

***Proposed Rule 18f-4 on the Use of Derivative Instruments by
Registered Investment Companies***

Data and Economic Analysis

James A. Overdahl, Ph.D.¹

Delta Strategy Group

March 24, 2016

¹ The author gratefully acknowledges financial support from the Coalition for Responsible Portfolio Management.

Table of Contents

Executive Summary	1
I. Overview of Proposed Rule 18f-4	4
A. Background	4
B. Derivatives and the Senior Securities Restrictions of Section 18.....	5
C. Motivation for the Proposed Rule Outside of Section 18.....	6
D. Other SEC Concerns Motivating the Proposed Rule.....	7
E. What the Proposed Rule Does	7
1. General Overview	7
2. The 150 Percent Exposure-Based Limit	8
3. Definition of Notional Amount.....	9
4. The 300 Percent Risk-Based Exposure Limit.....	11
II. Gross Notional Is a Blunt Instrument for Regulating Risk.....	12
A. Gross Notional is a Poor Measure of Market Risk Exposure	12
B. Industry Participants and Regulators Understand the Limitations of Gross Notional Measures	17
C. Safe and Unsafe Uses of Derivatives.....	22
III. Data and Evidence	24
A. Alternative Funds That Use Derivatives Are Not Unduly Speculative	24
B. Better Data on the Number of Funds Affected Can Be Obtained Through Surveys.....	29
IV. Consideration of Reasonable Alternatives.....	32
A. Risk-adjusted Notional Amounts.....	33
B. Absolute VaR Limit.....	35
C. Alternative Risk-Reduction Test.....	36
D. The UCITS Approach.....	37
E. Alternative Duration Benchmark for Interest Rate Futures and Swaps.....	40
F. Alternative Timing of Exposure Measurement.....	42
V. Incentives Created by the Proposed Rule	43
A. The Proposed Rule Discourages Low-Risk Fixed-Income Strategies.....	44

B.	The Proposed Rule Encourages Substitution Away From Derivatives Toward Purchased Assets, Regardless of Liquidity Concerns.....	47
C.	The Proposed Rules Encourages Substitution Toward Other More Risky Leveraged Assets	48
D.	The Proposed Rule May Impact the Ability of Funds to Use Derivatives to Manage Liquidations	49
VI.	The Proposing Release Does Not Adequately Describe the Costs of the Proposed Rule	51
A.	Identifying the Need for Rulemaking	52
B.	The Proposing Release Ignores Significant Costs	53
C.	Does the Proposed Rule Protect Investors?	54
D.	The Proposing Release Underestimates the Cost of the Rule.....	55
VII.	Conclusion	57

Executive Summary

The purpose of this White Paper is to provide data and economic analysis to assist the Securities and Exchange Commission (SEC or Commission) in its deliberations with respect to proposed Rule 18f-4, relating to the use of derivatives by investment companies, and to address issues raised in the Commission's proposing release of December 11, 2015.

The data and analysis presented below suggest that Rule 18f-4 as proposed may not be the most efficient or effective way for the Commission to achieve its regulatory goals of protecting investors and limiting the extent to which investment companies can take leveraged exposure to market risks (that is, limiting "undue speculation").² The rule as proposed seeks to limit risk exposure by placing a limit on the total gross notional amount of certain categories of derivative and financing positions, but does so in a manner that does not take into account the actual amount of market risk exposure in any individual position or the amount of risk exposure of the portfolio. Gross notional value is a poor measure of risk exposure, and a limit based on gross notional value places an equal restriction on the use of derivatives whether they are used to take highly speculative positions or whether they are used as part of conservative, low-risk strategies. The rule as proposed potentially harms investors by placing binding constraints on funds that are following fundamentally safe strategies that do not involve undue speculation but rather are used to enhance the risk/return tradeoff for conservative investors' portfolios in a reasonable, responsible way.

In addition, the proposed rule is likely to have the unintended consequence of inducing certain types of funds to follow riskier strategies, to shift their usage of derivative instruments from lower-risk to higher-risk asset classes, and to take on risk exposures using less liquid instruments. Alternative approaches that take risk into account, such as those described below, can achieve the Commission's goal of curtailing undue speculation and risk in investment companies without depriving investors of the benefits of efficient access to low-volatility, low-correlation strategies achievable through the responsible use of derivative instruments.

² See "Use of Derivatives by Registered Investment Companies and Business Development Companies," Release No. IC-31933 (Dec. 11, 2015), available at: <http://www.sec.gov/rules/proposed/2015/ic-31933.pdf> (the "proposing release"), page 25.

The core regulatory issue underlying both Section 18 of the Investment Company Act of 1940 (The Act) and proposed Rule 18f-4 is the extent to which Registered Investment Companies (RICs) should be allowed to increase their market risk exposures through the use of leverage. Section 18 addresses this concern by placing a limit on the issuance of senior debt securities by RICs. The logic underlying this approach is that when a RIC issues senior debt securities and invests the proceeds in a risky portfolio, the fund becomes leveraged in a way that magnifies the potential gains and losses to investors, and “results in an increase in the speculative character of the investment company’s outstanding securities.”³ In addition, if a fund has significant senior debt obligations, takes on highly leveraged exposure to market risks, and does not maintain sufficiently liquid assets, then it may be susceptible to a run if investors start to redeem shares out of fear the fund will not be able to meet its obligations. These are some of the fundamental risks Section 18 was designed to address.

Proposed Rule 18f-4 interprets all positions in derivative instruments and “financial commitment transactions” (such as short sale borrowings and repurchase agreements) as functionally equivalent to senior borrowing, and places limitations on the total amount of such obligations, in the spirit of Section 18. These limitations are based on gross notional amounts even if a fund is using derivative instruments to reduce market risks or to increase portfolio liquidity. The Commission’s goal in proposing Rule 18f-4, consistent with Section 18, is to limit excessive leverage obtained through the use of derivatives by funds because of concern that such leverage may lead to large losses and trigger fears about fund solvency, forced liquidations, or difficulty in meeting redemptions. The primary approach proposed by the Commission to limit these risks is to impose a portfolio-level limit on the use of derivatives and financial commitment transactions, based on the gross notional amount of these positions.

In this White Paper, I provide data and economic analysis of proposed Rule 18f-4, focusing on key questions the Commission may wish to consider in evaluating the proposed rule and alternative approaches to achieving their regulatory objectives. Among these are the following questions:

³ Proposing release, page 25.

- a. Is the proposed rule an effective and efficient means of achieving the goals of the Investment Company Act for limiting risks in RICs?
- b. To what extent would the proposed rule impede the investment objectives (and harm investors) in RICs that are currently using derivatives in safe, responsible ways that do not implicate the underlying regulatory concerns motivating the proposal?
- c. How might the proposed rule create incentives that would lead to outcomes inconsistent with the Commission's objectives?
- d. Are there alternative ways the Commission could achieve the goals of the Investment Company Act for limiting risk exposure in RICs while at the same time achieving stronger investor protection and lower costs to funds and their investors?
- e. Does the proposing release adequately address all the benefits and costs of the proposed Rule that should be considered by the Commission?

My main conclusions can be summarized as follows:

- a. Because there are vast differences in the riskiness of different positions with the same notional value, and because derivatives and financial commitment transactions can be used in many different ways to either increase or decrease risk, gross notional value is a very poor measure of risk exposure. (See section II below.)
- b. Certain RICs, particularly various categories of taxable bond funds (such as intermediate term bond funds) and alternative strategy funds (such as multialternative funds), make extensive use of derivative instruments but follow relatively low-risk strategies. These funds provide the public with investment opportunities that are significantly less risky than other funds that do not hold derivatives and do not engage in leveraged transactions. Some of these funds would not be able to continue their current investment strategies under the proposed rule. (See section III below.)
- c. There are alternative, risk-based approaches the Commission could consider for limiting the risk-exposure of RICs without placing unnecessary, costly restrictions on funds that use derivatives as part of low-risk strategies. (See section IV below.)
- d. The rule as proposed is likely to create perverse incentives that could undermine the Commission's goal of seeking to make RICs more resilient, less risky, and better for

- investors. For example, it creates incentives for certain funds to take positions in cash markets rather than through derivatives, even when doing so makes the fund's assets less liquid and more costly to trade. The rule would also create incentives for alternative strategy funds to allocate their limited, and therefore scarce, derivatives notional exposure in ways that will take on more exposure in riskier asset classes while moving away from less risky asset classes. (See section V below.)
- e. The proposing release does not adequately describe the costs of the proposed rule. The number of funds affected by the proposal is larger than contemplated in the cost benefit analysis in the proposal, and the impact of the rule falls disproportionately on investors in certain categories of funds such as intermediate term bond funds, nontraditional bond funds, managed futures funds and multialternative funds. Funds that engage in foreign currency strategies are also likely to be impacted. Investors in these funds will bear the costs of changes to affected funds as they alter their portfolios to comply with the rule. The proposing release does not attempt to estimate or even recognize an important component of costs, namely the cost of depriving investors access to certain funds or categories of funds as a result of the restrictions of the proposed rule. Many of these investors will not be wealthy enough to have access to funds with similar investment strategies organized under other structures available to accredited investors. (See section VI below.)

I. Overview of Proposed Rule 18f-4

A. Background

On December 11, 2015, the U. S. Securities and Exchange Commission voted to propose Rule 18f-4 under the Investment Company Act of 1940 with a stated goal of providing an updated and more comprehensive approach to regulating the use of derivatives by registered investment companies. Among other things, the proposed rule would limit the use of derivatives and financial commitment transactions entered into by mutual funds, exchange-traded funds (ETFs) and closed-end funds, as well as business development companies (BDCs). The proposed rule would also require funds to monitor and manage derivatives-related risks with a goal of

improving investor protections. The proposed rule follows two decades of growth in the volume and size of the derivatives markets and the increased use of derivatives by certain funds.

The proposed rule provides a regulatory framework intended to replace Investment Company Act Release 10666 (Release 10666), approved in 1979, as well as replacing a decades-long series of more than thirty instrument-by-instrument staff “no action” letters and other guidance concerning derivative transactions, financial commitment transactions, and transactions that may involve the issuance of a senior security by a RIC. The SEC states that the current lack of comprehensive regulatory framework makes it difficult for funds and SEC staff to evaluate and inspect for funds’ compliance with current guidance.

B. Derivatives and the Senior Securities Restrictions of Section 18

The proposed rule relies on language in the Act regulating the capital structure and activities of funds. In particular, the language of Section 18 of the Act imposes various limitations on the capital structure of funds including limitations on a fund’s ability to obtain leverage or incur obligations to persons other than the fund’s common shareholders through the issuance of senior securities. Section 18 limits the ability of funds to engage in transactions that involve potential future payment obligations, including any bond, debenture, note, or similar obligation or instrument constituting a security or evidencing indebtedness.

The language of the proposed rule follows from Release 10666, which derives its authority primarily from Section 18 of the Act, but which did not specifically address derivatives transactions. In Release 10666, the SEC describes transactions that came within the functional meaning of the term “evidence of indebtedness,” for purposes of Section 18 of the Act. In the proposed rule, the SEC applied the same analysis to derivatives transactions, such as forwards, futures, swaps and written options. Where the fund has entered into a derivatives transaction and has a future payment obligation the SEC interprets such transactions to involve “evidence of indebtedness” that qualifies as a senior security for purposes of Section 18.⁴ The proposed rule would impose a limit on the amount of gross notional amount that a fund may obtain through

⁴ Proposing release, page 23.

derivatives transactions and other senior securities transactions under which a fund has potential future payment obligations during the life of the instrument or at maturity or early termination.

This SEC contends that its interpretation is supported by the language of Section 18, which defines the term “senior security” broadly to include instruments and transactions that might not otherwise be considered securities under other provisions of the federal securities laws. The SEC states that the issuance of senior securities “magnifies the potential for gain or loss on monies invested and therefore results in an increase in the speculative character of the investment company’s outstanding securities.”⁵ The SEC states that many derivatives transactions entered into by a fund, such as futures contracts, swaps, and written options, involve leverage or the potential for leverage in that they enable the fund to participate in gains and losses on an amount of reference assets that exceeds the fund’s investment, while also imposing an obligation on the fund to make a payment or deliver assets to a counterparty.⁶

C. Motivation for the Proposed Rule Outside of Section 18

Motivation for the proposed rule, according to the SEC, also derives from other parts of the Act beyond Section 18. These include the conditions and concerns enumerated in sections 1(b)(7) and 1(b)(8) which state, respectively, that “the national public interest and the interest of investors are adversely affected” when funds “by excessive borrowing and the issuance of excessive amounts of senior securities increase unduly the speculative character” of securities issued to common shareholders and when funds “operate without adequate assets or reserves.”⁷ According to the SEC, funds’ obligations under derivative transactions can implicate each of these concerns. The SEC cited concerns over undue speculation that may occur when some funds make extensive use of derivatives to obtain notional investment exposures far in excess of the funds’ respective net asset values. The SEC noted that highly leveraged investment exposures appear to be inconsistent with the purposes and concerns underlying Section 18 of the Act.

In summary, the SEC proposed rule 18f-4 because of concerns that many derivatives investments entered into by a fund, such as futures contracts, swaps, and written options, pose a

⁵ Proposing release, page 25.

⁶ Proposing release, page 26.

⁷ Proposing release, page 25.

risk of loss that can result in payment obligations owed to the fund’s counterparties. Losses on derivatives therefore, can result in payment obligations that can directly affect the capital structure of a fund and the relative rights of the fund’s counterparties and fund shareholders, in that the fund would be required to make payments or deliver fund assets to its derivatives counterparties under the terms negotiated with its counterparties. Because of the leverage present in many types of derivatives, these payments can be substantially greater than any collateral initially delivered by the fund to initiate the derivatives transaction. The use of derivatives for leveraging purposes can make it more likely that a fund would be forced to sell assets, potentially generating losses for the fund. In an extreme situation, use of derivatives without regard to potential downside risk could result in a fund defaulting on its payment obligations.

D. Other SEC Concerns Motivating the Proposed Rule

In proposing Rule 18f-4, the SEC expressed concern that the excessive leverage obtained through the use of derivatives by funds may lead to substantial losses and trigger concerns about the ability of a fund to meet its obligations—including obligations to meet redemption requests.⁸ The SEC contends that derivatives usage by funds may entail risks from leverage, illiquidity (particularly with respect to complex over the counter (OTC) derivatives), and counterparty risk, among others. The SEC contends that a fund’s use of derivatives presents challenges for its investment adviser and board of directors in managing derivatives use so that they are employed in a manner consistent with the fund’s investment objectives, policies, and restrictions, its risk profile, and relevant regulatory requirements, including those under the federal securities laws.⁹

E. What the Proposed Rule Does

1. General Overview

Proposed rule 18f-4 limits the amount of leverage a fund may obtain through derivatives or certain other senior securities transactions, by requiring that a fund:

⁸ Proposing release, pages 29 and 30.

⁹ Proposing release, page 50.

- a. Comply with a new requirement to limit a fund's aggregate exposure using one of two alternatives. The first alternative imposes a gross notional exposure limit of 150 percent of a fund's net assets. The second alternative imposes a risk-based gross notional limit of 300 percent of a fund's net assets for those funds where the derivatives transactions, in aggregate, result in an investment portfolio that is subject to less market risk than if the fund did not use such derivatives;
- b. Manage the risks associated with its derivatives transactions by maintaining an amount of certain assets, defined in the rule as "qualifying coverage assets," available to segregate and cover a fund's obligations under its derivatives transactions; and
- c. Establish a formalized derivatives risk management program for funds that engage in derivatives transactions above a threshold amount or that use complex derivatives transactions. Fund boards would be responsible for approving and overseeing a fund's derivatives risk management program.

For purposes of this White Paper, I analyze the first of the above requirements with respect to portfolio limitations for those funds engaged in derivatives transactions or certain other senior securities transactions. I describe below the 150 Percent exposure-based limit and the 300 percent risk-based exposure limit.

2. The 150 Percent Exposure-Based Limit

Under the proposed rule, the aggregate exposure of a fund to senior securities transactions, including derivatives transactions, financial commitment transactions and outstanding borrowings that are senior securities, cannot exceed 150 percent of the value of the fund's net assets.

The proposed rule defines "exposure" to mean the sum of the following amounts, as determined immediately after a fund enters into any senior securities transaction:

- a. the aggregate notional amounts of the fund's derivatives transactions, subject to certain netting provisions;
- b. the aggregate financial commitment obligations of the fund; and
- c. the aggregate indebtedness (and with respect to any closed-end fund or BDC, involuntary liquidation preference) with respect to any senior securities

transaction entered into by the fund pursuant to sections 1 or 18 of the Act without regard to the exemption provided by the proposed rule.

3. Definition of Notional Amount

The proposed rule defines “notional amount,” with respect to most derivatives transactions, to mean:

- a. The market value of an equivalent position in the underlying reference asset for the derivatives transaction (expressed as a positive amount for both long and short positions); or
- b. The principal amount on which payment obligations under the derivatives transaction are calculated.

The SEC recognizes that the notional amount is not a risk measure, and that two funds can have the same aggregate notional exposures but very different risk characteristics. Nonetheless, it considers the use of the notional amount measure to be a “more effective and administrable means of limiting potential leverage from derivatives” than other leverage measures that might not be usable for certain funds or strategies.¹⁰

The SEC states that the proposed rule’s definition of notional amount generally would limit a fund’s ability to net derivatives transactions. Under the exposure limits, a fund’s aggregate notional exposure would be reduced by a directly offsetting derivatives transaction on the same instrument with the same underlying reference asset, maturity and other materials terms, regardless of whether the counterparty is the same. The proposed rule would not permit funds to offset, or “net,” positions in the same instrument with the same reference asset, however, if they had different maturities, including long and short exposures to futures contracts traded on the same exchange with the same reference asset where the long and short futures contracts did not have the same expiration date. The SEC considered whether to exclude from the exposure limit calculation any exposure associated with derivatives transactions that may be

¹⁰ Proposing release, page 71.

used to hedge or cover other transactions. However, the SEC determined such an exclusion would make it difficult to confirm compliance with the exposure limits of the proposed rule.¹¹

The proposed rule prescribes that the notional amount be calculated in a different manner for three categories of transactions: 1) leveraged transactions (e.g., a total return swap that has a notional amount of \$1 million and provides a return equal to three times the performance of an equity index to be treated as having a notional amount of \$3 million); 2) certain derivatives transactions where the reference asset is: (a) a managed account or entity formed or operated primarily for the purpose of investing in or trading derivatives transactions, or (b) an index that reflects the performance of such a managed account or entity; and 3) complex derivatives transactions such as path-dependent derivatives such as a barrier option, or derivatives that depends on a non-linear function of the value of the underlying reference asset, other than due to optionality arising from a single strike price, such as a variance swap.

The SEC states that it is unnecessary to treat standard put and call options as complex derivatives transactions. For these transactions, determining the notional amount based on the options' delta serves, in the SEC's view, as an appropriate measure of a fund's exposure for purposes of the proposed rule, "because it generally would result in a notional amount that reflects the market value of an equivalent position in the underlying reference asset for the derivatives transaction."¹²

The SEC states that the exposure limitation of 150 percent, as proposed, would allow funds to use derivatives transactions that could approximate the level of market exposure that would be possible through securities investments augmented by borrowings as permitted under Section 18. The SEC states that the proposed 150 percent exposure limitation of the value of a fund's net asset would appropriately constrain funds that use derivatives to obtain highly leveraged exposures.

¹¹ Proposing release, pages 70 and 71.

¹² Proposing release pages 77 and 78.

4. The 300 Percent Risk-Based Exposure Limit

The proposed rule specifies a second alternative that would permit a fund to enter into derivatives transactions with a limit of 300 percent of the value of the fund's net assets if the fund meets a risk-based test. Under this test, immediately after a fund entered into a senior securities transaction, the fund's full portfolio "value-at-risk" ("VaR") would have to be less than the fund's securities-only VaR. A fund would be able to use the risk-based portfolio limit if its derivatives use reduced rather than magnified market risk. If the fund failed to meet this risk-based test, that is, if the fund's portfolio of derivatives would add to, rather than reduce, the fund's exposure to market risk, then the fund would be required to comply with the 150 percent exposure-based limit.

The proposed rule defines VaR to mean an estimate of potential losses on an instrument or portfolio, expressed as a positive amount in U.S. dollars, over a specified time horizon and at a given confidence interval.¹³ A fund must apply its VaR model consistently when calculating the fund's securities VaR and the fund's full portfolio VaR.

The proposed rule defines "securities VaR" to mean the VaR of the fund's portfolio of securities and other investments, but excluding any derivatives transactions.¹⁴ The "full portfolio VaR" is defined as the VaR of the fund's entire portfolio, including securities, other investments and derivatives transactions.¹⁵

The proposed rule allows different methods for calculating VaR, but requires that a fund's VaR model must take into account and incorporate all significant, identifiable market risk factors associated with a fund's investments, including: 1) equity price risk, interest rate risk, credit spread risk, foreign currency risk and commodity price risk; 2) material risks arising from the nonlinear price characteristics of a fund's investments, including options and positions with embedded optionality; and 3) the sensitivity of the market value of the fund's investments to changes in volatility. The VaR models must use a 99 percent confidence level and a time horizon

¹³ Proposing release, page 119.

¹⁴ Proposing release, page 418.

¹⁵ Proposing release, page 418.

of not less than 10 and not more than 20 trading days.¹⁶ If the fund is modeling VaR based on historical simulation, that it must include at least three years of historical market data.¹⁷

The SEC notes that a fund that holds only cash, cash equivalents and derivatives (e.g., certain alternative strategy funds and leveraged ETFs) would not be able to satisfy the VaR test.¹⁸ This is because the securities VaR for these funds would reflect the VaR of the cash and cash equivalents, and thus would be very low and the portfolio VaR would not be reduced using derivatives. The SEC also notes, based on an analysis by the staff of the Division of Economic and Risk Analysis (DERA), that it expects that most funds would be able to comply with an exposure-based portfolio limit of 150 percent of net assets.¹⁹

II. Gross Notional Is a Blunt Instrument for Regulating Risk

A. Gross Notional is a Poor Measure of Market Risk Exposure

The proposed rule imposes a gross notional limit on the amount of leverage a fund may obtain through derivatives or certain other senior securities transactions. The proposed rule couples these limits with the aggregate gross notional amount of derivative positions outstanding of a fund, which is used as a measure the fund's market exposure obtained through the use of derivatives. In the proposing release, the SEC contends that the aggregate gross notional amount generally serves as a useful measure of the underlying market exposure because it reflects the value of the underlying reference asset for that derivative or the amount of the underlying reference asset on which payment obligations are based.²⁰ The SEC also contends that a notional amount limitation would be easier to administer than other means of limiting potential leverage from derivatives because the notional amount is a measure that is well-understood and recognized, and readily determinable by funds.²¹ Finally, the SEC contends that the proposed rule

¹⁶ Proposing release, page 419.

¹⁷ Proposing release, page 419.

¹⁸ Proposing release, FN 223, page 101.

¹⁹ Proposing release, page 97.

²⁰ Proposing release, footnote 159, page 67.

²¹ Proposing release, page 297.

calibrates the exposure limits in a way that achieves a balance between providing flexibility regarding the use of derivatives while limiting the potential risks associated with leverage.²²

Using gross notional amounts to measure the leverage and risk resulting from a fund's derivatives holdings is flawed because it has little relationship to what it is measuring. A fund with a high gross notional amount of derivatives exposure may be riskier, less risky, or equally risky as a fund without any derivatives exposure. The SEC acknowledges that using a gross notional amount to measure market exposure may have shortcomings. Indeed, in the proposing release, the SEC states that the notional amount of a derivatives transaction does not necessarily equal, and often will exceed, the amount of cash or other assets that a fund ultimately would likely be required to pay or deliver under the derivatives transaction.²³ The SEC recognizes that a derivative's notional amount does not reflect the way in which the fund uses the derivative and that the notional amount is not a precise risk measure. The proposing release states that "an exposure-based test based on notional amounts therefore could be viewed as a relatively blunt measurement in that different derivatives transactions having the same notional amount but different underlying reference assets—for example, an interest rate swap and a credit default swap having the same notional amount—may expose a fund to very different potential investment risks and potential payment obligations."²⁴ The SEC also recognizes that there are other approaches to evaluating leverage associated with a fund's derivatives activities, including approaches that disregard or subtract the notional value of hedging transactions from the calculation of a fund's exposure.²⁵

The inclusion in the proposed rule of an alternative risk-based exposure limit is further acknowledgement by the SEC that aggregate notional amounts fail to adequately reflect market exposure. The 300 percent risk-based exposure limit offers relief from the 150 percent aggregate notional limit for those funds where the derivatives transactions, in aggregate, result in an investment portfolio that is subject to less market risk, as measured by VaR, than if the fund did not use such derivatives. However, even when relief is obtained, the exposure limit and the

²² Proposing release, page 72.

²³ Proposing release, page 310.

²⁴ Proposing release, page 70.

²⁵ Proposing release, page 70.

measures of exposure that are imposed are based on aggregate gross notional amounts. In general, the structure of the proposed rule for implementing either of the alternative exposure limits is based on the incorrect premise that the gross notional value of derivative positions and senior obligations is a meaningful measure of risk exposure.

More generally, gross notional amounts are understood to be poor measures of market exposure, because for most derivative transactions the cash flow obligations are a small percentage of notional amounts.²⁶ Gross notional amounts can also be misleading because they do not account for differences across different types of derivative contracts. That is, the meaning of the gross notional amount can vary depending on the type of derivative being considered. For example, in an interest rate derivative, the notional amount refers to the hypothetical underlying amount used to calculate cash flow obligations. For a credit default swap, the notional amount refers to the par amount of credit protection bought or sold and is used for coupon payment calculations for each payment period and the recovery amounts in the event of a default. For an equity derivative, the notional amount refers to the hypothetical amount that can be used to calculate equity swap cash flows, or the value of the delivery obligation for physically-settled equity forwards.

The SEC argues that one advantage of using notional amounts as a measure of market exposure is that it can be applied consistently across all types of funds, including funds using different strategies and different types of derivatives.²⁷ However, this consistency disregards the differences in the risk characteristics of various types of derivative instruments. Even in the DERA White Paper, allowance is made for Eurodollar futures, where the notional value is adjusted to market standard conventions.²⁸ It appears that such an adjustment would not be permitted under the proposed rule.

²⁶ See: "The ISDA Market Survey: What the results show and what they don't," ISDA Research Notes, Number 1, Autumn.

²⁸ Daniel Deli, Paul Hanouna, Christof Stahel, Yue Tang & William Yost, "Use of Derivatives by Registered Investment Companies," Division of Economic and Risk Analysis (2015) ("DERA White Paper"), available at <http://www.sec.gov/dera/staffpapers/white-papers/derivatives12-2015.pdf>. In the DERA White Paper, the notional amounts of Eurodollar futures contracts were divided by four in accordance with market conventions as an adjustment for the fact that the underlying Eurodollar instrument is for one-quarter of a year.

Using gross notional amounts to measure risk exposure fails to account for differences in risk across the different underlying assets used to construct derivative instruments. To see this, consider a derivative contract on a low-volatility underlying asset. The risk of this position will derive proportionally from the risk associated with the underlying asset. The risk associated with this position will be less than the risk associated with a similarly-constructed derivative constructed with a high-volatility underlying asset.

These differences in risk can, and should, be quantified. For example, consider a Eurodollar futures contract and a S&P 500 index futures contract where each contract reflects a notional amount of \$1 million. Risk can be measured by daily volatility or by an extreme measure such as the 99th percentile 10-day loss. Using either measure, the risk of the Eurodollar futures position is only a small fraction of the risk contained in S&P futures position. Table 1, below, shows various historical risk measures for the S&P 500 and Eurodollar futures contracts (with one-month expiries), including historical volatility and the maximum loss over 1-day, 10-day, and 20-day periods, calculated over the five-year period from 2011 to 2015 and separately over a longer period containing the financial crisis, from 2005 to 2015. Over the recent five-year period, the market risk exposure of an S&P 500 Futures contract, measured by volatility of daily returns, would have had over 100 times higher risk than that of a futures contract constructed with three-month Eurodollar instruments and with the same notional value (and over the longer eleven-year period including the financial crisis, it would have been roughly 25 times higher). Similarly, the other risk measures show that the risk of large losses over one day, ten days, or twenty days is orders of magnitude larger for an unleveraged equity index position than for a Eurodollar position with the same notional value.

Table 1: Historical Risk Measures for S&P 500 and Eurodollar Futures²⁹

	Volatility	Max 1- Day Loss	Max 10- Day Loss	Max 20- Day Loss
2011 – 2015				
Eurodollar Futures	0.1%	-0.1%	-0.1%	-0.2%
S&P 500	15.5%	-6.7%	-16.3%	-16.5%
2005 – 2015				
Eurodollar Futures	0.8%	-0.6%	-1.2%	-2.1%
S&P 500	20.0%	-9.0%	-25.9%	-28.2%

Quantifying and understanding differences in the risk characteristics of underlying products helps put into perspective some of the claims made in the proposing release. For example, the proposing release highlights (three times) a result from the DERA White Paper showing that aggregate notional exposures for some managed futures funds range from approximately 500 percent to 950 percent of net assets, an amount far greater than the proposed exposure limits.³⁰ However, a fund with large notional exposure may have less potential downside exposure (i.e., actual risk) than a completely unlevered fund. To see this, consider a fund that has 1000 percent gross notional exposure achieved solely by using Eurodollar futures contracts. Referring to the risk measures from Table 1, we can determine that this fund would have far less actual risk than an unlevered equity index fund tracking the S&P 500. Using the 2005-2015 risk measures from Table 1, we see that the fund constructed with 1000 percent gross notional exposure using Eurodollar futures would have a volatility measure of eight percent per year (10 times .8 percent) versus a measure of 20 percent for an unlevered equity fund tracking the S&P 500. If an unlevered equity index fund tracking the S&P 500 is not viewed as “unduly speculative,” then, given these risk measures, a fund holding 1000 percent gross notional exposure with Eurodollar futures cannot be thought of as “unduly speculative” either. In this case, 1000 percent gross notional exposure says nothing about the risk associated with the fund. Similarly, the gross

²⁹ Data from Bloomberg. Data for Eurodollar futures are for contracts with one-month expirations.

³⁰ Proposing release, pages 102, 147, and 282. Currency funds are also referenced along with managed futures funds in the proposing release as having significant notional exposure although aggregate notional exposures are not cited for these funds.

notional exposures numbers for managed futures funds that are cited in the proposing release, say nothing about the risk of those funds.

The relative risk of Eurodollar futures and the S&P 500 can be seen from actual extreme stress scenarios. For example, one widely-used stress scenario for risk analysis of fixed income portfolios is the interest rate shock to the market of February 1994. On February 4 on that year the Federal Reserve significantly raised interest rates in a surprise move. In the following three months, the stock market, as measured by the S&P 500, fell by over eight percent. However, the June 1994 Eurodollar futures contract fell by only about 1.25 percent during the same period of time. Even though this event is used as an extreme stress test of fixed income portfolios, an investor in an equity index fund would have been exposed to greater risk during this episode.

B. Industry Participants and Regulators Understand the Limitations of Gross Notional Measures

Industry users of derivatives market data understand the limitations of using gross notional measures. Notional amounts outstanding, when used by the industry, are used as indicators of the scale of derivatives activity, especially when applied as a relative measure over time. For example, the International Swaps and Derivatives Association's (ISDA) Market Survey uses notional amounts to measure the size of the derivatives market and the level of activity because the measure is regarded as consistent over time and that any understatement or overstatement of activity are consistently canceled out across time. The ISDA Market Survey specifically warns users not to misinterpret notional amounts as some measure of risk. ISDA adds that "In fact, notional amounts are only loosely related to risk."³¹

In contrast to the ISDA Market Survey, the Bank for International Settlements (BIS) Semiannual OTC Derivatives Market Statistics report two numbers that are more closely related to risk than are notional amounts. The first is gross market value, which is the absolute value of positive and negative replacement values, where replacement value is the estimated amount that could be received or paid for unwinding a transaction on the reporting date. The second is gross credit exposure, which represents the current value of contracts that have a positive market value

³¹ See: "The ISDA Market Survey: What the results show and what they don't," ISDA Research Notes, Number 1, Autumn, 2008, page 2.

after taking account of legally enforceable bilateral netting agreements; in other words, it measures netted credit exposure between counterparties.

The BIS statistics show that gross notional amounts greatly overstate market risk. For example, in the second half of 2014, the gross notional amount of outstanding derivative contracts stood at \$630 trillion worldwide whereas the gross market value of outstanding derivatives contracts, which provides a more meaningful measure of amounts at risk than notional amounts, was \$21 trillion. In other words, gross notional value of outstanding derivative contracts overstates gross market value of outstanding derivative contracts by a factor of approximately 30 times (i.e., \$630 trillion divided by \$21 trillion).³²

Across the global regulatory landscape, notional values, when used, are adjusted to reflect the relative risk characteristics of the underlying instruments. For example, the Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO) identify minimum initial margin levels for different types of derivative instruments based on adjustments to the notional amount underlying the instrument so as to reflect the underlying risk and liquidity characteristics of the instrument. The measure, published by the BIS (the BIS approach), aims to establish an initial margin baseline, based on the potential future exposure that reflects an extreme but plausible estimate of changes in value of the instrument that is consistent with a one-tailed 99 percent confidence interval over a 10-day horizon.³³

In 2015, U. S. prudential regulators and the Commodity Futures Trading Commission (CFTC) adopted the BIS approach in their final rules on margin and capital requirements for covered entities which apply to entities supervised by prudential regulators that register with the CFTC or SEC as a dealer or major participant in swaps.³⁴ The standardized initial margin schedule from these final rules is shown below in Table 2. These measures are relevant to discussing proposed rule 18f-4, not because of the calculation of margin amounts, but because the measures serve as a guide to the relative risk of different asset types.

³² Bank for International Settlements, "OTC derivatives statistics at end-December 2014," found at: http://www.bis.org/publ/otc_hy1504.htm.

³³ "Margin requirements for non-centrally cleared derivatives," Basel Committee on Banking Supervision (BCBS) and the International Organization of Securities Commissions (IOSCO), Published by the Bank for International Settlements (BIS), September, 2013.

³⁴ See: <http://www.occ.treas.gov/news-issuances/news-releases/2015/nr-occ-2015-142aaa.pdf>.

Table 2: Standardized Initial Margin Schedule Accounting for Risk Differences Reflected in Notional Amounts by Asset Class and Duration of the Underlying Instrument

Asset Class	Duration	Initial Margin Requirements as a Percentage of Notional Exposure
Credit	0-2 years	2%
	2-5 years	5%
	5 years +	10%
Commodity	Any	15%
Equity	Any	15%
FX/Currency	Any	6%
Cross Currency Swaps	0-2 years	1%
	2-5 years	2%
	5 years +	4%
Interest Rate	0-2 years	1%
	2-5 years	2%
	5 years +	4%
Other	Any	15%

Table 2 illustrates the fact that regulators have recognized the need to adjust notional amounts to reflect differences in the risk characteristics of the asset types underlying derivative instruments. These adjustments are aimed at constructing consistent measures of risk for purposes of setting minimum initial margin.

In addition to providing a misleading measure of risk exposure, gross notional amounts can also give a misleading impression about the impact of derivatives transactions on managing the risk of a fund's portfolio. For example, the managers of a fixed-income fund may have a view that the yield curve will steepen over the next month. That is, they expect longer-term rates to rise relative to short-term rates. A set of positions a fund could take that would express this view of the market would be to establish a short position in a deferred-month Eurodollar futures contract while simultaneously establishing a long position in the near-term Eurodollar futures contract. If the term structure steepens as expected, the gains on the short deferred-month position will be greater than any losses resulting from the nearby position. By constructing a position in this way, the fund is not exposed to risk of changes to the absolute level of rates, but instead to the risk associated with relative changes in rates. Under the proposed rule, the notional

amounts of both the long position and the short position would be used to measure the exposure of this spread position, even though the position is isolating risk and not magnifying exposure to the market.³⁵

Another example illustrates how gross notional exposure can fail to reflect the actual market risk in a fund portfolio. Consider a fixed-income fund that seeks to gain exposure to U. S. Treasury bonds. The portfolio can be constructed by investing the fund's cash in Treasury bonds that meet the fund's objective and not use any derivatives. Alternatively, the fund could gain the same exposure by establishing a long position in Treasury bond futures. For the portfolio constructed with cash bonds the gross notional amount would be zero and for the equivalent-risk portfolio constructed with derivatives the gross notional exposure would be 100 percent of net assets. The two approaches to portfolio construction produce identical risk and expected return, yet using the gross notional amount gives vastly different exposure measures for the two equally-risky portfolios.

Another example illustrating the failure of gross notional exposure measures to reflect actual risk would be to consider two funds. Fund A obtains exposure to by taking long positions in adjacent Eurodollar quarterly futures contracts over a two-year horizon. Therefore, the notional exposure for this fund would be \$8 million (for the eight quarterly Eurodollar futures contracts, each with a notional amount of \$1 million). Alternatively, Fund B achieves the similar exposure with a two-year fixed-for-floating interest rate swap with a notional amount of \$1 million. The result is that two funds, with essentially equivalent exposure, have very different exposure measures. This example also shows the incentives that the proposed rule creates in that it may cause funds to shift their exposure from exchange-traded derivatives to over-the-counter swaps, a result that may be contrary to other Commission policy goals.

The SEC, in the proposing release, acknowledges that for some alternative strategy funds, such as managed futures funds or currency funds, using gross notional amounts to measure

³⁵ I discuss sources of risk in spread positions in more detail below with respect the experience of Amaranth Advisors, LLC.

exposure may be impractical.³⁶ These funds generally obtain their investment exposures exclusively through derivatives transactions, and thus can be expected to have high derivatives exposures relative to net assets. The SEC cited three managed futures funds in the sample from the DERA White Paper that had gross notional exposures ranging up to approximately 950 percent of net assets.³⁷ These funds, as currently structured, would clearly fail the 150 percent exposure-based limit. Moreover, these funds would not be subject to any relief using the risk-based exposure limit because the VaR for the securities-only component of the portfolio would be zero since that component consists of cash. Any notional amount of derivatives usage would fail to reduce the full-portfolio VaR below zero as the risk-based exposure test requires. As a practical matter, managed futures funds and currency are not used to gain high levels of leverage or levels of undue speculation. As I show later, these funds are less risky than an unlevered stock index fund. Instead, a primary investment objective of these funds is to provide returns that are uncorrelated or inversely correlated with other asset types (such as equities and bonds) through the use of both long and short derivatives positions³⁸. As a result, managed futures funds help mitigate portfolio risk in a way that is not possible in direct equity or fixed-income investments. Using gross notional amounts gives a misleading measure of the actual market risk exposure of these funds.

In general, the proposed rule's use of gross notional amounts as the basis for calculating a fund's market risk exposure and for constructing risk limits is not likely to achieve the SEC's stated goals as it has little relationship to what it purports to be measuring, namely, actual investment risk. As discussed earlier, a fund with a high gross notional amount of derivatives exposure may be riskier, less risky, or equally risky as a fund without any derivatives exposure. As the proposing release acknowledges, an approach relying on gross notional amounts is a "blunt" approach to measuring exposure but one that the SEC values for its administrative simplicity and for the consistency by which it can be applied. However, bluntness, simplicity, and consistency of application come at the cost of measuring risk inconsistently and

³⁶ Proposing release, page 102.

³⁷ Proposing release, page 102.

³⁸ As an example of the uncorrelated returns that can be offered by managed futures funds, consider the performance of the BarclaysHedge CTA Index during 2008, which gained 14.09 percent when during the same time the S&P 500 index fell 36.91 percent. See <http://www.barclayhedge.com/research/indices/cta/sub/cta.html>.

ineffectively—leading to perverse incentives and costly consequences as I discuss more fully below in Sections V and VI. Gross notional amounts fail to measure risk consistently across asset classes or across derivative positions with different durations. In addition, the approach is not in keeping with industry practice--or global regulatory practice—that adjusts notional amounts to account for risk differences in the underlying assets. Using gross notional amounts to measure risk can also have the effect of penalizing safe and appropriate uses of derivatives by funds where the measured exposure can be very high when the true net risk is very low.

C. Safe and Unsafe Uses of Derivatives

The proposed rule and the text of the proposing release perpetuates the misperception that the use of derivative instruments is inherently risky and the greater the use of derivatives by a fund, the greater the risk. To the contrary, derivatives are tools that can be used by funds in either safe or unsafe ways. The safe uses of derivatives enable fund managers to reduce a fund’s exposure to market swings or to manage a fund’s risk exposures so as to achieve an efficient risk-return allocation, across a variety of asset classes, consistent with an investor’s overall portfolio objectives across time. Safe uses of derivatives also enable managers to enhance the liquidity of a fund in instances where derivatives are more liquid than the underlying products. When used appropriately, funds using derivatives can achieve their investment objective in ways that are safer and lower cost than funds not using derivatives.

The unsafe uses of derivatives include strategies that may leave a fund’s investors exposed to the consequences of excessive leverage including the prospect of extreme losses, and the possibility that a fund faces liquidity constraints that may make it unable to meet redemption requests. The SEC release cites several instances where derivatives were used in an unsafe manner to excessively leverage one-sided exposures in ways that left funds vulnerable to meet contractual obligations or redemption requests when the market turned against them.³⁹ The challenge the SEC faces is to construct rules that appropriately constrain the unsafe uses of derivatives without inhibiting the safe and beneficial uses of derivatives. The exposure limits in

³⁹ Proposing release, page 44. Notably, the instances used to support the Commission’s arguments are from 2008 and early 2009 during the height of the financial crisis.

the proposed rule, because they are so blunt, may inhibit funds from safely using derivatives in an effort to prevent unsafe uses.

The SEC release observes that even “plain vanilla” derivatives can lead to significant losses for funds and the release cites recent examples. However, the rapid losses cited in the SEC examples show how derivatives can be misused in ways that go beyond simple exposure.

For example, the SEC cites the case of the private fund Amaranth Advisors, LLC as an instance where the use of plain vanilla derivatives caused catastrophic losses. In total, Amaranth lost approximately half of its \$10.2 billion of net assets from natural gas futures and swap positions during a period of a few weeks in August and September 2006. As a result of these losses, Amaranth was forced to liquidate its entire portfolio and close. The SEC argues that the fund’s exposure from its spread position involving long and short natural gas positions in August 2006 serves as example of why net exposure may include substantial long and short gross exposure.⁴⁰ Although Amaranth clearly lost substantial amounts on its spread position due to changes in term structure of natural gas prices, there were other factors contributing to the fund’s losses that make the example less compelling for supporting the SEC’s argument. First, Amaranth was a private fund that was not subject to the limitations under the Act. Second, losses in the fund were exacerbated by the fact that Amaranth had placed itself in a vulnerable position by holding a high concentration of the open interest certain natural gas futures contracts. This high degree of concentration created a high degree of illiquidity for the fund as other market participants demanded a premium in order to take the other side of Amaranth’s trades when it attempted to unwind its position. This high degree of concentration and its resulting illiquidity deepened Amaranth’s losses as it attempted to exit its positions in order to meet margin calls. The fund’s exposure itself, without the accompanying illiquidity resulting from the excessive concentration of Amaranth’s positions, may not have been sufficient to cause the fund’s inability to meet its margin obligations. It is not clear from the circumstances of the Amaranth matter that the SEC’s proposed rule would be the best way to address the issues that the fund faced, or whether these issues would have been addressed if the fund had been a RIC and subject to the limitations of the Act.

⁴⁰ Proposing release, page 47.

In addition to looking at ways that the unsafe use of derivatives can lead to extreme losses that can leave a fund vulnerable to liquidity constraints that may make it unable to meet redemption requests, the SEC should also look at ways derivative usage may mitigate these concerns. For example, on December 9, 2015 Third Avenue's Focused Credit Fund announced that it would block redemptions so that its holdings could be liquidated in an orderly fashion. It is important to note that, based on the public record, it does not appear that the Third Avenue fund's losses were in any way related to any derivatives positions. The Third Avenue fund had lost 27 percent in net asset value in the months preceding its liquidation and experienced a significant decline in assets as investors made redemption requests. To meet redemption requests, the fund tried to sell securities. In its letter to shareholders, the fund explained that reduction of liquidity in the fixed income markets made it impracticable for the fund to raise cash without resorting to sales at prices that would unfairly disadvantage the fund's remaining shareholders.

Instances like Third Avenue serve to illustrate the type of liquidity risks potentially faced by funds. They also illustrate the type of risks that the appropriate use of derivatives can help mitigate. Instead of having all cash invested in physical bonds, a fixed-income fund could gain similar exposure by constructing all or part of its portfolio by establishing a long position in Treasury bond futures and simultaneously selling credit protection on the appropriate corporate bond index in the credit default swap market. The two approaches to portfolio construction can produce similar market risk exposure. However, by using derivatives to gain the exposure the fund preserves cash and mitigates liquidity risk since generally credit derivatives are more liquid than the underlying physical bonds. As a result, the fund can be in a better position to manage redemption requests and can head off run behavior by investors. In many funds, fund managers used derivatives precisely for the purpose of reducing liquidity risk while gaining desired exposures.

III. Data and Evidence

A. Alternative Funds That Use Derivatives Are Not Unduly Speculative

In the proposing release, the SEC states that:

Our staff's review of funds' use of derivatives found that, although many funds do not use derivatives, and most funds do not use a substantial amount of derivatives, some funds do use derivatives extensively. Some of the funds that use derivatives more extensively have derivatives notional exposures that are substantially in excess of the funds' net assets, with notional exposures ranging up to almost ten times a fund's net assets. These highly leveraged investment exposures appear to be inconsistent with the purposes and concerns underlying section 18 of the Act. (p. 27, footnotes omitted)

By this statement the Commission appears to be concluding that funds with high amounts of gross notional value, such as a notional amount up to ten times a fund's net assets, have sufficiently "highly leveraged" investment exposures that they are inconsistent with the Act. As explained above, gross notional is a very poor measure of market risk exposure. A fund that takes on ten-times leveraged, directional exposure to an equity index, if such a fund existed, would have a very high level of market risk. A fund that holds a 500 percent notional long position in three-month September Eurodollar futures and a 500 percent notional short position in December Eurodollar futures has a very low level of market risk. Without looking deeper into the kind of strategies the funds are following, the types of derivatives the funds are using, and how they are using them, the Commission cannot know whether or not the strategies followed by the funds in fact have high exposure to market risks, and whether they implicate the purposes and concerns of Section 18.

The DERA study correctly concludes, based on their sample, that certain categories of funds, such as Alternative Strategy funds, tend to make greater use of derivatives than other categories. But the proposing release offers no analysis or evidence with respect to the actual riskiness of these funds. It simply proposes a rule based on the unsupported premise that funds with a gross notional positions in excess of 150 percent or 300 percent are risky and are likely to present significant concerns under Section 18. As I have shown elsewhere in this White Paper, funds with high gross notional exposure can be less risky than funds that are completely unlevered.

Had the staff investigated the risk characteristics of these funds, the Commission might have determined that Alternative Strategy funds tend to be relatively low risk. Table 3 provides summary risk characteristics for the largest three funds by assets under management in each of five Morningstar sub-categories under the category of Alternative Strategy Funds: managed

futures, market neutral, multicurrency, multialternative, and long-short equity. Table 3 also includes summary risk characteristics for the three largest nontraditional bond funds, categorized under the Morningstar Taxable Bond category, which DERA also identified as making greater use of derivatives than other sub-categories of funds, and which DERA included as an “Alt Strategies” fund under their own classification system.⁴¹ See Appendix A for a more complete description of each of these categories. For each fund, the table reports the long-term volatility, and the most extreme negative returns over one day, ten days, and twenty days, measured since 2005 (or since the fund’s inception if after 2005). For comparison purposes, the table reports the same statistics for the S&P 500 index and the Vanguard Total Stock Market Index Fund.⁴²

Table 3: Risk Measures⁴³

Fund	Volatility	Max 1-Day Loss	Max 10-Day Loss	Max 20-Day Loss
Managed Futures				
AQR Managed Futures Strategy I	8.9%	-3.4%	-5.7%	-6.4%
Natixis ASG Managed Futures Strategy Y	10.8%	-4.8%	-8.3%	-9.5%
Catalyst Hedged Futures Strategy I	8.6%	-5.2%	-6.8%	-7.6%
Market Neutral				
Merger Institutional	5.4%	-3.4%	-6.8%	-8.7%
Calamos Market Neutral Income I	6.5%	-3.8%	-9.2%	-11.5%
Arbitrage I	6.6%	-4.1%	-11.3%	-12.1%
Multicurrency				
PIMCO Emerging Markets Currency Instl	7.6%	-3.3%	-10.8%	-16.9%
JHancock Absolute Return Currency I	8.6%	-8.7%	-7.7%	-8.5%
Lord Abbett Emerging Markets Currency I	8.2%	-3.4%	-11.1%	-15.9%
Multialternative				
JHancock Global Absolute Ret Strats I	4.5%	-1.3%	-4.0%	-4.3%
Blackstone Alternative Multi-Strategy I	3.8%	-1.4%	-3.2%	-3.4%
Natixis ASG Global Alternatives Y	7.3%	-3.0%	-8.0%	-7.6%
Long/Short Equity				

⁴¹ This analysis excludes leveraged ETFs that seek to target a constant multiple of an equity index, as the amount of risk exposure in such funds is transparent and should be straightforward for the Commission to evaluate.

⁴² This is an unleveraged equity index fund that seeks to match the total return of the CRSP US Total Market Index, and does not generally have derivative instruments in its portfolio.

⁴³ Data from Morningstar and Bloomberg. Volatility and Maximum Losses calculated for S&P 500, Vanguard Total Stock Market and the three largest funds in each category above for the period 2005 to 2015. For funds with inception dates after 2005, the period from inception to 2015 is used.

Gateway Y	9.9%	-5.3%	-14.8%	-15.3%
Boston Partners Long/Short Rsrch Instl	9.0%	-4.0%	-9.8%	-10.6%
Diamond Hill Long-Short Y	14.2%	-7.3%	-19.8%	-21.3%
Nontraditional Bond				
BlackRock Strategic Income Opps Instl	2.6%	-2.0%	-6.3%	-8.2%
Goldman Sachs Strategic Income Instl	2.7%	-1.0%	-2.6%	-2.8%
PIMCO Unconstrained Bond Instl	2.9%	-1.3%	-2.1%	-2.9%
<hr/>				
S&P 500	20.0%	-9.0%	-25.9%	-28.2%
Vanguard Total Stock Market	20.4%	-9.2%	-26.1%	-28.7%
<hr/>				

As the table demonstrates, these are not excessively risky funds. In fact, all 18 of these funds are less risky than the S&P 500 or the Vanguard Total Market Index Fund, measured by volatility or by the maximum one-day, ten-day, or twenty-day loss over the 11-year period from 2005 to 2015.

While I have not systematically investigated the extent to which the use of derivatives by the largest alternative funds and non-traditional bond funds is representative of the entire sample of funds, it is clear that the funds in Table 3 do make substantial use of derivatives and some of these funds are likely to be directly impacted by the proposed rule. Based on my review of the portfolio holdings for each of the funds in Table 3, all of these funds employ some derivatives or financing transactions that would be subject to the proposed rule, and some have gross notional values well in excess of the proposed 150 percent and 300 percent limits. This is consistent with the findings reported in the DERA White Paper. Funds in this sector tend to use a wide variety of types of derivative instruments and financing transactions. My review of the portfolio holdings of the funds in Table 3 confirms that these funds use a variety of types of obligation transactions, including futures and futures options, swaps and swaptions, currency forwards and options, and short selling.

Appendix B summarizes the use of different categories of transactions for each of these 18 funds, based on a review of their disclosed portfolio holdings. I find that the use of derivatives by these funds appears to be heavily weighted toward standardized contracts that tend to trade in liquid markets, such as interest rate swaps, currency forwards, and exchange-traded futures contracts. I also find that funds listed in Appendix B make hardly any use of complex

derivatives, as defined in the release. Of the 18 funds in Appendix B, I found no evidence of any use of complex derivatives in the quarterly portfolio disclosure for 17 of the 18 funds. The other fund reported having just two positions in barrier options on the Australian dollar, which constituted a *de minimis* percentage of their portfolio.

For example, based on a snapshot at the end of September, 2015, it appears that the ASG Natixis Managed Futures Fund⁴⁴ had a gross notional exposure that was 471 percent of the fund’s net assets. However, the data in Table 3 above demonstrate that this fund is substantially less risky than an unleveraged equity index (for example, the maximum loss over ten-days or twenty-days for this fund was roughly one-third that of the S&P 500). This example demonstrates that a fund can have relatively high gross notional value, but still have relatively low market risk, and high liquidity, depending on the type of derivatives in the portfolio. As shown in Table 4 below, this fund’s portfolio consists entirely of standardized, exchange-traded futures contracts, and the gross notional positions are heavily weighted toward low-risk instruments. While total gross notional was 471 percent of assets, roughly 400 percent of this was in Eurodollar Futures, Treasury Futures, and other fixed income futures positions such as Euribor and G-7 government debt. Foreign currency derivatives also contributed substantially to the fund’s gross notional amount.

Table 4: ASG Natixis Managed Futures Fund Gross Notional Exposure

Category – Futures	Gross Notional Amount (\$MM)	Gross Notional Amount as Percentage of Fund Size
Eurodollar / US Treasury	\$4,685	188%
Other Fixed Income	\$5,331	214%
Foreign Currency ^[1]	\$859	35%
Commodity	\$505	20%
Equity	\$331	13%
Total Gross Notional	\$11,710	471%

⁴⁴ I selected this fund from Table 3 because of my confidence in the accuracy of its holdings’ data after reconciling with EDGAR disclosures.

The funds summarized in Table 3 are the largest funds in each of several categories of funds by assets under management, but represent only a small portion of the funds in those categories. According to the DERA study, there were over 900 Alternative and Nontraditional bond funds at the end of 2014, with over \$300 billion under management.⁴⁵ DERA staff has already estimated the gross notional usage for a sample of these funds, and historical returns data are readily available that would allow the Commission's staff economists to evaluate the risk characteristics of these funds. Building on the research already done by the staff, it should not be difficult for the staff to evaluate whether a significant proportion of the funds are using derivatives to take on a level of market risk that suggests the funds are using derivatives in a highly speculative way, or are taking on risks large enough that there is a significant likelihood the fund will not be able to meet its obligations. Similarly, the SEC's staff economists could build on their existing research to evaluate the extent to which funds with higher use of derivatives have greater risk exposures than unlevered funds. Again, the fact that a fund has a gross notional amount such as 300 percent or more does not mean the fund is following a high risk strategy or is unduly speculative. Finally, SEC staff economists could analyze the ability of funds that use derivatives to meet redemptions. In general, one would expect that funds using derivatives would also hold more cash and therefore be in a better position to meet redemption requests. This is a hypothesis that SEC economists could test.

B. Better Data on the Number of Funds Affected Can Be Obtained Through Surveys

As noted in the DERA study, for some funds it may be difficult for the Commission to compute, based on the fund's disclosed portfolio holdings, the exact amount of gross notional that would be subject to the rule. This is true for several reasons. Some funds do not disclose all of the individual positions comprising their derivatives exposure if that exposure is obtained through a third-party managed account or through offshore accounts. Others report option positions but do not disclose enough detail about the positions for an outside observer to

⁴⁵ See, for example, Table 2 of the DERA White Paper, which shows at year-end 2014 there were 969 Alternative funds and Nontraditional bond funds, with assets under management of approximately \$379 billion.

compute the option's delta, which is necessary to implement the delta adjustment permitted by the rule. The proposed rule permits netting of otherwise identical long and short derivatives positions held against different counterparties, but in some instances not enough detail is disclosed in the fund's EDGAR filings to determine whether positions are eligible for netting.

Also, it should be noted that the disclosed portfolio is simply a snapshot of the portfolio at a single point in time, and may not be representative of the highest level of gross notional value the fund may take on over time. Because funds may change the composition of their portfolio over time in response to changing market conditions or to take advantage of particular investment opportunities, there is likely to be substantial variation over time in the gross notional amounts used by any particular fund. A single snapshot in time, therefore, is not sufficient to determine whether a fund would be constrained by the proposed limits.

Given the limitations of the fund holdings data disclosed through EDGAR filings, and given the inability of the SEC, or any outside observer, to understand how the proposed rule's risk-reduction test would actually be applied by individual funds, a survey approach will likely generate more useful data for the Commission to consider. The Investment Company Institute (ICI) recently completed a survey of funds that provides useful insight into the likely impact of the proposed rule on various categories of funds. An ICI draft analysis as of March 11, 2016 reports that the survey received responses from 6,661 funds with assets totaling \$13.6 trillion.⁴⁶ The survey sample represents 59 percent of the number of funds and 80 percent of assets held in long-term mutual funds, closed-end funds, and registered ETFs.

Survey participants were asked to look to the portfolio holdings of their funds as of December 31, 2015 and determine whether the gross notional limitations from the proposed rule would be binding on their use of derivatives. Survey participants were asked, when applicable, to apply the VaR risk reduction test on their portfolios to determine eligibility for using the 300 percent gross notional limit.

The ICI survey finds that the proposed rule's limitations would have their greatest impact, by far, on taxable bond funds, and in particular on intermediate term bond funds. Bond funds often use derivatives to manage interest rate exposure and credit risks. The DERA White

⁴⁶ The numbers reported in the ICI's draft analysis are subject to change.

Paper, which relied on observations of the holdings of a limited sample of funds, failed to detect this feature of the proposed rule's likely impact. In total, the ICI survey finds that 471 funds out of 6,661 responding funds had a gross notional exposure exceeding the 150 percent exposure limit of the proposed rule, and that 198 of these 471 funds (42 percent) were taxable bond funds.

In terms of assets, the 471 funds exceeding the 150 percent exposure limit held \$613 billion in assets, of which \$485 billion (or 79 percent) were assets of taxable bond funds. The ICI survey also shows the impact on subcategories of taxable bond funds, finding that, based on assets, intermediate term bond funds, nontraditional bond funds, and multisector bond funds would be the most constrained by the exposure limits of the proposed rule. In addition, the ICI survey found that 111 of 173 funds (64 percent) with gross notional amounts greater than the 300 percent exposure limit were taxable bond funds. These funds represented 80 percent, or \$269 billion, of the \$338 billion of assets held by funds over the proposed 300 percent exposure limit. The ICI notes that these funds represent six percent of the industry-wide number and eight percent of the industry-wide assets of taxable bond funds.

Like the DERA White Paper, the ICI survey finds that the proposed portfolio exposure limits would have a disproportionate impact on alternative strategy funds. The ICI survey finds that 221 of the 471 funds (47 percent) with gross notional amounts exceeding the proposed 150 percent limit were alternative strategy funds. The funds represent 13 percent, or \$79 billion, of the \$613 billion in assets held by funds with gross notional exposures exceeding the proposed rule's 150 percent limit. The ICI notes that these funds exceeding the proposed limit represent 34 percent of the industry-wide number and 37 percent of the industry-wide assets of alternative strategy funds. The true impact on alternative strategy funds is likely to be greater, which could have been demonstrated with a higher survey response rate. The ICI survey shows that the subcategories of alternative strategy funds most affected by the proposed rule, in terms of assets, would be multialternative funds, inverse/leveraged funds, and managed futures funds.

The ICI also asked funds with gross notional exposures exceeding 150 percent of net assets to apply the VaR risk-reduction test from the proposed rule. With respect to the taxable bond funds category and the alternative strategy fund category, the survey shows inconsistencies in the results produced by the risk-reduction test. Several funds in these categories exceeded the 300 percent exposure limit but would have passed the VaR risk reduction test, thus showing that

the aggregate use of derivatives in these funds was risk reducing. Yet, these funds would be required to curtail their use of risk-reducing derivatives because their gross notional exposure exceeds the proposed 300 percent gross notional limit. This likely indicates that the 300 percent limit for risk reducing uses, is likely too binding. The Commission may choose to consider using a higher risk-based limit. In addition, some funds that were below the 300 percent limit and had passed the risk-reduction test had levels of return volatility, over the prior year, that exceeded the volatility levels of funds with higher notional exposures but had failed the proposed risk reduction test.

IV. Consideration of Reasonable Alternatives

The proposing release discusses some alternative approaches to implementing Rule 18f-4.⁴⁷ However, there are many alternative approaches that are not identified or discussed in the proposing release. Discussed below are additional alternatives that may be worthy of consideration by the Commission. These alternative approaches capture the spirit of the Commission's goal of protecting investors against excessively risky and leveraged positions but without the cost of harming investors otherwise excluded from responsible, welfare-improving, low-risk strategies.

Despite the limitations of gross notional as a measure of risk discussed above, a fixed gross notional limit such as the proposed limit of 150 percent may still be useful as a first prong that could be employed by funds that have only minimal or moderate use of derivatives and would like to take on derivative positions without conducting a more complicated risk analysis. The alternative suggestions described below might be considered as alternatives to the proposed 300 percent limit linked to the requirement that the entire portfolio of derivatives results in a reduction in VaR, or include a requirement to keep risk under reasonable levels.

⁴⁷ Proposing release, page 335. The Commission identifies three "significant alternatives" to Rule 18f-4, including: (1) A focus on minimum asset segregation requirements for derivatives transactions without additional limitations on leverage, (2) A requirement that a fund segregate liquid assets equal in value to the full amount of the potential obligations under the derivatives transactions, and (2) the European Union provisions related to UCITS funds and alternative investment funds.

A. Risk-adjusted Notional Amounts

One alternative approach is to allow for risk-adjusted notional amounts (i.e., notional haircuts) in order to produce measures that more consistently reflect market risk across underlying asset types, including the risk associated with duration of the underlying instruments. The adjusted notional amounts would then be applied against the gross notional limits. Such risk adjustments can satisfy the Commission's desire for simplicity by using a schedule of adjustments similar to what regulators already use with respect to the initial margin adjustments of notional amounts for non-cleared swap transactions or for risk haircuts in broker-dealer net capital rules.⁴⁸

Developing a risk-adjusted schedule of notional amounts needs to be anchored by an assumption about the baseline against which the risk of each asset type is compared. One possibility would be to use the notional amount for derivative products constructed with an unleveraged, diversified index of listed equities (such as the S&P 500) as a baseline.⁴⁹ Risk adjustments for other asset types could then be derived from the initial margin schedule since this schedule is based on estimates contained in the BIS approach for potential future exposure, reflecting an extreme but plausible estimate of changes in value of the instrument that is consistent with a one-tailed 99 percent confidence interval over a 10-day horizon.⁵⁰ The adjustment would take the form of a multiplier applied to the notional amount for each asset class. These risk adjustments are illustrative of an available set of risk adjustments used by other regulators. The SEC could conduct their own analysis to determine appropriate risk adjustments across asset types.

To construct the risk-adjusted notional amount schedule, a starting point could be to assign a baseline multiplier of 100 percent to equity products (that is, \$1 invested in equity products contributes \$1 to the notional exposure measure). Referring to the initial margin schedule, we see that the commodities asset type has the same risk-based initial margin as

⁴⁸ For example, see Table A of U.S. Prudential Regulators' Margin and Capital Requirements for Covered Swap Entities; Final Rule: <https://www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-28671.pdf> .

⁴⁹ Equity is generally understood to be among the most risky of the major asset classes, yet as far as I am aware, nothing in the statutes, Commission rules, or existing interpretations would indicate that investing in an unleveraged diversified portfolio of listed equities would be considered unduly speculative, or to create a level of risk inherently inappropriate to be held in the portfolio of a registered fund.

⁵⁰ See Appendix A at www.bis.org/publ/bcbs261.pdf .

equities (that is, \$1 invested in commodity derivatives contributes \$1 to the gross notional exposure measure). Therefore, the risk-adjusted notional amount for commodities would be the same as for the equity product baseline at 100 percent. A currency (FX) forward contract has, as reflected in the risk-based initial margin schedule, 6/15th the risk of the equity baseline, (or approximately 40 percent). Therefore, the risk-adjusted multiplier that would be applied to the notional amount for currency forward contracts would be 40 percent (that is a \$1 position in currency futures or forwards would contribute 40 cents to gross notional exposure). Other risk adjustments would be made accordingly and are displayed in Table 5 below.

Table 5: Possible Schedule for Risk-Based Multipliers of Notional Amounts

Asset Class	Duration	Risk-Based Initial Margin Requirements as a Percentage of Notional Amounts	Risk-Based Multiplier as a Percentage of Notional Amounts
Credit	0-2 years	2%	13%
	2-5 years	5%	33%
	5 years +	10%	67%
Commodity	Any	15%	100%
Equity	Any	15%	100%
FX (EUR, JPY, GBP)	Any	6%	40%
Cross Currency Swaps	0-2 years	1%	7%
	2-5 years	2%	13%
	5 years +	4%	27%
Interest Rate	0-2 years	1%	7%
	2-5 years	2%	13%
	5 years +	4%	27%
Other	Any	15%	100%

This risk-adjustment schedule achieves the objective of recognizing relative differences in the risk of different asset types.

The proposed rule notes that the DERA White Paper evaluated the notional exposure of Euribor and Eurodollar futures contracts by dividing the amount of the contract by four in order to reflect the three-month length of the underlying interest rate transaction. As proposed, the duration adjustments used by DERA would not be permitted under the proposed rule. The approach described above would allow for duration adjustments in the spirit of the DERA White

Paper but would derive these risk adjustments in a way that is consistent across all asset types and duration buckets.

B. Absolute VaR Limit

Given the shortcomings of using gross notional amounts to measure a fund's leverage and risk exposure, a true risk-based measure may be a reasonable alternative to consider. Value at risk (VaR) is one widely used portfolio risk measure aimed at accounting for correlated and offsetting risk exposures residing between positions within a portfolio. VaR measures expected loss, that may be exceeded, for a given level of statistical confidence. VaR has been applied in other contexts, such as measuring the market risk exposure of bank trading operations for purposes of setting risk-based capital requirements. For example, the 1996 Market Risk Amendment to the Basel II Capital Accord, outlines an approach for banks to use their internal VaR models for measuring market risk.⁵¹

The SEC proposing release discusses the possibility of an absolute VaR measure for derivatives exposures, mainly with respect to the European Union's Undertakings for Collective Investment in Transferable Securities Directive (UCITS) approach (addressed below) which includes two types of exposure measures based on VaR. The SEC expresses concern with an absolute VaR method that is based on historical trading conditions during the measurement period because the measure may change dramatically both from year to year and from periods of benign trading conditions to periods of stressed market conditions.⁵² The SEC states that a limitation based on an absolute VaR method could potentially allow a fund to obtain very substantial amounts of leveraged exposures that the fund could then be required to unwind during stressed market conditions, which could adversely affect the fund and its investors. However, for a fund to have "very substantial amounts of leveraged exposure" and a low VaR the exposures would have to be at least partially offsetting.⁵³ Capturing correlated and offsetting exposures within a portfolio is the essence of measuring portfolio risk.

⁵² Proposing release, page 346.

⁵³ Proposing release, page 346.

The SEC concerns are similar to concerns expressed by banking regulators in their application of VaR. To address these concerns, banking regulators have proposed the use of “stressed VaR,” which is a VaR calculation calibrated to a period of significant financial stress. Such an approach could be considered as an alternative approach for forming a risk-based limit on derivatives. The SEC’s concerns about consistency in the application of VaR and stressed VaR could be addressed through the use of third party vendors who could apply consistent measures across all funds. The SEC does ask a question for public comment on the merits of this approach.⁵⁴

C. Alternative Risk-Reduction Test

The proposed rule would permit a fund to enter into derivatives transactions with a notional amount limit of 300 percent of the value of the fund’s net assets if the fund meets a risk reduction test. Under this test, immediately after a fund entered into a senior securities transaction, the fund’s full portfolio VaR would have to be less than the fund’s securities-only VaR. A fund would be able to use the 300 percent risk-based exposure limit if its derivatives usage reduces, rather than magnifies, exposure as measured by VaR. If the fund fails to meet this risk-based test, that is, if the fund’s derivatives, in aggregate, generally would add to, rather than reduce, the fund’s exposure, then the fund would be required to comply with the 150 percent exposure-based limit.

As we have seen, the risk-based test as currently constructed cannot be practically applied by funds that obtain their investment exposures exclusively through derivatives transactions, and thus can be expected to have high derivatives exposures relative to net assets. These funds would not be subject to any relief from the exposure-based limit even if the funds are low-risk and are not using derivatives to leverage market risk. These funds, even when low-risk and beneficial to investors, would fail the risk-based exposure test because any notional amount of derivatives usage would fail to reduce the full-portfolio VaR below the VaR for the securities-only

⁵⁴ Proposing release, page 175.

component of the portfolio. For these funds, the securities-only component consists of cash and therefore has a VaR of approximately zero for that component.

An alternative way to implement the risk-reduction test is to introduce a stipulation that as long as the full portfolio (that is, securities plus derivatives) has an absolute VaR measure that is below some ceiling, e.g., less than 20 percent of the value of the fund's net assets, then the fund could use the risk-based notional limit (currently set at 300 percent of net assets).⁵⁵ VaR could be specified as it is currently in the proposed rule as using a 99 percent confidence level and a time horizon of not less than 10 and not more than 20 trading days.

Modifying the risk-reduction test in the way described above would be consistent with the objectives of the proposed rule. The modification would remove an impediment for funds that responsibly gain exposure to markets with derivative instruments in instances where the derivatives are more liquid than the products underlying those instruments. The approach would address the concern expressed in the proposing release about the difficulty in developing a suitably objective standard for these transactions, and for confirming compliance with any such standard.

D. The UCITS Approach

The SEC release includes a lengthy discussion of an approach to limiting fund exposures contained in guidelines of the Committee of European Securities Regulators (CESR) for funds subject to the European Union's Undertakings for Collective Investment in Transferable Securities (UCITS) directive. The UCITS approach is described in "Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS." Under the UCITS approach, funds are permitted to engage in derivatives transactions subject to compliance with one of two alternative methods to limit their exposure to derivatives: 1) the "commitment" approach; and 2) the VaR approach. The general contours of the UCITS approach appear to have served as a template for the SEC in developing their proposed approach.

⁵⁵ The use of a 20 percent VaR ceiling, if it was selected, would roughly correspond to the VaR of a portfolio of stocks in the S&P 500.

Under the UCITS commitment approach, a UCITS fund's net exposures from derivatives may not exceed 100 percent of the fund's net asset value. However, when calculating global exposure under the commitment approach, netting and hedging arrangements may be taken into account to reduce measured exposure under certain circumstances.

The commitment approach allows netting of derivatives transactions regardless of the derivatives' expiration dates, provided that the transactions are "concluded with the sole aim of eliminating the risks linked to the positions."⁵⁶

The commitment approach allows UCITS funds to take into account hedging arrangements when calculating exposure if they offset the risks linked to some assets and, in particular, if they comply with all of the following the criteria: 1) investment strategies that aim to generate a return should not be considered as hedging arrangements; 2) there should be a verifiable reduction of risk at the UCITS level; 3) the risks linked to financial derivatives instruments should be offset; 4) they should relate to the same asset class; and 5) they should be efficient in stressed market conditions.

Under the VaR approach, UCITS funds would measure potential losses due to market risk rather than using a notional exposure measure. When using the VaR approach to calculate exposure, a UCITS fund may use either an absolute VaR approach or a relative VaR approach. The absolute VaR approach limits the maximum VaR that a UCITS fund can have is limited to 20 percent of the fund's net assets. Under the relative VaR approach, the VaR of the portfolio cannot be greater than twice the VaR of an unleveraged reference portfolio.

In the discussion of the UCITS approach in the SEC release, the Commission addresses both the commitment approach and the VaR approach. With respect to the commitment approach, the Commission expresses concern with evaluating netting and hedging transactions beyond very strict netting arrangements for equal and opposite positions with identical contract specifications. In forming the exposure-based approach in the proposed rule, the SEC chose to not allow exposure calculations to account for hedging and netting arrangements beyond strict netting. Partially in recognition of the fact that the exposure measure in the proposed rule would

⁵⁶ Committee of European Securities Regulators, "CESR's Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS," April 2010, page 14.

be higher as a result of excluding hedging arrangements and many netting arrangements, the SEC selected a higher exposure-based limit (150 percent of net assets) than the limit selected in the UCITS commitment approach (100 percent of net assets).

However, the selection of a 150 percent exposure limit to offset the resulting effect of constraining exposure calculations by excluding risk-reducing hedging and netting transactions is not based on data. Instead, the limit was selected based on an intuition about allowing for “flexibility” in the uses of derivatives by funds. An alternative approach to relying on intuition would be for the Commission to gather data on the extent to which derivatives transactions are used for reducing exposure as opposed to magnifying it. A starting point for this analysis would be to gather data on the uses of derivatives by funds that would become available with the proposed Form N-PORT if it is adopted as part of the Investment Company Reporting Modernization proposal. Information from this form would be reported to the Commission, in a structured format, about portfolio holdings—including detailed information on a fund’s use of derivatives. In addition to using this data set, the Commission would have to gather information from funds on the risk-reducing uses of derivatives in order to properly calibrate an exposure limit if risk-reducing and netting transactions are excluded from the exposure calculation.

The SEC also addressed the VaR methods allowed in the UCITS approach. The SEC expressed concerns that a limitation based on an absolute VaR method could potentially allow a fund to obtain very substantial amounts of leveraged exposures that the fund could then be required to unwind during stressed market conditions, which could adversely affect the fund and its investors. The SEC also expressed concerns with the relative VaR approach stating that “we have not proposed this particular approach for several reasons, including concerns regarding difficulties in determining whether a reference index or benchmark is itself leveraged.”⁵⁷

As described in the sections above, the SEC could consider an alternative approach to involving “stressed VaR” to measure the risk-based level of derivatives exposure for a fund. Under stressed VaR, VaR is calculated in a way that is calibrated with stressed market conditions. If the Commission chooses to use a notional limit for its risk-based exposure limit, the SEC’s proposed risk reduction test could incorporate elements of the UCITS approach for the

⁵⁷ Proposing release, page 347.

risk-reduction test where an absolute VaR level would be used, not as an absolute limit, but to determine eligibility for using the 300 percent risk-based exposure test. Such a modification would remove an impediment for funds that responsibly gain exposure to markets with derivative instruments while also addressing the SEC's concern that a limitation based on an absolute VaR method could potentially allow a fund to obtain very substantial amounts of leveraged exposures.

It is worth noting that many fund complexes operate in both the U. S. and in Europe. For these funds, complying with two separate regimes designed to limit the use of derivatives raises their overall compliance costs. These compliance costs would be reduced if the U.S. and European regulatory regimes, with respect to the use of derivatives, were reconciled.

E. Alternative Duration Benchmark for Interest Rate Futures and Swaps

The proposing release asks:

“Should we consider permitting or requiring that the notional amounts for interest rate futures and swaps be adjusted so that they are calculated in terms of 10-year bond equivalents or make other duration adjustments to reflect the average duration of a fund that invests primarily in debt securities? Would this result in a better assessment of a fund's exposure to interest rate risk? Why or why not?” (Proposing release, page 89).

The goal of using duration adjustments is to account for one source of risk associated with interest rate futures and swaps. Although using such a measure would result in a better assessment of a fund's exposure to interest rate risk, it is not clear that using 10-year bond equivalents is the appropriate benchmark. If the Commission were to seek a benchmark calibrated to the risk of an unlevered, well-diversified equity index, such as what I have used in constructing Table 5, a longer-duration bond may serve as a better benchmark.

As an approximate guide to choosing a benchmark I have examined the initial margin levels (as a percent of notional) for long-term bond futures contracts and equity contracts listed at the Chicago Mercantile Exchange (CME). The initial margin levels are set by the exchange

using a risk-based approach called SPAN⁵⁸, so that these levels provide an approximate guide to the relative risk of an equity index contract to contracts on 10-year bonds and longer-term bonds.⁵⁹ Table 6 describes these relative risk-based measures. Reviewing these risk-based margin levels shows that a 10-year Treasury bond futures contract has about one-quarter of the risk as compare to an equity index contract such as the S&P 500 e-mini futures contract. Even an ultra-long bond futures contract (with underlying bonds having at least 25 years of remaining maturity) reflects only a portion of the risk associated with an equity index contract.

Table 6: Relative Risk Measures of the S&P 500 and Treasury Futures

	2011–2015			
	Volatility	Max 1-Day Loss	Max 10-Day Loss	Max 20-Day Loss
S&P 500	15.5%	-6.66%	-16.30%	-16.47%
30 Year US Treasury Futures	10.1%	-2.56%	-5.93%	-7.03%
10 Year US Treasury Futures	5.1%	-1.35%	-2.80%	-3.94%

	2005–2015			
	Volatility	Max 1-Day Loss	Max 10-Day Loss	Max 20-Day Loss
S&P 500	20.1%	-9.03%	-25.87%	-28.16%
30 Year US Treasury Futures	10.4%	-4.21%	-7.61%	-10.40%
10 Year US Treasury Futures	6.1%	-2.40%	-4.18%	-5.49%

Instead of using a 10-year bond equivalent duration as a benchmark for adjusting notional amounts for interest rate derivatives, the Commission could apply risk adjustments for notional

⁵⁸ SPAN stands for “Standard Portfolio Analysis of Risk.” Documentation of this approach can be found at: <http://www.cmegroup.com/clearing/span-methodology.html> .

⁵⁹ Found at: http://www.cmegroup.com/trading/equity-index/us-index/e-mini-sandp500_performance_bonds.html#pageNumber=1&sortField=exchange&sortAsc=true§or=EQUITY+INDEX&exchange=CME (for equities) and at: http://www.cmegroup.com/trading/interest-rates/us-treasury/ultra-t-bond_performance_bonds.html#pageNumber=1&sortField=volScanMaintenanceRate&sortAsc=false§or=INTEREST+RATES&exchange=CBT (for bonds).

amounts for all asset types and for all fund types. These adjustments could be of the form described in Table 5 and discussed above.

Duration adjustments reflect only one source of risk for one type of asset. Risk adjustments could also be made for other types of risks and other types of assets. Failing to account for all risks and all asset types can create perverse incentives for funds to substitute between instrument types not based on their true economic characteristics but instead based on artificial distinctions used to measure gross notional amounts. Adjusting notional amounts to account for all risks and for all asset types can eliminate these potentially perverse incentives.

F. Alternative Timing of Exposure Measurement

The proposed rule would require a fund relying on the proposed exposure-based limits to operate so that its aggregate exposure would be measured immediately after entering into any senior securities transaction. Such a real-time requirement will likely be operationally difficult (and costly) for many funds to implement, especially for funds operating across several trading centers or for funds applying the risk-based exposure limit. The SEC may wish to consider, as an alternative, administering limits on a weekly, monthly, or even quarterly basis. This alternative would achieve the Commission's broad goal of limiting exposure, but at less cost to funds (and ultimately cost to the funds' investors). In addition, the Commission may wish to consider allowing a certain number of exceptions for funds breaching the exposure limits to allow funds additional flexibility. Such a regime would resemble the method used by banking regulators in administering risk-based capital requirements where some exceptions to bank VaR limits (as measured by back-testing results) are permitted before a penalty, in terms of a higher capital charge, is imposed.⁶⁰

⁶⁰ For a description of this approach, see Darryll Hendricks and Beverly Hirtle, "Bank Capital Requirements for Market Risk: The Internal Models Approach," Federal Reserve Bank of New York Economic Policy Review, December 1997.

V. Incentives Created by the Proposed Rule

A complete economic analysis of the proposed rule should include a robust analysis of how market participants are likely to change their actions in response to the rule, and as far as possible to anticipate and explore possible unintended consequences, especially any that might undermine the goals of the Commission. As acknowledged in the proposing release, some funds (which based on the ICI survey sample, is 473 out of the 6,661 funds), currently operate outside of the parameters of the proposed rule, and as demonstrated above, the funds most likely affected tend to be in certain categories of taxable bond funds (such as intermediate term bond funds) and alternative strategy funds (such as multialternative funds). If the rule were to be adopted as proposed, these funds would either have to alter their strategies in such a way as to bring them in line with the rule, or would have to reorganize in a way that would permit them to operate outside of the jurisdiction of the Act.

Of course, one possibility is that a fund currently operating with notional values above the proposed limits may seek to comply with the rule by shrinking the exposure of the fund down to within the proposed limits. However, shrinking the fund exposure will proportionally reduce the expected returns on the fund, and impose a direct cost on investors. Specifically, shrinking the fund is likely to deprive investors of investment opportunities, contract the investor's "efficient frontier," and result in the investor achieving lower returns for the same amount of risk (or greater risk for the same return).⁶¹ This represents a real cost to investors, and these costs will make these funds less attractive or less useful to investors. It is reasonable to assume that when faced with compliance with this rule, fund managers will not necessarily respond by simply shrinking their exposures *pro rata*, as that would incur the maximum penalty for the funds' investors. To the extent it is possible for fund managers to alter the structure or strategy of the fund in such a way as to continue to offer value to investors within the boundaries of the rule, it is reasonable to expect them to seek to do so.

The proposing release in a few instances recognizes that the proposed rule might affect fund behavior. The few instances mentioned in the proposing release constitute an incomplete

⁶¹ See William F. Sharpe and Gordon J. Alexander, *Investments*, Fourth Edition, Englewood Cliffs, NJ Prentice Hall, 1990, page 155.

analysis of how the proposed rule might alter incentives, affect behavior of funds and investors, and result in unintended consequences that may be inconsistent with investor protection and the other goals of the proposed rule. In this section, I provide examples of how the rule as proposed may have unintended consequences.

First, as described in section A below, the proposed limits represent a significantly more binding constraint for funds employing low-risk derivatives such as Eurodollar futures or currency futures than funds using higher-risk contracts such as equity derivatives. Thus, the rule is likely to discourage the use of low-risk strategies and encourage the use of higher-risk strategies, particular within multi-strategy funds.

Second, as discussed in section B below, funds facing a binding constraint under the proposed rule will likely respond by substituting derivatives positions with positions in the underlying securities or commodities. Because the instruments underlying derivatives positions are generally less liquid than the equivalent derivatives market, the incentives to use the underlying securities or commodities may lead to an overall reduction in portfolio liquidity and make it more difficult for the fund to meet redemption requests, clearly at odds with the Commission's liquidity objectives and investor protection.

Third, as described in subsection C below, the rule will create an incentive for funds to take on risk exposure through structured products or other instruments that do not count under the proposed rule as derivatives, although doing so may add significant costs to the fund, decrease the liquidity of the fund, and expose it to other risks such as counterparty risks.

A. The Proposed Rule Discourages Low-Risk Fixed-Income and Currency Positions

As discussed above, certain Fixed Income derivatives, such as Eurodollar Futures and treasury bond futures, are highly liquid and involve far less risk per dollar of notional "exposure" than other categories of derivatives such as equity and commodity contracts. In addition, these derivative instruments are generally more liquid than the underlying products.⁶² For example, as

⁶² For a discussion of the relative liquidity of the cash treasury market vs. the treasury futures market see: <http://www.bloomberg.com/news/articles/2016-02-26/jpmorgan-s-flash-rally-theory-contains-message-on-today-s-market> .

discussed in section III above, the market risk associated with a position in short-term Eurodollar futures is on the order of three percent as large as the risk of a diversified portfolio of stocks with no leverage. Thus, a fund may have a position in Eurodollar futures with a notional value in excess of the 150 percent or 300 percent limits in the proposed rule and yet be following a safe, conservative investment strategy involving only a small fraction of the risk of an unleveraged portfolio in equities or commodities.

Because the risk (and the corresponding expected return) associated with certain fixed income instruments are so low, the use of leverage through derivatives may be a desirable and efficient means for a fund to offer investors an economically meaningful (and responsible) amount of exposure to these fixed income strategies. If the strategies involve derivative positions in extremely low-volatility contracts, a strategy involving relatively high notional values may still be a low-risk strategy. A number of specialized fixed income funds and multi-strategy funds have been offering low-risk fixed-income strategies to the market, in some cases using notional exposures well in excess of the limits proposed in the rule, but because the underlying instruments have such low risk, the high notional values translate into a modest exposure to market risk. As shown in Table 3 above, these strategies may have market risk significantly lower than unleveraged strategies in other asset classes that are permitted under the proposed rule. The data suggest that such strategies do not raise concerns that the funds are being used as a vehicle for extreme speculation, that the funds may face risks of large losses, or that the funds may have difficulty meeting redemptions.

The proposed rule imposes a limit on the amount of notional value held in derivative instruments (and financing transactions) regardless of whether the total market risk exposure associated with the holdings is high or low. The funds that would be most affected by the proposed limits are the funds that rely most heavily on high levels of notional value to implement their strategies, without regard to whether the high notional value actually results in high risk. My review of the data in section III above is consistent with the contention that the categories of funds with the highest notional values tend to be those that utilize derivatives in low-risk fixed-income and currency markets. These are not highly speculative or highly risky funds, but rather are funds that use derivatives to give investors the opportunity to expand their investment

opportunity set, allowing them to improve their risk/return tradeoff by increasing their potential to diversify across different markets and different types of strategies.

There are various ways the proposed rule could result in investors holding riskier or less diversified portfolios. To the extent that the proposed rule induces funds that use derivatives in connection with low-risk strategies to go out of business, or to cease offering the fund to the public, or move outside of the jurisdiction of the Act, this will decrease the set of low-risk, diversification-enhancing investments available to retail investors, resulting in lower returns and/or higher risk for these investors.

Alternatively, instead of deregistering as 40 Act funds, managed futures and multi-strategy funds may seek to comply with the proposed rule by rebalancing their portfolios away from low-risk asset classes (which often employ higher notional amounts) toward higher-risk asset classes. To illustrate, consider a multi-strategy fund that currently follows strategies in both fixed-income and equity markets, and which seeks to achieve a balance between the risk exposures of different asset classes. Multi-strategy funds may wish to balance risks in this way so that the performance of the fund is not dominated by the performance of the highest-volatility asset classes. To achieve such a balance, the fund would generally need to take on a larger notional exposure to the low-volatility asset classes and a lower notional exposure to the high-volatility asset classes. Under the proposed rule, however, it may not be feasible for a multi-strategy fund to continue balancing risks in this manner. For example, a fund may hold unleveraged exposure to a portfolio of equities and a high notional value of derivatives on low-risk fixed income securities. If such a fund is not able to comply with the notional limit under the proposed rule, the fund could come into compliance by investing more in the high-risk equity portfolio and less in the low-risk fixed income portfolio. The net effect would be to increase the risk of the fund, decrease the fund's liquidity, decrease the diversification within the fund, and potentially increase the correlation of the fund's holdings with equities or other risky assets, and reduce the diversifying benefits of the funds to investor portfolios.

In summary, by creating a hard limit on the total gross notional value of derivatives permitted in a fund's portfolio, the proposed rule makes notional value (from the point of view of a fund manager or an investor) into a scarce resource. The natural response is to allocate a scarce resource towards its highest value use. Thus, the rule creates a direct incentive for funds such as

managed futures funds, and multialternative funds to shift their derivative exposures away from low-risk asset classes, where the marginal benefit of additional exposure is low, toward higher-risk asset classes. In this manner, the rule is likely to push alternative funds toward riskier strategies, a result that does not seem to comport with the stated objective of the rule. However, as shown above, there are alternative ways to construct the rule so that costs to funds and investors are reduced, and the Commission's goals are achieved.

B. The Proposed Rule Encourages Substitution Away From Derivatives Toward Purchased Assets, Regardless of Liquidity Concerns

The proposed rule places a limit on the total notional value in derivative instruments, financing transactions, and other obligations by RICs, but fully purchased positions do not count toward the limit. This is understandable since the focus of the rule is to limit the extent to which a fund can take on positions that will cause it to have future payment obligations. However, the result of this design is to give disparate regulatory treatment for economically equivalent positions—derivative positions count against the limit while economically equivalent purchased positions do not. When a fund finds itself constrained by the rule's limits on notional value, one natural response might be for the fund to shift derivative positions into otherwise equivalent purchased positions. Depending on the market, the underlying asset market might be more or less liquid than the derivatives market. If situations where the underlying asset market is significantly less liquid than the derivatives market, the rule may create incentives for the fund to move into a less liquid portfolio.

It is commonly understood, for example, that the market for Credit Default Swaps (CDS) on corporate bond issues is generally more liquid than the market for the underlying corporate bonds.⁶³ Consider a fund that replicates a portfolio of corporate bonds by entering into U.S. Treasury futures with notional value amounting to 100 percent of the fund's net assets, and selling protection on each selected corporate issue through a CDS contract, also having notional

⁶³ Gopa Biswas, Stanislava Nikolova, Christof W. Stahel, "The Transaction Costs of Trading Corporate Credit," Working Paper, Division of Economic and Risk Analysis, U. S. Securities and Exchange Commission, March 1, 2015. Available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2532805 .

values amounting to 100 percent of assets. Economically, this has essentially the same risk profile as holding a portfolio of corporate bonds. Under the proposed rule, this fund would be at 200 percent notional, and would exceed the limit. The fund could come into compliance by moving out of the derivatives and purchasing the corporate bonds outright. Potentially, doing so would significantly decrease the liquidity of the fund (primarily by reducing the amount of cash available) increase transaction costs (making it more difficult for the fund to liquidate assets to meet redemptions) and place the fund at greater risk of experiencing a run.

C. The Proposed Rules Encourages Substitution Toward Other, More Risky Leveraged Assets

In the previous section, I discussed how the proposed rule would create an incentive for funds to substitute away from derivative positions toward economically equivalent purchased positions, regardless of whether doing so would have an adverse impact on the fund's liquidity, because purchased positions do not represent future payment obligations and thus do not count toward the exposure limit in the proposed rule.

Likewise, the rule would create an incentive for funds following leveraged strategies to move their portfolio into various other types of assets that can be used to increase exposure but which do not generate future obligations and do not count against the limit. While on the surface such substitution may satisfy the rule's immediate goal of reducing future payment obligations, it may do so in a manner that increases the fund's transaction costs, decreases the fund's liquidity, or exposes the fund to other types of risk.

As a simple example, a fund that wishes to achieve exposure to a particular asset can do so using a futures contract, a forward contract, or a total return swap. Under the proposed rule, all of the instruments would count against the fund's notional value limit. Alternatively, the fund can take on exposure by purchasing an in-the-money call option (for positive exposure) or an in-the-money put option (for negative exposure). Since these are pre-paid positions, they do not generate future obligations and do not count against the notional limit. Thus, for a fund facing a binding constraint on its notional limit, the fund would have the incentive to achieve leverage through purchased option positions rather than other types of derivatives. Funds that are constrained by the limits of the proposed rule may also respond to incentives to gain market

exposure with exchange-traded notes (ETNs) instead of derivatives.⁶⁴ ETNs are unsecured debt obligations that allow investors to gain exposure to different types of underlying assets. The consequence of such migration to ETNs is that these products are likely to be costlier for funds to use than derivative instruments with similar exposure. In addition, funds using ETNs take on credit risk tied to the ETN's issuer. This could potentially increase systemic risk concerns as the failure of an ETN's issuer could cause losses for investors in funds using those ETNs.

The limits on derivatives from the proposed rule would create incentives for funds to allocate their limited, and therefore scarce, derivatives notional exposure to instruments that offer higher exposure per unit notional amount. For example, a Eurodollar futures contract has \$1 million of notional amount. A fund trying to gain exposure under the constraints of the proposed rule may seek out derivatives that would provide greater market exposure for the same notional amount. A riskier product, such as a first-to-default credit swap, may provide greater exposure for an equivalent notional amount of \$1 million.

D. The Proposed Rule May Impact the Ability of Funds to Use Derivatives to Manage Liquidations

In addition to using derivative instruments as a vehicle for implementing a fund's ongoing investment strategies, funds can also use derivatives as a tool for minimizing the transaction costs associated with the creation and redemption of fund shares, and for minimizing the potential dilutive impact of forced liquidation of assets due to redemptions.

For most open-end mutual funds, excluding Exchange-Traded Funds, the vast majority of purchase and redemption transactions are done in cash. That is, investors send cash to the fund to create new shares, and investors receive cash upon redeeming their existing shares. As a fund's assets under management grows or shrinks on a daily basis in response to share purchases and redemptions, the fund will often need to execute trades in the market in order to take new investment positions with incoming cash or to liquidate existing positions to obtain cash to meet

⁶⁴ See "New SEC Rule Proposals Aimed at ETFs May Chase Investors Into ETNs," by Eric Balchunas, BloombergBusiness, February 9, 2016. Available at <http://www.bloomberg.com/news/articles/2016-02-09/new-sec-rule-proposals-aimed-at-etfs-may-chase-investors-into-etns> .

redemptions. Funds have a limited amount of time to come up with the cash to meet redemptions.⁶⁵ Buy-and-hold fund shareholders may face harm in the form of dilution, to the extent that the selling induced by redemptions is sufficiently large to have a short-term impact on the market price of the asset, in particular if it causes the fund to sell assets below fair market value.

One way that funds can reduce the potential harm to shareholders resulting from forced liquidations is to hold cash in their portfolio. Cash in the portfolio gives funds a buffer so that they can meet a certain amount of redemption requests immediately without having to liquidate any assets. However, holding a significant amount of cash in the portfolio may mean that a fund is not fully invested in its strategies, and may undermine the ability of the fund to meet its stated investment objectives. Cash in the portfolio held purely for liquidity reasons may create a drag on the performance of the fund (called “cash drag”). A fund can address this problem by using derivative instruments to obtain part of its market exposure, or exposure to meeting the performance of a benchmark. A fund that holds a significant portion of its portfolio in cash for liquidity management purposes can achieve its full desired market exposure through derivatives without cash drag. For example, a fund that seeks to track the performance of a particular stock benchmark index can do so by investing 100 percent of its assets in the component stocks in the index, but then would have to engage in frequent trading every time investors create or redeem shares. If the same fund were to invest, say, 90 percent of its assets in the stock portfolio and obtain the other 10 percent exposure using futures or total return swaps, this would allow them a substantial buffer of cash to meet redemption requests and give them more time to sell the portfolio assets. Similarly, when a fund receives cash inflows from new fund purchases, it may wish to invest the money quickly in the fund's portfolio, to avoid having the uninvested cash be a drag on the portfolio. Derivative instruments such as futures or swaps may be a lower-cost way for the fund to take on investment exposure quickly, with a minimum of transaction costs.

A fund that otherwise does not employ derivatives may wish to use derivatives solely for purposes of managing redemption risk. For such a fund, it may be that the 150 percent portfolio

⁶⁵ Mutual fund trades done through a broker are expected to settle in three days, and rule 22(e) under the Act prohibits funds from suspending redemptions for more than seven days, subject to certain exceptions.

limit is unlikely to become a binding constraint, and the proposed rule might not represent a significant restriction. But funds that are already using derivatives as part of their normal investment strategy may also wish to use derivatives to manage the liquidity risks associated with unexpected cash inflows and redemptions. The proposed rule would impose a strict limit on derivative notional value, that must be assessed on a transaction-by-transaction basis. Thus, a fund that is already close to the 150 percent limit might find itself unable to use short-term derivative transactions for liquidity management purposes, even in situations where doing so would clearly lower transaction costs, and benefit investors.

VI. The Proposing Release Does Not Adequately Describe the Costs of the Proposed Rule

The key elements of a high-quality economic analysis, outlined in a 2012 memorandum from the Commission's economists and Office of General Counsel [cite] include the following: "(1) identifying the need for the rulemaking and explaining how the proposed rule will meet that need; (2) articulating the appropriate economic baseline against which to measure the proposed rule's likely economic impact; (3) identifying and evaluating reasonable alternatives to the proposed regulatory approach; and (4) assessing the potential economic impact of the proposed rule and reasonable alternatives by seeking and considering the best available evidence of the likely quantitative and qualitative costs and benefits of each.

In light of this framework, in this section I review the economic analysis included in the proposing release that seeks to evaluate the potential impact of the proposed rule. As I show below, the economic analysis presented in the proposing release is incomplete. Most critically, it does not fully consider the implications of the rule for investor protection, does not fully describe the costs of the rule, and does not adequately consider the benefits and costs of the rule compared to other reasonable alternative rules that could achieve the stated goal, without the many unintended consequences described above, likely at a lower cost. For these reasons, the economic analysis in the proposing release does not provide a sufficient basis for the Commission to make an informed decision on whether to adopt the rule in the proposed form or whether there are alternatives that can achieve the same goals more effectively and efficiently.

In assessing the costs of the proposed rule and alternatives, it is important for a high-quality economic analysis to go beyond considering only the direct costs of implementing and complying with the rule. Other relevant factors to consider are how market participants are likely to change their behavior in response to the rule, and what the possible unintended consequences of the rule are likely to be. A proper cost-benefit analysis should seek to evaluate the extent to which changes in behavior by market participants in response to the rule might reduce the effectiveness of the rule at achieving the desired regulatory goals, or undermine the Commission's mission of investor protection, maintaining fair and orderly markets, and promoting capital formation. While the proposing release does mention some possible ways in which market participants could react to the rule, it does not follow this line of inquiry to its logical conclusion and investigate the extent to which such changes could result in greater risks for funds and investors.

A. Identifying the Need for Rulemaking

The proposing release does a good job explaining the need for codifying rules in an area that has for many years been regulated by interpretations and no-action letters, and for coming up with a modernized, unified framework for implementing the Commission's interpretation of Section 18.

However, the proposing release does not provide any analysis or evidence supporting the idea that RICs have been used as vehicles for undue speculation, or that the magnitude of derivatives positions taken by funds under the existing framework have been large enough to create Section 18 concerns. As discussed, the release mentions the Amaranth matter involving a private fund not subject to the limitations under the Act, but does not give any examples of actual RICs that have had any liquidity problems as a result of excessive risk, or explain why the liquidity requirements, concentration limits for diversified funds, and other protections of the Act are insufficient to protect investors from the risks of an Amaranth-style blow-up. Moreover, it is not clear which, if any, of the examples of substantial derivative losses cited by the SEC would have been prevented by the limits contained in the proposed rule.

Although the proposing release does recognize that some RICs have gross notional values well in excess of the proposed limits of 150 percent and 300 percent, it does not provide any

analysis of how large the resulting risk exposure in those particular funds is, nor does it give any examples of problems resulting from the existing guidance being too permissive. The release does not explain how the Commission determined that 150 percent and 300 percent were the appropriate threshold levels.

In short, the economic analysis in the proposing release explains the need for having a rule, but does not explain why the rule needs to be significantly more restrictive than the status quo.

B. The Proposing Release Ignores Significant Costs

The proposing release addresses certain categories of out-of-pocket costs, such as the operational costs of implementing controls or systems for complying with the rule. For example, the release estimates that there are one-time costs ranging from \$20,000 to \$150,000 per fund, attributable to developing policies and procedures, implementing systems modifications, and preparing training materials for affected staff. At certain places in the proposing release, the SEC recognizes that the rule might have other effects such as causing some funds to change their strategies or to de-register. But the release does not characterize these as costs in its cost-benefit analysis. It does not attempt to quantify these costs, or even evaluate whether they are likely to be significant. By focusing on the relatively insignificant administrative costs and ignoring the costs imposed on investors by the rule's substantive restrictions, the proposing release gives the impression that this is just a minor rule that at most will impose minor administrative costs on funds.

The reality is that over the years, under the Commission's existing guidance, an entire industry of Alternative Strategy funds and non-traditional bond funds has developed. As documented in the DERA study, this sector has thrived, enjoying significant growth in recent years. As this industry is relatively young, it is likely that the Alternative Strategy sector has not yet reached its full potential. Without the proposed rule, it is possible if not likely the sector would continue to grow in the future. Given the extensive use of derivatives by funds in this sector, the proposed rule may have a profound impact on this industry and its investors.

Alternative Strategy funds do not typically engage in rampant speculation or take extreme market risk. Rather, this category of funds seeks to offer public investors access to investment

strategies that have low correlation with other asset classes, and therefore can be used to improve an investor's "efficient frontier" of investment opportunities.

Based on the DERA study and my own review, it appears that the limits in the proposed rule will significantly impact some or many of the funds in this category. To the extent that the proposed rule induces funds to de-register as 1940 Act funds or alter their strategies in a way that reduces the benefits to investors, the rule imposes real cost to investors, manifest in the form of lower returns and/or higher risk.

This is not an ethereal cost that cannot be quantified. There are well-known techniques in financial economics dating back to the 1950s and 1960s that can be used for modeling an investor's opportunity set in terms of risk and return. A relatively straightforward application of mean-variance theory could be used to estimate the impact of prohibiting an investor from investing in a particular asset class or group of funds on the investor's opportunity set. If Alternative Strategy funds improve an investor's opportunity set and the proposed rule makes those funds unavailable to investors, the result is the investor will have a lower expected return for the same amount of risk, or a higher amount of risk for the same return. This represents a real cost to current investors, and all future investors who would otherwise have invested in these funds.

C. Does the Proposed Rule Protect Investors?

Because it fails to consider in depth the likely unintended consequences of the rule (some of which are addressed in Section V above), the proposing release does not adequately evaluate whether on balance the proposed rule promotes or undermines the Commission's investor protection mandate. For example, the proposing release suggests that one benefit of the rule may be to protect investors against large losses in funds that may result from funds that use derivative instruments to take highly leveraged speculative positions.⁶⁶ But the proposing release does not consider whether the funds currently using derivatives are following highly speculative strategies, or whether the rule would in fact create an incentive for funds to follow riskier

⁶⁶ Proposing release, page 121 and elsewhere.

strategies or to follow the same strategies using less liquid instruments, as described above. The proposing release does not address the extent to which the funds that currently use derivatives in excess of the proposed limits are in fact doing so in a way that exposes investors to highly speculative positions, nor does it provide a meaningful framework for evaluating at what point a leveraged position is sufficiently risky that the presumed benefits of protecting investors from taking a risky position outweigh the costs of depriving investors of an investment opportunity.

If the desire to protect investors from taking highly risky positions is a goal of the proposed rule, then the rule's design is not well suited to achieve that goal. As described above, the proposed rule is more likely to act as a binding constraint on funds that use Eurodollar futures, Treasury futures, or currency futures or forwards in connection with relatively low-risk strategies than it is to restrict highly risky positions in riskier asset classes. A quintessential example of a strategy explicitly designed to achieve increased exposure to market risk through derivatives are leveraged (and inverse) ETFs that use instruments such as total return swaps and index futures to take on risk exposure equal to 200 percent of an equity index such as the S&P 500. But the proposed rule permits such leveraged ETFs, inasmuch as a 200 percent exposure could be obtained by investing 50 percent of the portfolio in purchased stocks and taking 150 percent exposure with swaps or futures, or alternatively, similar leveraged exposure could be obtained through other instruments such as index-linked notes or purchased options that do not generate future payment obligations and do not count against the proposed limit.

D. The Proposing Release Underestimates the Cost of the Rule

In describing the costs of the rule, the proposing release emphasizes and reiterates multiple times the staff's conclusion that the majority of RICs do not use derivatives (or their use of derivatives is *de minimis*) and they would not likely be affected by the rule. To the extent that some (or many) funds are not much affected by the proposed rule, this suggests that both the costs and the benefits of the proposed rule are likely to be insignificant for unaffected funds and their investors.

Of course, it is useful for the Commission to understand which funds are most and least likely to be affected by the proposed rule. But ultimately, the fact that some funds are unaffected is irrelevant to the key questions that economic analysis in a rulemaking context is designed to

address. In every rulemaking, there are likely to be some parties outside the scope of the proposed rule that are unaffected. The goal of economic analysis in rulemaking is not to count the number of parties that are not affected, but to focus on the parties that might be affected, and understand as completely as possible how they might be affected.

The proposing release refers to a study by the staff of the Commission's Division of Economic and Risk Analysis (DERA) that sought to estimate the number of funds potentially affected by the rule by examining a sample of 10 percent of funds, representing a cross section drawn from all categories of funds.

The sampling technique implemented by DERA did provide some useful information to the Commission. For example, it documented the fact that certain categories of funds tend to use derivative instruments, short selling strategies, and financing transactions substantially more than others. However, the design of this analysis is not well suited to obtain an accurate estimate of the extent to which funds and their investors would be affected by the rule, in the sense that their investment strategy would likely be affected by the limits in the proposed rule. The analysis is based on a single snapshot of the portfolio holdings of each sampled fund, as disclosed in their SEC filings in 2014. The use of derivatives, short selling, and other positions affected by the proposed rule is likely to vary over time for any given fund. The proposed rule, which would be implemented on a transaction-by-transaction basis, would limit funds from ever exceeding the limit, not just going over the limit at the end of a quarter or at the end of a week. Thus, the relevant measure for evaluating whether a fund would be constrained by the limit is the maximum notional position held over time, not the snapshot on a single date. The level of derivatives positions held at the end of a reporting period must on average be lower (and by definition cannot be higher) than the maximum position held over the quarter. Thus, statistics based on a single snapshot, as used in the DERA White Paper, must underestimate the number of funds that use derivatives and the number of funds that sometimes take on derivative positions large enough to be constrained by the proposed rule. In addition, the DERA White Paper does not reflect the sizable increase in assets held by alternative strategy funds during 2015.

It should be noted that if a fund uses derivative instruments but does not typically use them with notional values as large as the proposed 150 percent limit, it does not mean the fund's strategy would not be affected by the rule. The flexibility to take on derivative positions larger

than the 150 percent limit when needed can be a valuable management option for a fund. For example, a fund manager may typically hold a portfolio employing derivative instruments with notional value below the 150 percent limit, but from time to time go above that limit to take advantage of an investment opportunity or to respond to immediate needs. This flexibility can be valuable for a fund in achieving its investment objectives.

VII. Conclusion

This White Paper provides data and economic analysis to assist the Commission in its deliberations with respect to proposed Rule 18f-4. The data and analysis presented above suggests that Rule 18f-4 as proposed may not be the most efficient or effective way for the Commission to achieve its regulatory goals of protecting investors and limiting the extent to which RICs can take leveraged exposure to market risks. The rule as proposed potentially harms investors by placing binding constraints on funds that are following fundamentally safe strategies that are used to enhance the risk/return tradeoff for conservative investors in a reasonable, responsible way.

In addition, the proposed rule is likely to have the unintended consequence of inducing certain types of funds to follow riskier strategies, to shift their usage of derivative instruments from lower-risk to higher-risk asset classes, and to take on risk exposures using less liquid instruments.

Alternative approaches that take risk into account can achieve the Commission's goal of curtailing undue speculation and leverage in investment companies without depriving investors of the benefits of efficient access to low-volatility, low-correlation strategies achievable through the responsible use of derivative instruments.

The proposing release does not adequately describe the costs of the proposed rule. The number of funds affected by the proposal is larger than contemplated in the cost benefit analysis in the proposal, and the impact of the rule falls disproportionately on investors in certain categories of funds such as intermediate term bond funds, nontraditional bond funds, managed futures funds, and multialternative funds. The proposing release does not attempt to estimate or even recognize an important component of costs, namely the cost to investors of being excluded

from investing in certain funds or categories of funds as a result of the restrictions of the proposed rule.

Appendix A

Morningstar Fund Categories

Category	Description
Managed Futures	"These funds primarily trade liquid global futures, options, swaps, and foreign exchange contracts, both listed and over-the-counter. A majority of these funds follow trend-following, price-momentum strategies. Other strategies included in this category are systematic meanreversion, discretionary global macro strategies, commodity index tracking, and other futures strategies. More than 60% of the fund's exposure is invested through derivative securities. These funds obtain exposure primarily through derivatives; the holdings are largely cash instruments."
Market Neutral	"These funds attempt to reduce systematic risk created by factors such as exposures to sectors, market-cap ranges, investment styles, currencies, and/or countries. They try to achieve this by matching short positions within each area against long positions. These strategies are often managed as beta-neutral, dollar-neutral, or sector-neutral. A distinguishing feature of funds in this category is that they typically have low beta exposures (< 0.3 in absolute value) to market indexes such as MSCI World. In attempting to reduce systematic risk, these funds put the emphasis on issue selection, with profits dependent on their ability to sell short and buy long the correct securities."
Multicurrency	"Currency portfolios invest in multiple currencies through the use of short-term money market instruments; derivative instruments including and not limited to forward currency contracts, index swaps, and options; and cash deposits."
Multialternative	"These funds offer investors exposure to several different alternative investment tactics. Funds in this category have a majority of their assets exposed to alternative strategies. An investor's exposure to different tactics may change slightly over time in response to market movements. Funds in this category include both funds with static allocations to alternative strategies and funds tactically allocating among alternative strategies and asset classes. The gross short exposure is greater than 20%."
Long-Short Equity	"Long-short portfolios hold sizable stakes in both long and short positions in equities and related derivatives. Some funds that fall into this category will shift their exposure to long and short positions depending on their macro outlook or the opportunities they uncover through bottom-up research. Some funds may simply hedge long stock positions through exchange-traded funds or derivatives. At least 75% of the assets are in equity securities or derivatives."
Nontraditional Bond	"The Nontraditional Bond category contains funds that pursue strategies divergent in one or more ways from conventional practice in the broader bond-fund universe. Many funds in this group describe themselves as "absolute return" portfolios, which seek to avoid losses and produce returns uncorrelated with the overall bond market; they employ a variety of methods to achieve those aims. Another large subset are self-described "unconstrained" portfolios that have more flexibility to invest tactically across a wide swath of individual sectors, including high-yield and foreign debt, and typically with very large allocations. Funds in the latter group typically have broad freedom to manage interest-rate sensitivity, but attempt to tactically manage those exposures in order to minimize volatility. The category is also home to a subset of portfolios that attempt to minimize volatility by maintaining short or ultra-short duration portfolios, but explicitly court significant credit and foreign bond market risk in order to generate high returns. Funds within this category often will use credit default swaps and other fixed income derivatives to a significant level within their portfolios."

Source: *The Morningstar Category Classifications*. Morningstar, 4/30/2014.

Appendix B

Obligation Positions of the Largest Alternative and Nontraditional Bond Funds

Fund	Futures ^[1]	Swaps ^[2]	FX Forwards ^[3]	Written Options ^[4]	Short Positions	Repurchase Agreements ^[5]	Negative Cash Positions/ Borrowing	Complex Derivatives
Managed Futures								
AQR Managed Futures Strategy I ^[6]	✓	✓	✓					
Natixis ASG Managed Futures Strategy Y	✓		✓					
Catalyst Hedged Futures Strategy I	✓							
Market Neutral								
Merger Institutional		✓	✓	✓	✓			
Calamos Market Neutral Income I				✓	✓			
Arbitrage I		✓	✓	✓	✓			
Currency								
PIMCO Emerging Markets Currency Instl	✓	✓	✓	✓	✓	✓		
JHancock Absolute Return Currency I			✓					
Lord Abbett Emerging Markets Currency I	✓	✓	✓					
Multialternative								
JHancock Global Absolute Ret Strats I								
Blackstone Alternative Multi-Strategy I	✓	✓	✓	✓	✓	✓		
Natixis ASG Global Alternatives Y	✓		✓					
Long/Short Equity								
Gateway Y				✓				
Boston Partners Long/Short Rsrch Instl				✓	✓			
Diamond Hill Long-Short Y					✓			
Nontraditional Bond								
BlackRock Strategic Income Opps Instl ^[7]	✓	✓	✓	✓	✓	✓	✓	✓
Goldman Sachs Strategic Income Instl	✓	✓	✓		✓		✓	
PIMCO Unconstrained Bond Instl	✓	✓	✓	✓	✓	✓		

Source: SEC EDGAR; Morningstar

Note:

[1] Includes futures options.

[2] Includes swaptions.

[3] Includes foreign currency options.

[4] Excludes written swaptions, written foreign currency options, and written futures options.

[5] Includes reverse repurchase agreements.

[6] Calculated from positions as recorded in AQR form N-Q for reporting period July 1, 2015 to September 30, 2015.

[7] Complex derivatives include written OTC barrier options.

