

**Second Follow-Up Response to SEC Questions Regarding the Use of Derivatives by
Registered Investment Companies and Business Development Companies,
File Number S7-24-15**

This is an additional follow-up to our previous comment letters responding to the SEC's questions regarding derivative use by registered investment companies.¹

The Intercontinental Exchange ("ICE") responded to the SEC request for comments on April 15, 2016.² ICE was responding in part as owner of the New York Stock Exchange including NYSE Arca; the largest listing exchange for exchange traded funds ("ETFs"). As we have demonstrated, the data shows ETFs present significant and increasing risk concerns.

ICE argues Value at Risk ("VaR") models can be effective risk valuation methods for fund portfolios under the right circumstances (with limitations), stating:

"ICE maintains, however, that relative VaR methodologies on the whole serve as an appropriate measurement of the aggregate exposure of derivative holdings as compared to the rest of the fund's portfolio. By exploring a distribution of scenarios and their outcomes on the portfolio, VaR and related methodologies are widely used by professional fund managers and investors to understand the risks in portfolios. While any single summary statistic cannot describe all possible risks associated with a portfolio, VaR approaches, and more importantly, their limitations, are well understood in the asset management industry."

The question here is not whether VaR models are appropriate in all aspects of the financial industry, but rather, are they reliable for the evaluation of exchange traded products ("ETPs") and associated derivatives that are the subject of this SEC public inquiry?

Ernst & Young defines VaR models as, "...the value-at-risk (VaR) used to calculate a fund's full portfolio VaR and securities VaR is an estimate of potential losses on an instrument or portfolio over a *specified period and at a given confidence interval*."³

Ernst & Young indicates a reluctance to perform and certify an audit of risk models stating, "As a result, we believe that the extent of procedures performed by auditors with respect to a closed-end fund's compliance with the provisions of proposed Rule 18f-4 should be limited to gaining an understanding of the closed-end fund's policies and procedures for compliance and verifying that these policies and procedures have been approved by the fund's board."

¹ *Response to SEC Questions Regarding the Use of Derivatives by Registered Investment Companies and Business Development Companies File Number S7-24-15*, March 28, 2016

<https://www.sec.gov/comments/s7-24-15/s72415-111.pdf>

Follow-Up Response to SEC Questions Regarding the Use of Derivatives by Registered Investment Companies and Business Development Companies, File Number S7-24-15, April 11, 2016 <https://www.sec.gov/comments/s7-24-15/s72415-192.pdf>

² Intercontinental Exchange letter to the SEC, *Release No. IC-31933; File No. S7-24-15; "Use of Derivatives by Registered Investment Companies and Business Development Companies"*, April 15, 2016

<https://www.sec.gov/comments/s7-24-15/s72415-196.pdf>

³ Ernst & Young letter to the SEC, *Use of Derivatives by Registered Investment Companies and Business Development Companies (Release No. IC-31933; Commission File No. S7-24-15)*, March 30, 2016

<https://www.sec.gov/comments/s7-24-15/s72415-184.pdf>

Risk Model Failures – Long-Term Capital Management

Arguably, hedge fund Long-Term Capital was blessed with the some of the most brilliant financial model developers of all time, including two economic model Nobel laureates and a former vice chairman of the U.S. Federal Reserve Board. It attracted top traders, economists and IT personnel because of its reputation as the premier organization using computerized models to trade securities. The finance wizardry almost took down the financial system. The Federal Reserve enlisted 14 of the largest Wall Street firms to bailout and wind down Long-Term Capital.

During the peak of the 2008 financial crisis, bestselling author, Wall Street Journal veteran and New York Times journalist, Roger Lowenstein, wrote *Long-Term Capital Management: It's a short-term memory*;⁴

"Its strategy was grounded in the notion that markets could be modeled. Thus, in August 1998, the hedge fund calculated that its daily "value at risk" — meaning the total it could lose — was only \$35 million. Later that month, it dropped \$550 million in a day."....."In the wake of Long-Term Capital's failure, Wall Street professed to have learned that even models designed by "geniuses" were subject to error and to the uncertainties that inevitably afflict human forecasts. It also professed a newfound respect for the perils of borrowing. Whether this wisdom endured may be judged by events of the past year, when not only Bear Stearns but also scores of banks and financial institutions have written off hundreds of billions of dollars — a result of blithe faith in models of the housing industry, not to mention a voracious hunger to do business on credit."

London Whale

As a relevant example since the financial crisis, JP Morgan suffered an internal failure of a VaR model between one of its' own clients and itself as a counter party. The well known trades, some of which were between the asset management division in California and JP Morgan's Chief Investment Office division in London, has been widely reported as the 'London Whale' trades. Internal review by JP Morgan and regulatory observations reveal a complete breakdown and potential manipulation of its' risk management models, which resulted in a 6 billion dollar loss to JP Morgan.⁵

This was a risk model failure for only one trading strategy, inside one clearing firm and demonstrates the risk that models can fail to anticipate; even at the most sophisticated financial firms. Empirical evidence shows that risk models are ineffective in determining losses in stressed markets where liquidity is absent. This is a fundamental consideration with regard to the SEC's proposal for a portfolio risk limit.

⁴ New York Times article, *Long-Term Capital Management: It's a short-term memory*, Roger Lowenstein, September 7, 2008 http://www.nytimes.com/2008/09/07/business/worldbusiness/07iht-07lcm.15941880.html?_r=0

⁵ New York Times article, *As One JPMorgan Trader Sold Risky Contracts, Another One Bought Them*, Azam Ahmed, May 15, 2012 http://dealbook.nytimes.com/2012/05/15/as-one-jpmorgan-trader-sold-risky-contracts-another-one-bought-them/?_r=0

Financial Times article, *JP Morgan loss strokes risk model fears*, Tracy Alloway, May 13, 2012 <http://www.ft.com/intl/cms/s/0/1293de8c-9ba2-11e1-b03e-00144feabdc0.html#axzz479DraCyP>

Bloomberg article, *The London Whale*, Patricia Hurtado, February 23, 2016 <http://www.bloombergvew.com/quicktake/the-london-whale>

Again, we raise the question; are these risks consistent with the intent of the Investment Company Act of 1940 (“1940 Act”) that governs these products? What if there were 10 Authorized Participants/clearing firms putting ETFs at risk through complex structured transactions like the London Whale trades? In this case, they could not just be affecting their own firm, but could also affect the ETF investors.

The data for some ETFs suggests it would be naïve to think that there are not external, risk-on, synthetic positions above the shares outstanding that are being accounted for within some clearing firms, as the information below exemplifies.

As stated in our previous comment letter, VaR models existed during the dot-com bubble, mortgage-backed securities crisis in 2008 and other negative market events where the VaR models failed to show warning signs to the marketplace of the coming stresses. Presumably, there were VaR models in place that had been thought to be accurately designed for AIG, Lehman Brothers, Bear Stearns, Wachovia and other firms that collapsed or nearly collapsed in 2008.

As SIFMA notes, the SEC no longer accepts the theory that VaR models properly function as promoted. In fact, the SEC suggests these models are ‘subjective’ and vulnerable for ‘gaming’ by industry participants.⁶

There is no question that 10 experienced financial modeling personnel assigned to the same project could independently arrive at many different model scenarios, with numerous outcomes.

All Market Participants May Not Use Risk Models

In its’ response to the SEC, ICE is making an assumption that asset managers and other professional market participants are going to use the appropriate models for complex transactions, intensely develop them to include a variety of circumstances and be able to come to the right conclusions. At times, certain firms have completely ignored conventional risk models and instead put risk on.

For example, Latour Trading (owned by Tower Research Capital a firm regarded as sophisticated model experts) was alleged by the SEC to have ‘extensive failures to maintain minimum net capital’ in connection with proprietary trading of ETFs, including the NYSE’ SPDR S&P 500 ETF (Symbol: SPY).⁷ The SEC used an example of Latour’s intra-day position that exceeded \$9 billion worth of SPY shares, when it had a negative net capital account. Thus, it is not conservative/prudent to conclude that all market participants are going to be as concerned and intensely investigative as ICE suggests (i.e. that professional market participants will be in developing and implementing VaR models).

The real question is: should the SEC put a limit on managements’ ability to take on portfolio risks, which appears to be the intent of the 1940 Act, or should industry risk models

⁶ SIFMA letter to the SEC, *Use of Derivatives by Registered Investment Companies and Business Development Companies*, File No. S7-24-15, March 28, 2016 <https://www.sec.gov/comments/s7-24-15/s72415-174.pdf>

⁷ SEC Administrative Proceeding In the Matter of Latour Trading and Nicolas Niquet, File No. 3-16128, September 17, 2014 <https://www.sec.gov/litigation/admin/2014/34-73125.pdf>

that are subjective, vulnerable to ‘gaming’ and have proven on multiple occasions to be unreliable, replace/become the modern intent of the 1940 Act?

ETF Outcomes Have Varied

The SPY and its sister ETF, the iShares S&P 500 ETF (Symbol: IVV), both track the same blue chip companies.

During the May 6, 2010 Flash Crash, the IVV became unhinged from both its related ETF, the SPY, and the value of the S&P 500 underlying securities. There was a large differential in the trading in these two related ETFs. The high of the day for both the SPY and the IVV was \$117. The low of the day for the SPY was \$105 or a decrease of 10% from the high price. However, the IVV plummeted 25% from the high to a low price of \$88.⁸

Using sophisticated model theories, this could not have happened. These two ETFs should have tracked the same securities identically. Different models can predict different risk conclusions, but the ETFs based on the same securities should have the same outcomes.

This is not an isolated event. On August 24, 2015, the IVV again deviated from the SPY and the underlying S&P 500 blue chip companies. Trading in the IVV triggered two circuit breakers, while the SPY tracked the underlying S&P 500 Index from the opening bell. At the lowest, the SPY priced the S&P 500 Index at 1,829 and the IVV priced the same index at 1,480; a 349 point difference, which would have resulted in an approximate differential in loss to all markets of \$3.2 trillion based on the IVV’s price.

The outcome of the trading and valuations on these securities operated by sophisticated firms were obviously dramatically different than what standard risk models would project. Risk models for the IVV (owned by BlackRock) and the SPY should be top of the class. If risk models are generally reasoned throughout the industry, then why has the IVV varied from the SPY and the underlying securities twice? Are risk models reliable for 'plain vanilla' index and physical based ETFs (IVV and SPY)? What are the VaR confidence levels of auditors when derivatives are added to a portfolio?

Ernst & Young stated that a VaR model should consider losses ‘over a specified period’, so how do ETF risk models calculate another Flash Crash or an August 24th type event?

If auditors are not comfortable with ETP risk models, should investors or regulators be?

ICE’s Significance

ICE’s status as a SRO responsible for the enforcement of securities laws and its’ members trading, its’ availability of a vast amount of market data, ownership of the largest ETF listing exchange (NYSE Arca), ownership of the largest exchange traded fund in the world the SPY⁹ (also, the largest traded security in any market), ownership of Interactive Data Holdings

⁸ Historical price information was sourced from Commodity Systems Inc. and verified by data from Edgar Online.

⁹ Not only is the SPY listed on NYSE Arca, but ICE is the parent of its sponsor, PDR Services LLC. The SPY’s prospectus states “On November 13, 2013, the Sponsor became an indirect, wholly-owned subsidiary of Intercontinental Exchange, Inc. (“ICE”), following the acquisition of NYSE Holdings LLC (the parent company of the Sponsor) by ICE.” https://www.spdrs.com/library-content/public/SPDR_500%20TRUST_PROSPECTUS.pdf

(which develops/utilizes VaR calculations) and the above historical information gives ICE an undisputed level of sophistication and credibility.

Moreover, NYSE Arca has been directly involved in bringing almost all ETFs to market through rule change filings that allow the ETFs to become listed and traded on its exchange and the filings explain an ETFs proposed investment goals/strategies to the SEC.

Therefore, given this expertise and sophistication, we believe ICE should consider the following questions and issues of concern and help investors and regulators better understand what is occurring in the market of ETFs.

Secondary Market Influences on ETP Risk Models

In its' comment letter to the SEC, ICE states a risk model should include 'a distribution of scenarios and their outcomes on the portfolio'. We agree that it is necessary for any risk models used for ETPs to examine the available scenarios that could put stress in the marketplace, including those affecting the ETF from the more important secondary market activity.

However, it is unclear whether ICE is using its' own described method of including a variety of scenarios and outcomes in its risk models for the SPY (or if extended scenarios are being utilized for other ETFs and derivative product risk models).

Significant market impacts from derivatives in the secondary market have been recognized to possess the capability of influencing ETFs and their underlying securities. These risks are expanded by the number of derivatives that become attached to the same small group of securities or ETFs.

For example, the SEC/CFTC reports on the May 2010 Flash Crash stated the unusual volumes and prices on May 6th were attributed to a cascading meltdown of market prices beginning from the S&P 500 E-Mini futures contract that escalated to the SPY and then spilled over into S&P 500 securities.

Derivatives Have Morphed

Instead of being based on market prices, some sophisticated market participants suggest derivatives are now leading the market with direct influence on ETPs and underlying assets.

Though industry participants do not agree precisely which product is leading prices; it does not appear that the founding principle of derivatives 'only reflecting' pricing of underlying assets is still true, but rather they are 'affecting the prices' of the underlying securities as suggested by the CME Group and the largest ETF operator, BlackRock.

In October 2010, the CME Group released a statement on the May 2010 Flash Crash, stating:¹⁰

"Academic and empirical evidence has ***firmly established*** that stock index futures markets are significantly more liquid than alternatives, including broad-based index ETF

¹⁰ CME Group press release, *CME Group Statement on the Joint CFTC/SEC Report Regarding the Events of May 6, October 1, 2010* <http://investor.cmegroup.com/investor-relations/releasedetail.cfm?ReleaseID=513388>

markets. As a result, stock index futures markets typically function as the **leading price indicator** and **fundamental** broad-based **equity market movements are generally first evidenced in CME's E-mini S&P 500 futures markets.**"

In a June 2013 letter to investors, according to BlackRock (operator of iShares ETFs), ETFs were/are leading the market:¹¹

"The last few weeks have highlighted an underlying trend that merits **more public appreciation. More and more ETFs are becoming the true market.**" BlackRock reinforces this theory by stating: "In a rapidly moving market, the reported prices of individual underlying assets may become stale. The ETF price can become **the true price for that market**, and **the underlying assets may eventually catch up** with any gap between the two."

These conflicting statements from industry members that their products are leading the market ahead of the underlying securities, illustrates the interconnectivity of all the products and that they do have a direct effect on the underlying securities pricing. The statements show the nature of derivative products as originally designed has changed and they now can **pose risks to the primary ETP portfolio and their underlying assets.**

These statements suggest that any risk models would have to be extensive in looking at the multiple scenarios in the primary portfolio, the secondary market trading and portfolios created.

More Derivatives Can Fragment Products Adding Risk

As an example of how the increasing number of derivatives on the same securities can have diminishing returns, in May 2013, the BOX Options Exchange listed a new derivative product based on the SPY, a Jumbo S&P 500 option contract for 1,000 shares of the SPY. Competing exchanges publicized their concerns regarding the Jumbo options.

Boris Ilyevsky, the managing director of the International Securities Exchange stated:¹²

"We believe Jumbo SPY would not create incremental volume and, even worse, could **harm liquidity in SPY.**"

"Larger sized ETF contracts do not address any unmet need in the industry and in fact would serve primarily to further fragment **one of the few healthy centers of liquidity.**"

The Chicago Board Options Exchange in a comment letter to the SEC when the BOX Options Exchange first proposed Jumbo options on the SPY stated:¹³

"CBOE believes that the Commission should give consideration to the fact that BOX's filing would introduce **a third contract on a single security.** CBOE believes that the

¹¹ BlackRock Open Letter to Our Investors, June 29, 2013

¹² Reuters article, 'Jumbo' SPY options make debut, but liquidity a concern to some, Doris Frankel, May 10, 2013 <http://www.reuters.com/article/2013/05/10/us-jumbo-spy-options-idUSBRE9490YL20130510>

¹³ CBOE comment letter to the SEC on File No. SR-BOX-2013-06, February 25, 2013 <https://www.sec.gov/comments/sr-box-2013-06/box201306-1.pdf>

potential for market fragmentation increases with each additional and different contract on a single security, even if that security is highly liquid with a well-established trading history.”

Regarding the BOX Jumbo SPY product, as owner of the SPY and the SRO/exchange that lists its shares for trading, the NYSE stated:¹⁴

“Importantly, the creation of a second-tier market for internalizing SPY options would also detract from price discovery and discourage aggressive liquidity provision in the regular SPY contract (one of the most successful options products ever created).”

We agree; the more secondary market derivatives on the same security poses increasing risks for the underlying security. This is precisely why derivatives that have expanded dramatically in the last few years could pose risks directly to the center of the capital markets, i.e. the S&P 500 blue chip securities which are the very heart of the important U.S. companies, the financial system as a whole and the economy.

There are now hundreds of ETPs with the same large cap U.S. equities as components. For example, for just the 30 Dow stocks there are now **between 80 and 100 ETPs**. Other important weighted S&P 500 non-Dow stocks are generally underlying securities in over **80 ETPs**. This is true for the most important S&P 500 companies with numerous side bets additionally available on the same securities, such as options and futures products.

Moreover, there is a number of other derivative products based on the same securities, including index futures, E-Mini futures, single stock futures, index options, equity options, leap options, flex options and swaps.

The **relatively new interconnection** between top U.S. companies and **hundreds of derivative products** (ETPs, options, futures etc.), has caused an unprecedented and apparent unhealthy relationship between traditional investments and systemically risky products that puts the majority of U.S. institutional and retail investors’ and potentially taxpayers’ money at risk in a stressed or crisis market environment.

Given the above, it seems apparent the secondary market trading and portfolio risks should be considered when evaluating ETPs.

Shadow ETP Portfolios

In essence, with ETPs there are 2 portfolios at risk, the ETP fund and the derivatives created within clearing firms through Authorized Participants, liquidity providers or others in the secondary market (the shadow portfolio(s)). These risks could be spread over multiple shadow portfolios operated by a number of participants and clearing firms. For the purpose of this discussion, we consider these multiple participants transactional activity together as one shadow ETP portfolio. The shadow portfolios consist of uncovered short sales and other derivatives.

These participants operate somewhat like the ETP issuer by creating synthetic positions based on the ETP shares outstanding. These shadow portfolios may be subject to similar market

¹⁴ NYSE Euronext comment letter to the SEC on File No. SR-BOX-2013-06, February 25, 2013
<http://www.sec.gov/comments/sr-box-2013-06/box201306-2.pdf>

stress or compounding to the ETPs' stresses on the funds' primary portfolio. Does ICE agree that these potential external stresses should be considered together with the primary ETP fund when contemplating the full derivative risk of ETP portfolios and what ETP portfolio risk limits should actually be? Are the undisclosed clearing firm positions in the shadow portfolios an issue for SRO enforcement oversight?

No Asset Creation Required

As previously discussed, regardless of the trading in the marketplace, there is no requirement for any party to create ETF portfolio assets. BlackRock, the largest global ETF operator by assets under management, explained the contractual requirements/obligations of Authorized Participants to the ETF:¹⁵

“Authorized Participants are not agents of the ETF – they are not required to create or redeem ETF shares under any circumstances, and only do so when it is in their interest.”

This is simply an incentive to sell ETF shares short. While these agreements between ETFs and Authorized Participants stipulate the above, these agreements do not supersede the industry/SRO rules or federal securities laws, rules and regulations.

The shadow portfolios could be leveraged with undisclosed liabilities of billions of dollars with no one required to reconcile with the main portfolios. Should auditors/fund management monitor the ETF shadow derivative portfolio risks? Should SRO enforcement be involved?

ETP Auditing

PricewaterhouseCoopers (“PwC”), as the independent accountant for the SPY has been auditing the financial data, which PwC states is the responsibility of State Street as the Trustee. PwC’s statement in the SPY filings includes only a surface audit of the ETF and does not appear to consider any external positions based on the SPY residing at clearing firms, i.e. synthetic positions over and above the shares issued/outstanding for the SPY.¹⁶

We believe ideally, as an auditor, PwC should be looking at all available risk scenarios, which include not only the primary portfolio, but the influence within the secondary market trading and synthetic/derivative position developments and ensuring disclosure of all risks to investors and regulators.

Specific Risk Considerations

There are other fundamental factors that should be incorporated into fund risk profiles to determine the true risks for ETFs, including: 1) new investment in the ETFs that does not cause

¹⁵ In a previous comment letter submitted to the SEC regarding Exchange Traded Products, BlackRock stated: “A small group of investors, known as Authorized Participants (“APs”), can trade directly with an ETF..... Authorized Participants are not agents of the ETF – they are not required to create or redeem ETF shares under any circumstances, and only do so when it is in their interest.” BlackRock Letter to the SEC Re: Exchange-Traded Products, Release No. 34-75165; File No. S7-11-15, Page 3, August 11, 2015 <http://www.sec.gov/comments/s7-11-15/s71115-10.pdf>

¹⁶ SPY Prospectus: https://www.spdrs.com/library-content/public/SPDR_500%20TRUST_PROSPECTUS.pdf

creation of shares, 2) shares outstanding turnover ratio, 3) shares not borrowed and delivered to the purchaser to complete contractual settlement of short sales and undisclosed liabilities/fails to deliver outside of the national clearance and settlement system, and 4) institutional holdings dilution and risks.

These and other subjects of concern are discussed below using a variety of data and time periods since the 2008 financial crisis to show there are red flags involving the SPY spanning a number of years.

1. No Net Creation of Shares

Without net creation of shares, the underlying S&P 500 stock holdings of the SPY do not effectively grow (investor sentiment (monies) are not transferring to the underlying assets and assisting in capital formation). The trading is not causing capital formation for investors in the SPY, nor in the underlying securities.

As an example of the lack of share creation for the SPY, on **December 13, 2012**, there were **824.2 million** shares outstanding and on **August 7, 2014** (*414 trading days later*), there were **825.6** million shares outstanding; an increase of just 1.4 million shares or a change of only one tenth of 1%; essentially no net change. Between these dates, marketplace volume for the SPY totaled **48 billion shares, worth \$8.2 trillion**.

During the 414-day period from December 13, 2012 through August 7, 2014, on 71% of the days (296), there was **less than 1% change in SPY shares outstanding from the previous day**. There are many time periods when shares outstanding changed less than 1% for consecutive days.

Reporting markets/SROs showed **65%** of all sales were the product of a short sale. Using the reporting markets percentage as a proxy, there were approximately **31 billion shares sold short** valued at **over \$5.3 trillion** during the period.¹⁷

In other words, there was \$8 trillion worth of SPY shares sold with \$5 trillion sold short (not owned by the sellers), **while there was virtually no net creation of shares outstanding to support this trading**. The summary data for this period is shown in Table 1.

Table 1 – SPY Marketplace Volume and Value, with Percent of Short Sales on Reporting Markets December 13, 2012 through August 7, 2014 (414 Trading Days). **Shares Outstanding at the Beginning and End of This Period: Approximately 825 Million.**

| | Trade Volume | Value Based on Daily Closing Price |
|---------------------------------|----------------|------------------------------------|
| Total Marketplace | 48,206,697,900 | \$8,225,654,349,292 |
| Short Sales Based on SRO | | |
| Reporting Markets Percent (65%) | 31,162,024,592 | \$5,321,631,995,402 |

¹⁷ We are reasonably confident the reporting markets percent of short selling is a representation of short selling on the non-reporting markets. Therefore, throughout this document we also use the percentage of short selling on reporting markets as a proxy for short selling on the consolidated tape.

To put this in perspective, for the full **414-day period**, the average daily trade volume was **116 million shares** for a total volume of **48 billion shares** with a **net change in shares outstanding of 1.4 million shares**; **virtually no net creation**.

During this 414-day period, the price of the SPY increased from \$143.42 to \$191.03 (a 33% increase), indicating positive investment sentiment continued without a net increase in underlying assets. This appears to us to be a **brilliant red flag** for the owners and operators of the SPY and its' auditor, indicating that there are problems with the trading and settlement processes that could significantly impact the ETF. Considering the owner is a SRO with enforcement responsibilities mandated by Congress, an answer should be available to explain this activity.

This lack of creation is found throughout many important ETFs and is a fatal flaw in these products that are believed to resemble mutual funds. Without the requirement to purchase shares/assets from open market investments, an ETF is ideal for a short exposure trade (i.e. a naked sale where shares should be created/borrowed, but are not). Instead of the marketplace trading growing the ETF portfolio, it appears to be growing the positions within clearing firms.

The risks to the ETF and the underlying from a lack of asset creation are substantial and cannot be easily quantified. However, we believe these risks should be factored into risk models and disclosed to the public and regulators when an ETF has not been creating shares despite net new investment for years.

2. Rapid Turnover of Shares Outstanding

The ratio of shares outstanding turned over by the trading volume is an important commonly used metric that should be considered as a factor in evaluating the number of potential shares trading in the markets versus the shares issued/outstanding.

An ETF portfolio value is based on the shares outstanding, but if a shadow portfolio exists with many more shares outstanding than an ETF reports to be available, the fundamental basis of the financials come into question. When there is an extremely high turnover ratio and shares in the underlying portfolio are not increasing accordingly, the obvious outcome is that synthetic positions are being created at some clearing firms.

The redemption risk of 5 shares existing in a synthetic derivative state against one real share outstanding in the main ETF portfolio can result in a completely different outcome of any model used to calculate the base portfolio at risk.

Table 2 below shows the yearly turnover ratio of all the shares outstanding for the SPY for three one-year periods from March 2009 – February 2012. There was a remarkable turnover of shares averaging **78 times** each year for **three consecutive years**.

The trade volume turned all of the shares outstanding over every **3 days** for **three consecutive years**. This ratio in of itself is **highly improbable** in a supply and demand marketplace where shares outstanding play an important role in clearance and settlement of transactions.

Table 2 – SPY Average Shares Outstanding Turnover Ratio

| Period | Annual Turnover Ratio of Average SPY Shares Outstanding by Total Trade Volume | Number of Days to Turnover Average SPY Shares Outstanding by Total Trade Volume | Daily Value of Turnover of Average SPY Shares Outstanding by Total Trade Volume |
|---------------------|---|---|---|
| March 09 - Feb 2010 | 81.25 | 3.10 | \$21,376,098,138 |
| March 10 - Feb 2011 | 74.77 | 3.37 | \$23,100,051,422 |
| March 11 - Feb 2012 | 77.84 | 3.24 | \$27,406,583,794 |
| Totals | 233.86 | | |
| Average | 77.95 | 3.24 | \$23,960,911,118 |

Despite all of this trade activity, out of the 757 trading days during the three years, the fails to deliver at NSCC **were less than 100,000 shares** on 251 days and were less than 10,000 shares on 107 days. On 30 of those days, ***fails were actually zero***, indicating ***perfect settlement*** of all new and previous long and short transactions.

This suggests clearing firms are ex-clearing undelivered securities outside the national clearance and settlement system (concealment of failed delivery of securities from regulators). It is becoming more recognized that these types of ex-cleared positions could develop into a risk for the national clearance and settlement system operated by DTCC/NSCC (a SRO).¹⁸

ICE and the SPY advisors should be considering the sheer volume traded in the SPY each day and the rapid turnover of the shares outstanding in comparison to settlement activity.

Unexplained Turnover of All Shares Outstanding

As a striking example, the SEC/CFTC reports on the May 2010 Flash Crash focused on the 20-minute Flash Crash and the trading on May 6th. On May 6th, the SPY traded all of its' shares outstanding.

But what is really remarkable is that on May 7th, again the SPY traded all of its' shares outstanding; two straight days as shown in Table 3. Additionally, many other securities also turned over all shares outstanding on both trading days.

¹⁸ Susan Cosgrove, DTCC Managing Director, Clearance and Settlement/Equities stated: "Because these trades are processed outside of NSCC's systems, it is ***impossible*** to estimate their numbers – making them ***essentially invisible to regulators*** and the industry and creating ***systemic risk*** during a time when financial firms are searching for new risk mitigation strategies."

DTCC Bylined Articles, *Transforming The Processing of Fails And Other Open Obligations*, October 1, 2009, <http://www.dtcc.com/en/news/2009/october/01/transforming-the-processing-of-fails-and-other-open-obligations.aspx>

Table 3 – All SPY Shares Outstanding Traded on May 6 and May 7, 2010

| Symbol | Fund Name | Shares Outstanding End of Day 5/5/10 | Volume Traded 5/6/10 | Average Volume from January 4 - May 5, 2010 | 5/6/10 Volume as a % of Average Volume | Volume Traded 5/7/10 | 5/7/10 Volume as a % of Average Volume |
|--------|------------------|--------------------------------------|----------------------|---|--|----------------------|--|
| SPY | SPDR S&P 500 ETF | 613,382,116 | 647,356,600 | 197,853,248 | 327% | 637,558,800 | 322% |

As the table shows, trading volumes were substantially elevated in the SPY on May 6th and May 7th; well above the average volume in 2010 prior to the Flash Crash. It is hard to explain why and how a very significant U.S. ETF could/would trade all of its' shares outstanding in one day, much less explain how this could happen for two days in a row. It is equally difficult to explain why the share volumes would remain elevated on May 7th when there was not any defined Flash Crash occurring.

The pricing was considerably affected in the Flash Crash, but on May 7th when all of the SPY shares outstanding were traded again, the pricing was not remarkable. Nor was the pricing remarkable in the other ETFs that experienced turnover of all shares outstanding on May 6th and May 7th (as examples, the following are all State Street ETFs listed on NYSE Arca: the SPDR S&P Retail ETF (Symbol: XRT), SPDR S&P Oil & Gas Exploration & Production ETF (Symbol: XOP), Financial Select Sector SPDR Fund (Symbol: XLF), Industrial Select Sector SPDR Fund (Symbol: XLI) and SPDR S&P Metals and Mining ETF (Symbol: XME)).

These consecutive days of trading have not been publicly discussed, but considering most of the securities underlying these additional ETFs that experienced this anomalous trading consist of components of the S&P 500 securities and the SPY, additional questions may arise for SROs as to: a) why this occurred, b) could this happen again, and c) what possible future risks may be related to these specific unusual market events.

3. Accounting for Risks from 'Naked' Short Positions and Fails to Deliver Outside the National Clearance and Settlement System

The risks of shares not being borrowed and delivered to complete contractual short sale settlement and the growing number of undisclosed liabilities/fails to deliver outside of the national clearance and settlement system should be of significant concern to SROs, investigated and enforcement actions taken if violations of securities regulations are found.

The **very large trading volume** (647 million shares worth approximately \$74.2 billion), which **exceeded all SPY shares outstanding on May 6, 2010** resulted in the NSCC fails **decreasing by 2.4 million shares**; a 78% decline. This indicates no problems completing the settlement of all SPY transactions on May 6th and an additional covering of 2.4 million shares occurred according to the NSCC data.

This is truly **remarkable** as all of the shares issued and outstanding were traded. Even more remarkable on May 7th again all of the SPY shares issued and outstanding were traded. If the trades were going through the national clearance and settlement system, it is hard to explain, in a logical supply and demand market, how all transactions could be so easily settled at the

NSCC when all of the shares outstanding traded on consecutive days. The simple result here is that all shares (the entire value of the SPY) transacted twice during the two days.

Can ICE explain why this turnover of shares outstanding two days in a row did not cause a significant number of net new fails at NSCC? Can it explain how long-term investors in the SPY were affected? What risks were in the marketplace on May 7th that were unknown by investors because the price did not reflect that all shares were changing hands, including those previously owned by institutions and other investors?

Was there no risk to these investors because there was little or no change in the beneficial ownership of the shares outstanding of the SPY? If so, what was trading in the marketplace; thin air versus actual shares outstanding?

How can this liquidity be quantified in risk models? Is there a significant amount of liquidity being counted on in securities like the SPY that is not resulting in changes of beneficial ownership?

A Short, But Significant Period to Examine

The following is a 16-day period ICE should consider as owner of the SPY and as a SRO. As shown in Table 4, from March 25 through April 16, 2013 (16 trading days) the creation/redemption in shares outstanding was less than 1% each day, with the average daily change just 3.5 million shares. At the beginning of the period, there were 249 million shares reported in short interest and 98 thousand shares failed at NSCC.

During the 16-day period, there were 2 billion shares traded worth ***\$313 billion***. Based on the reporting markets short sale percent (63% on average), approximately 1.3 billion SPY shares were sold short worth \$197 billion.

Despite the large volume of shares sold short, ***short interest declined during the period***. By April 10th, 241 million shares were reported in short interest and on April 25th, 234 million shares were reported short; a decline of 15 million shares from March 25th.

During the period, NSCC fails did not grow to reflect a large increase in delivery failures despite the 63% level of short selling. All shares outstanding were turned over on average ***each 8 days by trade volume***. At the same time, there were no net increases in shares borrowed and for already existing short positions there was a decrease (i.e. a covering of short interest occurred).

The following 16 days of data from the SPY (the largest traded security) is compelling evidence that trading/short selling is occurring without substantial increases in shares borrowed. Moreover, the number of fails reported by NSCC are not logically tied to the trading/reported short selling in the SPY.

Table 4 – SPY Volume, Short Sale Percentage, Short Interest and NSCC Fails March 25 through April 16, 2013

| Trade Date | Total Daily Marketplace Volume (Consolidated Tape) | Percent of Short Sale Volume on SRO Reporting Markets (Excluding Unreported Markets) | Short Sales Based on SRO Reporting Markets Percent | Short Interest | NSCC Fails |
|-----------------------------|--|--|--|-------------------|------------|
| 3/25/2013 | 151,322,300 | 59% | 89,476,876 | 248,708,900 | 98,016 |
| 3/26/2013 | 86,856,600 | 60% | 51,705,734 | | 15,711 |
| 3/27/2013 | 99,950,600 | 63% | 63,248,740 | | 77,589 |
| 3/28/2013 | 102,932,800 | 64% | 65,753,473 | | 219,649 |
| 4/1/2013 | 99,194,100 | 61% | 60,359,610 | | 37,674 |
| 4/2/2013 | 101,504,300 | 64% | 64,790,195 | | 44,152 |
| 4/3/2013 | 154,167,400 | 67% | 102,521,321 | | 1,998 |
| 4/4/2013 | 131,885,000 | 62% | 81,900,585 | | 50,677 |
| 4/5/2013 | 159,666,000 | 60% | 95,448,335 | | 239 |
| 4/8/2013 | 86,571,200 | 66% | 56,920,564 | | 72,921 |
| 4/9/2013 | 101,922,200 | 64% | 64,822,519 | | 311 |
| 4/10/2013 | 135,711,100 | 63% | 85,932,269 | 241,458,300 | 519,658 |
| 4/11/2013 | 110,142,500 | 62% | 68,244,293 | | 6,800 |
| 4/12/2013 | 116,359,900 | 66% | 76,413,546 | | 404,156 |
| 4/15/2013 | 217,259,000 | 63% | 137,829,110 | | 2,477,191 |
| 4/16/2013 | 147,507,800 | 63% | 93,416,690 | | 545,670 |
| Average | 125,184,550 | 63% | | | |
| Change During Period | | | | -7,250,600 | |
| Total | 2,002,952,800 | | 1,258,783,858 | | |

Due to the amount of volume and short selling without an increase in short interest or fails at NSCC, there should have been a large amount of shares being created during this period, but this did not happen (at the beginning of the period there were 828 million shares outstanding, at the end of the period there were 848 million shares outstanding; an increase of 20 million shares. By comparison, trade volume was 2 billion shares, with over 1.2 billion sold short.). Without large creations, significant numbers of SPY shares should have failed at NSCC, but again this did not occur.

Given the data for this period, NSCC fails are illogical and inconsistent with the 2 billion shares trading, aggressive short selling and decreasing shares borrowed. This suggests that internalized and ex-cleared fails to deliver/receive, including offshore re-hypothecated synthetic securities positions are not reflected in data produced by the NSCC. Compliance red flags are raised here regarding the settlement of securities transactions in accordance with U.S. laws for this important ETF.

According to the Data, Securities Are Not Being Lent/Borrowed for Short Sales

As shown by the data, there is a disconnect between short selling and securities lending that cause significant concerns of; a) systemic risk from excess ownership resulting in over-leveraged positions across the asset management, broker-dealer/clearing firm and investment

funds industries, b) unknown liability to financially support these uncovered short positions, c) inadequate collateralization supporting these positions, and d) unlimited real net capital risks for some firms creating synthetic positions. The data is very clear; securities lending has declined while short selling has increased. All metrics we have examined support this conclusion.

Additional evidence of this was released in the Financial Stability Oversight Council's Annual Reports.¹⁹ Charts in the *Securities Lending* section of the FSOC reports show the values and composition of securities lending from 2008 through January 2015. The underlying data sets are not available, but two trends are illustrated in the FSOC charts; a) securities lending has flat-lined, and b) the composition of equity securities lending has remained relatively consistent (specifically ETF lending has been consistently flat in value despite the growing number of products, increasing market prices and short selling).

The FSOC, FOCUS Reports and short interest reporting all suggest this underlying trend is correct and that a significant change in securities lending occurred after the market crisis bottom in March 2009.²⁰ This trend has flat-lined for six years despite enormous short selling reported on U.S. exchanges and increased market value of securities.

According to the FSOC reports, ETFs have consistently accounted for between 4% and 5% of the total static value of securities lending despite enormous amounts of short selling in significant ETFs, without substantial share creation to cover the short sales.

The value of ETF securities lent during the reported period has been between \$40 and \$50 billion for *all ETFs despite trillions of dollars in short sales over the period*.

Moreover, the number of U.S. ETFs grew from **719 to 1,436** from the financial crisis market bottom in March 2009 to January 2015.²¹ Given the large amount of short selling in ETFs, this increase in the number of ETF products alone should have created more share lending, but it did not.

As discussed above, the SPY is the largest security traded by value globally. The value of short interest for the SPY alone (one security) was about equal to the value of all ETF shares on loan from the lending data provided in the FSOC report for January 31, 2015. This suggests a large amount of ETF short sales are **not collateralized with borrowed shares**.

4. Ownership of Shares Outstanding

When share ownership exceeds all shares outstanding, risk grows from a possibility of a high level of redemptions under stressed market conditions.

Institutional money managers with over \$100 million in assets are required to report holdings to the SEC on quarterly 13-F reports. Many other managers, advisors and investors are

¹⁹Most recent: Financial Stability Oversight Council 2015 Annual Report and Annual Report Data <https://www.treasury.gov/initiatives/fsoc/studies-reports/Pages/2015-Annual-Report.aspx>

²⁰ In case there is any confusion between securities lending and the repo markets, the Federal Reserve Bank of New York reports that equity securities and ETFs total a minute amount of repos, contributing almost nothing in value to the securities lending discussion. http://www.newyorkfed.org/banking/tpr_infr_reform_data.html

²¹ Sources: Investment Company Institute and ETF.com as of January 2015.

not large enough to be required to file 13-F reports, but collectively own or represent owners of significant amounts of value held in S&P 500 stocks over and above 13-F filings.

Average holdings of institutional money managers filing 13-F forms for the SPY during the 18 months from January 15, 2013 through June 30, 2014 (367 trading days) exceeded 80% of the SPY shares outstanding. This high level of ownership suggests that other investors own the remaining shares outstanding, which is supported by the trading in the SPY. More recently, as of the quarter ended September 30, 2015, just institutional holders reported ownership of 95% of the SPY shares outstanding.

When an ETF has a high amount of institutional ownership (not including unreported ownership), the risks of over-ownership of shares should be considered and disclosed to regulators and investors.

There was obviously investment monies incoming to the SPY as market prices continued to increase during the 367-day period, but this did not result in a net increase of the SPY's holdings of the underlying S&P 500 companies. This period began with **870 million** shares outstanding and ended with a decline to **860 million** shares.

During the period, the SPY was sold short on reporting markets/SROs at 65%. There was virtually no increase in shares borrowed for short sales and of the 367 days, fails at NSCC were zero on 11 days and under 20,000 shares on 25% of the total dates.

At 65% short sales with no increase in short interest, supply constraints should cause substantial fails at NSCC if it were capturing the real amount of fails in the financial system. This did not occur; signaling that systemic risk from settlement fails may be building significantly within some clearing firms' books/records outside of the observable view of the national clearance and settlement system and regulators (i.e. shadow portfolios).

Given these metrics, with virtually 100% of SPY shares owned, a decline in shares outstanding and no net substantial change in short interest, supply and demand market theory observers would expect considerable constraints in trading. However, this did not occur as the average number of shares outstanding were sold almost **50 times** or every **7.5 days** during the 367-day period.

Trading and short selling continued (and continues today) unabated without supply constraints. To summarize, **\$7.3 trillion** of the SPY was sold (65% short) during this period (from January 15, 2013 through June 2014, 367 trading days) without; a) increasing shares outstanding, b) increasing shares borrowed, or c) NSCC accounting for any sizeable fails and at times reflecting **no fails** despite the shares averaging over **80% in known institutional ownership** during the period.

Does ICE agree that these metrics should be considered when evaluating an ETF by both ETF management (market gatekeepers) and SROs?

SRO Questions

In our previous comment letters regarding this SEC proposal and other SEC requests, we have provided data for the SPDR S&P Retail ETF (Symbol: XRT).²² The XRT is **one of several major ETFs** (along with their underlying equity securities) that have had ongoing excessive short selling, a high number of shares owned by reporting institutions (up to 7 owners per share at times for the XRT, considering just institutional 13-F reporting owners), inadequate share creation to support legitimate settlements, significantly under borrowed shares for short sale transactions, improper reporting of short interest and fails (ex-cleared/internalized) outside of the NSCC for several years.

The XRT has been a **Regulation SHO threshold security every day since December 14, 2015** (77 straight trading days as of April 5, 2016, our examined period). As of April 26th, the XRT was still listed on the NYSE Arca Regulation SHO threshold security report.

During the 77 days from December 14 – April 5th (the end of this document examination period), the XRT averaged 13.5 million shares outstanding (which is close to what the XRT shares have averaged for years). The total trade volume on the consolidated tape was 320 million shares, which turned over the average shares outstanding more than **23 times** in the 77 days or just over every 3 days.

This turnover ratio is again astounding by any measure, but for a Regulation SHO threshold security with the following metrics, there is no explanation how this could occur with legally provided locates and full contractual settlement of the transactions.²³

During the 77-day Regulation SHO period, XRT short sales as a percentage of total volume on reporting markets was **72%**, reaching a high on December 30, 2015 when 90% or 9 of every 10 shares were a product of a short sale. There are very few real XRT shares being sold. Nine of 10 shares sold short when a security is under Regulation SHO protections indicates, in this case, that the marketplace is filled with shares not owned by the sellers regardless of the laws, rules and regulations governing the U.S. markets.

This is an unusual time for the XRT. It is a current period spanning quarter ending dates, December 2015 and March 2016. It may be that a fairly large position is attempting to settle with shares issued by the ETF, but is not able to do so in a timely manner because shares are just not readily available, resulting in fails for the more than 77 days.

The Regulation SHO list information is published each day by NYSE Arca. While the XRT should have been receiving protection under Regulation SHO for the 77 days, the total trade value was **\$13.6 billion**, with **approximately \$9.8 billion sold short** based on the reporting markets percent of short selling. The average XRT net asset value of \$578 million was turned over by the \$9.8 billion of just short sales approximately 17 times during the 77 days.

²² Response to SEC Questions Regarding the Use of Derivatives by Registered Investment Companies and Business Development Companies File Number S7-24-15, <https://www.sec.gov/comments/s7-24-15/s72415-111.pdf>

²³ As we have stated, there appears to be a significant amount of washing/matching or similar type trading adding fictional volume to the marketplace, which we believe should also be of concern for a SRO listing the XRT for trading.

This is a large amount of transactional value in a security that essentially has no shares available to trade and is a Regulation SHO issue. Virtually nothing in the trading of the XRT changed after the Regulation SHO designation. This is not the apparent purpose of Regulation SHO and its amendments, i.e. to have *no affect* on securities that are being abusively sold short.

Certain ETFs, including the XRT, do not appear to be benefiting regular and long-term investors or the ETF's underlying securities capital formation processes; but rather are benefiting short sale transactional activity for a few, to the detriment of other market participants and perhaps ultimately the U.S. economy and taxpayers.

Table 5 shows five periods of extreme short selling since December 14, 2015, while the XRT was a Regulation SHO threshold security. These are market metrics we believe should be of concern for a SRO with regulatory responsibilities mandated by Congress.

Table 5 – Short Selling on Reporting Markets/SROs on Consecutive Example Days When the XRT was a Regulation SHO Threshold Security

| Date | Consolidated Tape Volume | Percent of Short Selling on All Reporting Markets | Percent of Short Selling on BATS Markets Combined | Percent of Short Selling on NASDAQ Markets Combined | Percent of Short Selling on NYSE TRF and NYSE Arca Markets Combined |
|------------|--------------------------|---|---|---|---|
| 12/15/2015 | 4,927,800 | 83% | 82% | 93% | 79% |
| 12/16/2015 | 4,830,500 | 85% | 82% | 89% | 85% |
| 12/17/2015 | 4,053,800 | 81% | 78% | 85% | 80% |
| 12/29/2015 | 1,798,800 | 77% | 78% | 80% | 72% |
| 12/30/2015 | 2,117,500 | 90% | 92% | 86% | 90% |
| 12/31/2015 | 2,771,400 | 88% | 86% | 89% | 92% |
| 1/21/2016 | 4,241,300 | 78% | 83% | 70% | 79% |
| 1/22/2016 | 4,311,500 | 78% | 87% | 61% | 84% |
| 1/25/2016 | 3,780,700 | 78% | 77% | 80% | 76% |
| 1/26/2016 | 4,396,000 | 78% | 76% | 87% | 74% |
| 1/27/2016 | 3,541,000 | 76% | 79% | 67% | 80% |
| 1/28/2016 | 2,492,200 | 76% | 78% | 84% | 67% |
| 1/29/2016 | 3,331,500 | 75% | 75% | 77% | 75% |
| 3/11/2016 | 5,056,600 | 83% | 81% | 87% | 82% |
| 3/14/2016 | 3,246,200 | 85% | 83% | 91% | 81% |
| 3/15/2016 | 4,608,700 | 81% | 81% | 84% | 80% |
| 3/16/2016 | 4,524,600 | 89% | 89% | 91% | 86% |
| 3/17/2016 | 4,771,600 | 87% | 84% | 89% | 88% |
| 3/28/2016 | 3,027,300 | 79% | 82% | 75% | 76% |
| 3/29/2016 | 3,027,900 | 76% | 77% | 73% | 80% |
| 3/30/2016 | 3,744,500 | 84% | 80% | 91% | 83% |
| 3/31/2016 | 3,947,300 | 82% | 85% | 78% | 79% |

What is the general role of a SRO in enforcement of short sale regulations? What is the role of SROs in a situation such as the XRT, while it has been a Regulation SHO Threshold security? What are the listing SRO's responsibilities for the protection of ETFs and their investors?

Short Sale Data

In 2009, the SEC requested that short sale volume data be available for public use, stating:²⁴

“Instead of renewing the rule, the Commission and its staff, together with SROs, are working to **substantially increase the public availability of short sale-related information** through a series of other actions. These actions should provide a wealth of information to the **Commission, other regulators, investors, analysts, academics, and the media.**

Specifically, the Commission and its staff are working together with several SROs in the following areas:

- **Daily Publication of Short Sale Volume Information.** It is expected in the next few weeks that the SROs will begin publishing on their Web sites the aggregate short selling volume in each individual equity security for that day.
- **Disclosure of Short Sale Transaction Information.** It is expected in the next few weeks that the SROs will begin publishing on their Web sites on a one-month delayed basis information regarding individual short sale transactions in all exchange-listed equity securities.”

The NYSE and NYSE Amex never fully complied with the SEC's requests. The NYSE and NYSE Amex do not provide their short sale data to the public without fees and most importantly, without agreements restricting the user to not publish or use the information as the SEC expressed in its' request for this information to be made public.²⁵

In our previous comment letters, we have included the NYSE Arca short sale data along with data from other major exchanges. Now, the NYSE Arca (the largest ETP listing exchange) is requiring a financial commitment to obtain its' short sale data (previously available at no charge). More importantly, NYSE Arca also now requires the same agreement to, in essence, demand that the user not publish the data in any public format.

As of April 2016, all major exchanges comply with the above SEC request at no charge, except for the NYSE, NYSE Amex and now NYSE Arca.

²⁴ *SEC Takes Steps to Curtail Abusive Short Sales and Increase Market Transparency*, July 27, 2009
<http://www.sec.gov/news/press/2009/2009-172.htm>

²⁵ Intercontinental Exchange Terms of Use, Copyright 2016 Intercontinental Exchange
<https://www.intercontinentalexchange.com/terms-of-use>

Why has ICE decided to withhold the short sale data the SEC wants available? Is this proper considering the SEC's request for transparency? Is the restriction of this data in the best interest of investors, issuers, market integrity and the general public?

Conclusion

The data sourced from the SROs/exchanges and the industry itself suggests that the SPY alone may have undisclosed positions at-risk that are larger than many mortgage-backed securities bundles. The shadow portfolios could pose significant risks to the primary ETP portfolios in stressed market conditions. Any comprehensive risk models should include all of the secondary market factors discussed above.

Again, the question here is; is it proper for the SEC to put portfolio risk limits on funds registered under the 1940 Act, or allow the industry to design its' own modeling system to calculate risk? What is in public investors' and the markets best interest?