
A REGULATORY FRAMEWORK FOR EXCHANGE-TRADED FUNDS*

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This is the first academic work to show the need for, or to offer, a regulatory framework for exchange-traded funds (“ETFs”). The economic significance of this financial innovation is enormous. U.S.-listed ETFs now hold more than \$3.6 trillion in assets and comprise seven of the country’s ten most actively traded securities. ETFs also possess an array of unique characteristics raising distinctive concerns. They offer what we here conceptualize as a nearly frictionless portal to a bewildering, continually expanding universe of plain vanilla and arcane asset classes, passive and active investment strategies, and long, short, and leveraged exposures. And we argue that ETFs are defined by a novel, model-driven device that we refer to as the “arbitrage mechanism,” a device that has sometimes failed catastrophically. These new products and the underlying innovation process create special risks for investors and the financial system.

Despite their economic significance and distinctive risks, ETFs remain a regulatory backwater. The United States has neither a dedicated system of ETF regulation nor even a workable, comprehensive conception of what an

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ETF is. A motley group of statutes divide similar ETFs into a plethora of different regulatory cubbyholes that were originally intended for very different vehicles such as mutual funds, commodity pools, and operating companies. Other regulatory constraints center on a process of discretionary review that generally allows the Securities and Exchange Commission (“SEC”) to assess the merits of each proposed ETF on an ad hoc, individualized basis. This process of review is opaque and unfocused. It is also inconsistent over time, with the effect that older funds often operate under lighter regulation than newer ones. And because it has its roots in statutes originally designed for other kinds of vehicles, the regulation of ETFs fails to address the ETF’s distinctive characteristics. Rooted in a disclosure system largely designed for mutual funds, the SEC’s disclosure mandates for ETFs fail to comprehend the significance and complexities of the arbitrage mechanism and often require no public disclosure of major breakdowns in the mechanism’s workings.

Our proposal contemplates a single regulatory framework for all ETFs. The treatment of all ETFs would be unified. This systematic approach, rooted in the arbitrage mechanism common to all ETFs, would largely displace the hodge-podge of regulatory regimes that vary widely across both the different ETF regulatory cubbyholes in use today and different ETFs within each such cubbyhole. The functional elements of the framework would streamline and rationalize the creation, substantive operations, and disclosure of all ETFs. Such elements would include a shift away from ETF-by-ETF discretionary review and toward written rules of general applicability. In terms of the creation of ETFs, we would narrow the range of ETFs subject to close substantive scrutiny while retaining some discretion for the SEC to address concerns related to the arbitrage mechanism or related structural engineering issues, risky or complex ETFs not adequately addressed by suitability rules and investor education, and large negative externalities. In terms of disclosure, we contemplate quantitative and qualitative information addressing what we here call “trading price frictions,” such as those relating to the performance of the arbitrage mechanism and related engineering during the trading day, model-related complexities, and evolving understandings and conditions.

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INTRODUCTION

The exchange-traded fund (“ETF”) is one of the key financial innovations of the modern era. The ETF, a new vehicle for collective investment, now stands alongside shares of individual companies, mutual funds, and hedge funds as one of the most important investments in the world. Seven of the ten most actively traded securities in the United States in 2016 were ETFs,¹ and the trading volume of shares in the SPDR S&P 500 ETF (“SPY”) exceeded the trading volume of shares in Apple, the world’s most valuable company.² Assets in U.S.-based ETFs multiplied more than 35-fold from year-end 2002 to July 30, 2018 (to \$3.61 trillion), more than ten times the three-fold increase over that same period in the assets of mutual funds, the paradigmatic vehicle for collective investment.³ As of September 30, 2017, each of the top fifteen holdings of Bridgewater Associates, the world’s largest hedge fund, was an ETF.⁴ In January 2018, worldwide ETF assets reached \$5 trillion.⁵

Individual ETFs and the process through which they evolve and through which new types of ETFs are invented, commercially introduced, and diffused in the marketplace together constitute a phenomenon that is not only financially significant, but also idiosyncratic in raising distinctive issues vital to investors and society.⁶ ETFs offer a unique investment premise to both

1. Dani Burger, *Stocks Are No Longer the Most Actively Traded Securities in Stock Markets*, BLOOMBERG (Jan. 12, 2017, 9:57 AM), <https://www.bloomberg.com/news/articles/2017-01-12/stock-exchanges-turn-into-etf-exchanges-as-passive-rules-all>.

2. Robin Wigglesworth, *ETFs Are Eating the US Stock Market*, FIN. TIMES (Jan. 24, 2017), <https://www.ft.com/content/6dabad28-e19c-11e6-9645-c9357a75844a?mhq5j=e3>.

3. Specifically, from year-end 2002 to July 30, 2018, ETF assets increased from \$102 billion to \$3.61 trillion; while over the same period, mutual fund assets increased from \$6.38 trillion to \$19.24 trillion. INV. CO. INSTITUTE, 2017 INVESTMENT COMPANY FACT BOOK 9 (57th ed. 2017) [hereinafter ICI, 2017 FACT BOOK]; *ETF Assets and Net Issuance August 2018*, INV. CO. INSTITUTE (Aug. 30, 2018), https://www.ici.org/etf_resources/research/etfs_07_18 [hereinafter, ICI, *July 2018 ETF Assets*]; *Trends in Mutual Fund Investing July 2018*, INV. CO. INSTITUTE (Aug. 30, 2018), https://www.ici.org/research/stats/trends/trends_07_18.

4. See Bridgewater Assoc., LP, Form 13F Holdings Report (Form 13F) (Nov. 13, 2017). Cf. Nathan Reiff, *What Are the Biggest Hedge Funds in the World*, INVESTOPEDIA (July 5, 2017), <https://www.investopedia.com/news/what-are-biggest-hedge-funds-world> (discussing Bridgewater’s size).

5. Chris Flood, *ETF Market Smashes Through \$5tn Barrier After Record Month*, FIN. TIMES (Feb. 11, 2018), <https://www.ft.com/content/5cf7237e-0cdc-11e8-839d-41ca06376bf2>.

6. We use the term ETF for any pooled investment that trades publicly and offers certain parties the right to create and redeem shares through the arbitrage mechanism we describe in *infra* Section I.A. Cf. *infra* Section IV.A (distinguishing ETF thus defined from exchange-traded note (“ETN”) and exchange-traded product (“ETP”).) In the context of ETFs, we use the term “innovation process” to refer both to the way an individual ETF evolves and to the manner in which a new type of ETF is developed, introduced commercially, and diffused in the marketplace. This follows earlier applications to modern financial innovation of the Schumpeterian tradition of breaking down the process of technological change

individual and institutional investors: what we here conceptualize as a nearly “frictionless,” often low-cost portal to a bewildering, continually expanding universe of plain vanilla and arcane asset classes, passive and active investment strategies, and long, short, and leveraged exposures.⁷

ETFs are nearly frictionless in the sense that, throughout the trading day, they offer almost instantaneous access to and exit from investment exposures at prices that closely reflect the value of the assets an ETF holds. But this frictionless exposure depends largely on the effectiveness of a novel, theory-driven device that we refer to as the “arbitrage mechanism.” We believe the arbitrage mechanism to be the ETF’s defining characteristic, because it is absent from the market microstructure of all other traded securities and from the ETF’s closest cousins, the mutual fund and the closed-end fund. The arbitrage mechanism’s effectiveness is essential to the integrity of ETF trading prices and the ETF’s core investment premise. And this mechanism has sometimes failed catastrophically, even with very large and simple ETFs.

Certain ETFs may pose heightened risks for investors and threaten to create negative externalities for financial markets. An ETF involving leveraged or leveraged inverse exposures or arcane, illiquid, or small asset classes might not only have a less effective arbitrage mechanism or unanticipated risk-return pattern, but also might disrupt asset prices in financial markets. An ETF offering straightforward long exposure to a small asset class may grow so large as to distort the market for that asset class, thus undermining not only the integrity of that market, but also the ETF’s ability to deliver on its investment premise. This appears to have occurred, for instance, with an ETF invested in junior gold mining stocks. Under certain circumstances, even plain vanilla investing strategies in which ETFs are playing an increasingly important role may, at least in the view of some observers, raise the possibility of material externalities. For example, if the overall assets of ETFs, mutual funds, and other market participants tracking the Standard & Poor’s (“S&P”) 500 Index grow large enough, a combination of the concentration in assets held, investor panic in the face of volatility, and expectations of easy exit might raise systemic risk concerns.

to invention, innovation, and diffusion. See Henry T. C. Hu, *Swaps, the Modern Process of Financial Innovation and the Vulnerability of a Regulatory Paradigm*, 138 U. PA. L. REV. 333, 337–40 (1989) [hereinafter Hu, *Regulatory Paradigm*]. We use the term “ETF phenomenon” to refer both to particular ETF products and to the underlying innovation process.

7. There were 923 U.S.-listed ETFs at year-end 2010, 1,412 at year-end 2014, and 1,923 on July 31, 2018. ICI, 2017 FACT BOOK, *supra* note 3, at 59; ICI, *July 2018 ETF Assets*, *supra* note 3. Of course, many new ETFs do not represent new types of ETFs.

Despite the ETF phenomenon's importance, it remains a regulatory and academic backwater. America has neither a dedicated system of ETF regulation, nor even a workable, comprehensive legal conception of what an ETF is. ETFs are subject to extensive regulation, but none of this regulation was developed with ETFs in mind. ETF regulation spills haphazardly from an odd mix of stock exchange listing rules and a motley group of statutes designed for older, fundamentally different products. The United States has almost no written rules that address the distinctive problems of ETFs directly, thus forcing ETFs to squeeze into regulatory cubbyholes intended for different vehicles like mutual funds, commodity pools, and even ordinary operating companies.⁸ Appropriate ETF regulation is so lacking that the SEC has managed to hold it together mainly through a system of highly improvisatory, ad hoc administrative review generally applicable at the moment of each new fund's proposed creation.

This regulatory state of affairs causes two basic types of problems: first, it introduces pathologies to the process of regulatory administration, and second, it fails to address the ETF phenomenon's most distinctive characteristics. The pathologies of administrative process are almost inevitable given how ETF regulation is fragmented across a series of different statutes that impose disparate rules on functionally identical funds. Current ETF regulation is also excessively discretionary. Whether a proposed ETF can be introduced usually depends on the SEC granting the request of the ETF sponsor for ad hoc, individualized, exemptive relief and, sometimes, SEC approval of the individualized request of the listing exchange for a listing exchange rule change. In this process, the SEC's professional staff engages in a substantive review of the proposed ETF and decides, with few meaningful statutory or administrative limits, whether to allow the fund to be introduced and, if so, what conditions the fund must comply with when in operation. This process is unfocused and sometimes opaque even to industry professionals, and the process inhibits innovation through its unpredictability, cumbersomeness, and complexity.

The current state of regulatory affairs also has the practical effect of grandfathering older ETF sponsors into more permissive rules than newer ones. Procrustean responses to proposed ETFs that offer leveraged or leveraged inverse exposures, for example, fail to deal with root issues and, in favoring certain older ETF sponsors, create unlevel playing fields. Some older ETF sponsors are able to introduce new ETFs through a relatively

8. This fundamental "cubbyhole" problem with respect to the regulation of financial innovations was first identified by the sources cited *infra* note 82 and, as suggested by the Sections of this Article referenced in that note, is a recurring theme with respect to the regulation of ETFs.

abbreviated process. In contrast, newer ETF sponsors may have to confront a more intensive substantive review.

Running beneath these problems is a failure to systematically recognize and respond to the ETF phenomenon's unique characteristics. The most distinctive feature of the ETF is its arbitrage mechanism. The purpose of this mechanism is to help bring together the price at which an ETF's shares trade on a stock exchange and the pro rata value of the fund's underlying assets, which is known as its net asset value ("NAV").⁹ This parity between trading price and NAV is essential to an ETF's unique role as a nearly frictionless, nearly universal, financial portal. The arbitrage mechanism poses risks, because it relies entirely on market incentives to lead certain "authorized participants" ("APs") to enter into just the right transactions at just the right times with an ETF and traders in the secondary market so that the trading price of a share will be close to the share's NAV.

ETF disclosure regulation, however, pays little attention to what we call "trading price frictions," such as those related to ineffective arbitrage mechanisms or bid-ask spreads. An effective arbitrage mechanism is essential to the investment premise of the ETF; yet SEC disclosure rules deal badly with simple matters like the past performance of the arbitrage mechanism, raising a serious risk of investor complacency. Bid-ask spreads faced by investors whenever they buy or sell ETF shares on a stock exchange, which can be significant to returns from investing in ETFs, are outside the purview of SEC disclosure mandates. This is largely because most ETFs are subject to a longstanding system of financial disclosure largely designed for mutual funds—a financial product that has no such *trading price frictions* because, unlike ETFs, its shares do not *trade*.¹⁰ Thus no arbitrage mechanisms or bid-ask spreads can exist in the mutual fund context. The disclosure system focuses on changes in NAV, certain operating expenses, and various sales loads and redemption fees, because these are the main concerns of mutual fund investors. But with ETFs, trading price frictions associated with the performance of the arbitrage mechanism and bid-ask spreads can be critical to investor decision-making.

The arbitrage mechanism sometimes has failed catastrophically in

9. We will discuss more specifically the concept of net asset value, and the complexities and ambiguities associated with this and related concepts, in Sections I.B and V.B.

10. In contrast to an ETF, in which an investor normally buys or sells shares in the secondary market, in a mutual fund, the investor buys and "redeems" shares directly with the mutual fund itself, typically at the net asset value ("NAV") of the mutual fund shares. As to the general operation of mutual funds, see, for example, John Morley, *The Separation of Funds and Managers: A Theory of Investment Fund Structure and Regulation*, 123 YALE L.J. 1228 (2013) [hereinafter Morley, *Funds and Managers*].

periods of market stress. On February 5, 2018, the shares of an arcane, “inverse volatility” ETF, with about two billion dollars in assets the prior trading day, closed at a trading price roughly *eighteen times* its NAV—and suffered a 96% drop in its NAV to boot.¹¹

Even plain vanilla ETFs can experience deviations from NAV that are surprising in at least two ways. First, major deviations from NAV have occurred even in the ETFs that are least subject to such deviations. Early on August 24, 2015, major deviations from NAV occurred with respect to a number of large, well-established ETFs offering simple passive long exposure to broad portfolios of highly liquid domestic stocks. During the May 6, 2010 flash crash, the arbitrage mechanism of many ETFs invested in domestic equities “failed dramatically for approximately 20 minutes” to similar effect, in the words of one large ETF sponsor.

Second, although trading rules and other market structure factors can be important to the effectiveness of the arbitrage mechanism and must be continually monitored, ETF-specific factors can also matter. For instance, large, well-established ETFs subject to identical market structures could experience striking differences in deviations. Early on August 24, 2015, the country’s second-largest ETF—one tracking the S&P 500—traded markedly *below* its NAV while the country’s largest ETF—one also tracking the same index—traded *at or slightly above* its NAV. The two ETFs invested in nearly identical highly liquid shares of domestic companies in identical proportions and were subject to the same market structure and market conditions. *Something* specific to these ETFs must have mattered, be it in terms of differences in APs, arbitrage mechanisms, clienteles, or otherwise.

Yet the SEC’s mandatory disclosure regime for past performance did not require any of the ETFs suffering extraordinary deviations on August 24, 2015 to make either quantitative or qualitative disclosures about their occurrence. Nor did the regime require any such ETF to set out any analysis of possible reasons for the deviations it experienced.

As a result, the SEC’s system of required disclosures can contribute to investor complacency, if not misunderstanding. Using the SEC-mandated arbitrage mechanism performance scorecard, the country’s second-largest ETF properly and accurately reported a perfect “100.00” percent performance for a period that included August 24, 2015, despite the major deviation it suffered early that day. The key item of qualitative disclosure of past performance, the “Management’s Discussion of Fund Performance”

11. See *infra* Sections I.B and IV.C (discussing the ProShares Short VIX Short-Term Futures ETF).

(“MDFP”), was largely developed with mutual funds in mind, a product that has no arbitrage mechanism. The MDFP nowhere specifies discussion of the past performance of the arbitrage mechanism, and ETFs appear to have interpreted it as not requiring such a discussion.

ETF disclosure regulation also fails to properly respond to the model-based nature of the arbitrage mechanism, something especially surprising given the major model-related disruptions associated with the modern process of financial innovation.¹² The arbitrage mechanism and its effectiveness vary among ETFs, depending on, among other things, the assets an ETF holds. Irrespective of particulars, every arbitrage mechanism embodies a theoretical model hypothesizing the voluntary behavior of APs and other market participants in a variety of circumstances. Like all models, this model depends on assumptions and suffers from “model risk”—the risk that the model may be faulty. It is difficult to ascertain how realistic the assumptions are and how robust the model is to failures to satisfy the assumptions. Moreover, a model developed assuming a certain business, legal, and regulatory environment may work quite differently when the environment changes. These model-related uncertainties are especially large before an ETF actually starts trading and the model is tested and validated in the real world. The first few generations of investors in an ETF serve, in effect, as the participants in a clinical trial of safety and efficacy, not unlike the participants in trials required for new drugs by the Food & Drug Administration. These uncertainties magnify as ETFs grow more arcane or complicated.

ETF regulation has also suffered from academic neglect. The entire corpus of law review literature on ETFs comprises five articles.¹³ All but one

12. The concept that certain structural factors would lead to modeling problems and related forms of misunderstanding with respect to financial innovations even at sophisticated financial institutions was first advanced in 1993. See generally Henry T. C. Hu, *Misunderstood Derivatives: The Causes of Information Failure and the Promise of Regulatory Incrementalism*, 102 *YALE L.J.* 1457, 1476–94 (1993) [hereinafter Hu, *Misunderstood Derivatives*]. Perhaps the two most dramatic recent illustrations of this concept both involved credit derivatives: the collapse of the American International Group (“AIG”) in 2008, one of the seminal events of the global financial crisis; and the JPMorgan Chase’s Chief Investment Officer debacle in 2012. See Henry T. C. Hu, *Disclosure Universes and Modes of Information: Banks, Innovation, and Divergent Regulatory Questions*, 31 *YALE J. REG.* 565, 623–36 (2014) (discussing JPMorgan Chase) [hereinafter Hu, *Disclosure Universes*]; Kara Scannell, *At SEC, a Scholar Who Saw It Coming*, *WALL ST. J.* (Jan. 24, 2010), <https://www.wsj.com/articles/SB10001424052748703415804575023402762491286> (discussing AIG). See also discussion *infra* Section V.C.1 (discussing how the events of August 24, 2015 taught ETF advisors that additional assumptions were necessary for the arbitrage mechanisms to be effective).

13. See generally William A. Birdthistle, *The Fortunes and Foibles of Exchange-Traded Funds: A Positive Market Response to the Problems of Mutual Funds*, 33 *DEL. J. CORP. L.* 69 (2008) (describing ETFs and comparing them to mutual funds); Daniel J. Grimm, *A Process of Natural Correction:*

are from 2008 or earlier, and most focus on discrete, narrow aspects of ETF operations. One of the best of these articles thoughtfully analyzes the mechanics of an ETF and the ETF's advantages and disadvantages relative to a mutual fund, but it stops short of describing and assessing the general structure of ETF regulation or offering a framework for new regulations as we do here.¹⁴

Thus this Article makes two basic contributions. The first is to be the only law review article to show the need for an overarching regulatory framework for ETFs. The second is to offer the outlines of such a framework.

Under our proposed framework, the arbitrage mechanism would be the organizing principle. Unlike the situation today, all collective investment vehicles utilizing the arbitrage mechanism would constitute an "ETF," and thus, all types of ETFs, irrespective of the assets invested in, the strategies followed, or the exposures offered, would come under the same regulatory umbrella. The ETF would enjoy an independent legal status. ETFs, investors, and the public interest would be served by a unified framework attuned to the idiosyncrasies of the ETF phenomenon. This framework includes a streamlined, transparent, and primarily rules-based system for creating new ETFs that would allow most ETFs to avoid individualized SEC substantive review, while leaving the SEC enough discretion to adequately address the most troublesome new funds.

Importantly, we would not mark out funds for such close scrutiny on the basis of product type—for example, leveraged ETFs, bitcoin ETFs, and so forth. Such a cubbyhole-based approach is vulnerable to the financial innovation process and changing market dynamics. Instead, we rely on three circumstances that, today and in the foreseeable future, will be matters of high regulatory significance.

We also propose rules governing the disclosure and substantive operations of all ETFs. We suggest, for example, that certain substantive elements of the Investment Company Act of 1940 ("ICA"), which regulates most ETFs, should be extended to cover other ETFs that currently escape its

Arbitrage and the Regulation of Exchange-Traded Funds Under the Investment Company Act, 11 U. PA. J. BUS. L. 95 (2008) (discussing actively managed ETFs); Peter N. Hall, *Bucking the Trend: The Unsupportability of Index Providers' Imposition of Licensing Fees for Unlisted Trading of Exchange Traded Funds*, 57 VAND. L. REV. 1125 (2004) (discussing certain licensing fees); Thor McLaughlin, *Eyes Wide Shut: Exchange Traded Funds, Index Arbitrage, and the Need for Change*, 22 REV. BANKING & FIN. L. 597 (2008) (discussing how outsiders may game ETFs engaged in indexed investing); John Yoder & Bo J. Howell, *Actively Managed ETFs: The Past, Present, and Future*, 13 J. BUS. & SEC. L. 231 (2013) (discussing actively managed ETFs).

14. See generally Birdthistle, *supra* note 13 (describing ETFs and comparing them to mutual funds).

application.

We propose disclosure requirements of a quantitative nature that would be granular enough to capture intraday breakdowns in the arbitrage process such as those that occurred on August 24, 2015. The essential historical information relating to intraday and at-the-close deviations from NAV would appear in traditional SEC disclosure documents and on the ETF's public website. More granular historical information, if merited on cost-benefit grounds, would only be available on the ETF's website in a downloadable form amenable to data analytics.

New disclosure requirements of a qualitative nature would consider the arbitrage mechanism as a key component of "performance" for the purposes of the MDFP. More generally, we suggest that all ETFs provide broader, more prospective information about the arbitrage mechanism and related structural engineering matters through an approach in the style of "Management's Discussion and Analysis" ("MD&A") requirements that comprehend the arbitrage mechanism's model-related complexities. This discussion should provide both a particularized assessment of the effectiveness of a fund's arbitrage mechanism and related engineering—including the implications of changes in the business, legal, or regulatory environment and the results of real-world testing—and outline the ETF's efforts to monitor and improve the associated engineering.

Finally, if any truly significant deviations from NAV occur at any time during a trading day, we would require disclosures the next business day through a Form 8-K-style SEC filing to alert investors and through web disclosure. Trading price frictions also arise from bid-ask spreads. Steps should be taken to begin mandating an appropriate degree of public disclosure as to such spreads, at least in terms of information of a quantitative nature.

Collectively, these disclosure reforms should help inform investors and the SEC about possible trading price frictions associated with ETFs, facilitate sensible innovations in ETFs, encourage ETFs to improve their arbitrage mechanisms, and reduce systemic risk. The reforms should also help facilitate SEC and industry initiatives relating to trading rules, other market structure matters, and additional factors associated with trading price frictions.

Part I of this Article summarizes the theory underlying the arbitrage mechanism and evidence as to patterns in the mechanism's actual performance. Part II sets out and analyzes the current de facto structure of the process for introducing new ETFs. Part III sets out and analyzes current

disclosure regimes applicable to ETFs. Part IV presents our proposal regarding regulation of a substantive nature. Part V presents our proposal for disclosure requirements.

On June 28, 2018, just prior to this Article's scheduled publication in the July 2018 issue of this law review, the SEC issued a proposal to change the regulatory state of affairs as to certain ETFs. (We call this the "June 2018 SEC Proposal").¹⁵ The June 2018 SEC Proposal, concurrent and prior statements by SEC Commissioners, and other published materials refer to drafts of this Article that had been posted in March 2018 on the Social Science Research Network ("SSRN"); this Article is largely as set forth in those and a subsequent draft.¹⁶ This Article offers a brief descriptive summary of major aspects of the June 2018 SEC Proposal in the Appendix. However, we do not attempt to contrast that proposal with ours in either the Appendix or the main body of this Article. We will offer an analysis of the June 2018 SEC proposal and related matters in a forthcoming issue of this law review.

The SEC is to be commended for its proposal. Moving towards a more rules-based approach with respect to certain ETFs is a step in the right direction. We also welcome the SEC's indicated openness to reconsidering the matter of better disclosures relating to the arbitrage mechanism and other distinctive aspects of ETFs, one of the core themes set forth in our Article. However, much more would need to be done to achieve a comprehensive regulatory framework for ETFs.

15. Exchange-Traded Funds, Securities Act Release No. 33-1051583, Fed. Reg. 37,332 (proposed July 31, 2018) (to be codified at 17 C.F.R. pts. 239, 270, 274), <https://www.sec.gov/rules/proposed/2018/33-10515.pdf> [hereinafter June 2018 SEC Proposal].

16. See, e.g., June 2018 SEC Proposal, *supra* note 15, at 113 n.291, 117 n.303, 176–77 nn.407–09 and accompanying text; Robert J. Jackson, Jr., Commissioner, SEC, Statement of Commissioner Robert J. Jackson, Jr. on Proposed Rules Regarding Exchange Traded Funds (June 28, 2018), <https://www.sec.gov/news/public-statement/statement-jackson-exchange-traded-funds-062818>; Hester M. Peirce, Commissioner, SEC, Looking at Funds Through the Right Glasses (Mar. 19, 2018), <https://www.sec.gov/news/speech/peirce-looking-funds-through-right-glasses>; Robert St. George, *SEC Faces Call to Update ETF Regulations*, CITIWIRED (Apr. 20, 2018), <http://citywireusa.com/professional-buyer/news/sec-faces-call-to-update-etf-regulations/a1107444>; Henry T. C. Hu, *The \$5m ETF Market Balances Precariously on Outdated Rules*, FIN. TIMES (Apr. 23, 2018), <https://www.ft.com/content/08cc83b8-38e0-11e8-b161-65936015ebc3> (op-ed based on March 18 draft of the Article). Cf. BlackRock, *BlackRock Supports Discussion About the Future of ETF Regulation*, ISHARES.COM (Apr. 2018), <https://www.ishares.com/us/insights/blackrock-supports-discussion-about-future-of-etf-regulation> (statement on the foregoing April 23 op-ed and related matters). We posted two drafts of this Article on Social Science Research Network ("SSRN") in March 2018 (one on March 9 and one on March 18) and posted a third draft on August 16, all at <http://ssrn.com/abstract=3137918>.

I. THE ETF'S DEFINING CHARACTERISTIC: THE ARBITRAGE MECHANISM

A. THE THEORY

The ETF's central investment premise rests on its role as a unique, nearly frictionless portal to seemingly endless combinations of asset classes, investment strategies, and long, short, and inverse exposures. ETFs allow investors not only to enter and exit positions nearly instantaneously throughout the trading day, but, critically, to also do so at little cost—that is, at a trading price nearly equal to the NAV of the shares. Such a mechanism is absent from the market microstructure of other traded securities, such as stocks, and of mutual fund shares.¹⁷ In our view, this novel, unique, and model-based device, which we refer to as the “arbitrage mechanism,” ought to be the starting point for a comprehensive framework for ETF regulation.

The arbitrage mechanism is a way of trying to help ensure that the price of an ETF on a stock exchange is approximately equal to the value of the assets that underlie the shares. The idea, to be more precise, is to help ensure that the fund's stock market price is always nearly equal to the fund's NAV, which is the value of the assets in the ETF's portfolio, minus the net of liabilities, all divided by the number of shares outstanding.¹⁸ An ETF investor would like to be able to count on the trading price being close to the NAV whenever she purchases or sells the ETF's shares, irrespective of the usual tumult of the market forces of supply and demand. Much of the difficulty in designing ETF regulation comes from the variation in how closely the trading prices adhere to the NAV and the possibility of the arbitrage mechanism not meeting its objectives.

In a simple ETF that holds the constituent stocks of a domestic equity index, the arbitrage mechanism roughly works as follows: At the beginning of each day, a fund announces a list of securities in its portfolio, which is known as the “creation basket.”¹⁹ Throughout the day, individual investors and market professionals (such as market makers and institutional investors)

17. Technically, uncollateralized debt obligations known as ETNs also have an arbitrage mechanism, but that mechanism operates differently from that of ETFs. *See* discussion *infra* Section IV.A.

18. *See infra* note 40 (referring to Sections in this Article discussing ambiguities and complexities in the concept of NAV).

19. Some funds also announce a separate list known as a “redemption” basket for use exclusively in redemptions. Current listing standards require beginning-of-day disclosure for actively managed ETFs, but not index-based ETFs. *See, e.g.*, NYSE, RULES OF THE NYSE ARCA, INC. r. 8.600-E(d)(2)(B)(i) (2017) [hereinafter RULES OF NYSE ARCA]. Nevertheless, as a matter of practice, almost all index-based ETFs disclose their portfolios at the beginning of the day.

can invest or divest from exposure to this portfolio by buying and selling the shares of the ETF on a stock exchange. In addition, certain market professionals known as “authorized participants” (“APs”) can also create new shares of the fund or redeem existing ones by engaging in transactions directly with the fund. If an AP wants to create shares, the AP can assemble and deliver the various securities that make up the fund’s announced creation basket and then hand the securities over to the fund in exchange for a proportionate number of shares of the fund. An AP who wishes to create new shares of an S&P 500 index fund, for example, can deliver the proportionate number of the 500 stocks (give or take) that make up the fund’s portfolio.²⁰ Similarly, an AP can sell, or “redeem,” a fund’s shares by buying the fund’s shares and giving them back to the fund in exchange for a proportionate number of the securities in a “redemption basket.” An AP who redeems shares of an S&P 500 fund, for example, will receive the proportionate basket of the 500 securities in the fund’s portfolio.²¹ Note that these direct transactions with a fund usually only take place in very large blocks of shares, which are commonly known as “creation units” and “redemption units.” This restriction to large blocks avoids the costs of processing millions of tiny transactions and simplifies administration by ensuring that transactions happen in standard sizes.²²

Note that not every investor can transact directly with a fund. Only a financial institution that has previously contracted with the fund to be an AP may do so.²³ APs are broker-dealers and clearing agents that have signed an authorized participant agreement with an ETF. Investors who are not APs may nevertheless be able to create or redeem shares by placing an appropriate order with an AP, because APs can create and redeem either for their own accounts or for those of their clients.²⁴

20. An S&P 500 ETF, like an S&P 500 mutual fund, may not necessarily hold all 500 shares of the S&P 500 index. We are simplifying for clarity.

21. Note that the shareholder may not receive the portfolio securities until the very end of the day when the redemption is processed. In the meantime, the shareholder is likely to hedge by short-selling the portfolio securities, in the expectation that the shareholder can close out the short sale later by delivering the securities once the redemption is processed. Request for Comment on Exchange-Traded Products, Exchange Act Release No. 75165, 80 Fed. Reg. 34,729, 34,733 (June 17, 2015) [hereinafter 2015 SEC Request for Comments].

22. Evidence indicates that creation and redemption transactions tend to be small and rare relative to the size of most funds. Rochelle Antoniewicz & Jane Heinrichs, *Understanding Exchange-Traded Funds: How ETFs Work*, ICI RESEARCH PERSPECTIVE, September 2014, at 10 fig.4.

23. See, e.g., Fourth Amended and Restated Application for an Order Under Section 6(c) of the Investment Company Act of 1940 (Form 40-APP/A) at 13–14, *In re Van Eck Assocs. Corp.*, No. 812-13605 (Oct. 7, 2010), https://www.sec.gov/Archives/edgar/data/869178/000093041310005013/c62957_appa.htm.

24. See, e.g., *id.*

APs are important because the creation and redemption transactions that they enter into with the ETF should have the effect of helping limit how much the fund's trading price will deviate from the fund's NAV.²⁵ While trading by market makers and other market participants can also serve to cause a general tendency for the trading price to gravitate to the NAV, the possibility of AP creations and redemptions tends to place both a floor and a ceiling on the stock exchange price of a fund's shares. The arbitrage mechanism tends to set a floor, because if the trading price ever goes too low, APs will have the incentive to buy up shares on the exchange and redeem them from the fund in-kind at the NAV. If the NAV is \$20.00, for example, and the price drops to \$19.50, an investor can buy up shares on the stock exchange at \$19.50 and then turn a 50-cent profit by redeeming the shares from the fund for a basket of securities worth \$20.00. The act of buying up the fund's shares on the exchange will tend to drive the trading price of the shares back up until the NAV comes close to \$20.00, making such arbitrage unprofitable. The arbitrage mechanism similarly serves as a ceiling on the stock market price, since if the price of shares rises too far above the NAV, an investor will buy up the basket of portfolio securities at a price equal to the NAV and use them to create new shares of the fund. The AP will then have the incentive to sell the new shares on the stock exchange, thereby driving the price back down until it gets close enough to the NAV that this arbitrage becomes unprofitable.

It is important to emphasize that an AP's contracts with an ETF do not actually require the AP to create or redeem shares at any time.²⁶ An AP faces no fiduciary duty and no contractual obligation to create or redeem. The arbitrage mechanism assumes that an AP will create or redeem because it is acting out of financial incentive and a desire to profit from gaps between the trading price and the NAV.

It is also important to emphasize that the market microstructure of ETF shares is novel. The microstructure for other tradable securities, including shares in public companies, relies on market forces of supply and demand, with professional trading firms providing market liquidity, including firms designated as market makers by exchanges. In contrast, an ETF hopes that the voluntary, self-interested behavior of a specific group of firms—the APs

25. For an explanation of these incentives, see Richard A. Defusco et al., *The Exchange Traded Funds' Pricing Deviation: Analysis and Forecasts*, 35 J. ECON. & FIN. 181 (2011).

26. See, e.g., U.S. Oil Fund, LP, Registration Statement Under the Securities Act of 1933 (Form S-1) (Apr. 7, 2006) ("An authorized purchaser is under no obligation to create or redeem baskets, and an authorized purchaser is under no obligation to offer to the public units of any baskets it does create.") [hereinafter U.S. Oil Fund 2006 Registration Statement].

for that ETF—can interact with such market forces whenever necessary in such a way as to help align the trading price with the NAV.

The arbitrage mechanism opens up a number of advantages over other types of investment funds. Unlike an open-end mutual fund, which may invest in similar assets and which also permits redemptions, the shares of an ETF trade on a stock exchange, allowing investors to buy and sell from each other at market-clearing prices in real time. A mutual fund, by contrast, does not list its shares on a stock exchange, effectively forcing investors, directly or through their brokerage accounts, to buy and sell only in direct transactions with the fund. And a mutual fund only processes these transactions once a day, often leaving investors to wait out market movements before they can buy or sell.²⁷ (On the other hand, with mutual funds, the ordinary investor can without question buy or sell precisely at the NAV while no ETF offers this certainty.) Additionally, because certain ETFs can transact in-kind, they offer significant tax advantages to investors, permitting funds to unload shares that have appreciated in value in direct, in-kind transactions with APs, thereby avoiding the need to realize taxable gains on those shares.²⁸

This, then, is the simple architecture of how the arbitrage mechanism works. In practice, however, the arbitrage mechanism varies widely across ETFs, even among simple index funds. Some funds, for example, establish the creation basket at the beginning of the day using only a sample of the securities in the portfolio, while other funds establish the creation basket using pro rata portions of all of the securities in the portfolio.²⁹ Some funds transact entirely or almost entirely in their portfolio securities; some funds

27. Mutual funds are not precluded from processing transactions more than once a day. From 1986 through 2006, mutual funds in the “Fidelity Select Portfolios” series offered hourly pricing. See Kathie O’Donnell, *Fidelity to End Hourly Pricing on Select Funds*, INV. NEWS (July 24, 2006, 12:01 AM), <http://www.investmentnews.com/article/20060724/REG/607240754/fidelity-to-end-hourly-pricing-on-select-funds>. The tendency to process transactions only once a day made mutual funds vulnerable to manipulation in the early 2000s. See Eric Zitzewitz, *How Widespread Was Late Trading in Mutual Funds?*, 96 AM. ECON. REV. 284, 285–88 (2006).

28. Jeffrey M. Colon, *The Great ETF Tax Swindle: The Taxation of In-Kind Redemptions*, 122 PENN. ST. L. REV. 1, 20–30 (2017).

29. Charles Schwab & Co., Inc., Comment Letter on Exchange-Traded Products at 4–5 (Aug. 17, 2015), <https://www.sec.gov/comments/s7-11-15/s71115-28.pdf> [hereinafter Charles Schwab]. In a comment letter to the SEC, Charles Schwab & Co. examined three different fixed-income ETFs that each sought to track the Barclays U.S. Aggregate Bond Index on August 7, 2015 and discovered that one of them, which used the pro rata method, included 1,486 securities in its creation basket, even as the other two, which used the sampling method, included only sixty-four and fifty-six securities in their creation baskets, respectively. *Id.* at 4 n.10.

transact in a mix of cash and securities; other funds are cash-settled.³⁰

The differences in the arbitrage mechanism become even greater for funds that hold assets such as derivatives or commodities. The United States Oil Fund LP (“USO”), for example, invests in oil futures contracts, rather than stocks.³¹ Instead of asking APs to redeem and create shares by transacting in baskets of securities, the fund asks APs to transact exclusively in cash, creating complicated timing issues about how and when to calculate a NAV.³² The iShares Gold Trust (“IAU”) dispenses with cash and asks its APs to deliver and receive physical bars of gold.³³ The trust has an elaborate set of procedures set up to process deposits and deliveries of gold, which must meet the specifications for weight, purity, and other characteristics as set forth in gold delivery rules of the London Bullion Market Association.³⁴

As with simple stock index funds, similar commodities or derivatives funds can vary in their arbitrage mechanisms. IAU is the second-largest ETF invested to track the price of gold bullion after the SPDR Gold Trust (“GLD”).³⁵ The two funds would thus seem to be quite similar, but IAU issues and redeems in blocks of 50,000 IAU shares—which, as of January 13, 2018 were collectively worth about \$643,000—GLD redeems in blocks of 100,000 GLD shares—which, as of the same date, were worth about \$12,696,000.³⁶

Similarly, with IAU, redemption may be suspended only, “(1) during any period in which regular trading on NYSE Arca is suspended or restricted, or the exchange is closed, or (2) during any emergency as a result of which delivery, disposal or evaluation of gold is not reasonably practicable.”³⁷ In contrast, with GLD, redemptions may be suspended under circumstances corresponding to (1) and (2), but also when the “[s]ponsor determines [it] to be necessary for the protection of the Shareholders.”³⁸

30. See, e.g., Direxion Shares ETF Trust, Statement of Additional Information 87, 90 (Feb. 28, 2018) (specifying how, for certain bear ETFs, the creation units will only be sold for cash and how the redemption proceeds will consist solely of cash), <http://direxioninvestments.onlineprospectus.net/DirexionInvestments/DFEN/index.html?open=Statement%20of%20Additional%20Information>.

31. U.S. Oil Fund 2006 Registration Statement, *supra* note 26, at 33.

32. *Id.*

33. iShares Gold Tr., Registration Statement Under the Securities Act of 1933 (Form S-3) at 19 (Nov. 21, 2017) [hereinafter IAU 2017 Prospectus]. One of the authors (Hu) holds shares in the iShares Gold Trust (“IAU”).

34. *Id.*

35. In the past, one of the authors (Hu) has held shares in SPDR Gold Trust (“GLD”).

36. See IAU 2017 Prospectus, *supra* note 33; SPDR Gold Tr., Registration Statement on Form S-3 Under the Securities Act of 1933 (Form S-3) 3 (May 8, 2017) [hereinafter GLD 2017 Prospectus].

37. IAU 2017 Prospectus, *supra* note 33, at 20.

38. GLD 2017 Prospectus, *supra* note 36, at 9.

Perhaps the most striking difference between the operation of the IAU and GLD arbitrage mechanism was an unexpected and evanescent one. On March 4, 2016, and for a short period thereafter, IAU's arbitrage mechanism was literally not fully operative at the same time that GLD's mechanism was functioning normally. That day, IAU announced that it had to temporarily suspend the creation of new shares until it could register additional shares with the SEC under the Securities Act of 1933 ("1933 Act").³⁹

B. PATTERNS IN REAL WORLD PERFORMANCE

The available evidence suggests that the ETF arbitrage mechanism tends to perform reasonably well.⁴⁰ However, there appear to be two general exceptions.

First, the arbitrage mechanisms of ETFs involving less plain vanilla assets or strategies generally appear to be less effective. Second, in times of market stress, major breakdowns can occur even with respect to the arbitrage mechanisms of large ETFs offering straightforward long exposure to highly liquid domestic equities. Moreover, among such plain vanilla ETFs, the differences in the performance of the arbitrage mechanisms can be large and baffling.

In terms of overall arbitrage mechanism performance, ETFs generally do fairly well. Antti Petajisto undertook an empirical study of deviations between share prices and the respective NAVs of 1,670 ETFs in the period from January 2007 to December 2014.⁴¹ Petajisto found that although the average deviation between trading price and NAV was only 6 basis points, the volatility of the deviation was 49 basis points, meaning that, with 95% probability, a fund is trading between -96 basis points and +96 basis points of its NAV, or within a 192 basis point band.⁴²

Certain kinds of ETFs exhibited higher deviations. These included

39. See Press Release, BlackRock, Issuance of New IAU (Gold Trust) Shares Temporarily Suspended; Existing Shares to Trade Normally for Retail and Institutional Investors on NYSE Arca and Other Venues (Mar. 4, 2016), <https://www.businesswire.com/news/home/20160304005402/en/Issuance-IAU-Gold-Trust-Shares-Temporarily-Suspended>.

40. There are a number of theoretical and practical complexities associated with the NAV (and the related matter of intraday indicative values), including the fact that the NAV can depart from the intrinsic value of the shares. See, e.g., *infra* Section V.B. One of these complexities is discussed in this Section I.B because of its importance to understanding the performance of certain ETFs on August 24, 2015. Specifically, we discuss how, in early trading that day, the S&P 500 Index (using the prescribed methodology) likely reflected values of certain constituent stocks that were in excess of their actual market values.

41. Antti Petajisto, *Inefficiencies in the Pricing of Exchange-Traded Funds*, FIN. ANALYSTS J., First Quarter 2017, at 24, 26, 33.

42. *Id.*

ETFs invested in less liquid U.S.-traded securities (such as municipal and high-yield bonds), international equities, and international bonds, with volatilities as high as 144 basis points, meaning a 95% confidence interval of almost 600 basis points.⁴³

Markus Broman analyzed data with respect to a sample of 164 physically replicated ETFs traded in the United States that offer passive exposure only to U.S. equity indices for the period January 2006 to December 2012.⁴⁴ In looking at, among other things, differences between trading prices and the NAV, his basic conclusion was that “ETFs are generally efficiently priced.”⁴⁵ However, he did find that there was considerable variation among ETFs; that large ETFs did better than mid-sized ETFs; and that mid-sized ETFs did better than small ETFs.

ETF industry findings are broadly consistent with such patterns. For instance, in a letter to the SEC, BlackRock, the world’s largest asset manager,⁴⁶ briefly discussed its review of the premiums and discounts of nine ETFs from January 1, 2008 through July 21, 2015.⁴⁷

It reported an average premium and discount of 0.01% and a standard deviation of 0.14% for SPY, the largest S&P 500 index fund. Funds holding municipal bonds and high-yield debt, and emerging market bonds had higher average premiums/discounts and standard deviations.

Second, when the market fails to operate as it ordinarily does, however, the arbitrage mechanism can perform much worse. Early evidence of the arbitrage mechanism’s fragility came during the so-called “flash crash” of May 6, 2010. That day, beginning shortly after 2:30 p.m., U.S. equity and futures markets fell over 5% within a few minutes. The rapid decline was followed by a similarly rapid recovery. This decline and rebound of prices in major market indexes and individual stocks was unprecedented in its

43. *Id.* at 33.

44. Markus S. Broman, *Liquidity, Style Investing and Excess Comovement of Exchange-Traded Fund Returns*, 30 J. FIN. MKTS. 27, 35 (2016).

45. *Id.* at 37.

46. See *Largest ETFs: Top 100 ETFs by Assets*, ETFDB.COM, <https://web.archive.org/web/20150810122335/http://etfdb.com/compare/market-cap> (last visited Aug. 28, 2018) (noting that assets under management were based on figures available on August 10, 2015); TOWERS WATSON, *THE 500 LARGEST ASSET MANAGERS: THE P&I/TOWERS WATSON GLOBAL 500 RESEARCH AND RANKING, YEAR END 2014*, at 3 (2015), <https://www.towerswatson.com/en-US/Insights/IC-Types/Survey-Research-Results/2015/11/The-worlds-500-largest-asset-managers-year-end-2014>.

47. BlackRock, Inc., Comment on Exchange-Traded Products, Release No. 75165; File No. S7-11-15 at 12–13, 27 Ex.5 (Aug. 11, 2015), <https://www.blackrock.com/corporate/en-at/literature/publication/sec-request-for-comment-exchange-traded-products-081115.pdf> [hereinafter BlackRock, Aug. 11, 2015 Comment Letter].

speed and scope.⁴⁸

ETFs were disproportionately affected during the May 6, 2010 flash crash. A total of 7,878 securities traded in the period from 2:40 p.m. to 3:00 p.m. Only 326 securities of individual companies experienced a price move of 60% or greater from the 2:40 p.m. price. In contrast, 227 of the 838 ETFs that traded in this period experienced such an extraordinary move.⁴⁹ It is highly implausible that these massive ETF stock price movements reflected real changes in the ETFs' NAVs, since the prices of the ETFs' portfolio assets were moving much less than the trading prices of the ETFs themselves.

Indeed, BlackRock stated unequivocally that during the 2010 flash crash, "the arbitrage mechanism of many ETFs failed dramatically for approximately 20 minutes," in that "ETF share prices fell dramatically compared to the current prices of the underlying holdings."⁵⁰ To illustrate this, BlackRock provided a graphic showing the intraday premium and discount performance of its own iShares Core S&P 500 ETF ("IVV") relative to its intraday estimated fair value, a figure updated every fifteen seconds to reflect the most recent current prices in the underlying securities.⁵¹ In BlackRock's view, this twenty-minute failure "meant the secondary market liquidity on exchanges available to ETF holders effectively failed for this period of time."⁵²

More direct evidence of problems in times of market stress became available on another day of difficult trading: August 24, 2015. Trading was tumultuous that day. The Shanghai Composite Index had fallen 8.5%, and declines in European shares followed.⁵³

The U.S. market open did not go smoothly. Most stocks listed on the New York Stock Exchange ("NYSE") did not open immediately at 9:30 a.m. on the NYSE (though they were immediately open for trading at other exchanges and off-exchange venues).⁵⁴ At 9:35 a.m., the S&P 500 Index

48. U.S. COMMODITY FUTURES TRADING COMM'N & SEC, PRELIMINARY FINDINGS REGARDING THE MARKET EVENTS OF MAY 6, 2010, at 2 (2010).

49. *Id.* at 29–30.

50. BENJAMIN GOLUB ET AL., BLACKROCK VIEWPOINT, EXCHANGE TRADED PRODUCTS: OVERVIEW, BENEFITS AND MYTHS 3, 20 (2013) <https://www.blackrock.com/corporate/en-pt/literature/whitepaper/viewpoint-etps-overview-benefits-myths-062013.pdf>.

51. *Id.* at 20 fig. 3.7.2.

52. *Id.* at 20.

53. Corrie Driebusch, *Markets Reel in Global Sell-Off—Wild Ride Leaves Investors Gasping*, WALL ST. J., Aug. 22, 2015, at A1.

54. SEC STAFF OF THE OFFICE OF ANALYTICS AND RESEARCH, DIVISION OF TRADING AND MARKETS, RESEARCH NOTE: EQUITY MARKET VOLATILITY ON AUGUST 24, 2015, at 15 (2015),

(“SPX”) reached its daily low of about 5% below its previous close, under the methodology prescribed by the S&P Dow Jones LLP (“S&P DJI”).⁵⁵ In contrast, all NASDAQ-100 (“NDX”) constituents (none of which were listed on the NYSE) did open at 9:30 a.m.⁵⁶ However, NDX opened at approximately an 8% decline and had declined nearly 10% by 9:32 a.m.⁵⁷

Some major ETFs did far worse than the securities they held in their portfolios. Immediately after the 9:30 a.m. open, the trading price of IVV fell to its daily low of 20% below its previous close, even though its NAV had dropped only about 5%.⁵⁸ IVV was the second-largest ETF in the United States, a plain vanilla S&P 500 ETF advised by BlackRock. IVV appeared to continue trading at a substantial discount to its NAV until 9:43 a.m.⁵⁹

During the trading day, 19.2% of non-leveraged ETFs experienced extreme price declines of 20% or more, while only 4.7% of shares of corporations experienced such declines.⁶⁰ The Vanguard Consumer Staples

https://www.sec.gov/marketstructure/research/equity_market_volatility.pdf [hereinafter SEC DECEMBER 2015 NOTE].

55. See *id.* at 3–4, 15.

56. This 9:35 a.m. 5% figure is not a precise measure of the true decline in the value of the S&P 500 Index (“SPX”) constituent stocks. This is because the S&P Dow Jones LLP (“S&P DJI”) methodology for calculating the SPX generally uses the New York Stock Exchange (“NYSE”) closing price for the previous trading day for NYSE-listed constituents that had not opened on the NYSE itself (irrespective of whether trades were occurring elsewhere). At 9:35 a.m., only 38% of NYSE-listed stocks had opened on the NYSE. SEC DECEMBER 2015 NOTE, *supra* note 54, at 3. Such SPX use of the previous day NYSE closing prices likely had the effect of SPX understating the extent of the decline in early trading. Thus, until 9:42 a.m., SPX remained substantially higher than it would have been had the constituent stocks calculated with reference to consolidated real-time trade prices. *Id.* at 3–4.

57. *Id.* at 16.

58. The 15% difference flows from comparing the 20% drop at the daily low of iShares Core S&P 500 ETF (“IVV”) (which occurred immediately after 9:30 a.m.), with the approximately 5% daily low of the SPX (which occurred at 9:35 a.m.). As an arithmetic matter, the actual difference between the IVV and SPX at 9:30 a.m. was greater than 15% (for example, since the daily low of SPX occurred at 9:35 a.m., the 9:30 a.m. SPX was necessarily higher). On the other hand, the methodology S&P DJI prescribes for calculating SPX in early trading uses stale prices with respect to NYSE-listed stocks that had not opened for trading. See *supra* note 56 (discussing how SPX remained substantially higher than the prices of the NAV of the constituent stocks calculated with reference to consolidated real-time trade prices). As a result, the 15% difference represents a rough approximation of the difference between the trading price of IVV and its NAV (based on consolidated real-time trade prices of S&P 500 constituent stocks). An early media report suggested that at the open, the trading price of IVV fell 26%, even though its NAV fell only 6%—a 20% difference. See Chris Dieterich, *ETF Focus: Market Plunge Provides Harsh Lessons for Investors*, BARRON’S (Aug. 29, 2015), <http://www.barrons.com/articles/market-plunge-provides-harsh-lessons-for-etf-investors-1440826630>.

59. As to this finding, the SEC used various measures proxying for the SPX. SEC DECEMBER 2015 NOTE, *supra* note 54, at 5.

60. The statistics cited above for non-leveraged ETFs (as we define the term) are the statistics reported for non-leveraged ETPs by the SEC. See SEC DECEMBER 2015 NOTE, *supra* note 54, at 2, 80. We believe this is a good approximation even though the term ETPs can also include vehicles that we would not classify at ETFs, because the great bulk of ETPs were clearly ETFs. *Id.* at 9. See also *infra*

ETF (“VDC”) fell 32% at the open, while the corresponding index fell only 9%. In the first trading hour, one ETF fell as much as 46%. Ironically, the name of this ETF was the PowerShares S&P 500 Low Volatility ETF (“SPLV”).⁶¹ At 9:31 a.m., the PowerShares QQQ Trust, Series 1 (“QQQ”), an ETF designed to track the NDX, reached its daily low of 17% below the previous close, even though its NAV dropped only about 9%—a difference of about 8%.⁶² QQQ continued to trade at a substantial discount to its NAV until 9:37 a.m.⁶³

Certain ETFs suffered nothing short of a breakdown in the arbitrage mechanism in early trading.⁶⁴ Arbitrage ceased temporarily on many ETFs because of a lack of information on gaps between the trading price and the NAV, anomalous single stock pricing, uncertainty around hedging because of fear of trades being cancelled, and delayed opens in many individual stocks.⁶⁵

Two other issues from August 24, 2015 implicate the basic “nearly frictionless” investment premise of the ETF. First, substantial friction manifested itself not only in terms of gaps between trading prices and NAVs, but also in terms of the ability to instantaneously acquire, and exit from, the desired exposures. That day, only eight constituents of the S&P 500 and two constituents of the NDX suffered trading halts under the “Limit Up-Limit Down” system of the National Market System Plan to Address Extraordinary Market Volatility.⁶⁶ In contrast, 327 ETFs, representing 20% of all ETFs, suffered such trading halts.

Second, the friction experienced by any one ETF proved highly

Section IV.A (on distinctions between ETFs (as we define the term), ETNs, and ETPs). The SEC nowhere indicated that it had excluded inverse products from its calculations, even though it is likely that the SEC did so since the report nowhere discusses any product as having *increased* in value concurrent with decreases in stock prices.

61. Chris Dieterich, *The Great ETF Debacle Explained*, BARRON'S (Sept. 5, 2015), <http://www.barrons.com/articles/the-great-etf-debacle-explained-1441434195>.

62. We calculated the 9% estimate for 9:31 a.m. by averaging the 8% 9:30 a.m. drop and the 10% 9:32 a.m. drop. SEC DECEMBER 2015 NOTE, *supra* note 54, at 5, 16.

63. *Id.* at 5.

64. This is not to suggest that the NAV is always identical to the intrinsic value of an ETF's assets. *See, e.g.*, Charles Schwab, *supra* note 29; *infra* Section V.B. *Cf. supra* note 40 (discussing various complexities associated with NAV). *See also supra* notes 56 and 58 (discussing the S&P DJI methodology to calculate SPX resulted in many previous-day closing prices being used with respect to NYSE stocks that had not opened for trading on the NYSE, even though the stocks were trading in other venues).

65. Barbara Novick et al., BLACKROCK, US EQUITY MARKET STRUCTURE: LESSONS FROM AUGUST 24, at 2, 5 (2015), <https://www.blackrock.com/corporate/en-au/literature/whitepaper/viewpoint-us-equity-market-structure-october-2015.pdf> [hereinafter NOVICK, MARKET STRUCTURE].

66. SEC DECEMBER 2015 NOTE, *supra* note 54, at 4.

unpredictable, even as between seemingly identical ETFs subject to identical market structure rules. SPY and IVV were, respectively, the largest and second-largest ETFs in the United States. Both were plain vanilla ETFs, offering passive exposure to the performance of the S&P 500 Index, an index composed of 500 selected stocks from a cross section of industries that are among the most liquid in the world. Both ETFs were run by extremely large asset managers with deep, well-established expertise: SPY by State Street, the third-largest asset manager in the world, and IVV by BlackRock, the largest.⁶⁷

Despite such similarities, identical market structure rules, and identical market conditions, the trading price frictions associated with the two ETFs varied considerably in the early minutes of market open. SPY's trading price only departed somewhat from its NAV, but began tracking relatively closely at 9:38 a.m. And throughout this period, SPY traded at a *premium* to its NAV.⁶⁸ “[I]mmediately after 9:30 am,” IVV declined much more than its NAV and SPY and reached a *discount* of about 15%.⁶⁹ And IVV did not start closely tracking its NAV until 9:43 a.m.

The impact on investors of a breakdown in the arbitrage mechanism of the sort that occurred with some ETFs is difficult to exaggerate. Consider an investor who held shares in IVV for one year and then sold his shares at IVV immediately after the open on August 24, 2015 when IVV reached its daily low. When that investor bought IVV (at what was likely the then-prevailing NAV), the investor was essentially counting on obtaining the performance of the stocks in the SPX, less the impact of the ETF's annual operating expenses. The reported expense ratio was 0.07%.⁷⁰ On Friday, August 22, 2014, the SPX opened at 1992.60, and at 9:35 a.m. on Monday, August 24, 2015, the SPX was about 1872,⁷¹ a percentage drop of about 6%. When the investor sold near the open on August 24, 2015, he was expecting to have lost about 6% on his investment, that is, the change in the SPX and 0.07% due to the annual operating expenses.

67. See *supra* note 46 (discussing the rankings).

68. SEC DECEMBER 2015 NOTE, *supra* note 54, at 15.

69. *Id.* at 16.

70. This uses the ongoing expenses that investors pay each year as a percentage of the value of investments (all of which was accounted for by management fees). iShares Tr., Registration Statement Under the Securities Act of 1933 and/or Registration Statement Under the Investment Company Act of 1940 (Form N-1A) S-1 (Jul. 24, 2015) [hereinafter IVV 2015 Prospectus].

71. This is based on comparing (1) the SPX price at the open on August 22, 2014 (1992.60) with (2) the SPX price at the close on August 21, 2015 (1970.89), then including a haircut of 5%. See *S&P 500 Historical Data*, INVESTING.COM, <https://www.investing.com/indices/us-spx-500-historical-data> (last visited Aug. 28, 2018); SEC DECEMBER 2015 NOTE, *supra* note 54, at 15 (SPX “reached its daily low of a little more than 5% at 9:35 [a.m.]”).

Instead of losing about 6% of his assets, however, this investor would have lost about 21%.⁷² This means that the performance of IVV's arbitrage mechanism was more than two times more important than the performance of SPX. And the effect of this "drag"—this trading price friction—caused by this 15% arbitrage mechanism gap is about 200 times the drag caused by the 0.07% in annual expenses. (Of course, an investor who *bought* IVV immediately after the open on August 24, 2015 at the 15% discount to NAV and later *sold* IVV at or close to the NAV would have benefited from a real bargain.⁷³)

The arbitrage mechanism problems experienced by these plain vanilla ETFs on August 24, 2015 were bad, but they pale in comparison to those experienced by another ETF on Monday, February 5, 2018. That day, the SPX fell 4.1%, its largest drop in about six years,⁷⁴ and, not surprisingly, investors who were using ETFs and other products to bet on continued *low* volatility suffered. The ProShares Short VIX Short-Term Futures ETF ("SVXY"), an ETF with \$1.89 billion in assets as of the Friday close,⁷⁵ was one such product. It pursued daily investment results corresponding to the simple, unleveraged, inverse (that is, -1X) of the performance of the S&P 500 VIX Short-Term Futures Index.⁷⁶

Between the Friday close and the Monday close, the NAV of SVXY shares fell from \$103.7288 to \$3.9635—a fall of over 96%.⁷⁷ For at least some SVXY investors, a near-total loss in the NAV in one day must have been surprising. However, the harsh reality is that, as to this NAV drop, such

72. This is based on comparing (1) the opening price of IVV on August 22, 2014 (200.67) with (2) the IVV price at the close on August 21, 2015 (198.79), then including a haircut of 20%. See *iShares Core S&P 500 ETF (IVV): Historical Data*, YAHOO! FINANCE, <https://finance.yahoo.com/quote/IVV/history?period1=1408683600&period2=1440392400&interval=1d&filter=history&frequency=1d> (last visited Aug. 28, 2018) [hereinafter *iShares Core S&P 500 ETF (IVV): Historical Data*]; SEC DECEMBER 2015 NOTE, *supra* note 54, at 16 ("[I]mmediately after 9:30 [a.m.], IVV reached a daily low of a more than 20% below its previous day's close . . .").

73. Technically, for ETF investors buying or selling ETFs in the secondary market, it is the variability between the NAV and the share price that can cause problems. That is, if the investor buys at a 15% discount to NAV and happens to sell at a 15% discount, there is no harm to the investor from such deviations from the NAV.

74. Fred Imbert, *Dow Plunges 1,175 Points in Wild Trading Session, S&P 500 Goes Negative for 2018*, CNBC (Feb. 5, 2018, 5:06 PM), <https://www.cnbc.com/2018/02/04/us-stocks-interest-rates-futures.html>.

75. See *Short VIX Short-Term Futures ETF: NAV History*, PROSHARES, <http://www.proshares.com/funds/svxy.html> (spreadsheet available under "NAV History") (last visited July 31, 2018) [hereinafter *ProShares SVXY NAV Spreadsheet*] (spreadsheet available under "NAV History").

76. See *id.* Cf. *infra* note 230 (announcement of change in the investment objective on February 26, 2018).

77. See *ProShares SVXY NAV Spreadsheet*, *supra* note 75.

SVXY investors had little to complain about. As ProShares stated, this “was consistent with its objective and reflected the changes in the level of its underlying index.”⁷⁸ Luckily, some investors did not have to find solace in this symmetry. The Harvard University endowment, for example, dodged the bullet entirely, having just disposed of its SVXY holdings the previous quarter.⁷⁹

However, the performance of SVXY’s arbitrage mechanism that day is something that, presumably, was very surprising even to the most highly sophisticated investors. At the Monday close, the SVXY’s trading price was \$71.82⁸⁰—a figure *18 times* that of SVXY’s NAV of \$3.9635. Even by the standards of this arcane ETF, this deviation between the trading price and the NAV was an extraordinary outlier. For the twelve-month period ending February 16, 2018, SVXY’s median premium and discount from NAV was 0.02%.⁸¹

II. THE EXISTING REGULATORY STATE OF AFFAIRS: SUBSTANTIVE ASPECTS

A. OVERVIEW, WITH A FOCUS ON PATHOLOGIES IN ADMINISTRATIVE PROCESS

The existing regulation of ETFs was never consciously designed to meet the unique challenges these funds pose. American law contains no dedicated body of ETF regulation and not even a workable, comprehensive conception of what an ETF is. Instead, the regulation of ETFs has been cobbled together ad hoc from the statutes that regulate other kinds of investment vehicles, including ordinary mutual funds, commodity pools, and regular operating companies. These statutes were written long before the ETF’s emergence, and none of them regulates with an ETF’s distinctive characteristics in mind.

ETFs are dodecahedrons that have been crammed into a series of round,

78. Gunjan Benarji, *Short Volatility ETN to Liquidate*, WALL ST. J., Feb. 7, 2018, at B14.

79. Michael McDonald & Luke Kawa, *Harvard’s Endowment Cut ProShares Volatility Fund Before Rout*, BLOOMBERG (Feb. 9, 2018, 1:44 PM), <https://www.bloomberg.com/news/articles/2018-02-09/harvard-s-endowment-cut-proshares-volatility-fund-before-rout>.

80. See *iShares Core S&P 500 ETF (IVV): Historical Data*, *supra* note 72.

81. See *ProShares Short VIX Short-Term Futures ETF: Premium/Discount*, ETF.COM, <http://www.etf.com/SVXY> (last visited Aug. 28, 2018). ProShares’s own figures show that in the fourth quarter of 2017, the gap between at-the-close trading prices and NAVs was within 49.9% about two-thirds of the trading days. See *Short VIX Short-Term Futures ETF: Premium/Discount Analysis Tool*, PROSHARES, http://www.proshares.com/tools/premium_discount?ticker=svxy (last visited Aug. 28, 2018).

square, and triangular cubbyholes, and the fit has always been awkward. In this regard, ETFs are typical of financial innovations more generally, which regulators often cannot easily integrate into regulations designed for older financial products.⁸²

The attempt to squeeze ETFs into existing cubbyholes has produced two types of problems in ETF regulation: first, pathologies in administrative process and second, failures to properly map regulation to the unique characteristics of the ETF phenomenon. The two problems are closely related. Nevertheless, we will largely deal with matters of administrative process in this Part II (with a focus on the introduction of new ETFs) and matters of mapping in Part III (in the context of disclosure requirements).

In terms of administrative process, there is first, an excess of *fragmentation* and second, an excess of *discretion*. Table 1 below illustrates these two basic problems.

ETF regulation is fragmented, because functionally similar ETFs are subject to different statutory regimes. ETFs all rely on an arbitrage mechanism, and this commonality tends to drive the significant features of all ETFs. Despite the importance of the arbitrage mechanism, regulation tends to ignore this commonality and instead divides ETFs based on the category of assets in which they invest. Depending on what an ETF invests in, it might be regulated as an investment company (that is, a mutual fund), a commodity pool, or a regular operating company, with very different consequences for each classification. Differences in assets yield differences in the regulation of the ETFs, for reasons that mostly do not make sense.

In addition to being fragmented, ETF regulation is also highly discretionary. Although some ETF regulation is codified in the form of stock exchange listing rules, the core of ETF regulation is an ad hoc process of individualized review that the SEC generally requires for every new ETF.

82. The cubbyhole problem arises in many contexts with respect to the regulation of ETFs and appears in, for example, the Introduction, Sections II.A, II.B, II.D, III.A, IV.A, IV.C, and V.A This cubbyhole problem in modern financial innovation and associated informational issues for regulators as well as possible solutions were first advanced in the context of financial innovation and the capital adequacy cubbyholes used by international bank regulators in by Henry T. C. Hu. *See* Hu, *Regulatory Paradigm*, *supra* note 6, at 335–39, 392–412. *See also* Hu, *Misunderstood Derivatives*, *supra* note 12, at 1463, 1495–1508 (addressing the informational disadvantages regulators face as they integrate new financial products into regulatory structures developed for existing financial products); Henry T. C. Hu, *New Financial Products, the Modern Process of Financial Innovation, and the Puzzle of Shareholder Welfare*, 69 TEX. L. REV. 1273, 1292–1300, 1311–12 (1991) (financial innovation and the “equity” and “debt” cubbyholes used by corporate law). Such works have influenced scholarship as to the design and administration of tax laws in the face of financial innovation. *See, e.g.*, Jeff Strnad, *Taxing New Financial Products: A Conceptual Framework*, 46 STAN. L. REV. 569, 570 n.2, 591 n.57, 605 n.110 (1994).

Generally speaking, before a new ETF can be introduced, the SEC has the authority to assess it individually and demand—with no guidelines and no need for consistency or transparency—that the ETF agree to comply with any condition or requirement that the SEC sees fit. This extended review process—which differs for different kinds of ETFs and varies even across different divisions within the SEC—has no discernible principles and no discernible limits. It is opaque and difficult to understand, and it has the effect of grandfathering old ETF advisers into more permissive rules, such that older advisers can often introduce new funds on easier regulatory terms than newer advisers.

TABLE 1. Fragmentation and Discretion in ETF Regulation

	<i>Investment Assets</i>	<i>Regulatory Statutes</i>	<i>Stock Exchange Listing Standards</i>	<i>Source of SEC Discretionary Review</i>
Investment Company ETF	Securities	Investment Company Act; Securities Act; Securities Exchange Act	e.g., NYSE Arca 5.2	Exemption from Investment Company Act
Commodity Pool ETF	Commodity futures	Securities Exchange Act; Commodity Exchange Act; Securities Act	e.g., NYSE Arca 8.203	Individual change in stock exchange listing standards
Operating Company ETF	Other (e.g., gold bars, currency & bitcoin)	Securities Exchange Act; Securities Act	e.g., NYSE Arca 8.202 (currency); 8.201 (other)	Individual change in stock exchange listing standards

B. FRAGMENTATION

The best way to understand the fragmentation of ETF regulation is to see it visually. Table 1 shows the sources of regulation for different types of ETFs. The rows in Table 1 show that the ETF universe can be divided into three different categories according to how they are classified: investment companies (“Investment Company ETFs”); commodity pools (“Commodity Pool ETFs”); or ordinary operating companies (“Operating Company ETFs”).

The reason regulation divides the ETF universe up in this way is that instead of focusing on all ETFs’ common reliance on the arbitrage mechanism, which is what should provide the center post for ETF regulation, current regulation focuses on the different kinds of assets that ETFs invest in. ETFs that are functionally similar in the way they operate and relate to investors are treated differently because of the differences in the assets they invest in.

By far the most common of the three categories of ETF is the Investment Company ETF.⁸³ Investment Company ETFs are subject mainly to regulation by the Investment Company Act of 1940 (“ICA”), which is the principal regulatory statute for ordinary mutual funds and other investment companies.⁸⁴ As we have noted, ETFs tend to be assigned to different regulatory categories based on the assets they invest in, and Investment Company ETFs are defined by their being invested in what are legally categorized as “securities.” The ICA says, roughly, that any company that is in the business of trading in securities or that devotes more than 40% of its assets to securities is an investment company to be regulated by the Act.⁸⁵ Thus, because most of the large index-based ETFs, such as SPY, invest in securities, they are regulated by the ICA, and they qualify under our rubric as Investment Company ETFs. The ICA includes several different categories of investment companies, and most ETFs qualify as “open-end management investment companies”—the same category that includes ordinary open-end mutual funds.⁸⁶ A few ETFs—most of which were started in the early days of the ETF industry—are classified as “unit investment trusts” (“UITs”).⁸⁷

83. Antoniewicz & Heinrichs, *supra* note 22, at 10 fig.4 (indicating the ETFs regulated as investment companies are more common than ETFs regulated as commodity pools or ordinary companies).

84. 15 U.S.C. § 80a-1 (2012). For an introduction to the ICA and its purposes, see John Morley, *Why Do Investment Funds Have Special Securities Regulation?*, in *THE ELGAR HANDBOOK OF MUTUAL FUND REGULATION* (William Birdthistle & John Morley eds., forthcoming 2018).

85. *Id.* § 80a-3(a).

86. Antoniewicz & Heinrichs, *supra* note 22, at 11.

87. *Id.* Unit investment trusts (“UITs”) and open-end management investment companies differ in

Investment Company ETFs are subject to a number of regulations under the ICA, which are administered by the SEC. Unlike the other securities regulation statutes, the ICA does not just regulate disclosure—it also regulates substance. It limits how much money a fund can borrow, for example, and regulates the way they redeem their shares.⁸⁸ Note that although many funds regulated by the ICA are technically also subject to the 1933 Act and the Securities Exchange Act of 1934 (“1934 Act”), the ICA largely supplants the requirements of these two other statutes, mandating its own distinct forms of disclosure, which we will detail in Part III.

The next type of ETF is what we call a Commodity Pool ETF. Like an Investment Company ETF, a Commodity Pool ETF is defined by its assets, namely commodity futures, which are contracts for the future delivery of anything that counts as a “commodity” under the Commodity Exchange Act. Examples of Commodity Pool ETFs include USO,⁸⁹ which invests in contracts for the future delivery of oil, and the recently proposed ForceShares Daily 4X US Market Futures Long Fund,⁹⁰ which hopes to invest in contracts to pay the future return on the S&P 500 index.⁹¹

Because a Commodity Pool ETF invests in commodity futures, rather than securities, its main regulatory statute is not the ICA, but the Commodity Exchange Act.⁹² The adviser of a Commodity Pool ETF must thus register as a commodity pool adviser with the Commodity Futures Trading

a few ways. A UIT, for example, is prohibited from having a board of directors, whereas an open-end management investment company is required to have one. 15 U.S.C. § 80a-4(2) (2012) (defining a UIT as an investment company that, *inter alia*, “does not have a board of directors”); 15 U.S.C. § 80a-16 (2012) (requiring a board of directors for other investment companies). For the most part, however, the differences between UITs and open-end management investment companies are not important for our purposes, and we leave aside discussion of UIT-specific regulatory matters.

88. *See, e.g.*, 15 U.S.C. § 80a-18(f) (2012) (regulating borrowing); *Id.* § 80a-22(e) (regulating the frequency of redemptions).

89. U.S. Oil Fund, LP, Registration Statement Under the Securities Act of 1933 (Form S-1) *passim* (Jan. 19, 2007).

90. Self-Regulatory Organizations; NYSE Arca, Inc.; Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund Under Commentary .02 to NYSE Arca Equities Rule 8.200, Exchange Act Release No. 79201, 81 Fed. Reg. 76,977 (Oct. 31, 2016), <https://www.sec.gov/rules/sro/nysearca/2016/34-79201.pdf> [hereinafter Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund Under Commentary .02 to NYSE Arca Equities Rule 8.200].

91. Section 1 of the Commodity Exchange Act defines the word “commodity” to include any good or article. 7 U.S.C. § 1(a)(9) (2012). Note that although futures contracts on equity securities tend to be defined as securities, rather than commodities, futures contracts on *indexes* of equity securities are commodities. Section 2(a)(1) of the Securities Act of 1933, for example, defines the term “security” to include a future on a security but not a future on an index of securities. 15 U.S.C. § 77b(a)(1) (2012).

92. 7 U.S.C. § 1 (2012).

Commission, the federal agency that administers the Commodity Exchange Act, and comply with the Commodity Exchange Act's disclosure requirements.⁹³ The Commodity Exchange Act is not a Commodity Pool ETF's only source of regulation, however, because a Commodity Pool ETF must also comply with the 1933 Act and the 1934 Act. Since the common stock that a Commodity Pool ETF issues to the public is a security, a Commodity Pool ETF must comply with the same securities regulations that apply to every other company that publicly issues securities. Indeed, as we shall discuss, for investors in a Commodity Pool ETF, the key source of information comes from the requirements of the 1933 and 1934 Acts, not from the Commodity Exchange Act. In addition, as we shall see, Commodity Pool ETFs face special regulation under stock exchange listing rules.

The final category of ETF is what we call an Operating Company ETF, not because such an ETF is actually an ordinary operating company like Apple or General Motors, but because of the way this category is regulated. Like other kinds of ETFs, an Operating Company ETF is defined by its assets, and it tends to invest in things other than securities and commodity futures. Examples include ETFs that invest in gold bullion, such as IAU or GLD, or the ETF that was proposed by the Winklevoss twins of Facebook fame that would have invested in bitcoins.⁹⁴ Operating Company ETFs are distinctive because they do not invest in securities or commodity futures and therefore are not subject to any special statutory regulation other than the 1933 Act and 1934 Act regimes that apply to all public operating companies. Even though these ETFs are collective investment vehicles and their reliance on the arbitrage mechanism profoundly affects the trading of their shares, Operating Company ETFs are basically no different under federal law from Apple and General Motors. Though, we will see in a moment that Operating Company ETFs face some special regulation under stock exchange listing rules, and this gives the SEC significant authority over them. But by statute, at least, Operating Company ETFs are run-of-the-mill public companies.

ETFs thus fall into several different regulatory regimes.⁹⁵ Statutes are not the only source of ETF regulation, however. Indeed, much more

93. *Id.* §§ 6k, 6n.

94. The SEC disapproved a proposed rule change pertaining to the Winklevoss bitcoin ETF on July 26, 2018 despite having previously granted a petition for review after the staff initially denied the stock exchange's application for a rule change to permit the fund's listing. BATS BZX Exch., Inc., Exchange Act Release No. 83723, 2018 WL 3596768 (July 26, 2018); BATS BZX Exch., Inc., Exchange Act Release No. 80511, 2017 WL 1491756 (Apr. 24, 2017) (order granting petition for review and scheduling filing of statements). *Cf. infra* note 237 (on status of proposed VanEck SolidX Bitcoin ETF and of nine other proposed bitcoin ETFs).

95. The first ETF began operating in 1993. Antoniewicz & Heinrichs, *supra* note 22, at 6.

important than statutes are the rules imposed by stock exchanges. The great bulk of ETFs in the United States tend to list on the NYSE Arca, Cboe BATS Exchange,⁹⁶ and NASDAQ Intermarket stock exchanges. These exchanges have each developed detailed listing rules to govern the operations of the ETFs they list, and these rules have become a major source of ETF regulation.

The exchange listing rules came into being as part of the broader program of exchange-based private regulation envisioned by the 1934 Act. The 1934 Act empowers stock exchanges to develop rules to govern the operations, disclosure, and trading of the companies whose securities listed on the exchanges, and the rules governing ETFs flow out of this authority.⁹⁷ The rules are not entirely the products of the exchanges, however. The 1934 Act requires an exchange to obtain the approval of the SEC before the exchange can create or change a rule, and this veto right functionally gives the SEC the power to dictate what the rules will say. The SEC can not only reject an exchange's proposed new rules; but also, it can force changes in an exchange's existing rules by refusing to cooperate with the exchange on other matters. Thus, although the listing rules for ETFs vary across exchanges, they should all be understood as part of a single program of regulation directed, in essence, by the SEC. Indeed, at times the SEC has granted what it calls "class relief," expressly setting out a set of policies applicable to all exchanges seeking to list ETFs of a given type.⁹⁸

Despite the SEC's central role in developing stock exchange listing rules, the rules set up for ETFs lack any coherent focus. None of NYSE Arca, NASDAQ Intermarket, and Cboe BATS Exchange have a single set of rules to regulate ETFs. Instead, just like the statutes that regulate ETFs, stock exchange listing rules tend to divide up ETFs by the kinds of assets they hold. Indeed, the exchanges divide up ETFs into an even finer set of categories than statutes do. NYSE Arca, for example, not only separates ETFs that invest in securities from other kinds of ETFs, but also breaks down

96. BATS was recently acquired and is now a subsidiary of Cboe. John Detrixhe & Annie Massa, *CBOE Agrees to Buy Market Operator Bats for \$3.2 Billion*, BLOOMBERG (Sept. 26, 2016) <https://www.bloomberg.com/news/articles/2016-09-26/cboe-says-it-plans-to-buy-market-operator-bats-for-3-2-billion>.

97. 15 U.S.C. § 78s(b) (2012).

98. See, e.g., *Combination Exchange-Traded Funds*, SEC No-Action Letter, 2007 WL 2011063 (June 27, 2007) (expanding class relief to ETFs that hold both equity and fixed-income securities); *Class Relief for Fixed-Income Exchange-Traded Funds*, SEC No-Action Letter, 2007 WL 1498768 (Apr. 9, 2007) (expanding class relief for index-based fixed-income ETFs); *Class Relief for Exchange-Traded Index Funds*, SEC No-Action Letter, 2006 WL 3455230 (Oct. 24, 2006) (expanding class relief for index-based ETFs that cannot meet one or more of the conditions in the 2001 class letter); *Am. Stock Exch.*, SEC No-Action Letter, 2001 WL 940280 (Aug. 17, 2001).

ETFs that invest into securities into further subcategories based on whether they invest in debt or equity.⁹⁹ The NYSE Arca also pulls apart Operating Company ETFs into separate categories based on whether they invest in currency or tangible assets.¹⁰⁰

There is a key difference between these stock exchange listing rules and the statutes that regulate ETFs, however, which is that the stock exchange listing rules often address the unique problems of the ETF arbitrage mechanism.¹⁰¹ One common theme in the exchange listing rules, for example, is the diversification and liquidity of a fund's portfolio.¹⁰² Another common theme is the transparency with which the portfolio is disclosed.¹⁰³ Despite these common themes, however, the details of the rules can vary. The NYSE Arca, for example, imposes different liquidity requirements on the portfolios of index-based Investment Company ETFs and actively-managed Investment Company ETFs.¹⁰⁴

The net effect of this fragmentation across different regulatory statutes, rules, and exchanges is enormous, often resulting in unfair and incoherent differences in the legal obligations of otherwise similar ETFs. Contrast, for example, the regulatory obligations of the Van Eck Vectors Junior Gold Miners ETF, which invests in the stock of small gold mining companies, with GLD, which holds gold bullion. Both funds describe themselves as ETFs, and both rely on versions of the arbitrage mechanism to maintain the connection between their share prices and their NAVs. But because the Van Eck ETF holds securities, it is subject to the ICA and its many burdensome requirements, including, for example, the obligations to hire a chief compliance officer; to undergo regular inspections by the SEC; to comply with limits on borrowing and capital structure; to satisfy mechanical

99. RULES OF NYSE ARCA, *supra* note 19, at r. 5.2-E(j)(3), cmts. 1, 2 (discussing ETFs investing in equities in the first comment and ETFs investing in debt in the second comment).

100. *Id.* at r. 8.202-E, 8.201-E (discussing currency and tangible assets, respectively).

101. For a general summary of stock exchange rules, see Kenneth Fang & Jane Heinrichs, *Understanding the Regulation of Exchange-Traded Funds Under the Securities Exchange Act of 1934*, INV. CO. INSTITUTE 7–10 (2017), https://www.ici.org/pdf/ppr_17_etf_listing_standards.pdf.

102. *E.g.*, CBOE BZX EXCHANGE, INC., RULES OF CBOE BZX EXCHANGE, INC. r. 14.11(c)(3)(A) (2018) (requiring minimum liquidity and diversification for components of an index used by an equity ETF) [hereinafter RULES OF CBOE BZX EXCHANGE]; RULES OF THE NYSE ARCA, *supra* note 19, at r. 5.2-E(j)(3) (same).

103. RULES OF CBOE BZX EXCHANGE, *supra* note 102, at r. 14.11(c)(3)(C) (requiring disclosure of intraday indicative value every 15 seconds); RULES OF NYSE ARCA, *supra* note 19, at r. 5.2-E(j)(3) cmt. .04(a) (requiring daily disclosure on a public web site of the portfolio holdings that will form the basis of a fund's calculation of NAV).

104. RULES OF CBOE BZX EXCHANGE, *supra* note 102, at r. 14.11(c)(3)(A) (requiring minimum liquidity and diversification for components of an index used by an equity ETF); RULES OF NYSE ARCA, *supra* note 19, at r. 5.2-E(j)(3) (same).

requirements for redemptions and securities sales; and to set up a board of directors and shareholder voting. In contrast, GLD faces none of these requirements, because GLD does not invest in securities.

These differences in regulatory obligations might make sense if they were connected to the differences in the two funds' assets. To the extent that bars of gold and the common stock of gold mining companies pose different risks to investors, then of course the law should account for those differences, but that is not what the law is doing. Instead, the law draws distinctions based on ancient categories that have little correlation with modern investor needs. Though bars of gold and stock in gold mining companies are surely different, it is impossible to say what those differences have to do with, say, the need for a chief compliance officer, the value of regular inspections by the SEC, or the myriad of other ICA requirements. And if the need for a chief compliance officer or regular inspections has anything to do with the differences between gold bars and stock in gold mining companies, it is only by accident and not because Congress or any other rational policy designer foresaw it.

C. DISCRETION

After fragmentation, the second major feature of the ETF administrative process is discretion. Although an ETF is subject to a host of statutes and rules, most of the regulation of ETFs comes from a process of ad hoc, individualized, discretionary review at the SEC. This individualized review process allows the SEC to impose requirements and conditions on every new ETF adviser. Many of these requirements and conditions have never been publicly announced or written down, and they have varied significantly over time, even for funds that are otherwise virtually identical. The SEC has a tremendous amount of discretion to impose novel requirements on any new ETF or ETF sponsor.

The details are somewhat complicated, but generally speaking, the SEC imposes this discretionary review on each new ETF in a slightly different way, depending on the nature of the ETF's assets. For an Investment Company ETF, the source of the SEC's discretionary review is the SEC's statutory power to grant exemptions from certain provisions of the ICA. The ICA was drafted more than forty years before the first ETF came into being, so the ICA imposes a number of requirements that unintentionally prohibit the arbitrage mechanism at the heart of an ETF. For example, sections 2(a)(32) and 5(a)(1) of the ICA say that in an "open-end management investment company"—the category of investment company that includes ordinary mutual funds as well as most ETFs—shares of common stock must

be redeemable at net asset value.¹⁰⁵ The SEC has interpreted this requirement to mean that every share must be individually redeemable by every shareholder.¹⁰⁶ This is a problem for ETFs, because ETFs generally only permit shares to be redeemed in large blocks and only by a small number of designated APs. Most shareholders thus cannot redeem directly, and even those who can are unable to redeem their shares one at a time. Hence, the arbitrage mechanism violates the ICA. Similarly, section 22 of the ICA regulates the distribution of shares of an open-end management investment company,¹⁰⁷ and the trading of ETF shares on a stock exchange may violate those regulations. In addition, ETFs tend to violate a number of other provisions of the ICA.¹⁰⁸

The SEC's solution to this problem has been to grant special exemptions to the Investment Company ETFs that apply for them. The SEC's authority for these exemptions comes from section 6(c) of the ICA, which says:

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.¹⁰⁹

In exchange for granting an exemption, however, the SEC imposes a number of requirements and conditions. Applicants often negotiate these conditions with the SEC privately and then memorialize the conditions in written applications that applicants later upload to the SEC's website, where many of the applications become publicly available.¹¹⁰ Sponsors that refuse

105. 15 U.S.C. §§ 80a-2(a)(32), 5(a)(1) (2012).

106. The SEC's position is implicit in the requests that ETF sponsors make to be exempted from sections 5(a)(1) and 2(a)(32) of the ICA. *See, e.g.*, Index IQ ETF Trust, Investment Company Act Release No. 33163 (July 19, 2018) (notice) ("Because shares will not be individually redeemable, applicants request an exemption from section 5(a)(1) and section 2(a)(32) of the Act that would permit the Funds to register as open-end management investment companies and issue shares that are redeemable in Creation Units.").

107. 15 U.S.C. § 80a-22.

108. ICA section 22(e) requires redemptions to be affected within seven days of demand. *Id.* § 80a-22(e). ETFs that invest in securities overseas are sometimes unable to satisfy this requirement because they cannot settle trades within seven days. Additionally, ICA section 17(a) limits transactions between a fund and its large shareholders (who, for technical reasons, may include authorized participants in an ETF). *Id.* § 80a-17(a).

109. *Id.* § 80a-6(c).

110. As a typical example, the SEC recently approved an application for exemption by the Northern

to accept the SEC's conditions may have their applications denied.¹¹¹

This process of review is thus a major source of regulation for Investment Company ETFs. The SEC essentially uses it to invent new regulations, ad hoc, for each new fund sponsor. The ability to invent new regulations is valuable for all kinds of reasons—it is a power any regulator would love—but it is especially useful for ETFs, because statutory law has so little to say about the unique features of ETFs. The SEC thus leans heavily on the exemptive process to formulate legal requirements that address an ETF's distinctive threats and risks.

One of the limitations of this ICA exemptive process, however, is that it does not reach Commodity Pool or Operating Company ETFs. Since only funds that trade in securities are subject to the ICA, only funds that trade in securities have to ask the SEC for exemptions from the ICA. The SEC thus cannot reach Commodity Pool or Operating Company ETFs through the ICA exemptive process, leaving these funds potentially free from the conditions and requirements that ICA exemptive orders apply to Investment Company ETFs.

Recognizing this problem, the SEC has found another source of authority to individually review Commodity Pool and Operating Company ETFs: stock exchange listing standards. Under the listing standards of the exchanges that list ETFs, every new Commodity Pool or Operating Company ETF has to be individually approved by the SEC before it can be listed on the exchange. The SEC achieves this outcome by leveraging a provision in the 1934 Act that requires all changes in stock exchange listing standards to be reviewed and approved by the SEC.¹¹² Thus, in order to give it a chance to review and impose conditions on every new Commodity Pool

Lights Fund Trust for a series of actively managed ETFs. Section 8 of the amended application contained a section titled "Express Conditions to this Application," which listed eighteen different conditions the trust agreed to comply with in exchange for an exemption. The conditions included, among other things, a commitment to maintain a web site with daily information on the fund's NAV and portfolio, a commitment not to call the fund a "mutual fund," and various commitments designed to limit the influence of large traders who might hold the fund's shares. N. Lights Fund Tr. & Toews Corp., Application for Exemption and Other Relief Filed Under the Investment Company Act of 1940 (Form 40-APP) 29–32 (June 26, 2017).

111. See, e.g., Order Disapproving a Proposed Rule Change Relating to the Listing and Trading of Shares of the SolidX Bitcoin Trust Under NYSE Arca Equities Rule 8.201, Exchange Release No. 80319, 82 Fed. Reg. 16,247 (Apr. 3, 2017) [hereinafter SolidX Bitcoin Tr.]; Order Disapproving a Proposed Rule Change to BZX Rule 14.11(e)(4) to List and Trade Shares Issued by the Winklevoss Bitcoin Trust, Exchange Release No. 80206, 82 Fed. Reg. 14,076 (Mar. 16, 2017) [hereinafter Winklevoss Bitcoin Tr.]; Precidian ETFs Tr., Investment Company Act Release No. 31336, 110 SEC Docket 1226 (Nov. 14, 2014) (order permitting withdrawal of application) [hereinafter Precidian ETFs Tr.]. For the current status of the Winklevoss, SolidX, and nine other proposed bitcoin ETFs, see *supra* note 94 and *infra* note 237.

112. 15 U.S.C. § 78s(b) (2012).

and Operating Company ETF, the SEC has required the exchanges to treat the listing of each one of these funds as a change in their listing standards, even if the fund complies with all of the requirements in an exchange's listing standards.¹¹³ Once the exchange applies for a special exemption to list a new Commodity Pool or Operating Company ETF, the SEC gets to decide whether to permit this technical change, and may impose additional requirements and conditions in exchange for its permission.¹¹⁴

It is worth noting that Commodity Pool and Operating Company ETFs are not the only ETFs that have to ask the SEC for changes in stock exchange listing rules. Sometimes Investment Company ETFs have to apply as well. The stock exchanges have listing standards for Investment Company ETFs, just as they do for other types of ETFs, and in recent years the SEC has permitted the exchanges to make these standards "generic," so that any Investment Company ETF that complies with the standards can list without any special approval for a rule change from the SEC.¹¹⁵ Some Investment Company ETFs, however, do not satisfy the generic standards. These Investment Company ETFs thus have to ask the SEC for a rule change, much as Commodity Pool and Generic ETFs do. For an Investment Company ETF that complies with a stock exchange's written listings standards, the SEC's discretionary review thus focuses primarily on the fund's application for an Investment Company Act exemption, rather than its listing on a stock exchange. If, however, an Investment Company ETF for some reason does not comply with an exchange's listing rules, the SEC can demand the right to review and approve any necessary changes in the listing rules. When the

113. Fang & Heinrichs, *supra* note 101, at 7–10.

114. When a stock exchange applies for a rule change to list a new fund, the SEC issues a public notice, permitting both the fund and anyone else who might be interested to comment on the SEC's decision. *See, e.g.*, Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund Under Commentary .02 to NYSE Arca Equities Rule 8.200, *supra* note 90.

115. The SEC permitted automatic exchange listings for index-based Investment Company ETFs in 1998 and did the same for actively managed Investment Company ETFs in 2016. Amendment to Rule Filing Requirements for Self-Regulatory Organizations Regarding New Derivative Securities Products, 63 Fed. Reg. 70,952 (Dec. 22, 1998) (to be codified at 17 C.F.R. pts. 240 and 249). *See, e.g.*, Self-Regulatory Organizations: The NASDAQ Stock Market LLC; Order Granting Approval of a Proposed Rule Change To Amend NASDAQ Rule 5735 To Adopt Generic Listing Standards For Managed Fund Shares, Exchange Act Release No. 78918, 2016 WL 5340200 (Sept. 23, 2016); Self-Regulatory Organizations: NYSE Arca, Inc.: Order Granting Approval of Proposed Rule Change, as Modified by Amendment No. 7 Thereto, Amending NYSE Arca Equities Rule 8.600 To Adopt Generic Listing Standards For Managed Fund Shares, Exchange Release No. 78397, 2016 WL 3151792 (July 22, 2016); Self-Regulatory Organizations: BATS Exchange, Inc.: Order Approving a Proposed Rule Change, as Modified by Amendment No. 6, To Amend BATS Rule 14.11(I) To Adopt Generic Listing Standards for Managed Fund Shares, Exchange Release No. 78396, 2016 WL 3970922 (July 22, 2016).

SEC is not inclined to approve, it issues a notice and invites comments.¹¹⁶

The key fact about these two review processes—the ICA exemption and stock exchange listing rule change approval—is that they each give the SEC enormous discretion. The statutes that govern these two processes place almost no limits on what the SEC can do. For Investment Company ETFs, there is no statutory requirement that the SEC ever grant an application for exemption, no matter how meritorious the application might be. The SEC can refuse to grant an exemption from the ICA for any reason or no reason at all. And if the SEC does choose to grant an exemption, the SEC faces only the vaguest and most general of constraints. Section 6(c) of the ICA says that if the SEC wishes to give an exemption, it must determine merely that the 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 subchapter.”¹¹⁷

For Commodity Pool and Operating Company ETFs, the SEC’s legal authority to review stock exchange listings is similarly broad. The requirements for a rule change application by a stock exchange appear in section 19(b) and rule 19b-4 of the 1934 Act.¹¹⁸ Section 19(b)(2)(C)(i) says only that the SEC must approve a change in stock exchange rules if the change “is consistent with the requirements” of the 1934 Act.¹¹⁹ But the 1934 Act does not provide any detailed requirements for stock exchange listing rules. At most, it provides only a set of vague exhortations that urge the SEC to make good policy.¹²⁰ The SEC thus has the effective authority to approve or disapprove a Commodity Pool or Operating Company ETF for almost any reason.

In theory, the SEC could choose to narrow its discretion by adopting formal, written rules that limit how it will carry its discretion out. Section 6(c) of the ICA, for example, says that the SEC could choose to grant exemptions “by rule or regulation,” rather than by individual application, but

116. Yet another potential source of discretionary review for all types of funds is the 1934 Act. ETFs of all types often violate certain provisions of the 1934 Act and rules promulgated thereunder, such as those governing credit on ETF shares, customer confirmation disclosures, and market manipulation. Fang & Heinrichs, *supra* note 101, at 10. For Investment Company ETFs, the SEC has limited some of its discretionary review authority by issuing class relief that covers all funds that meet certain requirements. *See, e.g.*, WisdomTree Tr., SEC No-Action Letter, 2008 WL 2792544 (May 9, 2008). *See also* AdvisorShares Tr., SEC No-Action Letter, 2011 WL 2423998 (June 16, 2011) (class relief for ETFs of ETFs).

117. 15 U.S.C. § 80-6(c) (2012).

118. 1934 Act § 19(b), 15 U.S.C. § 78s(b) (2012). *See also* 17 C.F.R. § 240.19b-4 (2013).

119. 1934 Act § 19(b)(2)(C)(i), 15 U.S.C. § 78s(b) (2012).

120. 1934 Act §§ 3(f), 6(b)(5), 11A(a)(1)(C)(iii), 15 U.S.C. §§ 78c(f), 78f(b)(5), 78k-1(a)(1)(C)(iii) (2012).

to date, the SEC has yet to adopt any official administrative rules that apply uniquely to ETFs.¹²¹ Though the SEC proposed a set of rules in 2008, it never adopted them.¹²² As noted in the Introduction, on June 28, 2018, the SEC proposed changes that would relate to one category of ETFs. The proposal is briefly summarized in the Appendix.

Of course, the SEC's review of new ETFs has become somewhat standardized over time. Successful applications for review are available for public inspection on the SEC's website, so the ETF industry has learned something about what the SEC requires. Most applications tend to be fairly routine, and the lawyers who draft them often begin by copying and pasting the applications of advisers already in business. A standard application contains a lengthy description of the sponsor's plans and details for how it intends to operate its funds. These plans operate as restrictions on the sponsor later on, since the terms of the SEC's exemptive order will inevitably require the sponsor to operate consistent with the plans described in its application.¹²³ In addition to this general description of a sponsor's plans, the application will also contain a set of "express conditions," which typically require, among many other things, that a fund be listed on a national stock exchange, that the fund not advertise itself as an ordinary mutual fund, and that the fund list the daily contents of its redemption/creation basket on its website.¹²⁴

Despite the increasing standardization of conditions for ETFs that are allowed to list, the SEC nevertheless continues to make liberal use of its broad authority to refuse ETF listings. The SEC recently refused or substantially delayed the listings of a number of ETFs, including at least eleven proposed bitcoin-focused ETFs, a 4X leveraged S&P 500 ETF proposed by a company called ForceShares, and an actively managed ETF that would have kept portions of its portfolios secret.¹²⁵

The details of how the SEC achieves and exercises all of this discretion

121. 15 U.S.C. § 80-6(c) (2012).

122. Exchange-Traded Funds, Securities Act Release No. 33-8901, 73 Fed. Reg. 14,618 (Mar. 18, 2008).

123. Wells Fargo Exch.-Traded Funds Tr. et al., Investment Company Act Release No. 32869, 2017 WL 4803650 (Oct. 24, 2017) (issuing an exemption "on the basis of the information set forth in the application").

124. See, e.g., CBOE Vest Fin. LLC, Amended Application for an Order Under Section 6(c) of the Investment Company Act of 1940 (Form 40-APP/A) 27-29 (Oct. 19, 2017); Sigma Inv. Advisors, LLC, Fourth Amended and Restated Application for an Order Under 6(c) of the Investment Company Act of 1940 (Form 40-APP/A) 71 (June 13, 2013).

125. Precidian ETFs Tr., *supra* note 111. As to the eleven proposed bitcoin ETFs, see *supra* note 94 and *infra* note 237.

can be a bit hard to follow, but their effect is important enough that they force us to contemplate a key question: Is all of this discretion a good idea? The main advantage is flexibility: the SEC can individually tailor the law to each new fund by designing the law ad hoc. If a fund pops up for the purpose of investing in some unusual category of assets like, say, bitcoin, the SEC can decide on a case-by-case basis what to permit and which conditions to impose. Regulation can be as flexible as the financial innovation that warrants it. And, of course, this individualized review nimbly avoids the legal and political burdens of the Administrative Procedure Act. Since the SEC can refuse an ETF's application for any reason or no reason at all, there is no risk that skeptical judges on the D.C. Circuit will find the action "arbitrary and capricious,"¹²⁶ unsupported by the requisite costs-benefit analysis, or otherwise troublesome.

But against these advantages we must weigh the brute fact that the individualized review process is not only cumbersome and complex, but also verges on the lawless. It allows the SEC to do more or less whatever it wants, for almost any reason. The regulation of ETFs—which are among the dynamic innovations in modern finance—is a kind of throwback to the very earliest state-level securities laws of the 1910s. Early state-level securities regulation operated as a system of "merit review," in which government officials self-consciously screened securities offerings for their quality and promise. Rather than merely verifying compliance with a set of regulations, officials chose the securities that they deemed worthy and declared the rest illegal.¹²⁷

This amount of SEC discretion produces serious problems. One is opacity. Although the SEC doubtless has internal policies for exercising its discretion, it is difficult to know what exactly those policies are because most of them are devised beyond the scope of public view. The SEC does not usually announce the policies it uses in reviewing an ETF's application for exemption, and although successful applications are available for public review on the SEC's web site, interviews suggest that ETF advisers may face individualized questioning and negotiations that never appear in the public record. ETF advisers often meet with SEC staff and present data and PowerPoint slides to address the staff's concerns, but none of the details of

126. See generally Administrative Procedure Act, 5 U.S.C. § 706(2)(A) (2012) ("The reviewing court shall . . . hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.").

127. See generally Daniel J. Morrissey, *The Road Not Taken: Rethinking Securities Regulation and the Case for Merit Review*, 44 U. RICHMOND L. REV. 647 (2009) (arguing in favor of re-adopting merit review).

these conversations make it into the brief and standardized final exemption applications that appear on the SEC's website. If the SEC does make an objection to a feature of an ETF's business plan, the adviser usually removes it without leaving any public record to show that the feature was ever disputed.¹²⁸ Likewise, when the SEC goes further and denies an exemptive application instead of merely requesting changes, this also tends to leave no public record, because staff members usually deliver the bad news in an unrecorded phone call or personal meeting, prompting the applicant to withdraw its application before the SEC can render an official public decision.¹²⁹ Thus, the contents of a failed application can usually only be guessed at or deduced through back-channel gossip with SEC staff and practicing lawyers. A related problem is that when lawyers parse the previously successful applications of existing ETF sponsors, they often find it impossible to distinguish between characteristics that are unique to a particular ETF and characteristics that the SEC intends to demand of all ETFs.

The opacity of the review process can baffle even seasoned industry players. In response to a recent request by the SEC for public comments on ETF regulation, what was then called the BATS stock exchange, a primary venue for ETF trading, complained specifically about the opacity of the review process. They noted that even though BATS had helped dozens of ETFs through the process of SEC review, BATS still often had little idea what the SEC would do in any given case.¹³⁰

Indeed, differences among individual SEC staff members and between Divisions can dictate the outcomes at the SEC. BATS complained that the requirements varied depending on which individual SEC staff member received a fund's application.¹³¹ Further, different Divisions of the SEC

128. Sometimes the feature might be discovered by comparing successive drafts of an application on the SEC's web site, but some proposals never make it into any draft at all.

129. *E.g.*, Precidian ETFs Tr., *supra* note 111 (permitting withdrawal of application after an applicant apparently failed to receive the exemption).

130. BATS Global Markets, Inc., Comment Letter on Exchange-Traded Products; Exchange Act Release No. 75165, File No. 87-11-15, at 2 (Jan. 14, 2016), http://cdn.batstrading.com/resources/comment_letters/ETP-Comment-Letter-14-January-2016.pdf (“[T]he Commission staff has not published well-defined criteria related to its concerns associated with the approval of an ETP for listing.”).

131. *Id.* (“[A]pplication of [the SEC's] general principles . . . can often be subjective and BATS has experienced the application of different specific standards of review between different staff members and as between different ETPs that are nearly identical, making it difficult if not impossible to anticipate the issues that Commission staff may raise with respect to any particular ETP filing.”). BATS further complained that since the listing of a new ETF technically takes the form of a change in the rules of the exchange, BATS found itself in the awkward position of “being an intermediary in what can best be described as a negotiation between the Commission staff” and a fund. *Id.*

clearly apply different policies on otherwise similar issues. Recall that ETFs can come into the SEC through two different channels—an ICA exemption or an exchange listing rule change. Crucially, these two channels flow through different Divisions of the SEC. Stock exchange listing standard changes go through the SEC's Division of Trading and Markets, and applications for ICA exemptions go through the Division of Investment Management. As we will see in a moment when we consider a pair of funds that recently attempted to operate as commodity pools, the two Divisions applied very different standards, even to otherwise highly similar funds.¹³²

A further problem is the delay and expense. Though the review process can be fairly simple for funds that closely resemble already established funds, the process can be extremely burdensome for innovative funds. For an ETF that requires a change in stock exchange listing rules in order to go public—which includes every new Commodity and Operating Company ETF and any new Investment Company ETF that does not satisfy existing stock exchange rules—the process for obtaining approval often takes more than a year.¹³³

A final problem—perhaps the biggest problem of all—is that the SEC cannot update its policies without treating new fund advisers differently from old ones. In essence, the SEC has grandfathered older fund advisers into different—and usually more lenient—requirements than new funds. When the SEC reviews an ETF's application for listing or exemption, the SEC only applies the policies it has in place at the time it does the review. If, however, the policies later change—if the SEC decides, for instance, to impose new conditions on a kind of ETF or get rid of old conditions—the SEC's only way to implement the change is to apply it to new funds that the SEC reviews in the future. The SEC, in other words, has no way of changing the standards for older funds already in existence. Since the SEC has no written rules that apply to all ETFs, it has no way to change the rules for all ETFs. Whatever regulatory conditions appear in a fund's initial application for exemption or stock exchange rule change go on to become the regulatory conditions that apply to the fund in perpetuity.

Though in theory the SEC could change the conditions of a fund's operation after the SEC has approved the fund's application by changing the terms of a fund's exemption, in practice such changes are rare—we have never heard of one—and they would be impossible to implement on a large scale. There are more than a thousand ETFs in existence, and the SEC's only

132. See *infra* Section II.D.

133. Fang & Heinrichs, *supra* note 101, at 8–9.

way to change the standards for all of them would be to start an excruciatingly time-consuming process of individualized correspondence. The bottom line is that once an ETF survives individualized SEC review, the conditions of its operation are basically set in place forever unless the ETF later seeks and obtains a modification of such conditions.¹³⁴

This risk of inconsistency between old and new funds has not stopped the SEC from changing its policies, however. Sometimes, the SEC loosens its restrictions. Prior to 2013, the SEC placed a number of restrictions on fund sponsors that used their own indices (rather than paying licensing fees to index providers like S&P). Fearful that sponsors might manipulate the indices they constructed, the SEC imposed various conditions to ameliorate what it be perceived to be conflicts of interest. In 2013, however, the SEC stopped imposing these conditions, announcing this change by issuing orders that eliminated the conditions to three different self-indexing fund sponsors on the same day.¹³⁵ Similarly, for many years the SEC refused to grant

134. The SEC does retain some capacity to change the terms for new funds by refusing to allow their registration statements to become effective. When a sponsor establishes its first fund, it generally organizes the fund as a Delaware statutory trust or Maryland Corporation and files a registration statement with the SEC on Form N-1A. The SEC staff can then review the registration statement and prevent it from becoming effective if it does not satisfy various legal requirements. When the sponsor later issues a new fund, it typically structures it as a new series of the existing Delaware statutory trust or Maryland corporation. BlackRock, for example, places most of its iShares-branded funds into a Delaware statutory trust or a Maryland corporation. One registration statement for a Delaware statutory trust included seventy-six iShares-branded funds; another registration statement for a Maryland corporation reflected thirty-seven such funds. iShares Tr., Registration Statement Under the Securities Act of 1933 and/or Under the Investment Company Act of 1940 (Form N-1A) 2–3 (Aug. 16, 2017) (listing seventy-six funds as series of the iShares Trust, a Delaware statutory trust); iShares, Inc., Registration Statement Under the Securities Act of 1933 and/or Under the Investment Company Act of 1940 (Form N-1A) 2–3 (Jan. 19, 2018) (listing thirty-seven funds as series of iShares, Inc., a Maryland corporation).

By structuring a new fund as a series of an already existing trust, a sponsor avoids having to file a new registration statement on Form N-1A and can register the new fund by making a post-effective amendment to the existing Form N-1A under SEC Rule 485(a). 17 C.F.R. § 230.485(a) (2018). Rule 485(c)(1), however, allows the SEC to issue a stop order refusing to let the post-effective amendment become effective. In early 2018, for example, the SEC staff threatened to use a stop order to prevent existing sponsors from registering cryptocurrency funds as new series of existing entities. *See, e.g.*, Dalia Blass, Director, Division of Investment Management, SEC, Staff Letter: Engaging on Fund Innovation and Cryptocurrency-Related Holdings (Jan. 18, 2018), <https://www.sec.gov/divisions/investment/noaction/2018/cryptocurrency-011818.htm>. As to the current status of bitcoin ETFs, see *supra* note 94 and *infra* note 237.

135. Guggenheim Funds Inv. Advisors, LLC, Investment Company Act Release No. 30560, 106 SEC Docket 2599 (June 14, 2013) (notice) and Guggenheim Funds Inv. Advisors, LLC et al., Investment Company Act Release No. 30598, 106 SEC Docket 3612 (July 10, 2013) (order); Sigma Inv. Advisors, LLC, Investment Company Act Release No. 30559, 106 SEC Docket 2588 (June 14, 2013) (notice) and Sigma Inv. Advisors, LLC, Investment Company Act Release No. 30597, 106 SEC Docket 3612 (July 10, 2013) (order); Transparent Value Tr., Investment Company Act Release No. 30558, 106 SEC Docket 2576 (June 14, 2013) (notice) and Transparent Value Tr., Investment Company Act Release No. 30596, 106 SEC Docket 3611 (July 10, 2013) (order).

exemptions for actively managed ETFs, allowing ETFs to operate only if they constructed their portfolios according to indices. The SEC loosened the policy in 2008, allowing actively managed funds under certain conditions.¹³⁶

When the SEC loosens its policies, existing advisers can apply for modifications to their exemptive letters, in the hope that they can attain some degree of fairness and uniformity.¹³⁷ Things can be more complicated when the SEC tightens its policies. Stock exchanges and ETF advisers have complained that the SEC's requirements for approving new ETFs have generally grown more stringent over time, forcing new ETFs to operate under harsher requirements than old ETFs.¹³⁸

A few key examples stand out. The first is the so-called "custom basket." Since 2012, the SEC has required new ETF advisers to construct their creation and redemption baskets so that a basket consists of a pro rata cross section of the securities in the fund's portfolio.¹³⁹ Prior to 2012, the SEC granted exemptions that allowed an adviser to construct creation and redemption baskets using only a subset of the securities in a fund's portfolio.¹⁴⁰ The ability to construct customized baskets offers advantages for taxes and the functioning of the arbitrage mechanism. The advantages are especially pronounced in funds that hold illiquid assets, such as bond funds.

136. WisdomTree Tr., Investment Company Act Release No. 28147, 92 SEC Docket 1672 (Feb. 6, 2008) (notice) [hereinafter WisdomTree Tr. (notice)] and WisdomTree Tr., Investment Company Act Release No. 28174, 92 SEC Docket 2090 (Feb. 27, 2008) (order) [hereinafter WisdomTree Tr. (order)]; Barclays Glob. Fund Advisors, Investment Company Act Release No. 28146, 92 SEC Docket 1668 (Feb. 6, 2008) (notice) and Barclays Glob. Fund Advisors, Investment Company Act Release No. 28173, 92 SEC Docket 2089 (Feb. 27, 2008) (order); Bear Stearns Asset Mgmt., Investment Company Act Release No. 28143, 92 SEC Docket 1659 (Feb. 5, 2008) (notice) and Bear Stearns Asset Mgmt., Investment Company Act Release No. 28172, 92 SEC Docket 2089 (Feb. 27, 2008) (order); PowerShares Capital Mgmt. LLC, Investment Company Act Release No. 28140, 92 SEC Docket 1648 (Feb. 1, 2008) (notice) and PowerShares Capital Mgmt. LLC, Investment Company Act Release No. 28171, 92 SEC Docket 2088 (Feb. 27, 2008) (order).

137. For an explanation of the changes, see *SEC Issues New Relief for Self-Indexing ETFs*, MORGAN LEWIS (July 17, 2013), https://www.morganlewis.com/pubs/im_if_secissuesnewreliefselfindexingetfs_17july13 (urging self-indexing advisers to seek modified exemptions after the SEC began loosening restrictions for new self-indexing advisers).

138. *E.g.*, BATS Global Markets, Inc., *supra* note 130, at 2.

[I]nconsistent standards and treatment result in a competitive disadvantage to both issuers and exchanges as it relates to previously approved ETPs that are already listed and traded on another exchange because, in almost all instances, such previously approved ETPs were not subject to the same level of standards or restrictions applied by Commission staff to the newer ETP, restricting the ETPs ability to compete with nearly identical ETPs already in the market.

Id.

139. Charles Schwab, *supra* note 29, at 4; Stacy L. Fuller et al., *At the End of the Rainbow: A Custom Basket?*, K&L GATES (Oct. 5, 2017), <http://www.klgates.com/at-the-end-of-the-rainbow--a-custom-basket-10-05-2017>.

140. *Id.*

If a bond fund holds hundreds of different bonds and an AP has to buy small quantities of each of them in order to create new shares of the fund, the AP will be much less likely to create shares than if the AP can purchase some smaller number of different bonds in large quantities.¹⁴¹

Another example involves derivatives. Between 2010 and 2012, the SEC refused to grant new exemption applications for funds that used derivatives—even as the SEC permitted existing funds to continue using derivatives unchecked.¹⁴²

A third example concerns the ability of an adviser to operate an ETF in combination with an ordinary mutual fund. The only adviser that has the SEC's permission to do this is Vanguard. In essence, Vanguard constructs ETFs by simply causing its existing mutual funds to issue share classes that trade on exchanges and can be redeemed during the trading day in large blocks as ETF shares. The same fund issues both mutual fund shares and ETF shares. Vanguard actively marketed this practice as a unique advantage of Vanguard funds. Vanguard's web site explained that because of their ability to combine with ordinary mutual funds, "Vanguard ETFs are different from other ETFs."¹⁴³ Vanguard touted a variety of economies of scale and tax advantages for investors because of this system.¹⁴⁴

When the SEC tightens its policies in this way, there is little that new advisers can do to level the playing field. Older advisers get the ability to continue operating under the older and more permissive policies, and they can even continue to create new funds under the exemptions granted under the old policies.

The clearest example of this unfortunate dynamic concerns leveraged and leveraged inverse funds. Leveraged funds generally try to return some multiple of the return on a specified index on a given day, so that a shareholder who buys shares in a 2X S&P 500 index fund, for example, will receive two times the daily return of the S&P 500 index, whether positive or

141. Fuller, *supra* note 139.

142. Press Release, U.S. Sec. & Exch. Comm'n, SEC Staff Evaluating the Use of Derivatives by Funds (Mar. 25, 2010), www.sec.gov/news/press/2010/2010-45.htm (announcing a moratorium on new exemptions for funds that "would make significant investments in derivatives"); Norm Champ, Director, Div. of Inv. Mgmt., SEC, Remarks to the ALI CLE 2012 Conference on Investment Adviser Regulation: Legal and Compliance Forum on Institutional Advisory Services (Dec. 6, 2012), <https://www.sec.gov/news/speech/2012-spch120612nchtm> (announcing the lifting of the moratorium) [hereinafter Champ, Remarks].

143. *Stand-One and Share Class ETFs, What's the Difference?*, VANGUARD <https://advisors.vanguard.com/iwe/pdf/standAloneTrans.pdf> (no longer available on website) (on file with the authors).

144. *Id.*

negative. Leveraged inverse funds do the same, only with a negative multiple.

Prior to 2010, the SEC granted ICA exemptions to two leveraged and leveraged inverse fund advisers: ProShares and Direxion.¹⁴⁵ In 2010, however, the SEC announced a temporary moratorium on further exemptions to leveraged and leveraged inverse advisers.¹⁴⁶ The SEC announced this moratorium at the same time that it also announced the moratorium on exemptions for funds that used derivatives. Neither moratorium came with any explanation. The press release that announced the moratorium said merely that “we want to be sure our regulatory protections keep up with the increasing complexity of these instruments [that is, derivatives] and how they are used by fund managers.”¹⁴⁷ The press release offered no details on what the complexities were or how regulatory protections might change to address them.

Eventually, in 2012, the SEC lifted the moratorium for funds that used derivatives, but crucially, it kept the moratorium in place for leveraged and leveraged inverse funds. Hence, since 2010, the SEC has refused to approve any new exemptive orders for leveraged and leveraged inverse funds under the ICA. The SEC’s only explanation for maintaining the moratorium on these funds was a single, cryptic sentence given in a speech by the Director of the Division of Investment Management after the moratorium was lifted on derivatives: “Because of concerns regarding leveraged ETFs . . . we continue not to support new exemptive relief for such ETFs.”¹⁴⁸

The effect of this moratorium has been to consolidate the market for leveraged and leveraged inverse funds into a *de jure* duopoly. Though the SEC refused to grant exemptions to new advisers, it kept in place the existing

145. ProShares Tr., Investment Company Act Release No. 27609, 89 SEC Docket 2036 (Dec. 12, 2006) (notice) and ProShares Tr., Investment Company Act Release No. 27666, 89 SEC Docket 2448 (Jan. 18, 2007) (order); Rafferty Asset Mgmt., LLC, Investment Company Act Release No. 28379, 94 SEC Docket 316 (Sept. 12, 2008) (notice) and Rafferty Asset Mgmt., LLC, Investment Company Act Release No. 28434, 94 SEC Docket 1008 (Oct. 6, 2008) (order).

146. Press Release, U.S. Sec. & Exch. Comm’n, *supra* note 142. The decision not to grant further exemptions for leveraged funds was announced at the same time as a decision not to grant further exemptions for funds that used derivatives. *Id.* In 2012, however, the SEC lifted the moratorium on funds that used derivatives even as it kept the moratorium in place for leveraged funds. Champ, Remarks, *supra* note 142. ForceShares noted the prohibition on leveraged ETFs in its correspondence with the SEC. ForceShares LLC, Re: Comment on Proposed Rule Change to List and Trade Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund Under Commentary .02 to NYSE Arca Equities Rule 8.200, 4 (June 13, 2017), <https://www.sec.gov/comments/sr-nysearca-2016-120/nysearca2016120-1801076-153684.pdf>.

147. Press Release, U.S. Sec. & Exch. Comm’n, *supra* note 142.

148. Champ, Remarks, *supra* note 142.

exemptions for ProShares and Direxion. Thus, as of the end of 2017, there were 121 leveraged equity ETFs listed for trading in the United States, and every one of them was sponsored by either ProShares or Direxion.¹⁴⁹

This inconsistency between old and new advisers is made worse by a quirk of law that allows old advisers not only to continue operating old funds under old regulatory policies, but also to create new funds under old regulatory policies. Since 2000, the SEC's exemptive orders under the ICA have covered not just the fund that was the subject of the initial order, but all new funds that the fund's sponsor may create in the future, so long as the new funds comply with the terms of the original exemption.¹⁵⁰ Having received an exemption for one fund, a sponsor can use the exemption to obtain future exemptive relief for an unlimited number of new funds so long as the new funds comply with the terms of the original exemption.¹⁵¹

The ability to obtain future relief is useful because it guarantees older sponsors lighter regulation than newer sponsors. Many commentators agree that the SEC's regulation of ETFs has grown stricter over time.¹⁵² This increasing strictness treats new fund sponsors unfairly, because sponsors tend to use the exemption process to make regulation into a kind of one-way ratchet. If ever the SEC's treatment of new sponsors grows lighter, existing sponsors can apply for an update to their exemptions to make sure they get the benefit of the lighter rules. But if the SEC's treatment grows harsher, the existing sponsors do nothing, silently enjoying the benefit of their lighter treatment without ever applying for a change.

The value of old exemptions for creating new funds is glaringly evident in the experiences of ProShares and Direxion, the duopolistic leveraged fund advisers. While the SEC has ostensibly maintained a moratorium on the creation of new leveraged and leveraged inverse ETFs, ProShares and Direxion—which each received an exemption before the moratorium went in place—have been busily flooding the markets. Since the SEC's moratorium on new leveraged fund advisers went into effect in 2010,

149. *Leveraged ETF List*, ETFDB, http://etfdb.com/type/equity/all/leveraged/#etfs&sort_name=assets_under_management&sort_order=desc&page=6 (last visited Aug. 29, 2018).

150. Exchange-Traded Funds, Securities Act Release No. 8901, 73 Fed. Reg. 14,618, at 8 fn.19 (Mar. 11, 2008) (citing Barclays Glob. Fund Advisors, Investment Company Act Release No. 24394, 65 Fed. Reg. 21,219 (Apr. 17, 2000) (notice) and Barclays Glob. Fund Advisors, Investment Company Act Release No. 24451, 72 SEC Docket 1082 (May 12, 2000) (order)).

151. See, e.g., *N. Lights Fund Tr. and Toews Corp.*, *supra* note 110, at 29 (“Applicants are requesting relief with respect to future series of the Trust or of other open-end management investment companies that currently exist or that may be created in the future and that are actively-managed exchange-traded funds (‘ETFs’) . . .”).

152. See *supra* note 138.

Direxion's new offerings include, among many others, a fund that offers three times the daily returns on an index of homebuilding companies ("NAIL") and a leveraged inverse fund that offers negative three times the daily returns on an index of oil and gas producers ("DRIP").¹⁵³

The favoritism towards older advisers distorts the market not just for ETFs, but also for the advisers who run them. Older advisers are more attractive acquisition targets than newer advisers, because the age of an older adviser's exemption makes the exemption a scarce and valuable resource.¹⁵⁴ Since an acquirer can use the old exemption to create an unlimited number of new funds that only need to comply with the terms of the original exemption, buying an older adviser can be like buying a beachhead for regulatory freedom.

D. AN EXAMPLE: THE FORCESHARES FUNDS

Fragmentation and discretion are evident in every aspect of ETF regulation, but are especially easy to see in the recent experience of an aspiring ETF advisor known as ForceShares. In the spring of 2017, ForceShares proposed to create two new ETFs, one that would achieve four times the daily return of the S&P 500 index and another that would achieve four times the inverse of the daily return on the S&P 500 index. ForceShares's proposed funds would have been the first "leveraged" ETFs to achieve a leverage ratio above three.¹⁵⁵

The most obvious way for ForceShares to operate these two funds would have been to invest the funds' portfolios directly in the stock of S&P 500 companies and then achieve their desired leverage ratios through short sales and other simple devices to create the 4X leverage ratio. This is how other leveraged S&P 500 ETFs work,¹⁵⁶ and if ForceShares had operated its funds this way, its only innovation would have been to offer a slightly higher leverage ratio than its competitors—4X rather than 3X or 2X.

Running the fund this way was not an option for ForceShares, however, because the SEC had already announced its moratorium in 2010 on new

153. Benzinga, *Four New Leveraged ETFs Right for the Times*, NASDAQ (Aug. 19, 2015, 1:20 PM), <http://www.nasdaq.com/article/4-new-leveraged-etfs-right-for-the-times-cm510870>.

154. Crystal Kim, *A Secret Ingredient in the Invesco ETF Deal*, BARRON'S, Oct. 2, 2017, at 15.

155. Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund, *supra* note 90; Jeff Cox, *Controversial ETFs that Would Have Delivered Four Times the Market Hit a Snag*, CNBC (May 18, 2017, 11:35 AM), <https://cnb.cx/2vggcns>. We should emphasize that we do not take a position on whether the ForceShares ETFs should be offered to the public.

156. Antoniewicz & Heinrichs, *supra* note 22, at 6.

exemptions for leveraged and leveraged inverse ETF advisers.¹⁵⁷ ForceShares sought an end-run around this barrier by exploiting the fragmentation of ETF regulation. Since the SEC had a moratorium on leveraged and leveraged inverse funds created under the ICA, ForceShares established its funds as commodity pools outside of the ICA.¹⁵⁸ By having the funds invest in futures contracts on the S&P 500, rather than the common stock of S&P 500 companies, ForceShares avoided owning securities in excess of the threshold that triggers the ICA—and thus sidestepped the ICA and the SEC’s moratorium on exemptions for leveraged and leveraged inverse funds under the ICA.¹⁵⁹ By sidestepping the ICA, ForceShares also avoided the prospective application of ICA Rule 18f-4, which the SEC had then proposed for adoption and which would have limited derivative usage by all Investment Company ETFs, mutual funds, and other open-end funds registered under the ICA.¹⁶⁰

At first, ForceShares’ commodity pool strategy worked. Because the listing of a new Commodity Pool ETF technically amounts to a change in stock exchange listing standards, rather than a request for exemption from the ICA, the authority to review a new Commodity Pool ETF belonged to the SEC’s Divisions of Trading and Markets and Corporation Finance, rather than to its Division of Investment Management. Because the moratorium on new ICA exemptions for leveraged and leveraged inverse funds came from the Division of Investment Management, ForceShares neatly skirted the

157. *Supra* note 142 and accompanying text.

158. Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund, *supra* note 90.

159. Although futures contracts on equity securities technically qualify as securities, rather than commodity futures, under the securities laws, ForceShares cleverly avoided this problem by investing in futures contracts on an *index* of equity securities—not contracts on the individual underlying securities. This worked because section 2(a)(1) of the Securities Act of 1933 (“1933 Act”) defines the term “security” to include a future on a security but not a future on an index of securities. 15 U.S.C. § 77b(a)(1) (2012).

ForceShares also neatly avoided restrictions on leverage in registered investment companies. The listing rules of the NYSE Arca exchange (the exchange where ForceShares proposed to list) prohibit an index-based ETF from offering an inverse leverage ratio in excess of 300% if the fund is registered as an investment company. RULES OF NYSE ARCA, *supra* note 19, at r. 5.2(j)(3) cmt. .04. This would have been a problem for ForceShares, because ForceShares’s inverse fund aspired to a leverage ratio of 400%. ForceShares avoided the 300% restriction, however, because the restriction only applied to an investment company and not a commodity pool. (Note that ForceShares was proposing to list under NYSE Arca Rule 8.200.)

160. Use of Derivatives by Registered Investment Companies and Business Development Companies, Investment Company Act Release No. 31933, 112 SEC Docket 6625 (Dec. 11, 2015). In its correspondence with the SEC, ForceShares cleverly pointed out that in the published Rule 18f-4 proposal, the SEC expressly invited any investment company that would violate the rule to register instead as a commodity pool. ForceShares LLC, *supra* note 146, at 3.

portion of the SEC staff that was hostile to leveraged and leveraged inverse ETFs. The staff of the Divisions of Trading and Markets and Corporation Finance thus issued an order approving the NYSE Arca's rule change permitting ForceShares to list.¹⁶¹ ForceShares had permission to go public.¹⁶²

A few weeks later, however, ForceShares faced a reversal of fortunes. Overruling the SEC staff members who had approved ForceShares' stock exchange listing, the SEC's Commissioners issued an order staying the stock exchange standards change, pending the Commissioners' further review.¹⁶³ The Commissioners never explained their logic, but presumably they were concerned about the same problems that originally motivated the Division of Investment Management to impose its moratorium on leveraged and leveraged inverse funds. As of this writing, ForceShares remains in this legal limbo.

The experience of ForceShares thus illustrates two key faults in the ETF administrative process. Most obviously, it shows the tremendous fragmentation within the process for introducing new ETFs. ForceShares's decision to operate its funds as commodity pools, rather than investment companies, exploited divisions not only in statutes, but also in discretionary policies, stock exchange listing standards, and the internal bureaucracy of the SEC. ForceShares also shows the risks of the SEC's reliance on discretion. The SEC's discretion was not applied consistently even in the case of ForceShares itself, and the treatment of Forceshares was at odds with the SEC's treatment of other advisers. Even as ForceShares was prohibited from taking its leveraged funds public, the two established leveraged fund advisers—ProShares and Direxion—continued to create new leveraged funds with little restriction.

161. Order Approving a Proposed Rule Change to List and Trade Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund under Commentary .02 to NYSE Arca Equities Rule 8.200, Exchange Act Release No. 80579, 2017 WL 2535412 (May 2, 2017).

162. The Division of Trading and Markets caused the SEC to issue a release requesting comments, with the effect that ForceShares's application was set to automatically become effective. Notice of Filing of Proposed Rule Change Relating to the Listing and Trading of Shares of the ForceShares Daily 4X US Market Futures Long Fund and ForceShares Daily 4X US Market Futures Short Fund, *supra* note 90.

163. Cox, *supra* note 155.

III. THE EXISTING REGULATORY STATE OF AFFAIRS: DISCLOSURE ASPECTS

A. OVERVIEW, WITH A FOCUS ON FAILURES TO RESPOND TO UNIQUE CHARACTERISTICS OF ETFs

Like the regulation of substantive matters, the regulation of disclosure in ETFs suffers from a “cubbyhole” problem. Current disclosure requirements for ETFs apply longstanding regulatory regimes intended for older, very different, financial products. Investment Company ETFs are thus subject to an ICA regime designed for mutual funds. Commodity Pool ETFs and Operating Company ETFs are largely subject to the 1933 Act and 1934 Act disclosure regime applicable to ordinary public companies.

But the market microstructures for mutual fund shares and public company shares lack any device analogous to the ETF’s arbitrage mechanism. For ETFs, the arbitrage mechanism is key to the core investment premise, to the integrity of trading prices, and to the regulatory challenges ETFs pose. Neither the mutual fund cubbyhole nor the ordinary public company cubbyhole inherently accommodate the ETF’s arbitrage mechanism.

The failures of the existing disclosure regime are best seen with Investment Company ETFs. These ETFs account for the bulk of the industry and are the only ETFs for which the SEC has attempted to develop any kind of ETF-specific disclosure requirements.¹⁶⁴ In particular, we focus on the predominant form of Investment Company ETF (the open-end management company) and leave aside unit investment trusts.

For such Investment Company ETFs, the existing disclosure requirements fail to recognize either the significance of the arbitrage mechanism or the implications of the model-based nature of the arbitrage mechanism. Such requirements pay little attention to the past performance of the mechanism. We discuss disclosures of a quantitative nature in Section III.B and of a qualitative nature in Section III.C. We largely defer the

164. This is true even with respect to the most recent SEC effort to strengthen disclosure requirements relating to ETFs and mutual funds, an effort centering on Forms N-PORT (to be regularly submitted beginning either by April 30, 2019 or April 30, 2020, depending on the size of the fund group) and N-CEN (to be regularly submitted as of June 1, 2018). Investment Company Reporting Modernization, Securities Act Release No. 10442, 82 Fed. Reg. 58,731 (Dec. 14, 2017) (delaying dates for submitting reports to April 20, 2019 and April 20, 2010) [hereinafter N-PORT Delay]; Investment Company Reporting Modernization, Securities Act Release No. 10231, 81 Fed. Reg. 81,870 (Oct. 13, 2016) (relating to Forms N-PORT and N-CEN) [hereinafter Investment Company Reporting Modernization]. *See also infra* note 283.

analysis of how the current disclosure regime fails to properly respond to model-related complexities to Part V, in the context of discussing our proposed disclosure system.

The basic architecture of an Investment Company ETF's disclosure requirements is somewhat convoluted, consisting of rules-based mandates relating to the disclosure documents of ETFs in general and conditions incorporated in the exemptive order for that ETF relating to that ETF's website. Investment Company ETFs look to the Form N-1A adopted under the ICA for the form and content of key disclosure documents.¹⁶⁵ One set of public disclosure requirements flows from registration statement provisions of the 1933 Act's section 5 and the ICA's section 8(b). Here, the three most important documents are the (statutory) prospectus, Summary Prospectus, and the Statement of Additional Information ("SAI"). The statutory prospectus is intended only to "provide essential information" about the fund.¹⁶⁶ The Summary Prospectus is an even shorter document—containing what one would assume to be super-essential information—three or four pages consisting of the summary section of the statutory prospectus.¹⁶⁷ ETFs are given the option of providing the Summary Prospectus in place of the prospectus and typically elect to do so. The SAI, a document available on request, provides information that is not essential but which "some users" may find useful.¹⁶⁸ Few investors request copies of the prospectus or the SAI. Both the prospectus and SAI must be updated annually, and most fund groups routinely send copies of the new prospectus or the new Summary Prospectus each time it is updated.¹⁶⁹

As a result of ICA section 30(e), shareholders also receive annual reports and semi-annual reports.¹⁷⁰ Besides the reports transmitted to shareholders, the fund must provide periodic reports, which are publicly available, to the SEC of their holdings and certain other matters.¹⁷¹

165. *Form N-1A*, U.S. SEC. AND EXCH. COMM'N (Aug. 2017), <https://www.sec.gov/files/formn-1a.pdf> [hereinafter *Form N-1A*].

166. *Id.* at v (discussing C(2)(a)).

167. The option of using a Summary Prospectus to meet prospectus delivery requirements became available in 2009. *See* Enhanced Disclosure and New Prospectus Delivery Option for Registered Open-End Management Investment Companies, Securities Act Release No. 8998, 74 Fed. Reg. 4,546, 4,573–74 (Jan. 26, 2009).

168. *Form N-1A*, *supra* note 165, at v (discussing C(2)(b)).

169. Michael Glazer, *Prospectus Disclosure and Delivery Requirements*, in 1 MUTUAL FUNDS AND EXCHANGE TRADED FUNDS REGULATION § 4.5.2(B) (Clifford E. Kirsch ed., 3d ed. 2011 & Supp. 10 2016).

170. *See Form N-1A*, *supra* note 165, at 39–42, items 27(b)–(d) (annual and semi-annual report requirements). *Id.* at 39–45.

171. Specifically, they are reports on Form N-Q and Form N-CSR. *Form N-Q*, U.S. SEC. AND EXCH. COMM'N (Aug. 2005), <https://www.sec.gov/files/formn-q.pdf>; *Form N-CSR*, U.S. SEC. AND EXCH.

An Investment Company ETF is also subject to requirements pertaining to its publicly accessible website under the exemptive order specific to that ETF. Apart from requiring that the Prospectus and SAI be included on the websites, these orders vary from ETF to ETF but appear to focus on a small number of items of a quantitative nature largely consistent in nature with the quantitative items mandated by general Investment Company ETF disclosure rules.¹⁷²

In short, for most Investment Company ETF investors, the two key documents are the prospectus (or, for the harried, the Summary Prospectus) and the annual report, both of which must be provided annually. An ETF's website provides certain limited amounts of information of a quantitative nature.

Commodity Pool ETFs and Operating Company ETFs do not invest in "securities" to the requisite degree and are thus not subject to the normal ICA requirements pertaining to disclosure documents. Instead, these ETFs are largely subject to the 1933 Act registration statement and 1934 Act periodic disclosure requirements applicable to ordinary public companies.¹⁷³ Thus these ETFs, unlike Investment Company ETFs, meet prospectus requirements that flow from the Form S-3 Registration Statement and must file Form 10-Qs on a quarterly basis, Form 10-Ks on an annual basis, and Form 8-Ks on the occurrence of certain key events. The disclosures required of these ETFs are of the familiar variety seen in the 1933 Act and 1934 Act rules for ordinary public companies.

The arbitrage mechanism-related disclosures of non-Investment

COMM'N (July 2018), <https://www.sec.gov/files/formn-csr.pdf>. Form N-Q is being superseded. *See supra* note 164 (discussing the adoption of Forms N-CEN and N-PORT).

172. *See, e.g.*, Fidelity Commonwealth Tr., Amended Application for an Order Under Section 6(c) of the Investment Company Act of 1940 (Form 40-APP/A) 19 (June 27, 2016) [hereinafter Fidelity Notice]; Fidelity Commonwealth Tr., Order Under Sections 6(c), 12(d)(1)(J), and 17(b) of the Investment Company Act of 1940, Investment Company Act Release No. 32191 (July 26, 2016); Barclays Global Fund Advisors, Notice of Application, Investment Company Act Release No. 28146, at 11 (Feb. 6, 2008) [hereinafter Barclays Notice]; Barclays Global Fund Advisors iShares Tr., Order Under Sections 6(c) and 17(b) of the Investment Company Act of 1940, Investment Company Act Release No. 28173 (Feb. 27, 2008); Claymore Exch.-Traded Fund Tr., Notice of Application, Investment Company Act Release No. 27469, 71 Fed. Reg. 51,869, 51,872 (Aug. 31, 2006) [hereinafter Claymore Notice], Claymore Exch.-Traded Fund Tr., Investment Company Act Release No. 27483 (Sept. 18, 2006).

173. There are some minor variations. For instance, United States Oil Fund, LP is generally subject to the SEC's 1933 Act and 1934 Act disclosure system, but its prospectus includes a one-page "Risk Disclosure Statement" mandated by the Commodity Futures Trading Commission. *See* U.S. Oil Fund, LP, Prospectus (Form 424B3) (Feb. 28, 2017) [hereinafter U.S. Oil 2017 Prospectus]. Also, this ETF has filed Form 8-Ks attaching the monthly account statements presented in the form of a Statement of Income (Loss) and a Statement of Changes in Net Asset Value as required pursuant to Rule 4.22 under the Commodities Exchange Act. *See, e.g.*, U.S. Oil Fund, LP, Current Report (Form 8-K) (May 25, 2017).

Company ETFs depart from those of Investment Company ETFs, and such disclosures are not consistent with each other. Non-Investment Company ETF disclosure documents are not subject to the ICA-based regime's requirement to disclose certain information on the past performance of the arbitrage mechanism. For example, the United States Oil Fund ("USO"), a Commodity Pool ETF, instead provides in the prospectus certain alternative measures of past performance.¹⁷⁴ IAU and GLD, both Operating Company ETFs, do provide certain information on the performance of their arbitrage mechanisms on their websites.¹⁷⁵ All three ETFs discuss risks flowing from the withdrawals of APs.¹⁷⁶ However, on the whole, all three ETFs, including the Blackrock-advised IAU, are less expansive in discussing the conditions necessary for arbitrage mechanism effectiveness than the Blackrock-advised IVV, an Investment Company ETF, whose disclosures will be discussed below.

B. THE ARBITRAGE MECHANISM: DISCLOSURES OF A QUANTITATIVE NATURE

An effective arbitrage mechanism is essential to the integrity of the trading prices of an ETF and to the core investment premise of the ETF. Rooted in a mutual fund mindset, ICA disclosure requirements fail to recognize the significance of the arbitrage mechanism to ETF investors.

In this Section III.B, we illustrate the disconnect between the current disclosure regime and the central feature of ETFs by examining requirements pertaining to the historical performance of the arbitrage mechanism that are of a quantitative nature. Such quantitative disclosures are not only inadequate, but also exacerbate an existing problem of investor complacency regarding the basic investment premise of the ETF.

The main aspects of the ICA disclosure regime of a quantitative nature relate to the historical returns experienced by investors, shareholder transaction costs, and annual operating expenses. For historical returns,

174. See U.S. Oil 2017 Prospectus, *supra* note 173, at 24.

175. As to such IAU and GLD web disclosures, see *iShares Gold Trust (IAU)*, ISHARES.COM, <https://www.ishares.com/us/products/239561/ishares-gold-trust-fund#premiumDiscountDialog> (last visited Aug. 29, 2018) and *SPDR Gold Shares (GLD)*, STATE STREET GLOBAL ADVISORS SPDR <https://us.spdrs.com/en/etf/spdr-gold-shares-GLD#> (last visited Aug. 29, 2018). GLD, in addition, provides a graph in its Form 10-K that reflects the share price and NAV versus the gold price over the period November 18, 2004 to September 30, 2017. SPDR Gold Trust, Annual Report (Form 10-K) 38 (Nov. 28, 2017). In the interests of disclosure, one of the authors (Hu) holds shares in IAU and, in the past, has held shares in GLD.

176. See IAU 2017 Prospectus, *supra* note 33, at 8–9; GLD 2017 Prospectus, *supra* note 36, at 9; U.S. Oil 2017 Prospectus, *supra* note 173, at 10.

changes in the NAV are the metric. Shareholder transaction costs focus on “contractual” costs such as the sales load and the redemption fee. The annual operating expenses include on-going costs such as management fees.

Thus, for example, the Summary Prospectus requires that a fund provide a bar chart showing the fund’s annual total returns (that is, changes in the NAV) for each of the last ten calendar years (or for the life of the fund if less than ten years), along with corresponding numerical information.¹⁷⁷ Similarly, the annual report must include a NAV-based performance graph. In addition to the bar charts in the Summary Prospectus, the annual report requires a line graph that reflects the impact of shareholder transaction expenses.¹⁷⁸ The annual operating expenses are summarized in the form of what is commonly referred to as the “expense ratio” in the Summary Prospectus¹⁷⁹ and are reflected a different way in the annual and semi-annual reports.¹⁸⁰

This NAV-centered metric of past performance and this information on shareholder transaction expenses like loads and redemption fees and on annual operating expenses do speak to the concerns of an investor in a mutual fund. In a mutual fund, investors always buy and sell shares directly with the fund at prices exactly equal to the NAV, apart from contractually-specified shareholder transaction expenses. And the expense ratio does represent the on-going “drag”—friction—on the investment performance.

This NAV-centered performance metric does not speak to the concerns of an ETF investor. Unlike a mutual fund investor, an ETF investor does not buy and redeem at the NAV. With ETFs, apart from APs, investors must buy and sell shares in the secondary market and thus are subject to trading price frictions, such as those associated with bid-ask spreads and ineffective arbitrage mechanisms. Mutual fund investors are not faced with such trading price frictions—mutual fund shares do not trade. We have already seen that for the unfortunate investor in IVV who sold on August 24, 2015, the performance of the arbitrage mechanism was two times more significant than the performance of the NAV.¹⁸¹

177. *Form N-1A*, *supra* note 165, at 7–8, item 4(b)(2).

178. *Id.* at 41, item 27(b)(7)(ii).

179. *Id.* at 2–5, item 3.

180. *Id.* at 42–43, item 27(d)(1).

181. One of the three exemptive orders examined with respect to disclosure contemplate performance information in the prospectus and annual report to not only be on the basis of NAV, but also in terms of the share price, while the other two exemptive orders do not add the general prospectus and annual report performance disclosure requirements. *Compare* Barclays Notice, *supra* note 172, at 11 (disclosure of cumulative total return and average annual total return “based on NAV and Bid/Ask Price”), *with* Fidelity Notice, *supra* note 172, at 19 *and* Claymore Notice, *supra* note 172, at 51,872.

There are similar mutual fund mindset problems associated with the disclosures of shareholder transaction and annual operating expenses. Contractually specified sales loads and redemption fees simply do not arise in the ETF context.

For ETF investors, what may effectively be the biggest shareholder transaction costs are: (1) the possibility of paying too high a premium over NAV at purchase; (2) the possibility of selling at too large a discount to NAV; and (3) the impact of bid-ask spreads on purchase or sale of ETF shares. But these trading-price frictions are, as we shall see, not subject to correspondingly fulsome disclosure requirements under either the general ICA disclosure rules or under ETF-specific exemptive orders.

Similarly, the ICA is fulsome on its disclosure requirements with respect to the expense ratio. But, as we have seen with that IVV investor, the 15% trading-price friction caused by the arbitrage mechanism was about 200-fold the friction caused by the 0.07% in annual operating expenses.¹⁸²

Differences in ETF expense ratios are material to shareholder costs, and the mandated disclosures in this regard are as well. One major reason why investors may choose IVV, the second-largest S&P 500 ETF, over SPY, the largest ETF is its expense ratio. IVV's expense ratio, at 0.04% is 55% lower than SPY's 0.0945%, with the result that, among other things, IVV's "30-Day SEC Yield" as of March 31, 2018 was 1.84% versus SPY's 1.80%.¹⁸³

However, no mandated disclosures apply with respect to bid-ask spreads, despite the fact that spreads are also material to ETF shareholder costs, especially for active traders. Thus, SPY emphasizes that it is the largest S&P 500 ETF, in part, because of the consistently tight spreads between the bid and ask price, which translates into reduced trading costs for investors.¹⁸⁴ SPY has published a graph showing its spreads relative to IVV and the Vanguard S&P 500 ETF and states that it is "the only ETF traded at a penny-wide spread for 8 consecutive years, illustrating its unmatched resilience in varying market conditions."¹⁸⁵

In contrast to the omission of bid-ask spreads, the ICA regime does at

182. See *supra* Section I.B. (discussing the performance of IVV's arbitrage mechanism on August 24, 2015).

183. See *iShares Core S&P 500 ETF: Fact Sheet as of 6/30/2018*, ISHARES, <https://www.ishares.com/us/literature/fact-sheet/ivv-ishares-core-s-p-500-etf-fund-fact-sheet-en-us.pdf> (last visited Aug. 29, 2018); *SPDR S&P 500 ETF*, STATE STREET GLOBAL ADVISORS SPDR, <https://us.spdrs.com/en/etf/spdr-sp-500-etf-SPY> (last visited Aug. 29, 2018).

184. James E. Ross, *ETF Insights: 3 Charts That Capture SPY's Liquidity*, SPDR BLOG (Jan. 22, 2018), <https://global.spdrs.com/blog/post/2018/jan/3-charts-that-capture-spys-liquidity.html>.

185. *Id.*

least require some disclosures about the past performance of an ETF's arbitrage mechanism. However, such rules are so inadequate that even the catastrophic breakdowns on August 24, 2015 were not required to be disclosed. Indeed, the SEC-prescribed methodology served to mask their occurrence.¹⁸⁶

The ICA regime's periodic reporting rules require one type of quantitative disclosure regarding the performance of an ETF's arbitrage mechanism. Form N-1A requires that an ETF must provide, with respect to the most recently completed calendar year, and later quarters, either in the prospectus or on the ETF's website "a table showing the number of days the [price at the close of trading] of the [f]und shares was greater than the [f]und's net asset value and the number of days it was less than the [f]und's net asset value (i.e., premium or discount)".¹⁸⁷ The corresponding formulations in the exemptive orders vary in specificity and content, but none appear to require more than what is contemplated by Form N-1A.¹⁸⁸

This requirement turned out to demand very little. Consider what the 2016 prospectus of IVV, issued after the August 24, 2015 debacle, disclosed by way of SEC mandate on the performance of the arbitrage mechanism for 2015 and the first two calendar quarters of 2016:¹⁸⁹ The table appeared as follows:

<i>Premium/Discount Range</i>	<i>Number of Days</i>	<i>Percentage of Total Days</i>
Between 0.5% and -0.5%	377	100.00%

This information is accompanied by the requisite standard SEC warning that past performance cannot be used to predict future results.

186. It should be emphasized at the onset that the IVV disclosure documents referred to in our analysis below were well-written documents that complied fully with SEC requirements. Our analysis of informational gaps relates to the inadequacies of the existing SEC disclosure regime and is not meant to imply any improper act or omission by IVV or any other ETF.

187. *Form N-1A*, *supra* note 165, at 14, item 11(g)(2). There is substantially the same requirement, but with data up to five years, for the annual report (again, with a website option). *Id.* at 41, item 27(b)(7)(iv).

188. The verbal formulations vary in specificity and content. *Compare* Fidelity Notice, *supra* note 172, at 19 (having the website disclose the prior business day's price and NAV at closing and a calculation of the premium and discount), *with* Barclays Notice, *supra* note 172, at 11 (requiring that the website, prospectus, and annual report include the prior business day's premium and discount at closing; and a chart showing the frequency distribution, within appropriate ranges, of such premiums and discounts for each of the four previous calendar quarters) *and* Claymore Notice, *supra* note 172, at 11 (requiring that the website include updated daily information at the close and "information about the premiums and discounts at which the Fund Shares have traded").

189. iShares Tr., Registration Statement Under the Securities Act of 1933 and/or Under the Investment Company Act of 1940 (Form N-1A) 26 (Jul. 27, 2016) [hereinafter IVV 2016 Prospectus].

The fund, in other words, disclosed that 100% of the time, its trading price was within half a percent of the NAV—even though at one point the fund’s trading price dropped fully 20% more than the fund’s NAV.

The reason the table ignores the massive divergence between the trading price and NAV on the morning of August 24 is that the table requires disclosure only of the gap between the trading price and the NAV at the *close* of trading. On August 24, the gap was largest early in the day, and it had dwindled to the 0.5% to -0.5% range by the close, hence the perfect 377 days out of 377 days record in the table.

Intraday performance of the arbitrage mechanism is not relevant under this methodology. Only performance at an instant in time—the close of trading—matters.

This SEC methodology masks intraday, catastrophic breakdowns from view and, in so doing, can sometimes result in glossing over the actual realities of arbitrage mechanism performance. Thus, an investor who diligently reads the 2016 IVV prospectus is presented with a table that is completely accurate with respect to such instants in time, but which in fact offers an unrealistically sunny view as to actual experience of most investors. After all, most trading in an ETF occurs during the course of the trading day, not at the close.

Indeed, performance at the close may especially poorly reflect the actual experience of well-counseled investors. Investors who heed the advice of major ETF sponsors would affirmatively *avoid* trading at the close. Vanguard advises ETF investors to “avoid trading at either the market open or close;” at the close, an ETF may have wider bid-ask spreads and prices may be more volatile.¹⁹⁰ Similarly, BlackRock advises ETF investors to “[c]onsider trading after the first, and before the last, 20 minutes of the trading day” as markets can be more volatile and there may be less liquidity at such times.¹⁹¹

This SEC approach may exacerbate what is likely an existing problem of investor complacency about the ETF’s basic investment premise. In 2013, a financial advisor who had put all of his clients’ money in ETFs stated, “I don’t think most people have any clue that the prices they’re paying or selling at can veer significantly from NAV.”¹⁹² Even professional

190. JOEL M. DICKSON & JAMES J. ROWLEY, JR., “BEST PRACTICES” FOR ETF TRADING: SEVEN RULES OF THE ROAD, *VANGUARD* 1, 6 (2014), <https://www.vanguard.com/pdf/ISGETF.pdf>.

191. BLACKROCK, GUIDE TO BUYING AND SELLING ETFS 1 (2017), <https://www.ishares.com/us/literature/brochure/guide-to-buying-and-selling-etfs-en-us.pdf>.

192. Christopher Condon & Margaret Collins, ‘Seduced’ ETF Investors Caught by Surprise as

commentary intended to help investors on ETF investing does not appear to pay sufficient attention to arbitrage mechanism breakdowns. A thoughtful 2017 *Wall Street Journal* article on how, unlike in mutual funds, one needed to look beyond expense ratios when investing in ETFs did not mention the arbitrage mechanism issue.¹⁹³ Another article, originally published in October 2015, specifically recommended IVV as “the best core fund” for a portfolio, one of the reasons being that it had a “very low tracking error.”¹⁹⁴

On October 8, 2016, the SEC adopted sweeping changes to investment company reporting requirements that will become effective over the period between mid-2018 and early 2020.¹⁹⁵ The attempt is ambitious, laudable, and much-needed. However, it includes no changes to the just-discussed measure of arbitrage mechanism performance.

C. THE ARBITRAGE MECHANISM: DISCLOSURES OF A QUALITATIVE NATURE

The key item of disclosure of a qualitative nature relating to past performance of an Investment Company ETF is found in the MDFP required in the annual report. The MDFP is intended as the ICA-disclosure regime’s analogue to the managerial discussions of past performance required by the MD&A requirements found in 1933 Act and 1934 Act documents.¹⁹⁶ From the standpoint of disclosures pertaining to the arbitrage mechanism, there are two basic problems with the MDFP.

First, as with the quantitative disclosures of past performance just discussed, the MDFP has a mutual fund mindset. The MDFP appears to conceive of “performance” in terms of changes in the NAV. The MDFP is required to “[d]iscuss the factors that materially affected the [f]und’s

Prices Diverge, FUTURES MAG. (July 1, 2013) <http://www.futuresmag.com/Wjw> (quoting David Blain, a financial adviser who manages \$75 million).

193. Simon Constable, *Four Reasons to Avoid the Lowest-Cost ETFs Unlike the Case for Mutual Funds, the Expense Ratio Isn't the End and Be-All*, WALL ST. J., Oct. 9, 2017, at R5.

194. Kent Thune, *7 Best iShares ETFs for Building Your Portfolio*, INVESTORPLACE (Nov. 16, 2017, 6:03 AM), <http://bit.ly/2mwsUYn>. According to the InvestorPlace website, “[t]his article was originally published on Oct. 29, 2015, but we’re republishing it so our readers will continue to benefit from these still-solid iShares ETFs.”

195. See Investment Company Reporting Modernization, *supra* note 164; N-PORT Delay, *supra* note 164. Cf. *supra* note 164 and accompanying text (on certain information as to APs being required on Form N-CEN beginning June 1, 2018 with respect to Investment Company ETFs).

196. See, e.g., Disclosure and Analysis of Mutual Fund Performance Information; Portfolio Manager Disclosure, Securities Act Release No. 6850, 55 Fed. Reg. 1,460, 1,462 (Jan. 8, 1990) (proposed rule) [hereinafter MDFP Proposing Release]; Disclosure of Mutual Fund Performance and Portfolio Managers, Securities Act Release No. 6998, 58 Fed. Reg. 19,050, 8–12 (May 4, 1993) [hereinafter MDFP Adopting Release].

performance” in the previous year, “by the [f]und’s investment advisor.”¹⁹⁷ Throughout the prospectus disclosure requirements, “performance” is conceived of as changes in the fund’s NAV, as adjusted for shareholder transaction costs and annual operating expenses. There is little indication that “performance” is meant to include the performance of the arbitrage mechanism.

ETFs do not construe the MDFP as requiring any discussion of the performance of the arbitrage mechanism. Neither the IVV annual report nor the IVV prospectus filed after the events of August 24, 2015 mentioned these events at all.¹⁹⁸ Similarly, neither the SPLV nor the VDC, which also experienced similar arbitrage mechanism failures, referred to August 24, 2015 in their annual reports or prospectuses.¹⁹⁹

Second, more fundamentally, even if “performance” is interpreted more broadly, the usefulness of the MDFP as a guide to investors would still be limited. The reason is that, in the proposing release for the MDFP, the SEC explicitly rejected MD&A’s approach of requiring forward-looking information, such as a discussion of known trends, events, and uncertainties reasonably likely to have a material impact.²⁰⁰ The SEC stated that the MDFP “is designed to assist investors in evaluating the *past performance* of the fund.”²⁰¹ In the adopting release, the SEC confirmed this by summarizing MDFP as follows: “the item requires funds to explain what happened during the previous fiscal year and why it happened.”²⁰² This requirement contemplates discussion only of those factors that had affected the fund’s performance in the previous year, with no discussion of factors that may affect future performance.²⁰³

The investor must look elsewhere to infer the advisor’s views as to the prospective performance of the mechanism. This is unlikely to be fruitful. In the “Risk/Return Summary” portion of the Summary Prospectus, the ETF is to “summarize the principal risks of investing in the [f]und, including the

197. *Form N-1A*, *supra* note 165, at 41, item 27(b)(7)(i).

198. See iSHARES, 2015 ANNUAL REPORT 6–7 (Mar. 31, 2016) (Management’s Discussion of Fund Performance); IVV 2016 Prospectus, *supra* note 189.

199. See POWERSHARES, 2015 ANNUAL REPORT TO SHAREHOLDERS (Oct. 31, 2015); PowerShares Exchange-Traded Fund Tr. II, Registration Statement: PowerShares S&P 500 Low Volatility Portfolio (Form N-1A) (Feb. 29, 2016); VANGUARD U.S. SECTOR INDEX FUNDS, ANNUAL REPORT (Aug. 31, 2015); Vanguard World Fund, Registration Statement: Vanguard Consumer Staples Index Fund (Form N-1A) (Dec. 22, 2015).

200. MDFP Proposing Release, *supra* note 196, at 1,462.

201. *Id.* (emphasis added).

202. MDFP Adopting Release, *supra* note 196, at 10.

203. *Form N-1A*, *supra* note 165, at 40, item 27(b)(7).

risks to which the [f]und's portfolio as a whole is subject and the circumstances reasonably likely to affect adversely the [f]und's net asset value, yield, and total return."²⁰⁴

Discussion of the risks associated with the fund's investment strategies not among the fund's "principal strategies" can be relegated to the Statement of Additional Information.²⁰⁵

No rules specifically address how risks associated with the arbitrage mechanism should be handled. The only requirement in this respect comes in the "Purchase and Sale of Fund Shares" section of the prospectus, where the ETF is merely to mention that the trading price of the ETF shares may be higher or lower than the NAV.²⁰⁶ These summaries of risk do not contemplate discussions of specific factual events, such as the debacle of August 24, 2015, or the implications for the arbitrage mechanism's effectiveness. Instead, for something like the arbitrage mechanism, these summaries only require brief discussions of its purpose and identification of the circumstances under which its effectiveness will be undermined.²⁰⁷

Changes in an ETF advisor's views on the arbitrage mechanism are not required to be identified by the SEC disclosure requirements. In fact, an ETF advisor's views are constantly evolving as the results of real world "testing" of their original hypotheses and assumptions occur and as changes in market conditions, trading rules, or other aspects of the business and regulatory environment force even previously valid theoretical models to be modified. BlackRock's modeling with respect to the arbitrage mechanism did change after August 24, 2015.²⁰⁸ But, given the MDFP's approach, IVV was not required to disclose such modeling developments (although it did make some changes to its description of the associated risks).²⁰⁹ The MDFP's approach deprives investors of such expert views.

We return to these issues in Section V.C, where we suggest a more MD&A-like approach with respect to the arbitrage mechanism, including associated model-related complexities.

204. *Id.* at 6–7, item 4(b)(1). *See also id.* at 11, item 9(c).

205. *Id.* at 19, item 16(b).

206. *Id.* at 10, item 6.

207. *See, e.g.*, IVV 2015 Prospectus, *supra* note 70 at S-3, 5.

208. *See infra* Section V.C.

209. Most notably, it added a sentence to the effect that APs may be less willing to create or redeem fund shares if there is, among other things, the lack of an active market for the underlying investments, which may contribute to the shares trading at a premium or discount. IVV 2016 Prospectus, *supra* note 189, at 6.

IV. OUR PROPOSED REGULATORY FRAMEWORK: SUBSTANTIVE ASPECTS

To solve the problems in existing ETF regulation, we encourage the SEC to create a single unified body of regulation that covers all ETFs and shifts a greater share of regulation away from discretionary review and toward written rules. This systematic approach to ETFs as a whole, rooted in the structural elements common to all ETFs, would largely displace the hodge-podge of regulatory regimes that vary widely across both different categories of ETFs and different ETFs within each category.

In Section IV.A, we set out the general rationales for a single framework as well as methods for implementing such a framework. To a significant extent, this analysis applies with respect to both the substantive and disclosure aspects of our proposal. As to the disclosure side, there are additional rationales for a single framework and additional implementation pathways and considerations. These disclosure-specific matters will be deferred to Part V.

In Sections IV.B and IV.C, we focus on the two key functional elements of our single framework's substantive side.

We note that the SEC is now trying, and has tried in the past, to adopt new rules for Investment Company ETFs (but not other kinds of ETFs). The SEC proposed a set of rules in 2008, but the rules were never finalized amidst the demands of the global financial crisis.²¹⁰ The SEC also asked for general comments on ETFs in 2015, presumably with the intention of developing rules later on.²¹¹ And on June 28, 2018, the SEC proposed certain changes relating to Investment Company ETFs, which changes are summarized in the Appendix.

A. THE GENERAL RATIONALES FOR A SINGLE FRAMEWORK FOR ALL ETFs

We contemplate a single framework for all ETFs. The treatment of Investment Company ETFs, Commodity Pool ETFs, and Operating Company ETFs would be unified.

The SEC would need to begin by adopting a definition that establishes the scope of the regulatory framework by clearly identifying what an ETF is.

210. Exchange-Traded Funds, Securities Act Release No. 8901, 73 Fed. Reg. 14,618 (Mar. 11, 2008).

211. Request for Comment on Exchange-Traded Products, Exchange Release No. 75165, 80 Fed. Reg. 34,729 (June 17, 2015).

As we have seen, the regulation that applies to ETFs currently does not rely on a comprehensive conception of an ETF, and there is no single body of regulation that could even make use of such a definition. One consequence is that ETFs invested in different assets are subject to different regulation.

We would define an ETF—and thus circumscribe the universe of entities that would be subject to the new ETF rules—by focusing on the arbitrage mechanism. Specifically, we would define an ETF as a pooled investment vehicle that is publicly traded (on a stock exchange or otherwise) and that permits an investor to create and redeem shares in exchange for assets or a combination of assets and cash at values equal to the entity's net asset value.²¹²

The principal advantage of defining an ETF so broadly is that for the first time it would bring Commodity Pool and Operating Company ETFs under the same regulatory umbrella as Investment Company ETFs. Our definition would identify an ETF on the basis of structure—including public trading and the processing of creations and redemptions of shares at NAV—rather than on the basis of assets. Our aspiration to cover Commodity Pool and Operating Company ETFs in addition to Investment Company ETFs represents a major innovation over the SEC's past and present rulemaking efforts in this area. The SEC's 2008 proposal, Form N-CEN disclosure requirements relating to APs effective June 1, 2018, the forthcoming (2019) SEC requirements relating to certain liquidity risk requirements, and the June 2018 SEC Proposal, for example, all relate only to Investment Company ETFs.²¹³

Equalizing the treatment of Investment Company and other kinds of ETFs is important to level the playing field and end the gamesmanship that allows Commodity Pool and Operating Company ETFs to avoid the restrictions on Investment Company ETFs and vice versa. It was the temptation for gamesmanship that led ForceShares, for example, to try to organize its funds as commodity pools in order to avoid the Division of

212. We adapt this formulation from stock exchange listing standards. *E.g.*, RULES OF CBOE BZX EXCHANGE, *supra* note 102, at r. 14.11(c)(1) (defining an "Index Fund Share" for index-based exchange-traded funds); RULES OF NYSE ARCA, *supra* note 19, at r. 8.200 (regulating "trust-issued receipts" that trade on an exchange and permit shareholders to redeem shares). Although there is no universal definition of an ETF in stock exchange listing standards, the various rules developed to apply to individual types of ETFs have been forced to identify the basic outlines of what an ETF is. 2015 SEC Request for Comments, *supra* note 21, at 34, 730–31.

213. Exchange-Traded Funds, *supra* note 210, at 5 n.4 (noting the exclusion of Commodity Pool ETFs); *infra* note 224 (discussing forthcoming 2019 liquidity-related requirements excluding Commodity Pool ETFs and Operating Company ETFs); *infra* note 283 and accompanying text (noting how Form N-CEN does not cover Commodity Pool ETFs and Operating Company ETFs).

Investment Management's informal moratorium on approving new exemptions for leveraged Investment Company ETFs.²¹⁴ By organizing as a commodity pool rather than an investment company, ForceShares entered the SEC through a different division and obtained different and better treatment—until the Commissioners intervened. It is likely that any substantive restrictions the SEC places on new Investment Company ETFs by rule or informal policy could potentially be avoided by sponsors savvy enough to organize their funds as commodity pools.

Therefore, we think that the SEC should self-consciously try to harmonize the treatment of Investment Company ETFs with other kinds of ETFs. It should treat all kinds of ETFs as a single regulatory space and develop a comprehensive approach that thoughtfully addresses all of them. To be clear, this does not necessarily mean that the SEC should treat all kinds of ETFs the same. The SEC might reasonably decide after careful study that different kinds of assets or different kinds of arbitrage mechanisms warrant different regulatory treatment. The SEC might choose to impose different requirements about portfolio transparency on an ETF that invests in oil futures and an ETF that invests in corporate bonds. But even if the SEC does choose to regulate different ETFs differently, it ought to do so self-consciously, as part of a single cohesive strategy that intentionally identifies differences and justifies each of them. If the SEC chooses, for instance, to permit custom redemption baskets for Investment Company ETFs, but not Commodity Pool ETFs, it should do so as part of a carefully thought-out strategy that pays due attention to both the similarities and differences between these vehicles.

Such a unified strategy—even one that permits differences—would stand in contrast to the haphazard, ad hoc jumble of policies that prevails today. At present, both the similarities and the differences between Investment Company and non-Investment Company ETFs are the product of accident and history, rather than a cogent strategy. The SEC sometimes treats Investment Company and non-Investment Company ETFs similarly and sometimes treats them differently, but never does it design the similarities and differences as part of synoptic, unifying vision. The haphazard nature of the SEC's approach was evident, for instance, in the experience of ForceShares, where the SEC first permitted a Commodity Pool ETF to circumvent the policies on Investment Company ETFs without realizing what had happened, then reversing itself a few days later without explaining why.²¹⁵

214. *Supra* Section II.D.

215. *Supra* Section II.D.

One way to harmonize the treatment of different ETFs is to adopt a single body of administrative rules. The SEC could adopt a set of formal rules under the Administrative Procedure Act and apply them to all ETFs. The SEC could accomplish this by combining its rulemaking authority under section 6(c) of the ICA (which covers exemptions to Investment Company ETFs) with its rulemaking authority under section 19(b) of the 1934 Act (which covers approval of stock exchange listing rule changes) to adopt a single rule that defines its scope broadly enough to cover everything.

Another, less ambitious way to harmonize ETF regulation would be to develop an informal policy to be applied when reviewing stock exchange listing rule change applications for Commodity Pool and Ordinary Company ETFs. The SEC's Division of Trading and Markets reviews these applications every time a new Commodity Pool or Ordinary Company ETF attempts to list. It might use this process to self-consciously harmonize its demands for Commodity Pool and Ordinary Company ETFs with any formal rules the SEC adopts for Investment Company ETFs. If the Commission decides not to approve leveraged Investment Company ETFs for ICA exemptions, for instance, it could announce a similar policy for reviewing stock exchange listing rule changes by Commodity Pool and Ordinary Company ETFs. This informal approach to harmonizing the treatment of different ETFs holds the appeal of possibly being more flexible than a more formal approach that addresses all kinds of ETFs in a single administrative rule and might make it easier to address differences and novel challenges as they arise.

One major challenge in harmonizing the treatment of Investment Company and other kinds of ETFs will be to consider which elements of the ICA to extend to non-Investment Company ETFs. The ICA and its implementing rules contain a host of regulations, none of which touch the ETF arbitrage mechanism, and the SEC should think about which of these to extend to non-Investment Company ETFs. Since 2003, for instance, the SEC has required every registered investment company to employ a Chief Compliance Officer and to give him or her responsibility for overseeing the legal compliance efforts of the fund and its adviser.²¹⁶ There is no good reason why Commodity Pool and Operating Company ETFs should not face this same requirement. Whatever differences these ETFs have with Investment Company ETFs, they surely do not concern the need for solid regulatory compliance. Section 17 of the ICA also has important rules on self-dealing and custody of assets, which might also apply in some fashion

216. 17 C.F.R. § 270.38a-1 (2004); *Id.* § 275.206(4)-7.

to Commodity Pool and Operating Company ETFs.²¹⁷ Self-dealing and custody pose problems in any investment fund that is dominated by an external advisor, a category which includes Commodity Pool and Operating Company ETFs.²¹⁸

In recommending harmonized treatment, we are aware that the cleavage between securities and commodities regulation runs much deeper than ETFs and that the argument in favor of harmonization has been made much more broadly than we make it now.²¹⁹ We note, however, that because the SEC has placed itself in the position of individually reviewing every new Commodity Pool ETF, the SEC has an exceptional opportunity to harmonize this space. Because none of the relevant statutes in either securities or commodities regulation has anything at all to say about the distinctive features of ETFs, everything the SEC does in this space is invented by administrative regulation. Moreover, in its capacity as reviewer of stock exchange listing rule changes, the SEC is clearly the primary regulator of Commodity Pool ETFs, even if these vehicles are also formally regulated by the Commodities Exchange Act.

Ironically, one advantage of defining an ETF in terms of pooled investments with the creation/redemption arbitrage mechanism is the narrowness of this approach. This approach avoids extending our regulatory system to products commonly referred to as exchange-traded notes (“ETNs”)—at least as an initial matter. ETNs are in nature different from ETFs. First and foremost, ETNs are debt instruments and do not offer ownership interests in pooled investments. ETF investors have no credit exposure to the ETF sponsor while the fortunes of ETN investors depend ultimately on the ability of the ETN issuers to meet their contractual obligations. Second, the creation process associated with the arbitrage mechanism for ETNs works differently from the process associated with ETFs.²²⁰

Currently, however, the SEC often conflates ETFs and ETNs into a single unit for analysis—both being categorized as an exchange-traded product (“ETP”). This can serve to undermine the development of sensible

217. 15 U.S.C. § 80a-17 (2012). For an example of how these rules might apply, see Exchange-Traded Funds, *supra* note 210, at 41.

218. For an explanation of these issues, see generally Morley, *Funds and Managers*, *supra* note 10 (explaining the conflicts that can arise when a fund is distinct from its advisor).

219. See, e.g., Roberta Romano, *The Political Dynamics of Derivative Securities Regulation*, 14 YALE J. ON REG. 279 (1997).

220. For a more detailed discussion of differences between ETFs and ETNs, see, for example, Brian A. Johnson, *Essays on Exchange Traded Notes* (Summer 2016) (unpublished Ph.D. dissertation, University of California, Berkeley), at 5–8 (on file with author (Hu)).

policies and rules. As we saw in Section I.B, the SEC looked at the performance of all ETPs (both ETFs and ETNs) in assessing various arbitrage mechanism-related matters on August 24, 2015, even though the arbitrage mechanisms of ETFs and ETNs differ.

Our proposed rules would apply to existing ETFs as well as ETFs created in the future. Since the SEC's system of ad hoc, fund-by-fund review has allowed old fund sponsors to operate under different rules from newer fund sponsors, any new system of regulation will have to cope with the fact that its changes will be felt unequally. Old sponsors that presently operate under lax requirements might feel the new rules more acutely than newer sponsors that presently operate under more burdensome requirements. One solution to this problem might be to apply the rules prospectively, enforcing them only against new funds created after the rules are adopted, regardless of the age of the funds' sponsors and their exemptions. Another solution would be to apply the rules on the same terms to all funds, including funds already in existence when rules are adopted. Perhaps the difference in burdens of compliance could be dealt with by phasing the rules in gradually, thereby giving older sponsors time to figure out how to comply.

We acknowledge, however, the seriousness of the difficulty in applying the rules to existing funds. Some funds have attained such great size that liquidating them could potentially hurt current investors and the broader financial system, especially if there is no appropriate transition period. And given how delicate the arbitrage process can be sometimes, we fear that the announcement of a shutdown or major change in the way a fund does business could have unpredictable consequences for the trading prices of its shares. Should the Vanguard exemption be disallowed, absent some work-around with the IRS, there could be some tax consequences for existing ETF investors. Thus, though we favor applying the rules uniformly to all funds, regardless of the date of creation, we acknowledge the potential need for greater sensitivity.

We note the foregoing analysis, both with respect to the case for a single regulatory framework and pathways for implementation, generally applies not just to the regulation of substantive matters, but also to the regulation of disclosure matters. There are also disclosure-specific rationales and implementation considerations. We say more about such matters when we discuss our proposal for disclosure regulation in Part V.

We turn now to the functional elements of our proposal for regulation of substantive matters. We start by focusing on the content of the rules and then turn to the scope and nature of SEC discretion.

B. FUNCTIONAL ELEMENTS: CONTENT OF THE RULES

Our view that the new rules should apply to all ETFs rests on our conviction that the distinctive element of an ETF is its reliance on the arbitrage mechanism. The rules we propose thus focus on the arbitrage mechanism as the principal object of regulatory concern.

The SEC should develop rules that specify minimum criteria to be satisfied. The criteria should relate to portfolio transparency, asset liquidity, and the number and activity of APs. We briefly refer to the portfolio transparency and liquidity issues here in the context of ETFs generally, leaving aside the possible complications associated with ETFs that are actively managed.

Consistent with the SEC's longstanding policy for granting exemptive orders to new Investment Company ETF applicants,²²¹ the contents of a fund's redemption basket should have to be disclosed on a fund's website every trading day prior to the commencement of trading. Also consistent with the SEC's longstanding policy, such a rule should permit ETFs to announce their baskets at the beginning of the day and keep them fixed throughout the day, even if the fund changes its portfolio.²²² This permits an ETF to change its portfolio over the course of a day without allowing other traders to front-run the ETF's trades. As will be discussed shortly, there are severe limitations to the accuracy of indicative intraday values currently being disseminated every fifteen seconds, and joint SEC-exchange-ETF industry efforts will be needed to address this and related problems.²²³

The portfolio of an ETF must also satisfy certain liquidity requirements. Liquidity is important to ensure that the fund and the arbitrageurs who create and redeem its stock can transact in the underlying portfolio assets with sufficient speed and convenience so they can keep the fund's stock in line with its NAV. The exchanges already have liquidity rules in place and, beginning June 1, 2019, the SEC will require most Investment Company ETFs to adopt a written program reasonably designed to assess and manage their liquidity risk.²²⁴ We believe that the SEC should continue further in this

221. See, e.g., WisdomTree Tr. (notice), *supra* note 136; WisdomTree Tr. (order), *supra* note 136.

222. WisdomTree Tr. (notice), *supra* note 136, at 7.

223. See, e.g., Van Eck Assocs. Corp., Investment Company Act Release No. 27283, 71 Fed. Reg. 19,214, 19,215 (Apr. 7, 2006). Note that the SEC proposed similar rules in its 2008 proposal. Exchange-Traded Funds, *supra* note 210, at 27–28.

224. See, e.g., RULES OF CBOE BZX EXCHANGE, *supra* note 102, at r. 14.11(liquidity requirements for fixed-income-linked Commodity Pool ETFs); RULES OF NYSE ARCA, *supra* note 19, at r. 5.2(j)(3) (liquidity requirement for index fund Investment Company ETFs funds).

Beginning on June 1, 2019 or December 1, 2019 (depending on certain ETF size considerations), ETFs that are Investment Company ETFs (other than "In-Kind ETFs" as defined by the

crucial area, including, among other things, extending the forthcoming requirements to Commodity Pool ETFs and Operating Company ETFs.

Yet a fundamental question arises, irrespective of the particulars of such arbitrage mechanism-related criteria. Why should the SEC be involved at all as to the effectiveness of the arbitrage mechanism? Here, we believe that the SEC should openly adopt a policy of unapologetic, but measured, paternalism. The SEC should focus not merely on giving investors information, but also on limiting the availability of products that appear likely to have serious problems in their arbitrage mechanisms.

The reason we believe in a modest degree of paternalism is that the pricing of an ETF's shares does not necessarily reflect the risks of a poorly functioning arbitrage mechanism. If the arbitrage mechanism works as it should, then the stock price of an ETF will usually be approximately equal to the fund's NAV. But a fund's NAV is not a measure of a fund's true expected value—it does not factor in risks related to fees, the potential for future breakdowns in the arbitrage mechanism, or anything else that is not an asset in a fund's portfolio. This is because a fund's NAV is merely a mechanical calculation that adds up the values of the assets in a fund's portfolio.²²⁵ One reaches the NAV by simply totaling up the value of the stocks, bonds, gold bars, or other portfolio assets and then subtracting the amount owed on any liabilities. If a fund holds stock in the S&P 500, then the only thing that affects the fund's stock price will be fluctuations in the value of the S&P 500. Thus, the distinctive risk in an ETF—that the arbitrage process might fail at some point in the future—has little bearing on the trading price of an ETF today. Two ETFs with the same NAV will tend to trade at the same price today, even if one of the funds has a flawed arbitrage process that it is likely to break down next week.²²⁶

SEC) would be required by the SEC to adopt and implement said written liquidity risk management program. See Investment Company Institute Liquidity Risk Management Programs; Commission Guidance for In-Kind ETFs, Investment Company Act Release No. 33010, 83 Fed. Reg. 8,342, 8,343, 8343 n.2 (Feb. 27, 2018) (“[F]unds” in the release “includes open-end management companies, including exchange traded funds . . . that do not qualify as In-Kind ETFs . . . and excludes money market funds.”). Cf. Investment Company Liquidity Risk Management Programs, Investment Company Act Release No. 32315, 81 Fed. Reg. 82142, 82,216–17 (Nov. 18, 2016) (stating that the SEC is defining an ETF as an “open-end management investment company (or series or class thereof), the shares of which are listed and traded on a national securities exchange, and that has formed and operates under an exemptive order under the [ICA] granted by the Commission or in reliance on an exemptive rule adopted by the Commission.”).

225. For a complete explanation of this idea, see generally John Morley & Quinn Curtis, *Taking Exit Rights Seriously: Why Governance and Fee Litigation Don't Work in Mutual Funds*, 120 YALE L.J. 84 (2010).

226. Certain factors (unrelated to the arbitrage mechanism) could cause two ETFs with the same NAV to trade at somewhat different prices (or at different bid-ask spreads). For example, the shares of

As a result, an unsophisticated investor cannot rely on the stock market to price the risk of a malfunctioning arbitrage mechanism. In this regard, an ETF stands in contrast to an ordinary company. In an ordinary company, an unsophisticated investor does not need to understand and price every risk effectively, because sophisticated investors will drive the market price to an appropriate level on their own. An investor does not need to know personally, for example, about the risks that Apple faces to the supply chain for its iPhones, because even if the unsophisticated investor does not understand these risks, many sophisticated investors will, and these sophisticated investors will buy and sell Apple's common stock on the basis of this risk until the price of the stock settles at an appropriate level. This is why federal securities law has developed the so-called "fraud on the market" doctrine: even if an investor is not aware of a piece of information, she may nevertheless be said to have relied on it, because the information will inevitably influence the price at which an investor can buy or sell.

The unique, arbitrage mechanism-centered microstructure for the pricing of ETF shares creates a unique problem. The price of an ETF does not reflect every publicly disclosed risk that might affect the ETF's value because certain kinds of risks are mechanically excluded from being reflected in the price.

To be sure, the market may eventually punish the advisors of an ETF with a poorly performing arbitrage process, when fund investors redeem, leaving a smaller base of money in the fund to generate the advisor's fees. In this sense, even ETFs are subject to a certain kind of market competition that eventually rewards the good and punishes the bad. But this kind of competition operates much more slowly and much less directly than the kind of competition we ordinarily see in securities markets. In ordinary securities markets, the discovery of a new risk affects prices almost instantaneously; in ETF markets, it might take months or years. If, for example, a computer software company announced a major flaw in its key product, the price of the stock would drop immediately. If, by contrast, an ETF announced a major flaw in its arbitrage mechanism that might manifest sometime in the future, the fund's NAV—and thus its market price—would not be affected. This ETF might lose investors eventually, but the investors might take a very long

an ETF needing to make a (taxable) distribution would be less attractive to most investors than the shares of an otherwise identical ETF that does not need to do so. Depending on the efficiency of the market in the shares of these two ETFs, the respective share prices might reflect this. *See* E-mails from Andrew J. (Buddy) Donohue, Director, SEC Div. of Inv. Mgmt. (2006–10), to Henry T. C. Hu, Allan Shivers Chair in the Law of Banking and Fin., Univ. of Tex. Law Sch. (Apr. 30, 2018, 4:51 PM CST. and July 27, 2018, 2:40 PM CST) (on file with author (Hu)).

time to leave, and in the meantime many of them would overpay for an investment with unnecessary and unrewarding risks.

In addition to the foregoing matters, the rules might also address a number of technical issues in the ICA, such as the ability of registered investment companies to invest in shares of Investment Company ETFs, the need for broker-dealers to deliver prospectuses when selling Investment Company ETF shares, and the delay that ETFs often experience in settling redemptions when their portfolios include foreign securities.²²⁷

In addition to these written rules, the SEC should require regular review of funds and their arbitrage processes. The ICA currently subjects registered investment companies to regular examinations,²²⁸ but this requirement does not currently extend to Commodity Pool or Operating Company ETFs. Moreover, the examination requirement does not require or assume that the SEC will review the operation of a fund's arbitrage process. The rules should thus require every fund to be subject to periodic examination and should require every fund to report and explain to the SEC any significant deviations between its NAV and its exchange-trading prices, including intraday deviations. The proposed public disclosure requirements set out in Part V should be helpful to the SEC with respect to such matters.

C. FUNCTIONAL ELEMENTS: SCOPE AND NATURE OF SEC DISCRETION

Even after enacting the written rules of general applicability that we propose, the SEC should have the capacity both to add and remove requirements for individual funds. The SEC already has this power, since it can craft requirements ad hoc for every fund, and the adoption of written rules should substantially reduce both the frequency and extent of the SEC's use of this discretion.

We believe such close substantive scrutiny should not flow from an ETF falling into identified product categories, but instead on the presence of any of three circumstances. Subjecting an ETF to such scrutiny based on it falling into a product category (for example, leveraged ETFs or bitcoin ETFs) is an example of a regulatory cubbyhole approach that has repeatedly proven inadequate in the face of modern process of financial innovation. Financial innovation will result in new product categories that would be untouched under such an approach, even if they pose greater regulatory

227. The SEC's 2008 proposal addresses a number of these technical issues. *E.g.*, Exchange-Traded Funds, *supra* note 210, at 44 (delays in delivering redemption proceeds), 49 (prospectus delivery requirement for broker dealers), 97 (investments by other investment companies in ETFs).

228. 15 U.S.C. § 80a-30(b) (2012).

concerns. A cubbyhole approach may also suffer from another kind of obsolescence: a product category we currently think deserves special scrutiny may not deserve such scrutiny with changing financial dynamics.

That is, such fund-specific SEC intervention should occur in three circumstances: (1) when the SEC has significant doubts about the effectiveness of an arbitrage mechanism or related structural engineering (broadly defined), irrespective of whether the arbitrage mechanism satisfies the criteria in the written rules; (2) when the riskiness or complexity of a proposed ETF could not be adequately addressed by investor “suitability” rules imposed on financial intermediaries and associated investor education efforts; and (3) when a proposed ETF or, in truly exceptional circumstances, an existing ETF creates significant negative externalities for financial markets or the financial system. Such intervention would occur only sparingly, and discretion would be cabined by certain principles and enumerated factors.

The first set of circumstances—those pertaining to the arbitrage mechanism and related structural engineering—would likely not apply to most types of ETFs. As discussed, the minimum transparency, liquidity, AP, and other requirements should be met by most proposed ETFs and should do an adequate job of ensuring a sufficiently effective arbitrage mechanism. However, a key feature of the ETF phenomenon is its role as a financial portal to an expanding universe of risk-return possibilities. Endless combinations of new asset classes, asset strategies, and forms of exposure are constantly arising through a robust innovation process. An eighteen-fold difference between an ETF’s trading price and its NAV, as occurred with the inverse volatility SVXY on February 5, 2018, is unimaginable with respect to an ETF offering straightforward passive exposure to the S&P 500. Innovations with respect to the arbitrage mechanism or related structural engineering may be necessary in ways not contemplated by the criteria established by the written rules.

Also, as discussed in Part V, arbitrage mechanisms and related structural engineering for both plain vanilla and innovative ETFs can be expected to change with more and more financial R&D, the continuing flow of real world “testing” results, and with changes in trading practices, trading rules, and other aspects of the business and regulatory environment. The SEC’s general written criteria may not reflect such new financial learning or the changes necessitated by a changing business and regulatory environment.

Another situation that may trigger SEC doubts about the effectiveness of an arbitrage mechanism and related structural engineering may involve the particular ETF sponsor. For instance, an ETF sponsor that does not have

demonstrable expertise with respect to arbitrage mechanisms or the underlying assets in which the ETF invests should trigger SEC review.

The second set of circumstances relates to especially risky or complex ETFs that neither investor suitability rules nor investor education efforts effectively address. ETFs are the dominant collective investment vehicle for the riskiest and most arcane assets and strategies.²²⁹ In Section I.B, we discussed the ninety-six percent drop in the NAV of SVXY on Monday, February 5, 2018. The NAV move that Monday was very sharp in absolute terms, but was consistent with SVXY's stated goal of delivering the simple, unleveraged, inverse of the performance of the S&P 500 VIX Short-Term Futures Index. On Tuesday, the NAV changes were even sharper, but were even more startling given the stated objective of the ETF. The index decreased twenty-six percent on Tuesday, and thus, had SVXY again performed as intended, its NAV should have gone up by about twenty-six percent. Instead, SVXY increased 187 percent—an increase that was *seven-fold* higher than the expected increase.²³⁰

FINRA and SEC rules do require investment professionals to place clients only in “suitable” investments. FINRA Rule 2111 requires, for example, that broker-dealers and associated persons must “have a reasonable basis to believe that a recommended transaction or investment strategy . . . is suitable for the customer”²³¹ However, there have been problems. In 2016, FINRA fined Oppenheimer & Co. Inc. for failing to reasonably supervise transactions in non-traditional ETFs, and in 2017, Morgan Stanley

229. A review of the ETF and mutual fund screener website of *U.S. News & World Report* showed forty-six mutual funds that were in the “trading-leveraged-equity” category, with total assets of \$3.16 billion. In contrast, there were 101 ETFs in the same category, with total assets of \$17.68 billion. (This was based on a review on August 22, 2017 of *Best Mutual Fund Rankings: Trading—Leveraged Equity*, U.S. NEWS & WORLD REPORT, <https://money.usnews.com/funds/mutual-funds/rankings/trading-leveraged-equity>.) Similarly, in the “trading-inverse-debt” category, there were only seven mutual funds, with total assets of \$182 million versus nineteen ETFs with total assets of \$3.46 billion. *Id.*

230. See *ProShares SVXY NAV Spreadsheet*, *supra* note 75. At the Tuesday close, the gap between trading price and the NAV was still sizable, but the gap was far narrower than the Monday close. The Tuesday closing price was \$12.24 while the NAV was \$11.3792. Both SEC Chairman Jay Clayton and SEC Commissioner Kara Stein have expressed concerns over the nature of some ETFs now available to average investors. See, e.g., Benjamin Bain & Matt Robinson, *VIX Funds Face Fresh Scrutiny from U.S. Regulators*, BLOOMBERG (Feb. 23, 2018), <https://www.bloomberg.com/news/articles/2018-02-23/vix-fund-blowups-spur-u-s-to-probe-if-misconduct-played-a-role>.

Three weeks after the “Vix-mageddon” of February 5, 2018, ProShare Capital Management announced that ProShares Short VIX Short-Term Futures ETF (“SVXY”) would change its investment objective to seek results (before fees and expenses) that correspond only to one-half of the inverse (-0.5X) of the S&P 500 VIX Short-Term Futures Index. Press Release, ProShare, ProShare Capital Management LLC Plans to Reduce Target Exposure on Two ETFs (Feb. 26, 2018), http://www.proshares.com/news/proshare_capital_management_llc_plans_to_reduce_target_exposure_on_two_etfs.html.

231. FINRA, FINRA MANUAL, at r. 2111 (2014).

Smith Barney agreed to pay a penalty to settle SEC charges related to ETF investments it recommended to advisory clients.²³²

The mere fact that an ETF is especially risky or complex would be insufficient to justify SEC intervention on investor protection grounds under our system. Instead, intervention would occur only in those circumstances where the SEC has reasons to believe that suitability requirements and investor education efforts have not been or will not prove sufficiently effective.

We think this is the right way to address leveraged and leveraged inverse funds (apart from the possible applicability to certain of these funds of the arbitrage mechanism/structural engineering circumstance just discussed and the negative externalities circumstance to be discussed below). Recall that since 2010, the SEC has refused to grant new exemptions for leveraged ETF advisers, presumably, at least in part, on the belief that leveraged ETFs pose special risks to investors.²³³ Perhaps rather than imposing such a blanket moratorium based on product category, the SEC and FINRA should think more carefully about whether suitability requirements or investor education efforts are or can be effective enough in addressing these funds, especially when the funds are unusually risky or complex. FINRA has, for instance, stated that though “it is not FINRA’s position that all leveraged and inverse ETFs are unsuitable for all retail customers,” firms that recommend such products “must carefully consider their suitability for each customer.”²³⁴

Our approach would address the *de jure* duopoly on leveraged and leveraged inverse ETFs enjoyed by the Direxion and ProShares advisory companies already discussed in Section II.C. Though one might reasonably debate whether leveraged and leveraged inverse funds (or certain subsets of such funds) should be allowed, no one can seriously argue that the public is well served by letting only two specific advisors create these types of funds. If certain leveraged and leveraged inverse funds should not be allowed, then letting these two advisors create these funds is doing harm. And if certain leveraged and leveraged inverse funds should be allowed, then investors ought to be able to reap the benefits of these funds through robust market

232. Morgan Stanley Smith Barney, LLC, Exchange Act Release No. 79794, 2017 WL 129913 (Feb. 14, 2017) (order instituting administrative and cease-and-desist proceedings); Press Release, FINRA, FINRA Sanctions Oppenheimer & Co. \$2.9 Million for Unsuitable Sales of Non-Traditional ETFs and Related Supervisory Failures (June 8, 2016), <https://www.finra.org/newsroom/2016/finra-sanctions-oppenheimer-co-29-million-unsuitable-sales-non-traditional-etfs>.

233. *Supra* note 146–47 and accompanying text.

234. *Non-Traditional ETFs FAQ*, FINRA, <http://www.finra.org/industry/non-traditional-etf-faq> (last visited Aug. 29, 2018).

competition among advisors. The SEC could plausibly rationalize the regulation of these funds either by prohibiting all advisers from creating them or permitting all advisers to create them. Either approach would be better than the status quo. Our approach would treat all sponsors proposing new leveraged or leveraged inverse funds the same way. (With respect to *existing* leveraged or leveraged inverse funds, as discussed earlier, there may be the need for special dispensation.)

ETFs involving bitcoins and other current privately-issued cryptocurrencies may trigger close review under both the risk and complexity circumstance and the arbitrage mechanism circumstance just discussed (as well as under the negative externalities circumstance to be discussed later in this Article). There is at least a possibility that bitcoins themselves (and thus bitcoin ETFs) may be fundamentally flawed from the standpoint of riskiness and complexity. For instance, do the nascent markets for bitcoins have elements of a Ponzi scheme or a tulip-like mania or, if they do not, are such markets nevertheless too susceptible to manipulation? While our approach to risky and complex ETFs contemplates how suitability rules and investor education may in certain circumstances be sufficient grounds for allowing the introduction of highly risky and complex ETFs, this pathway should be foreclosed to ETFs that are invested in assets that are fundamentally flawed. If bitcoins do not in fact suffer from such fundamental flaws and pass the risk and complexity test, there would still remain the question of whether bitcoins are amenable to the arbitrage mechanism of ETFs.

The third set of circumstances in which the SEC could intervene would be when an ETF may have significant negative externalities for financial markets or the financial system as a whole. In the Introduction and Section V.C.2, we refer to externalities when an ETF grows too large relative to an asset class and when too many ETFs track the same equity index.

One clear example involves the Van Eck Junior Gold Miners ETF. Because the ETF's assets became too large relative to the market for junior gold mining stocks in the pertinent index, the ETF changed its threshold of allowable companies so as to allow the ETF to invest in larger producers not in the index.²³⁵ According to a gold stock-oriented mutual fund manager, in advance of this change, market participants "indiscriminately" sold their junior gold mining stocks, causing "fresh volatility" and "depreciated

235. Frank Holmes, *Small-Cap Mining Stocks, Big-Time Opportunity*, U.S. GLOBAL INVESTORS: FRANK TALK (June 19, 2017), <http://www.usfunds.com/investor-library/frank-talk/small-cap-mining-stocks-big-time-opportunity>. We turn to another aspect of this ETF situation in *infra* Section IV.C.

prices.”²³⁶ This was because market participants anticipated that the change would cause the Van Eck ETF to down-weight or divest altogether a number of the smaller constituents.

ETFs, such as those involving bitcoins, and inverse volatility strategies may trigger review not only under the arbitrage mechanism circumstance and riskiness and complexity circumstance discussed earlier, but also because of possible externality issues. Policy-makers worldwide have been worried about the possibility that bitcoins may contribute to systemic risk and how, in Treasury Secretary Steven Mnuchin’s words, “[w]e want to make sure that bad people cannot use these currencies to do bad things.”²³⁷ The events of February 2018 have triggered public concerns over the possibility that inverse volatility strategies can disrupt the overall stock market.²³⁸

More broadly, the behavior of ETFs invested in less liquid assets in February 2018 is contributing to the International Monetary Fund’s growing

236. *Id.* Frank Holmes co-manages, among others, the U.S. Global Investors Gold and Precious Metals Fund. See *U.S. Global Investors Gold and Precious Metals Fund*, MORNINGSTAR, http://financials.morningstar.com/fund/management.html?t=USERX®ion=usa&culture=en_US (last visited Aug. 29, 2018).

237. Liz Moyer, *Treasury Secretary Mnuchin Wants to Make Sure Bad People Cannot Use Bitcoin to Do Bad Things*, CNBC (Jan. 16, 2018), <https://www.cnbc.com/2018/01/12/mnuchin-wants-to-make-sure-bad-guys-cant-use-cryptocurrencies.html>. See also Jeff Kluter, *Can Bitcoin Threaten Market Stability?*, INSTITUTIONAL INVESTOR (Feb. 28, 2018), <https://www.institutionalinvestor.com/article/b17435bhd2bdgk/can-bitcoin-threaten-market-stability>; Eric Lam, *What the World’s Central Banks Are Saying About Bitcoin*, BLOOMBERG (Jan. 28, 2018), <https://www.bloomberg.com/news/articles/2017-12-15/what-the-world-s-central-banks-are-saying-about-cryptocurrencies>.

The SEC so far has not permitted the creation of a bitcoin ETF. On January 18, 2018, Dalia Blass, the Director of the Division of Investment Management, indicated that several questions had to be answered regarding cryptocurrencies before the SEC would let them be included in fund products. See Ari I. Weinberg, *It’s Getting Harder to Bring an Exotic ETF to Market*, WALL ST. J., Mar. 5, 2018, at R7. Cf. Avi Salzman, *The End of the Road for Bitcoin ETFs?*, BARRON’S (Jan. 10, 2018, 2:50 PM), <https://www.barrons.com/articles/the-end-of-the-road-for-bitcoin-etfs-1515613827>. On July 26, 2018, the SEC disapproved the proposed introduction of a bitcoin ETF by Cameron and Tyler Winklevoss. See *supra* note 94. On August 7, 2018, the SEC announced that it would delay its decision with respect to the proposed Van Eck SolidX Bitcoin ETF. See Cboe BZX Exch., Inc., Exchange Act Release No. 83792 (Aug. 7, 2018); *Bitcoin Dealt a Blow After SEC Delays ETF Decision*, FIN. TIMES (Aug. 8, 2018), <https://www.ft.com/content/53311902-9ad1-11e8-ab77-f854c65a4465>. On August 22, 2018, staff at the SEC rejected applications for nine separate bitcoin ETFs. At the time of this Article’s publication, however, the Commission was reviewing the staff’s decisions. See Rachel Evans & Lily Katz, *Bitcoin ETFs Aren’t Coming Any Time Soon Thanks to the SEC*, Bloomberg (Aug. 23, 2018), at <https://www.bloomberg.com/news/articles/2018-08-23/bitcoin-etfs-won-t-be-coming-any-time-soon-thanks-to-the-sec>.

238. See, e.g., Bob Pisani, *How Small, Exotic Volatility Trades Had Outsized Influence on the Market’s Free Fall*, CNBC (Feb. 7, 2018, 3:43 PM), <https://cnb.cx/2FX0NLz> (asserting that the activities of the SVXY and related products in early February 2018 raise a question about whether these products introduce a systemic risk).

unease over the potential impact of the fast growth of such ETFs on financial stability.²³⁹ In particular, the IMF appears to suggest that these ETFs, in combination with a greater emphasis on passive investment strategies, may contribute to a contagion that extends to other asset classes. The IMF stated as follows:

As evidenced during the February [2018] episode of volatility in equity markets, the sensitivity of high-yield and emerging market bond ETFs to S&P 500 returns is higher than the sensitivity of their underlying indices to S&P 500 returns. This suggests that the rise in ETFs, particularly those investing in relatively illiquid assets, may increase contagion risk and possibly amplify price moves across asset markets during periods of stress. Greater investment in passive investment strategies, such as ETFs, may be related to the rise in cross-asset correlations during periods of stress, one of the main attributes of contagion. Benchmark-focused investors are more likely to be driven by common shocks than by the idiosyncratic fundamentals of assets they invest in.²⁴⁰

Determining the presence of the three circumstances and assessing their regulatory implications requires a highly interdisciplinary approach. That is, matters such as the likely effectiveness of a proposed ETF's arbitrage mechanism or a proposed ETF's possible negative externalities must involve lawyers working closely with other experts such as those with real world experience in financial markets and Ph.D.'s in economics, finance, and data analytics. Historically, the SEC has been dominated by, and known for, its outstanding lawyers. The first professional economists of the modern era did not arrive at the SEC until the 1970s.²⁴¹

We believe that the modern SEC is up to these important, but challenging and unenviable tasks. It is perhaps emblematic that SEC Chairman Jay Clayton chose as Director of the Division of Trading and Markets someone who, Chairman Clayton emphasized, had "extensive markets experience" and "longstanding, active engagement with investors, financial services firms, exchanges, and the SEC."²⁴² Brett Redfearn came from J.P. Morgan, where he was Global Head of Market Structure for the

239. INT'L MONETARY FUND, GLOBAL FINANCIAL STABILITY REPORT APRIL 2018: A BUMPY ROAD AHEAD 19 (2018), <https://www.imf.org/en/Publications/GFSR/Issues/2018/04/02/Global-Financial-Stability-Report-April-2018>.

240. *Id.*

241. Henry T. C. Hu, *Systemic Risk and Financial Innovation: Toward a "Unified" Approach*, in QUANTIFYING SYSTEMIC RISK 11, 23 (Joseph G. Haubrich & Andrew W. Lo eds., 2013), <http://www.nber.org/chapters/c12053.pdf> [hereinafter Hu, *Unified Approach*].

242. Press Release, U.S. Sec. & Exch. Comm'n, SEC Names Brett Redfearn as Director of the Division of Trading and Markets (Oct. 18, 2017), <https://www.sec.gov/news/press-release/2017-198>.

Corporate & Investment Bank.²⁴³ The Division of Economic and Risk Analysis, the first new Division in thirty-seven years, was created in 2009 with the overarching goal of providing sophisticated, interdisciplinary analysis across the entire spectrum of SEC activities.²⁴⁴ By the end of fiscal year 2017, this Division, the “think tank” home to most of the SEC’s Ph.D.’s, had grown to 157 full-time-equivalents, only slightly lower than the 182 full-time-equivalents at the Division of Investment Management.²⁴⁵

V. OUR PROPOSED REGULATORY FRAMEWORK: DISCLOSURE ASPECTS

Our disclosure proposal centers on three concepts. First, like the regulation of substantive matters, the regulation of disclosure should apply universally to all types of ETFs, even if they are not regulated as investment companies. The rationales for a single regulatory framework apply to disclosure much as they do to substance. In fact, there are some additional rationales for harmonizing regulation in the domain of disclosure, and certain considerations may make implementation easier on the disclosure side. Section V.A discusses such matters as well as one functional element of our disclosure proposal that is a natural corollary to a single framework: every ETF should identify itself as an ETF in its name.

Second, every ETF should begin providing certain quantitative information on trading price frictions experienced by investors, whether the frictions arise from deviations from NAV or the simple matter of bid-ask spreads. Historical information on certain intraday and at-the-close deviations from NAV would be mandated, in traditional SEC disclosure documents and/or on the ETF’s website, depending on the nature of the information. Moreover, if extreme deviations from NAV occur at any point during a trading day, a next-day Form 8-K-type filing requirement and associated website disclosure would be triggered. Section V.B discusses the quantitative information elements to our proposal.

243. See *Biography: Brett Redfearn, Director, Division of Trading and Markets*, U.S. SEC. AND EXCH. COMM’N, <https://www.sec.gov/biography/brett-redfearn> (last visited Aug. 29, 2018).

244. For a discussion of the role of this Division at the SEC and with respect to issues involving financial innovation and systemic risk, see, e.g., Hu, *Unified Approach*, *supra* note 241, at 23–26; *Fingers in the Dike: What Regulators Should Do Now*, ECONOMIST (Feb. 13, 2010), <https://www.economist.com/special-report/2010/02/11/fingers-in-the-dike> (special report on financial risk). The original name for this Division was “Division of Risk, Strategy, and Financial Innovation.” Press Release, U.S. Sec. & Exch. Comm’n, SEC Renames Division Focusing on Economic and Risk Analysis (June 6, 2013), <https://www.sec.gov/news/press-release/2013-2013-104htm>.

245. U.S. SEC. & EXCH. COMM’N, FISCAL YEAR 2019 CONGRESSIONAL BUDGET JUSTIFICATION AND ANNUAL PERFORMANCE PLAN 15 (2018), <https://www.sec.gov/reports-and-publications/budget-reports/secfy19congbudjust>.

Third, an ETF should be required to provide qualitative information offering the sponsor's expert views on arbitrage mechanism-related trading price frictions and bid-ask spread-related trading price frictions as well the sponsor's assessments of associated trends, events, and uncertainties. Such discussions would be in the spirit of what is widely considered to be the central disclosure item for ordinary public companies—the management's discussion and analysis, or MD&A. In the ETF context, we would narrow the scope of the required discussion to trading price frictions. Section V.C discusses the qualitative information elements of our proposal and includes additional benefit and cost considerations associated with such qualitative elements.

A. THE SINGLE REGULATORY FRAMEWORK: DISCLOSURE-SPECIFIC CONSIDERATIONS AND THE CORRELATIVE FUNCTIONAL ELEMENT OF ETF SELF-IDENTIFICATION

Our proposal would extend to every ETF—whether Investment Company, Commodity Pool, or Operating Company—the same framework of mandatory disclosure for issues related to trading price frictions, including those related to the arbitrage mechanism. The basic reason is that the costs and benefits of disclosure related to trading price frictions do not depend on the assets an ETF invests in. Sections V.B and V.C, which set out the quantitative and qualitative elements of the proposal, offer more specific justifications and details about which disclosures we propose to require.

Consider first the primary goal of SEC mandatory disclosure: that investors have the basic information essential to their decision-making.²⁴⁶ Every ETF has both an arbitrage mechanism (and deviations from NAV) and bid-ask spreads and, irrespective of the assets an ETF invests in, such characteristics can materially affect the risks and returns experienced by investors. Investor decision-making in all ETFs could thus benefit from information related to trading price frictions. This is especially so as to arbitrage mechanism-related information. As Section III.B showed, many ETF investors are unaware of how significant arbitrage mechanism-related matters can prove even with plain vanilla ETFs. The contemplated disclosure would alert them. And investors who are aware would finally have useful information that can be costly, difficult, or impossible for them to obtain on their own. The harmonization of disclosure across categories of ETFs would facilitate investor comparisons of ETFs in different categories.

246. For a discussion of the longstanding goals of SEC-mandated disclosure in the context of ordinary companies, see, for example, Henry T. C. Hu, *Efficient Markets and the Law: A Predictable Past and an Uncertain Future*, 4 ANN. REV. FIN. ECON. 179, 180–81, 200 (2012).

A second longstanding goal of mandatory disclosure is at the level of managerial behavior: disclosure can reward managerial performance and deter managerial malfeasance. Under our disclosure proposal, many aspects of the past and prospective performance of an ETF's arbitrage mechanism would be brought to the attention of the ETF's investors for the first time. This would give the ETF sponsor greater incentives to try to improve the performance of the arbitrage mechanism, whether at the level of the arbitrage mechanism itself or at the level of the trading rules and other aspects of market structure. All ETFs, irrespective of assets invested in could benefit from appropriate managerial attention to such matters.

A third, more modern, goal is at the level of financial markets and society at large. In the context of ordinary public companies, a robust informational predicate is essential to an efficient market which, among other things, could promote the proper allocation of resources across companies and industries. In the context of ETFs, a greater understanding of the highly idiosyncratic risks flowing from an ETF's arbitrage mechanism could help investors make better informed allocations of portfolios across different kinds of investment vehicles. The additional information on the arbitrage mechanism and related market structure issues can also be helpful to both the SEC and the ETF industry in addressing trading rules and other market structure matters.

The costs side of our proposal's justification also does not turn on the assets an ETF holds. There is little reason to expect that the costs of compliance with our disclosure proposal would vary materially across the different legal categories of ETFs. Indeed, irrespective of the assets an ETF holds, the ETF sponsor is likely to be well-situated to provide the contemplated information.

In sum, there are disclosure-specific rationales for a single regulatory framework for all ETFs that supplement the general rationales discussed in Part IV. Every investor in an ETF should be entitled to presume the same basic standards of regulatory protection.

But for this to occur, investors need to know whether the entity whose shares they have bought is an ETF. One functional element of our disclosure proposal flows directly from this: every ETF should incorporate the term "Exchange Traded Fund" in its name. Currently, ETFs are not required to do so. USO's prospectus, for example, describes the fund as an exchange-traded fund, but the fund does not label itself an ETF in its name.²⁴⁷

247. U.S. Oil 2017 Prospectus, *supra* note 173, at 1–2.

Requiring a fund to directly mention its ETF status in its name would alert investors to the fact that the fund's shares represent an ownership stakes in a pooled investment vehicle and that the vehicle has an arbitrage mechanism that seeks to tether the trading price of shares to the value of an underlying portfolio. In addition, this requirement, when combined with the baseline substantive and disclosure standards we advocate for all ETFs, should help investors because they can rely on the presence of an associated portfolio of investor protections.

The SEC has the authority to create this new disclosure framework and require self-identification without requiring any statutory changes. Implementation of the disclosure side of our proposal is perhaps easier than the substantive side, because when it comes to disclosure, the SEC has even more levers to use. The SEC has comprehensive authority over Investment Company ETFs due to their coverage by the ICA. And the SEC also has authority over Commodity Pool and Operating Company ETFs. One reason is that these entities issue "securities" and therefore have to comply with many of the disclosure requirements under the 1933 and 1934 Acts. Another reason is that the SEC individually reviews the applications for changes in listing standards when these ETFs apply to list on stock exchanges. Ideally, such a new approach would be taken through applicable revisions in registration statement forms, periodic report forms (for example, the annual report for Investment Company ETFs and Form 10-K for other ETFs), and website disclosure requirements. An easier, more incremental alternative would be to try to reflect such changes in an industry guide applicable to all ETFs.²⁴⁸

B. FUNCTIONAL ELEMENTS: QUANTITATIVE INFORMATION ON TRADING PRICE FRICTIONS—TRADING DAY DEVIATIONS FROM NAV AND BID-ASK SPREADS

As we have seen, IVV suffered extraordinary departures from NAV on August 24, 2015. It is a sad commentary on the state of ETF disclosure requirements that for the period that included August 24, 2015, IVV was able to properly report a perfect 100.00% score (for coming within a band of -0.5% discount to NAV and +0.5% premium to NAV) using the SEC-mandated metric for the past performance of ETF arbitrage mechanisms.²⁴⁹ This was solely due to the fact that the metric only looks at the difference between the trading price and the NAV at the close of trading. Had the SEC

248. Cf., e.g., Guides for Statistical Disclosure by Bank Holding Companies, Securities Act Release No. 5735, 41 Fed. Reg. 39,007 (Sept. 14, 1976).

249. See *supra* Section III.B.

metric reflected extremes in intraday performance, the metric would have shown at least one striking outlier of about 15%, stemming from the results immediately after the 9:30 a.m. open on August 24, 2015. While simplicity and other reasons explain the SEC's decision to look only at the close and not intraday performance, the result was an emphatically reassuring picture being presented to investors. As a result, an investor may have a misleading sense as to the true risks and returns of the ETF.

In addition, the shareholder transaction expenses—being conceived in terms of the friction caused by contractual loads and redemption fees found only in the mutual fund context—ignore the possibility of *trading price-frictions* caused by contingent NAV premiums/discounts and ever-present bid-ask spreads incurred by ETF investors on purchase and sale.

First, we propose that the ETF not only provide the existing historical information reflecting various size categories of at-the-close deviations, but also provide historical information on the frequency with which various size categories of intraday deviations occurred. Only the most basic information should be set out through tables or charts in both traditional SEC disclosure documents and on the public websites of ETFs. As will be discussed, more granular information, if determined to make sense to mandate on benefit-cost grounds, cannot be captured by the graphs, tables, and other “depiction tools” on which traditional SEC disclosure documents must rely. Such “too complex to depict” information should, however, be made available on the ETF's public website.

Reporting of intraday deviations depends, of course, on the ETF having information on such deviations. An ETF should be able to provide such information notwithstanding the severe limitations to so-called “intraday indicative values” and the high costs of more accurate alternatives. Some background on both intraday indicative values and other kinds of information will show why ETFs should be able to provide information on intraday deviations.

Exchange listing standards currently require ETFs to publicly disseminate during the trading day an intraday indicative value (“IIV”), “which is designed to provide investors with information on the value of the investments held” by the ETF.²⁵⁰ Typically, the IIV is calculated and disseminated at least every fifteen seconds during the trading day and disseminated over the Consolidated Tape or via an exchange data feed.²⁵¹

250. 2015 SEC Request for Comments, *supra* note 21, at 34,733.

251. *Id.*

The IIV, however, is not necessarily a reliable proxy for intraday NAVs. Some ETFs are expressly allowed, for instance, to base the IIV on the current value of only certain assets in its portfolio, even if they may differ in composition of the overall portfolio.²⁵² Some ETFs are expressly allowed to calculate IIVs based on the current value of some, but not all, assets in its portfolio.²⁵³ IIVs may sometimes rely on stale information, especially when certain assets are only traded overseas and the pertinent markets for those assets are closed. At a minimum, views diverge on the accuracy of the IIV. One major ETF sponsor has stated that the IIV “should closely approximate the net asset value (NAV) of an ETF throughout the trading day,”²⁵⁴ In contrast, the SEC stated flatly that the IIV “may or may not be equal to the per-share value” of an ETF’s underlying portfolio.²⁵⁵

ETF advisers appear to rely on, and outside vendors to offer, alternatives that are believed to be more accurate.²⁵⁶ But accurate, *real-time* information can be extremely expensive for an ETF sponsor.²⁵⁷

Our proposal for the ETF reporting of intraday deviations is practical because there is no need to rely either on crude IIVs or accurate, but costly, real-time information. Our proposal depends on the *retrospective* compilations of intraday deviations on a periodic basis. No real-time information is needed at all. Indeed, the historical information needed by an ETF sponsor to comply with our proposal would be completely stale from a trading standpoint and should be relatively inexpensive.

Of course, even with perfectly complete and accurate information, calculating the NAV can still be difficult as a purely conceptual matter. In Section I.B, for example, we how discussed how material gaps existed between the SPX (as calculated using the prescribed S&P DJI methodology) and the actual, real-time, market value of the constituent stocks until 9:42 a.m. on August 24, 2015. Sometimes, ETFs serve an important price discovery role.

More generally, a variety of circumstances exist in which the valuation methodologies used to compute NAV result in imperfect estimates of the fair

252. *Id.*

253. *Id.*

254. *Finding ProShare Intraday Values (IOPVS/IIVS)*, PROSHARES, http://www.proshares.com/finding_proshares_intraday_values.html (last visited Aug. 29, 2018).

255. 2015 SEC Request for Comments, *supra* note 21, at 34,733.

256. *See, e.g.*, Markit, Comment Letter on Exchange-Traded Products, at 2 (Aug. 17, 2015), <https://www.sec.gov/comments/s7-11-15/s71115-17.pdf>.

257. This is based on an interview one of the authors (Hu) had with a major ETF sponsor in May 2018.

value.²⁵⁸ In all ETF disclosures relating to arbitrage mechanism performance proposed by this Article, we contemplate that the ETF would be free to provide commentary correcting naïve, incomplete, or mistaken understandings of NAV computation methodologies, the NAV concept itself, and the way intraday deviations are calculated.

Joint initiatives involving the SEC, ETF sponsors, stock exchanges, financial data providers, brokerages, and other market participants would be helpful in addressing some of the existing limitations of IIVs and in exploring more accurate, but cost-effective, alternatives for the purpose of the retrospective reporting of intraday deviations contemplated by this Article. Similarly, such joint efforts should try to resolve or, at least standardize, approaches to some of the complexities associated with NAV. Such initiatives with respect to IIVs, cost-effective alternatives, and NAVs should also involve efforts to better educate investors on the basics of these and related matters.

The essential information relating to intraday and at-the-close deviations from NAV should be included in appropriate tables, charts, and the like in traditional hard-copy SEC disclosure documents and, to increase accessibility, on the ETF's public website. There is a possibility, however, that more granular information may turn out to make sense when a careful cost-benefit analysis is done.

However, the tables, graphs, and other “depiction tools” on which traditional SEC disclosure documents must rely may be incapable of capturing important aspects of this kind of information. This “depiction tools” roadblock and other issues create a “too complex to depict” problem for traditional SEC disclosure technology, as has manifested itself in other financial innovation-related contexts such as asset-backed securities and major banks heavily involved in complex derivatives.²⁵⁹

Some of the proffered solutions to this too-complex-to-depict problem

258. See, e.g., GOLUB, *supra* note 50, at 14 (discussing circumstances such as when valuation methodologies used to compute NAV may suffer from price staleness associated with thinly traded securities, closed markets as can happen with international funds, and conventions); *supra* note 40 (referring to the theoretical and practical complexities associated with the NAV and the related matters associated with intraday indicative values).

259. See, e.g., Hu, *Disclosure Universes*, *supra* note 12, at 575–83, 618–35, 639–50, 654–55 (discussing three “modes of information,” the rationale for the “transfer mode,” and how the GLD ETF provides “pure information” as to its gold bars); Henry T. C. Hu, *Too Complex to Depict? Innovation, “Pure Information,” and the SEC Disclosure Paradigm*, 90 TEX. L. REV. 1601 (2012) (proposing a new conceptual framework for “information,” terminology such as “depiction tools,” and initial analysis of too complex to depict problems with, for example, asset-backed securities and too big to fail banks heavily involved in complex financial innovations).

center on a new mode of information, one involving the transfer of “pure information” to investors. Thus, in our ETF context, the “pure information” of certain kinds of raw data on intraday deviations could be captured in a form that would be amenable to investors and third parties seeking to engage in sophisticated data analytics and downloadable from the ETF’s website.

Second, in the event there is an *exceptional* deviation that occurs at any time during the trading day, the ETF would need to publicly disclose this by the close of trading the next business day on a Form 8-K-style SEC filing and on the ETF’s public website. Both the SEC filing and the disclosure on the website are necessary. Normal Form 8-K’s alert investors in ordinary public companies to the occurrence of certain extraordinary events. This Form 8-K-style filing alerts investors in ETFs to the occurrence of an exceptional deviation. The placement of information on the ETF’s public website ensures wide and easy availability. A flat percentage trigger—say, 5% or over—applicable to all ETFs has the virtue of uniformity, but may be impractical because some arcane ETFs may thus be required to file a numbingly large number of such reports. The ETF sponsor would be encouraged, but not required, to provide a very brief, highly preliminary, assessment of reasons why the exceptional deviation occurred, both in its SEC filing and on the ETF’s website. And, as discussed, the ETF sponsor would be free to explain why it may believe that such deviations from NAV relate more to weaknesses or misunderstandings relating to NAV computations, the NAV concept itself, or how intraday deviations are calculated than with problems associated with its arbitrage mechanism.

Third, the data on the past performance of arbitrage mechanisms needs to be extended to ten years (or the life of the fund, if shorter). Currently, information is only required with respect to roughly one year or five years (in the annual report). As we have seen, past performance information with respect to changes in NAV are required for periods of ten years (or the life of the fund, if shorter).

We see no reason to use a different period for the past performance of arbitrage mechanisms. Just as performance of a fund can significantly vary from year to year, performance of the arbitrage mechanism can do so as well. Consider the average deviation in the iShares MSCI Emerging Markets ETF (“EEM”) for the period from September 2004 through September 2014. The average deviation on a daily basis was just 0.05%, but there was considerable variation: in late 2008, the worst daily deviations were -6.20% and +12.07 percent.²⁶⁰ If this late 2008 performance were excluded, the worst daily

260. This is based on a review of Figure 3.3 in ANANTH N. MADHAVAN, EXCHANGE-TRADED

deviations would be fractions of such numbers.

Fourth, there should be information on the most extreme performance outliers on a historical basis. Currently, following the bar chart in the Summary Prospectus, the fund must disclose the fund's highest and lowest return (in NAV terms) for a quarter during the past ten years (or the life of fund, if shorter) covered by the chart.²⁶¹ Similarly, an ETF should be required to disclose the highest premium and lowest discount to NAV experienced at any time in the past ten years (or the life of the fund, if shorter).

Such arbitrage mechanism performance information should be helpful with respect to the shareholder transaction-expenses issue. In addition, prominent cautionary language about the possibility of contingent premium and discount expenses should accompany graphical presentations and narrative discussions of shareholder transaction expenses.

Fifth, the disclosures pertaining to shareholder transaction expenses should be accompanied by a warning about the possibility of "contingent" transaction costs flowing from NAV premiums and discounts. Trading price frictions always flow from bid-ask spreads. There should be quantitative disclosure of bid-ask spreads, such as mean bid-ask spreads and breakdowns of bid-ask spreads into size categories, perhaps with the use of tables, charts, or graphs.

C. FUNCTIONAL ELEMENTS: QUALITATIVE INFORMATION—AN MD&A-STYLE APPROACH TO THE ARBITRAGE MECHANISM AND RELATED MATTERS

1. The Proposal and Its Basic Logic

For investors in an ETF, assessments on an on-going basis as to what is known and unknown about the prospective effectiveness of that ETF's arbitrage mechanism are critical to ascertaining an ETF's overall risk and return characteristics. Such assessments are difficult to make, depending not only on expertise with respect to that ETF's particular arbitrage mechanism and related structural engineering (including the modeling) and knowledge about the characteristics of that ETF's clientele, but also on detailed information, some proprietary in nature, on diverse matters such as trading practices and prices, APs, market makers, and the current and prospective regulatory environment.

At its core, the mechanism is anchored in a model that predicts the

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261. *Form N-1A*, *supra* note 165, at 8, item 4(b)(2)(ii).

completely voluntary behavior on the part of current and prospective APs as well as other market participants in both normal circumstances and times of market stress. Every such model relies on certain key business and legal assumptions. On the business side, the arbitrage mechanism assumes, for instance, that throughout the trading day, an informationally rich environment will allow APs to identify gaps between trading prices and the NAV; that enough APs are both able and willing to enter into the necessary transactions at the correct times and in the correct amounts; and that APs have shorting or other hedging tools available to allow them to achieve “riskless” arbitrage profits. On the legal side, the arbitrage mechanism assumes, for instance, that throughout the trading day, no exchange trading rules or other regulatory constraints will limit either the trading of the assets in which the ETF is invested or an AP’s shorting and other hedging transactions, and that the transactions can be executed with a high degree of legal certainty.

In the real world, one or more of these assumptions may not be satisfied. In times of market stress, an assumption of uninterrupted trading and the willingness and wherewithal of APs to engage in the necessary transactions can be heroic. Changes in the regulatory environment or in business practices, which may be especially likely during or after times of market stress, may render certain assumptions obsolete. Moreover, every theoretical model may suffer from model risk in the sense of being incomplete or wrong. The modelers may not realize, for instance, that certain additional assumptions are necessary in order for the mechanism to be effective. For the modelers, the real world “testing” that occurred on August 24, 2015 proved informative.

We believe that an ETF’s sponsor is uniquely situated to provide informed views on an ongoing basis and would be able to do so without incurring undue costs. We also believe, critically, that most ETF shares are in the hands of investors who are sophisticated enough to appreciate the value of such views.

To accomplish the appropriate level of disclosure for Investment Company ETFs, we propose that “performance” for the purposes of the annual MDFP be conceived to include performance of the arbitrage mechanism, and that the discussion of the performance of this mechanism and related structural engineering (including modeling matters) in the MDFP meet requirements that are in the general spirit of the MD&A, not the MDFP.²⁶² For symmetry, with Commodity Pool and Operating Company

262. Regulation S-K, 17 C.F.R. § 229.303 (2018).

ETFs, such reviews should be specifically required to be part of the MD&A disclosures that are mandatory in the annual Form 10-K.

The MD&A required in the Form 10-Q quarterly and Form 10-K annual reports²⁶³ of public companies is not only the central risk-related disclosure item,²⁶⁴ but also is widely considered the primary source of narrative disclosure that is reviewed, together with financial statements, for investment decision-making.²⁶⁵ In the words of the SEC, the MD&A seeks to “give the investor an opportunity to look at the company through the eyes of management.”²⁶⁶ Critically, corporations are not only required to provide historical information, but also offer management’s view as to the future. Speaking of MD&A requirements as a whole, the SEC stated that, “[the] requirements are intended to provide, in one section of a filing, material historical and prospective textual disclosure enabling investors and other users to assess the financial condition and results of operations of the registrant, with particular emphasis on the registrant’s prospects for the future.”²⁶⁷

A company’s financial statements are historical in nature and show the company’s past performance. But the past is not necessarily prologue. The MD&A requirements help fill the gap. The MD&A requires disclosure of, for example, “known trends or any known demands, commitments, events or uncertainties” relating to any material change in the company’s liquidity and “known trends or uncertainties that have had or that the registrant reasonably expects will have a material . . . impact on net sales or revenues or income from continuing operations” with respect to risk-related matters,

263. FORM 10-Q, U.S. SEC. AND EXCH. COMM’N, at 5, pt. I, item 2 (Apr. 2017), <https://www.sec.gov/files/form10-q.pdf>; FORM 10-K, U.S. SEC. AND EXCH. COMM’N, at 9, pt. II, item 7 (Apr. 2017), <https://www.sec.gov/files/form10-k.pdf>. The MD&A is also required in registration statements. See, e.g., FORM S-1, U.S. SEC. AND EXCH. COMM’N, at 5, pt. I, item 11(h) (Apr. 2017), <https://www.sec.gov/files/forms-1.pdf>.

264. Hu, *Disclosure Universes*, *supra* note 12, at 593–96.

265. See, e.g., Ori E. Barron et al., *MD&A Quality as Measured by the SEC and Analysts’ Earnings Forecasts*, 16 CONTEMP. ACCT. RES. 75, 80 (1999) (“We focus on MD&A because a growing body of evidence suggests that the SEC and users of financial reports view MD&A as particularly important, despite the fact that MD&A is only a small part of each firm’s total disclosure.”); Carl W. Schneider, *MD&A Disclosure*, 22 REV. SEC. & COMMODITIES REG. 149, 150 (1989) (characterizing MD&A as requiring “all material information, historical or prospective, that has impacted or might foreseeably impact on the financial affairs of the registrant”).

266. Concept Release on Management’s Discussion and Analysis of Financial Condition and Operations, Securities Act Release No. 6711, 52 Fed. Reg. 13,715, 13,717 (Apr. 24, 1987).

267. Management’s Discussion and Analysis of Financial Condition and Results of Operation, Certain Investment Company Disclosures, Securities Act Release No. 6835, 54 Fed. Reg. 22,427, 22,428 (May 24, 1989) (footnote omitted).

corporations must disclose known trends or uncertainties of various kinds.²⁶⁸ More generally, the Regulation S-K Instructions mandate that the MD&A “shall focus specifically on material events and uncertainties known to management that would cause reported financial information not to be necessarily indicative of future operating results or of future financial condition.”²⁶⁹

This application of MD&A principles to the arbitrage mechanism and related structural engineering matters would consist of three basic components supplementing the MDFP in the Annual Report.

First, there would be a summary overview of the past performance of the arbitrage mechanism, comprehending intraday performance, including a brief discussion of how the past performance corresponded to prior expectations of the ETF sponsor.

This overview, which would for the first-time result in an integrated discussion of the past performance of the ETF’s arbitrage mechanism, would be helpful in several ways. First, this overview requirement would create soft incentives for ETF managers to create more effective arbitrage mechanisms. Some money managers may be more talented than others. For instance, some ETF sponsors may be “more adept at tracking a given benchmark” (as stated by BlackRock),²⁷⁰ and there is every reason to believe that some ETF sponsors may be better at the modeling and structuring of arbitrage mechanisms than others. Such an overview requirement would give ETF sponsors with strong capabilities a convenient pathway for at least indirectly comparing their past performance and their expectations with those of competitors.

This overview would also alert ETF investors to possible differences among types of ETFs in terms of the effectiveness of the arbitrage mechanism. As we have seen in Section I.B, ETFs offering passive exposure to highly liquid domestic stocks tend to have more effective mechanisms than those investing in, say, high yield or municipal debt. Large ETFs might be better in this respect than small ETFs.

This benefit may be especially large for investors interested in ETFs that invest in more illiquid assets, more arcane strategies, and leveraged or leveraged inverse exposures. This relates to the role ETFs play in serving as a financial portal for both retail and institutional investors in an ever-

268. See, e.g., 17 C.F.R. § 229.303(a)(1), (a)(3)(ii) (2018).

269. *Id.* § 229.303, instruction 3 to para. 303(a).

270. GOLUB, *supra* note 50, at 2.

expanding universe of risk-return possibilities. ETFs are the dominant collective investment vehicle for the riskiest strategies. Some of these arcane assets, strategies, and forms of exposure can pose unique difficulties for ETF arbitrage mechanisms. One ETF advisor, for instance, has noted such problems for bank loan ETFs, active ETFs, and leveraged and leveraged inverse ETFs.²⁷¹ Sometimes, a narrow asset class may make it difficult for an ETF in that class to operate.

Examples in the junior gold mining area, one involving an ETF intended to track an index and the other a 3X leveraged exposure, illustrate. As briefly discussed in Section IV.C in relation to another point, the Van Eck Junior Gold Miners ETF was intended to track an index of smaller gold mining stocks, the MVIS Global Junior Gold Miners Index. But the ETF grew so large (\$5 billion) relative to the market capitalization of the index (\$30 billion), that it caused concerns over Canadian takeover laws and U.S. Internal Revenue Service diversification requirements.²⁷² On March 31, 2017, none of the ETF's top six holdings were among the top six components of the index.²⁷³

On April 13, 2017, the Direxion Daily Junior Gold Miners Index Bull 3X Shares Leveraged Exchange Traded Fund suspended daily creation orders due to the "limited availability of certain investments or financial instruments used" to provide the requisite exposure to an index of junior gold mining stocks.²⁷⁴ This, Direxion stated, would cause the ETF's shares to trade at a premium if demand exceeded supply during the period the creation units are limited.

Finally, this overview could help address a concern important to all ETF investors: at least in times of market stress, arbitrage mechanisms can not only perform badly, but also in bizarre, unpredictable ways. Thus, had our proposed requirement for an overview of the arbitrage mechanism been in

271. BlackRock, Aug. 11, 2015 Comment Letter, *supra* note 47, at 7.

272. Sumit Roy, *How an ETF Gets Too Big For Its Index*, ETF.COM (Apr. 10, 2017), <http://www.etf.com/sections/features-and-news/how-etf-gets-too-big-its-index>.

273. See Ryan T. McIntyre, *Method to Madness: Opportunity in a Volatile Time*, TOCQUEVILLE FUNDS (Apr. 19, 2017), <http://www.tocquevillefunds.com/insights/method-madness-opportunity-volatile-time> (showing the top 10 holdings of the ETF and the MVIS Global Junior Gold Miners Index as of March 31, 2017 in Exhibit 1). On April 13, 2017, MVIS Index Solutions announced changes to its index, widening the criteria for inclusion. Luzi-Ann Javier, Danielle Bochove & Aoyon Ashraf, *'Curse of Success' Leads the Most Popular Mining ETF to Widen Its Holdings*, BLOOMBERG (Apr. 13, 2017), <https://www.bloomberg.com/news/articles/2017-04-13/vaneck-s-junior-gold-miner-etf-seen-rebalancing-as-assets-soar>.

274. Press Release, Direxion, *Direxion Suspends Creation Units for Daily Junior Gold Miners Index Bull 3X Shares* (Apr. 13, 2017), <http://www.direxioninvestments.com/wp-content/uploads/2017/04/Direxion-Suspends-Creation-Units-for-Daily-Junior-Gold-Miners-Index-Bull-3X-Shares.pdf>.

place with respect to 2015, ETFs that suffered catastrophic failures in the arbitrage mechanism on August 24, 2015 would have been required to discuss these issues. As discussed in Section I.B, IVV and SPY, the two largest ETFs in the country, showed striking differences in deviations from NAV in early trading on August 24, 2015 even though they were both were invested in the same S&P 500 stocks in identical proportions. Informed ETF sponsor views on whether differences, if any, in the arbitrage mechanism, APs, clientele, or other factors may help explain this puzzle would be highly useful, even to very sophisticated investors.

Second, an ETF advisor would offer its views on material events and uncertainties known to it that would cause reported performance of the arbitrage mechanism not to be necessarily indicative of future results. Consider, for instance, the situation where an ETF sponsor is aware that an active AP has decided to cease its arbitrage activities or is now no longer in a financial position to do so. The median number of active APs for ETFs in 2014 was four,²⁷⁵ so unless other APs step in, this could have a material impact on the effectiveness of the arbitrage mechanism. (If the AP who has ceased its arbitrage activities is, in fact, primarily acting on behalf of its clients, then the AP's withdrawal would have limited impact. The clients could presumably simply act through the remaining APs.) In fact, active APs have sometimes stepped away, including Citigroup and Knight Trading, with the impact depending on, among other things, the size of the ETF, the nature of the assets it invests in, and the number of APs remaining.²⁷⁶

Regulatory uncertainties could significantly affect the effectiveness of the arbitrage mechanism, in either direction. After the August 24, 2015 debacle, BlackRock, State Street Global Advisors, and others urged the SEC to adopt changes in “limit-up/limit-down” trading rules—rules related to the certainty of execution and such other matters as the procedures that should be followed after certain trading halts.²⁷⁷ Absent such changes, the markets would be susceptible to another August 24 debacle “at any time.” Investors would benefit from ETF sponsor evaluation of the implications of a known regulatory change. In fact, changes in “limit-up/limit-down” trading rules and certain other aspects of the market structure have occurred, but at least

275. See Inv. Co. Inst., Comment Letter on Exchange-Traded Products (File No. S7-11-15) 16 (Aug. 17, 2017), <https://www.sec.gov/comments/s7-11-15/s71115-22.pdf>.

276. *Id.* at 16–17 (discussion of withdrawal as APs by Knight Trading Group and Citigroup).

277. BlackRock et al., Comment Letter on SEC Action to Address Market Structure Issues Related to August 24, 2015, at 1–3 (Mar. 10, 2016), <https://www.sec.gov/comments/265-29/26529-60.pdf> (comment letter from eighteen equity market participants, representing “asset managers, ETF providers, industry analysts, institutional and retail broker-dealers, and professional market makers and liquidity providers”).

one major ETF sponsor believes that more remains to be done.²⁷⁸

Third, the ETF advisor would discuss the circumstances in which the arbitrage mechanism can be expected to depart significantly from its past long-term performance and any significant changes in the advisor's structural engineering, whether with respect to modeling or otherwise. The advisor should also seek to outline in broad terms what can be said in qualitative or quantitative terms about the impact of such circumstances or such engineering changes. Among the circumstances that should be discussed are high stress events involving changes in the liquidity or the prices of the assets in which the ETF is invested.

The August 24, 2015 real world "tests" caused ETF advisors to change their models. No doubt, extreme stress helped concentrate the minds of ETF advisors wonderfully.²⁷⁹ But, in addition to that, real-world tests provide information on the validity of the modeling. This reflects a basic theme in modern financial innovation. There have been repeated instances involving the known and unknown limitations of theoretical models becoming manifest as real-world trading unfolds.²⁸⁰

The events of August 24, 2015 taught ETF advisors that their arbitrage mechanisms were more fragile than they had thought and that additional assumptions were necessary for such mechanisms to be effective. For instance, BlackRock, IVV's advisor, stated in a house publication two months after the debacle that:

For many years, including most recently in our August 2015 letter to the SEC, we only included two categories – valuation clarity and access – that are necessary for an effective arbitrage mechanism. However, given the

278. See, e.g., PAUL HUGHES, SEC DIVISION OF ECONOMIC AND RISK ANALYSIS, WHITE PAPER SERIES, THE EFFECT OF AMENDMENT 10 OF THE "LIMIT UP-LIMIT DOWN" PILOT PLAN (2017), https://www.sec.gov/files/dera_wp_the_effect_of_amendment_10_of_the_luld_plan.pdf; Barbara Novick et al., BLACKROCK, 2018 CASE STUDY: ETF TRADING IN A HIGH-VELOCITY MARKET 6 (2018), <https://www.blackrock.com/corporate/literature/whitepaper/viewpoint-case-study-etf-trading-high-velocity-market-february-2018.pdf> [hereinafter NOVICK, 2018 CASE STUDY].

279. "Depend upon it, sir, when a man knows he is to be hanged in a fortnight, it concentrates his mind wonderfully." JOHN BARTLETT, BARTLETT'S FAMILIAR QUOTATIONS 310 (Geoffrey O'Brien ed., 18th. ed. 2014) (quoting Boswell, Life of Johnson, September 19, 1777).

280. See generally *Hedge Fund Operations: Hearing Before the H. Comm. on Banking and Fin. Serv.*, 105th Cong. 104–06, 279–82 (1998) (statement of Henry T. C. Hu) (comments on the 1998 collapse of Long Term Capital Management); *Hearing to Review the Role of Credit Derivatives in the U.S. Economy: Hearing Before the H. Comm. on Agric.*, 110th Cong. 41–46 (2008) (statement of Henry T. C. Hu) (comments on the modeling-error related demise of the AIG in 2008); Hu, *Misunderstood Derivatives*, *supra* note 12 (suggesting systematic reasons for modeling and other problems in modern financial innovation; and offering reasons for such problems); Hu, *Disclosure Universes*, *supra* note 12, at 618–36 (on modeling and other problems relating the "London Whale" debacle at JPMorgan Chase in 2012).

events of August 24, we felt it was important to acknowledge that certainty of execution, which was lacking for certain periods on that day, is also essential.²⁸¹

2. The Contemplated MD&A-Style Information: Additional Benefit and Cost Considerations

An ETF sponsor is uniquely situated to provide forward-looking assessments of the effectiveness of its ETF's arbitrage mechanism. One reason is that an ETF advisor is usually responsible for designing the full particulars of the arbitrage mechanism used for its ETF. The variations in the arbitrage mechanism reflect careful engineering, attuned to the trading, regulatory, and other characteristics of the assets in which the ETF invests, the asset strategies it follows, and the forms of exposure it offers. The person who designed the mechanism is likely to be familiar with it.

Another reason why an ETF advisor tends to be well positioned to understand the effectiveness of the arbitrage mechanism is that advisors often become directly involved in seeking changes in trading rules or business practices that may directly affect the future performance of the arbitrage mechanism. After the flash crash of May 6, 2010, several regulatory reforms recommended by BlackRock and other market participants were implemented, including extending circuit breakers previously applied to individual stocks to a set of heavily traded ETFs.²⁸² Outside of the SEC itself, ETF advisors are best situated to assess the likelihood and impact of any such regulatory changes.

A third reason an advisor is well situated to discuss the arbitrage mechanism's performance is that the advisor often has facts that are not available to others. For instance, until Form N-CEN requirements came into effect on June 1, 2018, no information needed to be provided publicly on the identity of APs by any ETF, including the dollar value of the shares each AP created and redeemed with the fund.²⁸³ Today, although such Form N-CEN requirements with respect to APs apply to Investment Company ETFs, they do not apply to Commodity Pool ETFs or Operating Company ETFs. Even with such additional disclosure by Investment Company ETFs, only the fund has the expertise to make judgments as to the continued willingness or ability of existing APs to continue engaging in the arbitrage-based transactions or,

281. NOVICK, MARKET STRUCTURE, *supra* note 65, at 15 n.19.

282. GOLUB, *supra* note 50, at 21.

283. Investment Company Reporting Modernization, *supra* note 164, at 82,052 (describing item E.2 on Form N-CEN). Form N-CEN specifies that it applies to "registered investment companies." *Id.* at 82,024 (General Instructions, at "A" and "C(1)").

if existing APs exit, the likelihood of new APs coming in.

The advisors may also have information on professional trading firms other than APs who monitor and trade the ETF's shares. Such firms' behavior can be an important factor in determining trading price parity with the NAV.

Naturally, the costs and benefits of adopting such a disclosure requirement must be considered, especially given the high bar that the D.C. Circuit has set for economic analysis in SEC rulemaking.²⁸⁴ The costs should be fairly low. The ETF advisor likely already has the information, and, if not, the ETF advisor, as a matter of internal controls and reputation, would have the incentive to develop such information for reasons independent of any disclosure requirements. Such disclosures need not involve the loss of proprietary information. This is evidenced by the detailed discussions of arbitrage mechanisms in the public August and October 2015 BlackRock documents referred to earlier.

The most daunting "cost" may flow from the possibility of liability. Investment companies, including Investment Company ETFs, cannot avail themselves of the statutory safe harbor for forward-looking statements under the Private Securities Litigation Reform Act of 1995.²⁸⁵ However, ETFs who provide well-grounded prospective information accompanied by appropriate cautionary language should be able to rely on the protections available with the judicially crafted "bespeaks caution" doctrine.²⁸⁶ In other contexts, ETFs have not hesitated to offer what is clearly forward-looking information. For instance, IVV reported in its 2015 prospectus that it expects its "sampling

284. The most notable such case is *Business Roundtable v. Securities & Exchange Commission*, 647 F.3d 1144, 1146 (D.C. Cir. 2011), where the D.C. Circuit struck down the SEC's proxy access rule notwithstanding the Dodd-Frank Act's affirmation of the agency's authority. The SEC is mindful of the D.C. Circuit's standards. *See, e.g.*, U.S. SEC. & EXCH. COMM'N, DIVISION OF RISK, STRATEGY, AND FINANCIAL INNOVATION & OFFICE OF GENERAL COUNSEL, CURRENT GUIDANCE ON ECONOMIC ANALYSIS IN SEC RULEMAKING (2012) (memorandum to Staff of the Rulewriting Divisions and Offices); Michael S. Piwowar, Commissioner, U.S. Sec. & Exch. Comm'n, Remarks to the First Annual Conference on the Regulation of Financial Markets (May 16, 2014), <https://www.sec.gov/news/speech/2014-spch051614msp>. In his first speech as Chairman of the SEC, Jay Clayton emphasized that "disclosure and materiality have been at the heart of the SEC's regulatory approach for over eighty years" and the need for comprehensive analysis of benefits and costs of disclosure requirements. Jay Clayton, Chairman, U.S. Sec. & Exch. Comm'n, Remarks at the Economic Club of New York (July 12, 2017), <https://www.sec.gov/news/speech/remarks-economic-club-new-york>.

285. *See, e.g.*, 1934 Act, 15 U.S.C. §§ 77z-2(a), 77z-2(b)(2)(B) (2012).

286. For a discussion on how the judicial bespeaks caution doctrine can be useful to companies that are excluded from protection under the statutory safe harbor, see, for example, Morris DeFeo, Jr., Amanda Paracuellos & Kelly Howard, *When a Company's Forward-Looking Statements Find No Safe Harbor: Bespeaks Caution Doctrine Provides Alternative Protection*, CROWELL & MORING LLP (2006) https://www.crowell.com/documents/DOCASSOCFKTYPE_ARTICLES_404.pdf.

indexing strategy” for tracking the S&P 500 will result in a divergence of the performance of the fund’s portfolio from the S&P 500 that, “over time, will not exceed 5%.”²⁸⁷

This is precisely the kind of “firm-specific” information that federal disclosure law has always emphasized and, as we have discussed, the ETF advisor is uniquely situated to provide this information.²⁸⁸ Such firm-specific information would promote investor understanding of the true risks and returns associated with ETFs and thereby promote market efficiency.

Importantly, ETF investors are in a good position to comprehend and understand the value of the kind of nuanced MD&A-style analysis we contemplate. The current ICA disclosure requirements flow in large part from the perception that investors in mutual funds are not sophisticated and either incapable or uninterested in the kinds of disclosures more characteristic of the SEC.²⁸⁹ The content of the ICA disclosure is circumscribed in ways inconsistent with standard 1933 Act and 1934 Act materials, as witnessed by the contrast between the MDPF and the MD&A. Most ETF shares (nearly 60%) are held by institutional investors, not retail investors, which is dramatically different from the situation with mutual funds.²⁹⁰ In addition, the typical retail investor in ETFs is better off and more

287. IVV 2015 Prospectus, *supra* note 70, at 1.

288. A few judges have gone so far as to seemingly suggest that only firm-specific information is required under federal securities law. Most notably, Judge Frank Easterbrook has written that “[i]ssuers of securities must reveal firm-specific information. Investors combine this with public information to derive estimates about the securities’ value. It is pointless and costly to compel firms to reprint information already in the public domain.” *Wielgos v. Commonwealth Edison Co.*, 892 F.2d 509, 517 (7th Cir. 1989).

289. The last comprehensive reform of Form N-1A occurred in January 2009. A basic motivation for such changes was, in the words of then-SEC Chairman Christopher Cox, because too many mutual fund investors were not reading the prospectuses “because they were too complicated and too hard to understand.” Christopher Cox, Chairman, U.S. Sec. & Exch. Comm’n, Statement by SEC Chairman: Enhanced Disclosure for Mutual Fund Investors (Nov. 19, 2008), <https://www.sec.gov/news/speech/2008/spch111908cc.htm>. The SEC’s Division of Investment Management has characterized Form N-1A as “intended to create a disclosure regime tailored to the *unique needs* of mutual fund investors” and the Form’s general instructions emphasize that it is “intended to elicit information for an average or typical investor who may not be sophisticated in legal or financial matters.” See GUIDANCE REGARDING MUTUAL FUND ENHANCED DISCLOSURE, U.S. SEC. & EXCH. COMM’N 6 (June 2014) <https://www.sec.gov/investment/im-guidance-2014-08.pdf> (emphasis added); *Form N-1A*, *supra* note 165, at general instructions 3.C.1(b). While there are so-called “Plain English” requirements, there are no corresponding directives in 1933 Act registration statements and 1934 Act periodic reports that the disclosures be tailored to unsophisticated investors.

290. According to a study by Deutsche Bank, institutional investors held 58.5% of U.S. ETFs as of the end of 2016. See Joe Rennison, *Institutional Investors Boost Ownership of ETFs*, FIN. TIMES (Apr. 13, 2017), <https://www.ft.com/content/c70113ac-ab83-33ac-a624-d2d874533fb0>. In contrast, with respect to equity, hybrid, and bond mutual funds, institutional ownership was only 7.8%, 4.1%, and 10.1%, respectively. ICI, 2017 FACT BOOK, *supra* note 3, at 229.

educated than retail investors in mutual funds and even retail investors in individual stocks. As of mid-2016, median household financial assets of ETF investors were nearly double that of mutual fund investors and somewhat higher than investors in individual stocks.²⁹¹

The more sobering assessments of ETF risks and returns may be especially propitious from the standpoint of overall market efficiency. As discussed earlier, following the events in February 2018, the International Monetary Fund raised the possibility of how problems with ETFs invested in high yield and emerging market bonds, in tandem with the increase in passive investing, may result in contagion across asset classes.²⁹² Some respected Wall Street veterans have become increasingly concerned that what they perceive as a blind rush to ETFs in search of low-cost passive exposure market indexes such as the S&P 500 may be contributing to a general stock market bubble.²⁹³ Concerns have also been raised about whether, because the percentages of certain popular blue chip stocks held by ETFs is so high, the presumptive liquidity of ETF shares may not be available in case of panic. Fuller investor understanding as to how the ETF portal may not prove frictionless may help curb possible irrational exuberance.

The benefits of an MD&A-style analysis of the arbitrage mechanism extend well beyond such ETF investor-specific or overall market efficiency gains. The focus should provide additional incentives for ETF advisors to seek to improve its performance. This may involve adopting changes to the arbitrage mechanism in light of new learning (including changing the nature of the relationship with APs and stock exchanges) or seeking changes in SEC trading rules or other aspects of the regulatory environment. This greater focus should also be helpful to the SEC in structuring its rules or practices of general application, as well as helping the SEC in terms of its discretionary review of requests to introduce new ETFs.

CONCLUSION

Individual ETFs and the underlying innovation process together constitute a modern phenomenon of vital importance to individual investors, institutional investors, and society. ETFs now account for the bulk of the

291. ICI, 2017 FACT BOOK, *supra* note 3, at 72.

292. See *supra* notes 239–40 and accompanying text.

293. See, e.g., Howard Marks, *There They Go Again . . . Again*, OAKTREE CAPITAL (July 26, 2017), <https://www.oaktreecapital.com/docs/default-source/memos/there-they-go-again-again.pdf> (client memorandum written by Oaktree co-chairman Howard Marks). There are also respected Wall Street veterans with contrasting views. See, e.g., NOVICK, 2018 CASE STUDY, *supra* note 278, at 4–5.

most actively traded securities in the United States and a vigorous innovation process has made the ETF the key financial portal to an ever-expanding universe of asset classes, asset strategies, and forms of exposure.

This phenomenon, however, poses an array of highly distinctive risks and other concerns that have not been addressed. Many of these concerns relate to the defining characteristic of an ETF, the presence of a novel, unique, and model-based arbitrage mechanism.

The regulation of the ETF phenomenon is stuck in the past. There is no self-conscious body of ETF regulation, leaving the legal oversight in the first instance to a haphazard jumble of statutes that were never designed to deal with an ETF's distinctive challenges. The United States is largely regulating ETFs as though they were mutual funds, commodity pools, or ordinary operating companies, even though in reality an ETF differs widely from these traditional financial products.

To date, the SEC's main solution to the need for ETF-specific regulation has been to regulate by dictate. At the core of current substantive regulation is a process by which the SEC individually reviews each proposed ETF and decides, ad hoc, whether it should be allowed to do business. This individualized review has turned out to be immensely flexible, but it has also hobbled the ETF innovation process by creating a system that is opaque, unfocused, cumbersome, and incapable of fair and consistent updating or change. Current SEC disclosure regulation, rooted in a mutual fund mindset, fails to comprehend the arbitrage mechanism's significance or its model-related complexities, and can mask major breakdowns in the mechanism.

A better system is needed, one that is crafted with the distinctive characteristics of the phenomenon in mind. Our proposal, which would require no new statutory authorization from Congress, is to unify ETF regulation with the adoption of a single body of written rules. On the substantive side, a single system of written rules would finally offer the ETF industry and its investors the transparency, consistency, and simplicity they require and free the SEC to focus on ETFs that raise special risks for their investors or for capital markets.

On the disclosure side, for the first time, investors would finally have, among other things, much-needed information about the performance of the arbitrage mechanism that defines the ETF and whose model-related complexities constitute a vital, little-understood, and evolving component in a true calculus of ETF risks and returns. The increased disclosure would also encourage ETF sponsors to improve their arbitrage mechanisms, help the SEC in its decision-making, and contribute to greater overall market

efficiency.

ETFs are not the only pressing problem the SEC faces. But we believe that there are few, if any, subjects in financial regulation that are more important and for which the current rules are more outdated. ETFs have been a great success, but they also pose great risks. The time has come for a legal regime worthy of this phenomenon and its fascinating and complex new challenges.

APPENDIX: SUMMARY OF JUNE 2018 SEC PROPOSAL

On June 28, 2018, the SEC proposed changes that would govern the operation of most existing Investment Company ETFs and simplify the introduction of most new Investment Company ETFs.^a The proposal appeared about three months after the first two drafts of this Article were posted on SSRN^b and just before the final version of this Article went to the printer for publication in this July 2018 issue of this law review. We will analyze the proposal and related matters in a forthcoming issue of this law review.

In the interim, this Appendix offers a brief descriptive summary of major aspects of the rule at the centerpiece of the proposal, which the SEC is calling Rule 6c-11. We set forth the rule's basic operation, the three major constraints on the scope of the rule, and various related substantive and disclosure requirements.

A. THE BASIC OPERATION OF THE RULE

The rule would replace most of the individualized letters the SEC issued to exempt ETF sponsors from elements of the ICA. For covered Investment Company ETFs already in existence, the rule would revoke the individual exemptive letters that these ETFs and their sponsors had been relying on and replace the letters with the standardized exemption granted by the rule. The elements of the ICA for which exemptions would be granted by the rule substantially correspond to those for which exemptions have been granted by the old exemptive orders. In granting this standardized exemption, the rule aims to eliminate some of the inconsistencies among exemptive letters that now tilt the marketplace in favor of sponsors with older letters.

The standardized exemption under the new rule would extend to new Investment Company ETF sponsors as well as existing ones, so that these new sponsors would no longer need to seek letters granting individualized relief from the provisions of the ICA.^c Thus, at least as to the ICA-related aspects of the new ETF creation process, the principal obligation that would be created by the new rule for most new Investment Company ETFs would be the various conditions the rule prescribes.

a. See generally June 2018 SEC Proposal, *supra* note 15.

b. See *supra* note 16 and accompanying text (discussing the March 2018 SSRN drafts and regulatory, industry, media, and other materials referring to such research and the subsequent August 16 SSRN draft).

c. June 2018 SEC Proposal, *supra* note 15, at 143.

B. THE SCOPE OF THE RULE: THREE MAJOR CONSTRAINTS

1. Commodity Pool ETFs, Operating Company ETFs, and Investment Company ETFs Organized as Unit Investment Trusts

The rule does not cover all ETFs. Because the legal effect of the rule is merely to exempt certain Investment Company ETFs from having to comply with elements of the ICA, the rule does not affect, among other funds, ETFs that are not organized under the ICA. Thus, Commodity Pool and Operating Company ETFs would remain unaffected by the rule and would still be subject to the existing regulatory regimes.

In addition, the rule would exclude Investment Company ETFs organized as UITs. The UIT form was common in the earliest days of the ETF industry—SPY, the oldest and by far the largest ETF, is a UIT—but newer Investment Company ETFs are instead organized as open-end management investment companies. Like the other kinds of ETFs excluded from the rule, UITs could continue to operate and would remain subject to the same exemptive letters and regulatory regime as before the rule was proposed.

2. Leveraged, Inverse, and Share Class Investment Company ETFs

The rule also excludes leveraged, inverse, and “share class” Investment Company ETFs.^d Leveraged ETFs offer a multiple of the indices they track. Inverse ETFs offer the negative return (or a multiple of the negative return) of the indices they seek to track.^e Share class ETFs are structured as share classes of pre-existing mutual funds that issue multiple classes of shares representing interests in the same portfolio.^f

The only advisers with exemptive letters that permit leveraged or leveraged inverse ETFs are ProShares and Direxion. The only adviser with an exemptive letter that permits share class ETFs is Vanguard.^g The rule would leave these sponsors’ exemptive orders in place.

The result is that some of the most significant inconsistencies in the status quo regulatory regime would remain untouched. ProShares, Direxion, and Vanguard would have the exclusive rights to continue operating their existing leveraged, leveraged inverse, and share class ETFs. ProShares and

d. The Proposal uses the term “leveraged ETFs” to refer to, in common parlance, both leveraged ETFs and inverse ETFs. *See id.* at 7 n.7; Proposed Investment Company Act Rule 6c-11(c)(4).

e. June 2018 SEC Proposal, *supra* note 15, at 28–30.

f. *Id.* at 137–39.

g. *See supra* Section II.C for further discussion regarding these exemptions.

Direxion would also have the right to continue creating new leveraged funds and leveraged inverse funds.

3. Stock Exchange Listing Standards

Because the rule only addresses elements of the ICA, it leaves undisturbed the many provisions that govern ETFs—including Investment Company ETFs—in the 1934 Act. As an example, it leaves stock exchange listing standards and the procedures for changing them in place. Many new ETFs require a change in stock exchange listing standards, including all Commodity Pool and Ordinary Company ETFs and Investment Company ETFs that fail to satisfy listing standards as previously adopted. Under the proposed rule, these ETFs and the exchanges on which they hope to list would still have to apply and wait for the SEC's permission to change their listing standards.

C. CONDITIONS: SUBSTANTIVE MATTERS

After the scope, the second most important feature of the proposed rule is the set of conditions the rule imposes on funds that wish to rely on it. These conditions are the heart of the rule's effort to regulate Investment Company ETFs. This Section C describes the conditions that relate to substantive matters (including disclosure requirements directed at APs and certain other market professionals) and Section D describes the conditions that relate to disclosure matters directed at investors.

The first set of substantive conditions concerns the issuance and redemption of shares. Funds may generally issue and redeem shares only in transactions with APs and may limit the issuance and redemption of shares only in certain circumstances.^h A fund must list on a national securities exchange and, if delisted, would no longer be eligible to rely on the rule.ⁱ

A fund would have to disclose the contents of its portfolio on its website prior to the beginning of each trading day, but would not need to disclose subsequent changes in the portfolio over the course of the day.^j The portfolio disclosure requirement applies to all funds, including both indexed and actively managed funds, and it requires a fund to disclose all of its investments, including cash, options, and short positions, in addition to securities.^k

^{h.} June 2018 SEC Proposal, *supra* note 15, at 66–67; Proposed Investment Company Act Rule 6c-11(a).

^{i.} *Id.* at 70–72; Rule 6c-11(a).

^{j.} *Id.* at 76–87; Rule 6c-11(c)(1)(i)(A).

^{k.} *Id.* at 82–83; Rule 6c-11(c)(1)(i)(A).

The rule would require a fund to disclose its creation and redemption baskets on its website prior to the start of each trading day.^l Crucially, however, the rule would permit funds to construct their baskets on a customized basis.^m In other words, all funds would now be able to construct creation and redemption baskets that do not reflect representative cross sections of their portfolios.ⁿ Currently, only certain older ETF sponsors have exemptive orders allowing them to construct customized baskets. Moreover, an ETF may use multiple different baskets for different APs. To protect against the risk that an AP might pressure a fund's sponsors to construct custom baskets contrary to the interests of the fund or its shareholders, a fund must adopt detailed policies and procedures for constructing its custom baskets.

D. CONDITIONS: DISCLOSURE MATTERS

Investment Company ETFs subject to the rule must meet certain investor-oriented disclosure requirements on their websites and in their registration statement Form N-1A's.^o In terms of content, the biggest changes concern three principal matters.

First, for the first time, large deviations between the trading price and the NAV of ETFs would trigger certain disclosures if the deviations occur *at the close of trading*.^p If any ETF's premium or discount was greater than 2% for more than seven consecutive trading days at the close of trading, that information must be posted on the fund's website, along with a discussion of the factors that are reasonably believed to have materially contributed to the premium or discount. In addition, the proposal would supplement current requirements for quantitative information presented in tabular form concerning at-the-close deviations with some presentation in graphic form.^q

Second, for deviations from NAV that occur *during the trading day*, the proposal imposes no disclosure requirements. The SEC considered such a requirement and chose not to include it in the proposal.^r

Notably, however, the SEC indicated its openness to reconsidering this and other arbitrage mechanism-related disclosure issues as well as the

l. *Id.* at 88–107; Rule 6c-11(c)(1)(i)(B).

m. *Id.* at 90, 105; Rule 6c-11(a), (c)(3).

n. *Id.* at 90, 93, 105; Rule 6c-11(a) (defining “Custom basket.”).

o. UTIs file Form N-8B-2 instead of Form N-1A. The June 2018 SEC Release contemplates changes to Form N-8B2 corresponding to changes in Form N-1A. *Id.* at 178–81.

p. *Id.* at 119; Rule 6c-11(c)(1)(v).

q. *Id.* at 116–19.

r. *Id.* at 46–47.

overarching issue of whether the distinctive characteristics of ETFs merit a more systematic approach to disclosure. The SEC acknowledged that additional information regarding intraday deviations could help investors and requested comment on the possibility of adopting requirements relating to such deviations.^s In addition, the SEC asked for comment on whether it should require regular disclosure of a *qualitative* nature relating to the performance of the ETF's arbitrage mechanism.^t More broadly, the SEC acknowledged that, unlike mutual funds, ETFs rely on the arbitrage mechanism, and asked for comment on whether a new registration form should be created specifically for ETFs.^u

The SEC proposed to eliminate a requirement in existing exemptive orders that forced an ETF to widely disseminate its IIV, which is an intraday estimate of the NAV, generally at least once every fifteen seconds.^v The effect of this change would be limited, at least initially, however, because exchange listing standards currently require a fund to disseminate its IIV, and the rule does not change these listing standards.

Third, for the first time, a fund would be required to disclose certain information on bid-ask spreads. On its website and in its prospectus, an ETF would need to provide the median bid-ask spread for the ETF's most recent fiscal year.^w An ETF would also have to include on its Form N-1A information that would, among things, serve to educate investors about what our Article refers to as the "trading price frictions" that are present with ETFs, but absent with mutual funds (for example, frictions from bid-ask spreads and premiums and discounts to NAV).^x

s. *Id.* at 113–14.

t. *Id.* at 176–78.

u. *Id.* at 176.

v. *Id.* at 72–76.

w. *Id.* at 114–16.

x. *Id.* at 153–64.

