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March 10, 2016

Brent J. Fields
Secretary
U.S. Securities and Exchange Commission
100 F Street, NE
Washington, DC 20549-1090

Re: Proposed Rule Change to Adopt NYSE Arca Equities Rule 8.900 to Permit Listing and Trading of Managed Portfolio Shares and to Permit Listing and Trading of Shares of Fifteen Issues of the Precidian ETFs Trust (Release No. 34-77117; File No. SR-NYSEARCA-2016-08)

Dear Mr. Fields:

Thank you for the opportunity to comment on the above-referenced filing (Filing) by NYSE Arca, Inc. (the Exchange) to permit the listing and trading of Managed Portfolio Shares (Shares) and the listing and trading of Shares of 15 series (Funds) of the Precidian ETFs Trust (Trust).[1] The Filing relates to a request[2] by the Trust and other parties for exemptive relief from various provisions of the Investment Company Act of 1940, as amended (Exemptive Application), and a registration statement purportedly filed[3] by the Trust on Form N-1A under the Securities Act of 1933, as amended (Registration Statement). In this letter, the Filing and the Exemptive Application are treated as elements of a single proposal (Proposal) and the various filing parties are referred to as the "Applicants." For a more complete description of the Proposal, please refer to the Filing and the Exemptive Application. Unless otherwise noted, the capitalized terms used have the same meanings as in those documents. Where the Filing and

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[1] As background, I am the author of The Exchange-Traded Funds Manual (Second Edition, Wiley, 2010) and numerous other publications on the topic of exchange-traded products. Since 2003, I have been the principal of a consulting business now operating as ETF Consultants.com, inc. I was previously Managing Director for ETF Product Development at Nuveen Investments and Senior Vice President for New Product Development at the American Stock Exchange. In 2005, Managed ETFs™ LLC (Managed ETFs), of which I am a principal, filed an application for exemptive relief to permit the offering of certain actively managed ETFs (File No. 812-13228 (May 29, 2005); no longer active). The intellectual property developed by Managed ETFs was subsequently sold to an affiliate of Eaton Vance Corp. (Eaton Vance) and forms much of the basis for the new NextShares™ exchange-traded managed funds (NextShares), for which the Commission granted exemptive relief in December 2014 and Eaton Vance launched the first fund in February 2016. Eaton Vance staff assisted in the preparation of this letter. Because NextShares may be competitive with the Shares and because I have a retained economic interest, my views may be considered subject to a conflict of interest. My comments are made in the public interest and, to the best of my ability, are not influenced by any conflict.

[2] *See* File No. 812-14405 (September 21, 2015). Footnote 11 on page 9 of the Filing erroneously describes the Filing as relating to an earlier exemptive application submitted by the Trust (File No. 812-14116 dated July 18, 2013) that was withdrawn on November 14, 2014 following notice by the Commission that it preliminarily intended to deny the application.

[3] In footnote 11 on page 9 of the Filing, Applicants state that "[o]n September 21, 2015, the Trust filed a registration statement on Form N-1A under the Securities Act of 1933 . . . and under the 1940 Act relating to the Funds (File Nos. 333-171987 and 811-22524)." No record of a registration statement filing covering the 15 subject Funds can be found on the SEC website.

the Exemptive Application use different terminology or conflict, the Filing is followed unless otherwise noted.

Summary of the Proposal

The Funds are proposed actively managed exchange-traded funds (ETFs) whose investments would consist of long and short positions in U.S.-listed securities, including other ETFs. All exchange-listed equity securities in which the Funds may invest would be listed and traded on U.S. national securities exchanges. In addition to U.S-listed securities, Fund investments may include repurchase agreements and reverse repurchase agreements, cash and cash equivalents, and investments in money market funds and other investment companies. Each Fund could invest up to 15% of its net assets in illiquid assets, as determined at the time of investment. No Fund would be permitted to invest in options, futures, forwards, swaps or leveraged ETFs, or to use investments for leverage purposes.

The Shares would list and trade on the Exchange during the Exchange's Core Trading Session, and may also trade on other national securities exchanges pursuant to unlisted trading privileges. To maintain the confidentiality of their investment programs, the Funds would not disclose the identity of current portfolio holdings on a daily basis, as is now required for all actively managed ETFs. Instead, the Funds would disclose their holdings on the same basis as mutual funds, at least quarterly with no more than a 60-day lag.

Authorized Participants could transact with a Fund to purchase and redeem Shares in Creation Units of 25,000 or more Shares in exchange for the Fund's then-current Creation Basket, which is generally expected to mirror the Fund's portfolio holdings pro rata. Transfer of portfolio securities to and from the Fund by Authorized Participants would be required to be effected through a confidential brokerage account (Confidential Account) established with a bank or broker-dealer selected from a list provided by the Fund (Trusted Agent). A Trusted Agent would serve as a fiduciary between the Fund and the Confidential Account holder.

Before the commencement of trading each Business Day, each Trusted Agent would be provided, on a confidential basis, with the names and quantities of the instruments comprising the Creation Basket and the holdings of the Fund used in determining the Fund's NAV for that day. The Trusted Agent would generally not be permitted to disclose the Fund's Creation Basket and holdings information, but could trade in the underlying securities for the benefit of the associated Authorized Participant at its direction. By transacting through its Confidential Account, an Authorized Participant could enter into offsetting trades in connection with its creations and redemptions and hedge its intraday Share positions without knowing the identity of the Fund's holdings.

Although direct purchases and redemptions of Shares would be limited to Creation Unit transactions by or through Authorized Participants, Non-Authorized Participant Market Makers and other market participants could establish and maintain Confidential Accounts with Trusted Agents and use aggregate purchases and sales of Fund holdings entered on a blind basis to hedge their intraday Share positions, which the Applicants refer to as "Bona Fide Arbitrage."[4]

[4] *See* Filing at pages 11-14.

Once every second throughout the Exchange's Core Trading Session each Business Day, the Exchange would disseminate a Verified Intraday Indicative Value (VIIV) of the Fund's current holdings, which market participants could use to evaluate the relationship between the Fund's market price and the underlying value of Fund holdings. For purposes of the VIIV, Fund securities would be valued based on the midpoint between the currently disseminated national best bid and offer quotations. Each Fund would utilize two independent sources of pricing information and a "Pricing Verification Agent" that would continuously compare the two data streams for consistency. Whenever the Pricing Verification Agent identifies a material discrepancy between the two data streams, the Exchange would be notified and would halt Fund trading until the discrepancy is resolved.

Compared to actively managed ETFs as approved to date, the Funds' principal distinguishing features would be: (a) restricting Fund investments to U.S.-listed securities and short-term instruments; (b) disclosing portfolio holdings quarterly with a lag, rather than on a current daily basis; (c) limiting purchases and redemptions of Creation Units of Shares to transactions through Confidential Accounts; (d) disseminating VIIVs at one-second intervals throughout the Exchange's Core Trading Session; and (e) relying on dissemination of VIIVs and transactions by Authorized Participants and Non-Authorized Participant Market Makers through Confidential Accounts, rather than daily holdings disclosures and transactions directly by Authorized Participants and Non-Authorized Participant Market Makers, as the primary basis for seeking to ensure the Shares' secondary market trading efficiency.

The Applicants assert their belief that the Funds will bring "significant advantages" over investments in actively managed mutual funds, including lower operating costs, enhanced tax efficiency and enabling investors to buy and sell Shares intraday on an Exchange.[5] The Adviser represents that, unlike fully transparent ETFs, the Funds' proposed method of operation "will preserve the integrity of the active investment strategy and eliminate the potential for "free riding" or "front-running"" of the Fund's portfolio trades.[6] In the secondary market trading of Shares, the Applicants assert that the Funds' manner of trading "will not lead to significant deviations between the shares' Bid/Ask Price and NAV."[7]

Applicants' Prior Proposals

Relevant to an understanding of the Proposal is the history of related proposals previously submitted by the Applicants for consideration by the Commission. On October 24, 2014, the Commission issued an order disapproving the Exchange's requested rule change to permit the listing and trading of Managed Portfolio Shares as then proposed (Applicants' First Proposal).[8] On November 14, 2014, the Commission issued an order granting the Applicants' request to withdraw the associated exemptive application,[9] which followed the Commission's notice (Notice) that it preliminarily intended to deny the application.[10] Cited extensively in the Notice were comment letters addressing the

[5] *See* Exemptive Application at page 5.

[6] *See* Filing at page 48.

[7] *See* Filing at page 46.

[8] Securities Exchange Act Release No. 34-73424; File No. SR-NYSEArca-2014-10 (October 24, 2014).

[9] Investment Company Act Release No. 31336; File No. 812-14116 (November 14, 2014).

[10] Investment Company Act Release No. 31300; File No. 812-14116 (October 21, 2014). "The Commission preliminarily believes that the specific features proposed by the Applicants that would cause the proposed ETFs to operate without transparency fall far short of providing a suitable alternative to the arbitrage activity in ETF shares that is crucial to helping keep the market

Applicant's First Proposal that I submitted on March 18, 2014 (March 2014 Comment Letter)[11] and June 23, 2014.[12]

Shortly after the Commission's rejection of the Applicants' First Proposal, the Applicants submitted a new exemptive application describing a somewhat modified version of the same concept (Applicants' Second Proposal).[13] On April 17, 2015, the Commission staff responded by sending a letter to the Applicants (Staff Letter) concluding that the Applicants' Second Proposal "rather than addressing the fundamental concerns raised by the Commission in the Notice, raises new substantive regulatory issues," and, accordingly, that the staff "will recommend denial" to the Commission unless the Applicants withdraw or revise the proposal.[14]

The current Proposal shares with its failed predecessors the objective to devise an actively managed ETF structure that provides a reliable mechanism for ensuring that the Shares will trade consistently close to the Fund's current underlying value, protects the confidentiality of the Fund's current portfolio information to prevent front running and free riding, and, on an overall basis, demonstrates net investor benefits consistent with the 1940 Act requirement for exemptive relief that the requested relief is "necessary or appropriate in the public interest and consistent with the protection of investors."[15] Novel elements of the current Proposal include creations and redemptions of Shares through Confidential Accounts (rather than through blind trusts) and public dissemination of VIIVs at one-second intervals (rather than "unverified" intraday indicative values (IIVs) disseminated every 15 seconds for existing ETFs).

__General ETF Trading Concerns__

Over the two years since my March 2014 Comment Letter responding to the Applicants' First Proposal, public awareness of the strengths and weaknesses of the current ETF trading regime has significantly advanced. In June 2015, the Commission issued a request for public comment on ETF trading and related topics (June 2015 Request for Comment on ETFs),[16] which has generated 40 responses to date from a broad range of industry observers.[17] Many of the responding letters, including my own, focused considerable attention on the poor trading efficiency of many existing ETFs and the lack of trading cost transparency across the ETF landscape.

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price of current ETF shares at or close to the NAV per share of the ETF. Accordingly, the Commission preliminarily believes that it is not in the public interest or consistent with the protection of investors or the purposes fairly intended by the policy and provisions of the Act to grant the exemptive relief under section 6(c) that the Applicants seek." (*see* Notice at page 12).

[11] Available at https://www.sec.gov/comments/sr-nysearca-2014-10/nysearca201410-1.pdf.

[12] Available at https://www.sec.gov/comments/sr-nysearca-2014-10/nysearca201410-4.pdf.

[13] Precidian ETFs Trust, et al., File No. 812-14405 (December 22, 2014).

[14] A redacted version of the Staff Letter obtained through a Freedom of Information Act request is available at http://www.nextshares.com/regulatory-and-technical-documents.php#other_structures.

[15] Section 6(c) of the 1940 Act permits the Commission to exempt any person or transactions from any provision of the 1940 Act if such exemption is necessary or appropriate in the public interest and consistent with the protection of investors and the purposes fairly intended by the policy and provisions of the act.

[16] *See* Securities Exchange Act Release No. 34-75165; File No. S7-11-15 (June 17, 2015) available at https://www.sec.gov/rules/other/2015/34-75165.pdf

[17] Comment letters received available at https://www.sec.gov/comments/s7-11-15/s71115.shtml.

On August 24, 2015, the U.S. equity markets and related futures markets experienced unusual price volatility, particularly in the period surrounding the U.S. market open. Trading in a large number of U.S.-listed ETFs was severely disrupted, with a significant number experiencing wide swings in intraday prices and trading pauses triggered by the National Market System Plan to Address Extraordinary Market Volatility (commonly known as the Limit Up-Limit Down, or "LULD," Plan). According to a research note issued by the Commission's Staff of the Office of Analytics and Research in the Division of Trading and Markets (SEC Staff Note),[18] ETFs and other exchange-traded products investing primarily in U.S. equities (U.S. Equity ETPs) were much more affected than other types of ETFs, with 41.9% of U.S. Equity ETPs experiencing at least one LULD halt and a mean intraday high-low trading range of 19.2%. According to the SEC Staff Note, the most volatile 24 U.S. Equity ETPs investing in large-cap and mid-cap stocks experienced an average of 8.2 LULD halts and had a mean intraday high-low trading range of 42.8%. Any illusion that existing U.S. equity ETFs always trade smoothly and predictably was shattered last August 24th.

In the wake of the troubling trading performance of ETFs on August 24th, it should come as no surprise that multiple Commissioners have expressed grave concerns. In October, former Commissioner Luis Aguilar suggested that "it may be time to reexamine the entire ETF ecosystem."[19] And last month, Commissioner Kara M. Stein called for a "holistic look" at ETFs and related products, their transparency and how they interact in the capital markets.[20]

The current Proposal must be evaluated in the context of an ETF trading and regulatory environment that is significantly unsettled. Whatever the normal standard for considering the approval of a potentially groundbreaking new, less-transparent ETF structure, a meaningfully higher standard should certainly apply until the Commission is completely comfortable with the state of the ETF market, a far cry from where we are today.

<u>Assessment of the Current Proposal</u>

This analysis concludes that the current Proposal has a number of fatal flaws that, like the Proposal's predecessors, *strongly recommend against approval.* Significant deficiencies undermine the Proposal's objectives, diminish or call into question the purported benefits, expose Fund investors to potential harm and run afoul of federal securities law principles. In the following sections I address in detail the Proposal's deficiencies and provide commentary on other considerations that the Commission should include in its evaluation of the Proposal.

<u>Missing Trust Document</u>

As noted in footnote 3 above, the Registration Statement purportedly filed by the Trust on September 21, 2015 cannot be found on the SEC website by referencing either the registrant name or file number provided. The Filing makes over a dozen references to a "Registration Statement" or "N-1A"

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[18] Available at https://www.sec.gov/marketstructure/research/equity_market_volatility.pdf.

[19] Available at https://www.sec.gov/news/statement/how-can-markets-adapt-to-rapid-growth-etfs.html.

[20] Available at https://www.sec.gov/news/speech/stein-sec-speaks-2016.html. Also see https://www.sec.gov/news/speech/stein-2015-remarks-harvard-law-school.html

for the 15 subject Funds that appears not to exist. Because the Registration Statement provides otherwise unavailable essential information about the Funds' proposed investment strategies and the disclosures to be provided to investors, the Proposal cannot be fully evaluated at this time. As such, the Filing should be rejected as incomplete.

Background on ETF Trading

ETFs offered in the U.S. are generally regulated as open-end funds. By law, open-end funds are normally required to redeem their shares on demand at the fund's next-determined NAV. As a condition for granting ETF exemptive relief, the Commission has consistently required that a reliable mechanism exists to ensure that the ETF's investors will have the ongoing ability to sell their shares at prices that closely approximate NAV. Such a mechanism is essential because ETFs do not issue or redeem their individual shares at NAV. In granting relief from section 22(d) of the 1940 Act and rule 22c-1 thereunder, the Commission relies on the close tie between the prices at which retail investors may transact in the secondary market and the NAV at which Authorized Participants and other market makers may directly purchase and redeem shares to make the finding that the ETF's shareholders are being treated equitably.

In the exemptive relief granted to date for actively managed ETFs, the Commission has required the ETFs to provide daily transparency of their portfolio holdings. This transparency gives market makers the ability to value the ETF portfolio on an intraday basis and to conduct the arbitrage trading that is required to keep the market price of ETF shares at or close to the fund's underlying value. Knowing an ETF's current portfolio holdings provides market makers with two pieces of information vital to effective arbitrage: first, the current value of the ETF's holdings, which tells the market maker whether potential arbitrage profits are available, either in buying shares below current value or selling shares above this value; and second, what market exposures the market maker should assume to offset the market risk it takes on when it goes long or short the ETF's shares.

Market makers that enter into arbitrage positions in ETF shares and offsetting market exposures can unwind their ETF positions at NAV (plus or minus a transaction fee) by transacting with the ETF through an Authorized Participant to purchase or redeem Creation Units of shares. If a market maker has hedged its ETF share inventory by buying or selling the securities that constitute the ETF's current Creation Basket, the market maker can unwind its hedge, and lock in arbitrage profits, as it closes its ETF position by (a) depositing the Creation Basket securities to the ETF (to close a long position in such securities) in a purchase of fund shares or (b) receiving Creation Basket securities from the ETF (to close a short position in such securities) in a redemption of fund shares.

ETF market makers commonly employ transactions in a representative hedge portfolio, rather than trading the Creation Basket securities pro rata, to add or subtract offsetting market exposure as they build short or long inventory positions in ETF shares through intraday trading. Transacting in a hedge portfolio may be easier to implement or more cost effective for a market maker than buying or selling the Creation Basket securities. Moreover, for ETFs holding foreign securities that do not trade during U.S. market hours, it may not be possible for a market maker to hedge its ETF positions by simultaneously trading in the Creation Basket securities. For a market maker that uses trading in a hedge portfolio to offset changes in its ETF positions, the arbitrage profits it earns will fluctuate to the extent that the hedge portfolio deviates in performance from that of the ETF over their respective holding periods. A loose correspondence between the hedge portfolio and the ETF's holdings means that arbitrage profits may be highly variable. The more uncertain the potential to earn arbitrage profits, the more market makers will seek to be compensated by trading the ETF with wide bid-ask spreads and variable premiums/discounts to the ETF's underlying value.

The trading performance of ETFs varies widely across different types of funds and over time, significantly influenced by the costs and risks market makers assume in connection with fund arbitrage. Attached as Exhibit 1 are summaries of two measures of average trading costs of equity ETFs for the years 2008 to 2015.[21] For each category of equity ETFs as classified by Morningstar, Exhibit 1 shows the average of the absolute value of the daily closing premium/discount and the average volatility of the daily closing premium/discount as measured based on the relationship between NAV and closing price for each ETF. The average of the absolute value of the daily closing premium/discount measures how far, on average, an ETF's closing price varies from NAV. The average volatility of the daily closing premium/discount is the average of the standard deviation of observed premium/discount values for each ETF. Exhibit 1 separates index ETFs from actively managed ETFs and shows period averages for each ETF category based on (a) equally weighting all funds in the category (EW), (b) weighting funds based on their respective average net assets (AW) and (c) weighting funds based on their respective dollar trading volume (VW).

As can be seen in Exhibit 1, measures of equity ETF trading costs varied significantly over different market environments and across different categories of funds, primarily reflecting differences in the costs and risks of ETF market making. The more efficient the arbitrage process for a given ETF category in a given period, the lower the observed investor trading costs. At one extreme, in the generally benign market environment of 2014, investors in large-cap blend index ETFs (a category dominated by funds indexed to the S&P 500) experienced average (absolute value) closing premiums/discounts of 2 basis points (bps) and average premium/discount volatility of 3 bps. At the other extreme, in the challenging 2008 market environment, investors in numerous ETF categories experience average (absolute value) closing premiums/discounts and average premium/discount volatility of more than 100 bps.

Although average trading costs of equity ETFs have declined from the highs of 2008, the study results for 2015 (Ex. 1-1) indicate that economically significant trading costs remain in effect for numerous ETF categories, include categories with large assets. As an example, in 2015 investors in emerging market equity index ETFs experienced average (absolute value) closing premiums/discounts of 48 bps AW and 56 bps VW, and average premium/discount volatility of 59 bps AW and 70 bps VW. The data on ETF premiums/discounts reflected in Exhibit 1 is consistent with the results of a recent academic study of ETF trading, which concluded that "the difference between [an ETF's] share price and the value of the underlying portfolio is often economically significant, indicating that the unsophisticated investor may face an unexpected additional cost when trading ETFs."[22]

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[21] This and the accompanying Exhibit 2 are based on an analysis performed by the Eaton Vance Investment Analytics and Risk Measurement Group, an earlier version of which was included in the Eaton Vance response to the Commission's June 2015 Request for Comment on ETFs, available at https://www.sec.gov/comments/s7-11-15/s71115.shtml. The ETF Transaction Cost Paper referenced below under "Scope of Proposal" developed similar data for several specific index ETFs.

[22] *See* Petajisto, Antti, 2013. "Inefficiencies in the Pricing of Exchange-Traded Funds." Available at http://www.petajisto.net/.

In support of the Proposal, the Applicants assert[23] that existing ETFs whose holdings do not support low-risk arbitrage (*e.g.*, due to differences in trading hours) generally trade at acceptably tight bid-ask spreads and stable premiums/discounts. This is a key underpinning to the Applicants' argument that the Funds should be expected to trade acceptably well, despite not disclosing their current holdings. As can be seen in Exhibit 1, equity index ETFs investing in markets whose trading hours do not corresponds to U.S. market hours, in fact, generally *trade at significantly higher costs* than U.S. equity index ETFs.

Attached as Exhibit 2 is a comparison of historical trading costs of actively managed equity ETFs versus equity index ETFs in the same Morningstar category over the period since the first active ETFs were introduced in 2008. Relevant to the Proposal, Exhibit 2 indicates that *the costs to buy and sell actively managed equity ETFs reflected in closing premiums/discounts are generally higher than the costs to buy and sell equity index ETFs* in the same Morningstar category. In all periods studied (2008 – 2015), most Morningstar equity categories including both active and index ETFs showed higher average trading costs for active ETF investors than experienced, on average, by index ETF investors in the same category. This holds true whether measuring trading costs based on the absolute value of the daily closing premium/discount or the volatility of the daily closing premium/discount, and whether basing the experience of the average ETF investor on fund size (AW) or fund share trading volume (VW). *Observed active ETF trading costs were consistently higher across essentially all U.S. equity categories.*

The observed higher trading costs of actively managed equity ETFs versus equity index ETFs are primarily attributable to three factors: (a) active ETFs are generally smaller than index ETFs in the same category, reflecting greater scale economies in the management of index-based products and the relative newness of active ETFs; (b) adjusted for fund size, active ETFs often trade less actively than corresponding index ETFs, since index products are generally more attractive for use as short-term market exposure vehicles; and (c) index ETFs are generally easier for market makers to arbitrage because, in addition to trading directly in the underlying fund holdings, a market maker in index ETFs can hedge its ETF positions intraday by transacting in corresponding index futures and options contracts, index swaps, similar index ETFs and other index portfolio instruments without incurring meaningful basis risk. On average, the more cumbersome process of hedging ETF share inventory positions makes active ETFs more difficult and costly to arbitrage, which is consistent with the observation from Exhibit 2 that active ETFs are generally more expensive to buy and sell than corresponding index products.

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[23] *See* Filing at pages 45-46. "[C]ertain existing ETFs with portfolios of foreign securities have shown their ability to trade efficiently in the secondary market at approximately their NAV even though they do not provide opportunities for riskless arbitrage transactions during much of the trading day. Such ETFs have been shown to have pricing characteristics very similar to ETFs that can be arbitraged in this manner. For example, index-based ETFs containing securities that trade during different trading hours than the ETF, such as ETFs that hold Asian stocks, have demonstrated efficient pricing characteristics notwithstanding the inability of market professionals to engage in "riskless arbitrage" with respect to the underlying portfolio for most, or even all, of the U.S. trading day when Asian markets are closed. Pricing for shares of such ETFs is efficient because market professionals are still able to hedge their positions with offsetting, correlated positions in derivative instruments during the entire trading day."

The Funds' Proposed Arbitrage Mechanism

Different from all actively managed ETFs approved to date, the Proposal does not include a requirement or the expectation that the Funds would disclose their full current portfolio holdings[24] each Business Day. Instead, the Funds propose to disclose their holdings on a quarterly basis with a lag of not more than 60 days, consistent with mutual fund disclosure requirements.

Because the Funds would not disclose their holdings on a daily basis, the Applicants propose a different mechanism to seek to ensure that secondary market trading prices of Shares are aligned with underlying Fund values. As described in the Filing and the Exemptive Application, Fund market makers would: (a) use the VIIVs disseminated at one-second intervals throughout the Exchange's Core Trading Session to identify potential opportunities to earn arbitrage profits by either selling Shares above the underlying value of the Fund's net assets or buying Shares below this value; (b) enter into arbitrage transactions by instructing the Trusted Agent that oversees their Confidential Account to buy or sell offsetting aggregate positions in the Fund's underlying securities as they sell or buy Shares intraday; and/or (c) as a complement or substitute for arbitrage transactions effected through Confidential Accounts, independently construct and manage portfolio hedges to offset the market risk exposures of their Share positions, based principally on knowledge about a Fund's means of achieving its investment objective and information about the Fund's current portfolio positions derived from time-series analysis of changes in VIIVs. According to the Applicants, "the real-time dissemination of a fund's VIIV, the ability for market makers to engage [in] riskless arbitrage through the Bona Fide Arbitrage mechanism, together with the right of Authorized Participants to create and redeem each day at the NAV, will be sufficient for market participants to value and trade shares in a manner that will not lead to significant deviations between the shares' Bid/Ask Price and NAV."[25]

In support of the proposed arbitrage mechanism, the Applicants state that "the Exchange, after consulting with various Lead Market Makers that trade ETFs on the Exchange, believes that market makers will be able to make efficient and liquid markets priced near the VIIV as long as an accurate VIIV is disseminated every second, market makers have knowledge of a fund's means of achieving its investment objective even without daily disclosure of a fund's underlying portfolio, and are able to engage in Bona Fide Arbitrage. The Exchange believes that market makers will employ risk-management techniques such as Bona Fide Arbitrage in addition to "statistical arbitrage", which is currently used throughout the financial services industry, to make efficient markets in exchange traded products. This ability should permit market makers to make efficient markets in shares without knowledge of a fund's underlying portfolio."[26]

Despite these assurances, it is clear that market makers will face significant impediments to successfully arbitraging the Funds' Shares, leading the Funds to trade at wider bid-ask spreads and more variable premiums/discounts than actively managed ETFs available today.

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[24] All existing actively managed ETFs are required to include on their sponsor's public website, updated each Business Day prior to the opening of market trading, a complete listing of the holdings that will be used to determine the ETF's NAV on such day. Index ETFs are required to make available to market members through NSCC daily creation and redemption composition files that either replicate, or closely approximate, the fund's holdings. Although not required, most index ETFs also disclose their full holdings on the sponsor's website on a daily basis.

[25] *See* Filing at pages 46 and 48.

[26] *ibid* at page 43.

Reliance on VIIVs. A key component of the Applicant's proposed approach to maintain price-value alignment of the Shares is disseminating VIIVs at one-second intervals throughout the Exchange's Core Trading Session each Business Day. The Applicants assert that the VIIV would provide significantly more valuable information to market makers and other Fund investors seeking to evaluate the relationship between a Fund's market trading prices and underlying Fund values than is provided by the IIVs disseminated today for ETFs.

The asserted improvement in VIIVs over ETF IIVs reflects the Applicants' intent to: (a) calculate and disseminate intraday Fund valuations at one-second intervals rather than every 15 seconds (like IIVs); (b) source valuations of each portfolio holding from at least two Independent Pricing Sources and engage a Pricing Verification Agent to continuously compare the data streams from each Independent Pricing Agent and initiate a Share trading halt whenever valuation differences of at least 25 bps persist for 60 seconds; (c) value Fund securities based on the midpoint between the current national best bid and offer quotations rather than last sale price (which may update less frequently); (d) seek to include in the VIIV calculation all accrued Fund income and expenses, including any extraordinary expenses, that would be taken into account in calculating the Fund's NAV for that day; (e) disclose on each Fund's website all Fund holdings that are currently subject to fair value pricing and the value of such holdings reflected in current VIIVs; (f) disclose on each Fund's website the specific methodology for calculating VIIVs; (g) maintain procedures for calculating VIIVs that are subject to at least annual review and approval by each Fund's Board and the ongoing oversight of the Fund's chief compliance officer; (h) require each Independent Pricing Agent and the Pricing Verification Agent to contractually commit always "to act in good faith and to exercise reasonable care, diligence and the expertise of an Independent Pricing Agent;"[27] and (i) assert the Independent Pricing Agents' and the Pricing Verification Agent's legal liability for losses attributable to their negligence, and attribute ultimate responsibility for the calculation of VIIVs to the Fund.[28]

Assuming that the Applicants can deliver on each of the above commitments, the proposed VIIVs should be significantly more valuable to market makers and other Fund investors than existing ETF IIVs have proven to be. Whether VIIVs provide an adequate basis for ensuring the Funds' ongoing price-value alignment and secondary market trading efficiency is quite a different matter.

In comparing the proposed VIIVs to existing ETF IIVs, it is important to understand the dramatic difference in the role of the disseminated intraday values: for the Funds, disseminating timely and accurate VIIVs is a key requirement for market trading efficiency; for existing ETFs, IIVs have essentially zero relevance to Fund trading efficiency and limited overall utility to investors. Responding to the

[27] *See* Exemptive Application at page 11.

[28] "It is anticipated that under the terms of [a Fund's] contracts with the Independent Pricing Agents and Pricing Verification Agent, each shall be liable to the Fund (or any person or entity claiming through or for the Fund) for loss, cost, expense and damages caused by an error in the calculation or dissemination of the VIIV resulting from a breach of the applicable contract to the extent the breach constitutes bad faith, willful misconduct, reckless disregard or negligence in the performance of its obligations. Neither the Fund nor any service provider . . . shall be deemed liable for any errors in the calculation or dissemination of the VIIV resulting from any event beyond the reasonable control of either the Fund or a service provider. To the extent that any Fund might be found liable for an error in the calculation or dissemination of the VIIV, it anticipated that the Fund will have appropriate errors and omissions insurance that would serve to protect the assets of the Fund from any such claim." (*see* Exemptive Application at page 11).

Commission's 2008 proposed ETF rule,[29] the Exchange commented that it was "not convinced that the Intraday Value is a meaningful pricing tool for investors [in existing ETFs] in light of the availability of other pricing information" and "a public investor should not use the Intraday Value to determine the price at which the investor will buy or sell a particular ETF."[30]

The relevant comparison for VIIVs is not versus the IIVs of existing ETFs, but rather the independently derived real-time estimates of underlying fund value that ETF market makers use to identify arbitrage opportunities and manage their risk of holding ETF positions today. Because existing actively managed ETFs (and most index ETFs) provide full daily disclosure of their current portfolio, their market makers have access to *far better information about the current value of Fund holdings* than the proposed VIIVs would provide.

Compared to the Fund's proposed VIIVs, the intraday Fund valuations that market makers routinely generate internally and employ in their market making have the following significant advantages:

- *Internal market maker valuations are significantly more precise than the proposed VIIVs.* As proposed, the Funds would disclose VIIVs to the nearest whole cent and maintain NAVs in a range of $20-30. One cent on $20 is 5 bps; one cent on $30 is 3.3 bps. ETF market makers generally calculate their internal valuations to a precision of a *fraction of a basis point*. Truncating the precision of the Fund's VIIV disclosures to a range of 3.3-5 bps provides market makers with far less detailed valuations than they are accustomed to having.

- *Internal valuations of ETF market makers include significant information not reflected in VIIVs.* In calculating VIIVs, Applicants propose to value Fund securities based on the midpoint between the current national best bid and offer quotations. The bid-ask midpoint is a fairly crude valuation metric that does not capture important trading information that market makers frequently incorporate in their internal valuations: among others, the current bid-ask spread, the depth of the current order book on the bid and offer side of the market, and the predominance of current trading between bid-side and offer-side transactions. As an example of how this information is useful, a market maker that is selling short an ETF's shares against net market demand is primarily interested in knowing the offer-side prices of the fund's underlying securities, since that is the side of the market on which the market maker would likely transact to hedge its fund share position or to purchase underlying securities to be delivered in a creation. Conversely, a market maker that is accumulating a long position in an ETF's shares will want to know the bid-side prices of the fund's underlying securities, since the market maker would likely transact on the bid side to hedge its long fund share position or sell the individual securities to be received in a redemption. In either case, the depth of market on the relevant side is at least as important as the best bid or best offer, since best bids and offers may not be representative of market prices to move larger blocks of

[29] *See* Release Nos. 33-8901 and IC-28193; File No. S7-07-08 (March 11, 2008).

[30] *See* Comments of Mary Yeager, Corporate Secretary, NYSE Arca, Inc., May 29, 2008 under File No. S7-07-08 (available at http://www.sec.gov/comments/s7-07-08/s70708-16.pdf).

shares. Whereas a market maker in an existing ETF can incorporate the full complement of current market data into its internal valuations, the Funds' market makers would only know the midpoint values reflected in the VIIVs.

- *The proposed VIIVs are not continuously available and may update with economically meaningful delays.* Although dissemination of VIIVs at one-second intervals may seem sufficient, the reality of current markets is that securities prices often adjust significantly in fractions of a second (milliseconds or microseconds). The internal valuations used by ETF market makers update continuously, at frequencies much higher than once per second. In addition to discontinuous dissemination, a concern market makers will have about the proposed VIIVs not addressed in the Filing or Exemptive Application is *latency* – the time lag over which changes in a Fund's underlying securities prices are reflected in the next disseminated VIIV. The number of participating parties and steps involved in computing, verifying and disseminating the VIIVs raises suspicion that Fund VIIVs may routinely update with economically meaningful delays.[31]

- *The proposed VIIV verification process leaves significant room for dissemination of erroneous values.* As proposed, a Fund's Pricing Verification Agent would take no action to address observed discrepancies in VIIV input prices until the calculated Fund values differ by at least 25 bps for 60 seconds. That's a huge disparity – 5 to 8 cents a share on a $25-30 NAV – far wider than the customary bid-ask spread of most domestic equity ETFs. No ETF market maker's internal valuation process would choose to ignore price disparities of that magnitude. Whatever comfort the Funds' proposed VIIV "verification" process seeks to provide is significantly compromised by the wide tolerance band on observed price deviations.

- *The Fund's VIIV process does not address all potential intraday valuation errors.* As described in the Exemptive Application, a Fund's Custodian would each Business Day be responsible for determining, and providing to each Independent Pricing Agent prior to the beginning of market trading, a "constituent basket file" consisting of all the Fund's investments, other assets and liabilities that will be reflected in the Fund's NAV for that day.[32] Because each Independent Pricing Agent would utilize the same constituent basket file to determine intraday values, valuation discrepancies caused by errors in the constituent basket file could not be detected by the Pricing Verification Agent using the proposed verification process. If the constituent basket file for a Fund includes material inaccuracies, the Fund will disseminate erroneous VIIVs. Corporate actions (mergers, stock splits, spinoffs, dividends and the like) in Fund securities are a source of potential error in the constituent basket files disseminated by Fund Custodians. Because, in practice, *each corporate action must be reflected in constituent basket files the evening before the corporate action becomes effective*, it can be a challenge for Fund Custodians

[31] A further potential cause of economically meaningful delays in VIIVs versus market makers' interval valuations is that, in calculating their internal valuations, market makers may source pricing data directly from trading venues through proprietary data feeds, whereas the Funds will source their pricing data from the Consolidated Quotation System and UTP Plan Securities Information Processor (SIP). Proprietary data feeds routinely update faster than the SIP.

[32] *See* Exemptive Application at page 10. The IIVs of existing ETFs are also calculated using constituent basket files determined by Custodians and disseminated to IIV calculation agents.

to consistently account for them correctly. One of the advantages to an ETF market maker of calculating intraday fund valuations internally is that this allows the market maker to perform its own accounting of corporate actions or to check the Fund Custodian's accounting. The lack of holdings transparency makes this impossible for the Funds. Market makers' inability to verify that corporate actions are appropriately reflected in Fund VIIVs is a source of incremental risk for them compared to making markets in existing ETFs.

- *The Fund's proposed process for adjusting VIIVs in the event of trading halts in portfolio securities is cumbersome and likely to result in errors in disseminated VIIVs.* The Funds' proposed procedures provide that "should a portfolio security stop trading, the Pricing Verification Agent will immediately notify an officer of the Adviser, who will in turn notify the Fund's Fair Valuation Committee. The Fair Value Committee will then make a good faith pricing determination using a methodology approved by the Board of the Fund. In cases where the fair value price of the security is materially different from the pricing data provided by the Independent Pricing Sources and the Adviser determined that the ongoing pricing information is not likely to be reliable, the fair value will be used for calculation of the VIIV, and the Custodian will be instructed to disclose the identity and weight of the fair valued securities, as well as the fair value price being used for the security."[33] Left unsaid in this description is that, throughout this potentially protracted (lasting hours? days?) process, the Fund would continue to disseminate VIIVs at one-second intervals that *do not reflect fair values of the halted security,* and therefore may vary significantly from the Fund's true underlying value at that time. The internal valuation process of any existing ETF's market makers would almost certainly arrive at a fair estimate of the fund's current underlying value far faster than the cumbersome Fund process outlined above.

- *Reliance on faulty VIIVs may expose market makers to unrecoverable losses.* One of the significant constraints on the utility of the existing ETF IIV calculation and dissemination regime is that no responsible party stands behind the disseminated values – all parties involved disclaim liability. Buyer (and seller) beware is very much the rule of the day. The Filing and the Exemptive Application include statements attributing liability for the timeliness and accuracy of the VIIVs disseminated for each Fund variously to the Fund itself, the Independent Pricing Agents and the Pricing Verification Agent.[34] No similar liability appears to rest with the Exchange, its agents or the Reporting Authority responsible for disseminating the VIIVs.[35] Moreover, the circumstances under which the Independent Pricing Agents and the Pricing Verification Agent are legally liable are limited.[36] Whether a Fund could acquire insurance or otherwise make provisions to meet its legal liabilities in the event of a costly VIIV error is subject to doubt.[37] Taken as

[33] *See* Exemptive Application at page 22.

[34] *See* Exemptive Application at page 11.

[35] *See* Filing at page 7.

[36] *See* Exemptive Application at page 11.

[37] *ibid.* Also see discussion under "Fund Costs and Liability Risks" below.

a whole, the ability of a market maker to successfully prosecute a claim for damages resulting from a VIIV error is substantially unclear. This is likely not very comforting to a potential market maker trying to assess whether a valid claim against a Fund or service provider due to losses based on reliance on faulty VIIVs would be successful. If VIIVs are not viewed as supported by responsible parties, market makers either won't participate in the Funds or will make markets only at spreads and premiums/discounts that are wide enough to cover the risks assumed.

The Applicants acknowledge that "the ability of market participants to buy and sell Shares at prices near the VIIV is dependent upon their assessment that the VIIV is a reliable, indicative real-time value for a Fund's underlying holdings."[38] On an overall basis, the proposed VIIVs would fail to provide a consistently reliable, real-time measure of intraday Fund values.

The Funds' proposed VIIVs would offer market makers far less, and far less useful, intraday valuation information that they now have for existing ETFs. Compared to the internal valuations that ETF market makers now generate from daily fund holdings disclosures, the proposed VIIVs would provide intraday valuations that are significantly less precise, less robust, less continuous, less timely, more prone to errors, more subject to agency risks and vulnerable to potentially unrecoverable losses in the event of erroneous VIIVs. All else being equal (which it's not), Fund market makers' forced reliance on VIIVs to determine intraday Fund valuations is a source of significant incremental risk for them versus making markets in existing ETFs. This will surely translate into the Funds trading at wider bid-ask spreads and more variable premiums and discounts to NAV than similar existing ETFs. The lack of transparency of Fund holdings and the resulting loss of market maker control over their internal valuation process will also likely make the Funds especially prone to poor trading performance during periods of market stress and volatility.

Transactions through Confidential Accounts. In the Funds' proposed method of operation, all trading in Creation Unit instruments in connection with Fund creations and redemptions would be required to be effected through a Confidential Account overseen by a Trusted Agent. Authorized Participants, Non-Authorized Participant Market Makers and other market participants seeking to make markets or take advantage of arbitrage opportunities in Shares may enter into an agreement to open a Confidential Account with a Trusted Agent selected from a list of banks and broker-dealers approved by the Fund. If a Trusted Agent is a bank, it would be required to have an affiliated broker-dealer to accommodate trades by the Confidential Account holder. The Trusted Agent would serve as a fiduciary between the Fund and the Confidential Account holder, and act as a broker-dealer on the Confidential Account holder's behalf.

Before the commencement of market trading each Business Day, the Trusted Agent of each of a Fund's Confidential Account holders would be provided with (a) the names and quantities of the instruments comprising the Fund's Creation Basket and the estimated Balancing Amount for that day and (b) the identities and quantities of portfolio securities that will form the basis for the Fund's calculation of NAV on that day. The terms of the Confidential Account Agreements would provide that the Trusted Agent will not disclose the identity of the Creation Basket or any other identifying information regarding the portfolio securities of a Fund, except as required by law.

[38] *See* Filing at page 47.

Acting on execution instructions from a Confidential Account holder, a Trusted Agent would, on an aggregate basis, purchase or sell the securities currently held in a Fund's portfolio for purposes of arbitrage and/or in-kind creation and redemption activity. By trading through their Confidential Accounts, Authorized Participants, Non-Authorized Participant Market Makers and other market participants seeking to make markets or take advantage of arbitrage opportunities could transact in the Fund's underlying securities without knowing their identity. Arbitrage using Confidential Account transactions would not necessary be limited to Confidential Account holders; any investor that makes arrangement to transact through a broker-dealer that has established a Confidential Account could, in theory, engage in arbitrage trading.

Compared to the usual manner in which market makers in existing ETFs engage in arbitrage and buy and sell Creation Basket instruments, the proposed arrangement exposes market makers to significant additional costs, risks and lost opportunities. These include:

- *The required delegation of trade implementation and trade order management authority to third-party organizations.* Efficient execution of portfolio hedging and Creation Unit instrument transactions is the heart and soul of effective ETF market making. No ETF market maker would ever voluntarily cede authority over these vital market-making functions to an outside organization. Less control means more cost and risk and less profit opportunity for market makers.

- *No ability for market makers to use their market knowledge and market positions to enhance arbitrage profits and minimize costs.* Market makers don't manage their ETF arbitrage positions in a vacuum. Market makers' other activities – making markets in other ETFs and individual securities, lending and borrowing securities, managing risk across their entire book of business – frequently create opportunities to lower the costs and increase the profitability of their market making activities in a particular ETF. When transacting on a blind basis through Confidential Accounts, market makers could not, as a practical matter, use any market intelligence they have or any other positions they hold to enhance arbitrage efficiency.

- *Reduced incentive for third-party service providers to trade expeditiously and with low market impact.* This is a classic agency problem. No Trusted Agent or other Confidential Account service provider could ever match the vested interest a profit-motivated market maker would have in ensuring consistently high levels of trading performance in the market maker's own account.

- *Forced pro rata hedging.* A "perfect" hedge is very often not the best hedge. As explained under "Background on ETF Trading" above, ETF market makers commonly employ transactions in a representative hedge portfolio, rather than buying or selling the ETF's constituent securities pro rata, to add or subtract offsetting market exposure as they build short or long inventory positions in ETF shares through intraday trading. Transacting in a hedge portfolio may be easier to implement or more cost effective for a market maker than buying or selling the Creation Basket securities. For the Funds, arbitrage trading through Confidential Accounts would be limited to pro rata transactions. Hedging sub-optimally causes market makers' arbitrage to be less efficient, which translates into worse Fund trading performance.

- *Slower trade executions.* Given the more involved routing of trade instructions and trade orders that the Confidential Account structure would necessitate, hedging and Creation Unit instrument transactions through Confident Accounts will almost certainly take longer, on average, for a market maker to execute than similar transactions that the market maker executes internally. In arbitrage, time is money. Here again, less efficient arbitrage translates into worse Fund trading performance.

- *Constraints on sub-Creation Unit transactions.* The Proposal does not address how (or if) Confidential Accounts could be used to buy and sell representative pro rata slices of a Fund's portfolio in quantities less than a Creation Unit. At some minimum aggregate trade size, the pro rata trading approach breaks down. What happens when a market maker seeks to trade smaller pro rata positions through its Confidential Account? Can the Confidential Account arrangement accommodate smaller trades? What party takes responsibility for the basis risk that arises when smaller-sized traded positions are adjusted from pro rata?

- *Little or no ability for market makers to monitor trading in Confidential Accounts to ensure best execution or to evaluate trading performance.* The blind nature of the trading relationship means market makers will have little or no ability to monitor the performance of trades made on their behalf.

- *Potential significant explicit costs to establish and maintain Confidential Accounts.* Confidential Account holders will be responsible for paying their Trusted Agent and associated service providers. Ongoing costs incurred by market makers in connection with maintaining Confidential Accounts and associated broker-dealer arrangements may be significant.

On an overall basis, the Funds' requirement that market makers transact on a blind basis through Confidential Accounts to effect trades in Creation Basket instruments and for "Bona Fide Arbitrage" imposes significant costs and risks on market makers and limits their opportunities for profitable trading. Market makers will respond in one of two ways – either (a) not participating in Fund market making or (b) making markets in the Funds' Shares only at wider bid-ask spreads and more variable premium/discount levels. The increased costs and risks and loss of control that the Confidential Account arrangement imposes on market makers will invariably translate into worse Fund trading performance.

Direct Hedging Transactions. The Proposal describes how market makers could supplement or even replace their arbitrage trading through Confidential Accounts by entering into directly traded hedging transactions. As described in the Filing, "market makers, in addition to employing Bona Fide Arbitrage, may use the knowledge of a Fund's means of achieving its investment objective . . . to construct a hedging proxy for a Fund to manage a market maker's quoting risk in connection with trading Fund Shares. Market makers can then conduct statistical arbitrage between their hedging proxy (for example, the Russell 1000 Index) and Shares of a Fund, buying and selling one against the other over the course of the trading day. They will evaluate how their proxy performed in comparison to the price of a Fund's Shares, and use that analysis as well as knowledge of risk metrics, such as volatility and turnover, to enhance their proxy calculation to make it a more efficient hedge. Market makers . . . have indicated to the Exchange that, after the first few days of trading, there will be sufficient data to run a statistical analysis which will lead to spreads being tightened substantially around the VIIV. This is similar to certain other existing exchange traded products (for example, ETFs that invest in foreign securities that do not trade during U. S. trading hours), in which spreads may be generally wider in the early days of trading and then narrow as market makers gain more confidence in their real- time hedges."[39]

While market makers may be able to gain some useful information about a Fund's current composition by knowing the Fund's investment objective and tracking performance correlations over time versus a known index, the amount of portfolio information that can be gleaned using this approach is limited.[40] As a result, any portfolio hedge constructed using this information would be subject to meaningful basis risk. The Applicants' comparison to ETFs holding foreign securities that do not trade during U.S. trading hours is invalid, because all current ETFs provide significantly greater holdings transparency than the Funds propose to provide. Because market makers would not know a Fund's current holdings, any hedging transactions that they enter on a direct basis would be especially prone to basis risk during periods of market stress or volatility.

Conclusion and Recommendations. Different from existing ETFs, a Fund's market makers must rely on VIIVs calculated and disseminated by third parties to estimate intraday Fund values, cannot control their trading in Fund instruments in connection with creations and redemptions, and must use either transactions through third parties or hedging trades subject to unknown and potentially significant basis risk to manage their Share exposures and engage in arbitrage. All told, market makers' ability to engage in successful arbitrage will be significantly curtailed. Unavoidably, the extra costs and risks borne by market makers in connection with the required Confidential Account arrangement and forced reliance on VIIVs will be passed through to shareholders transacting in the secondary market and reflected as wider bid-ask spreads and more variable premiums/discounts for the Shares.

The Funds are highly unlikely to trade with consistently narrow bid-ask spreads and tight premiums/discounts to NAV. The Funds will certainly trade worse than existing fully transparent active equity ETFs,[41] which themselves trade consistently worse than similar equity index ETFs. In addition, during periods of market stress and volatility, the Funds' lack of transparency will invariably cause spreads and premiums/discounts to widen disproportionately in relation to ETFs that provide daily holdings disclosure.

The Proposal falls well short of meeting an appropriate secondary market liquidity standard, and should not be approved for this and other reasons stated in this letter.

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[39] *See* Filing at pages 14-15.

[40] This assumes that market makers will not be able to derive the actual composition of a Fund's current portfolio from available information, but see "Reverse Engineering of Portfolio Holdings" below.

[41] This is consistent with the understanding expressed in the Staff Letter responding to the Applicants' Second Proposal that "an ETF which has something less than full portfolio transparency will *always* [emphasis added] exhibit a greater and more persistent premium or discount and wider intraday price spread than an identical product with full portfolio transparency." (*see* footnote 20 on page 5 of the Staff Letter available at http://www.nextshares.com/regulatory-and-technical-documents.php#other_structures.)

Portfolio Data Security Concerns

A novel aspect of the current Proposal that was not present in the Applicants' First Proposal is the dissemination of a Fund's confidential portfolio information across a potentially wide network of Trusted Agents, affiliated broker-dealers and other service providers involved in managing and implementing securities trades on behalf of the Confidential Accounts established and maintained by Authorized Participants, Non-Authorized Participant Market Makers and other market participants. In the Applicants' First Proposal, no confidential portfolio information would be disseminated other than to a Fund's Custodian and other existing fund service provider relationships.

In the current Proposal, the Fund will provide to each Trusted Agent, before the commencement of trading in Shares on the Exchange each Business Day, "the identities and quantities of portfolio securities that will form the basis for a Fund's calculation of NAV per Share at the end of the Business Day, as well as the names and quantities of the instruments comprising a "Creation Basket" . . . for that day."[42] The terms of each Confidential Account agreement will provide that the Trusted Agent will not disclose any identifying information regarding the portfolio securities of a Fund, "except as required by law."[43]

A significant concern that arises in connection with the current Proposal is the potential for misappropriation or misuse of the Funds' confidential portfolio information communicated across a potentially broad network of organizations and individuals within those organizations. If the Funds' confidential data is not completely secure, the Proposal's central claim that the Funds' proposed method of operation "will preserve the integrity of the active investment strategy and eliminate the potential for "free riding" or "front-running"" of the Funds' portfolio trades"[44] is invalid.

Neither the Filing nor the Exemptive Application addresses concerns about portfolio data security or describes meaningful steps the Applicants will take to ensure against misappropriation or misuse. The Filing provides that "if any Trusted Agent is registered as a broker-dealer or is affiliated with a broker-dealer, such . . . Trusted Agent will erect a "fire wall" between the . . . Trusted Agent and (i) personnel of the broker-dealer or broker-dealer affiliate, as applicable, or (ii) the Authorized Participant or non-Authorized Participant market maker [holding the Confidential Account], as applicable, with respect to access to information concerning the composition and/or changes to such [Fund's] portfolio."[45] On its face, this representation is completely unworkable, as it fails to recognize that no "fire wall" can exist between a Trusted Agent and the personnel of its broker-dealer or broker-dealer affiliate because some such personnel *would be required to know* the Fund's confidential portfolio information to implement securities trades as instructed by the associated Confidential Account holder.

In 2012, the Commission's Office of Compliance Inspections and Examinations issued a staff report (OCIE Staff Report)[46] addressing control deficiencies in the handling of material nonpublic information (MNPI) within broker-dealer organizations. Numerous concerns raised in the OCIE Staff Report would be directly applicable to the Funds' dissemination of confidential portfolio data to Trusted

[42] *See* Filing at page 12.

[43] *See* Exemptive Application at page 16.

[44] *See* Filing at page 48.

[45] *See* Filing at pages 8, 15 and 41-42.

[46] Available at https://www.sec.gov/about/offices/ocie/informationbarriers.pdf.

Agents, affiliated broker-dealers and other Confidential Account service providers and the use within those organizations of the provided information to implement trades on behalf of Confidential Account holders.

Exchange Act Section 15(g) requires registered broker-dealers to establish, maintain and enforce written policies and procedures reasonably designed to prevent misuse of MNPI in violation of the securities laws by the broker-dealer or its associated persons. The OCIE Report notes that the Commission has found violations of Section 15(g) by a broker-dealer that allowed traders without customer order execution responsibility to see customer order information on the customer facilitation traders' computer screens and hear market makers discuss customer orders. The Commission has also found violations of Section 15(g) based on a broker-dealer's failure to have appropriate controls over squawk boxes used to disseminate customer order information.[47]

With regard to the Proposal, it does not appear that the Applicants have given serious consideration to the data security concerns and misappropriation and misuse risks that arise in connection with the dissemination of confidential Fund data across a network of Trusted Agents, affiliated broker-dealers and other Confidential Account service providers, and their use of the provided information to implement trades on behalf of Confidential Account holders. Preventing Authorized Participants, Non-Authorized Participant Market Makers and other market participants that hold Confidential Accounts from knowing a Funds' portfolio information is not sufficient to maintain the information's confidentiality. Also necessary is a comprehensive data security compliance and monitoring program that applies to each of the Trusted Agents and all their service providers.

As a condition for approval of the Proposal, the Applicants should be required to develop a comprehensive data security compliance and monitoring program and prospectively demonstrate its effectiveness. Unless the security of the Funds' confidential portfolio information can be assured, the Funds serve little or no useful purpose.

<u>Fund Costs and Liability Risks</u>

One of the asserted benefits of the proposed Funds over existing actively managed mutual funds is the potential for lower operating costs by reducing transfer agency fees and associated account maintenance expenses based on the Funds' use of an exchange-traded structure. Offsetting these identified savings are the costs to be incurred by the Funds in connection with the calculation, verification and dissemination of VIIVs at one-second intervals throughout the Exchange's Core Trading Session each Business Day. Mutual funds do not provide any intraday values, and the IIVs of other ETFs are less frequently disseminated (once every 15 seconds) and subject to less stringent calculation and liability standards than the Applicants propose for the Funds' VIIVs. Unaddressed in the Proposal documents are the incremental costs to be borne by the Funds in connection with VIIVs. Also unaddressed are potential risks to the Fund that arise from VIIV-related liabilities assumed by the Fund.

Ongoing VIIV-Related Costs. Comparing the Funds' proposed VIIV methodology to the IIV practices of existing ETFs, there seems little doubt that the Funds' approach will be significantly more costly than what ETFs customarily pay. Presumably, these costs will be borne by Fund shareholders. How significant are the incremental Fund shareholder costs in connection with VIIVs likely to be? Will

[47] *See* footnote 36 at page 16 of OCIE Staff Report.

they negate, or substantially offset, the savings in transfer agency fees and shareholder maintenance expenses that the Applicants represent that the Funds will provide?

The principal distinctions of the Funds' proposed VIIV methodology versus the standard IIV practices of existing ETFs include: (a) calculating and disseminating intraday Fund valuations at one-second intervals (23,400 valuations per day) instead of 15-second intervals (1,560 valuations per day); (b) sourcing continuous intraday valuations of each portfolio holding from at least two Independent Pricing Sources rather than relying on a single pricing vendor; (c) engaging a Pricing Verification Agent and establishing and maintaining a computer-based protocol to permit the Pricing Verification Agent to continuously compare the data streams from the each Independent Pricing Agent on a real-time basis and to initiate a Share trading halt whenever valuation differences of at least 25 basis points persist for 60 seconds;[48] (d) valuing securities held by each Fund based on the midpoint between the current national best bid and offer quotations rather than last sale price; (e) seeking to include in the VIIV calculation "all accrued income and expenses of a Fund and . . . any extraordinary expenses, booked during the day, that would be taken into account in calculating the Fund's NAV for that day;"[49] and (f) requiring each Independent Pricing Agent and the Pricing Verification Agent at all times, "by contract, to act in good faith and to exercise reasonable care, diligence and the expertise of an Independent Pricing Agent."[50]

Although neither of the Proposal documents addresses the issue, the picture that emerges from the above is that the Funds' proposed VIIV calculation, verification and dissemination methodology will expose the Funds to *significantly higher ongoing costs* than ETFs incur in connection with their disseminated IIVs. As a condition for approval, the Applicants should be required to provide the Commission with detailed estimates of the VIIV-associated Fund costs and demonstrate that the asserted Fund cost benefits are likely to be achieved.

VIIV-Related Liabilities and Potential Costs. The Proposal indicates that the Funds will assume legal liability for potential claims in connection with dissemination of inaccurate or untimely VIIVs. The Exemptive Application states that "each Fund will ultimately be responsible for the calculation of the VIIV."[51] A Fund's liability may be limited by the assertion that "neither the Fund nor any service provider . . . shall be deemed liable for any errors in the calculation or dissemination of the VIIV resulting from

[48] The Pricing Verification Agent would also be responsible for notifying a Fund's Adviser whenever a trading halt is instituted for any portfolio securities (*see* Exemptive Application at page 22).

[49] *See* Exemptive Application at 21. It is my understanding that ETF IIVs do not always fully reflect all fund income and expenses that would be included in the ETF's NAV on that day.

[50] *See* Exemptive Application at page 11. "It is anticipated that under the terms of such contracts with the Independent Pricing Agents and Pricing Verification Agent, each shall be liable to the Fund (or any person or entity claiming through or for the Fund) for loss, cost, expense and damages caused by an error in the calculation or dissemination of the VIIV resulting from a breach of the applicable contract to the extent the breach constitutes bad faith, willful misconduct, reckless disregard or negligence in the performance of its obligations." It is apparent that the contractual liability standard applicable to pricing agents involved in the calculation and dissemination of ETF IIVs is notably lower than what the Applicants represent will apply to the Funds' VIIVs. Whether any pricing agents would be willing to engage with the Applicants on the proposed terms at reasonable cost is an open question that the Applicants should be required to address as a condition for approval.

[51] *See* Exemptive Application at page 11. The Exchange makes clear that neither it nor any of its agents or Reporting Authority bears any liability for "damages, claims, losses or expenses caused by any errors, omissions, or delays in calculating or disseminating" of the VIIV or other portfolio information (*see* Filing at page 7).

any event *beyond the reasonable control* [emphasis added] of either the Fund or a service provider."[52] In spite of this carve-out, it is not hard to imagine circumstances under which market participants that have incurred VIIV-related trading losses could have significant claims against a Fund.

The Applicants assert that "to the extent that any Fund might be found liable for an error in the calculation or dissemination of the VIIV, it anticipated that *the Fund will have appropriate errors and omissions insurance* [emphasis added] that would serve to protect the assets of the Fund from any such claim."[53]

It is far from clear that a Fund would be able to acquire comprehensive errors and omissions insurance covering claims against trading losses and other damages that may be incurred by market participants that rely on VIIVs that prove untimely or inaccurate. Even getting a price quote for this type of insurance may be impossible, as the depth of potential losses would be quite large and the risk of loss unknowable. No insurer seeks to underwrite open-ended liabilities and unquantifiable risks. If a Fund is forced to self-insure this risk, potential costs to Fund shareholders in a worst case scenario are incalculable.

As a condition for approval, the Applicants should be required to (a) demonstrate to the Commission that they have secured commitments from at least one creditworthy insurer to provide errors and omissions insurance to the Funds and (b) provide the Commission with assurances regarding the reasonableness of the associated Fund costs. Given the potential liability risks that a Fund's shareholders could face, the Funds should not be permitted to operate without appropriate insurance coverage.

<u>Share Trading Halts</u>

The Filing describes two circumstances under which the Exchange would halt trading in a Fund's Shares intraday: (a) the Fund's VIIVs are not being priced and disseminated in one-second intervals and (b) the Exchange receives notice that the Fund's Pricing Verification Agent has determined that the two Independent Pricing Source valuations vary by more than 25 bps for 60 seconds. A trading halt would continue until the cause of the trading halt is successfully resolved.[54] These "circuit breakers" are designed to prevent trading in Shares during periods in which VIIVs are unavailable or may reflect outlier prices of underlying Fund securities.

If trading in a Fund's shares is frequently interrupted by trading halts, severe damage to the Fund's ongoing liquidity and trading efficiency would result. In the Proposal documents, the Applicants do not suggest that they have tested the reliability of the proposed VIIV pricing and dissemination process or examined how frequently the proposed circuit breaker would cause trading halts to be invoked for a Fund. The results of any such examinations would likely be highly dependent on the nature of a specific Fund's investment strategy, with Funds investing in more focused portfolios and less liquid underlying holdings more susceptible to trading interruptions.

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[52] *ibid.*

[53] *ibid.*

[54] *See* Filing at page 6. In the Exemptive Application, the Applicants state that they would also request the Exchange to halt trading in a Fund whenever securities representing 10% or more of the Fund's portfolio are subject to a trading halt (*see* footnote 31 at page 22 of the Exemptive Application).

As a condition for approval, the Applicants should be required to complete, and publicly report, the results of a study that examines the reliability of the VIIV calculation and dissemination process and the estimated frequency of circuit breaker-imposed trading halts for each proposed Fund strategy. The study should include consideration of both normal market conditions and periods of heightened market stress and volatility. If the study does not demonstrate that intraday trading in Shares will be virtually continuous and trading halts minimal, the Proposal should not be approved.

Erroneous Share Trades

It appears inevitable that VIIV errors will occur from time to time, given the various challenges to the accurate calculation and timely dissemination of VIIVs at one-second intervals throughout each Business Day's Core Trading Session. Due to the central role of VIIVs in determining market prices of Shares, material errors in disseminated VIIVs will, in turn, invariably cause erroneous Share trades to be executed.

The Proposal, like its predecessors, does not address the treatment of erroneous Share trades resulting from faulty VIIVs. Would all such trades be deemed erroneous and cancelled? Would the Exchange apply a materiality standard in determining when to cancel trades due to faulty VIIVs? Most importantly, as a first step, how would VIIV errors and associated erroneous Share trades be detected?

The Filing describes, in general terms, the steps the Exchange will take to monitor trading in Shares, which will "generally focus on detecting securities trading outside their normal patterns, which could be indicative of manipulative or other violative activity."[55] The Exchange does not express any intention to monitor the accuracy and timeliness of disseminated VIIVs, or describe how Share trades executed in reliance on faulty VIIVs would be treated.

As a condition for approval, the Exchange should be required to institute a comprehensive program to monitor the timeliness and accuracy of disseminated VIIVs and to adopt appropriate procedures for the treatment of Share trades executed during periods when erroneous VIIVs are determined to have been disseminated. The history of ETFs suggests that faulty trading and resulting order cancellations do happen. Rather than addressing the appropriate treatment of erroneous Share trades on an ad hoc basis after the fact, the Exchange should be obligated to do so in advance of the Funds' launch as a condition for listing and trading approval.

Reverse Engineering of Portfolio Holdings

Both the Notice issued by the Commission in response to the Applicants' First Proposal and the Staff Letter responding to the Applicants' Second Proposal highlighted[56] the potential damage to Fund shareholders that could arise if the Fund's holdings and trading activity can be uncovered through data analysis or other means. If a Fund's holdings could be reverse engineered, the Fund's claims of non-transparency would be invalidated and the Fund would become susceptible to the dilutive effects of front running by investors that gain the ability to anticipate the Fund's trades.

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[55] *See* Filing at page 38.

[56] *See* Notice footnote 33 at page 16 and footnote 36 at page 17 and Staff Letter at page 4.

The Applicants assert that they "have carefully sought to provide a level of access and precision for the VIIV that would both facilitate arbitrage, yet protect a Fund from "front running" and "free riding" by other investors and/or managers which could otherwise harm, and result in substantial costs to, the Funds. Applicants believe it highly unlikely, and have sought to confirm mathematically, that a VIIV calculated as described herein and provided at one second intervals would not allow others to reverse engineer a Fund's investment strategy for purposes of front running."[57]

The Exemptive Application includes as Exhibit C an analysis by Ricky Alyn Cooper, PhD, and as Exhibit E a supplemental analysis by the same author (collectively, the Ricky Cooper Study) that evaluate the potential to reverse engineer (RE) the holdings of a hypothetical ETF using VIIVs calculated and disseminated in the manner described in the Proposal. The summary conclusion of the Ricky Cooper Study is that "it seems rather unlikely that the Precidian ETF construction methodology will result in a product that can be reverse engineered for purposes of front running."[58]

Relative to previous versions of the Proposal that may have been more susceptible to RE, the Ricky Cooper Study cites the protective benefits of (a) scaling Fund prices to an initial value of $20 per share, (b) using bid-ask midpoint prices of securities in the calculation of VIIVs and (c) disseminating VIIVs rounded to the nearest cent.

To test the thesis that a Fund's holdings would not be susceptible to RE, the author of the Ricky Cooper Study constructed a randomly selected hypothetical portfolio of 40 stocks drawn from the NASDAQ-100 universe (approximately 100 stocks) and attempted to identify the constituent stocks and stocks weightings using a least squares optimization technique, constraining individual portfolio weights to a range of 0-10%. The data was analyzed over 44 trading days from May 1, 2014 to July 2, 2014. The accuracy of the regression was measured by the square root of the mean square error in the estimated versus actual portfolio weights, averaged over the observations. The square root of the mean square error was found to average 1.04%, which compared to a square root of the mean square error of 1.22% for a naïve tracking portfolio consisting of equally weighted holdings of each of the NASDAQ-100 constituent stocks (used as a control). According to the author, the similarity of the mean square errors implies that "reverse engineering is likely to achieve the same success by the end of the day as a naïve index tracking strategy would achieve."[59] The author's conclusion that RE "seems rather unlikely" for the Funds appears to reflect only the results of the test described in the study.

Among the factors that would determine a Fund's susceptibility to RE through time-series analysis of VIIVs are: (a) the number of Fund holdings (fewer makes RE easier); (b) the number of potential Fund investments (fewer makes RE easier); (c) the current Fund NAV within the indicated $20-30 range (higher makes RE easier; the Ricky Cooper Study used $20); (d) the average price range of the Fund's holdings and eligible investments (higher makes RE easier); (e) the intraday price volatility of the Fund's holdings and eligible investments (higher makes RE easier; the Ricky Cooper Study was conducted during a period of abnormally low market volatility); (f) the correlation of intraday price movements of the Fund holdings and eligible investments (lower makes RE easier); (g) Fund portfolio

[57] *See* Exemptive Application at page 23.

[58] *See* Exemptive Application at page 63.

[59] *See* Exemptive Application at page 61.

turnover rates (lower makes RE easier); (h) the statistical method employed in the RE process (there are several options); and (i) other Fund information incorporated in the RE process (such as previously disclosed holdings) that constrains or biases the RE process to increase the odds of a successful RE result.

Recent research[60] addressing the potential for reverse engineering the holdings of a Fund operating as described in the Proposal demonstrates that significant improvements in RE results over the Ricky Cooper Study can be achieved by using a different statistical method and altering some of the study conditions. Although this research is not complete, it already demonstrates that match rates between estimated and actual portfolio weightings above 99% can be achieved during volatile market periods using the same portfolio parameters as in the Ricky Cooper Study (40 stock portfolio drawn from the NASDAQ-100). Because actual portfolios are not randomly selected and a determined reverse engineer[61] could come to know a great deal about a given Fund's likely holdings based on inputs other than VIIV analysis alone, in actual practice reverse engineering a Fund may not be nearly as difficult as the Ricky Cooper Study suggests. On an overall basis, *it is far from a settled question that the Funds would not ever be susceptible to reverse engineering.*

Accordingly, as a condition for approval, the Applicants should be required to conduct, and publicly report, additional research studies that demonstrate to the Commission's satisfaction that reverse engineering of the Funds is not possible over any reasonably foreseeable circumstances.

<u>Selective Disclosure of Confidential Fund Information</u>

In the Staff Letter responding to the Applicants' Second Proposal, the Commission's staff expressed significant reservations regarding the proposed private communication of confidential Fund information to support trading in the Fund's underlying holdings on behalf of Authorized Participants. As stated in the Staff Letter, "this disclosure would seem to run afoul of a foundational federal securities laws principle. The Commission has consistently opposed the selective disclosure of non-public material information, in particular where the recipients of such information could use it to trade for their own profit. Selectively disclosing information to trustees of the blind trusts for the benefit of Authorized Participants, but no others, and allowing the Authorized Participants to continuously trade on that selective information, constitutes a major departure from this long-standing principle. . . . Moreover, as noted at length by the Commission in its Notice, section 22(d) and rule 22c-1 under the [1940] Act are designed to require that all fund shareholders be treated equitably when buying and selling fund shares. Applicants' proposal would create asymmetry between market participants by providing confidential disclosures to the ETFs' Authorized Participants but no other market participants."[62]

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[60] Conducted by a research consulting firm engaged by Eaton Vance.

[61] To increase the efficiency of their arbitrage trading, market makers and other arbitrageurs would be highly motivated to reverse engineer a Fund's holdings. As stated in footnote 16 on page 4 of the Staff Letter, "it is the staff's understanding that, in their quest for pricing precision, market makers or other market participants likely will seek to reconstruct the underlying portfolio as much as possible using any and all available information, even if the ETF is nominally non-transparent." The resources and determination a market maker could bring to this endeavor could far exceed the simple academic test demonstrated in the Ricky Cooper Study. See, for example, the *New York Times* article "A New Breed of Trader on Wall Street: Coders With a Ph.D." (February 22, 2016) available at http://www.nytimes.com/2016/02/23/business/dealbook/a-new-breed-of-trader-on-wall-street-coders-with-a-phd.html?_r=0.

[62] See Staff Letter at page 4-5.

Although the current Proposal (a) alters the arrangement through which Authorized Participants could, through an agent, trade using privately disclosed confidential Fund information and (b) expands the eligibility to participate in such an arrangement to also include Non-Authorized Participant Market Makers and other arbitrageurs, the concerns expressed in the Staff Letter are not fully resolved and remain an issue for this Proposal.

The Proposal provides[63] that "any investor that is willing to transact through a broker-dealer that has established a Confidential Account with a Trusted Agent will have the same opportunity to engage in arbitrage activity." As a matter of actual practice, few, if any, Fund investors that are not market makers or professional traders are likely to ever avail themselves of the Confidential Account arrangement. As a group, non-professional investors will not have the requisite trading skills, access to the necessary Fund trading information (including current VIIVs and Fund Transaction Fees) or the capital required to successfully engage in Fund arbitrage or otherwise make sensible use of trading through Confidential Accounts.

The proposed Confidential Account arrangement should be revealed for what it truly is – a scheme to enable Fund market makers and other arbitrageurs to trade on selectively disclosed material Fund information. As such, the Confidential Account arrangement that is at the core of the Proposal violates foundational principles of federal securities law. Accordingly, the Confidential Account arrangement should not be permitted and the Proposal should not be approved.

<u>Tax Treatment of In-kind Redemptions</u>[64]

The Applicants represent that the Funds offer potential tax advantages over traditional mutual funds that include "reduction in capital gains associated with the in-kind transfer of securities from the ETF to Authorized Participants and the accompanying cost-basis step up" and "increased Adviser flexibility associated with the reduction of embedded capital gains."[65] The Funds' potential tax advantages appear to derive solely from the proposed use of distributions of portfolio securities to effect redemptions in a tax-favorable manner. None of the descriptions of the Funds' investment strategies suggest that the Funds will employ other means to minimize or defer shareholder taxes.

The potential tax advantages would, if realized, depend on Section 852(b)(6) of the Internal Revenue Code (IRC). Under generally applicable federal income tax rules, a distribution of appreciated property from a corporation to a shareholder causes the corporation to realize gain equal to the excess of the value of the property distributed over the tax basis of that property. When the distributing corporation is a regulated investment company (RIC), the realized gain would then be taxed either to the RIC or its shareholders, depending on the fund's distribution policy.

Section 852(b)(6) "turns off" the gain realization rule for cases when a RIC makes a distribution "in redemption of its stock upon the demand of the shareholder." This provides an advantage for RICs that meet redemptions in kind. Such a fund can effect redemptions using appreciated securities without

[63] *See* Filing at page 14.

[64] This section is based on advice of tax counsel engaged by Eaton Vance.

[65] *See* Exemptive Application at page 20.

realizing the built-in gains on the securities. As a result, in-kind redemptions reduce the built-in gain that will ultimately be taxed to the fund or its shareholders. As described in the Filing, "the Fund[s] can use in-kind redemptions to reduce the unrealized capital gains that may, at times, exist in a Fund by distributing low cost lots of each security that a Fund needs to dispose of to maintain its desired portfolio exposures. Shareholders of a Fund would benefit from the in-kind redemptions through the reduction of the unrealized capital gains in a Fund that would otherwise have to be realized and, eventually, distributed to shareholders."[66]

The Funds' process for in-kind redemptions would differ significantly from how existing ETFs redeem shares in kind, which could change the resulting tax treatment. Whereas Authorized Participants and other redeeming shareholders of an existing ETF know the contents of the Creation Basket instruments that will be used to effect the redemption and have complete control over the receipt, holding, and disposition of those assets, the Funds' redeeming shareholders are not permitted to receive the assets directly and are intentionally kept ignorant of the contents of the Creation Basket. Although described as an "agent," the Trusted Agent does not act solely on behalf of the redeeming shareholder, but rather has duties both to the redeeming shareholder and to the Fund. As a result, redeeming shareholders have only diminished, indirect control over the assets held by the Trusted Agent in a Confidential Account.

As a practical matter, the ability of a redeeming shareholder to control the disposition of the distributed assets would be limited by the fact that the Trusted Agent cannot divulge the identity of those assets. While, in theory, the Trusted Agent acts at the instruction of the redeeming shareholder in selling, holding, or hedging against the distributed assets, the lack of information as to the composition of the Creation Basket effectively dictates the instruction that a prudent investor will give to its Trusted Agent. In order to avoid exposing itself to unknown market risks with respect to the distributed assets, a prudent investor will be compelled to maintain a standing instruction to sell or completely hedge against the distributed assets.[67]

<u>Tax Analysis.</u> When a corporation distributes property in kind to a shareholder and the shareholder shortly thereafter sells or otherwise disposes of the property, there is a question as to whether the sale should be treated, for tax purposes, as a sale by the corporation (followed by a distribution of cash to the shareholder), or should be respected as a sale by the shareholder. The seminal case is *Commissioner v. Court Holding Co.*, 324 U.S. 331 (1945), in which the Supreme Court treated a corporation's distribution of assets in liquidation, followed by a shareholder's pre-planned sale of the assets, as a sale by the corporation. The decisions in *Court Holdings* and other cases applying this principle have focused on factors such as the corporation's involvement in negotiating and planning the sale of distributed assets, the regularity of purchases and sales by the corporation of similar assets, the existence of a tax avoidance motive, the lack of a business purpose and the expectation of immediate sale by the shareholder.[68]

[66] *See* Filing at page 30.

[67] The discussion below refers to an immediate sale of distributed assets. A complete hedge would likely be treated as the equivalent of a sale under IRC Section 1259 or substance over form principles.

[68] See, for example, *Anderson v. Commissioner*, 92 T.C. 138 (1989), where the Tax Court required some evidence of involvement by the distributing corporation in the sale of publicly traded stock distributed to a shareholder to re-characterize the transaction. Because the assets distributed were not inventory or similar to inventory, the court held that it would not re-characterize the transaction as a sale by the corporation without a finding that the corporation had "participation in a

A number of factors present in the Proposal could lead the IRS to re-characterize the Funds' in-kind distributions as sales by the Funds, which would eliminate the tax benefit under IRC Section 852(b)(6). Not only is an immediate sale of the distributed securities expected, it is arguably a foregone conclusion due to the blind nature of the Confidential Account arrangement and the redeeming shareholder's complete ignorance regarding what securities are distributed. While in form a redeeming shareholder would instruct the Trusted Agent as to the disposition of the distributed assets, in substance the shareholder would exercise little meaningful choice. Given the Trusted Agent's joint duties to the Fund and to the shareholder whose Confidential Account the Trusted Agent oversees, the distribution and sale would be tantamount to a direct sale by the Fund.

In addition, there is a clear tax benefit to a Fund of using in-kind redemptions to remove low-basis holdings from the Fund's portfolio, which benefit the Proposal promotes. Further, to the extent *Anderson*'s requirement of at least some involvement in the sale by the distributing corporation were to apply, factors supporting a Fund's "participation in a significant manner" in the sale of the distributed securities by a redeeming shareholder would include the role of the Fund and its agents in selecting the banks and broker-dealers that are eligible to serve as Trusted Agents, and the ongoing contractual and fiduciary relationship that exists between the Fund and each Trusted Agent. The entire Confidential Account and Trusted Agent arrangement is constructed by the Fund for its own benefit, and redeeming shareholders have no choice other than to redeem through the specified arrangement.

Conclusion and Recommendations. There is a significant risk that the Funds' in-kind distributions of securities will be re-characterized for federal income tax purposes as a sale of the securities by the Fund followed by a distribution of cash, thereby negating the normal tax advantages to a RIC of redeeming in kind. Even if the tax treatment of the Funds' in-kind redemptions were to be challenged by the IRS and ultimately upheld, there is a high likelihood that the Funds would liquidate or seek to restructure such that they would no longer operate in accordance with the Proposal.

Given the importance of tax efficiency to the Proposal's claimed investor benefits and the strong possibility that the Fund's asserted tax benefits will be denied, this risk cannot be adequately addressed through disclosure alone. The IRS has in place a process through which a taxpayer taking a tax position can request a ruling (Private Letter Ruling) that the position would not be subject to challenge. Although, to my knowledge, no ETF has previously requested a Private Letter Ruling addressing the appropriate tax treatment of in-kind redemptions, it should be a condition for approval of the Proposal that the Applicants receive, prior to the launch of any Fund, a Private Letter Ruling from the IRS affirming the proposed tax treatment of the Funds' in-kind distributions.

The IRS has in the past issued favorable Private Letter Rulings on proposed distributions of appreciated property by a RIC,[69] but with conditions and under circumstances quite different from the Proposal. Based on past precedent, it appears unlikely that the IRS would be willing to grant a Private Letter Ruling assenting to the proposed tax treatment of the Funds' in-kind distributions. If the IRS will not grant a favorable Private Letter Ruling, the Proposal should not be permitted to move forward.

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significant manner" in the shareholder's sale of the distributed assets by negotiation, prior agreement, post-distribution activities or otherwise.

[69] *See, e.g.*, PLR 200536003 (Sept. 9, 2005).

Order Cut-off Times for Creation Unit Transactions

A central element of the Applicants' First Proposal was maintaining Order Cut-Off Times for Fund creations and redemptions on a given Business Day that would be prior to the close of market trading on that day. The current Proposal is ambiguous in this regard. While the Exemptive Application and Filing each state that "orders to purchase Creation Units . . . must be received . . . no later than the scheduled closing time of the regular trading session on the NYSE,"[70] the Filing also provides that the "Order Cut-off Time for a Fund . . . may be prior to the Valuation Time if the Board determines that an earlier Order Cut-off Time . . . is necessary and is [in] the best interests of Fund shareholders."[71]

On its face, the imposition of early Order Cut-off Times for redemptions of Shares violates the prohibition set forth in Section 22(e) of the 1940 Act against a registered investment company suspending the right of redemption of any redeemable security and the requirement of Rule 22c-1 under the 1940 Act that shareholders in open-end funds receive the NAV next computed after their redemption request. Mandatory early Order Cut-off Times for direct purchases and redemptions of Shares also raise Exchange Act issues due to the potential impact on secondary market trading after the designated Order Cut-off Time.

To my knowledge, the Commission has not previously granted similar relief to any other ETF or mutual fund seeking to suspend redemption rights in its shares for a portion of each Business Day. As a condition for approval of the Proposal, the Funds should be required to establish and maintain Order Cut-off Times consistent with the requirements for other ETFs and mutual funds.

Scope of Proposal

For the reasons discussed previously in this letter, the Proposal should not be approved. If approved, however, the Funds' permitted investments should be limited as described in this section.

The Proposal covers 15 Funds whose investments would consist of long and short positions in U.S.-listed securities, including other ETFs. All exchange-listed equity securities in which the Funds may invest would be listed and traded on U.S. national securities exchanges. In addition to U.S-listed securities, Fund investments may include repurchase agreements and reverse repurchase agreements, cash and cash equivalents, and investments in money market funds and other investment companies. No Fund would be permitted to invest in options, futures, forwards, swaps or leveraged ETFs, or to use investments for leverage purposes.

Based on available information,[72] the 15 Funds appear to encompass a broad spectrum of U.S. equity strategies, including large-cap, mid-cap and small-cap strategies, some of which would maintain significant short positions on an ongoing basis. Each Fund may also invest up to 15% of its net assets in illiquid assets, as determined at the time of investment.

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[70] *See* Exemptive Application at page 15 and Filing at page 27.

[71] *See* Filing at page 26 (addressing purchases of Creation Units) and page 28 (addressing Creation Unit redemptions).

[72] As noted in Footnote 3, no record of a Registration Statement covering the 15 subject Funds can be found on the SEC website. Available information about the Funds' individual investment strategies is limited to the one-to-three sentence summaries included in the Filing (*see* pages 17-20) and the Exemptive Application (*see* pages 54-55).

In the Applicants' First Proposal, the Applicants asserted that "the nature of the markets in the component securities . . . will be primarily determinant of premiums or discounts"[73] and noted that "the large and medium capitalization exchange traded equity securities in which the Funds plan to invest will generally be highly liquid and actively traded."[74] Further, "because a Fund will generally invest in large and medium capitalization equity securities that are highly liquid and have pricing information readily available in the marketplace, the Fund is able to provide shareholders a reliable [IIV] calculation and therefore, an effective hedging mechanism."[75]

Although the current Proposal differs from the Applicants' First Proposal in a number of respects, it remains the case that the liquidity and level of trading activity in a Fund's underlying holdings will be a primary determinant of the Fund's trading efficiency. In evaluating the Funds' proposed investments and comparing them to the Applicants' prior statements, there are significant inconsistencies. A number of the Funds describe themselves as "small cap" or "mid cap," suggesting that they will hold significant investments that may not be highly liquid and actively traded. In addition, the Funds' ability to invest up to 15% in illiquid assets is clearly inconsistent with the need for continuous active trading in the Fund's underlying investments throughout the Exchange's Core Trading Session to maintain efficient trading in Shares. Moreover, the Funds' ability to hold short positions and invest in non-U.S. debt instruments could significantly interfere with the effectiveness of the proposed mechanism for maintaining close correspondence between market trading prices of Shares and underlying portfolio values.

Although the Funds' permissible ETFs investments are proposed to be limited to U.S.-listed ETFs, the only stated restriction on the types of U.S.-listed ETFs a Fund could hold is a prohibition against investing in leveraged ETFs. I am one of the authors of a paper entitled, "ETF Transaction Costs Are Often Higher than Investors Realize," forthcoming in the Spring 2016 issue of *The Journal of Portfolio Management* (ETF Transaction Costs Paper).[76] The paper demonstrates that the prices at which investors buy or sell shares of an ETF often vary greatly from the current value of the ETF's portfolio. Not surprisingly, the difference is frequently greatest for funds holding foreign equities and less-liquid fixed income instruments. Even though the Funds would not be permitted to invest in these instruments directly, they could hold them indirectly through positions in other ETFs. As the paper (and other research) reveals, ETF trading prices are often a poor measure of underlying value. Because a Fund's VIIVs can only be as valid as the inputs used in their calculation, any Fund that owns positions in ETFs holding foreign equities and/or less-liquid fixed income instruments is subject to significant mispricing.

If the Proposal is approved, the Funds' permitted investments should be curtailed. In particular, the Funds should: (a) be required to limit their equity investments to U.S.-listed stocks with market caps of $5 billion or greater (consistent with the general understanding of large- and medium-cap stocks); (b) be required to limit their ETF investments to U.S.-listed domestic equity ETFs; (c) not be permitted to invest in illiquid assets; and (d) not be permitted to hold short positions.

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[73] *See* First Proposal Exemptive Application at page 25.

[74] *ibid* at page 21.

[75] *ibid*.

[76] Reprints are available from Dewey Palmeiri at dpalmeiri@iijournals.com.

Adequacy of Investor Information and Potentially Misleading Claims

Access to VIIVs. The Proposal provides that VIIVs will be "widely disseminated by one or more major market data vendors every second during the Exchange's Core Trading Session."[77] The proposed means of dissemination of intraday values is consistent with the current requirements for ETFs.[78] Broad public access to the Funds' VIIVs is of substantially greater importance for the Funds than access to IIVs is for existing ETFs, reflecting the critical role that VIIVs provided to market makers play in seeking to ensure the Shares' market trading efficiency and the likelihood of higher investor trading costs to buy and sell Shares.

Similar to the IIVs disseminated by other ETFs, the VIIVs are intended to provide Fund shareholders with information about the relationship between current market trading prices of Shares and the underlying value of Fund assets at approximately the same time, addressing the question: "do current Share prices represent a fair deal?"

Given the greater importance of VIIVs to the Funds and their shareholders, it is essential that all Fund shareholders have ongoing access to current VIIVs. The proposed dissemination of VIIVs "by one or more major market data vendors" is not sufficient for this purpose. Information is rarely useful to an investor if the investor does not have ready, consistent and free access to it. It does most investors no good to have VIIVs disseminated every second, if they have to get a Bloomberg terminal to see them. It should be a requirement for approval of the Proposal that each Fund's current VIIVs are provided at no charge on a public website and made available to the public no later than available to any other market participant.[79]

Website Information. The Proposal represents[80] that the Funds will maintain a free public website through which a Fund's prospectus may be downloaded and including various Fund trading information that is updated daily, consistent with the current practices of existing ETFs. Given the heightened importance of VIIVs for Fund investors and the likelihood that the Funds will trade at wider spreads and more variable premiums/discounts, some additional and different Fund trading information should be required as a condition for approval. In particular, the Commission should consider requirements for the following:

VIIVs

a. Real-time VIIVs updated continuously throughout the Exchange's Core Trading Session on each Business Day (as discussed above);

[77] *See* Filing at page 5.

[78] Certain ETF sponsors provide real-time intraday fund values on their public website or support dissemination of intraday fund values through other public websites.

[79] Investor understanding of the trading costs they pay to buy and sell Shares would be further enhanced by requiring broker-dealers to include on trade confirmations for transactions in Shares the amount of trading cost incurred in connection with the trade, measured as the difference between the price paid or received and the Fund's VIIV at the time of trade execution. As a further recommendation, the Commission should consider requiring this for the Funds.

[80] *See* Filing at page 34 and Exemptive Application at page 21.

b. Updated daily, complete intraday VIIV history for at least the twenty most recent trading days (allowing buyers and sellers of Shares to compare their executed prices to reported VIIVs at the time of their trade execution);

c. Updated daily, prior Business Day's closing VIIV and a calculation showing the relationship of closing VIIV to NAV (allowing investors to evaluate the historical correspondence); and

d. Updated daily, a chart and tables showing the frequency distribution and range of the closing VIIV-to-NAV ratios for each calendar quarter over the life of the Fund.

Closing Price Premiums/Discounts[81]

a. Updated daily, prior Business Day's closing market price and premium/discount (expressed as a percentage) based on the relationship of closing market price to NAV; and

b. Updated daily, a chart showing the frequency distribution and range of daily closing price premiums/discounts (expressed as percentages) for each calendar quarter over the life of the Fund.

Intraday Estimated Premiums/Discounts

a. Updated daily, prior Business Day's average, minimum and maximum intraday estimated premiums/discounts (expressed as percentages) based on VIIVs and bid-ask midpoints at each VIIV publication time; and

b. Updated daily, a chart showing the frequency distribution and range of daily average, minimum and maximum intraday estimated premium/discounts (expressed as percentages) for each calendar quarter over the life of the Fund.

Bid-Ask Spreads

a. ETF issuers often stress using bid-ask spreads to measure investor trading costs. At least one free website (ETF.com) publishes average spreads for all or nearly all ETFs traded in the United States. Free is fine; but, as explained at length in the ETF Transaction Costs Paper, the bid-asked spread for an ETF is not a useful guide to estimating the cost of trading the ETF's shares. The cost of trading an ETF is the difference between the transaction price and the then-current value of the Fund's net assets; and

b. If ETF.com is going to publish bid-ask spreads for everyone, there is little reason to require each Fund to provide similar data. In the long run, dialog on the uselessness of

[81] As discussed in the ETF Transaction Costs Paper, disclosures of historical closing premiums/discounts are usually based on the midpoint of the closing bid-ask spread, rather than the closing price. While a significant percentage of an ETF's daily trading volume frequently takes place at the official market closing price, little or no trading likely takes place at the closing bid-ask midpoint. Using closing bid-ask midpoints to calculate an ETF's reported premiums/discounts not only reflects the actual experience of few, if any, ETF investors, but also likely understates the actual trading costs of many ETF investors. Retail investors accessing market liquidity almost invariably buy shares on the (higher) offer side of the bid-ask midpoint and sell shares on the (lower) bid side of the midpoint.

ETF bid-ask spread data might lead to order management changes that will reduce investor costs to trade ETFs.

Fund Market Exposure and Leverage

a. Updated daily, prior Business Day's net long or short equity market exposure, expressed as a percentage of Fund net assets; and

b. Updated daily, a chart showing the frequency distribution and range of the Fund's daily net market exposure percentages for each calendar quarter over the life of the Fund.

Purchase and Redemption Transaction Fees

a. Updated daily, Transaction Fees currently applicable to direct purchases and redemptions of Shares; and

b. Updated daily, a chart showing the frequency distribution and range of Transaction Fees applicable to direct purchases and redemptions of Shares for each calendar quarter over the life of the Fund.

Website disclosure of Transaction Fees currently in effect would improve the transparency of Fund costs and help investors assess the reasonableness of the premiums/discounts at which they buy and sell Fund shares. Any market participant that seeks to engage in arbitrage trading needs access to current Fund Transaction Fees.

Fund Claims. The Applicants represent that the Funds' structure and method of operation will offer significant investor benefits relating to cost and tax efficiency, Fund trading confidentiality and shareholder trading costs. As detailed above, this analysis concludes that the Proposal, like its predecessors, has a number of serious flaws that undermine the claimed benefits and recommend against approval. If, contrary to this letter's recommendation, the Commission permits the Proposal to move forward, it should be a condition for approval that the Funds' Registration Statement and marketing and advertising materials should not be permitted to represent that:

a. the Funds are more cost efficient or lower cost than mutual funds (unless substantiated by Fund expense ratios that are below the average of mutual funds with similar investment practices and comparable distribution and service fee (*i.e.*, 12b-1) structures);

b. the Funds are more tax efficient than mutual funds (unless Funds receive a Private Letter Ruling affirming the asserted tax treatment of the Funds' in-kind distributions);

c. the Shares will not trade on the secondary market at large discounts or premiums to NAV (until documented by actual trading experience through a range of market conditions to show that the average premium/discount of Shares as measured based on the absolute value of the difference between daily closing market price and NAV is less than 0.25%); and

d. the Funds provide protection against front running and free riding (until the Funds have instituted and demonstrated the effectiveness of policies to ensure that Fund holdings cannot be reverse engineered and that confidential Fund data disseminated to Confidential Account service providers is adequately secured).

Conclusion

This letter's principal conclusion is that the Proposal should not be approved. As an initial matter, the Proposal should be rejected as incomplete, because no Registration Statement for the 15 subject Funds is publicly available. Addressed on its merits, the Proposal falls well short of meeting the statutory standard that approval is necessary or appropriate in the public interest and consistent with the protection of investors. Among the reasons for disapproval are:

1. The unreliability of the Funds' proposed method for ensuring secondary market trading efficiency, and the likelihood that the Shares will trade at significantly wider bid-ask spreads and/or more variable premiums/discounts than existing ETFs that themselves demonstrate trading deficiencies.

2. Concerns that the security of confidential Fund information disseminated to Trusted Agents and other Confidential Account service providers cannot be assured.

3. Potentially significant added Fund costs and risks in connection with the calculation, verification and dissemination of VIIVs and associated Fund warranties.

4. The potential for frequent Share trading halts.

5. The likely incidence of erroneous Share trades and the absence of an Exchange program to detect and appropriately remediate erroneous trades.

6. The potential for reverse engineering of a Fund's portfolio holdings through analysis of VIIVs and other Fund information.

7. Selective disclosure concerns raised by the dissemination of confidential Fund holdings information to Trusted Agents for trading on behalf of Confidential Account holders.

8. The significant risk that the IRS will deny the purported tax benefits of the Funds' distinctive in-kind redemption program.

Should the Proposal move forward, its scope should be reduced by:

1. Restricting the Funds' investments to include only U.S.-listed large-cap and mid-cap stocks, U.S.-listed domestic equity ETFs and cash instruments.

2. Not permitting the Funds to hold illiquid assets or to enter into short positions.

Should the Proposal move forward, the information provided to investors should be expanded to include:

1. Real-time dissemination of VIIVs on a free public website, updated continuously throughout the Exchange's Core Trading Session each Business Day.

2. Daily updated statistics on the Funds' website showing historical VIIVs, closing price/NAV ratios, VIIV/NAV ratios, intraday price/VIIV ratios, net long and short market exposures, and Transaction Fees applicable to direct purchases and redemptions of Shares.

Claims regarding Fund cost and tax efficiency, the Shares' trading performance and the Funds' protection against front running and free riding should not be permitted until substantiated.

In closing, I wish to thank the Commissioners and staff of the SEC for consideration of the views and information presented in this letter.

Sincerely,

Gary L. Gastineau

Gary L. Gastineau
President, ETF Consultants.com, inc.

Exhibit 1-1: Measures of ETF Investor Trading Costs: 2015

Category	No of Funds		Average Market Cap ($MM)		Average Volume ($MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	**27**	**289**	**1,222**	**902,925**	**9**	**39,057**	**0.29**	**0.16**	**0.16**	**0.03**	**0.16**	**0.03**	**0.44**	**0.24**	**0.23**	**0.05**	**0.23**	**0.04**
Mid-Cap Value	3	20	379	33,606	2	170	0.13	0.12	0.11	0.03	0.12	0.03	0.17	0.18	0.14	0.04	0.15	0.04
Mid-Cap Blend	5	25	444	77,539	2	797	0.24	0.10	0.11	0.04	0.12	0.03	0.30	0.14	0.14	0.07	0.15	0.05
Large Blend	6	89	135	428,901	1	27,662	0.34	0.21	0.28	0.03	0.25	0.02	0.65	0.31	0.55	0.04	0.42	0.03
Large Growth	5	27	112	116,940	2	3,991	0.33	0.14	0.24	0.03	0.14	0.03	0.48	0.20	0.34	0.06	0.18	0.04
Large Value	5	56	91	125,450	1	1,846	0.31	0.14	0.21	0.03	0.26	0.04	0.45	0.20	0.32	0.05	0.37	0.05
Small Blend	2	28	48	63,843	1	4,083	0.29	0.23	0.29	0.04	0.32	0.04	0.39	0.34	0.40	0.05	0.45	0.05
Mid-Cap Growth	1	16	12	22,571	0	145	0.32	0.11	0.32	0.04	0.32	0.05	0.42	0.16	0.42	0.05	0.42	0.06
Small Growth		11		16,384		188		0.11		0.05		0.04		0.16		0.08		0.06
Small Value		17		17,691		174		0.14		0.05		0.05		0.20		0.06		0.06
US EQUITY SECTORS	**8**	**287**	**1,154**	**284,349**	**11**	**12,193**	**0.30**	**0.21**	**0.11**	**0.06**	**0.11**	**0.07**	**0.43**	**0.28**	**0.14**	**0.09**	**0.14**	**0.10**
Equity Energy	1	24	1,050	24,010	10	2,243	0.09	0.19	0.09	0.05	0.09	0.04	0.10	0.25	0.10	0.07	0.10	0.10
Real Estate	1	19	51	41,564	0	1,198	0.27	0.17	0.27	0.04	0.27	0.04	0.42	0.22	0.42	0.05	0.42	0.05
Miscellaneous Sector	1	23	8	4,474	0	30	0.30	0.36	0.30	0.25	0.30	0.32	0.45	0.44	0.45	0.31	0.45	0.39
Technology	2	36	19	37,138	0	844	0.34	0.17	0.34	0.05	0.33	0.04	0.50	0.21	0.49	0.06	0.49	0.06
Energy Limited Partnership	1	8	15	8,934	0	116	0.48	0.23	0.48	0.13	0.48	0.13	0.63	0.34	0.63	0.39	0.63	0.39
Health	1	28	8	50,211	0	2,070	0.37	0.10	0.37	0.05	0.37	0.05	0.54	0.16	0.54	0.07	0.54	0.08
Communications		7		2,177		24		0.15		0.10		0.09		0.20		0.13		0.12
Consumer Cyclical		19		22,396		1,018		0.13		0.04		0.04		0.18		0.06		0.06
Consumer Defensive		12		15,687		491		0.13		0.04		0.03		0.17		0.05		0.04
Equity Precious Metals		14		7,688		1,112		0.55		0.28		0.28		0.67		0.35		0.34
Financial		32		33,402		1,250		0.18		0.05		0.05		0.25		0.08		0.08
Industrials		20		13,658		701		0.14		0.04		0.03		0.18		0.05		0.04
Natural Resources		30		12,906		462		0.29		0.15		0.11		0.36		0.19		0.15
Commodities Industrial Metals		3		176		3		0.55		0.24		0.25		0.72		0.39		0.39
Utilities	1	12	3	9,929	0	632	0.22	0.17	0.22	0.04	0.22	0.03	0.29	0.24	0.29	0.05	0.29	0.04
INTERNATIONAL EQUITY	**16**	**452**	**682**	**453,166**	**4**	**10,848**	**0.40**	**0.62**	**0.23**	**0.43**	**0.29**	**0.54**	**0.48**	**0.74**	**0.27**	**0.54**	**0.36**	**0.70**
World Stock	8	31	537	17,955	3	180	0.22	0.45	0.15	0.20	0.15	0.20	0.27	0.50	0.18	0.23	0.19	0.24
Foreign Large Value	2	25	85	11,697	0	83	0.49	0.46	0.47	0.41	0.48	0.41	0.56	0.56	0.50	0.51	0.54	0.51
Foreign Large Blend	2	46	21	139,266	0	2,084	0.66	0.49	0.69	0.32	0.65	0.36	0.76	0.49	0.82	0.39	0.74	0.44
Foreign Large Growth	1	6	17	2,772	0	22	0.51	0.39	0.51	0.40	0.51	0.41	0.67	0.47	0.67	0.50	0.67	0.49
Foreign Small/Mid Value	1	8	12	1,435	0	8	0.69	0.55	0.69	0.50	0.69	0.50	0.48	0.67	0.48	0.57	0.48	0.58
China Region	1	37	8	18,321	0	1,336	0.80	0.91	0.80	0.76	0.80	0.82	1.31	1.23	1.31	1.01	1.31	1.10
Diversified Emerging Mkts		68		90,331		2,989		0.73		0.48		0.56		0.84		0.59		0.70
Diversified Pacific/Asia		6		3,600		38		0.68		0.24		0.22		0.83		0.30		0.27
Foreign Small/Mid Blend		9		8,773		62		0.58		0.45		0.46		0.61		0.48		0.48
India Equity		9		7,556		206		0.72		0.67		0.66		0.93		0.87		0.89
Japan Stock		27		37,667		816		0.74		0.73		0.72		0.98		0.97		0.96
Latin America Stock		14		3,382		520		0.73		0.62		0.69		0.92		0.82		0.93
Miscellaneous Region		99		34,338		1,217		0.61		0.48		0.55		0.75		0.64		0.73
Europe Stock		38		57,453		1,109		0.49		0.33		0.33		0.54		0.44		0.44
Global Real Estate	1	15	2	11,502	0	66	0.38	0.60	0.38	0.35	0.38	0.34	0.48	0.51	0.48	0.41	0.48	0.40
Pacific/Asia ex-Japan Stk		14		7,117		112		0.64		0.61		0.64		0.74		0.80		0.82

Exhibit 1-2: Measures of ETF Investor Trading Costs: 2014

Category	No of Funds		Average Market Cap ($M)		Average Volume ($M)		Avg Abs Premium/Discount (%)						Vol of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	**22**	**239**	**821**	**774,265**	**12**	**34,958**	**0.27**	**0.11**	**0.14**	**0.03**	**0.18**	**0.03**	**0.40**	**0.14**	**0.19**	**0.04**	**0.25**	**0.03**
Mid-Cap Value	3	18	326	30,827	3	150	0.10	0.09	0.09	0.03	0.10	0.04	0.12	0.12	0.11	0.04	0.12	0.04
Mid-Cap Blend	5	25	301	64,967	4	859	0.23	0.10	0.12	0.04	0.16	0.03	0.30	0.13	0.15	0.04	0.17	0.04
Large Blend	4	55	68	368,608	4	22,916	0.25	0.12	0.27	0.02	0.23	0.02	0.37	0.17	0.38	0.03	0.35	0.03
Large Growth	4	26	36	102,359	1	3,878	0.45	0.08	0.36	0.03	0.39	0.03	0.76	0.10	0.57	0.03	0.64	0.03
Large Value	4	49	69	107,422	1	1,581	0.26	0.09	0.17	0.03	0.21	0.03	0.40	0.12	0.24	0.04	0.32	0.03
Small Blend	1	24	13	55,147	0	5,110	0.23	0.14	0.23	0.04	0.23	0.04	0.30	0.20	0.30	0.05	0.30	0.05
Mid-Cap Growth	1	16	8	15,453	0	87	0.43	0.12	0.43	0.04	0.43	0.04	0.69	0.17	0.69	0.05	0.69	0.05
Small Growth		11		13,821		221		0.11		0.05		0.05		0.16		0.06		0.06
Small Value		15		15,661		158		0.10		0.05		0.05		0.14		0.06		0.06
US EQUITY SECTORS	**7**	**286**	**795**	**251,880**	**9**	**10,480**	**0.29**	**0.23**	**0.13**	**0.06**	**0.16**	**0.07**	**0.40**	**0.27**	**0.12**	**0.08**	**0.19**	**0.09**
Equity Energy	1	23	722	21,758	6	2,167	0.12	0.18	0.12	0.04	0.12	0.03	0.10	0.20	0.10	0.06	0.10	0.04
Real Estate	1	17	38	36,378	0	1,028	0.17	0.14	0.17	0.04	0.17	0.04	0.27	0.17	0.27	0.05	0.27	0.05
Miscellaneous Sector	1	25	14	4,977	3	48	0.24	0.37	0.24	0.24	0.24	0.32	0.35	0.41	0.35	0.28	0.35	0.38
Technology	2	31	12	32,212	0	603	0.41	0.18	0.43	0.04	0.42	0.04	0.63	0.23	0.65	0.06	0.64	0.06
Energy Limited Partnership	1	8	6	9,302		74	0.30	0.15	0.30	0.08		0.08	0.34	0.19	0.34	0.12		0.12
Health	1	26	3	33,541	0	1,213	0.33	0.12	0.33	0.04	0.33	0.04	0.47	0.16	0.47	0.06	0.47	0.05
Communications		8		2,071		22		0.22		0.09		0.10		0.29		0.12		0.13
Consumer Cyclical		19		13,946		909		0.15		0.04		0.04		0.20		0.06		0.05
Consumer Defensive		13		11,999		386		0.21		0.04		0.03		0.25		0.05		0.04
Equity Precious Metals		14		10,004		1,180		0.51		0.29		0.29		0.63		0.39		0.40
Financial		34		31,400		1,086		0.19		0.05		0.04		0.25		0.06		0.06
Industrials		21		16,338		707		0.15		0.04		0.03		0.20		0.05		0.04
Natural Resources		31		18,412		476		0.32		0.11		0.06		0.35		0.14		0.09
Commodities Industrial Metals		3		302		5		0.59		0.19		0.24		0.64		0.25		0.30
Utilities		13		9,240		577		0.24		0.04		0.03		0.31		0.05		0.04
INTERNATIONAL EQUITY	**14**	**363**	**569**	**389,932**	**9**	**9,722**	**0.33**	**0.54**	**0.18**	**0.37**	**0.22**	**0.44**	**0.39**	**0.64**	**0.22**	**0.47**	**0.27**	**0.58**
World Stock	8	20	490	15,407	7	126	0.17	0.30	0.14	0.19	0.14	0.19	0.23	0.34	0.18	0.21	0.19	0.21
Foreign Large Value	2	19	38	11,151	1	68	0.61	0.41	0.44	0.38	0.55	0.39	0.64	0.42	0.41	0.42	0.56	0.42
Foreign Large Blend	1	26	18	104,664	0	1,437	0.42	0.38	0.42	0.28	0.42	0.32	0.49	0.37	0.49	0.32	0.49	0.39
Foreign Large Growth	1	6	13	2,393	0	12	0.42	0.35	0.42	0.32	0.42	0.32	0.53	0.42	0.53	0.43	0.53	0.42
Foreign Small/Mid Value	1	7	8	1,316	0	7	0.60	0.51	0.60	0.48	0.60	0.47	0.42	0.52	0.42	0.52	0.42	0.51
China Region	1	33	3	14,329	0	1,000	0.57	0.57	0.57	0.50	0.57	0.54	0.79	0.72	0.79	0.70	0.79	0.75
Diversified Emerging Mkts		60		102,815		3,283		0.52		0.40		0.45		0.61		0.52		0.59
Diversified Pacific/Asia		4		2,904		30		0.39		0.19		0.20		0.49		0.24		0.26
Foreign Small/Mid Blend		7		7,034		43		0.51		0.41		0.41		0.51		0.43		0.44
India Equity		9		4,109		143		0.82		0.71		0.69		0.95		0.85		0.84
Japan Stock		19		26,870		658		0.68		0.71		0.70		0.98		1.00		1.00
Latin America Stock		15		5,952		978		0.50		0.38		0.41		0.60		0.49		0.53
Miscellaneous Region		93		37,484		1,131		0.61		0.42		0.46		0.74		0.56		0.67
Europe Stock		20		37,564		675		0.41		0.25		0.25		0.49		0.31		0.32
Global Real Estate		11		9,157		48		0.35		0.34		0.34		0.40		0.39		0.38
Pacific/Asia ex-Japan Stk		14		6,784		82		0.96		0.46		0.47		1.27		0.61		0.64

Source: Morningstar, Inc. AETF means actively-managed ETF; IETF means index ETF.
EW means weighting all funds equally; AW means weighting funds by net assets; VW means weighting funds by dollar trading volume.
Note: Excludes ETNs, non-equity, leveraged, inverse, and inverse leveraged ETFs as well as premium/discount observations greater than 20% for included funds.

Exhibit 1-3: Measures of ETF Investor Trading Costs: 2013

Category	No of Funds		Average Market Cap ($MM)		Average Volume ($MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	11	228	254	602,855	5	30,466	0.30	0.11	0.19	0.03	0.20	0.03	0.43	0.15	0.26	0.04	0.26	0.04
Mid-Cap Value	1	15	118	24,542	2	133	0.12	0.09	0.12	0.04	0.12	0.04	0.13	0.11	0.13	0.05	0.13	0.05
Mid-Cap Blend	1	27	42	50,116	1	756	0.16	0.12	0.16	0.04	0.16	0.04	0.18	0.17	0.18	0.05	0.18	0.06
Large Blend	4	52	57	283,095	1	21,345	0.26	0.13	0.27	0.03	0.26	0.02	0.36	0.17	0.38	0.04	0.36	0.03
Large Growth	2	24	12	79,539	0	2,590	0.59	0.08	0.52	0.03	0.60	0.03	0.86	0.11	0.84	0.04	0.87	0.04
Large Value	2	46	22	84,819	0	1,441	0.27	0.10	0.23	0.04	0.25	0.03	0.49	0.13	0.46	0.04	0.47	0.04
Small Blend	1	23	3	45,089	0	3,853	0.25	0.14	0.25	0.05	0.25	0.05	0.33	0.19	0.33	0.06	0.33	0.06
Mid-Cap Growth		15		11,764		65		0.12		0.04		0.04		0.17		0.05		0.05
Small Growth		11		11,220		155		0.12		0.05		0.05		0.16		0.06		0.06
Small Value		15		12,672		129		0.12		0.05		0.05		0.15		0.06		0.06
US EQUITY SECTORS	3	294	389	193,811	4	8,170	0.21	0.28	0.17	0.07	0.17	0.06	0.25	0.32	0.11	0.09	0.13	0.07
Equity Energy	1	25	348	17,187	3	1,375	0.16	0.22	0.16	0.05	0.16	0.04	0.09	0.25	0.09	0.06	0.09	0.05
Real Estate	1	16	28	30,178	0	1,003	0.20	0.14	0.20	0.05	0.20	0.05	0.28	0.18	0.28	0.06	0.28	0.07
Miscellaneous Sector	1	27	13	3,594	0	33	0.27	0.45	0.27	0.25	0.27	0.36	0.39	0.47	0.39	0.27	0.39	0.41
Technology		31		21,882		392		0.23		0.05		0.05		0.27		0.06		0.07
Energy Limited Partnership		7		6,638		57		0.19		0.10		0.10		0.19		0.14		0.14
Health		25		20,261		588		0.15		0.05		0.04		0.17		0.06		0.05
Communications		9		1,761		23		0.34		0.11		0.10		0.39		0.14		0.12
Consumer Cyclical		19		13,857		930		0.18		0.05		0.04		0.22		0.07		0.06
Consumer Defensive		14		9,930		372		0.26		0.05		0.03		0.31		0.06		0.04
Equity Precious Metals		13		9,222		901		0.60		0.23		0.14		0.73		0.31		0.20
Financial		37		23,390		1,069		0.25		0.05		0.04		0.30		0.06		0.05
Industrials		21		9,798		522		0.20		0.05		0.04		0.23		0.06		0.05
Natural Resources		33		17,259		469		0.38		0.14		0.07		0.40		0.15		0.08
Commodities Industrial Metals		3		301		4		1.02		0.24		0.25		1.07		0.31		0.33
Utilities		14		8,552		431		0.28		0.04		0.04		0.33		0.05		0.04
INTERNATIONAL EQUITY	6	303	56	328,958	1	8,997	0.34	0.63	0.34	0.45	0.31	0.52	0.50	0.70	0.49	0.56	0.45	0.66
World Stock	3	14	30	10,656	1	100	0.25	0.45	0.27	0.22	0.25	0.23	0.39	0.47	0.42	0.23	0.37	0.24
Foreign Large Value		19		7,770		50		0.52		0.45		0.46		0.44		0.47		0.46
Foreign Large Blend	1	18	16	77,427	0	1,304	0.42	0.46	0.42	0.33	0.42	0.38	0.52	0.41	0.52	0.36	0.52	0.44
Foreign Large Growth	1	3	8	1,944	0	10	0.43	0.45	0.43	0.41	0.43	0.43	0.65	0.47	0.65	0.46	0.65	0.44
Foreign Small/Mid Value		6		860		6		0.71		0.63		0.72		0.66		0.59		0.74
China Region	1	28	2	15,130	0	897	0.45	0.73	0.45	0.59	0.45	0.61	0.65	0.84	0.65	0.75	0.65	0.78
Diversified Emerging Mkts		55		113,931		3,537		0.70		0.48		0.52		0.75		0.61		0.69
Diversified Pacific/Asia		3		2,308		25		0.40		0.20		0.20		0.48		0.23		0.23
Foreign Small/Mid Blend		7		4,883		32		0.61		0.52		0.52		0.51		0.48		0.50
India Equity		9		2,195		92		0.85		0.78		0.77		1.13		1.05		1.05
Japan Stock		11		19,728		725		0.91		0.91		0.90		1.11		1.13		1.12
Latin America Stock		16		8,492		749		0.48		0.38		0.41		0.55		0.50		0.55
Miscellaneous Region		79		32,234		990		0.63		0.47		0.48		0.75		0.63		0.65
Europe Stock		11		16,565		335		0.49		0.27		0.28		0.43		0.34		0.35
Global Real Estate		11		7,520		53		0.45		0.44		0.44		0.50		0.50		0.49
Pacific/Asia ex-Japan Stk		13		7,314		92		0.79		0.52		0.54		1.03		0.70		0.72

Exhibit 1-4: Measures of ETF Investor Trading Costs: 2012

Category	No of Funds		Average Market Cap ($M)		Average Volume ($M)		Avg Abs Premium/Discount (%)						Vol of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	8	237	57	434,426	1	30,277	0.59	0.18	0.52	0.04	0.51	0.03	0.64	0.25	0.56	0.05	0.53	0.04
Mid-Cap Value		13		18,493		132		0.13		0.04		0.04		0.18		0.06		0.05
Mid-Cap Blend	1	28	8	33,654	0	786	0.31	0.16	0.31	0.04	0.31	0.05	0.50	0.23	0.50	0.06	0.50	0.06
Large Blend	4	50	37	199,782	1	20,543	0.32	0.16	0.35	0.03	0.28	0.03	0.37	0.21	0.40	0.04	0.30	0.04
Large Growth	2	32	9	66,776	0	3,060	1.41	0.16	1.46	0.03	1.39	0.03	1.31	0.22	1.31	0.04	1.31	0.04
Large Value	1	46	3	59,881	0	1,165	0.35	0.17	0.35	0.04	0.35	0.03	0.50	0.22	0.50	0.05	0.50	0.04
Small Blend		19		29,985		1,029		0.17		0.06		0.06		0.24		0.07		0.07
Mid-Cap Growth		14		8,978		67		0.20		0.04		0.04		0.33		0.05		0.05
Small Growth		16		7,974		3,371		0.27		0.06		0.05		0.47		0.08		0.07
Small Value		19		8,903		124		0.25		0.06		0.06		0.35		0.08		0.08
US EQUITY SECTORS	3	294	100	146,358	2	7,199	0.29	0.30	0.26	0.08	0.26	0.06	0.35	0.35	0.26	0.10	0.24	0.08
Equity Energy	1	27	70	15,405	2	1,381	0.25	0.28	0.25	0.06	0.25	0.05	0.20	0.33	0.20	0.08	0.20	0.06
Real Estate	1	17	23	23,279	0	359	0.25	0.15	0.25	0.05	0.25	0.05	0.37	0.20	0.37	0.06	0.37	0.07
Miscellaneous Sector	1	25	7	2,929	0	20	0.37	0.43	0.37	0.27	0.37	0.32	0.49	0.37	0.49	0.27	0.49	0.35
Technology		31		17,304		399		0.26		0.05		0.10		0.30		0.07		0.11
Energy Limited Partnership		3		3,532		34		0.21		0.10		0.10		0.20		0.11		0.12
Health		25		12,513		323		0.16		0.06		0.05		0.21		0.08		0.07
Communications		9		1,669		14		0.37		0.14		0.14		0.44		0.17		0.16
Consumer Cyclical		19		8,276		777		0.20		0.06		0.06		0.24		0.07		0.07
Consumer Defensive		15		8,318		228		0.28		0.05		0.04		0.35		0.06		0.05
Equity Precious Metals		13		11,920		746		0.59		0.17		0.11		0.67		0.22		0.14
Financial		35		12,379		1,331		0.27		0.06		0.07		0.37		0.08		0.09
Industrials		24		5,497		742		0.29		0.06		0.04		0.33		0.07		0.05
Natural Resources		35		14,239		537		0.37		0.14		0.06		0.43		0.16		0.08
Commodities Industrial Metals		3		347		3		0.70		0.28		0.28		1.62		0.39		0.40
Utilities		13		8,752		305		0.30		0.05		0.05		0.36		0.07		0.06
INTERNATIONAL EQUITY	5	278	40	250,891	0	8,093	0.40	0.66	0.45	0.41	0.42	0.55	0.52	0.71	0.57	0.49	0.53	0.65
World Stock	3	13	19	6,575	0	31	0.33	0.54	0.34	0.29	0.32	0.26	0.47	0.50	0.47	0.30	0.45	0.26
Foreign Large Value		16		4,784		35		0.65		0.46		0.46		0.75		0.50		0.52
Foreign Large Blend	1	18	14	56,331	0	402	0.68	0.66	0.68	0.35	0.68	0.35	0.76	0.54	0.76	0.38	0.76	0.37
Foreign Large Growth	1	4	7	1,356	0	840	0.34	0.39	0.34	0.39	0.34	0.39	0.45	0.45	0.45	0.47	0.45	0.47
Foreign Small/Mid Value		5		586		2		0.63		0.51		0.51		0.75		0.59		0.60
China Region		25		12,117		752		0.95		0.66		0.75		1.03		0.85		0.90
Diversified Emerging Mkts		50		101,336		1,420		0.74		0.40		0.41		0.73		0.49		0.47
Diversified Pacific/Asia		3		1,594		12		0.41		0.12		0.13		0.41		0.15		0.15
Foreign Small/Mid Blend		7		3,336		12		0.57		0.45		0.46		0.61		0.46		0.45
India Equity		9		1,758		106		0.72		0.64		0.66		0.85		0.78		0.81
Japan Stock		10		6,012		56		0.68		0.56		0.56		0.86		0.74		0.74
Latin America Stock		17		11,385		542		0.50		0.29		0.39		0.61		0.40		0.49
Miscellaneous Region		69		26,881		1,308		0.63		0.47		0.56		0.71		0.60		0.67
Europe Stock		10		5,746		115		0.56		0.33		0.29		0.54		0.37		0.31
Global Real Estate		10		4,903		48		0.47		0.45		0.48		0.52		0.49		0.55
Pacific/Asia ex-Japan Stk		12		6,191		2,410		0.68		0.57		0.71		0.83		0.73		0.85

Source: Morningstar, Inc. AETF means actively-managed ETF; IETF means index ETF.
EW means weighting all funds equally; AW means weighting funds by net assets; VW means weighting funds by dollar trading volume.
Note: Excludes ETNs, non-equity, leveraged, inverse, and inverse leveraged ETFs as well as premium/discount observations greater than 20% for included funds.

Exhibit 1-5: Measures of ETF Investor Trading Costs: 2011

Category	No of Funds		Average Market Cap ($MM)		Average Volume ($MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	8	227	64	364,536	1	40,351	0.58	0.25	0.53	0.04	0.54	0.04	0.91	0.40	0.82	0.07	0.84	0.07
Mid-Cap Value		13		14,109		126		0.15		0.05		0.05		0.24		0.07		0.06
Mid-Cap Blend	1	28	5	32,903	0	786	0.45	0.25	0.45	0.05	0.45	0.05	0.66	0.43	0.66	0.08	0.66	0.07
Large Blend	2	51	19	166,662	0	28,288	0.63	0.23	0.70	0.04	0.73	0.03	0.92	0.36	1.00	0.06	1.04	0.07
Large Growth	3	30	34	52,494	1	4,002	0.65	0.26	0.45	0.04	0.44	0.03	1.08	0.39	0.76	0.05	0.75	0.04
Large Value	1	39	3	44,248	0	1,353	0.51	0.17	0.51	0.04	0.51	0.04	0.75	0.25	0.75	0.06	0.75	0.05
Small Blend		19		28,441		5,329		0.25		0.07		0.07		0.40		0.10		0.09
Mid-Cap Growth	1	14	3	8,923	0	100	0.49	0.28	0.49	0.05	0.49	0.05	0.81	0.43	0.81	0.07	0.81	0.07
Small Growth		15		8,214		216		0.48		0.08		0.08		0.78		0.12		0.11
Small Value		18		8,542		152		0.37		0.08		0.09		0.57		0.12		0.12
US EQUITY SECTORS	1	297	20	135,323	0	10,757	0.30	0.33	0.30	0.12	0.30	0.09	0.59	0.47	0.59	0.17	0.59	0.15
Equity Energy		26		20,568		2,812		0.27		0.07		0.04		0.35		0.10		0.06
Real Estate	1	17	20	16,580	0	714	0.30	0.26	0.30	0.07	0.30	0.07	0.59	0.42	0.59	0.10	0.59	0.09
Miscellaneous Sector		24		4,600		48		0.42		0.36		0.41		0.51		0.43		0.51
Technology		36		16,200		753		0.27		0.10		0.29		0.45		0.16		0.53
Energy Limited Partnership		1		1,187		13		0.10		0.10		0.10		0.12		0.12		0.12
Health		27		11,121		505		0.22		0.09		0.06		0.32		0.14		0.09
Communications		11		1,771		21		0.37		0.19		0.16		0.56		0.28		0.24
Consumer Cyclical		20		5,994		1,080		0.31		0.12		0.14		0.52		0.26		0.38
Consumer Defensive		15		6,341		296		0.34		0.07		0.05		0.45		0.10		0.07
Equity Precious Metals		9		11,160		846		0.47		0.21		0.15		0.59		0.28		0.20
Financial		35		11,342		1,572		0.37		0.08		0.06		0.54		0.12		0.09
Industrials		25		5,840		802		0.33		0.07		0.04		0.48		0.10		0.06
Natural Resources		35		14,921		1,006		0.43		0.20		0.10		0.57		0.26		0.12
Commodities Industrial Metals		2		540		6		0.46		0.44		0.44		0.63		0.61		0.61
Utilities		14		7,159		281		0.33		0.06		0.05		0.44		0.08		0.06
INTERNATIONAL EQUITY	3	231	31	244,592	1	10,827	0.58	0.84	0.62	0.63	0.71	0.75	0.80	1.01	0.84	0.82	0.96	0.98
World Stock	1	11	11	4,820	0	49	0.33	0.54	0.33	0.41	0.33	0.38	0.47	0.64	0.47	0.45	0.47	0.43
Foreign Large Value		15		3,779		33		0.77		0.68		0.70		0.87		0.84		0.84
Foreign Large Blend	1	14	12	53,642	0	1,378	1.04	0.71	1.04	0.56	1.04	0.62	1.38	0.82	1.38	0.70	1.38	0.79
Foreign Large Growth	1	4	8	1,494	0	9	0.38	0.71	0.38	0.66	0.38	0.64	0.54	0.82	0.54	0.84	0.54	0.81
Foreign Small/Mid Value		4		679		3		0.75		0.72		0.77		0.89		0.91		0.96
China Region		23		13,779		1,049		1.34		0.97		1.01		1.51		1.37		1.45
Diversified Emerging Mkts		34		89,996		3,989		0.77		0.56		0.67		0.88		0.76		0.93
Diversified Pacific/Asia		2		1,583		10		0.26		0.19		0.19		0.34		0.23		0.23
Foreign Small/Mid Blend		7		3,459		26		0.65		0.67		0.67		0.80		0.82		0.84
India Equity		7		2,013		83		0.88		0.82		0.83		1.19		1.14		1.15
Japan Stock		11		7,654		332		0.87		0.88		0.88		1.16		1.22		1.22
Latin America Stock		15		15,029		1,167		1.03		0.67		0.72		1.02		0.66		0.68
Miscellaneous Region		55		31,460		1,183		0.85		0.71		0.74		1.12		0.98		1.03
Europe Stock		10		5,235		1,398		0.61		0.47		0.95		0.78		0.58		1.12
Global Real Estate		10		3,220		26		0.64		0.70		0.68		0.76		0.83		0.80
Pacific/Asia ex-Japan Stk		9		6,750		92		0.89		0.85		0.85		1.23		1.21		1.22

Exhibit 1-6: Measures of ETF Investor Trading Costs: 2010

Category	No of Funds		Average Market Cap ($M)		Average Volume ($M)		Avg Abs Premium/Discount (%)						Vol of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	6	188	40	293,388	0	35,642	0.82	0.19	0.59	0.05	0.59	0.04	1.34	0.30	0.94	0.06	0.97	0.06
Mid-Cap Value		15		10,850		117		0.17		0.05		0.06		0.25		0.07		0.07
Mid-Cap Blend		22		26,794		680		0.24		0.05		0.05		0.40		0.08		0.10
Large Blend	1	46	3	134,992	0	24,521	0.85	0.25	0.85	0.04	0.85	0.03	1.41	0.39	1.41	0.05	1.41	0.05
Large Growth	3	22	31	42,488	0	4,271	0.85	0.13	0.53	0.04	0.51	0.04	1.33	0.20	0.83	0.06	0.79	0.07
Large Value	1	30	2	31,778	0	1,252	0.80	0.11	0.80	0.05	0.80	0.04	1.50	0.16	1.50	0.06	1.50	0.05
Small Blend		18		24,921		4,384		0.20		0.07		0.07		0.31		0.09		0.08
Mid-Cap Growth	1	13	3	6,898	0	77	0.71	0.17	0.71	0.05	0.71	0.05	1.16	0.30	1.16	0.07	1.16	0.08
Small Growth		10		6,510		176		0.21		0.07		0.07		0.31		0.08		0.08
Small Value		12		8,157		164		0.16		0.07		0.08		0.23		0.09		0.09
US EQUITY SECTORS	3	242	19	96,096	0	8,173	1.03	0.35	0.67	0.12	0.68	0.08	1.52	0.50	1.00	0.15	1.03	0.11
Equity Energy		21		11,680		1,304		0.29		0.09		0.07		0.41		0.12		0.09
Real Estate	1	13	13	12,152	0	915	0.38	0.29	0.38	0.08	0.38	0.09	0.60	0.52	0.60	0.12	0.60	0.14
Miscellaneous Sector		24		4,684		43		0.33		0.29		0.32		0.40		0.34		0.39
Technology	1	23	3	10,056	0	330	1.08	0.24	1.08	0.07	1.08	0.07	1.61	0.34	1.61	0.09	1.61	0.09
Energy Limited Partnership		1		293		10		0.10		0.10		0.10		0.09		0.09		0.09
Health		22		7,904		337		0.22		0.08		0.07		0.32		0.11		0.10
Communications		8		1,379		18		0.44		0.17		0.17		0.59		0.21		0.21
Consumer Cyclical		17		4,618		915		0.31		0.10		0.08		0.46		0.13		0.10
Consumer Defensive		12		4,229		196		0.33		0.07		0.06		0.51		0.10		0.08
Equity Precious Metals		8		8,262		645		0.55		0.18		0.16		0.61		0.24		0.21
Financial	1	31	3	10,377	0	1,819	1.62	0.45	1.62	0.08	1.62	0.07	2.35	0.70	2.35	0.11	2.35	0.09
Industrials		21		5,086		575		0.47		0.10		0.06		0.71		0.13		0.09
Natural Resources		29		9,936		839		0.41		0.19		0.11		0.51		0.24		0.16
Commodities Industrial Metals		1		431		8		0.47		0.47		0.47		0.61		0.61		0.61
Utilities		11		5,010		219		0.31		0.07		0.06		0.44		0.11		0.09
INTERNATIONAL EQUITY	2	197	11	206,613	0	9,127	0.24	0.80	0.24	0.54	0.24	0.60	0.33	0.84	0.33	0.67	0.32	0.76
World Stock	1	11	5	3,117	0	30	0.15	1.14	0.15	0.35	0.15	0.34	0.19	1.16	0.19	0.37	0.19	0.38
Foreign Large Value		13		2,921		21		0.56		0.58		0.60		0.71		0.75		0.74
Foreign Large Blend		13		46,483		1,256		0.65		0.53		0.58		0.83		0.65		0.73
Foreign Large Growth	1	3	6	1,377	0	9	0.34	0.59	0.34	0.58	0.34	0.58	0.47	0.69	0.47	0.75	0.47	0.74
Foreign Small/Mid Value		4		646		3		0.69		0.63		0.66		0.80		0.82		0.82
China Region		20		15,039		1,297		1.31		0.75		0.79		0.96		0.98		1.03
Diversified Emerging Mkts		23		75,141		3,629		0.68		0.43		0.46		0.70		0.51		0.58
Diversified Pacific/Asia		2		1,460		9		0.19		0.21		0.21		0.24		0.25		0.25
Foreign Small/Mid Blend		7		2,258		20		0.62		0.67		0.67		0.68		0.72		0.71
India Equity		6		1,673		59		0.83		0.74		0.77		0.79		0.90		0.93
Japan Stock		8		5,205		227		0.77		0.73		0.73		1.07		0.97		0.96
Latin America Stock		10		14,150		1,424		1.33		0.70		0.76		0.60		0.83		0.92
Miscellaneous Region		48		23,490		940		0.72		0.61		0.61		0.87		0.81		0.81
Europe Stock		11		5,053		89		0.55		0.41		0.38		0.73		0.54		0.50
Global Real Estate		10		1,980		15		0.65		0.70		0.68		0.71		0.81		0.73
Pacific/Asia ex-Japan Stk		8		6,620		99		0.94		0.68		0.68		1.24		0.91		0.90

Source: Morningstar, Inc. AETF means actively-managed ETF; IETF means index ETF.
EW means weighting all funds equally; AW means weighting funds by net assets; VW means weighting funds by dollar trading volume.
Note: Excludes ETNs, non-equity, leveraged, inverse, and inverse leveraged ETFs as well as premium/discount observations greater than 20% for included funds.

Exhibit 1-7: Measures of ETF Investor Trading Costs: 2009

Category	No of Funds		Average Market Cap ($MM)		Average Volume ($MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	6	173	20	232,818	1	34,114	0.67	0.40	0.68	0.09	0.71	0.08	1.01	0.62	1.03	0.15	1.10	0.12
Mid-Cap Value		14		7,979		120		0.34		0.11		0.11		0.60		0.15		0.16
Mid-Cap Blend		17		18,471		766		0.35		0.10		0.09		0.55		0.14		0.15
Large Blend	1	42	2	114,656	0	23,503	0.59	0.32	0.59	0.08	0.59	0.07	0.90	0.48	0.90	0.12	0.90	0.11
Large Growth	3	21	9	34,388	0	4,606	0.67	0.32	0.68	0.10	0.68	0.08	0.97	0.49	1.00	0.15	1.00	0.14
Large Value	1	29	3	24,456	0	1,704	0.76	0.24	0.76	0.10	0.76	0.07	1.22	0.48	1.22	0.24	1.22	0.11
Small Blend		15		16,862		3,059		0.37		0.15		0.14		0.59		0.20		0.19
Mid-Cap Growth	1	16	5	4,919	0	82	0.67	0.96	0.67	0.11	0.67	0.11	1.02	1.31	1.02	0.15	1.02	0.15
Small Growth		9		5,096		146		0.81		0.14		0.14		1.12		0.18		0.19
Small Value		10		5,991		129		0.31		0.18		0.19		0.49		0.24		0.25
US EQUITY SECTORS	3	204	10	66,859	0	8,017	1.13	0.48	1.28	0.21	1.31	0.18	1.78	0.69	2.07	0.31	2.14	0.26
Equity Energy		18		8,656		1,390		0.40		0.14		0.10		0.56		0.18		0.13
Real Estate	1	11	4	6,903	0	1,291	1.94	0.70	1.94	0.22	1.94	0.23	3.36	1.20	3.36	0.34	3.36	0.35
Miscellaneous Sector		24		4,289		41		0.55		0.46		0.53		0.69		0.59		0.68
Technology	1	22	3	6,299	0	206	0.72	0.42	0.72	0.16	0.72	0.16	1.03	0.63	1.03	0.23	1.03	0.22
Energy Limited Partnership																		
Health		20		6,696		266		0.28		0.14		0.13		0.40		0.20		0.19
Communications		7		950		16		0.49		0.25		0.22		0.65		0.33		0.30
Consumer Cyclical		15		2,842		682		0.50		0.22		0.16		0.79		0.30		0.22
Consumer Defensive		10		3,219		147		0.35		0.15		0.14		0.57		0.34		0.20
Equity Precious Metals		3		4,919		461		0.59		0.24		0.25		0.81		0.37		0.38
Financial	1	24	3	9,381	0	2,396	0.72	0.54	0.72	0.21	0.72	0.19	0.96	0.81	0.96	0.33	0.96	0.30
Industrials		17		2,856		337		0.48		0.20		0.17		0.74		0.27		0.23
Natural Resources		23		6,336		559		0.56		0.27		0.19		0.70		0.37		0.25
Commodities Industrial Metals		1		285		7		0.66		0.66		0.66		0.81		0.81		0.81
Utilities		9		3,229		218		0.42		0.15		0.13		0.62		0.24		0.19
INTERNATIONAL EQUITY	0	175	0	139,639	0	7,155		1.06		0.74		0.77		1.29		0.96		1.03
World Stock		11		1,766		27		0.86		0.46		0.49		1.05		0.54		0.56
Foreign Large Value		13		2,258		19		0.84		0.81		0.82		1.09		1.03		1.03
Foreign Large Blend		12		38,012		1,141		1.08		0.69		0.74		1.36		0.88		0.96
Foreign Large Growth		3		1,164		9		0.82		0.77		0.78		1.08		0.99		1.00
Foreign Small/Mid Value		4		511		3		1.05		0.92		0.94		1.24		1.11		1.12
China Region		15		13,661		1,162		0.88		1.20		1.25		1.05		1.62		1.67
Diversified Emerging Mkts		17		41,629		2,631		0.93		0.59		0.61		0.96		0.74		0.78
Diversified Pacific/Asia		2		1,286		12		0.25		0.29		0.29		0.37		0.39		0.39
Foreign Small/Mid Blend		6		976		13		0.82		0.91		0.87		0.99		1.00		0.92
India Equity		3		588		18		0.88		1.08		1.12		1.09		1.36		1.40
Japan Stock		9		5,439		271		1.26		1.15		1.15		1.64		1.54		1.54
Latin America Stock		5		10,277		1,121		0.99		0.50		0.52		0.96		0.75		0.81
Miscellaneous Region		37		12,306		604		0.95		0.89		0.91		1.14		1.14		1.18
Europe Stock		17		4,452		49		1.57		0.53		0.56		1.99		0.68		0.73
Global Real Estate		11		1,153		9		1.23		1.04		1.05		1.59		1.22		1.25
Pacific/Asia ex-Japan Stk		10		4,162		66		1.72		1.06		1.06		2.14		1.34		1.34

Exhibit 1-8: Measures of ETF Investor Trading Costs: 2008

Category	No of Funds		Average Market Cap ($M)		Average Volume ($M)		Avg Abs Premium/Discount (%)						Vol of Premium/Discount (%)					
							EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
US EQUITY DIVERSIFIED	3	168	11	248,798	0	60,751	1.35	0.63	1.40	0.19	1.37	0.23	1.92	1.01	1.91	0.33	1.94	0.37
Mid-Cap Value		14		10,630		603		0.70		0.18		1.06		1.10		0.32		1.64
Mid-Cap Blend		19		16,971		1,365		0.79		0.22		0.24		1.12		0.45		0.58
Large Blend	1	35	2	121,228	0	39,529	1.22	0.66	1.22	0.21	1.22	0.23	2.01	1.04	2.01	0.33	2.01	0.35
Large Growth	1	19	3	39,760	0	7,858	1.28	0.47	1.28	0.17	1.28	0.13	1.83	0.80	1.83	0.30	1.83	0.26
Large Value		28		26,315		3,719		0.49		0.19		0.41		0.85		0.33		0.68
Small Blend		15		16,205		6,674		0.64		0.17		0.19		1.00		0.26		0.29
Mid-Cap Growth	1	17	6	6,346	0	48	1.55	0.78	1.55	0.18	1.55	0.20	1.93	1.31	1.93	0.37	1.93	0.34
Small Growth		9		5,198		740		0.62		0.19		0.16		1.00		0.31		0.28
Small Value		12		6,143		215		0.63		0.21		0.21		1.00		0.33		0.32
US EQUITY SECTORS	1	214	3	70,350	0	15,814	5.26	0.85	5.26	0.36	5.26	0.37	5.62	1.26	5.62	0.57	5.62	0.63
Equity Energy		17		9,112		7,371		0.67		0.26		0.41		1.07		0.48		0.63
Real Estate	1	11	3	7,417	0	1,060	5.26	0.96	5.26	0.30	5.26	0.36	5.62	1.62	5.62	0.53	5.62	0.62
Miscellaneous Sector		23		5,487		81		0.81		0.52		0.72		1.09		0.72		0.95
Technology		23		5,757		213		0.71		0.25		0.24		1.17		0.41		0.39
Energy Limited Partnership																		
Health		40		7,545		290		0.92		0.25		0.24		1.36		0.47		0.49
Communications		7		1,115		19		0.72		0.41		0.35		1.08		0.64		0.56
Consumer Cyclical		15		2,503		542		0.80		0.28		0.27		1.23		0.48		0.46
Consumer Defensive		10		3,666		138		0.56		0.26		0.25		0.93		0.51		0.52
Equity Precious Metals		2		1,794		168		0.99		0.25		0.25		1.39		0.44		0.44
Financial		21		12,328		4,450		0.84		0.38		0.38		1.38		0.76		0.75
Industrials		16		3,356		434		0.81		0.26		0.22		1.26		0.45		0.40
Natural Resources		19		6,789		787		1.38		0.78		0.32		1.56		0.76		0.50
Commodities Industrial Metals		1		58		2		0.56		0.56		0.56		0.82		0.82		0.82
Utilities		9		3,425		260		0.64		0.25		0.21		0.97		0.40		0.33
INTERNATIONAL EQUITY	0	154	0	135,999	0	13,543		1.36		1.16		1.37		1.90		1.76		2.05
World Stock		12		1,443		31		1.25		0.61		0.65		1.62		0.87		0.88
Foreign Large Value		13		2,187		26		1.15		1.10		1.11		1.64		1.65		1.67
Foreign Large Blend		10		43,781		1,163		1.19		1.09		1.11		1.67		1.69		1.73
Foreign Large Growth		3		1,256		13		1.25		1.09		1.10		1.77		1.64		1.64
Foreign Small/Mid Value		4		604		6		1.17		1.15		1.15		1.65		1.64		1.64
China Region		8		10,999		1,422		1.90		2.08		2.31		2.58		2.86		3.17
Diversified Emerging Mkts		14		29,704		2,808		1.20		1.06		1.17		1.59		1.61		1.83
Diversified Pacific/Asia		2		1,558		14		0.24		0.29		0.29		0.38		0.45		0.45
Foreign Small/Mid Blend		5		450		8		1.19		1.27		1.31		1.76		1.82		1.86
India Equity		2		247		11		1.53		1.74		1.76		1.97		2.30		2.32
Japan Stock		9		7,816		4,843		1.60		1.63		1.54		2.24		2.39		2.25
Latin America Stock		4		9,599		1,222		1.38		0.58		0.65		2.01		1.11		1.28
Miscellaneous Region		30		15,103		886		1.27		1.23		1.31		1.86		1.87		1.98
Europe Stock		17		6,677		1,026		1.46		0.75		0.98		2.16		1.16		1.55
Global Real Estate		11		1,035		14		1.53		1.21		1.25		2.06		1.73		1.76
Pacific/Asia ex-Japan Stk		10		3,539		50		1.76		1.73		1.72		2.42		2.45		2.40

Source: Morningstar, Inc. AETF means actively-managed ETF; IETF means index ETF.
EW means weighting all funds equally; AW means weighting funds by net assets; VW means weighting funds by dollar trading volume.
Note: Excludes ETNs, non-equity, leveraged, inverse, and inverse leveraged ETFs as well as premium/discount observations greater than 20% for included funds.

Exhibit 2-1: Comparison of Active ETF (AETF) vs Index ETF (IETF) Trading Costs. Asset-Weighted (AW) within overlapping fund categories.

Category	Difference (AETF-IETF) in Avg Absolute Premium/Discount (%) - AW								
	2008	2009	2010	2011	2012	2013	2014	2015	AVG
US EQUITY DIVERSIFIED	**1.21**	**0.59**	**0.55**	**0.49**	**0.48**	**0.16**	**0.11**	**0.13**	**0.46**
Mid-Cap Value						0.09	0.06	0.08	0.07
Mid-Cap Blend				0.40	0.27	0.12	0.08	0.08	0.19
Large Blend	1.02	0.51	0.81	0.66	0.32	0.24	0.24	0.26	0.51
Large Growth	1.11	0.58	0.49	0.41	1.42	0.49	0.33	0.21	0.63
Large Value		0.66	0.75	0.47	0.31	0.20	0.13	0.18	0.38
Small Blend						0.20	0.19	0.25	0.22
Mid-Cap Growth	1.37	0.56	0.65	0.44			0.40	0.28	0.61
Small Growth									
Small Value									
US EQUITY SECTORS	**4.96**	**1.07**	**0.59**	**0.23**	**0.19**	**0.10**	**0.08**	**0.06**	**0.91**
Equity Energy					0.19	0.11	0.08	0.04	0.11
Real Estate	4.96	1.72	0.30	0.23	0.20	0.15	0.14	0.23	0.99
Miscellaneous Sector					0.10	0.02	0.00	0.05	0.04
Technology		0.56	1.01				0.38	0.29	0.56
Energy Limited Partnership							0.22	0.35	0.29
Health							0.29	0.32	0.31
Communications									
Consumer Cyclical									
Consumer Defensive									
Equity Precious Metals									
Financial		0.50	1.54						1.02
Industrials									
Natural Resources									
Commodities Industrial Metals									
Utilities								0.18	0.18
INTERNATIONAL EQUITY			**-0.18**	**0.07**	**0.11**	**-0.02**	**-0.12**	**-0.13**	**-0.04**
World Stock			-0.20	-0.08	0.05	0.05	-0.06	-0.05	-0.05
Foreign Large Value							0.06	0.05	0.06
Foreign Large Blend				0.48	0.33	0.09	0.14	0.36	0.28
Foreign Large Growth			-0.24	-0.27	-0.06	0.02	0.10	0.10	-0.06
Foreign Small/Mid Value							0.13	0.19	0.16
China Region						-0.15	0.07	0.04	-0.01
Diversified Emerging Mkts									
Diversified Pacific/Asia									
Foreign Small/Mid Blend									
India Equity									
Japan Stock									
Latin America Stock									
Miscellaneous Region									
Europe Stock									
Global Real Estate								0.03	0.03
Pacific/Asia ex-Japan Stk									

Category	Difference (AETF - IETF) in Volatility of Premium/Discount (%) - AW								
	2008	2009	2010	2011	2012	2013	2014	2015	AVG
US EQUITY DIVERSIFIED	**1.59**	**0.89**	**0.89**	**0.76**	**0.52**	**0.21**	**0.15**	**0.18**	**0.65**
Mid-Cap Value						0.08	0.07	0.10	0.08
Mid-Cap Blend				0.58	0.45	0.12	0.10	0.07	0.26
Large Blend	1.69	0.78	1.36	0.94	0.36	0.34	0.35	0.51	0.79
Large Growth	1.52	0.85	0.77	0.71	1.27	0.80	0.53	0.28	0.84
Large Value		0.98	1.44	0.69	0.45	0.41	0.20	0.27	0.63
Small Blend						0.27	0.25	0.35	0.29
Mid-Cap Growth	1.55	0.87	1.09	0.75			0.64	0.37	0.88
Small Growth									
Small Value									
US EQUITY SECTORS	**5.09**	**1.77**	**0.89**	**0.49**	**0.18**	**0.04**	**0.06**	**0.05**	**1.07**
Equity Energy					0.12	0.03	0.04	0.03	0.06
Real Estate	5.09	3.02	0.48	0.49	0.31	0.22	0.22	0.38	1.28
Miscellaneous Sector					0.21	0.12	0.06	0.15	0.14
Technology		0.81	1.51				0.60	0.43	0.84
Energy Limited Partnership							0.22	0.24	0.23
Health							0.42	0.47	0.44
Communications									
Consumer Cyclical									
Consumer Defensive									
Equity Precious Metals									
Financial		0.63	2.24						1.43
Industrials									
Natural Resources									
Commodities Industrial Metals									
Utilities								0.24	0.24
INTERNATIONAL EQUITY			**-0.15**	**0.16**	**0.19**	**0.08**	**-0.14**	**-0.17**	**0.00**
World Stock			-0.18	0.02	0.17	0.20	-0.03	-0.05	0.02
Foreign Large Value							-0.01	-0.01	-0.01
Foreign Large Blend				0.68	0.38	0.16	0.17	0.44	0.37
Foreign Large Growth			-0.28	-0.30	-0.02	0.18	0.10	0.18	-0.02
Foreign Small/Mid Value							-0.10	-0.09	-0.09
China Region						-0.10	0.09	0.30	0.10
Diversified Emerging Mkts									
Diversified Pacific/Asia									
Foreign Small/Mid Blend									
India Equity									
Japan Stock									
Latin America Stock									
Miscellaneous Region									
Europe Stock									
Global Real Estate								0.07	0.07
Pacific/Asia ex-Japan Stk									

Exhibit 2-2: Comparison of Active ETF (AETF) vs Index ETF (IETF) Trading Costs. Volume-Weighted (VW) within overlapping fund categories.

Category	Difference (AETF-IETF) in Avg Absolute Premium/Discount (%) - VW								
	2008	2009	2010	2011	2012	2013	2014	2015	AVG
US EQUITY DIVERSIFIED	**1.16**	**0.64**	**0.56**	**0.51**	**0.48**	**0.17**	**0.16**	**0.14**	**0.48**
Mid-Cap Value						0.08	0.06	0.09	0.08
Mid-Cap Blend				0.40	0.27	0.11	0.13	0.09	0.20
Large Blend	1.00	0.52	0.82	0.70	0.25	0.24	0.21	0.23	0.49
Large Growth	1.15	0.60	0.47	0.41	1.36	0.57	0.37	0.11	0.63
Large Value		0.69	0.76	0.47	0.31	0.21	0.19	0.22	0.41
Small Blend						0.21	0.19	0.28	0.23
Mid-Cap Growth	1.35	0.56	0.65	0.44			0.39	0.27	0.61
Small Growth									
Small Value									
US EQUITY SECTORS	**4.90**	**1.11**	**0.61**	**0.24**	**0.20**	**0.13**	**0.12**	**0.06**	**0.92**
Equity Energy					0.20	0.12	0.09	0.05	0.11
Real Estate	4.90	1.71	0.30	0.24	0.20	0.15	0.13	0.23	0.98
Miscellaneous Sector					0.05	-0.09	-0.08	-0.02	-0.03
Technology		0.56	1.02				0.38	0.29	0.56
Energy Limited Partnership								0.35	0.35
Health							0.29	0.32	0.30
Communications									
Consumer Cyclical									
Consumer Defensive									
Equity Precious Metals									
Financial		0.52	1.56						1.04
Industrials									
Natural Resources									
Commodities Industrial Metals									
Utilities								0.19	0.19
INTERNATIONAL EQUITY			**-0.16**	**0.10**	**0.04**	**-0.15**	**-0.18**	**-0.23**	**-0.10**
World Stock			-0.19	-0.06	0.05	0.01	-0.04	-0.05	-0.05
Foreign Large Value							0.16	0.06	0.11
Foreign Large Blend				0.42	0.33	0.04	0.10	0.29	0.23
Foreign Large Growth			-0.24	-0.26	-0.06	0.00	0.10	0.09	-0.06
Foreign Small/Mid Value							0.13	0.19	0.16
China Region						-0.17	0.03	-0.02	-0.05
Diversified Emerging Mkts									
Diversified Pacific/Asia									
Foreign Small/Mid Blend									
India Equity									
Japan Stock									
Latin America Stock									
Miscellaneous Region									
Europe Stock									
Global Real Estate								0.03	0.03
Pacific/Asia ex-Japan Stk									

Category	Difference (AETF-IETF) in Volatility of Premium/Discount (%) - VW								
	2008	2009	2010	2011	2012	2013	2014	2015	AVG
US EQUITY DIVERSIFIED	**1.60**	**0.98**	**0.91**	**0.77**	**0.49**	**0.22**	**0.21**	**0.19**	**0.67**
Mid-Cap Value						0.07	0.08	0.11	0.09
Mid-Cap Blend				0.59	0.44	0.12	0.12	0.10	0.27
Large Blend	1.67	0.79	1.36	0.97	0.26	0.32	0.32	0.39	0.76
Large Growth	1.57	0.86	0.73	0.71	1.27	0.83	0.60	0.14	0.84
Large Value		1.11	1.44	0.70	0.45	0.43	0.29	0.32	0.68
Small Blend						0.27	0.25	0.39	0.30
Mid-Cap Growth	1.59	0.88	1.08	0.75			0.63	0.36	0.88
Small Growth									
Small Value									
US EQUITY SECTORS	**5.00**	**1.83**	**0.93**	**0.49**	**0.17**	**0.07**	**0.14**	**0.05**	**1.08**
Equity Energy					0.14	0.04	0.06	0.01	0.06
Real Estate	5.00	3.01	0.46	0.49	0.30	0.22	0.22	0.38	1.26
Miscellaneous Sector					0.14	-0.02	-0.04	0.06	0.04
Technology		0.81	1.52				0.58	0.44	0.84
Energy Limited Partnership								0.24	0.24
Health							0.42	0.46	0.44
Communications									
Consumer Cyclical									
Consumer Defensive									
Equity Precious Metals									
Financial		0.65	2.26						1.46
Industrials									
Natural Resources									
Commodities Industrial Metals									
Utilities								0.25	0.25
INTERNATIONAL EQUITY			**-0.14**	**0.18**	**0.10**	**-0.11**	**-0.25**	**-0.31**	**-0.09**
World Stock			-0.18	0.04	0.19	0.13	-0.01	-0.05	0.02
Foreign Large Value							0.14	0.03	0.08
Foreign Large Blend				0.59	0.39	0.08	0.10	0.30	0.29
Foreign Large Growth			-0.26	-0.27	-0.02	0.21	0.11	0.18	-0.01
Foreign Small/Mid Value							-0.09	-0.10	-0.09
China Region						-0.12	0.04	0.21	0.04
Diversified Emerging Mkts									
Diversified Pacific/Asia									
Foreign Small/Mid Blend									
India Equity									
Japan Stock									
Latin America Stock									
Miscellaneous Region									
Europe Stock									
Global Real Estate								0.08	0.08
Pacific/Asia ex-Japan Stk									

Source: Morningstar, Inc. AETF means actively-managed ETF; IETF means index ETF.
AW means weighting funds by net assets; VW means weighting funds by dollar trading volume.
Note: Excludes ETNs, non-equity, leveraged, inverse, and inverse leveraged ETFs as well as premium/discount observations greater than 20% for included funds.