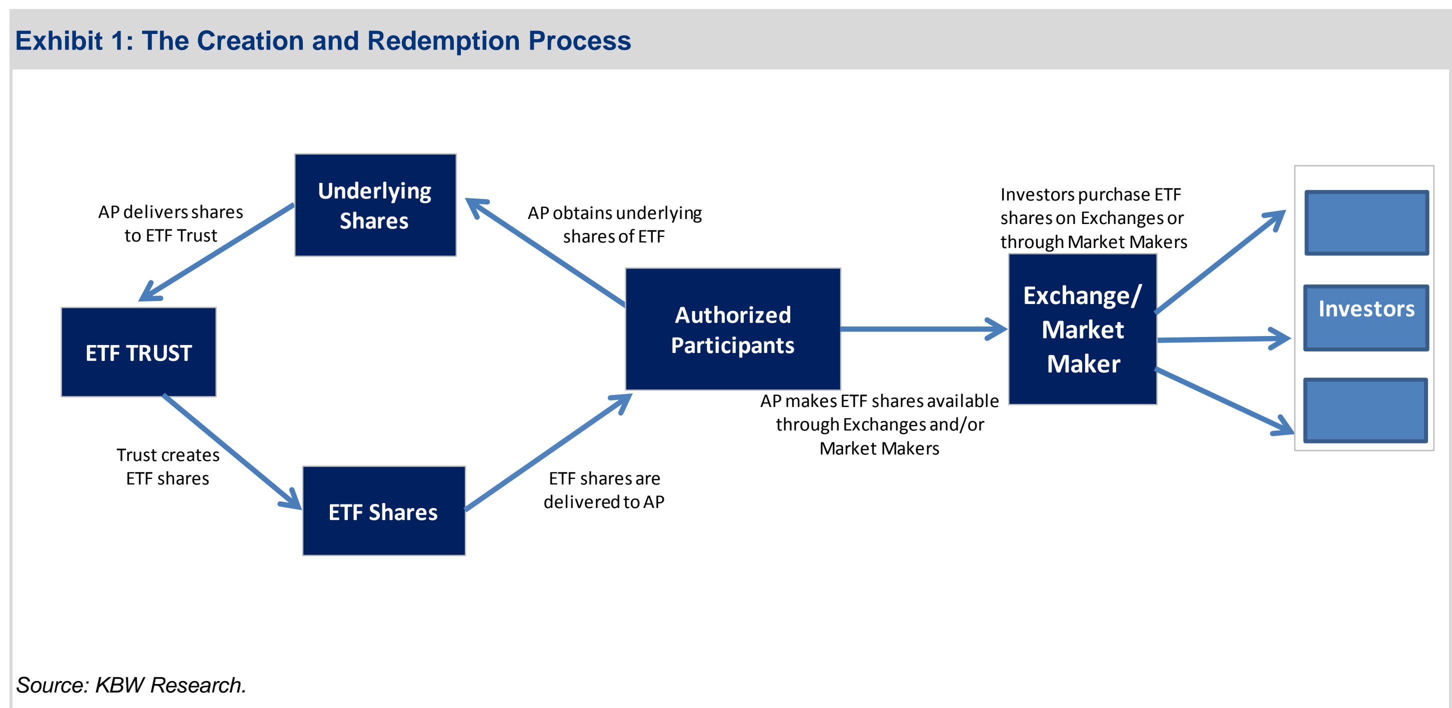
APs play a critical role in the ETF cycle. More specifically, APs sign a "participation agreement" with a fund sponsor to provide "in-kind" transactions. APs will purchase or borrow the required securities for a given ETF and then provide the appropriate amount of shares to a custodial bank for bookkeeping and administrative and storage purposes. Once the delivered basket has been verified, the custodial bank issues ETF shares to the AP for sale in the secondary market.

ETF investors have two options when they decide to sell their shares of the fund: 1) they can sell their shares in the secondary market, or 2) they can accumulate enough shares to create a Creation Unit in the primary market. When investors have accumulated enough shares for a Creation Unit, they can leverage an in-kind transaction and redeem these shares directly to the sponsor for the appropriate amount of shares of the underlying securities. The ETF shares outstanding are subsequently reduced and the ETF's AUM declines.

In addition to APs, there are also market makers who serve as liaisons between investors and APs. Market makers are broker-dealers that help facilitate the trading of ETFs in the secondary market, and in turn make money from the bid-ask spread. Most ETFs have a designated lead market maker (LMM) that guarantees quotes for the ETF in exchange for economic incentives and reduced transaction pricing from the exchange.

Both APs and market makers will arbitrage the price of the ETF and its underlying basket. ***It is this arbitrage process that keeps the ETF trading close to its net asset value (NAV).***

Exhibit 1: The Creation and Redemption Process



Source: KBW Research.

Exhibit 2: Characteristics Comparison: Stocks vs. Mutual Funds vs. ETFs

	Stocks	Mutual Funds	ETFs
Liquid?	Yes, intraday liquidity	No	Yes, intraday liquidity
Transparent?	Holdings disclosed quarterly on a lagged basis	Holdings disclosed quarterly on a lagged basis	Holdings disclosed daily
Pricing?	Intraday	Daily - End of Day	Intraday
Primary Market Trading?	No	Yes	Yes
Secondary Market Trading?	Yes	No	Yes
Trading Participants?	Market	Issuer	Issuer and Market
Diversified Investment?	No	Yes	Yes
Shares	Fixed by Issuer	Adjustable	Adjustable

Source:KBW Research.

How did it all begin?

The origins of ETFs date back to Black Monday, October 19, 1987, when the stock market crashed and the Dow Jones Industrial Average fell 22% and lost 508 points. In February 1988, the SEC published a reflective paper on this crash and launched the idea that if a market basket instrument were present on that day to provide liquidity, it could have aided in reducing the volatility and selling pressure on the underlying equities. The SEC effectively laid out the blueprint for a market basket instrument in this paper.

The American Stock Exchange (AMEX) immediately began working on this concept and partnered with State Street as trustee and custody agent. Together, in 1989, AMEX and State Street applied to the SEC for approval of an ETF based on the S&P 500 Index. It took four years for the SEC to grant its approval, and in January 1993, SPY was officially launched. In 1990, during this approval process, Canada technically launched the first successful ETFs, known as Toronto Index Participation Shares (TIPS), which tracked the Toronto Stock Exchange TSE 35.

ETF Global Launches: A Timeline

1990: ***First Canadian-listed fund is launched***

1993: ***First U.S.-listed fund is launched***

1995: ***First Japanese-listed fund is launched***

1999: ***First Hong Kong-listed fund launched***

2000: ***First European-listed fund launched***

Exhibit 3: Historical Look at the First ETFs

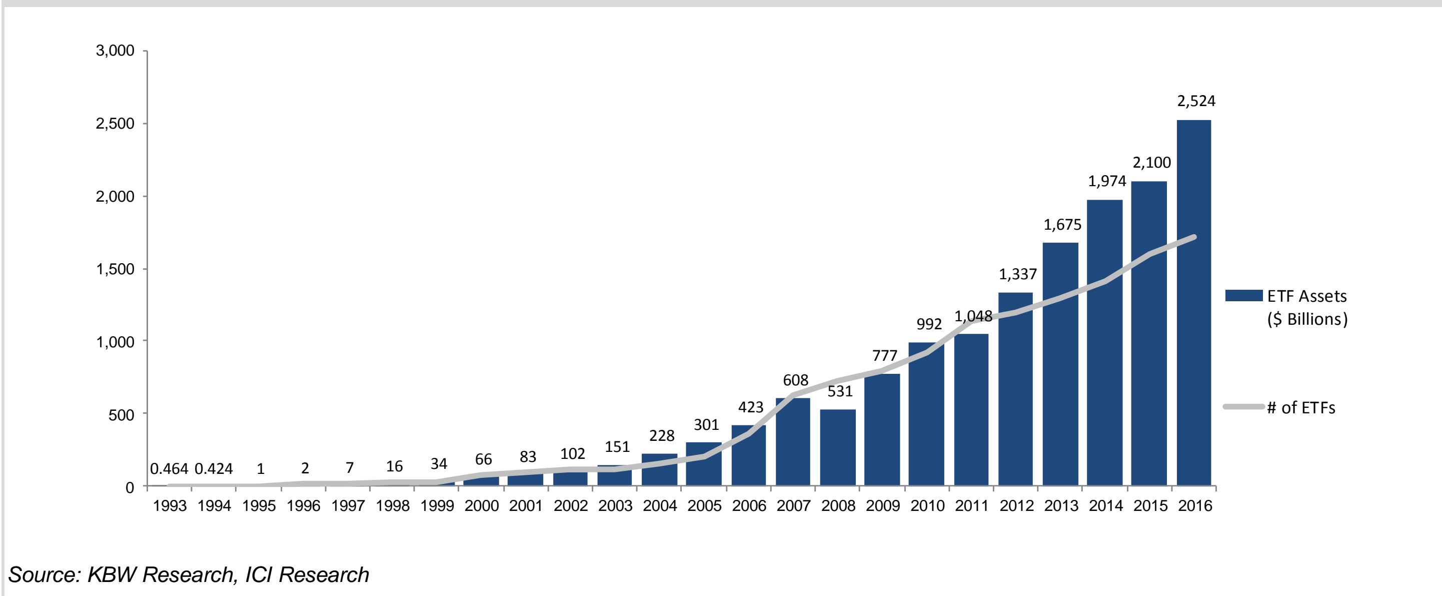
Ticker	Name	Domicile	Inception Date	Parent Company Name	Fund Type
SPY US	SPDR S&P 500 ETF TRUST	United States	1/22/1993	State Street ETF/USA	Exchange Traded Funds
MDY US	SPDR S&P MIDCAP 400 ETF TRUST	United States	5/4/1995	State Street ETF/USA	Exchange Traded Funds
1319 JP	NOMURA LISTED STOCK NIKK 300	Japan	5/29/1995	Nomura Asset Management Co Ltd/Japan	Exchange Traded Funds
2800 HK	TRACKER FUND OF HONG KONG	Hong Kong	11/12/1999	State Street Global Advisors Asia Ltd/ Hong Kong	Exchange Traded Funds
EUN2 GR	ISHARES EURO STOXX 50	Ireland	4/3/2000	BlackRock Asset Management Ireland Ltd/Ireland	Exchange Traded Funds
ISF LN	ISHARES PLC-ISHARES FTSE 100	Ireland	4/27/2000	iShares Plc/Ireland	Exchange Traded Funds

Source: Bloomberg, Company Filings.

Growth in ETFs

ETFs have steadily gained traction and popularity among investors. Since the first SPDRs product was launched in 1993, there has been a significant amount of steady growth of the exchange-traded products (ETPs) industry, which encompasses funds structured as ETFs, exchange-traded notes (ETNs), and exchange traded commodities (ETCs). Over the past 10 years, U.S. listed ETFs grew their combined AUM by 497% and the number of U.S listed ETFs skyrocketed by 378%. As of December 2016, total U.S listed ETF AUM was $2.5 trillion.

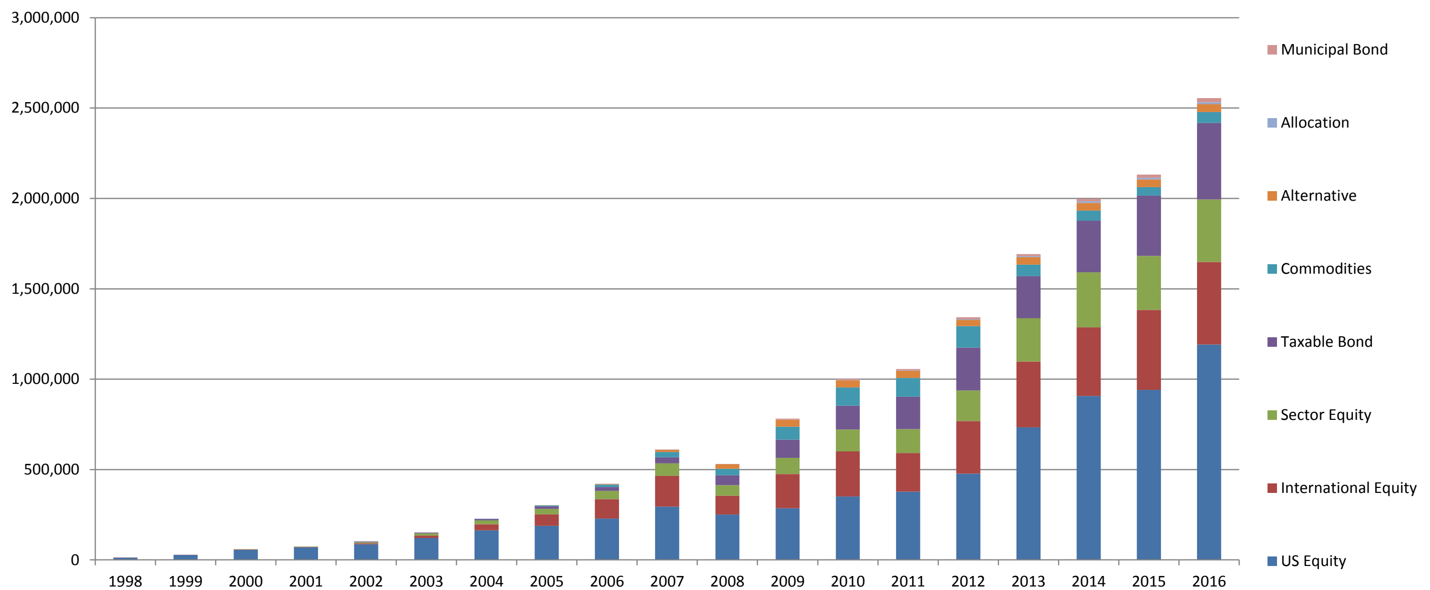
Exhibit 4: ETF Growth Has Been Strong and Steady



Source: KBW Research, ICI Research

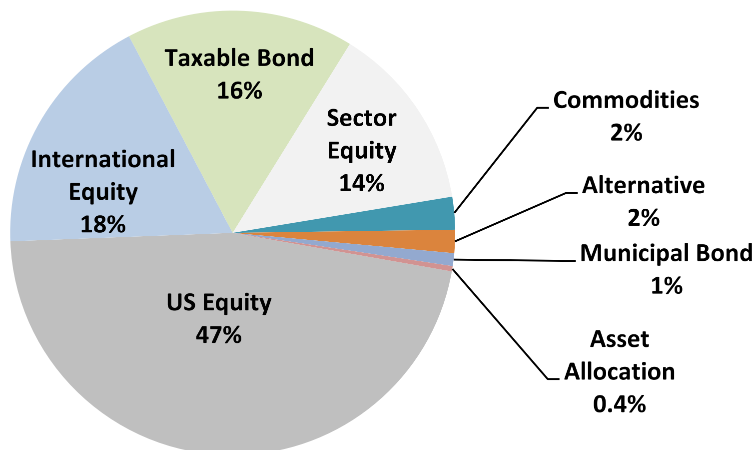
ETFs have grown in usage across all asset classes. While domestic equity funds account for the majority of ETF assets, representing 47% of total AUM, other asset classes have also experienced significant growth over the past 10 years. Specifically, asset allocation ETFs have seen the greatest growth over the past decade with a compounded annual growth rate of 67%.

Exhibit 5: Significant Growth Across All Underlying ETF Asset Classes



Source: KBW Research, Morningstar.

Exhibit 6: The Bulk of ETF AUM Is Within U.S. Equity-Based Products



As of December 31, 2016.

Source: KBW Research, Morningstar

The transition from actively managed to passively managed funds over the past decade has benefitted ETFs. From January 2007 through year-end 2016, passive equity mutual funds and ETFs received a combined $1.0 trillion in cumulative inflows. This is in sharp contrast to actively managed equity mutual funds which experienced cumulative outflows of nearly $867 billion over the same period.

Exhibit 7: ETFs Have Benefitted from Outflows from Actively Managed to Passive Equity Funds

Source: KBW Research, Morningstar.

ETFs are an integral part of the marketplace and represent some of the most widely traded equities. The most traded U.S.-listed equity in 2016, in terms of dollar volume traded, was an ETF. ***The SPDR S&P 500 ETF (SPY) saw $5.5 trillion traded in 2016 and was 5.4x more traded than the next highest ranking security, Apple, Inc. (AAPL).*** AAPL saw $1.0 trillion traded in 2016. In total, five ETFs ranked among the top 10 securities by dollar volume traded in 2016.

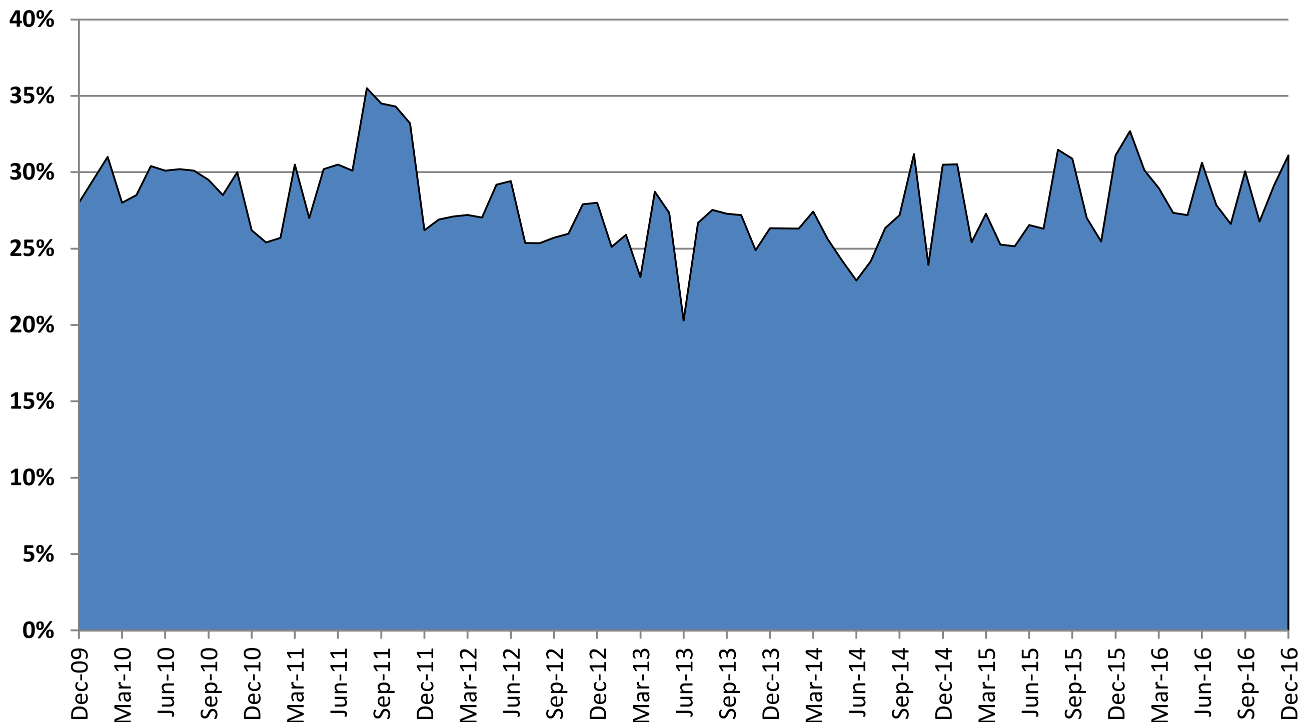
Exhibit 8: Top 10 Most Traded U.S. Listed Equities in 2016 by Dollar Volume Traded

Ticker	Name	Volume Traded ($B)	ETF ?
SPY	SPDR S&P 500 ETF Trust	5,480	Yes
AAPL	Apple, Inc.	1,008	
IWM	iShares Russell 2000 ETF	931	Yes
QQQ	PowerShares QQQ Trust	784	Yes
FB	Facebook, Inc.	739	
AMZN	Amazon.com, Inc.	710	
EEM	iShares MSCI Emerging Markets ETF	603	Yes
GDX	VanEck Vectors Gold Miners ETF	470	Yes
MSFT	Microsoft Corp.	429	
BAC	Bank of America Corp.	423	

Source: KBW Research, Bloomberg.

According to the most recent NYSE data, U.S. listed ETFs traded about $91 billion worth of shares per day in November 2016, and represented 29.1% of consolidated dollar volume traded of equities on U.S. exchanges. ***ETFs are not suddenly a new market phenomenon, as on average, since 2009, U.S. listed ETF dollar volume represented about 28% of consolidated dollar volume traded.***

Exhibit 9: U.S. Listed ETFs as a Percentage of Consolidated Dollar Volume Traded of Equities on U.S. Exchanges



Source: KBW Research, NYSE.

Institutional investors are utilizing ETFs, especially the largest ETFs, more than their retail peers. While ETFs have the origins as a purely retail investment product, their current investor base is much more diversified. We reviewed the most recent ownership data for the 25 largest ETFs and found that on average, retail investors accounted for 42% of all investors while institutional investors accounted for the remaining 58%.

Exhibit 10: Average Ownership of Top 25 ETFs by AUM

Source: KBW Research, Bloomberg, Factset.

Largest ETFs

Aside from trading volume, ETFs also continue to gain traction with AUM. The first U.S. listed ETF, SPY, is currently the largest ETF with nearly $224 billion in AUM. The 25 largest ETFs have a combined $1.1 trillion in AUM. The cost of the largest ETFs ranged from 4 bps (iShares Core S&P 500 ETF) to 72 bps (iShares MSCI Emerging Markets ETF), and averaged 17 bps for the group.

Exhibit 11: The Top 25 Largest ETFs by AUM

Ticker	Name	Assets Under Management ($M)	Avg Trading Volume	Fund Sponsor	Expense Ratio (bps)
SPY	SPDR S&P 500 ETF	224,385	71,543,680	State Street Global Advisors	9.5
IVV	iShares Core S&P 500 ETF	92,660	3,661,628	BlackRock	4.0
VTI	Vanguard Total Stock Market ETF	69,889	2,451,550	Vanguard	5.0
EFA	iShares MSCI EAFE ETF	62,365	21,315,554	BlackRock	33.0
VOO	Vanguard S&P 500 ETF	56,648	2,653,263	Vanguard	5.0
VWO	Vanguard FTSE Emerging Markets ETF	43,947	12,623,574	Vanguard	15.0
QQQ	Pow erShares QQQ ETF	43,447	17,917,120	Invesco	20.0
AGG	iShares Core U.S. Aggregate Bond ETF	41,753	3,534,139	BlackRock	5.0
VEA	Vanguard FTSE Developed Markets ETF	40,243	9,207,480	Vanguard	9.0
IWM	iShares Russell 2000 ETF	37,198	27,185,216	BlackRock	20.0
IJH	iShares Core S&P Mid-Cap ETF	36,945	1,590,435	BlackRock	7.0
IWD	iShares Russell 1000 Value ETF	35,184	2,345,005	BlackRock	20.0
VNQ	Vanguard REIT ETF	32,676	4,717,315	Vanguard	12.0
IWF	iShares Russell 1000 Grow th ETF	32,038	2,137,687	BlackRock	20.0
GLD	SPDR Gold Shares ETF	31,859	7,078,215	State Street Global Advisors	40.0
BND	Total Bond Market ETF	31,445	2,568,614	Vanguard	6.0
LQD	iShares iBoxx $ Investment Grade Corporate Bond ETF	28,680	4,590,988	BlackRock	15.0
IJR	iShares Core S&P Small-Cap ETF	28,093	3,405,480	BlackRock	7.0
EEM	iShares MSCI Emerging Markets ETF	27,598	47,080,824	BlackRock	72.0
VTV	Vanguard Value ETF	27,126	1,696,319	Vanguard	8.0
VUG	Vanguard Grow th ETF	23,040	1,120,985	Vanguard	8.0
XLF	Financial Select Sector SPDR Fund	22,444	53,082,552	State Street Global Advisors	14.0
VIG	Vanguard Dividend Appreciation ETF	22,388	891,969	Vanguard	10.0
TIP	iShares TIPS Bond ETF	22,076	2,174,368	BlackRock	20.0
MDY	SPDR S&P MidCap 400 ETF	19,658	1,341,172	State Street Global Advisors	25.0

Data as of 2/2/17

Source: KBW Research, ETFdb.com, Bloomberg.

ETF Sponsors

While there are nearly 80 ETF sponsors in the United States, the market is dominated by the top three sponsors. The three largest sponsors in the ETF market are BlackRock's iShares with about $1.0 trillion in assets or about 39% of the industry assets. The next largest provider is The Vanguard Group ($612 billion or 23% of ETF assets), and then State Street Global Advisors ($510 billion or 19% of the market). These top three players control 82% of ETF assets.

Exhibit 12: ETF Sponsors by Assets Under Management

Sponsor Name	Fund Family	# ETFs	Total ETF AUM ($M)
BlackRock	iShares	334	**1,018,652**
Vanguard	Vanguard	70	**611,759**
State Street Global Advisors	The SPDR Funds	145	**509,935**
Invesco PowerShares	Powershares	149	**114,543**
Charles Schwab	Schwab	142	**63,327**
First Trust	First Trust	25	**42,888**
WisdomTree	WisdomTree	76	**40,652**
Guggenheim	Guggenheim	21	**33,134**
Van Eck	VanEck	114	**33,758**
ProShares	ProShares	82	**26,229**

As of 2/2/17

Source: KBW Research, ETF.com, Bloomberg.

Leveraged and Inverse ETFs

Leveraged and inverse ETFs are a complex sub-group of ETFs that offer investors the ability to obtain leverage through equity products without the use of margin. Leveraged ETFs provide daily leverage on a diverse group of underlying asset classes. They are structured to provide a multiple of the daily performance (such as 2x, 3x), relative to the underlying benchmark. Simplistically, if you were to buy a 2x leveraged ETF and the benchmark returned 5%, the ETF should return 10%. Since the ETF is leveraged to the daily performance, the portfolio is essentially rebalanced daily and returns over time can drastically differ from the benchmark due to the effect of compounding.

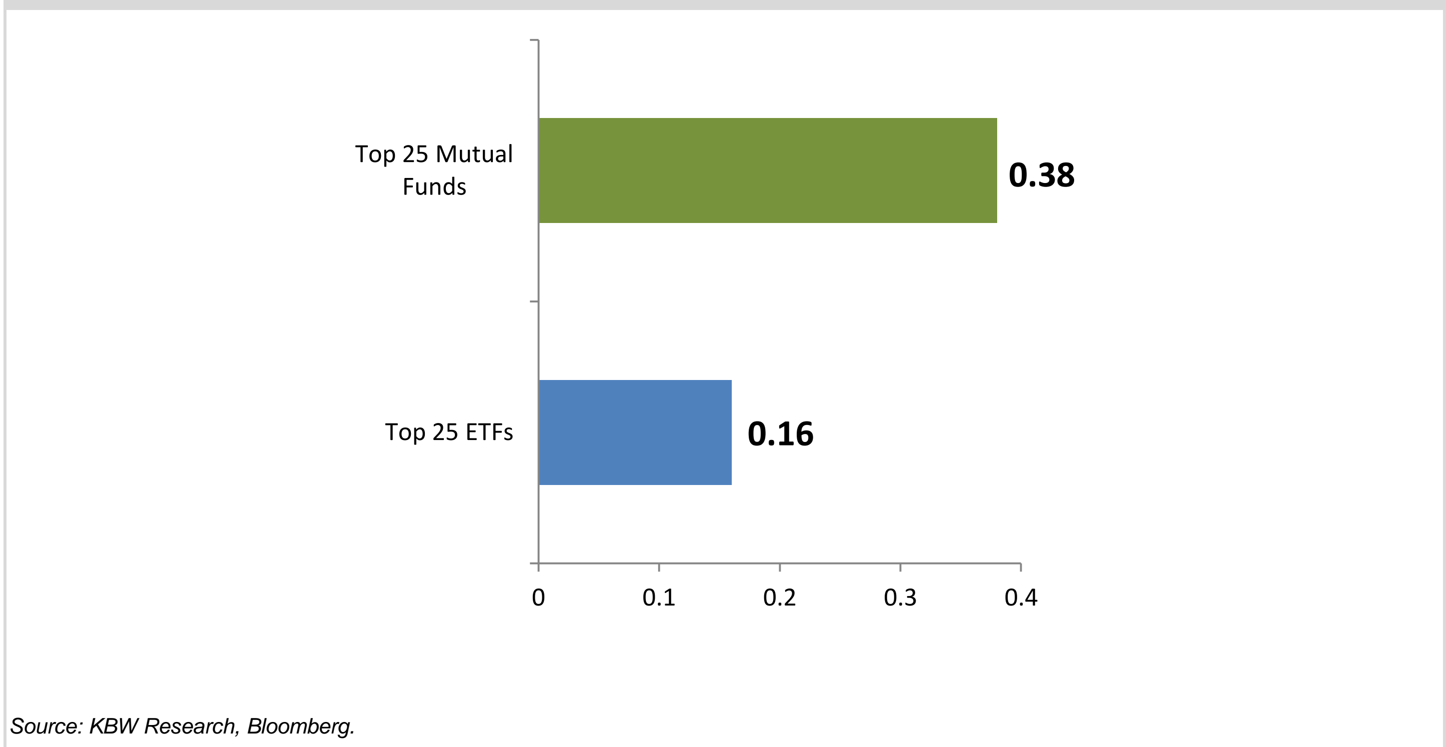
Inverse ETFs are similar to leveraged short ETFs and provide expected returns based on negative multiples. An inverse ETF is typically -1x while a leveraged short ETF might be at a higher leverage of -2x or greater.

Advantages of ETFs

ETFs have garnered prominence globally because of their transparency, liquidity, tax efficiency, and access to unique markets and diversified asset classes that would typically be more costly to investors. These benefits are the main reasons why AUM within ETFs have grown at a substantial rate since the launch of the first ETF.

- ***Low Cost:*** ETFs are generally low-cost vehicles when compared to other fund structures. The reasons are threefold: 1) ETFs do not charge loads or 12B-1 fees, 2) ETFs do not pass along administrative costs onto the investor (i.e., the investor's brokerage firm is responsible for most administrative functions and dividend distribution), and 3) passive ETFs do not incur large compensation costs like those associated with active fund strategies. Since costs are inevitable, the fact that ETFs are significantly cheaper than competing products is probably their number one advantage.

Exhibit 13: Average Cost of Top 25 ETFs vs. Mutual Funds: Average Net Prospectus Expense Ratio



Source: KBW Research, Bloomberg.

- ***Liquidity:*** Liquidity is another significant benefit of ETFs. By being listed on an exchange, ETFs trade throughout the trading day like equities. In addition, U.S.-listed ETFs have a single share class unlike mutual funds which have multiple share classes typically at different prices for different types of investors. ETFs therefore attract a broader range of investors which in turn further facilitates liquidity.

- ***Tax Efficiency:*** ETFs are tax-efficient instruments. When an investor sells ETF shares in the open market, this results in either capital gains or losses for the investor and does not affect the ETF. This is due to the in-kind method used in the creation and redemption process. Conversely, when a mutual fund has a large redemption, the manager must sell the underlying stocks to generate cash for the investor. When these stocks are sold at a gain or loss, this triggers a taxable event for the entire mutual fund, thereby impacting all investors.

- ***Transparency:*** ETFs are transparent as the vast majority of sponsors publish their fund holdings at the end of each trading day. This is in sharp contrast to mutual funds which are only required to report their holdings quarterly and with a 45-day delay. This transparency helps facilitate the arbitrage that ensures the ETF and its underlying assets trade independently but with some level of relation.

- ***Precise Diversified Exposure***: ETFs deliver diversified exposure to a specific asset class without the difficulty of selecting and purchasing shares individually. This could be particularly beneficial if an investor is interested in a narrow, specialized sector, or a smaller, illiquid market.

- ***Portfolio Management:*** ETFs provide investors with a tool to manage exposure across various asset classes, and they are highly effective tools for asset allocation. Various types of risk can also be managed by selecting different ETFs with low correlations to each other to limit exposure.

- ***Versatility:*** ETFs are highly versatile instruments and can be used in many ways other than just as a long-term investment vehicle. In particular, institutional investors can leverage ETFs for shorting purposes, hedging purposes or even for specific strategies such as tax-loss selling.

- ***Hedges/Shorts:*** ETFs provide investors with the ability to hedge their portfolios from sector or market risks. An investor can short an ETF to hedge market risks. Shorting an ETF is similar to shorting a stock. But, sometimes there are cost advantages when shorting an ETF because the creation/redemption process also allows investors to source the market maker to create new ETF shares and then subsequently sell them. Lastly, investors can also go long an inverse ETF to create a short position. Inverse ETFs allow investors to create a short position without borrowing the security, but there are additional risks that come from investing in both inverse and leveraged ETFs.

Risks

Market Risk: Despite their tax efficiency and lower costs, ETFs do not diversify away market risk. By design, most ETFs replicate and track a major market or sub-sector/industry index. If the ETF's underlying index moves lower, so will the ETF.

Composition Risk: ETFs may track the same sector or industry group but their performance may differ based on the underlying index or basket of securities they follow. A more precisely created index may offer better returns than a more broadly designed index. The underlying composition of the ETF and its weighting structure are key components that drive performance. To gauge their risk, investors can use standard deviation which measures an ETF's expected returns based on its historical returns. Standard deviation helps provide a common benchmark among different ETFs for investors to make decisions.

Exotic Exposure Risk: ETFs have made niche areas of the market easily accessible and affordable for investors. While this is beneficial because investors can access many different types of investments, it can also introduce risks for those investors where the underlying investment strategy is unsuitable for their risk appetite and investment style. As ETFs become more complex, not all investors may have the same understanding of the investment strategy. Some investors may not understand the complexity of the underlying strategy and loss potential.

Tracking Difference: Tracking difference is simply the difference between an ETF's return and its underlying index's return. ETFs do not provide the exact same returns as the underlying index and usually modestly lag the index. An ETF's expense ratio is the primary reason that an ETF lags its index. In addition, there are transaction costs associated with index rebalances and constituent changes that cause an ETF's performance to deviate from the index's performance. Further, when dealing with highly illiquid securities that have a high associated trading cost, some ETFs do not own the exact components of their respective benchmark indexes, and instead use sampling to hold a representative group of stocks in the benchmark. Sampling also helps to drive differentiated returns.

Liquidity Risk: An ETF's liquidity is measured by the liquidity of its underlying components, not its average daily trading volume. The average daily trading volume of the ETF simply conveys how frequently ETF shares are traded. ETFs are limited in their liquidity by the lowest liquidity component stock in their basket. The concept of an ETF's implied liquidity is determined based on the ability to trade the lowest liquidity component. The lowest liquidity component will determine the implied liquidity for ETF and convey to investors what size trades are feasible for the ETF.

Lack of Investor Education: ETFs are still a relatively new investor tool, and investors may lack adequate education on how to properly use them.

Trading Risks Associated with Bid Ask Spreads: The difference between the price buyers are willing to pay and the price that sellers are willing to accept for an ETF is known as the bid-ask spread. ETFs typically trade very close to their NAVs. But, for lower liquidity ETFs, the bid-ask spread may be wide and could act as a drag on potential returns.

Closure Risk: Sometimes an ETF does not garner enough assets for it to be profitable for a fund sponsor. When a sponsor chooses to liquidate an ETF, it does so in an orderly process and notifies investors typically between 30 to 60 days prior to liquidation. This allows investors to have two choices: 1) to sell their ETF shares and find a suitable replacement investment; or 2) to continue to hold their ETF shares and receive the cash equivalent of the value of the assets at the time of liquidation. The cash equivalent value of the assets may include capital gains, and therefore one possible risk from liquidation is that the sale of the securities owing to liquidation could suddenly create a short-term capital gains tax for investors.

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KBW

			*IB Serv./Past 12 Mos.	
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Restricted [RES]	**1**	**0.16**	**1**	**100.00**
Suspended [SP]	**22**	**3.51**	**3**	**13.64**
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