

Separating ETF Facts from Fiction

Over the past few years, a number of industry observers have raised concerns about the stability, solvency and risk management controls of exchange traded funds (ETFs). These commentaries have ranged from attempts to accuse ETFs of causing the 'Flash Crash' of 2010 to a number of research papers that have raised concerns about the accounting of ETFs as shorting transactions, the growing popularity of synthetic ETFs and the use of certain practices such as securities lending. Together, these commentaries could paint an inaccurate picture of ETFs.

It's important to remember that ETFs are not exotic investment vehicles but are, in fact, highly regulated investment vehicles that have been around for nearly two decades. State Street does not believe that well constructed and managed ETFs pose systemic risks. However, we do believe that increased disclosure, greater transparency and improved investor education are vital for helping investors decide which financial products are most appropriate for their investment needs, including ETFs. The increased scrutiny of ETFs is evidence of the industry's greatest opportunity and challenge—promoting a better understanding of the structures and safeguards that span a rapidly growing industry. While State Street welcomes this debate, we believe that the interests of investors will be better served if viewpoints on ETFs are supported by facts that reflect an accurate understanding of how they are structured, regulated and traded. This article will examine some of the events that have led to these concerns and clear up some common misconceptions about ETFs that persist today.

While ETFs are often portrayed as a new investment product, it's important to remember that they have been around since 1993, when State Street launched the first ETF (SPDR® S&P 500®¹ – Ticker SPY). As of September 30, 2011, \$1,246 billion dollars in assets were invested in 2,913 ETFs globally.² They provide investors with exposure to a variety of investment styles and a broad spectrum of equities and fixed income both at home and abroad, as well as specialized assets such as energy, gold and other commodities, in a cost-effective vehicle designed to replicate the performance of a particular benchmark or strategy. The impact ETFs have had in reshaping the way investors build and manage portfolios is a testament to the appeal of their core benefits, which include diversification, lower fees and expenses,* liquidity and transparency.

Over time, a number of ETFs have been introduced that employ hedging strategies and the use of derivatives rather than physical securities. Many of the accusations cautioning investors on the excessive risk of ETFs, including those raised in the wake of the Flash Crash of 2010, fail to acknowledge that each country regulates its ETFs differently, and all are held to a high degree of fiduciary and regulatory scrutiny.

*Frequent trading of ETFs could significantly increase commissions and other costs such that they may offset any savings from low fees or costs.

THE FLASH CRASH

Perhaps no single event has generated greater controversy and misinformation about ETFs than the Flash Crash of May 6, 2010. On that day, a number of events occurred that highlighted some of the operational inefficiencies inherent on the various exchanges that resulted in one of the wildest days in Wall Street's history, with the share prices of many securities, including many ETFs, temporarily losing half their value or more for a brief period.

Some commentators speculated that ETFs were to blame for the Flash Crash, but a closer look at the event itself demonstrates that ETFs were a victim, rather than a culprit, of a series of interdependent market events.

On the afternoon of May 6, the Dow was already down around 300 points following discouraging economic news from Europe. According to an SEC analysis of the Flash Crash,³ at 2:32 pm a large fundamental trader used an automated algorithm to execute a sizable sell order of S&P 500 futures contracts. For the next 13 minutes, high-frequency-trading firms began to buy and sell these contracts to each other. Selling pressure caused prices to drop by 5% in a four minute period. Meanwhile, cross-market arbitrageurs began to buy these discounted contracts and sell

individual securities and ETFs. This maelstrom of buy-and-sell activity generated trading volume that was over 10 times higher than the trading volume during the equivalent time period of the previous three days. At 2:45 pm, these price declines caused the Chicago Mercantile Exchange to automatically halt trading in these contracts for five seconds, which helped to alleviate the sell-side pressure.

Unfortunately, before this action could help stabilize the market, these cumulative price declines triggered a number of automated trading systems to temporarily pause trading. These pauses activate when accurate pricing information on securities is either unavailable or prices move beyond predetermined thresholds and give traders some breathing room to evaluate what is happening in the market and plan their next move.

These same pricing issues caused a number of exchanges to begin enacting self-help provisions. These operational procedures are designed to protect traders by allowing an exchange to sever its connections with other exchanges in times of extreme market duress or technological malfunctions. Ideally, exchanges should centrally coordinate activation of their self help provisions, but during the Flash Crash individual exchanges enacted them independently. The resulting uncertainty and confusion caused a number of market makers and other liquidity providers to cancel their bids for many securities, including ETFs, or withdraw from the market entirely, temporarily creating an environment where sellers could not find buyers.

All of these events led to the most volatile 30 minutes in Wall Street's history. Starting around 2:40 pm, the Dow fell another 600 points in five minutes before recovering most of its losses by 3:07 pm. During this time, nearly two billion shares traded with a total volume of more than \$56 billion. While 98% of all trades executed at prices within 10% of their 2:40 pm value, more than 20,000 market trades involving more than 300 securities, including many ETFs, executed at a loss of 60% or more, including a number of stocks that sold at pennies per share. Eventually, traders realized that this volatility was the result of operational, rather than systemic issues, and when the market closed the Dow recovered most of its losses to finish down 348 points for the day.

WHY DID ETF PRICES DROP DURING THE FLASH CRASH?

Because ETFs' net asset values are based on the price of their underlying securities, the sudden free-fall in the price of many individual securities, the lack of accurate pricing information and the uncertainty whether orders would even be executed caused many market makers to either reduce their bids for ETF shares or temporarily stop making them altogether. This created a liquidity vacuum that drove prices down even further, as sellers couldn't find buyers for their shares. Investors who placed their trades as market orders, rather than stop or limit orders, suffered the

most significant losses during this period. These losses, however, weren't restricted to ETF investors; any investor who sold stock using market orders may have experienced similar losses. In the end, however, many of these losses were nullified when the SEC rescinded all trade executions for securities whose prices had declined by 60% or more during this period. ETFs accounted for 68% of these trades.

In the aftermath of the Flash Crash, the SEC collaborated with the exchanges to implement processes that should result in greater coordination of protective measures in times of extreme volatility and trading volume. Among these processes were the institution of 'circuit breaker' rules that automatically halt trading in a selected list of stocks and ETFs if their prices experienced extreme short-term volatility. State Street supports these rules and would like to see these circuit breaker provisions expanded to encompass all stocks and ETFs in order to provide greater protection to investors during times when technical and operational issues create market uncertainty.

While there is no guarantee that Flash Crash-like conditions won't occur in the future, investors may avoid becoming victims of these events by refraining from trading in highly volatile markets. If investors are compelled to buy or sell shares of ETFs or any other security during periods of high trading volume, State Street recommends that these trades be placed using stop or limit orders or a combination of the two.

TRACKING ERROR AND PRICING VOLATILITY

Some industry commentators have claimed that during periods of high market volatility, ETFs experience significant tracking error. This is a broad generalization that has not been substantiated by independent research.

For ETFs, tracking error is defined as the difference between a fund's NAV performance and the total return of its underlying index. Depending on an investor's time horizon, tracking error can be measured on a daily, monthly, quarterly or annual basis.

In general, ETFs that fully replicate the underlying securities of their indices tend to have lower tracking errors than those that use 'optimization' methods to create a representative or optimized portfolio of securities that closely matches the characteristics of the underlying index. Investors should examine each ETF's tracking error on an individual basis as part of their due diligence process.

In terms of short-term pricing volatility, it is true that high trading volume may drive the prices of ETFs higher or lower than their indicative intraday value. However, the unique process ETFs and Authorized Participants use to create and redeem shares helps keep these swings in check. For example, if it appears that demand for shares will exceed supply, an Authorized Participant

can provide additional securities to the ETF in exchange for the right to create additional shares and supply them to the market to meet this demand.

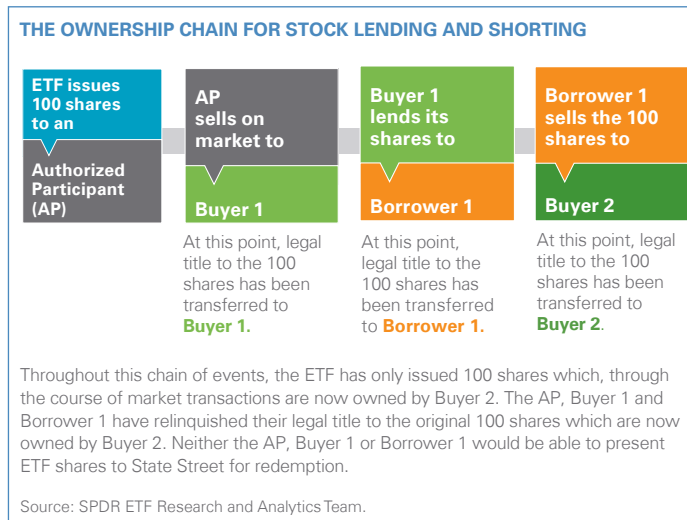
The reverse is also true. In the event of high redemption volumes, an Authorized Participant can gather large increments of fund shares into a redemption unit and deliver them to the ETF in exchange for the underlying securities in the appropriate weightings.

The ability of Authorized Participants to manage this process effectively may be impacted by a number of factors, including the inability to get accurate pricing information on certain securities (particularly those in overseas markets) or a lack of liquidity in certain securities that Authorized Participants are required to purchase or sell. This, again, is why State Street recommends that investors protect their trades with stop or limit orders.

Tracking error is only one of many issues investors need to consider when contemplating an investment in any ETF. A SPDR ETF whitepaper, *Insights into Evaluating Exchange Traded Funds* (available on www.spdrs.com.hk), provides information on this and other issues.

SHORTING ETFs

Many of the concerns raised about ETFs focus on their common use as shorting vehicles. Specifically, commentators have stated that the unique share creation and redemption process employed by ETFs could put them at risk of default if a high volume of redemption requests for 'phantom shares' generated by multiple short sales exceeded the actual supply of 'real' shares.



For example, if Buyer 1 sells 100 shares of XYZ ETF short by lending them to Borrower 1, who then immediately sells them short to Buyer 2, ownership of these shares could temporarily appear on the account records of all three investors, creating the illusion that 300 shares actually existed. Industry commentators have incorrectly assumed that if all three parties tried to redeem these shares, the ETF would be redeeming 200 more shares than actually existed.

This assertion demonstrates a misunderstanding of how ETF trades are executed and settled. While shares sold short may temporarily appear on the ledgers of multiple buyers and borrowers, there is only one actual 'owner' of ETF shares. Final ownership is only determined by the trade that settles the assigned shares. Most ETF sponsors, including State Street, require Authorized Participants or their clients to demonstrate proof of ownership of ETF shares before they can be redeemed. In this illustration, only Buyer 2 would be able to redeem these shares, since this investor was the final 'purchaser.'

DERIVATIVES AND SYNTHETIC ETFs

A great deal of criticism has been directed at the growing number of ETFs that use derivatives, rather than physical securities, to replicate their associated indices. ETFs that use synthetic replication attempt to replicate index returns by purchasing total return swaps through agreements providers arrange with one or more counterparties. The counterparty agrees to deliver the return of the underlying index, sometimes minus a small spread, in exchange for the performance of a pool of securities that is held by the ETF. If the counterparty defaults, this collateral pool provides recourse for investors in the ETF. To minimize the risks, some synthetic ETF providers over-collateralize the swap and/or use multiple swap counterparties.

A synthetic ETF should track the underlying index closely, but it does not physically hold the index's component shares. These vehicles have come under increased scrutiny due to their potential for introducing opacity, complexity and credit risk to ETF products. While not particularly popular in the US, in Europe synthetic ETFs represent more than 60% of European ETF offerings and 44% of invested assets.⁴

Critics of synthetic ETFs claim that they do not truly reflect the liquidity of the underlying benchmark and are subject to default risks should redemptions exceed their ability to sell illiquid derivative-based securities, particularly if the ETF uses a single counterparty. They also raise conflict-of-interest concerns over synthetic ETFs that are issued by the asset management arms of banks and pay fees to the bank's derivatives trading desks to serve as exclusive counterparties in swap transactions. Finally, they claim that such ETFs may not be adequately understood by investors.

Finally, all ETFs—including synthetic ETFs—are held to even stricter transparency requirements than mutual funds. Portfolio holdings must be valued on a daily basis, following pricing procedures established by its board of directors and disclosed in the fund's prospectuses. All current holdings must be made available to the public and listed in semi-annual reports, including derivatives. And any ETF that uses derivatives must include language in its prospectus describing their purpose in the portfolio and how they will be managed.

These rules apply not only to synthetic ETFs that attempt to replicate index returns but to inverse and leveraged ETFs which seek to either move in an opposite direction of the target index or outperform the target index by a specific multiple.

State Street Global Advisors does not currently offer synthetic SPDR ETFs, but recognizes that this structure may offer certain benefits to investors who are comfortable with their inherent risk-return characteristics—particularly as they relate to gaining access to specialized asset classes or to products that are difficult to manage in traditional ETFs, which hold the same or representative securities as their associated index. In return, investors must be comfortable with these products' counterparty risks. It's important for investors to remember that regulations governing any kind of ETF will vary from country to country.

SECURITIES LENDING

Several industry organizations have recently raised concerns over the use of securities lending among ETFs. Securities lending plays a major role in the efficient functioning of the securities markets worldwide and fund participation in securities lending programs can be a valuable part of efficient portfolio management, offering benefits to both lenders and borrowers. Securities lending is a common practice for institutional investors as well as commingled funds, mutual funds and ETFs, and is strictly regulated in most financial markets.

In a securities lending transaction, securities are temporarily transferred by one party (the lender) to another (the borrower). The borrowers are brokers, dealers and other financial institutions, which provide collateral in return for the loan. The lender retains the economic benefits associated with ownership of the loaned securities such as the dividends and corporate action entitlements. The borrower is contractually obligated to return the securities upon recall by the lender. The borrower pays a fee to the lender for the use of the borrowed securities.

Securities lending may directly benefit shareholders, as it generates revenue for the fund which can potentially offset fund expenses and improve index tracking. In addition, the fund can continue to collect dividends on loaned securities. For their part, the borrowers gain an opportunity to turn a profit in a transaction

such as shorting a security. Securities lending allows them to obtain securities with which to express their investment opinions at a lower cost than if they bought the securities outright. This improves the efficiency of market pricing and lowers costs for investors overall.

RISKS AND BEST PRACTICES

Like all investments, securities lending bears risks. The risks associated with lending securities can be reduced by using an experienced lending agent. The agent facilitates the transaction, managing and reducing the risks associated with securities lending. The agent screens potential borrowers and negotiates the amount and type of cash or non-cash collateral. The agent also arranges for the investment of the cash collateral and monitors non-cash collateral.

The most common risks of securities lending relate to the loaned securities (counterparty risk and replacement risk), the collateral (collateral risk and cash collateral investment risk) and to other aspects of handling the loans (operational risk and tax and accounting risk). The level of risk varies with the quality of the lending agent's practices.

- **COUNTERPARTY RISK**, also known as borrower risk, is the risk that the borrower will default on its obligation. In other words, the risk that the borrower will not return the borrowed security—or the sum required to replace the security—to the lender. This can be managed by careful selection and monitoring of borrowers. Some lending agents indemnify borrowers, meaning they will make up the default-related shortfall in funds needed to replace securities.
- **REPLACEMENT RISK** refers to the risk that it may be difficult to purchase replacement securities if the borrower fails to return the borrowed securities.
- **COLLATERAL RISK** refers to the risk that is associated with the non-cash collateral used to secure a loan. A loan that is secured by collateral is considered safer than an unsecured loan. However, the value of the collateral may fluctuate and diverge from the value of the loaned security. This can happen for a variety of reasons, including credit quality, liquidity, price volatility and exchange rate fluctuations. A lending agent has an array of techniques that can reduce the risk of insufficient collateral.
- **CASH COLLATERAL INVESTMENT RISK** refers to market risk in that investments may not perform as expected or desired. Cash collateral is generally easier to value than non-cash collateral.
- **OPERATIONAL RISK** refers to risks such as processing mistakes as well as problems with trade settlements and accurately tracking or distributing dividends, interest or corporate action entitlements. This can be reduced and monitored by compliance officers and audits by internal and external experts.

- **TAX AND ACCOUNTING RISK** means that a country's tax and accounting bodies may treat payments on loaned securities differently than interest or dividends paid on those securities. A good lending agent is responsible for surfacing these possibilities, so it can address them to the client's benefit.

SECURITIES LENDING BY ETFs

Securities lending programs are not new nor are they unique to ETFs. They are in fact a common practice used by many traditional commingled vehicles, including mutual funds, and are strictly regulated in most major financial markets. Many ETFs, including some SPDR ETFs, and other collective investments engage in securities lending programs. The details and risks of an ETF's securities lending program are disclosed in its prospectus and should always be reviewed before investing in any ETF.

Typically, an ETF uses a lending agent to lend a portion of the underlying securities in the ETF portfolio to brokers, dealers and other financial institutions. If the ETF needs to sell the security, it can recall it from the borrower. Critics of securities lending warn that this practice poses counterparty risk, in that a default of the security's borrower could potentially leave the ETF provider scrambling to replace the securities it lent out. However, many ETFs apply additional safeguards and procedures, beyond regulatory requirements, to ensure that any lending of securities does not create liquidity or redemption risk. For example, all SPDR ETFs participate in an indemnified securities lending program, which means that State Street Bank and Trust will indemnify the ETFs should a borrower default.

In addition, the operational procedures for share creation and redemption are designed to protect the interest of the fund's

shareholders by contractually requiring the fund's Authorized Participants to represent that shares being tendered for redemption are settled shares in the possession of the Authorized Participant or the client they represent. As such, a SPDR ETF is not directly impacted by the amount of lending in the secondary market ('short interest') and cannot be redeemed for more than its actual shares outstanding.

Though they are widely available in many countries, securities lending programs are still in their early stages in much of the Asia Pacific region, where SPDR ETFs do not currently engage in this practice. Details and risks of securities lending programs are disclosed in qualifying SPDR ETF Prospectuses / Product Disclosure Statements.

CONCLUSION

For nearly two decades, ETFs have enabled investors to effectively execute short-term and long-term investment strategies under a wide variety of market conditions. In most developed financial markets, investors can trade ETFs with confidence knowing that they are subject to the same regulations that govern other pooled investment funds; ETFs are strictly regulated to help ensure liquidity, manage risk and operate with a high degree of transparency and fiduciary oversight.

As the ETF universe evolves to encompass a broader range of investment objectives and trading strategies, they will continue to be a topic of ongoing analysis and discourse. State Street believes that these discussions will be a great benefit to both investors and the industry in general—when supported by data, and based on a deep understanding of how ETFs are structured, regulated and managed—both at home and abroad.

ABOUT SPDR® ETFs

Offered by State Street Global Advisors ("SSGA"), SPDR ETFs are a family of exchange traded funds that provide investors with the flexibility to select investments that are precisely aligned to their investment strategy. Recognized as the industry pioneer, State Street Global Advisors created the first ETF in 1993 – SPDR S&P 500®⁵ which is currently the world's largest ETF.⁶ SSgA introduced ETFs in Asia Pacific in 1999 when it launched the Tracker Fund of Hong Kong⁵. Since then, SSgA has introduced Singapore's first ETF, the SPDR Straits Times Index ETF⁵. Currently, State Street Global Advisors manages approximately US\$244 billion of ETF assets worldwide.⁷

STATE STREET GLOBAL ADVISORS ASIA LIMITED

68/F, Two International Finance Centre
8 Finance Street, Central, Hong Kong
+852 2103 0100

STATE STREET GLOBAL ADVISORS SINGAPORE LIMITED

COMPANY REGISTRATION: 200002719D
168 Robinson Road, #33-01 Capital Tower
Singapore 068912
+65 6826 7500

¹ The fund is not authorised by the Securities and Futures Commission (SFC) and may not be available to investors in Hong Kong.

² Bloomberg, SPDR ETF Research and Analytics Team, as of 30 September 2011.

³ U.S. Securities and Exchange Commission, Findings Regarding the Market Events of May 6, 2010, as of 30 September 2010.

⁴ IndexUniverse.eu, <http://www.indexuniverse.eu/europe/opinion-and-analysis/7862-synthetic-etf-boom-slows.html>.

⁵ The ETFs mentioned herein are offered in limited jurisdictions only and may not be available for certain investors.

⁶ Bloomberg, as of 30 September 2011.

⁷ As of 30 September 2011. This AUM includes the assets of the SPDR Gold Trust (approx. US\$64 billion as of September 30, 2011), for which State Street Global Markets, LLC, an affiliate of State Street Global Advisors serves as the marketing agent.

THIS MATERIAL IS FOR YOUR PRIVATE INFORMATION.

The whole or any part of this work may not be reproduced, copied or transmitted or any of its contents disclosed to third parties without SSgA's express written consent.

The information provided does not constitute investment advice and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell a security. It does not take into account any investor's particular investment objectives, strategies, tax status or investment horizon. You should consult your tax and financial advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information.

ETFs trade like stocks, are subject to investment risk, fluctuate in market value and may trade at prices above or below the ETFs net asset value. Brokerage commissions and ETF expenses will reduce returns. Frequent trading of ETFs could significantly increase commissions and other costs such that they may offset any savings from low fees or costs. Diversification does not ensure a profit or guarantee against loss. Asset Allocation may be used in an effort to manage risk and enhance returns. It does not, however, guarantee a profit or protect against loss.

"SPDR" is a trademark of Standard & Poor's Financial Services LLC ("S&P") and has been licensed for use by State Street Corporation. STANDARD & POOR'S, S&P, SPDR and S&P 500 have been registered in many countries as trademarks of Standard & Poor's Financial Services LLC and have been licensed for use by State Street Corporation. No financial product offered by State Street Corporation or its affiliates is sponsored, endorsed, sold or promoted by S&P or its affiliates, and S&P and its affiliates make no representation, warranty or condition regarding the advisability of buying, selling or holding units/shares in such products. Further limitations and important information that could affect investors' rights are described in the prospectus for the applicable product.