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March 6, 2018

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 Rule 8.900-E to Permit the Listing and Trading of Managed Portfolio Shares and to List and Trade Shares of Royce Pennsylvania ETF, Royce Premier ETF and Royce Total Return ETF (Release No. 34-82549; File No. SR-NYSEArca-2018-04)

Dear Mr. Fields:

Thank you for the opportunity to comment<sup>1</sup> on the above-referenced rule change request (Filing) by NYSE Arca, Inc. (the Exchange) pursuant to the Securities Exchange Act of 1934, as amended (Securities Exchange Act), to permit the listing and trading of Managed Portfolio Shares and to list and trade shares of three series (Funds) of the Precidian ETF Trust II (Trust). The Filing relates to a request<sup>2</sup> (Exemptive Application) by the Trust and other parties for exemptive relief from various provisions of the Investment Company Act of 1940, as amended (Investment Company Act), and a registration statement<sup>3</sup> (Registration Statement) filed by the Trust on Form N-1A under the Securities Act of 1933, as amended. Various filing parties and their affiliates (Applicants) have provided supportive statements in the public record as comment letters addressing prior versions of the Filing (Applicants' Public Comments), certain of which I reference herein.<sup>4</sup>

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<sup>1</sup> As background, I am the author of The Exchange-Traded Funds Manual (Second Edition, Wiley, 2010) and numerous other publications on exchange-traded products. Since 2003, I have been the principal of a consulting business now operating as ETF Consultants.com, inc. I maintain a free website at [www.etfconsultants.com](http://www.etfconsultants.com) for anyone interested in ETFs. 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relief to permit the offering of certain actively managed exchange-traded funds (File No. 812-13228 (May 29, 2005); no longer active).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 NextShares™ exchange-traded managed funds (NextShares), for which the Commission granted exemptive relief in December 2014 and Eaton Vance launched the initial funds in the first quarter of 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.

<sup>2</sup> See File No. 812-14405 (December 4, 2017).

<sup>3</sup> See File Nos. 333-217142 and 811-23246 (April 4, 2017).

<sup>4</sup> See, for example, comments of Mark Criscitello (October 11, 2017), Daniel J. McCabe (October 12, 2017) and Joseph A. Sullivan (October 12, 2017) available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736.htm>.

In this letter, the proposed Managed Portfolio Shares and Funds as described in the Filing, Exemptive Application, Registration Statement and Applicants' Public Comments (together, the Proposal Documents) are treated as a single proposal (Proposal). Unless otherwise noted, the capitalized terms I use have the same meanings as in the Proposal Documents. Where the Filing, Exemptive Application, Registration Statement and Applicants' Public Comments use different terminology or conflict, the Filing is followed unless otherwise noted. For a summary and brief history of the Proposal, please see pages 5-7 below. For a more complete description, please refer to the Proposal Documents.

### **Assessment of the Proposal**

As I have stated numerous times in previous comment letters addressing prior versions of the Proposal, I believe the Proposal has a number of fatal deficiencies that, individually and collectively, *mandate its rejection or withdrawal*. The Proposal requests approval for a new actively managed exchange-traded fund (ETF) structure that seeks to maintain the principal benefits of active ETFs as they now exist, and to improve over the currently approved active ETF structure by keeping confidential each Fund's proprietary investment strategy. In my judgment, the convoluted, compliance-challenged and risk-laden scheme described in the Proposal fails spectacularly to achieve these objectives. Among the Proposal's fatal flaws are:

**1. The Proposal Documents are incomplete, inaccurate and materially misleading in their characterizations of the Proposal's risks and benefits.**

The Filing, Exemptive Application, Registration Statement and Applicants' Public Comments are riddled with demonstrably false statements of fact, unsubstantiated and misleading expressions of opinion, and omissions of critical analysis and disclosure that, taken together, grossly distort the Proposal's risks and benefits and greatly exaggerate the case for approval. (see pages 7-11 for additional details.)

**2. By not assuring the protection of the Funds' proprietary investment strategies, the Proposal fails to demonstrate a public purpose.**

Managed Portfolio Shares offer only a single possible investor benefit relative to existing actively managed ETFs – which is protecting the confidentiality of a Fund's proprietary investment strategy. The Proposal Documents do not demonstrate that the Proposal would accomplish this goal, and there is much reason to believe it would not be realized. (see pages 12-18 for additional details.)

**3. The Proposal violates principles and guidance of federal securities law opposing the selective disclosure of material, non-public information.**

The proposed daily disclosure of the Funds' confidential portfolio holdings information to the AP Representatives for trading on behalf of Authorized Participants violates both the Commission's specific guidance for selective disclosure of material, non-public information by registered open-end funds and the broader policy objectives of federal securities law relating to selection disclosure as set forth in Regulation Fair Disclosure (Regulation FD). (see pages 18-20 for additional details.)

**4. The Proposal facilitates illegal insider trading in the Funds' portfolio securities to the detriment of Fund shareholders.**

The proposed disclosure on a current daily basis of the Funds' portfolio holdings to AP Representatives, Fund service providers (Advisers, Sub-Advisers, Custodians, Calculation Engine operators and Pricing Verification Agents) and oversight authorities (the Exchange and FINRA), and the absence of any discernible Fund program to monitor these organizations and their employees to ensure that the Fund's confidential information is protected and not misused, facilitates and encourages illegal insider trading on a potentially grand scale. Failure to protect Fund shareholders from harm resulting from misuse or theft of selectively disclosed portfolio holdings information would constitute a violation of Funds' and Advisers' fiduciary duty. (see pages 21-23 for additional details.)

**5. The normal tax benefits of ETF investing will likely not apply to the Funds.**

Among the most widely recognized and highest-value benefits of investing in ETFs is tax efficiency, which the Proposal cites as a key advantage for the Funds over mutual funds. The tax-efficiency advantage of ETFs derives from the use of in-kind distribution of portfolio securities to meet shareholder redemptions. Because the Funds would participate significantly in controlling the disposition of the securities they distribute to meet in-kind redemptions and because redeeming shareholders (*i.e.*, Authorized Participants) would have little or no effective control, the IRS will likely characterize a Fund's in-kind redemptions as sales of the distributed securities by the Fund, negating the normal tax advantage. (see pages 23-26 for additional details.)

**6. The secondary market trading performance of Fund shares will not meet the requirements for exemptive relief or marketplace expectations for ETFs.**

Because the proposed Fund structure does not provide a reliable mechanism for market makers to arbitrage differences between secondary market trading prices of Fund shares and the underlying value of Fund assets, Fund shares will trade with notably wider bid-ask spreads and more variable premiums and discounts than similar existing ETFs. During periods of market stress and volatility, Fund shares will be especially vulnerable to collapses of trading liquidity and trading halts. (see pages 26-41 for additional details.)

**7. The Proposal exposes Fund shareholders to significant new costs and substantial liabilities and risks not present for existing ETFs.**

The Funds' proposed structure and method of operation introduce significant new costs, liabilities and risks to shareholders in connection with the calculation and public dissemination of Verified Intraday Indicative Values (VIIVs) and the selective private disclosure of the Funds' confidential portfolio holdings information on a daily basis. These novel aspects of the Funds' structure and operation will cost money — exposing shareholders to unspecified amounts of new expenses that will diminish, if not negate, the Funds' claimed cost advantages. Moreover, the Funds' proposed structure involves liabilities and risks, again unquantified in the Proposal, that could expose Fund shareholders to large losses under foreseeable circumstances. (see pages 41-44 for additional details.)

**8. The Proposal is overreaching in scope and fails to provide for adequate investor information.**

The Proposal seeks authorization to offer, list and trade Funds holding long and short positions in substantially all types of U.S. exchange-listed securities, and proposes to include on Fund websites essentially the same trading information as available for conventional ETFs. Given the major concerns regarding how well Fund shares will trade, if Managed Portfolio Shares are approved at all, Funds should be permitted to invest only in long positions in the most-liquid domestic stocks, U.S. equity ETFs and short-term instruments, and should be required to provide substantial additional website disclosures of current and historical Fund trading information as conditions for approval. (see pages 44-47 for additional details.)

**9. On an overall basis, the Proposal fails to meet the statutory requirements for approval of Exchange rule changes set forth in the Securities Exchange Act.**

The requested Exchange rule change to permit the listing and trading of Managed Portfolio Shares does not meet the requirements for approval set forth in Sections 19(b)(2)(C) and 6(b) of the Securities Exchange Act. In particular, the requested rule change does not conform to the requirement of Section 6(b)(5) that Exchange rules must be designed “to prevent fraudulent and manipulative acts and practices,” “to protect investors and the public interest,” and not “to permit unfair discrimination” among issuers, brokers, dealers and other market participants. The anti-fraud, investor protection and anti-discrimination requirements of Section 6(b)(5) are particularly implicated by the proposed widespread dissemination of the Funds’ confidential portfolio holdings information on a daily basis, and the absence of any discernible program to ensure that the Funds’ confidential information is adequately protected and not used in a manner that harms Fund shareholders or constituting securities fraud. (see pages 47-48 for additional details.)

**10. On an overall basis, the Proposal fails to meet the statutory standards for exemptive relief set forth in the Investment Company Act.**

The Proposal does not meet the requirement for exemptive relief under Section 6(c) of the Investment Company Act that “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 Investment Company Act].” Without assurances that the Funds’ proprietary holdings information will be protected, the proposed Funds offer no advantage over existing ETFs. Further, the proposed Funds likely will not realize the normal tax benefits of operating as ETFs, will subject Fund shareholders to significant added costs, liabilities and risks not present for existing ETFs, and their shares will trade less efficiently in the secondary market than shares of similar existing ETFs, especially during periods of market stress and volatility. As such, exemptive relief is neither necessary nor appropriate in the public interest, nor consistent with the protection of investors. (see page 49 for additional details.)

Over the balance of this letter, I first provide a summary and brief history of the Proposal, and then address in detail each of the Proposal’s fatal flaws as identified above. For the convenience of readers, I use the same numbering as above for that discussion.

## **Summary of the Proposal**

Managed Portfolio Shares are a proposed new type of actively managed ETF. Compared to actively managed ETFs as approved to date, the principal distinguishing features of Managed Portfolio Shares as currently proposed are: (a) restricting Fund investments primarily to long and short positions in U.S.-listed securities, shares issued by other U.S.-listed ETFs and short-term instruments; (b) publicly disclosing portfolio holdings quarterly with a lag, rather than on a current daily basis; (c) limiting purchases and redemptions of Creation Units of Fund shares to transactions by or through Authorized Participants on a blind basis through a brokerage account (Confidential Account) with an AP Representative that has entered into a confidentiality agreement with the Fund; (d) prior to the commencement of trading each Business Day, providing each AP Representative with the names and quantities of the instruments constituting the holdings of the Fund used in determining the Fund's NAV for that day and the Fund's Creation Basket securities for that day, which AP Representatives would trade in to facilitate Authorized Participants' in-kind purchases and redemptions of Creation Units; (e) disseminating VIIVs based on the bid-offer midpoint of the Fund's current holdings at one-second intervals throughout the Exchange's Core Trading Session each Business Day; and (f) relying on dissemination of VIIVs, hedging of market maker positions in Fund shares using "statistical arbitrage" and related correlation-based hedging techniques (Macro Hedges), and purchases and redemptions of Creation Units of Fund shares by Authorized Participants through Confidential Accounts as the primary basis for seeking to ensure the Fund shares' secondary market trading efficiency.

Each of the three initial Funds that the Filing seeks permission to list and trade would invest primarily in U.S. small-cap stocks with market capitalizations of \$3 billion or less, and the initial Funds would not hold short positions.<sup>5</sup>

The Applicants represent that the Funds' proposed structure "mitigates the risk of front running and free riding"<sup>6</sup> that arises from the daily disclosure of portfolio holdings by existing active ETFs. As represented, "in all other material ways, the Funds would operate in a manner substantially identical to, and enjoy the same efficiencies as, existing ETFs."<sup>7</sup> In the secondary market trading of Fund shares, the Applicants assert that the proposed manner of trading "will not lead to significant deviations between the shares' Bid/Ask Price and NAV."<sup>8</sup>

Relative to mutual funds, which publicly disclose their portfolio holdings on the same basis as proposed for the Funds, the Applicants describe the Funds' potential benefits as including "the ability to transact at negotiated prices intraday on Exchanges," "improved tax efficiency through the reduction in capital gains associated with the in-kind transfer of securities from the Fund to Authorized Participants" and "cost savings related to the elimination or reduction of transfer agency fees and the associated account maintenance expenses."<sup>9</sup>

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<sup>5</sup> See Registration Statement at pages 2-9 and 33. The Exemptive Application and Registration Statement provide for an additional five series of the Trust that would invest primarily in long and short positions in U.S.-listed equity securities of various descriptions.

<sup>6</sup> See Exemptive Application at page 29.

<sup>7</sup> *ibid.*

<sup>8</sup> See Filing at page 34.

<sup>9</sup> See Exemptive Application at page 5.

## Applicants' Prior Proposals

The Proposal is the latest in a series of similar proposals submitted by the Applicants for consideration by the Commission over the past five years, none of which have been approved. 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).<sup>10</sup> On November 14, 2014, the Commission issued an order granting the Applicants' request to withdraw the associated exemptive application,<sup>11</sup> which followed the Commission's notice (Notice) that it preliminarily intended to deny the application.<sup>12</sup> Cited extensively in the Notice were comment letters opposing approval of the Applicants' First Proposal that I submitted on March 18, 2014<sup>13</sup> and June 23, 2014.<sup>14</sup>

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).<sup>15</sup> 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.<sup>16</sup>

On January 27, 2016, the Exchange submitted a request<sup>17</sup> for a proposed rule change to permit the listing and trading of Managed Portfolio Shares (and 15 series thereof) to operate as described in a revised exemptive application submitted on September 21, 2015 (Applicants' Third Proposal).<sup>18</sup> I submitted comment letters opposing approval of Applicants' Third Proposal on March 10, 2016<sup>19</sup> and June 13, 2016<sup>20</sup>. On May 17, 2016, the Commission issued an order<sup>21</sup> (Order) instituting proceedings to determine whether to approve or disapprove the Exchange's rule change request. The Order included a

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<sup>10</sup> See Securities Exchange Act Release No. 34-73424; File No. SR-NYSEArca-2014-10 (October 24, 2014).

<sup>11</sup> See Investment Company Act Release No. 31336; File No. 812-14116 (November 14, 2014).

<sup>12</sup> See 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 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).

<sup>13</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2014-10/nysearca201410-1.pdf>.

<sup>14</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2014-10/nysearca201410-4.pdf>.

<sup>15</sup> See Precidian ETFs Trust, et al., File No. 812-14405 (December 22, 2014).

<sup>16</sup> 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](http://www.nextshares.com/regulatory-and-technical-documents.php#other_structures).

<sup>17</sup> See Release No. 34-77117; File No. SR-NYSEArca-2016-08.

<sup>18</sup> See Precidian ETFs Trust, et al., File No. 812-14405 (September 21, 2015).

<sup>19</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2016-08/nysearca201608-2.pdf>.

<sup>20</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2016-08/nysearca201608-8.pdf>.

<sup>21</sup> See Securities Exchange Act Release No. 34-77845; File No. SR-NYSEArca-2016-08 (May 17, 2016).

series of questions regarding the Applicants' Third Proposal that commenters were invited to address. On July 8, 2016, the Commission gave notice<sup>22</sup> of the Exchange's withdrawal of its rule change request.

On April 14, 2017, the Exchange requested a rule change<sup>23</sup> to permit the listing and trading of Managed Portfolio Shares (and three series thereof) to operate as described therein and in an amended exemptive application dated May 2, 2017 (Applicants' Fourth Proposal).<sup>24</sup> I submitted comment letters opposing approval of Applicants' Fourth Proposal on May 24, 2017<sup>25</sup> and a substantially amended version of the same<sup>26</sup> on December 18, 2017.<sup>27</sup> On December 21, 2017, the Commission gave notice<sup>28</sup> of the Exchange's withdrawal of its rule change request.

The current Proposal differs from the Applicants' Fourth Proposal in a number of important respects, most significantly that: (a) Authorized Participants, Non-Authorized Participant Market Makers and other arbitrageurs could no longer engage in Bona Fide Arbitrage (as defined in the Applicants' Fourth Proposal) through Confidential Accounts, removing one of the foundational elements of the Applicants' prior approach to seeking to ensure the secondary market trading efficiency of Fund shares; and (b) bowing to growing evidence that the Funds may be susceptible to reverse engineering based on analysis of VIIV changes, the Proposal now represents that Managed Portfolio Shares would only "reduce," rather than "eliminate," front-running and free-rider risks, and proposes to add prominent disclosure to each Fund's prospectus and website flagging the potential harm to shareholders if the Fund's proprietary trading strategy is successfully reverse engineered. Other notable differences in the Proposal versus prior versions include substantial changes to the proposed method of VIIV calculation and the operation of Confidential Accounts, new Fund Board responsibilities for monitoring secondary market trading and the removal of prior statements that the Applicants expect the Funds to be able to mitigate their liability relating to errors, delays or interruptions in disseminated VIIVs by purchasing insurance.

### **The Proposal's Fatal Flaws**

#### **1. The Proposal Documents are incomplete, inaccurate and materially misleading in their characterizations of the Proposal's risks and benefits.**

The Filing, Exemptive Application, Registration Statement and Applicants' Public Comments are riddled with demonstrably untrue statements of fact, unsubstantiated and misleading expressions of opinion, and omissions of critical analysis and disclosure that, taken together, grossly distort the Proposal's risks and benefits and greatly exaggerate the case for approval. Examples of unsubstantiated

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<sup>22</sup> See Securities Exchange Act Release No. 34-78261; File No. SR-NYSEArca-2016-08 (July 8, 2016).

<sup>23</sup> See Release No. 30-80553; File No. SR-NYSEArca-2017-36. The rule change request (2017 Filing) was amended on December 5, 2017.

<sup>24</sup> See Precidian ETFs Trust, et al., File No. 812-14405 (May 4, 2017). The exemptive application was further amended on September 29, 2017 and December 4, 2017.

<sup>25</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-1773725-152542.pdf>.

<sup>26</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2759313-161597.pdf>

<sup>27</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2818427-161700.pdf>.

<sup>28</sup> See Securities Exchange Act Release No. 34-82374; File No. SR-NYSEArca-2017-36 (December 21, 2017).

and false statements of material fact and materially misleading statements of opinion contained in the Proposal Documents include (with my emphasis in italics):

- “The Funds would provide an *enhanced ETF product*.”<sup>29</sup>

Relative to existing active ETFs, the Funds’ only possible advantage is protecting the confidentiality of current Fund holdings, which the Proposal fails to ensure. In other material respects – secondary market trading, operating costs, shareholder risks and likely tax treatment – the proposed Funds are inferior to existing ETFs.

- The Funds’ design “is *economically superior* to competing products that already have received SEC approval.”<sup>30</sup>

The Funds’ proposed design diminishes secondary market trading efficiency, exposes shareholders to added costs and risks, likely eliminates the normal tax advantages of operating as ETFs and fails to ensure the ongoing protection of the Funds’ proprietary portfolio holdings information. In no way are the proposed Funds superior to existing active ETFs.

- “To a very large extent, the Funds . . . *will operate in exactly the same manner* [as] all existing ETFs.”<sup>31</sup>

The Funds would operate very differently from existing ETFs. Among other distinctions, the Funds would not disclose their holdings each Business Day and would not employ the same arbitrage trading mechanism used by existing ETFs to maintain alignment between market prices of fund shares and underlying fund values.

- “The Applicant believes that to investors, the Funds *will be indistinguishable* from existing ETFs given all of the similarities.”<sup>32</sup>

Only to the most naïve observers would the Funds appear indistinguishable from existing ETFs. Their secondary market trading performance, shareholder costs and risks, and likely tax treatment would differ significantly from existing ETFs.

- “The unique structure and safeguards of ActiveShares will *solve the front-running concern*.”<sup>33</sup>

Because they fail to ensure the ongoing protection of the Funds’ proprietary portfolio holdings information, the proposed Managed Portfolio Shares do not “solve” concerns regarding front-running of Fund trades.

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<sup>29</sup> See Exemptive Application at page 29.

<sup>30</sup> *ibid* Footnote 51 at page 29.

<sup>31</sup> *ibid* at page 3.

<sup>32</sup> *ibid* at page 10.

<sup>33</sup> See Comment Letter of Joseph A. Sullivan (October 12, 2017) at page 2, available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2649755-161341.pdf>.

- “Precidian has engaged leading economists and mathematicians who *have confirmed that it is not possible* to determine portfolio holdings and their weightings with any precision, given Precidian’s structure.”<sup>34</sup>

The claim that reverse engineering of a Fund’s holdings based on analysis of VIIVs is “not possible” has been refuted by the principals of Blue Tractor Group LLC (Blue Tractor)<sup>35</sup> and the SEC Division of Economic and Risk Analysis (DERA).<sup>36</sup> The Applicants’ studies also do not address the possible use of other publicly available Fund information in combination with disseminated VIIVs to assist in reverse engineering, or other means (besides analysis of VIIVs) through which the confidentiality of a Fund’s holdings could be compromised.

- “Applicants believe the dissemination of VIIV at one second intervals provides a level of current information that will facilitate intraday arbitrage *without any material risk that the Adviser’s investment strategy will be reverse engineered.*”<sup>37</sup>

There is significant risk that a Fund’s holdings could be reverse engineered through analysis of VIIVs and other disseminated portfolio information. In addition to reverse engineering, there are multiple other avenues by which a Fund’s confidential holdings could be uncovered and used in a manner harmful to Fund shareholders.

- “[M]arket makers *have the same opportunities to arbitrage* discrepancies between share price and the underlying NAV as if it were a fully transparent ETF.”<sup>38</sup>

Opportunities for market makers to make efficient markets in Fund shares will be significantly diminished relative to existing ETFs by the forced reliance on VIIVs as the sole information on intraday Fund values, the required use of Confidential Accounts to effect purchases and redemptions of Creation Units of Fund shares, and severe limitations on market makers’ ability to construct and manage high-correlation hedges against their positions in Fund shares.

- “The real-time dissemination of a fund’s VIIV, together with the right of APs 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.”<sup>39</sup>

There is every reason to expect Fund shares to trade at unacceptably wide bid-ask spreads and unacceptably variable premiums/discounts to underlying Fund values, especially during periods of market stress and volatility.

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<sup>34</sup> See comment letter of Daniel J. McCabe (October 12, 2017) at page 3, available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2636843-161243.pdf>.

<sup>35</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736.htm>.

<sup>36</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2695453-161510.pdf>.

<sup>37</sup> See Exemptive Application at page 29.

<sup>38</sup> *ibid* at page 69.

<sup>39</sup> See Filing at page 34.

- “The Confidential Account Agreement . . . should be *similar in cost* to other brokerage arrangements.”<sup>40</sup>

Securities law compliance and contractual obligations will require AP Representatives to wall off their trading staff supporting Confidential Accounts and prevent such staff from trading in Creation Basket securities on behalf of other customers. These and other requirements for the management of Confidential Accounts will impose significant incremental costs on AP Representatives, for which they will surely seek compensation.

- The Funds “will offer *all the other benefits that have made ETFs desirable . . .*, including the ability of the public to trade shares throughout the day at market prices, *lower fund operating expenses* and *improved tax efficiency*.”<sup>41</sup>

The Funds’ proposed structure and method of operation introduce significant new Fund costs and liabilities in connection with the calculation and public dissemination of VIIVs and the selective private disclosure of the Funds’ confidential portfolio holdings information on a daily basis. These added costs and liabilities will erode, if not negate, the normal cost advantages of operating as ETFs. The normal tax-efficiency advantages of ETFs will also likely not apply to the Funds.

- “[T]he Funds will operate with *the same in-kind creation and redemption process* that has provide tax efficiency for existing traditional ETFs.”<sup>42</sup>

The creation and redemption process proposed for the Funds differs significantly from that employed by existing ETFs. Different from the normal manner in which existing ETFs redeem their shares, the Funds would participate significantly in controlling the disposition of the securities distributed to meet in-kind redemptions and redeeming Authorized Participants would have little or no effective control over the securities they receive.

- “a Fund *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.”<sup>43</sup>

Reflecting the Fund’s significant participation in controlling the disposition of the securities distributed to meet in-kind redemptions and redeeming shareholders’ limited control over the securities, the IRS will likely characterize a Fund’s in-kind redemptions as sales of the distributed securities by the Fund, causing the Fund to realize capital gains on the same basis as if the distributed securities were sold and the redemption met in cash.

- “Should there be any shortcomings in the Precidian structure, it will result in an inability to attract assets, *not some unforeseen consequence to investors or the markets*.”<sup>44</sup>

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<sup>40</sup> See Exemptive Application at page 11.

<sup>41</sup> See Comment Letter of Joseph A. Sullivan (October 12, 2017) at page 2, available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2649755-161341.pdf>.

<sup>42</sup> See Footnote 3 to the Exemptive Application at page 6.

<sup>43</sup> See Filing at page 22.

<sup>44</sup> See comment letter of Mark Criscitello (October 11, 2017) at page 2, available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2634577-161228.pdf>.

If the Proposal is authorized and then proves deficient, resulting harm will hardly be limited to the commercial interests of Fund sponsors. The Funds' shareholders will suffer harm in the form of lower returns, reduced liquidity and/or higher taxes. Introducing a defective ETF structure also risks broader harm to investor perceptions about ETFs generally and public confidence in the financial markets and the Commission.

Examples of material facts and risks relevant to the Proposal's approval, the discussion of which has been omitted from the Proposal Documents:

- The significant differences between the Funds' proposed in-kind redemption practices and those of existing ETFs, and the likelihood that the IRS will deny the Funds' asserted tax-efficiency advantages.
- The added costs that the Funds will incur in connection with providing for the calculation and public dissemination of VIIVs and the selective private disclosure of the Funds' confidential portfolio holdings information on a daily basis.
- The liabilities and risks that the Funds will assume relating to the calculation and public dissemination of VIIVs and the selective disclosure of the Funds' confidential portfolio holdings information.
- The actions, if any, the Funds will take to monitor AP Representatives and other recipients of confidential portfolio holdings information to ensure that such information is not misused and remains protected.
- The risk of harm to Fund shareholders from misappropriation or misuse of confidential portfolio holdings information disseminated to AP Representatives, Fund service providers, the Exchange and FINRA each Business Day.
- The risk of harm to Fund shareholders from loss or theft of confidential portfolio holdings information disclosed daily to AP Representatives and other recipients.
- The significant constraints imposed on other trading activity of broker-dealers serving as AP Representatives, the impact of these constraints on the costs to Authorized Participants of trading through Confidential Accounts and the resulting effect on the efficiency of Fund shares' secondary market trading.
- The risk of harm to shareholders from interruptions in Fund share trading.

Conclusion. As a whole, the large number of significant errors and omissions and misleading statements in the supporting documents severely compromise the Proposal's credibility. Until the Applicants provide the Commission with complete and accurate descriptions and analyses of the proposed Funds' structure and method of operation, and the benefits, costs and risks to investors of the proposed Managed Portfolio Shares, the Commission should not give serious consideration to the Applicants' requests for approval. The Commission has a full agenda of important work, and should not waste time on incomplete, inaccurate and materially misleading requests for exemptive relief and changes to exchange rules.

**2. By not assuring the protection of the Funds' proprietary investment strategies, the Proposal fails to demonstrate a public purpose.**

In his comment letter dated October 12, 2017, Daniel J. McCabe, Chief Executive of Precidian Investments, defined well the purpose of the proposed Managed Portfolio Shares — “to allow active managers to manage ETFs without disclosing their proprietary trading strategies.”<sup>45</sup> Unlike the proposed Funds, all existing active ETFs are required to publicly disclose their full portfolio holdings as of the close of each Business Day before the opening of market trading on the following Business Day. By maintaining the confidentiality of their portfolio trading, the Funds would gain a potential performance advantage over existing active ETFs by avoiding the dilutive effects of front-running of the Funds' trades by other market participants. By keeping Fund holdings confidential, the Managed Portfolio Shares structure also would be appealing to fund sponsors seeking to preserve the proprietary nature of their investment strategies.

Apart from the Funds' objective to protect the confidentiality of their portfolio holdings information, there is not a single mention in any Proposal Document of *any* possible advantage of the proposed structure over existing active ETFs. There is a reason the Proposal Documents do not describe other possible advantages: *there are none*. At most, the Applicants would argue that the other features of Managed Portfolio Shares are similar to existing active ETFs. In fact, as discussed below, there is much reason to expect Managed Portfolio Shares:

- to trade with substantially wider bid-ask spreads and more variable premiums/discounts than existing active ETFs, particularly during periods of market stress and volatility;
- to trade less continuously than existing active ETFs, with more frequent interruptions in trading;
- to be more costly to operate than existing active ETFs, increasing shareholder expenses;
- to expose Fund shareholders to significant liabilities and risks not present for existing active ETFs; and
- to be significantly less tax efficient than existing active ETFs, because the IRS will likely deny favorable treatment of the Funds' proposed in-kind redemptions.

From the above, it should be clear that any claim that the Proposal serves a public purpose or that the Funds offer investors any advantage over currently approved structures rests on a single premise: that, in Mr. McCabe's words, the Funds would “allow active managers to manage ETFs without disclosing their proprietary trading strategies.”

The question arises: does the Proposal ensure the protection of the Funds' proprietary investment strategies? Certainly not.

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<sup>45</sup> See comment letter of Daniel J. McCabe (October 12, 2017) at page 2, available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2636843-161243.pdf>.

There are at least four avenues by which the confidentiality of a Fund's current portfolio holdings information could be compromised, with resulting harm to Fund shareholders if used for trading purposes:

- Fund holdings are uncovered based on time-series analysis of VIIVs and other publicly disseminated Fund information (Reverse Engineering);
- Fund holdings are uncovered based on observations of Confidential Account trading (Trade Pattern Detection);
- Fund holdings information communicated privately to AP Representatives, Fund service providers and oversight authorities is misappropriated or misused (Misappropriation of Confidential Fund Data); and
- Fund holdings information communicated privately to AP Representatives, Fund service providers and oversight authorities is lost or stolen (Theft of Confidential Fund Data).

As described in the following, there is much reason to believe the Funds would be vulnerable to harm from trading in portfolio securities identified through one or more of these routes.

Reverse Engineering. In a series of comment letters<sup>46</sup> submitted in 2017, Terence Norman and Simon Goulet of Blue Tractor demonstrated that the Applicants' (now former) central claim that the Funds' proposed method of operation will "eliminate the potential for "free riding" or "front-running" of the Funds' portfolio trades"<sup>47</sup> is grossly overstated, showing that a Funds' holdings may be reverse engineered through analysis of VIIVs. Additional evidence that the Funds could be susceptible to reverse engineering was provided by the DERA study<sup>48</sup> published on November 4, 2017. Together, the Blue Tractor and DERA analyses obliterate the Applicants' long assertion that the statistical studies they commissioned<sup>49</sup> demonstrate that reverse engineering of the Funds would not be feasible.

The Applicants have responded to the growing body of evidence that the Funds would be subject to reverse engineering risk by amending the Exemptive Application (a) to state their belief that the proposed structure will permit the Funds to operate "with significantly less susceptibility"<sup>50</sup> (versus the former "without being susceptible") to front-running and free-riding and (b) to represent that each Fund will prominently disclose in its prospectus and on its website that market participants may attempt to use VIIVs to reverse engineer a Fund's trading strategy, "which if successful, could increase opportunities for certain predatory trading practices, such as front-running, that may have the potential to harm Fund shareholders."<sup>51</sup> In addition, the Applicants now represent that they "would not, and

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<sup>46</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736.htm>.

<sup>47</sup> See 2017 Filing at page 35.

<sup>48</sup> Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2695453-161510.pdf>.

<sup>49</sup> See Exemptive Application at pages 59-89.

<sup>50</sup> *ibid* at page 6.

<sup>51</sup> *ibid* at page 22.

believe that any Adviser, would not utilize an investment strategy in a Fund that it believed could be reverse engineered based on the dissemination of the VIIV to the detriment of the Fund.”<sup>52</sup>

Reflecting the Blue Tractor and DERA analyses (and, I suspect, the encouragement of Commission staff), the Applicants have moved off their former stance that reverse engineering of a Fund’s holdings (RE) is “not possible.” 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 Fund NAV per share (higher makes RE easier); (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 on a particular trading day (higher makes RE easier); (f) the correlation of intraday price movements of the Fund holdings and other eligible investments (lower makes RE easier); (g) Fund portfolio turnover rates (lower makes RE easier); (h) the sophistication of the statistical method employed in the RE process (a key distinction between the Blue Tractor and DERA analyses versus the Applicants’ commissioned studies); 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.

On an overall basis, *it is far from a settled question that the Funds would not be susceptible to reverse engineering* based on analysis of VIIVs and other publicly available Fund information. In fact, it will *never be* a fully settled question — proving impossibility, in this case, is not possible. Demonstrating that a Fund’s holdings cannot be successfully reverse engineered using a given method under a given set of circumstances does not prove that a successful result could not be achieved with a different method or under different circumstances.

Trade Pattern Detection. Recent changes to the Proposal suggest that the Applicants are aware of a second route by which the confidentiality of a Fund’s daily holdings information could be compromised – by market participants with visibility into an AP Representative’s trading activities detecting a marker or pattern of trading that identifies certain trades (or trade orders) as being in the Creation Basket securities (and thus the pro rata current holdings) of a particular Fund. To help mitigate this risk, the Proposal now requires AP Representatives buying and selling Creation Basket securities for Confidential Accounts to “obfuscate” such trades “by use of tactics such as breaking the purchase into multiple purchases and transacting in multiple marketplaces.”<sup>53</sup>

A challenge for an AP Representative seeking to “cover its tracks” when trading for Confidential Accounts arises from the Proposal’s requirement for each AP Representative “to erect and maintain a “fire wall” between . . . [staff acting as] AP Representative . . . and [other] personnel of the broker-dealer or broker-dealer affiliate, as applicable, with respect to access to information concerning the composition and/or changes to [a Fund’s] portfolio.”<sup>54</sup> This requirement effectively isolates an AP Representative’s Confidential Account trading to individual traders (CA Traders) who are walled off from their trading desk colleagues with respect to Creation Basket securities. In addition, the CA Traders for

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<sup>52</sup> *ibid* footnote 53 at page 30.

<sup>53</sup> *ibid* at page 11.

<sup>54</sup> See Filing at page 98.

any given Fund could not serve as CA Traders for any other Fund, and walls would need to be maintained between the CA Traders of different Funds.<sup>55</sup>

These requirements mean that, for any trader functioning as a CA Trader with respect to a given Fund on a given day, all trades in any of the Fund's Creation Basket securities must be accompanied by corresponding, same-directional trades in all the other Creation Basket securities *in exactly the same ratio as they constitute the current holdings of the Fund*. Anyone who has access to a CA Trader's trade records could likely identify which of the trades he or she executes on a particular day exhibit the distinguishing characteristics of Creation Basket securities trades (*i.e.*, always made<sup>56</sup> in conjunction with same-way trades in the same, correspondingly identical, set of other securities). Once the identity and relative weights of the securities in the defined trading block are identified, it would likely be a simple matter to match that trading block to a particular Fund<sup>57</sup> – at which point that Fund's Creation Basket securities (and, thus, its current holdings) are no longer confidential.

To summarize, anyone with access to a CA Trader's trading records could, certainly in theory, identify the Creation Basket securities (and, thus, the current holdings) of any Fund for which the CA Trader is currently engaged. While the requirement for AP Representatives to "obfuscate" trades executed for Confidential Accounts may help mitigate the risk of a Fund's holdings being unmasked through observation of CA Traders' trading patterns, it does not eliminate it. None of the Proposal Documents suggests that the Applicants would take other steps (including monitoring the extent or effectiveness of each AP Representative's trade obfuscation efforts) to ensure that the confidentiality of a Fund's daily portfolio holdings information could not be breached by tracking the trading activity of AP Representatives.

Misappropriation of Confidential Fund Data. The Proposal provides that the Funds will send each of their AP Representatives, before the commencement of trading in Fund 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."<sup>58</sup> The terms of each Confidential Account agreement will provide that the AP Representative will not disclose any identifying information regarding the portfolio securities of a Fund, "except as required by law."<sup>59</sup>

The Filing also makes clear that a Fund's confidential portfolio holdings information would be disclosed each Business Day to multiple parties in addition to AP Representatives. These include: the Investment Adviser, the Sub-Adviser (for sub-advised Funds), the Custodian, the Calculation Engine operators, the Pricing Verification Agent, the Exchange and FINRA.

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<sup>55</sup> Under the "possession equals use" doctrine of federal securities law, any trading by a CA Trader in any of a Fund's Creation Basket securities (the identity of which is material, non-public information) *other than trading to facilitate creation and redemption transactions as authorized by the Fund*, would constitute illegal insider trading subject to criminal and civil prosecution. See footnote 77 for additional details.

<sup>56</sup> Potentially executed in multiple same-day trades at multiple trading venues.

<sup>57</sup> By, for example, comparing the trading block securities to the most recent publicly disclosed portfolio holdings of each Fund (required at least quarterly with no more than a 60-day delay).

<sup>58</sup> See Filing at page 12.

<sup>59</sup> See Exemptive Application at page 19.

The Filing provides that “each service provider that has access to the identity and weightings of securities in a Fund’s Creation Basket or portfolio securities, such as a Fund’s Custodian or pricing verification agent, shall be restricted contractually from disclosing that information to any other person, or using that information for any purpose other than providing services to the Fund.”<sup>60</sup> Further, “if an AP Representative, [Fund service provider] or any other entity that has access to information concerning the composition and/or changes to [a Fund]’s portfolio, is registered as a broker-dealer or affiliated with a broker-dealer, such [entity] will erect and maintain a “fire wall” between [its personnel] . . . and personnel of the broker-dealer or broker-dealer affiliate, as applicable, with respect to access to information concerning the composition and/or changes to such [Fund] portfolio. Personnel who make decisions on the [Fund]’s portfolio composition must be subject to procedures designed to prevent the use and dissemination of material nonpublic information regarding the applicable [Fund] portfolio.”<sup>61</sup>

The Exemptive Application provides that “in selecting entities to serve as AP Representatives, a Fund will obtain, both initially and each year thereafter, representations from the entity related to the confidentiality of the Fund’s Creation Basket and portfolio securities, the effectiveness of information barriers, and the adequacy of insider trading policies and procedures.”<sup>62</sup>

From the above, the Proposal clearly provides that each AP Representative and all Fund service providers would have a contractual obligation not to use a Fund’s confidential portfolio holdings information disclosed to them for any purpose other than as authorized by the Fund. For the AP Representatives, the only authorized use of a Fund’s confidential portfolio holdings information would be to execute trades in Creation Basket securities on behalf of Authorized Participants for the narrow purpose of facilitating their purchases and redemptions of Creation Baskets of Fund shares. Because a Fund’s confidential portfolio holdings information would constitute material, non-public information, any use of such information by an AP Representative or Fund service provider (or the Exchange or FINRA) for trading purposes, except as authorized by the Fund, would constitute illegal insider trading under federal securities law.

While the obligations (both contractual and under federal securities law) of AP Representatives and Fund service providers in receipt of a Fund’s confidential portfolio holdings information not to use such information other than as authorized by the Fund are clear enough, concerns about the potential for a Fund’s confidential portfolio holdings information to be used for unauthorized trading harmful to Fund shareholders arise from: (a) the potentially large number of Authorized Representatives, Fund service providers and oversight authorities that would be provided with the Fund’s confidential portfolio holdings information each Business Day; (b) the clear value of the Fund’s confidential portfolio holdings information for illicit trading purposes; (c) the fact that the AP Representatives are broker-dealers, in the business of trading in securities for customers and their own accounts; and (d) the absence of any discernible program for any of the Applicants to monitor the AP Representatives and other recipients of a Fund’s confidential portfolio holdings information to ensure that neither they nor any of their employees use such information for trading other than as authorized by the Fund. In no other context of which I am aware has the Commission authorized the regular dissemination of a registered funds’ confidential holdings information across such a potentially large number of broker-dealers and fund service providers, with or without an effective compliance monitoring program in place.

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<sup>60</sup> See Filing footnote 21 at pages 18-19.

<sup>61</sup> *ibid* at pages 98-99.

<sup>62</sup> See Exemptive Application footnote 10 at page 12.

Theft of Confidential Fund Data. Fund holdings information communicated privately to AP Representatives, Fund service providers and oversight authorities may be vulnerable to being lost or stolen. The reliance on electronic media as the usual means for dissemination adds to other causes of vulnerability. In a statement on cybersecurity released on September 20, 2017, SEC Chair Jay Clayton observed that “the scope and severity of risks that cyber threats present [to capital markets and market participants] have increased dramatically, and constant vigilance is required to protect against intrusions. The Commission is focused on identifying and managing cybersecurity risks and ensuring that market participants – including issuers, intermediaries, investors and government authorities – are actively and effectively engaged in this effort.”<sup>63</sup>

In his statement, Chair Clayton described several cases the Commission has recently brought alleging theft of material, non-public information in connection with illegal trading activity, which include: (a) charging three traders with participating in a scheme to hack into law firms to steal client information relating to mergers or acquisitions, and using this information to trade; (b) charging two defendants with hacking into newswire services to obtain information about corporate earnings announcements, and charging dozens of other defendants with trading on the hacked information; and (c) charges relating to a scheme to gain unauthorized access to online brokerage accounts and making unauthorized stock trades in them, thereby driving up share prices and enabling the alleged perpetrators to generate profits in other trading accounts.

Closer to home, Chair Clayton’s statement also described how an intrusion into the SEC’s EDGAR system detected in 2016 “may have provided the basis for illicit gain through trading”<sup>64</sup> and cited the results of a 2014 internal review by the SEC’s Office of Inspector General, which found that “certain SEC laptops that may have contained nonpublic information could not be located” and identified “instances in which SEC personnel have transmitted nonpublic information through non-secure personal email accounts.”

In April 2015, the SEC’s Division of Investment Management issued staff guidance (Staff Cybersecurity Guidance)<sup>65</sup> to highlight the importance of cybersecurity and to discuss measures for funds and advisers to consider when addressing cybersecurity risks. Among other recommendations, the Staff Cybersecurity Guidance recommended that funds and advisers consider the implementation of strategies designed to prevent, detect and respond to cybersecurity threats, which could include: (a) controlling access to systems and data via management of user credentials, authentication and authorization methods, firewalls and/or perimeter defenses, tiered access to sensitive information and network resources, network segregation and system hardening; (b) data encryption; (c) protecting against the loss or exfiltration of sensitive data by restricting the use of removable storage media and deploying software that monitors technology systems for unauthorized intrusions, the loss or exfiltration of sensitive data or other unusual events; (e) data backup and retrieval; and (f) the development of an incident response plan. The Staff Cybersecurity Guidance also noted the potential value of routine testing in enhancing the effectiveness of cyber defense strategies.

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<sup>63</sup> Available at <https://www.sec.gov/news/public-statement/statement-clayton-2017-09-20>.

<sup>64</sup> In a follow-up statement issued on October 2, 2017, Chairman Jay Clayton announced that subsequent SEC staff investigations had determined that the EDGAR test filing accessed by third parties as a result of that intrusion contained the names, dates of birth and social security numbers of two individuals. See <https://www.sec.gov/news/press-release/2017-186>

<sup>65</sup> See Cybersecurity Guidance, IM Guidance Update (Apr. 2015), available at <http://www.sec.gov/investment/im-guidance-2015-02.pdf>.

What does the Proposal suggest the Applicants' will do to address the Funds' elevated risk of loss or theft arising from the daily dissemination via electronic media of highly valuable confidential portfolio holdings information across a broad network of AP Representatives, Fund service providers and oversight authorities? Virtually nothing.

The Proposal provides only that the Funds intend to obtain representations from AP Representatives "as to the effectiveness of information barriers."<sup>66</sup> There is no suggestion that other entities with daily access to confidential Fund holdings information would be required to make similar representations. Nor do any of the Proposal Documents give even the merest hint that a Fund would do anything to ensure that the AP Representatives' representations regarding information barriers and data security are reasonably based or effective in practice.

Conclusion. As the discussion in this section amply demonstrates, the confidentiality of each Fund's current portfolio holdings information on an ongoing basis is far from ensured, and would be subject to compromise at any time. Whether through reverse engineering based on analysis of VIIVs and other publicly disseminated Fund information, detection of trading patterns in Confidential Accounts, the misappropriation, loss or theft of privately disclosed portfolio holdings information, or other means of discovery, the ongoing security of each Fund's proprietary investment strategy would be at significant risk.

Unless the Applicants can demonstrate that the Proposal incorporates robust defenses against *every plausible means* by which a Fund's confidential portfolio holdings information could be used by other market participants to harm Fund shareholders, any claimed advantage for the Funds over existing active ETFs (and therefore any claimed public purpose) is invalid. Given the Funds' proposed structure and method of operation, I do not believe it is possible for the Applicants, or anyone else, to adequately ensure the ongoing confidentiality of each Fund's portfolio holdings information. For this reason, as well as the many others described in this letter, the Proposal should not be approved.

**3. The Proposal violates principles and guidance of federal securities law opposing the selective disclosure of material, non-public information.**<sup>67</sup>

In 2004, the Commission issued guidance for the selective disclosure of portfolio holdings information by registered open-end funds, reflecting the Commission's broader policy concerns relating to the use of selectively disclosed material information for trading purposes.<sup>68</sup> In the adopting release for the amendments to Form N1-A (2004 N1-A Amendments), the Commission provided that "divulging nonpublic portfolio holdings to selected third parties is permissible only when the fund has legitimate

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<sup>67</sup> For additional discussion of selective disclosure securities law compliance issues raised by the Proposal, see comment letter of Professor Kevin S. Haeblerle (December 15, 2017) at pages 13-19. Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2808360-161694.pdf>.

<sup>68</sup> In the proposing release for proposed amendments to Form N-1A, the Commission expressed concern about "the misuse of material, nonpublic information that may occur when [a registered open-end] fund's portfolio holdings are selectively disclosed and professional traders are given the opportunity to use this information to their advantage to the detriment of fund shareholders." See Investment Company Act Release No. 26287 (December 11, 2003).

business purposes for doing so and the recipients are subject to a duty of confidentiality, *including a duty not to trade on the nonpublic information* [emphasis added].”<sup>69</sup>

The adopting release to the 2004 N1-A Amendments provides examples of “instances in which selective disclosure of a fund’s portfolio securities may be appropriate, subject to confidentiality agreements *and trading restrictions* [emphasis added], include disclosure for due diligence purposes to an investment adviser that is in merger or acquisition talks with the fund’s current adviser, disclosure to a newly hired investment adviser or sub-adviser prior to commencing its duties, or disclosure to a rating agency for use in developing a rating.” The adopting release also notes that the “circumstances in which the fund may have legitimate business purposes for entering into an arrangement to selectively disclose its portfolio holdings information *typically would be limited* [emphasis added]. In most cases, these arrangements would be *with a relatively small number of service providers to the fund* [emphasis added].”<sup>70</sup>

What the Funds propose is very different from the kinds of selective disclosures of fund holdings information that are permissible under the 2004 N1-A Amendments guidance. Most obviously, the confidentiality agreements to be entered into by AP Representatives in receipt of a Fund’s current portfolio holdings information would not include “a duty not to trade on the nonpublic information.” Not only would AP Representatives not be obligated to avoid trading on the selectively disclosed portfolio holdings information, the *express purpose* of the whole Confidential Account arrangement is to enable AP Representatives to trade in the selectively disclosed Creation Basket securities on behalf of Authorized Participants. Moreover, the Funds’ proposed selective disclosures of confidential portfolio holdings information are very different from the examples of permissible activities cited in the adopting release to the 2004 N1-A Amendments: occurring on a continuous daily basis (rather than only under limited circumstances); to a potentially large (rather than relatively small) number of recipients; to AP Representatives and Fund service providers (rather than only to service providers); and expressly for trading (rather than to meet fund service obligations or for due diligence purposes).

In the Staff Letter responding to the Applicants’ Second Proposal, the Commission staff expressed significant reservations regarding the proposed private communication of confidential Fund information to support trading in the Fund’s underlying portfolio 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 [Investment Company] 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.”<sup>71</sup>

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<sup>69</sup> See Investment Company Act Release No. 26418 (April 16, 2004).

<sup>70</sup> *ibid.*

<sup>71</sup> See Staff Letter at page 4-5.

The Commission's longstanding opposition to the selective disclosure of material, non-public information for trading purposes is broadly expressed in Regulation FD. Promulgated by the Commission in 2000, Regulation FD seeks to ensure that material, non-public information released to the marketplace is made available to all market participants at the same time. In particular, Regulation FD provides that "whenever an issuer, or any person acting on its behalf, discloses any material nonpublic information regarding that issuer or its securities to any person described in paragraph (b)(1) of this section, the issuer shall make public disclosure of that information."<sup>72</sup> The referenced paragraph (b)(1) includes any person outside the issuer who is, or associated with, a broker or dealer.

In a broad, bright-lined manner, Regulation FD seeks to restrict the uneven distribution to the market of material, non-public information and to prevent asymmetrically informed trading from occurring. While registered open-end funds are not directly subject to Regulation FD, the adopting release to the 2004 N1-A Amendments makes clear the Commission's intent to hold them accountable to similar, if not more demanding, standards for the dissemination and use of material, non-public information as apply to other issuers of securities. Moreover, while Regulation FD does not apply to ETFs directly, it does apply indirectly through the listing exchanges' requirement that ETFs must disclose material, non-public information in a Regulation FD-compliant manner.

Similar to the guidance in the 2004 N1-Amendments adopting release, Regulation FD provides carve-outs to permit disclosures of material, non-public information for certain purposes under a duty of confidentiality. But these exclusions were clearly not intended to authorize the transmittal of material, non-public information to broker-dealers to permit them to trade on confidential information about which the rest of the market remains ignorant. With respect to the Proposal, it strikes me as inconceivable that the drafters of Regulation FD would view the proposed selective disclosure of a Fund's confidential portfolio holdings information to broker-dealers for use in trading as falling outside what the regulation was intended to prevent.

Conclusion. On its face, the proposed disclosure of the Funds' confidential portfolio holdings information to AP Representatives for use in trading on behalf of Authorized Participants violates the clear requirements for selective disclosure of portfolio holdings by registered open-end funds set forth in the adopting release to the 2004 N1-A Amendments. Moreover, the proposed arrangement violates foundational principles of federal securities law opposing selective disclosure of material, non-public information for trading purposes as expressed in Regulation FD. Accordingly, the Proposal should be deemed illegal and not approved.

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<sup>72</sup> Available at <https://www.sec.gov/rules/final/33-7881.htm>.

**4. The Proposal facilitates illegal insider trading in the Funds' portfolio securities to the detriment of Fund shareholders.**<sup>73</sup>

In addition to violating federal securities law prohibitions against selective disclosure of material, non-public information for trading purposes, the Proposal facilitates, indeed *encourages*, the illegal insider trading activities that the selective disclosure laws are designed to prevent.

The Filing provides that each Fund will disclose to AP Representatives, before the commencement of trading in Fund 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.”<sup>74</sup> Each Fund’s confidential portfolio holdings information would also be provided each Business Day to the Investment Adviser, the Sub-Adviser (for sub-advised Funds), the Custodian, the Calculation Engine operators, the Pricing Verification Agent, the Exchange and FINRA.

According to the Filing, “each service provider that has access to the identity and weightings of securities in a Fund’s Creation Basket or portfolio securities . . . shall be restricted contractually from disclosing that information to any other person, or using that information for any purpose other than providing services to the Fund.”<sup>75</sup> The Exemptive Application provides that “in selecting entities to serve as AP Representatives, a Fund will obtain, both initially and each year thereafter, representations from the entity related to the confidentiality of the Fund’s Creation Basket and portfolio securities, the effectiveness of information barriers, and the adequacy of insider trading policies and procedures.”<sup>76</sup>

In addition to their contractual obligations not to trade based on disclosures of a Fund’s confidential portfolio holdings information except as authorized, each AP Representative and Fund service provider has the same obligation under federal securities law: any trading (or tipping of others for trading) in a Fund’s portfolio securities (whose identity constitutes material, non-public information) except as authorized by the Fund while in possession of the Fund’s confidential portfolio holdings information constitutes illegal insider trading subject to criminal and civil prosecution.

For the AP Representatives, the only authorized use of a Fund’s confidential portfolio holdings information would be to execute trades in Creation Basket securities on behalf of Authorized Participants for the narrow purpose of facilitating their purchases and redemptions of Creation Units of Fund shares. Crucially, under case law and Rule 10b-5, any trading by an AP Representative in any of the Creation Basket securities while in possession of a Fund’s confidential portfolio holdings information would be treated as trading on the basis of the disclosed holding information — and, thus, illegal, if for any customer other than an Authorized Participant or for any purpose other than facilitating an Authorized Participant’s creations and redemptions.

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<sup>73</sup> For additional discussion of insider trading law compliance issues raised by the Proposal, see comment letter of Kevin S. Haeberle (December 15, 2017) at pages 5-13 and Professor Haeberle’s subsequent comment letter dated February 16, 2018 in its entirety. Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2808360-161694.pdf> and <https://www.sec.gov/comments/sr-nysearca-2018-04/nysearca201804-3110867-161909.pdf>.

<sup>74</sup> See Filing at page 12.

<sup>75</sup> *ibid* footnote 21 at pages 18-19.

<sup>76</sup> See Exemptive Application footnote 10 at page 12.

To comply with federal securities law (and contractual “fire wall” requirements), all of an AP Representative’s Confidential Account trading must be conducted through dedicated CA Traders who are walled off from their trading desk colleagues with respect to each of the Creation Basket securities. In addition, the CA Traders for any given Fund could not serve as CA Traders for any other Fund, and effective walls would need to be maintained between the CA Traders of different Funds.<sup>77</sup> If a CA Trader were, intentionally or unintentionally, to: (a) trade in any of a Fund’s Creation Basket securities other than for a Confidential Account holder of that Fund; (b) trade in any of a Fund’s Creation Basket securities for a Confidential Account holder for any purpose other than facilitating creations and redemptions of Fund shares; (c) divulge the identity of any Creation Basket securities to anyone else who then trades in those securities; or (d) use information discerned from the disclosed Fund portfolio holdings to influence how or with whom the CA Trader executes trades on behalf of Confidential Account holders in a manner that adversely affects the Confidential Account holder’s trade execution quality, *any of these transactions would constitute illegal insider trading.*

From the above, it should be clear that even the best-intentioned and most compliance-oriented of AP Representatives will be challenged to continuously avoid illegal insider trading by their trading staffs. Placing a large amount of material, non-public (and highly valuable) trading information into the hands of potentially large groups of traders on a daily basis, and forcing them to abide by a narrow set of procedures to avoid illegal insider trading, seems a recipe for bad outcomes.

Beyond the demanding technical requirements and heavy compliance burden for AP Representatives to avoid violations of the insider trading laws, there are other reasons for concern. These include the large number of organizations (AP Representatives, Fund service providers and oversight authorities) whose employees would have daily access to the Fund’s confidential portfolio holdings information, the value of such information for trading purposes and the absence of any discernible program for any of the Applicants to monitor recipients of a Fund’s confidential portfolio holdings information to ensure that neither they nor any of their employees use such information for trading other than as authorized by the Fund.

The challenge that the Proposal poses for maintaining compliance with the federal securities laws against insider trading is clear enough, even if all parties involved are scrupulously honest. Unfortunately, the compliance history of the securities industry demonstrates clearly that scrupulous honesty on the part of all market participants cannot be assumed. The Proposal would offer employees of AP Representatives, Fund service providers and oversight authorities ongoing daily opportunities to trade illegally for personal profit, which could prove tempting.

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<sup>77</sup> An AP Representative could not employ the same CA Traders to serve Confidential Accounts of multiple Funds, unless such Funds would never hold any securities in common, which could not be assured. If the same CA Traders were to serve two or more Funds that hold any of the same securities, their customer obligations could require the CA Traders to buy or sell the Funds’ overlapping securities on the same Business Day for Authorized Participants of multiple Funds. Under the “possession equals use” doctrine of federal securities law, permitted trading in any security for which the trader holds material, non-public information is limited to purposes authorized by the source of the material, non-public information (here, a Fund). Because authorized use of a Fund’s confidential portfolio holdings information by a CA Trader would include only Creation Basket securities trades to facilitate creations and redemptions of the Fund’s shares, any trading by a CA Trader in any of a Fund’s Creation Basket securities for any other purpose (including creation/redemption facilitating trades for other Funds) would constitute illegal insider trading. If CA Traders within the same AP Representative firm serving different Funds are not effectively walled off from each other, any trading in the Funds’ overlapping Creation Basket securities would also constitute illegal insider trading.

The Proposal is silent on whether or how a Fund would seek to ensure that AP Representatives and other recipients of the Fund's confidential portfolio holdings information will maintain compliance with their contractual obligations and securities law requirements not to engage (nor to assist others) in unauthorized trading in Fund portfolio holdings. How a comprehensive surveillance or compliance assurance system that might be employed by the Funds could work effectively is hard to envision.

In the proposing release to the 2004 N1-A Amendments, the Commission sought "to reinforce funds' and advisers' obligations to prevent misuse of material, non-public information."<sup>78</sup> Operating as described in the Proposal, the Funds would fail their duty to "prevent misuse of material, non-public information" by disclosing their confidential portfolio holdings information on a daily basis: (a) to AP Representatives for trading purposes, in direct conflict with the Commission's guidance set forth in the adopting release to the 2004 N1-A Amendments; and (b) to AP Representatives, Fund service providers and oversight authorities without having in place a robust compliance monitoring program to ensure that the disclosed information is not used in a manner harmful to Fund shareholders. Because the Funds would not (and, likely, could not) effectively monitor all the recipients of their confidential portfolio holdings information, the Funds would have no way of ensuring that their selectively disclosed confidential information is not used in a manner harmful to shareholders.

Given Funds' and Advisers' fiduciary duty to shareholders, merely requiring the recipients of a Fund's confidential portfolio holdings information to periodically attest to their compliance with confidentiality and trading restriction agreements in place is grossly insufficient. Duty requires far more than that. The adopting release to the 2004 N1-A Amendments makes clear the Commission's views on this point:

We reemphasize, as we stated in the Proposing Release, that [a registered open-end fund] or investment adviser that discloses the fund's portfolio securities may only do so consistent with the antifraud provisions of the federal securities laws and the fund's or adviser's fiduciary duties.<sup>79</sup>

Conclusion. The proposed disclosure on a current daily basis of the Funds' portfolio holdings to AP Representatives, Fund service providers and oversight authorities and the absence of any discernible Fund program to monitor these organizations and their employees to ensure that the Fund's confidential information is protected and not misused, facilitates and encourages illegal insider trading on a potentially grand scale. Because they would not, and could not, protect Fund shareholders from harm resulting from misuse of selectively disclosed portfolio holdings information, the Funds and their Advisers would violate their fiduciary duty. For this reason, as well as the many others described in this letter, the Proposal should not be approved.

##### **5. The normal tax benefits of ETF investing will likely not apply to the Funds.**<sup>80</sup>

Among the most widely recognized and highest-value benefits of investing in ETFs is tax efficiency. Indeed, the Exemptive Application cites "enhanced tax efficiency" prominently among the "significant advantages" of the Funds over traditional mutual funds.<sup>81</sup> The Funds' asserted tax

<sup>78</sup> See Investment Company Act Release No. 26287 (December 11, 2003).

<sup>79</sup> See Investment Company Act Release No. 26418 (April 16, 2004).

<sup>80</sup> The below discussion and analysis is based on advice of tax counsel engaged by Eaton Vance.

<sup>81</sup> See Exemptive Application at page 6. Most mutual funds rarely, if ever, employ in-kind redemptions.

advantages appear to derive solely from the proposed use of in-kind distributions of portfolio securities to meet shareholder redemptions. None of the descriptions of the Funds' investment strategies set forth in the Registration Statement suggest that the Funds will employ other means to minimize or defer shareholder taxes.

The Funds' potential tax advantages would, if realized, depend on the application of Section 852(b)(6) of the Internal Revenue Code (IRC) to the proposed use of in-kind redemptions. Section 852(b)(6) is applicable to regulated investment companies (RICs), which tax status the Registration Statement represents that the Funds intend to elect and qualify for each year.<sup>82</sup>

Section 852(b)(6) "turns off" the general gain realization rule for dispositions of appreciated property when a RIC makes a distribution "in redemption of its stock upon the demand of the shareholder." This provides a tax advantage for RICs that meet redemptions in kind. Such funds can effect redemptions using appreciated securities without realizing the built-in gains on the distributed securities. As a result, in-kind redemptions reduce the built-in gains that will ultimately be taxed to the fund or its shareholders. As described in the Filing, "a Fund 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."<sup>83</sup>

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 redeeming shareholders of existing ETFs know the identity of the fund assets used to effect their redemptions and have complete control over the receipt, holding and disposition of those assets, shareholders redeeming from the Funds would not be permitted to receive the assets directly and would be intentionally kept ignorant of the redemption proceeds. Instead, all Fund redemptions would be required to be effected by Authorized Participants through a Confidential Account on their behalf held with an AP Representative serving "as an agent between a Fund and each Authorized Participant and act[ing] as a broker-dealer on behalf of the Authorized Participant."<sup>84</sup>

An Authorized Participant would be limited in the selection of its AP Representative to broker-dealer affiliates of the "list of banks and trust companies that have signed confidentiality agreements with the Fund."<sup>85</sup> In selecting entities eligible to serve as AP Representatives, the Funds would require annual representations "related to the confidentiality of the Fund's Creation Basket and portfolio securities, the effectiveness of information barriers, and the adequacy of insider trading policies and procedures."<sup>86</sup> The Funds would require the Confidential Account agreement between each Authorized Participant and its AP Representative to include the stipulation that all redemption proceeds must be

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<sup>82</sup> See Registration Statement at page 26 of the Statement of Additional Information.

<sup>83</sup> See Filing at page 22.

<sup>84</sup> See Exemptive Application at page 11 and Filing at page 19. Like other ETFs, Fund shareholders that are not Authorized Participants would be permitted to redeem shares only in transactions through Authorized Participants.

<sup>85</sup> See footnote 33 of the Exemptive Application at page 19 and footnote 26 of the Filing at page 22.

<sup>86</sup> See footnote 12 of the Exemptive Application at page 12 and footnote 22 of the Filing at page 19.

sold on the same day as distributed,<sup>87</sup> and a requirement for the AP Representative to “obfuscate” the sale of the distributed assets “by use of tactics such as breaking the [sale] into multiple [transactions] and transacting in multiple marketplaces.”<sup>88</sup> Reflecting these requirements, redeeming Fund shareholders would, in practice, have only very limited control over the disposition of the proceeds of their redemptions.

Tax Analysis. When a corporation (including a RIC) 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.<sup>89</sup>

A number of factors present in the Proposal would likely lead the IRS to characterize the Funds’ in-kind distributions as sales by the Funds, which would eliminate the normal tax benefit provided under IRC Section 852(b)(6). For the Funds’ redeeming shareholders, an immediate sale of the distributed securities is both a requirement under the terms of the Confidential Account agreements and also arguably a foregone conclusion due to the blind nature of the distribution arrangement. While in form a redeeming Authorized Participant would instruct its AP Representative as to the disposition of the distributed assets, in substance the shareholder would exercise little meaningful choice. Given the AP Representative’s joint duties to the Fund and the Authorized Participant, 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 minimize realized capital gains and to remove low-basis holdings from the Fund’s portfolio, which benefit the Filing and Exemptive Application promote. 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 in selecting the entities eligible to serve as AP Representatives, the Fund-imposed terms and conditions of the Confidential Account agreements dictating the timing and manner of sale of the distributed assets, and the ongoing contractual relationship that would exist between the Fund and each AP Representative. The entire Confidential

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<sup>87</sup> See Exemptive Application at page 11 and footnote 12 of the Filing at page 12. “The Confidential Account will be liquidated daily, so that the account holds no positions at the end of the day.”

<sup>88</sup> See Exemptive Application at page 11 and Filing at pages 17 and 21.

<sup>89</sup> 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 significant manner” in the shareholder’s sale of the distributed assets by negotiation, prior agreement, post-distribution activities or otherwise.

Account and AP Representative arrangement is constructed by the Funds for their own benefit, and redeeming shareholders would have no choice other than to redeem through the specified arrangement.

Conclusion. There is a high likelihood that the Funds' in-kind distributions of portfolio securities will be treated by the IRS as a sale of the securities by the Fund followed by a distribution of cash, thereby negating the normal tax advantages to an ETF (or other RIC) of redeeming in kind. I doubt that any reputable tax counsel would provide the Applicants with an opinion that the Proposal's asserted tax benefits from using in-kind redemptions are likely to be attainable. I also believe it is highly unlikely that the IRS would grant a ruling (Private Letter Ruling) assenting to the proposed tax treatment of the Funds' in-kind distributions.

The Applicants' claims that the Funds would provide "an enhanced ETF product" and "enjoy the same efficiencies as existing ETFs" depend critically on the availability of in-kind redemptions as a tax-management tool for the Funds on the same basis as used today by existing ETFs.<sup>90</sup> Irrespective of the Proposal's other shortcomings, if the Funds cannot deliver the normal tax advantages of ETFs, I find it hard to see how they provide sufficient net investor benefit to warrant approval.

As a minimum condition for the Commission to give the Proposal serious consideration – let alone approval – the Applicants should be required to receive a Private Letter Ruling affirming the Applicants' asserted tax treatment of the Funds' in-kind distributions. If, as I expect, the IRS will not grant a favorable Private Letter Ruling, the Commission should not consider approving the Proposal.

**6. The secondary market trading performance of Fund shares will not meet the requirements for exemptive relief or marketplace expectations for ETFs.**

Background on ETF Trading. Almost all ETFs registered under the Investment Company Act are regulated as open-end funds.<sup>91</sup> Registered open-end funds normally are legally required, except under extraordinary circumstances, 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 assurance that a reliable mechanism exists to ensure that an ETF's investors will have the ongoing ability to sell their shares at prices that closely approximate NAV. Such a mechanism is deemed essential because ETFs, unlike other registered open-end funds, do not issue or redeem their individual shares at NAV. In granting relief from section 22(d) of the Investment Company Act and rule 22c-1 thereunder, the Commission relies upon assurance of a close tie between the prices at which retail investors may transact in the secondary market and the NAV at which Authorized Participants may directly purchase and redeem shares to make the finding that the ETF's shareholders are being treated equitably. By similar reasoning, the Securities Exchange Act requirement that an exchange's rule changes must be designed to not permit unfair discrimination among market participants is met when an ETF proposed for listing and trading is ensured of trading in the secondary market at prices close to NAV.

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<sup>90</sup> See Exemptive Application at page 29.

<sup>91</sup> A handful of the earliest index ETFs were structured as unit investment trusts, rather than open-end funds. All new ETFs introduced since 2000, and all actively managed ETFs, are structured as open-end funds.

In the exemptive relief and listing and trading approvals 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 normally keeps 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 exposures as they build short or long inventory positions in ETF shares through intraday trading. Transacting in a correlated hedge portfolio may be easier to implement or more cost effective for a market maker than buying or selling 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.

ETF Trading Performance. Awareness of the strengths and weaknesses of current ETF trading has significantly advanced over the past three years. In June 2015, the Commission issued a request for public comment on ETF trading and related topics (June 2015 Request for Comment on ETFs),<sup>92</sup> which generated 40 responses from a range of industry observers.<sup>93</sup> 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.

On August 24, 2015, the U.S. equity markets and related futures markets experienced extraordinary 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 many experiencing wide swings in intraday prices and trading pauses triggered by the automated halts built into the National Market System Plan

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<sup>92</sup> 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>

<sup>93</sup> Comment letters received available at <https://www.sec.gov/comments/s7-11-15/s71115.shtml>.

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),<sup>94</sup> 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 percent of U.S. Equity ETPs experiencing at least one LULD halt and a mean intraday high-low trading range of 19.2 percent. 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 percent. Any illusion that U.S. equity ETFs always trade smoothly and predictably was shattered that day.

In 2016, *The Journal of Portfolio Management* published an article<sup>95</sup> that I co-authored with James Angel and Todd Broms, “ETF Transaction Costs Are Often Higher than Investors Realize” (Angel, Broms and Gastineau Paper). The article described the high trading costs that investors frequently pay to buy and sell ETFs and highlighted the significant, and often unrecognized, contribution to ETF trading costs of variations in premiums/discounts to NAV.

In 2017, *Financial Analysts Journal* published an article<sup>96</sup> by Antti Petajisto describing the results of a comprehensive study of ETF trading efficiency over the 2008-2014 period, “Inefficiencies in the Pricing of Exchange-Traded Funds” (Petajisto Study). The Petajisto Study estimated the wealth transfer from less sophisticated individual investors to more sophisticated institutional investors in connection with ETF trading costs at almost \$20 billion a year,<sup>97</sup> more than three times the annual operating costs of all ETFs combined, as reflected in their total expense ratios.

As identified in the Petajisto Study, 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 to this letter are summaries of two measures of the contribution of premiums/discounts to equity ETF investor trading costs for the years 2008 to 2017.<sup>98</sup> 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

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<sup>94</sup> Available at [https://www.sec.gov/marketstructure/research/equity\\_market\\_volatility.pdf](https://www.sec.gov/marketstructure/research/equity_market_volatility.pdf).

<sup>95</sup> Angel, J.J., Broms, T.J. and Gastineau, G.L., 2016. “ETF Transaction Costs Are Often Higher than Investors Realize.” *Journal of Portfolio Management*. 42(3) 55-65. Reprints available at [dpalmeiri@iijournals.com](mailto:dpalmeiri@iijournals.com).

<sup>96</sup> Petajisto, Anti, 2017. “Inefficiencies in the Pricing of Exchange-Traded Funds.” *Financial Analyst Journal*. 73(1) 24-54. Available at <https://www.cfainstitute.org/learning/products/publications/faj/Pages/faj.v73.n1.7.aspx>.

<sup>97</sup> *ibid* at pages 27.

<sup>98</sup> 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 contribution of bid-ask spreads and applicable commissions to ETF investor trading costs is not reflected in Exhibits 1 and 2.

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, the contribution of premiums/discounts to equity ETF trading costs varies 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 low-volatility market environment of 2017, 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 2-3 bps. At the other extreme, in the highly volatile 2008 market environment, investors in numerous equity ETF categories experience average (absolute value) closing premiums/discounts and average premium/discount volatility of more than 100 bps.

Although the contribution of premiums/discounts to equity ETF trading costs has declined from the highs of 2008, the study results indicate that economically significant trading costs still exist across numerous ETF categories, including categories with large assets. As an example, in 2016 investors in diversified emerging market equity index ETFs experienced average (absolute value) closing premiums/discounts of 51 bps AW and 58 bps VW, and average premium/discount volatility of 63 bps AW and 73 bps VW.

In support of prior versions of the Proposal, the Applicants have asserted<sup>99</sup> 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 correspond 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 the premium/discount experience 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 years studied (2008-2017), 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

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<sup>99</sup> See 2017 Filing at pages 42-43. “[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 arbitrated 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.” Available at <https://www.nyse.com/publicdocs/nyse/markets/nyse-arca/rule-filings/filings/2017/NYSEArca-2017-36,%20Re-file.pdf>.

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 all U.S. equity categories over all years.*

I attribute the observed higher trading costs of actively managed equity ETFs versus equity index ETFs primarily 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.

The Funds' Proposed Arbitrage Mechanism. Different from all actively managed ETFs approved to date, the Proposal does not include a requirement or expectation for the Funds to disclose their full current portfolio holdings<sup>100</sup> 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 approach than used by existing ETFs to seek alignment of secondary market trading prices of Fund shares and corresponding 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 seek to identify when Fund shares are trading sufficiently above or below the underlying value of the Fund's net assets to create arbitrage profit opportunities; (b) when buying and selling Fund shares, entering into Macro Hedges to partially offset the market risk exposures of their (long or short) Fund share positions; (c) when accumulating Creation Unit-sized positions (long or short) in Fund shares, entering into irrevocable orders (through Authorized Participants, for execution on their behalf by AP Representatives in Confidential Accounts) to redeem or purchase Creation Units of Fund shares at the close of the current Business Day; and (d) when redeeming or purchasing Creation Units of Fund shares, adjusting Macro Hedge position sizes corresponding to the value of the Fund shares delivered or received. According to the Applicants, "the real-time dissemination of a fund's VIIV, together with the right of APs 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."<sup>101</sup>

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<sup>100</sup> 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.

<sup>101</sup> See Filing at page 34.

The proposed approach to seeking alignment of market trading prices of Fund shares with underlying Fund values described in the Filing and Exemptive Application (as summarized above) removes a key element of the proposed arbitrage mechanism of the Applicants' Third Proposal and earlier versions of the Proposal — so-called "Bona Fide Arbitrage." As described in the Applicants' Third Proposal, Authorized Participants, Non-Authorized Participant Market Makers and other arbitrageurs could establish and maintain Confidential Accounts with "Trusted Agents" (now AP Representatives) through which they could buy, sell and hold aggregate positions in the Fund's underlying securities on a blind basis. As formerly provided, market makers and other arbitrageurs could establish and maintain closely hedged positions in Fund shares by adjusting their short or long positions in the Fund's underlying securities held through Confidential Accounts as they buy and sell Fund shares (Bona Fide Arbitrage). Under the current Proposal, without the ability to engage in Bona Fide Arbitrage, market makers will now be forced to rely on *much less precise* Macro Hedges to attempt to hedge their positions in Fund shares. In the Proposal as it now stands: (a) Confidential Accounts would be available only to Authorized Participants (and not Non-Authorized Participant Market Makers or other arbitrageurs); (b) transactions through Confidential Accounts would be limited to irrevocable orders to redeem and purchase Creation Units of Fund shares; and (c) all securities position in Confidential Accounts must be closed out at the end of each Business Day.

Eliminating Bona Fide Arbitrage from the Proposal exposes market makers to additional costs and risks that, without question, will cause Fund shares to trade worse (*i.e.*, with wider bid-ask spreads and more variable premiums/discounts) under the current Proposal than its predecessors. On an overall basis, for the reasons detailed below, it is clear that market makers will face significant impediments to successfully arbitraging Fund shares, leading the Funds to trade at substantially wider bid-ask spreads and more variable premiums/discounts than actively managed ETFs available today.

Reliance on VIIVs. A key component of the Applicants' proposed approach to maintain price-value alignment of Fund shares is disseminating VIIVs at one-second intervals throughout the Exchange's Core Trading Session each Business Day. The Applicants assert that the VIIVs 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 the IIVs of existing ETFs; (b) employ at least two different Calculation Engines to calculate intraday values; (c) engage a Pricing Verification Agent to continuously compare the intraday values from each Calculation Engine on a real-time basis; (d) institute a trading halt in Fund shares whenever the intraday values from different Calculation Engines differ by at least 25 bps for 60 or more seconds; (e) generally value securities held by each Fund based on the midpoint between the current national best bid and offer quotations rather than last sale price (which may update less frequently); (f) for securities subject to pending corporate actions, base VIIVs on positions held as of the beginning of the current Business Day (rather than at the close of the prior Business Day); (g) whenever the market quotations for a security are determined not to be a reliable basis for calculating VIIVs, convene a meeting of the Fund's Fair Valuation Committee to "make a good faith pricing determination using a methodology approved by the Board of the Fund" and generally apply such fair values to the security in subsequent VIIV

calculations;<sup>102</sup> (h) seek 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;”<sup>103</sup> (i) 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; (j) disclose on each Fund’s website the specific methodology for calculating VIIVs; and (k) 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.

Different from the description of the VIIV calculation methodology in the Applicants’ Third Proposal, the current Proposal: (a) does not provide for the Funds to source intraday price quotations of each portfolio security from at least two independent sources (the same Consolidated Quote System (CQS) data streams would be used by each Calculation Engine); (b) does not require the provider of price quotations 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;”<sup>104</sup> and (c) does not assert the pricing source’s and Pricing Verification Agent’s legal liability for losses attributable to its negligence.<sup>105</sup>

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 Commission’s 2008 proposed ETF rule,<sup>106</sup> 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.”<sup>107</sup>

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 today use to identify arbitrage opportunities and to manage their risk of holding ETF positions. 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.

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<sup>102</sup> See Exemptive Application at pages 25-26. “In cases where the fair value price of the security is materially different from the most recent quoted price and the Adviser has 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.”

<sup>103</sup> *ibid* at pages 24-25.

<sup>104</sup> See File No. 812-14405 dated May 2, 2017 (May 2017 Exemptive Application) at page 12.

<sup>105</sup> *ibid*. “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.”

<sup>106</sup> See Release Nos. 33-8901 and IC-28193; File No. S7-07-08 (March 11, 2008).

<sup>107</sup> 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>).

Compared to the Funds' proposed VIIVs, the intraday ETF 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 establish initial NAVs in a range of \$20-60 per share.<sup>108</sup> One cent on \$20 is 5 bps; one cent on \$30 is 1.7 bps. ETF market makers generally calculate their internal valuations to a precision of a *fraction of a basis point*. Truncating the precision of a Fund's VIIV disclosures to as much as 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 CQS 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 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 CQS 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 for most purposes, 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, often much faster 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

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<sup>108</sup> See Exemptive Application at page 15.

VIIVs raises suspicion that Fund VIIVs may routinely update with economically meaningful delays.<sup>109</sup>

- *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 16 cents a share on a \$20-60 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 proposed VIIV verification process will be unable to detect most foreseeable source of erroneous values.* In calculating VIIVs, each Calculation Engine would use the exact same pricing source (CQS) and the exact same source of current portfolio holdings (the Custodian). As now proposed, the Applicants' vaunted "verification" process is little more than a check that two calculators do math the same way. Valuation discrepancies caused by errors in either the portfolio holdings file or CQS quotations would not be detected by the proposed verification process.
- *Corporate actions in a Fund's portfolio securities may cause VIIV errors.* The Filing provides that corporate actions (mergers, stock splits, spinoffs, dividends and the like) in a Fund's portfolio securities will be reflected in VIIVs based on Fund holdings as of the opening of business on the current Business Day, rather than the close of the prior Business Day as for other Fund holdings. Because the timing and final outcomes of corporate actions cannot always be known in advance, the last-minute adjustments they can require may result in erroneous portfolio holdings files being disseminated to a Fund's Pricing Verification Agent, and therefore erroneous VIIVs being calculated. One of the (many) 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.
- *The Funds' 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 promptly notify an officer of the Adviser, who will in turn notify the Fund's Fair Valuation Committee. The Fair Valuation 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 most recent quoted price and the Adviser has 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

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<sup>109</sup> 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 CQS (see Exemptive Application at pages 23 and 24). Proprietary data feeds routinely update faster than CQS (that's why there is market demand for them).

the security.”<sup>110</sup> 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 fair estimates of the fund’s current underlying value far faster than the cumbersome Fund process outlined above.

- *Errors, delays and interruptions in the dissemination of VIIVs may expose market makers to unrecoverable losses.* One of the most significant constraints on the utility of existing ETF IIVs is that no responsible party stands behind the disseminated values – all parties involved disclaim liability. As an apparent advantage for VIIVs over existing ETF IIVs, the May 2017 Exemptive Application included statements attributing liability for the timeliness and accuracy of the VIIVs disseminated for each Fund variously to the Fund itself, the (former) Independent Pricing Agents and the Pricing Verification Agent,<sup>111</sup> *which statements have been removed from the current Proposal Documents.* In the Filing, the Exchange expressly disclaims liability for itself, its agents and the Reporting Authority relating to VIIVs.<sup>112</sup> In the Exemptive Application, the Fund expressly disclaims liability for “errors in the VIIV resulting from errors, omissions or interruptions of the data provided by the CQS.”<sup>113</sup> Taken as a whole, the ability of a market maker to successfully prosecute a claim for damages resulting from trading losses attributable to reliance on erroneous, delayed or discontinuous VIIVs is substantially unclear. 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 compensate for the risks assumed.

The Applicants acknowledge that “the ability of market participants to buy and sell Fund 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.”<sup>114</sup> 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 than they now have for existing ETFs. All else being equal (which it is 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 make the Funds especially prone to poor trading performance during periods of market stress and volatility.

Macro Hedging. With Bona Fide Arbitrage removed from the Proposal, the Applicants now propose that market makers would use “various trading methodologies such as statistical arbitrage”<sup>115</sup> to

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<sup>110</sup> See Exemptive Application at pages 25-26.

<sup>111</sup> See May 2017 Exemptive Application at page 12.

<sup>112</sup> See Filing at page 8.

<sup>113</sup> See Exemptive Application at pages 13-14.

<sup>114</sup> See Filing at page 35.

<sup>115</sup> *ibid* at page 12.

seek to offset the market risk exposures of the (long or short) positions in Fund shares they hold in connection with making markets. As described in the Filing, “market makers 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 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.”<sup>116</sup>

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 through this process is inherently limited.<sup>117</sup> Any Macro Hedges employed by a market maker against positions in Fund shares would be subject to significant basis risk. As market conditions change, even minute to minute within the same trading day, correlations among groups of securities can break down or disappear. As this happens, market makers will increasingly find themselves without an effective hedge, and with market exposures they did not intend and cannot measure. Like other elements of the Funds’ proposed arbitrage mechanism, restricting market maker hedging to imprecise Macro Hedges will contribute to the Funds trading especially poorly during periods of market stress and volatility.

Creations and Redemptions through Confidential Accounts. Under the Proposal, all purchases and redemptions of Creation Units of shares, and all trading in Creation Basket securities in connection with in-kind purchases and redemptions, would be required to be effected by Authorized Participants transacting through Confidential Accounts. Overseeing each Confidential Account would be an AP Representative selected by the Authorized Participants from a list of banks, trust companies and/or broker-dealers approved by the Fund. If the AP Representative is not a broker-dealer, it would be required to have an affiliated broker-dealer to trade on behalf of the Confidential Account holder. Non-Authorized Participant Market Makers and other arbitrageurs would not be permitted to establish or maintain Confidential Accounts, and could purchase and redeem Creation Units of Fund shares only in transactions through Authorized Participants.

The terms of each Funds’ Confidential Account agreements would provide that the AP Representative will not disclose the identity of the Creation Basket or any other identifying information regarding the portfolio securities of the Fund, except as required by law. Each AP Representative would be required to erect and maintain a “fire wall” between its personnel with access to a Fund’s confidential portfolio holdings information and all other broker-dealer personnel. The Funds would

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<sup>116</sup> *ibid* at page 13.

<sup>117</sup> This assumes that market makers will not be able to derive the actual composition of a Fund’s current portfolio from available information.

obtain, both initially and each year thereafter, representations from each AP Representative “related to the confidentiality of the Fund’s Creation Basket and portfolio securities, the effectiveness of information barriers, and the adequacy of insider trading policies and procedures.”<sup>118</sup> For reporting purposes, the books and records of each Confidential Account would be maintained by the AP Representative and provided or made available to the appropriate regulatory agency as required.

Before the commencement of market trading each Business Day, the AP Representatives of each Fund would be provided with (a) the names and quantities of the instruments constituting 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. Acting on execution instructions from an Authorized Participant that is its customer, an AP Representative would purchase or sell the Fund’s Creation Basket securities to effect irrevocable orders to purchase or redeem Creation Units of Fund shares on behalf of the transacting Authorized Participant. In its purchases and sales for Confidential Accounts, an AP Representative would be required to “obfuscate” the accounts’ trading activity “by use of tactics such as breaking the purchase [or sale] into multiple purchases and transacting in multiple marketplaces.” Each Confidential Account would be liquidated daily, “so that the account holds no positions at the end of day.”<sup>119</sup>

Although not discussed in the Proposal Documents, each AP Representative would be required to establish and implement special procedures for the handling of Creation Basket securities that are not eligible for trading (Restricted Securities) by one or more of its Confidential Account customers (and other investors on whose behalf those customers create and redeem Fund shares) (together, Restricted Traders). The AP Representative would be charged with ensuring that no Restricted Securities are distributed in redemption to any Restricted Trader, and that no purchases of Fund shares by any Restricted Trader would require the delivery of Restricted Securities, in each case substituting cash for the Restricted Securities. Careful coordination among the Funds, the AP Representatives and their (direct and indirect) Confidential Account holders would be necessary to meet Restricted Traders’ compliance obligations with respect to the Restricted Securities.

Compared to the usual manner in which Authorized Participants and other market makers effect in-kind purchases and redemptions of ETF shares, the proposed Confidential Account arrangement exposes Authorized Participants and other market makers to significant additional costs, risks and lost opportunities. These include:

- *Significant incremental costs will be required to operate Confidential Accounts, which AP Representatives will pass through to Authorized Participants and other market makers.* AP Representatives operating Confidential Accounts will be subject to significant incremental costs. To maintain compliance with “fire wall” obligations and federal securities law, each AP Representative will be required to employ one or dedicated CA Traders for each Fund, who would not be permitted to trade in any of the Fund’s Creation Basket securities for any other customer (including other Funds). Each Fund’s CA Traders must be isolated (physically and electronically) from all other broker-dealer personnel, and their activities must be monitored to ensure compliance with contractual agreements and securities laws requirements relating to the protection and use of material, non-public information. AP Representatives will be subject

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<sup>118</sup> See footnote 12 to the Exemptive Application at page 10.

<sup>119</sup> *ibid* at page 12.

to additional ongoing costs in connection with maintaining the books and records of Confidential Accounts and implementing procedures to prevent trading in Restricted Securities in Confidential Accounts. AP Representatives will surely seek to pass through to Authorized Participants their higher costs of operating Confidential Accounts. Competition among broker-dealers seeking to serve as AP Representatives is not likely to serve as a significant constraint on AP Representatives' ability to pass through their added costs.

- *No ability for Fund market makers to use their market knowledge and their positions in other securities to enhance the quality of their trade executions in Creation Basket securities.* Market makers don't manage their ETF creations and redemptions 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 creations and redemptions and related securities transactions. When transacting on a blind basis through Confidential Accounts, Fund market makers cannot use any market intelligence they have or any other positions they hold to enhance trade execution quality in the Creation Basket securities.
- *Less incentive for third-party service providers to trade Creation Basket securities expeditiously and with low market impact.* This is a classic agency problem. No AP Representative 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.
- *Limited flexibility and imposed constraints on how Creation Basket securities trades are executed.* Trades in Creation Basket securities through Confidential Accounts would be subject to significant constraints that could adversely affect trade execution quality, including the requirements for AP Representatives to "obfuscate" trades in Confidential Accounts and to liquidate all positions held in Confidential Accounts at the end of each Business Day.
- *Slower trade executions.* Given the more involved routing of trade instructions and trade orders that the Confidential Account structure would necessitate (particularly for Non-Authorized Participant Market Makers and other arbitrageurs), Creation Unit securities transactions through Confidential Accounts will almost certainly take longer, on average, for a market maker to execute than similar transactions that the market maker could execute internally. In trading, time is money.
- *No ability for Fund 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 no ability to monitor the performance of trades made on their behalf to ensure best execution.<sup>120</sup> No customer transparency means less trader accountability, and the likelihood of worse trading results.
- *Less efficient use of Authorized Participant net capital.* Broker-dealers are required by Rule 15c3-1 under the Securities Exchange Act to maintain at least a prescribed minimum amount of

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<sup>120</sup> See comment letter of Professor Kevin S. Haerberle (December 15, 2017) at pages 19-22 for a discussion of securities law issues arising from the Authorized Participants inability to ensure best execution of their trades through Confidential Accounts. Available at <https://www.sec.gov/comments/sr-nysearca-2017-36/nysearca201736-2808360-161694.pdf>.

net capital at all times, including throughout each Business Day on a “moment-to-moment” basis. In computing net capital, the securities positions held by broker-dealers are subject to “haircuts” ranging from 0 percent to 100 percent, depending on the security type and maturity. To compute its net capital on a continuous intraday basis, a broker-dealer must be able to determine both the value of each securities position held and the appropriate haircut for each, which is problematic for the Funds’ Authorized Participants with respect to their securities positions in Confidential Accounts. The Funds propose to address this by disclosing daily on their website “the maximum Securities Haircut applicable to the securities in a Creation Basket, as determined under Rule 15c3-1.”<sup>121</sup> These disclosures would not permit Authorized Participants to fully recognize the value of securities held through Confidential Accounts for purposes of meeting their broker-dealer capital requirements. One of the most precious assets of any broker-dealer is its regulatory capital; forcing Authorized Participant to employ their capital less efficiently is an added cost for them of transacting through Confidential Accounts.

On an overall basis, the Funds’ requirement that market makers transact on a blind basis through Confidential Accounts to effect trades in Creation Basket securities 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 Fund 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.

Share Trading Halts. The Filing and Exemptive Application describe specific circumstances under which, upon receipt of notice from a Fund or its agent, the Exchange would halt intraday trading in the Fund’s shares: (a) the Fund’s VIIVs are not being calculated and disseminated in one-second intervals; (b) the Fund’s Pricing Verification Agent has determined that the intraday indicative values calculated by different Calculation Engines vary by more than 25 bps for 60 second;<sup>122</sup> and (c) securities representing 10 percent or more of a Fund’s portfolio themselves become subject to a trading halt.<sup>123</sup> These “circuit breakers” are designed to prevent trading in Fund shares during periods in which VIIVs are unavailable or may be unreliable. The Filing also provides that the Exchange would have broad discretion to halt trading in Fund shares whenever otherwise deemed appropriate.<sup>124</sup>

Circumstances under which a Funds’ shares could be subject to trading halts include: (a) interruptions or delays in CQS data transmissions to any of the Calculation Engine operators or the Pricing Verification Agent; (b) interruptions or delays in VIIV data transmissions from the Pricing Verification Agent to the Exchange and the Consolidated Tape; and (c) halts in trading or disruptions in the availability of current quotes for one or more securities held by the Fund. Although the Exemptive

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<sup>121</sup> See footnote 11 to Filing at page 11.

<sup>122</sup> Footnote 44 to the Exemptive Application at page 25 provides that the trading halt would remain in effect “until the two indicative values comes back into line.”

<sup>123</sup> *ibid* footnote 45 at page 26.

<sup>124</sup> The Exchange may “consider all relevant factors in exercising its discretion to halt or suspend trading in the Shares of the Funds,” including if “circuit breaker parameters . . . have been reached,” due to “market conditions” or “for reasons that, in the view of the Exchange, make trading in the Shares inadvisable.” Trading in Fund shares will also be halted if “the Exchange becomes aware that the net asset value is not being disseminated to all market participants at the same time.” See Filing footnote 5 at page 6 and page 29.

Application provides that halts in trading of a Fund's shares would only be required if 10 percent or more of the Fund's holdings become subject to a trading halt, the reliability of the Fund's VIIVs as a basis for current trading in Fund shares would surely become suspect at a much lower level of halt activity in Fund holdings. In practice, I believe even a minimal level of quote disruptions or trading halts in a Fund's holdings would force the Fund itself to halt trading in its shares.

It is worth noting that shareholders of existing ETFs do not face the risk of trading halts due to discontinuous or unreliable IIVs. Because the arbitrage mechanism of existing ETFs does not depend on IIVs, their shares can continue to trade smoothly and efficiently without reliable indicative intraday values being continuously available. Not so the Funds.

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 trading halts are likely to occur. Until demonstrated otherwise, I believe there is much reason to expect the Funds to trade less continuously than existing active ETFs, with more frequent interruptions in trading, particularly during periods of market stress and volatility.

Trading Performance during Periods of Market Stress and Volatility. A critical test for the liquidity of any exchange-traded security is what happens to trading performance during times of market stress and volatility. Do bid-ask spreads gap out and the depth of price quotes diminish? Or are efficient markets maintained? There are many reasons to believe that Fund shares will trade especially poorly during periods of market stress and volatility. As described above in this section, during period of market stress and volatility, Fund market makers will increasingly question:

- the reliability of VIIVs as measures of the real-time value of a Fund's underlying holdings;
- their ability to offset the risk of their positions in Fund shares using Macro Hedges; and
- their ability to efficiently execute trades in Creation Basket securities on a blind basis through Confidential Accounts.

As Fund market makers lose confidence in their trading positions during periods of market stress and volatility, they will invariably respond by: (a) widening the bid-ask spreads at which they quote Fund shares; (b) reducing the amount of capital they put at risk by shrinking the size of their Fund share quotes; and/or (c) withdrawing altogether from making markets in Fund shares. Compared to existing ETFs, the Funds will be at much greater risk of collapses in share trading efficiency during volatile market periods. In fact, I believe collapses in the liquidity of Fund share trading during periods of market stress and volatility are inevitable – *a foregone conclusion*.

As an additional threat to the liquidity of Fund shares during periods of market stress and volatility, halts in Fund share trading are most likely to occur during stressed market conditions. Either way, a collapse in trading efficiency or trading halts – mark my words, *the liquidity of Fund shares during periods of market stress and volatility will surely disappoint*.

Conclusion. Market makers will face significant impediments to successfully arbitraging Fund shares. Different from existing ETFs, a Fund's market makers must rely on VIIVs calculated and

disseminated by third parties to estimate intraday Fund values. 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 would expose market makers to potentially unrecoverable losses in the event of erroneous, delayed or discontinuous VIIVs.

In addition to the challenges to efficient market making raised by the proposed reliance on VIIVs as the only available intraday valuation metric, the Proposal would remove market makers' ability to control their own trading in underlying Fund assets in connection with their creations and redemptions, and force them to rely upon Macro Hedges subject to unknown and potentially significant basis risk to manage their intraday Fund exposures. The deficiencies of VIIVs as intraday price signals, market makers forced reliance on Macro Hedges to managing their intraday Fund exposures, and the higher costs and loss of execution control over transactions in Creation Basket securities effected through Confidential Accounts will significantly curtail effective market making in the Funds' shares.

Reflecting the impediments to effective market making, the Funds are likely to attract less market maker interest, and market makers that do become involved will impose high profit hurdles to compensate for their added costs and risks. As a result, the Funds will certainly trade worse (with notably wider bid-ask spreads and more variable premiums and discounts) than existing active equity ETFs,<sup>125</sup> which themselves trade consistently worse than similar equity index ETFs. There is also reason to expect the Funds to trade less continuously than existing active ETFs, with more frequent halts in Fund share trading. During periods of market stress and volatility, the Fund shares will be especially vulnerable to collapses in trading efficiency and trading halts. On an overall basis, 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.

**7. The Proposal exposes Fund shareholders to significant new costs and substantial liabilities and risks not present for existing ETFs.**

One of the asserted "significant advantages" of the proposed Funds over similarly invested mutual funds is the potential for "lower operational costs" due to savings in transfer agency fees and shareholder account maintenance expenses based on the Funds' use of an exchange-traded structure.<sup>126</sup> Offsetting the assumed transfer agency and account maintenance cost savings will be the costs incurred by the Funds in connection with (a) the calculation, verification and dissemination of VIIVs at one-second intervals throughout the Exchange's Core Trading Session each Business Day and (b) the dissemination of the Fund's confidential portfolio holdings information to AP Representatives, Calculation Engine operators, Pricing Verification Agents, other Fund service providers and oversight authorities each Business Day. In addition to increasing the Funds' ongoing operating costs, these novel elements of the Funds' proposed structure expose shareholders to added liabilities and risks that could prove quite substantial.

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<sup>125</sup> 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](http://www.nextshares.com/regulatory-and-technical-documents.php#other_structures).)

<sup>126</sup> See Exemptive Application at page 6.

VIIIV-Related Costs. Mutual funds do not provide any intraday values, and the IIVs of existing ETFs are less frequently disseminated and subject to less stringent calculation standards than the Applicants propose for the Funds' VIIIVs. The principal distinctions between the Funds' proposed VIIIV methodology and 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) using two or more different Calculation Engines to calculate intraday values; (c) engaging a Pricing Verification Agent and establishing and maintaining a computer-based protocol to permit the Pricing Verification Agent to continuously compare the intraday values from each Calculation Engine on a real-time basis and to institute a trading halt in Fund shares whenever valuation differences of at least 25 bps persist for 60 seconds;<sup>127</sup> (d) generally 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) for securities subject to pending corporate actions, basing VIIIVs on positions held as of the beginning of the current Business Day (rather than at the close of the prior Business Day); (f) whenever the market quotations for a security are determined not to be a reliable basis for calculating VIIIVs, convening a meeting of the Fund's Fair Valuation Committee to "make a good faith pricing determination using a methodology approved by the Board of the Fund" and generally applying such fair values to the security in subsequent VIIIV calculations;<sup>128</sup> and (g) seeking to include in the VIIIV 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."<sup>129</sup>

Comparing the Funds' proposed VIIIV 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 in connection with their IIVs.

Selective Disclosure Costs. The Funds will incur ongoing costs not borne by other ETFs in connection with the dissemination of the Fund's confidential portfolio holdings information to AP Representatives, Calculation Engine operators, Pricing Verification Agents, other Fund service providers and oversight authorities each Business Day. In addition to the (presumably modest) daily cost to securely transmit each Fund's confidential portfolio holdings information to each of the intended recipients (and not to anyone else), regular interactions with each AP Representative and other confidential data recipients will be required to maintain contractual agreements and certifications. Although not discussed in the Proposal Documents, the Funds may seek (or be required) to monitor the AP Representatives and other recipients of confidential Fund data to test and verify compliance with contractual and federal securities law requirements for the use and protection of the Funds' confidential portfolio holdings information. Depending on how extensive a compliance monitoring program is maintained, the Funds may incur significant ongoing costs in connection with the selective disclosure of their confidential portfolio holdings information.

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<sup>127</sup> 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 24).

<sup>128</sup> See Exemptive Application at page 25. "In cases where the fair value price of the security is materially different from the most recent quoted price and the Adviser has determined that the ongoing pricing information is not likely to be reliable, the fair value will be used for calculation of the VIIIV, 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."

<sup>129</sup> *ibid* at pages 24-25. 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.

How meaningful are the incremental Fund costs in connection with VIIVs and daily selective disclosures likely to be? Will these added costs negate the savings in transfer agency fees and shareholder maintenance expenses that the Applicants represent that the Funds will provide? The Proposal Documents do not say. While no information is provided, it seems likely that the Funds' proposed VIIV calculation, verification and dissemination methodology and daily selective disclosures will expose the Funds to *significantly higher ongoing costs* than existing ETFs.

VIIV-Related Liabilities and Risks. The Filing provides that the Fund or its agent “*shall be responsible* [emphasis added] for monitoring that the [VIIV] is being priced and disseminated as required.”<sup>130</sup> The Exemptive Application similarly provides that “each Fund will adopt procedures governing the calculation and dissemination of the VIIV and *will bear responsibility* [emphasis added] for the oversight of the process.”<sup>131</sup>

A Fund's potential liability for VIIV-related damages attributable to the intraday pricing feed used in calculating the VIIVs (but not other sources of VIIV-related damages) may be limited by the assertion in the Exemptive Application that “the Fund will not be responsible, and will expressly disclaim liability for errors in the VIIV resulting from errors, omissions or interruptions of data provided by the CQS.”<sup>132</sup> Even with this carve-out, it is not hard to imagine circumstances under which market participants that have incurred trading losses attributable to erroneous, delayed or discontinuous VIIVs could have large (multi-million dollar) claims against a Fund.

Notably absent from the current version of the Exemptive Application are the Applicants' prior words of comfort 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.”<sup>133</sup>

Similarly removed from the current Exemptive Application are the former representations that “each Independent Pricing Agent *shall at all times be required, by contract, to act in good faith and to exercise reasonable care, diligence and the expertise* [emphasis added] of an Independent Pricing Agent” and that “it is anticipated that under the terms of such contracts with the Independent Pricing Agents and Pricing Verification Agent, *each shall be liable* [emphasis added] 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.”<sup>134</sup>

What to make of these deletions? I suspect that, upon investigation, the Applicants found that (a) “appropriate errors and omissions insurance” would not be available to the Funds on commercially reasonable terms and (b) no potential Pricing Verification Agent or other VIIV-related service providers would agree to be engaged by the Funds under the previously proposed liability terms.

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<sup>130</sup> See Filing at page 7.

<sup>131</sup> See Exemptive Application at page 24.

<sup>132</sup> *ibid* at pages 13-14.

<sup>133</sup> See May 2017 Exemptive Application at page 12.

<sup>134</sup> *ibid*.

Without insurance, what party bears responsibility for liabilities relating to VIIVs? If plaintiffs successfully prove damages from losses in trading Fund shares in reliance on erroneous, delayed or discontinuous VIIVs, who pays? When all other parties involved disclaim or limit their liability, payment obligations fall to one place — the Fund and its shareholders.<sup>135</sup>

Selective Disclosure-Related Liabilities and Risks. Although ignored in the Proposal Documents, it is not hard to imagine circumstances under which a Fund could incur significant liabilities related to its selective disclosure of confidential portfolio holdings information. Most obviously, if there is a data security breach, the Fund could be subject to front-running by market participants who gain access to the Fund's proprietary trading strategies. In addition, data breaches or failure to provide adequate protection against illegal insider trading based on a Fund's selective disclosures could expose the Fund to damages in connection with regulatory actions and private lawsuits. Unless the Adviser or other third party assumes responsibility, payment obligations for any fines, settlements or court awards again fall to one place — the Fund and its shareholders.

Conclusion. The Funds' proposed structure and method of operation introduce significant new costs, liabilities and risks to shareholders in connection with the calculation and public dissemination of VIIVs and the selective private disclosure of the Funds' confidential portfolio holdings information. These novel aspects of the Funds' structure and operation will cost money — exposing shareholders to unspecified amounts of new expenses that will diminish, if not negate, the Funds' claimed cost advantages. Moreover, the Funds' new and untested structure involves liabilities and risks, again unquantified in the Proposal, that could expose Fund shareholders to large losses under foreseeable circumstances. For these reasons, as well as the many others described in this letter, the Proposal should not be approved.

## **8. The Proposal is overreaching in scope and fails to provide adequate investor information.**

Scope of Proposal. The Proposal seeks authorization to offer, list and trade Funds holding long and short positions in substantially all types of U.S. exchange-listed securities, including shares of other U.S.-listed ETFs.<sup>136</sup> As proposed, each Fund could invest up to 5 percent of total assets in warrants, rights and options that are listed on a U.S. exchange, could invest a portion of its assets in cash or cash equivalents, and could invest in securities of other investment companies to the extent allowed by law.<sup>137</sup> Like registered open-end funds generally, up to 15 percent of each Fund's assets could be illiquid. The three initial Funds that the Filing seeks permission to list and trade each would invest primarily in U.S. small-cap stocks with market capitalizations of \$3 billion or less.<sup>138</sup>

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<sup>135</sup> 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 8).

<sup>136</sup> Footnote 7 on page 7 of the Exemptive Application provides that "although the Funds may invest in securities of companies of any capitalization, the Funds do not intend to invest in small capitalization companies listed on the Nasdaq Capital Market." Page 17 of the Filing provides that "a Fund will not invest in leveraged (e.g., 2X, -2X, 3X or -3X) ETFs."

<sup>137</sup> See Filing at page 16.

<sup>138</sup> See Registration Statement at pages 2-9. The Exemptive Application and Registration Statement provide for an additional five series of the Trust that would invest primarily in long and short positions in equity securities of various descriptions.

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"<sup>139</sup> 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."<sup>140</sup> 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 [indicative intraday valuation] calculation and therefore, an effective hedging mechanism."<sup>141</sup>

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 secondary market trading efficiency. In evaluating the Funds' proposed investments and comparing them to the Applicants' prior statements, there are notable inconsistencies. Most obviously, introducing Funds focused on investing in small-cap stocks as the initial embodiment of a new type of ETF whose trading efficiency is understood to depend critically on the liquidity of the underlying holdings is profoundly inappropriate. Moreover, a Fund's potential investment of up to 15 percent in illiquid assets is clearly inconsistent with the need for continuous active trading in the Fund's underlying investments to maintain efficient trading in Fund shares.

In addition, although the Funds' permissible ETF 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. The Petajisto Study and the attached Exhibits to this letter show that the prices at which investors buy or sell shares of existing ETFs often vary significantly 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 initial Funds would not be permitted to invest in these instruments directly, they could hold them indirectly through positions in other ETFs. As the Petajisto Study, the attached Exhibits and other research demonstrate, ETF trading prices are often a relatively 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 may be subject to significant mispricing.

Adequacy of Investor Information. 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,"<sup>142</sup> consistent with the current dissemination requirements for IIVs of existing ETFs.<sup>143</sup> Given the much greater importance of VIIVs to the Funds and their shareholders, it is essential that all Fund shareholders have ongoing access to current VIIVs. 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 own 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

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<sup>139</sup> See File No. 812-14116 (July 23, 2013) at page 25.

<sup>140</sup> *ibid* at page 21.

<sup>141</sup> *ibid*.

<sup>142</sup> See Filing at page 11.

<sup>143</sup> Certain ETF sponsors provide real-time intraday fund values on their public website or support dissemination of intraday fund values through other public websites.

public website and made available to the public no later than available to any other market participant.<sup>144</sup>

The Proposal represents<sup>145</sup> that the Funds will maintain a free public website through which a Fund's prospectus may be downloaded and including 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, additional Fund trading information should be required as a condition for approval. In particular, the Commission should require the Funds to provide the following on a free public website:

VIIVs

- a. Real-time VIIVs updated continuously throughout the Exchange's Core Trading Session on each Business Day (as discussed above);
- b. Updated daily, complete intraday VIIV history for at least the twenty most recent trading days (allowing buyers and sellers of Fund 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 of closing VIIVs to NAVs); 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<sup>146</sup>

- 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.

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<sup>144</sup> Investor understanding of the trading costs they pay to buy and sell Fund shares would be further enhanced by requiring broker-dealers to include on trade confirmations for transactions in Fund 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.

<sup>145</sup> See Filing at page 26 and Exemptive Application at page 24.

<sup>146</sup> As discussed in the Angel, Broms and Gastineau Paper, disclosures of historical closing premiums/discounts are often 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.

#### Intraday Estimated Premiums/Discounts

- a. Updated daily, the prior Business Day's average, minimum and maximum intraday estimated premiums/discounts (expressed as percentages) based on VIIVs and Fund 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.

#### Purchase and Redemption Transaction Fees

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

Knowing the Transaction Fees currently in effect for a Fund is essential for market participants to evaluate the reasonableness of the premiums/discounts to underlying values at which Fund shares trade. In addition, any market participant that seeks to engage in arbitrage trading needs access to current Fund Transaction Fees.

Conclusion. Among other reasons why the Proposal should not be approved, the proposed focus of the initial Funds on investing in small-cap stocks, the Funds' potential investment of up to 15 percent of net assets in illiquid assets and the Funds' ability to invest in ETFs whose underlying holdings do not trade on U.S. exchanges align poorly with the requirements for Fund shares to trade even remotely well, given all the other challenges to trading efficiency imposed by the Proposal's structure. If approved at all, 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 solely 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. If approved, Funds should also be required to provide the substantial additional website disclosures of current and historical Fund trading information described in this section as conditions for approval.

#### **9. On an overall basis, the Proposal fails to meet the statutory requirements for approval of Exchange rule changes set forth in the Securities Exchange Act.**

The standards to be applied by the Commission in approving or disapproving a proposed rule change submitted by the Exchange (or other self-regulatory organization) are set forth in Section 19(b)(2)(C) of the Securities Exchange Act, which provides in relevant part:

(C) STANDARDS FOR APPROVAL AND DISAPPROVAL.—

(i) APPROVAL.—The Commission shall approve a proposed rule change of a self-regulatory organization if it finds that such proposed rule change is consistent with the requirements of this title and the rules and regulations issued under this title that are applicable to such organization.

(ii) DISAPPROVAL.—The Commission shall disapprove a proposed rule change of a self-regulatory organization if it does not make a finding described in clause (i).

Whether a proposed rule change “is consistent with the requirements of this title and the rules and regulations issued under this title that are applicable to such organization” is, in turn, determined by reference to Section 6(b) of the Securities Exchange Act, which provides in relevant part:

(b) An exchange shall not be registered as a national securities exchange unless the Commission determines that—

(5) The rules of the exchange are designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, to foster cooperation and coordination with persons engaged in regulating, clearing, settling, processing information with respect to, and facilitating transactions in securities, to remove impediments to and perfect the mechanism of a free and open market and a national market system, and, in general, to protect investors and the public interest; and are not designed to permit unfair discrimination between customers, issuers, brokers, or dealers, or to regulate by virtue of any authority conferred by this title matters not related to the purposes of this title or the administration of the exchange.

The requested Exchange rule change to permit the listing and trading of Managed Portfolio Shares does not meet the conditions for approval set forth in Sections 19(b)(2)(C) and 6(b) of the Securities Exchange Act. In particular, the requested rule change does not conform to the Section 6(b)(5) requirement that Exchange rules must be designed “to prevent fraudulent and manipulative acts and practices,” “to protect investors and the public interest,” and not “to permit unfair discrimination” among issuers, brokers, dealers and other market participants. The anti-fraud, investor protection and anti-discrimination requirements of Section 6(b)(5) are particularly implicated by the proposed widespread dissemination of the Funds’ confidential portfolio holdings information on a daily basis and the absence of any discernible program to ensure that the Funds’ confidential information is adequately protected and not used in a manner that harms Fund shareholders or constitutes securities fraud. The investor protection and anti-discrimination requirements of Section 6(b)(5) are further implicated by (a) the substantial risk that the confidentiality of a Fund’s portfolio holdings information will be compromised, with resulting harm to Fund shareholders, and (b) the high likelihood that Fund shares will trade in the secondary market at significantly wider bid-ask spreads and more variable premiums/discounts than existing active ETFs, especially during periods of market stress and volatility, with resulting harm to buyers and sellers of Fund shares.

If the Commission were to approve the Exchange’s rule change request in conflict with the requirements of the Securities Exchange Act, such action could be subject to legal challenge in the District of Columbia Court of Appeals or other venues.

**10. On an overall basis, the Proposal fails to meet the statutory standards for exemptive relief set forth in the Investment Company Act.**

The Exemptive Application applies for and requests an order of the Commission granting the Applicants exemption from various provisions of the Investment Company Act pursuant to Section 6(c) of the Investment Company Act,<sup>147</sup> which provides:

(c) The Commission, by rules and regulations upon its own motion, or by order upon application, may conditionally or unconditionally exempt any person, security, or transaction, or any class or classes of persons, securities, or transactions, from any provision or provisions of this title or of any rule or regulation thereunder, if and to the extent that 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 this title.

The Proposal does not meet the requirement for exemptive relief under Section 6(c) of the Investment Company Act that “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 Investment Company Act].” Without assurances that the Funds’ proprietary trading information will be protected, the proposed Funds offer no advantage over existing ETFs. Further, the proposed Funds likely will not realize the normal tax benefits of operating as ETFs, will subject Fund shareholders to significant added costs, liabilities and risks not present for existing ETFs, and their shares will surely trade less efficiently in the secondary market than shares of similar existing ETFs, especially during periods of market stress and volatility. As such, exemptive relief is neither necessary nor appropriate in the public interest, nor consistent with the protection of investors.

Similar to the possibility of a legal challenge based on failure to comply with the requirements of the Securities Exchange Act, granting the Proposal exemptive relief when the statutory requirements for exemption are so plainly unmet could also subject the Commission to legal challenge.

**Conclusion**

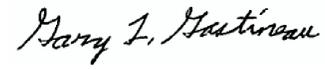
As stated in my previous comment letters and detailed at length in this letter, I believe the Proposal is deeply, fundamentally and fatally flawed and should not be approved. In my judgment, the Proposal falls far short of the Investment Company Act requirement for exemptive relief that approval is necessary or appropriate in the public interest and consistent with the protection of investors, and also fails to meet the anti-fraud, investor protection and anti-discrimination requirements for approval under the Securities Exchange Act. Approval would inflict harm on investors, and risk damage to the market’s confidence in the ETF industry as a whole.

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<sup>147</sup> Certain provisions of the Investment Company Act from which the Applicants seek exemptive relief are pursuant to authority granted the Commission under Section 12(d)(1)(J) and Section 17(b) of the Investment Company Act, which apply similar standards to Section 6(c).

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

Sincerely,

A handwritten signature in black ink that reads "Gary L. Gastineau". The signature is written in a cursive style with a large, stylized initial "G".

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

**Exhibit 1-1: Measures of ETF Investor Trading Costs: 2017**

Category	No of Funds		Average Market Cap (\$MM)		Average Volume (\$MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			AETF	IETF	AETF	IETF	EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>37</b>	<b>386</b>	<b>1,384</b>	<b>1,374,105</b>	<b>9</b>	<b>30,867</b>	<b>0.21</b>	<b>0.21</b>	<b>0.14</b>	<b>0.02</b>	<b>0.14</b>	<b>0.02</b>	<b>0.28</b>	<b>0.27</b>	<b>0.17</b>	<b>0.03</b>	<b>0.16</b>	<b>0.03</b>
Large Blend	18	125	706	669,269	5	19,466	0.18	0.27	0.13	0.02	0.13	0.02	0.23	0.35	0.15	0.03	0.14	0.02
Large Growth	5	36	120	158,836	1	4,449	0.24	0.12	0.15	0.02	0.16	0.02	0.38	0.16	0.18	0.03	0.20	0.03
Large Value	6	70	116	201,055	1	1,524	0.27	0.16	0.17	0.02	0.16	0.02	0.37	0.21	0.22	0.03	0.21	0.03
Mid-Cap Blend	4	34	212	110,527	1	752	0.16	0.18	0.15	0.03	0.15	0.03	0.19	0.21	0.18	0.03	0.18	0.03
Mid-Cap Growth		24		26,182		99		0.14		0.03	0.04			0.21		0.04		0.04
Mid-Cap Value	2	23	199	49,433	1	186	0.12	0.13	0.11	0.03	0.12	0.03	0.13	0.19	0.13	0.04	0.13	0.03
Small Blend		42		106,069		4,024		0.32		0.04	0.04			0.44		0.05		0.04
Small Growth	2	12	31	21,442	0	152	0.42	0.12	0.33	0.04	0.35	0.04	0.67	0.16	0.50	0.06	0.54	0.06
Small Value		20		31,292		217		0.12		0.04	0.04			0.16		0.05		0.05
<b>US EQUITY SECTORS</b>	<b>12</b>	<b>308</b>	<b>2,641</b>	<b>367,022</b>	<b>28</b>	<b>12,715</b>	<b>0.18</b>	<b>0.19</b>	<b>0.11</b>	<b>0.06</b>	<b>0.15</b>	<b>0.07</b>	<b>0.20</b>	<b>0.21</b>	<b>0.11</b>	<b>0.06</b>	<b>0.14</b>	<b>0.08</b>
Commodities Industrial Metals		2		290		4		0.22		0.20	0.20			0.31		0.28		0.28
Communications		5		2,361		35		0.10		0.07	0.08			0.12		0.10		0.10
Consumer Cyclical		23		20,107		777		0.15		0.03	0.04			0.21		0.04		0.05
Consumer Defensive		17		15,360		602		0.28		0.03	0.03			0.30		0.04		0.04
Energy Limited Partnership	2	8	2,226	11,390	19	136	0.15	0.16	0.10	0.12	0.14	0.12	0.14	0.20	0.10	0.16	0.13	0.16
Equity Energy		26		28,691		1,732		0.20		0.04	0.04			0.25		0.05		0.05
Equity Precious Metals		12		14,989		1,721		0.34		0.24	0.23			0.48		0.32		0.31
Financial	1	29	65	52,155	1	2,282	0.22	0.09	0.22	0.05	0.22	0.05	0.13	0.12	0.13	0.06	0.13	0.06
Health	1	33	26	48,681	0	1,327	0.20	0.18	0.20	0.04	0.20	0.04	0.27	0.23	0.27	0.05	0.27	0.05
Industrials		23		25,008		784		0.13		0.03	0.03			0.19		0.05		0.04
Miscellaneous Sector	2	23	9	5,803	0	50	0.19	0.29	0.23	0.20	0.17	0.27	0.23	0.30	0.32	0.20	0.19	0.25
Natural Resources		32		18,983		440		0.27		0.12	0.07			0.33		0.13		0.09
Real Estate	1	21	26	54,328	0	1,001	0.19	0.15	0.19	0.03	0.19	0.03	0.27	0.20	0.27	0.04	0.27	0.04
Technology	4	42	275	56,185	7	1,139	0.15	0.17	0.16	0.03	0.16	0.04	0.14	0.00	0.14	0.00	0.14	0.00
Utilities	1	12	15	12,691	0	686	0.24	0.17	0.24	0.03	0.24	0.03	0.38	0.21	0.38	0.04	0.38	0.04
<b>INTERNATIONAL EQUITY</b>	<b>14</b>	<b>473</b>	<b>947</b>	<b>621,707</b>	<b>7</b>	<b>10,115</b>	<b>0.52</b>	<b>0.44</b>	<b>0.50</b>	<b>0.26</b>	<b>0.42</b>	<b>0.30</b>	<b>0.46</b>	<b>0.40</b>	<b>0.38</b>	<b>0.20</b>	<b>0.29</b>	<b>0.31</b>
China Region		40		14,435		915		0.54		0.34	0.35			0.63		0.43		0.45
Diversified Emerging Mkts	1	72	47	146,419	0	3,118	0.50	0.52	0.50	0.33	0.50	0.35	0.28	0.49	0.28	0.34	0.28	0.38
Diversified Pacific/Asia	1	5	22	5,388	0	28	0.56	0.35	0.56	0.19	0.56	0.18	0.43	0.45	0.43	0.19	0.43	0.18
Europe Stock	1	36	76	52,472	1	779	0.47	0.45	0.47	0.17	0.47	0.17	0.29	0.46	0.29	0.19	0.29	0.20
Foreign Large Blend	5	60	330	237,501	3	2,172	0.40	0.45	0.42	0.20	0.42	0.20	0.34	0.00	0.27	0.00	0.26	0.00
Foreign Large Growth	1	11	82	4,361	1	24	0.27	0.40	0.27	0.26	0.27	0.27	0.19	0.40	0.19	0.24	0.19	0.23
Foreign Large Value		30		20,156		90		0.36		0.26	0.26			0.30		0.25		0.25
Foreign Small/Mid Blend		8		15,967		80		0.43		0.29	0.29			0.44		0.24		0.25
Foreign Small/Mid Value		8		2,139		7		0.48		0.35	0.36			0.41		0.28		0.29
Global Real Estate	1	11	1	12,013	0	68	0.88	0.24	0.88	0.20	0.88	0.20	0.78	0.28	0.78	0.18	0.78	0.19
India Equity		9		8,609		165		0.47		0.42	0.41			0.55		0.52		0.52
Japan Stock		25		29,592		580		0.43		0.38	0.37			0.53		0.50		0.49
Latin America Stock		8		7,609		713		0.40		0.39	0.42			0.50		0.55		0.59
Miscellaneous Region	1	94	10	32,418	0	1,052	1.27	0.42	1.27	0.30	1.27	0.33	1.44	0.49	1.44	0.40	1.44	0.44
Pacific/Asia ex-Japan Stk		12		8,099		109		0.44		0.35	0.35			0.46		0.40		0.41
World Stock	3	44	381	24,528	1	213	0.47	0.36	0.60	0.13	0.47	0.12	0.44	0.32	0.51	0.12	0.37	0.12

**Exhibit 1-2: Measures of ETF Investor Trading Costs: 2016**

Category	No of Funds		Average Market Cap (\$MM)		Average Volume (\$MM)		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			AETF	IETF	AETF	IETF	EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>29</b>	<b>332</b>	<b>1,201</b>	<b>1,012,433</b>	<b>6</b>	<b>34,845</b>	<b>0.23</b>	<b>0.19</b>	<b>0.15</b>	<b>0.03</b>	<b>0.15</b>	<b>0.02</b>	<b>0.32</b>	<b>0.26</b>	<b>0.17</b>	<b>0.04</b>	<b>0.17</b>	<b>0.03</b>
Large Blend	11	94	318	490,019	2	23,996	0.24	0.23	0.16	0.02	0.16	0.02	0.37	0.29	0.17	0.03	0.17	0.03
Large Growth	3	35	103	122,047	0	3,594	0.30	0.20	0.21	0.02	0.17	0.02	0.40	0.27	0.24	0.03	0.19	0.03
Large Value	4	63	57	148,962	1	1,723	0.28	0.13	0.19	0.03	0.19	0.03	0.37	0.19	0.24	0.04	0.24	0.03
Mid-Cap Blend	5	32	414	83,226	2	826	0.16	0.14	0.13	0.03	0.12	0.03	0.18	0.20	0.14	0.04	0.13	0.04
Mid-Cap Growth	1	23	38	21,828	0	118	0.09	0.18	0.09	0.04	0.09	0.04	0.11	0.27	0.11	0.05	0.11	0.05
Mid-Cap Value	2	23	232	38,563	1	220	0.12	0.14	0.12	0.03	0.12	0.03	0.12	0.21	0.12	0.05	0.12	0.04
Small Blend	1	30	14	70,586	0	3,928	0.25	0.38	0.25	0.04	0.25	0.04	0.32	0.43	0.32	0.05	0.32	0.05
Small Growth	2	12	25	15,724	0	176	0.31	0.12	0.39	0.04	0.36	0.04	0.54	0.16	0.67	0.05	0.62	0.05
Small Value		20		21,479		265		0.15		0.04	0.04			0.21		0.05		0.05
<b>US EQUITY SECTORS</b>	<b>9</b>	<b>323</b>	<b>1,404</b>	<b>288,778</b>	<b>9</b>	<b>14,396</b>	<b>0.36</b>	<b>0.24</b>	<b>0.14</b>	<b>0.07</b>	<b>0.21</b>	<b>0.10</b>	<b>0.53</b>	<b>0.31</b>	<b>0.16</b>	<b>0.09</b>	<b>0.24</b>	<b>0.13</b>
Commodities Industrial Metals		2		172		3		0.31		0.22	0.22			0.54		0.31		0.31
Communications		6		2,584		39		0.15		0.08	0.07			0.21		0.11		0.09
Consumer Cyclical		26		19,031		929		0.20		0.04	0.04			0.27		0.05		0.06
Consumer Defensive		17		17,417		757		0.22		0.04	0.04			0.31		0.05		0.05
Energy Limited Partnership	1	9	82	8,979	2	124	0.68	0.24	0.68	0.16	0.68	0.15	0.86	0.34	0.86	0.21	0.86	0.20
Equity Energy	1	26	1,232	26,605	7	2,124	0.10	0.25	0.10	0.05	0.10	0.05	0.08	0.34	0.08	0.07	0.08	0.07
Equity Precious Metals		12		12,877		2,466		0.52		0.35	0.33			0.67		0.47		0.45
Financial		32		31,168		1,818		0.18		0.05	0.05			0.25		0.07		0.06
Health	1	35	7	39,732	0	1,888	0.55	0.18	0.55	0.04	0.55	0.05	0.84	0.26	0.84	0.06	0.84	0.07
Industrials		23		13,835		791		0.17		0.04	0.04			0.24		0.06		0.06
Miscellaneous Sector	1	24	6	3,516	0	16	0.30	0.35	0.30									

**Exhibit 1-3: Measures of ETF Investor Trading Costs: 2015**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>27</b>	<b>289</b>	<b>1,222</b>	<b>902,925</b>	<b>9</b>	<b>39,057</b>	<b>0.29</b>	<b>0.16</b>	<b>0.16</b>	<b>0.03</b>	<b>0.16</b>	<b>0.03</b>	<b>0.44</b>	<b>0.24</b>	<b>0.23</b>	<b>0.05</b>	<b>0.23</b>	<b>0.04</b>
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
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
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
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
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
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
<b>US EQUITY SECTORS</b>	<b>8</b>	<b>287</b>	<b>1,154</b>	<b>284,349</b>	<b>11</b>	<b>12,193</b>	<b>0.30</b>	<b>0.21</b>	<b>0.11</b>	<b>0.06</b>	<b>0.11</b>	<b>0.07</b>	<b>0.43</b>	<b>0.28</b>	<b>0.14</b>	<b>0.09</b>	<b>0.14</b>	<b>0.10</b>
Commodities Industrial Metals		3		176		3		0.55		0.24		0.25		0.72		0.39		0.39
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
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
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
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
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
Industrials		20		13,658		701		0.14		0.04		0.03		0.18		0.05		0.04
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
Natural Resources		30		12,906		462		0.29		0.15		0.11		0.36		0.19		0.15
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
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
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
<b>INTERNATIONAL EQUITY</b>	<b>16</b>	<b>452</b>	<b>682</b>	<b>453,166</b>	<b>4</b>	<b>10,848</b>	<b>0.40</b>	<b>0.62</b>	<b>0.23</b>	<b>0.43</b>	<b>0.29</b>	<b>0.54</b>	<b>0.48</b>	<b>0.74</b>	<b>0.27</b>	<b>0.54</b>	<b>0.36</b>	<b>0.70</b>
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
Europe Stock		38		57,453		1,109		0.49		0.33		0.33		0.54		0.44		0.44
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 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 Small/Mid Blend		9		8,773		62		0.58		0.45		0.46		0.61		0.48		0.48
Foreign Small/Mid Value	1	8	12	1,435	8	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
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
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
Pacific/Asia ex-Japan Stk		14		7,117		112		0.64		0.61		0.64		0.74		0.80		0.82
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

**Exhibit 1-4: Measures of ETF Investor Trading Costs: 2014**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>22</b>	<b>239</b>	<b>821</b>	<b>774,265</b>	<b>12</b>	<b>34,958</b>	<b>0.27</b>	<b>0.11</b>	<b>0.14</b>	<b>0.03</b>	<b>0.18</b>	<b>0.03</b>	<b>0.40</b>	<b>0.14</b>	<b>0.19</b>	<b>0.04</b>	<b>0.25</b>	<b>0.03</b>
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
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
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
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
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
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
<b>US EQUITY SECTORS</b>	<b>7</b>	<b>286</b>	<b>795</b>	<b>251,880</b>	<b>9</b>	<b>10,480</b>	<b>0.29</b>	<b>0.23</b>	<b>0.13</b>	<b>0.06</b>	<b>0.16</b>	<b>0.07</b>	<b>0.40</b>	<b>0.27</b>	<b>0.12</b>	<b>0.08</b>	<b>0.19</b>	<b>0.09</b>
Commodities Industrial Metals		3		302		5		0.59		0.19		0.24		0.64		0.25		0.30
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
Energy Limited Partnership	1	8	6	9,302		74	0.30	0.15	0.30	0.08	0.08	0.08	0.34	0.19	0.34	0.12	0.12	0.12
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
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
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
Industrials		21		16,338		707		0.15		0.04		0.03		0.20		0.05		0.04
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.

**Exhibit 1-5: Measures of ETF Investor Trading Costs: 2013**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>11</b>	<b>228</b>	<b>254</b>	<b>602,855</b>	<b>5</b>	<b>30,466</b>	<b>0.30</b>	<b>0.11</b>	<b>0.19</b>	<b>0.03</b>	<b>0.20</b>	<b>0.03</b>	<b>0.43</b>	<b>0.15</b>	<b>0.26</b>	<b>0.04</b>	<b>0.26</b>	<b>0.04</b>
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
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
Mid-Cap Growth		15		11,764		65		0.12		0.04		0.04		0.17		0.05		0.05
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
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
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
<b>US EQUITY SECTORS</b>	<b>3</b>	<b>294</b>	<b>389</b>	<b>193,811</b>	<b>4</b>	<b>8,170</b>	<b>0.21</b>	<b>0.28</b>	<b>0.17</b>	<b>0.07</b>	<b>0.17</b>	<b>0.06</b>	<b>0.25</b>	<b>0.32</b>	<b>0.11</b>	<b>0.09</b>	<b>0.13</b>	<b>0.07</b>
Commodities Industrial Metals		3		301		4		1.02		0.24		0.25		1.07		0.31		0.33
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
Energy Limited Partnership		7		6,638		57		0.19		0.10		0.10		0.19		0.14		0.14
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
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
Health		25		20,261		588		0.15		0.05		0.04		0.17		0.06		0.05
Industrials		21		9,798		522		0.20		0.05		0.04		0.23		0.06		0.05
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
Natural Resources		33		17,259		469		0.38		0.14		0.07		0.40		0.15		0.08
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
Technology		31		21,882		392		0.23		0.05		0.05		0.27		0.06		0.07
Utilities		14		8,552		431		0.28		0.04		0.04		0.33		0.05		0.04
<b>INTERNATIONAL EQUITY</b>	<b>6</b>	<b>303</b>	<b>56</b>	<b>328,958</b>	<b>1</b>	<b>8,997</b>	<b>0.34</b>	<b>0.63</b>	<b>0.34</b>	<b>0.45</b>	<b>0.31</b>	<b>0.52</b>	<b>0.50</b>	<b>0.70</b>	<b>0.49</b>	<b>0.56</b>	<b>0.45</b>	<b>0.66</b>
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
Europe Stock		11		16,565		335		0.49		0.27		0.28		0.43		0.34		0.35
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 Large Value		19		7,770		50		0.52		0.45		0.46		0.44		0.47		0.46
Foreign Small/Mid Blend		7		4,883		32		0.61		0.52		0.52		0.51		0.48		0.50
Foreign Small/Mid Value		6		860		6		0.71		0.63		0.72		0.66		0.59		0.74
Global Real Estate		11		7,520		53		0.45		0.44		0.44		0.50		0.50		0.49
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
Pacific/Asia ex-Japan Stk		13		7,314		92		0.79		0.52		0.54		1.03		0.70		0.72
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

**Exhibit 1-6: Measures of ETF Investor Trading Costs: 2012**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>8</b>	<b>237</b>	<b>57</b>	<b>434,426</b>	<b>1</b>	<b>30,277</b>	<b>0.59</b>	<b>0.18</b>	<b>0.52</b>	<b>0.04</b>	<b>0.51</b>	<b>0.03</b>	<b>0.64</b>	<b>0.25</b>	<b>0.56</b>	<b>0.05</b>	<b>0.53</b>	<b>0.04</b>
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
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
Mid-Cap Growth		14		8,978		67		0.20		0.04		0.04		0.33		0.05		0.05
Mid-Cap Value		13		18,493		132		0.13		0.04		0.04		0.18		0.06		0.05
Small Blend		19		29,985		1,029		0.17		0.06		0.06		0.24		0.07		0.07
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
<b>US EQUITY SECTORS</b>	<b>3</b>	<b>294</b>	<b>100</b>	<b>146,358</b>	<b>2</b>	<b>7,199</b>	<b>0.29</b>	<b>0.30</b>	<b>0.26</b>	<b>0.08</b>	<b>0.26</b>	<b>0.06</b>	<b>0.35</b>	<b>0.35</b>	<b>0.26</b>	<b>0.10</b>	<b>0.24</b>	<b>0.08</b>
Commodities Industrial Metals		3		347		3		0.70		0.28		0.28		1.62		0.39		0.40
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
Energy Limited Partnership		3		3,532		34		0.21		0.10		0.10		0.20		0.11		0.12
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
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
Health		25		12,513		323		0.16		0.06		0.05		0.21		0.08		0.07
Industrials		24		5,497		742		0.29		0.06		0.04		0.33		0.07		0.05
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
Natural Resources		35		14,239		537		0.37		0.14		0.06		0.43		0.16		0.08
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
Technology		31		17,304		399		0.26		0.05		0.10		0.30		0.07		0.11
Utilities		13		8,752														

**Exhibit 1-7: Measures of ETF Investor Trading Costs: 2011**

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

**Exhibit 1-8: Measures of ETF Investor Trading Costs: 2010**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>6</b>	<b>188</b>	<b>40</b>	<b>293,388</b>	<b>0</b>	<b>35,642</b>	<b>0.82</b>	<b>0.19</b>	<b>0.59</b>	<b>0.05</b>	<b>0.59</b>	<b>0.04</b>	<b>1.34</b>	<b>0.30</b>	<b>0.94</b>	<b>0.06</b>	<b>0.97</b>	<b>0.06</b>
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
Mid-Cap Blend				26,794		680		0.24		0.05		0.05		0.40		0.08		0.10
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
Mid-Cap Value				10,850		117		0.17		0.05		0.06		0.25		0.07		0.07
Small Blend				24,921		4,384		0.20		0.07		0.07		0.31		0.09		0.08
Small Growth				6,510		176		0.21		0.07		0.07		0.31		0.08		0.08
Small Value				8,157		164		0.16		0.07		0.08		0.23		0.09		0.09
<b>US EQUITY SECTORS</b>	<b>3</b>	<b>242</b>	<b>19</b>	<b>96,096</b>	<b>0</b>	<b>8,173</b>	<b>1.03</b>	<b>0.35</b>	<b>0.67</b>	<b>0.12</b>	<b>0.68</b>	<b>0.08</b>	<b>1.52</b>	<b>0.50</b>	<b>1.00</b>	<b>0.15</b>	<b>1.03</b>	<b>0.11</b>
Commodities Industrial Metals				431		8		0.47		0.47		0.47		0.61		0.61		0.61
Communications				1,379		18		0.44		0.17		0.17		0.59		0.21		0.21
Consumer Cyclical				4,618		915		0.31		0.10		0.08		0.46		0.13		0.10
Consumer Defensive				4,229		196		0.33		0.07		0.06		0.51		0.10		0.08
Energy Limited Partnership				293		10		0.10		0.10		0.10		0.09		0.09		0.09
Equity Energy				11,680		1,304		0.29		0.09		0.07		0.41		0.12		0.09
Equity Precious Metals				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
Health				7,904		337		0.22		0.08		0.07		0.32		0.11		0.10
Industrials				5,086		575		0.47		0.10		0.06		0.71		0.13		0.09
Miscellaneous Sector				4,684		43		0.33		0.29		0.32		0.40		0.34		0.39
Natural Resources				9,936		839		0.41		0.19		0.11		0.51		0.24		0.16
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
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
Utilities				5,010		219		0.31		0.07		0.06		0.44		0.11		0.09
<b>INTERNATIONAL EQUITY</b>	<b>2</b>	<b>197</b>	<b>11</b>	<b>206,613</b>	<b>0</b>	<b>9,127</b>	<b>0.24</b>	<b>0.80</b>	<b>0.24</b>	<b>0.54</b>	<b>0.24</b>	<b>0.60</b>	<b>0.33</b>					

**Exhibit 1-9: Measures of ETF Investor Trading Costs: 2009**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>6</b>	<b>173</b>	<b>20</b>	<b>232,818</b>	<b>1</b>	<b>34,114</b>	<b>0.67</b>	<b>0.40</b>	<b>0.68</b>	<b>0.09</b>	<b>0.71</b>	<b>0.08</b>	<b>1.01</b>	<b>0.62</b>	<b>1.03</b>	<b>0.15</b>	<b>1.10</b>	<b>0.12</b>
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
Mid-Cap Blend		17		18,471		766			0.35		0.10	0.09		0.55		0.14		0.15
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
Mid-Cap Value		14		7,979		120			0.34		0.11	0.11		0.60		0.15		0.16
Small Blend		15		16,862		3,059			0.37		0.15	0.14		0.59		0.20		0.19
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
<b>US EQUITY SECTORS</b>	<b>3</b>	<b>204</b>	<b>10</b>	<b>66,859</b>	<b>0</b>	<b>8,017</b>	<b>1.13</b>	<b>0.48</b>	<b>1.28</b>	<b>0.21</b>	<b>1.31</b>	<b>0.18</b>	<b>1.78</b>	<b>0.69</b>	<b>2.07</b>	<b>0.31</b>	<b>2.14</b>	<b>0.26</b>
Commodities Industrial Metals		1		285		7			0.66		0.66	0.66		0.81		0.81		0.81
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
Energy Limited Partnership																		
Equity Energy		18		8,656		1,390			0.40		0.14	0.10		0.56		0.18		0.13
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
Health		20		6,696		266			0.28		0.14	0.13		0.40		0.20		0.19
Industrials		17		2,856		337			0.48		0.20	0.17		0.74		0.27		0.23
Miscellaneous Sector		24		4,289		41			0.55		0.46	0.53		0.69		0.59		0.68
Natural Resources		23		6,336		559			0.56		0.27	0.19		0.70		0.37		0.25
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
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
Utilities		9		3,229		218			0.42		0.15	0.13		0.62		0.24		0.19
<b>INTERNATIONAL EQUITY</b>	<b>0</b>	<b>175</b>	<b>0</b>	<b>139,639</b>	<b>0</b>	<b>7,155</b>	<b>1.06</b>	<b>0.74</b>	<b>1.06</b>	<b>0.74</b>	<b>1.06</b>	<b>0.77</b>	<b>1.29</b>	<b>0.96</b>	<b>1.29</b>	<b>0.96</b>	<b>1.29</b>	<b>1.03</b>
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
Europe Stock		17		4,452		49			1.57		0.53	0.56		1.99		0.68		0.73
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 Large Value		13		2,258		19			0.84		0.81	0.82		1.09		1.03		1.03
Foreign Small/Mid Blend		6		976		13			0.82		0.91	0.87		0.99		1.00		0.92
Foreign Small/Mid Value		4		511		3			1.05		0.92	0.94		1.24		1.11		1.12
Global Real Estate		11		1,153		9			1.23		1.04	1.05		1.59		1.22		1.25
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
Pacific/Asia ex-Japan Stk		10		4,162		66			1.72		1.06	1.06		2.14		1.34		1.34
World Stock		11		1,766		27			0.86		0.46	0.49		1.05		0.54		0.56

**Exhibit 1-10: Measures of ETF Investor Trading Costs: 2008**

Category	No of Funds		Average		Average		Avg Abs Premium/Discount (%)						Volatility of Premium/Discount (%)					
			Market Cap (\$MM)		Volume (\$MM)		EW		AW		VW		EW		AW		VW	
			AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF	AETF	IETF
<b>US EQUITY DIVERSIFIED</b>	<b>3</b>	<b>168</b>	<b>11</b>	<b>248,798</b>	<b>0</b>	<b>60,751</b>	<b>1.35</b>	<b>0.63</b>	<b>1.40</b>	<b>0.19</b>	<b>1.37</b>	<b>0.23</b>	<b>1.92</b>	<b>1.01</b>	<b>1.91</b>	<b>0.33</b>	<b>1.94</b>	<b>0.37</b>
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
Mid-Cap Blend		19		16,971		1,365			0.79		0.22	0.24		1.12		0.45		0.58
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
Mid-Cap Value		14		10,630		603			0.70		0.18	1.06		1.10		0.32		1.64
Small Blend		15		16,205		6,674			0.64		0.17	0.19		1.00		0.26		0.29
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
<b>US EQUITY SECTORS</b>	<b>1</b>	<b>214</b>	<b>3</b>	<b>70,350</b>	<b>0</b>	<b>15,814</b>	<b>5.26</b>	<b>0.85</b>	<b>5.26</b>	<b>0.36</b>	<b>5.26</b>	<b>0.37</b>	<b>5.62</b>	<b>1.26</b>	<b>5.62</b>	<b>0.57</b>	<b>5.62</b>	<b>0.63</b>
Commodities Industrial Metals		1		58		2			0.56		0.56	0.56		0.82		0.82		0.82
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
Energy Limited Partnership																		
Equity Energy		17		9,112		7,371			0.67		0.26	0.41		1.07		0.48		0.63
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
Health		40		7,545		290			0.92		0.25	0.24		1.36		0.47		0.49
Industrials		16		3,356		434			0.81		0.26	0.22		1.26		0.45		0.40
Miscellaneous Sector		23		5,487		81			0.81		0.52	0.72		1.09		0.72		0.95
Natural Resources		19		6,789		787			1.38		0.78	0.32		1.56		0.76		0.50
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
Technology		23		5,757		213			0.71		0.25	0.24		1.17		0.41		0.39
Utilities		9		3,425		260			0.64		0.25	0.21		0.97		0.40		0.33
<b>INTERNATIONAL EQUITY</b>	<b>0</b>	<b>154</b>	<b>0</b>	<b>135,999</b>	<b>0</b>	<b>13,543</b>	<b>1.36</b>	<b>1.16</b>	<b>1.36</b>	<b>1.16</b>	<b>1.37</b>	<b>1.37</b>	<b>1.90</b>	<b>1.76</b>	<b>1.90</b>	<b>1.76</b>	<b>1.90</b>	<b>2.05</b>
China Region		8		10,999		1,422			1.90		2.08	2.31		2.58				

