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March 28, 2016

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

RE: Use of Derivatives by Registered Investment Companies and Business Development Companies (File No. S7-24-15)

Dear Mr. Fields:

AlphaSimplex Group, LLC ("AlphaSimplex") appreciates the opportunity to comment on the Securities and Exchange Commission's (the "Commission") Release No. IC-31933 on the Use of Derivatives by Registered Investment Companies and Business Development Companies (the "Release").

AlphaSimplex is a registered investment adviser that manages more than $7 billion in five mutual funds distributed by NGAM Distribution, L.P., a subsidiary of Natixis Global Asset Management, L.P. Each of these funds employs derivatives extensively—primarily liquid exchange-traded futures and currency forward contracts—using a diversified and risk-managed approach. The oldest of these funds was launched in September 2008 and has operated without incident and as expected during one of the most turbulent and difficult market environments in recent memory. Our experience during this time convinces us that derivatives can be used safely to benefit investors. These benefits include the efficient and inexpensive implementation of investment strategies that help investors build more diversified and durable portfolios and manage their portfolio risk.

We applaud the Commission on the thoroughness of the Release and the clarity with which it was written. We also support the goal of having a single source of guidance for the use of derivatives by mutual funds. We support the aspects of proposed rule 18f-4 (the "Proposed Rule") that would require a formalized, board-approved derivatives risk management program, the designation of and reporting to the board by a derivatives risk officer, and the maintenance and daily monitoring of qualifying coverage assets.

However, we also believe the Proposed Rule, as drafted, has unintended adverse consequences and that there are alternate approaches that would better protect investors and achieve the Commission's objectives. We will focus on three key points:

1) The potential for the Proposed Rule to increase, rather than decrease, risk to investors;
2) The inability of the Proposed Rule to properly protect investors because it does not take into account the risk of different derivative instruments; and
3) The consequences of eliminating retail investor access to managed futures and similar liquid alternative funds that help investors manage their portfolio risk.

1. How the Proposed Rule may increase, rather than decrease, risk to investors

Under the Proposed Rule, funds that obtain market exposures primarily through non-derivative securities—such as stocks and bonds—could achieve much higher market exposures (and risks) when derivatives are added to the portfolio than funds that hold primarily cash and cash equivalents plus derivatives. Consider, for example, a fund that holds 500 stocks replicating the S&P 500 (the "Equity

Fund") and a fund that holds Treasury bills only (the "Cash Fund"), each of which also obtains S&P 500 equity exposure through liquid futures contracts of up to 150% of its NAV, as permitted under the Proposed Rule. The Equity Fund would be able to achieve a total S&P 500 equity exposure of 240% (assuming it would need 10% in cash for margin requirements) while the Cash Fund would be able to achieve a total S&P 500 equity exposure of only 150%. Clearly, the Cash Fund would be in a much better position to meet its obligations and would have more liquidity (i.e., attributes more in line with the Commission's stated objectives in the Release). However, under the Proposed Rule, funds may be inclined to hold less cash and invest in less liquid non-derivative securities to achieve exposures that they currently obtain through derivatives, which could subject the funds to greater risks.[1]

Suggested refinement to exposure-based portfolio limit for funds holding more cash and cash equivalents

As noted in the "Equity Fund" and "Cash Fund" example above, funds that obtain market exposures primarily through non-derivative securities could achieve much higher market exposures (and risks) when derivatives are added to the portfolio than funds that hold primarily cash and cash equivalents plus derivatives. To address this disparity, AlphaSimplex proposes that a fund be able to obtain notional exposures through derivatives equal to 150% *plus the percentage of its cash and cash equivalents* relative to its NAV at the time of purchase of a derivatives contract. Thus, a fund that has 100% of its assets in cash and cash equivalents would be permitted to achieve notional exposures through derivatives of up to 250% of its NAV, with similar market exposures as an Equity Fund that has 150% in notional derivatives exposure.

An exposure-based portfolio limit of 150%, increased by the percentage of the cash and cash equivalents that a fund has on hand, would still accord with the Commission's goal of having a practical means of limiting potential leverage from derivatives. Cash and cash equivalents are well-defined and well-understood by market participants, and it would be straightforward for any adviser to calculate these amounts daily and for the Commission and its staff to confirm compliance with the limitation. In addition, this proposal would encourage funds that use derivatives more extensively to have more cash and cash equivalents on hand to support their obligations under such derivatives and provide fund shareholders with additional liquidity. We believe that having more cash available to support a fund's derivatives exposure is something the Proposed Rule should promote, rather than deter. The adjustment we are recommending is the only way to address this disparity in the Proposed Rule and discourage funds from potentially increasing investment risk.

2. The Proposed Rule does not protect investors because it does not take into account the risk of different derivative instruments

The strict gross notional limit of 150% under the proposed Rule does not consider the risk of different derivative instruments and thus it is not an effective way to limit undue speculation and ensure funds can meet their obligations. To illustrate this point, consider a portfolio holding 60% Japanese equities, 40% cash, and 150% short notional exposure through VIX futures contracts (as would be permitted by the Proposed Rule). Over the last 10 years, there were two days when this portfolio experienced a loss greater than 100% intra-day and would have been fully liquidated to meet margin calls, and another day when the loss was 97%. In other words, this fund would have suffered extreme losses in a single day and to a much greater extent than the Amaranth natural gas hedge fund ("Amaranth") referred to on page 47 of the Release, despite being within the limits of the Proposed Rule. Quite simply, gross notional value is not an

[1] The same unintended consequence could result from the 300% risk-based portfolio limit. For example, a fund that holds primarily cash and cash equivalents likely could not access the 300% limit (as noted by the Commission on page 283 of the Release), but a fund that holds primarily non-derivative securities could as long as its full portfolio value-at-risk ("VaR") is less than its securities VaR.

effective measure of risk for a derivative. Without an adjustment to notional values to reflect risk, the Proposed Rule will be ineffective at meeting the Commission's objectives, both now and in the future, as more (and potentially higher-risk) derivatives are developed.

Moreover, with its exposure limits based on notional amounts alone, the Proposed Rule could result in two different funds that have the same notional exposures but very different risk profiles, which could lead to a false sense of security for investors. For example, one fund could have 150% notional exposure to natural gas futures while another fund could have 150% notional exposure to short-term interest rate futures. Although the fund with natural gas exposure has greater investment risk and potentially greater payment obligations than the fund with short-term interest rate exposure, the Proposed Rule would treat these exposures identically. Investors could develop a false sense of security from the equal notional exposures even though the funds have very different risk profiles.

Another example of how the Proposed Rule's gross notional measure does not meet the Commission's objectives is given in the chart below (Figure 1), which plots the worst monthly returns for 21 hypothetical funds that achieve 150% gross notional through a single futures contract, as permitted under the Proposed Rule. As demonstrated by Figure 1, the largest monthly loss experienced over the last 20 years varies widely under the Proposed Rule's gross notional limit and there are three funds (corresponding to Crude Oil, Natural Gas, and VIX, three very common derivatives) *with monthly losses <u>in excess</u> of –48%, the loss experienced by Amaranth.*

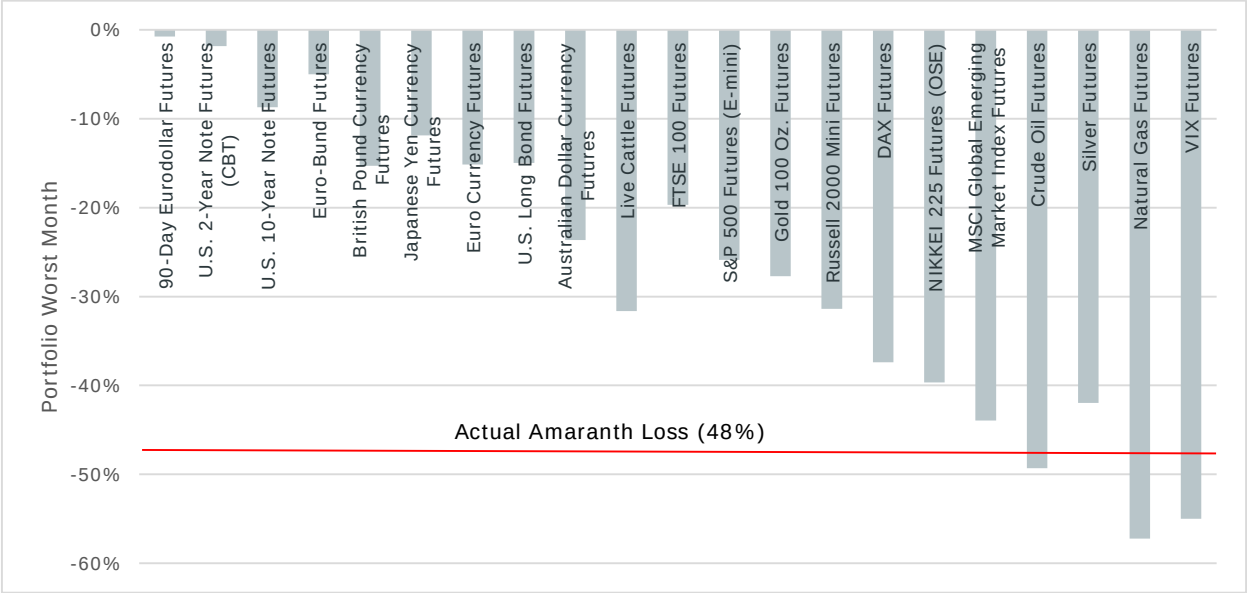

Figure 1: Worst Month Using 150% Gross Notional Exposure (20 years ending December 31, 2015)

Without factoring in the risk of the specific derivative, a gross notional limit will not be effective at limiting undue speculation and ensuring a fund can meet its obligations.

An alternate risk-adjusted notional approach would be better for investors

If the Commission's goal is to have a rule that limits leverage but is also implementable by compliance staff and adaptable to new derivatives that may be developed in the future,[2] there are alternate approaches that

[2] On pages 70–71 of the Release, the Commission justifies a notional-based limit because "[it] would be a more effective and administrable means of limiting potential leverage from derivatives than a limitation which relies on other leverage measures that may be more difficult to adapt to different types of fund strategies or different uses of derivatives, including types of fund strategies and derivatives that may be developed in the future."

would achieve that result. One approach is to allow for a risk adjustment to the notional value of a derivative contract to more accurately reflect the volatility and risk of the contract and its reference asset(s). For example, for each "standardized derivative"—defined as any derivatives traded on an exchange or with standardized terms (other than exchange-traded or standardized options) that involve payment amounts between the parties that change on a dollar-for-dollar basis tracking changes in the value of the underlying reference asset[3]—the notional value associated with the contract would be multiplied by a risk coefficient to arrive at a risk-adjusted notional exposure that more truly reflects the volatility and risk of the derivative contract and its reference asset(s). AlphaSimplex proposes that these risk coefficients be determined relative to the risk of the S&P 500 because it is familiar, is well-understood by most investors, and represents the largest category of mutual funds. We also believe this approach is flexible enough to accommodate new derivatives as financial markets evolve because any derivative (or its reference asset(s)) would have a volatility that can be calculated very simply with a spreadsheet and measured relative to the S&P 500.

There are numerous possible methods for calculating the risk coefficients themselves, but we suggest risk coefficients that are referenced to the average volatility of the S&P 500 daily returns over the previous five years.[4] Below in Table 1 are risk coefficients that AlphaSimplex has determined based on this methodology, together with the 5-year annual standard deviations for a number of "standardized" common futures contracts:

Type of Exposure	Name of Contract	Annual Std. Dev.	Risk Coefficient
Fixed Income	90-Day Eurodollar Futures	0.3%	.05
Fixed Income	U.S. 2-Year Note (CBT) Futures	0.7%	.05
Fixed Income	U.S. 10-Year Note Futures	4.9%	.32
Fixed Income	Euro-Bund Futures	6.0%	.39
Currency	British Pound Currency Futures	7.2%	.47
Currency	Japanese Yen Currency Futures	8.9%	.58
Currency	Euro Currency Futures	9.3%	.60
Fixed Income	U.S. Long Bond Futures	10.0%	.64
Currency	Australian Dollar Currency Futures	10.8%	.70
Commodity	Live Cattle Futures	13.9%	.89
Stock	FTSE 100 Futures	15.3%	.98
Stock	**S&P 500 Futures (E-mini)**	**15.5%**	**1.00**
Commodity	Gold 100 Oz. Futures	17.9%	1.15
Stock	Russell 2000 Mini Futures	20.5%	1.32
Stock	DAX Futures	20.9%	1.34
Stock	NIKKEI 225 (OSE) Futures	21.5%	1.39
Stock	MSCI Global Emerging Markets Futures	22.1%	1.42
Commodity	Crude Oil Futures	30.9%	1.99
Commodity	Silver Futures	32.9%	2.12
Commodity	Natural Gas Futures	40.1%	2.58
Other	VIX Futures	79.5%	5.10

Table 1: Risk Coefficients and Annual Standard Deviations

Annual Std. Dev.: Standard Deviation of five years of daily returns ending 12/31/15. Source: Bloomberg.
Risk Coefficient: Ratio of the Futures Contract Annual Std. Dev. / S&P 500 Futures Contract Annual Std. Dev. with a minimum of 0.05.
Example: DAX Futures Risk Coefficient = 20.9%/15.5% = 1.34 (with rounding adjustments).

[3] *Id.* at 76. AlphaSimplex proposes that forward currency contracts be considered standardized derivatives for this purpose because they have standardized terms that involve payment amounts between the parties that change on a dollar-for-dollar basis tracking changes in the value of the underlying currencies.

[4] We believe that five years of data is sufficient to produce stable and statistically significant results, but is flexible enough to adapt as markets change and evolve. One advantage of using standard deviation is that it is a precise, commonly used formula that would have a low variation among industry participants if the Commission specified the period and frequency with which it should be measured.

Note that this objective adjustment allows the risk coefficient of a derivative contract to be *less or greater than 1* relative to the risk of the S&P 500.[5] There also is a direct relationship between the 5-year annualized standard deviation relative to the S&P 500 and the risk coefficient, such that as the relative 5-year annualized standard deviation increases, so would the risk coefficient.[6] AlphaSimplex also recommends that this risk-adjusted exposure limit be supplemented by an overall limit of 1000% gross notional exposure to address the extreme case of a very low volatility derivative that may, in fact, have the potential for jump risk.

Under this proposed alternate approach, natural gas futures contracts with a $10 million notional value would have a risk-adjusted notional value of $25.8 million ($10 million notional multiplied by a 2.58 risk coefficient, reflecting its higher risk relative to the S&P 500). Thus, a $100 million fund would only be able to obtain a gross notional exposure of 58%[7] or $58 million (to remain below the 150% *risk-based portfolio exposure limit*) while under the Proposed Rule, a fund of the same size would be able to obtain a total gross notional exposure of $150 million, representing almost *three times* the market risk (as measured by annualized volatility). In contrast, $10 million of 90-day Eurodollar futures contracts would have a risk-adjusted notional value of $0.5 million, reflecting its much lower risk relative to the S&P 500.

Recognizing that the exposure risk of a derivative contract is not static over time, the Commission could require each fund to re-calculate the coefficient for each commonly-used standardized derivative as of December 31st of each year and apply those coefficients to the portfolio beginning no later than March 31st of the subsequent year.[8] Each fund could be required to report to its board all initial and revised risk coefficients and make them readily available to the Commission staff upon an examination. Each fund also could be required to disclose in its financial statements, in a simple table format, the notional exposure of each derivative contract, its risk coefficient, and the resulting risk-adjusted notional exposure.[9] We would expect that, as the concept is adopted, data providers would begin to calculate and disseminate these risk coefficients publicly, such that the Commission, as well as advisers and investors, would have a public source to confirm all risk coefficients.

The risk-adjusted notional approach would achieve the Commission's objectives of limiting a fund's leverage through derivatives while at the same time applying a rule that is administrable by examination and compliance staff. It would also improve transparency and understanding of the true risks of derivatives held by funds so that shareholders would be in a better position to understand, evaluate, and determine if those risk levels are appropriate for them given their risk tolerances.

Stress testing: AlphaSimplex's risk-adjusted notional approach vs. the Proposed Rule's unadjusted notional approach

We performed numerous stress tests to demonstrate that a risk-adjusted notional approach provides greater protection to investors than the Proposed Rule and would not result in losses of the magnitude suffered by Amaranth. For example:

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[5] For over-the-counter derivatives, the Commission could require an additional risk premium to reflect the liquidity and counterparty risks inherent in these derivative contracts. Similarly, the Commission could require a new derivative without a 5-year trading history to have a risk coefficient of 1 plus an additional risk premium.

[6] It should be noted that this risk-adjusted notional approach is very similar to how exchanges set margin requirements for derivatives. For more detail, see **Exhibit A**, which plots the relationship of AlphaSimplex's risk coefficients against margin requirements as well as risk as measured by standard deviation.

[7] 150% gross notional / 2.58 risk coefficient = 58% (with rounding adjustment).

[8] This lag would allow for an orderly transition of the portfolio.

[9] **Exhibit B** provides a sample format for such a financial statement table.

- When multiplied by AlphaSimplex's 2.58 risk coefficient for natural gas futures, and allowing a 250% limit for a cash portfolio, the holdings of Amaranth[10] would have been limited to a gross notional exposure of 97% and incurred a loss of −9%. The Proposed Rule would have allowed a gross notional exposure of 150% and a loss of −14% (or around one and a half times as much).[11]
- For multiple portfolios, each holding primarily cash and cash equivalents and investing in a single derivatives contract up to the maximum amount possible under our proposed risk-adjusted notional approach (i.e., 250%, or a 100% cash portfolio plus 250% exposure through derivatives), we analyzed the magnitude of loss for the worst day, worst week, and worst month during the 20-year period ended December 31, 2015, which includes the recent global financial crisis, 9/11/01, and several hurricanes (Katrina, Sandy, etc.). In every case, the largest one-day losses were less than −25.3% and the portfolio would be able to satisfy its obligations. In fact, these losses were very similar to those of an S&P 500 portfolio (−23.8%) that could achieve 250% market exposure under the Proposed Rule.
- Over the same 20-year period, we analyzed the risk of loss for one million portfolios constructed by randomly generating combinations of 21 futures contracts (from Table 1) up to the maximum 250% risk-adjusted notional limit permitted by our risk-adjusted approach. In no case could we find a combination that suffered a one-day loss of more than −16%, a monthly loss of more than −73% or a quarterly loss more than −100%. In other words, there were no occasions when the portfolio suffered losses beyond its assets. By comparison, we did the same simulation using the Proposed Rule's 150% unadjusted notional limit and, while the largest one-day loss was about the same at −17%, the worst monthly loss was much worse (−90%) and there were 15 outcomes when *the loss was more than –100% in a quarter*.

In conclusion, although the risk-adjusted notional approach may allow higher unadjusted gross notional amounts, it does not pose the extreme loss risks of the Proposed Rule's unadjusted notional approach. In fact, the Proposed Rule's approach has larger and more frequent extreme losses and would increase the chances that a fund could not meet its obligations. As demonstrated in the histogram in **Exhibit D**, AlphaSimplex's proposed risk-adjusted notional approach would better protect investors from these extreme events.

3. Eliminating retail investor access to managed futures and similar alternative funds would deprive them access to effective tools to help manage portfolio risk

Managed futures funds ("Managed Futures") and similar liquid alternative funds can add much needed diversification and play an important role in helping to reduce overall portfolio risk, particularly during times when stocks decline. Managed Futures generally have little to no correlation to equities,[12] produced a 20.9% positive return in 2008, and had positive returns in seven of the worst quarterly declines in the stock market since 2000.[13] These attributes make Managed Futures a very effective tool to help reduce, rather than increase, overall portfolio risk despite their use of derivatives.

This risk-reducing role has been demonstrated in recent history as well. Based on an analysis of 294 model portfolios in a moderate risk category during the drawdown from December 29, 2015 to February 11, 2016,

[10] For this stress test, AlphaSimplex used data from Table III of the Chincarini study (Ludwig B. Chincarini, *A Case Study on Risk Management: Lessons from the Collapse of Amaranth Advisors L.L.C.*, 18 J. OF APPLIED FIN. 152 (Spring/Summer 2008), available at http://ludwigbc.com/pubs/pub9.pdf).

[11] See **Exhibit C**.

[12] The correlation between the SG Trend Index, comprised of the top managed futures funds, and the S&P 500 for the 16-year period from 1/1/2000, the inception of the SG Trend Index, through 12/31/2015 was –0.14%.

[13] See **Exhibit E** for details.

model portfolios that had an allocation to Managed Futures of 10% or more outperformed the model portfolios without Managed Futures by 2.9% and reduced volatility by 1.9%.[14] The Proposed Rule would deprive investors of this important tool for diversification and risk reduction.

In the Release, the Commission acknowledges that the Proposed Rule may make it difficult, if not impossible, for certain types of funds to operate effectively or even at all in a registered mutual fund structure, yet it downplays the impact of this result based on the relative size of the Managed Futures category. The Release does not recognize that these products only recently have become available to retail investors, and Managed Futures is one of the fastest growing mutual fund categories. Moreover, many of these funds are actively risk-managed and the computing power necessary to calculate and manage these risks has been a relatively recent advance in the broader context of the almost 80-year history of mutual funds. The Commission suggests that these funds can simply adjust their exposures below the 150% limit or choose to de-register under the Investment Company Act of 1940 and liquidate and/or convert to a private fund or commodity pool,[15] but these actions would result in meaningful disadvantages for retail investors:

- *Scaling down exposures below 150%*: If such a fund were to scale down its exposures below the 150% limit, it would result in a portfolio that would be less efficient and more costly and would not provide the same diversification and risk-reduction benefits to investors. Faced with a limited budget for portfolio notional exposure, along with a rule that treats all contracts equally regardless of contract risk, advisers could be encouraged to hold *higher-risk* contracts (within the 150% limit) in an effort to generate higher returns. Further, advisers looking to access higher notional exposure limits may be inclined to invest in more non-derivative securities—even though they often are less liquid and more costly and may entail more risk than derivatives[16]—to achieve greater market exposure limits, thus increasing investment risk.
- *Liquidation*: If such a fund could not operate effectively within the 150% limit and had to liquidate, investors would be subjected to transaction costs and also face the possibility of untimely and unwelcome capital gains taxes. Should the liquidation occur in volatile markets and alongside rising tax rates, investors would be further harmed. In addition, liquidating funds and their affiliated service providers may suffer reputational damage that cannot easily be repaired. This reputational damage could spread to other products in the fund complex, even if they do not use derivatives, and the result may be more redemptions, imposing additional costs and liquidity risks to a broader-than-anticipated group of funds and shareholders.
- *Conversion to a private fund or commodity pool*: Retail investors who are not "accredited investors" under the Securities Act of 1933 may not be eligible to purchase the shares of such products. As a result, they would be denied access to strategies that can provide significant portfolio diversification and risk mitigation benefits. (See **Exhibit D** for information regarding the benefits of Managed Futures and other funds that use derivatives extensively for diversification and risk management purposes.) Furthermore, many investors in these funds access them through advisers or platforms that do not have the operational infrastructure to accommodate investments in

[14] Model investment portfolios of U.S. based financial advisers and other professionals. Source: Natixis Portfolio Clarity, Natixis Global Asset Management's portfolio consulting service.

[15] These are possibilities suggested by the Commission on page 289 of the Release.

[16] See: (i) **Exhibit F(1)** showing the difference in trading volume of the S&P 500 futures contract relative to the five largest positions in the S&P 500 Index (the "S&P 500"); there is greater liquidity in the S&P 500 futures market than in securities underlying the S&P 500; and (ii) **Exhibit F(2)** comparing the transaction costs of buying a basket of S&P 500 stocks for a $100 million fund with the transaction costs of buying S&P 500 futures contracts for the same size fund; the transactions costs are significantly greater when buying S&P 500 stocks.

unregistered funds. Investors forced to access these strategies via unregistered funds outside of their broader account platform would no longer have the ability to see their entire portfolio in aggregate or conduct analysis and stress tests on their entire portfolio. Many service providers of private funds do not accommodate daily calculations of NAVs and trading, or charge fund shareholders significantly more for daily NAVs and trading, and thus investors would be forced to choose between higher costs or limited ability to trade.

How to protect retail investors from these adverse consequences

As discussed above, we believe that these adverse consequences for retail investors, advisers, and markets can be avoided simply by revising the Proposed Rule to: (i) adjust the notional exposure limit to 150% plus the percentage in cash and cash equivalents in a fund; and (ii) require risk-adjustment to notional values, in the manner described above, to more accurately reflect the risk of different derivatives contracts and better protect fund investors.

Conclusion

In conclusion, AlphaSimplex supports the Commission's objectives and many of the aspects of the Proposed Rule. However, we are concerned that, without adjustment, the strict notional-based portfolio limit will lead to unintended adverse consequences and deprive retail investors of important tools to help manage overall portfolio risk. A gross notional test is simply not the most effective way to achieve the Commission's objectives. Modifying the Proposed Rule to implement a risk-based approach and limit a fund's derivative risk-adjusted notional exposure to 150% of a fund's NAV plus the percentage of cash and cash equivalents in the portfolio would treat all funds equally and reduce the potential for unintended consequences.

Respectfully submitted,

Duncan B. E. Wilkinson, CFA
Chief Executive Officer
AlphaSimplex Group, LLC

cc: The Honorable Mary Jo White
The Honorable Kara M. Stein
The Honorable Michael S. Piwowar

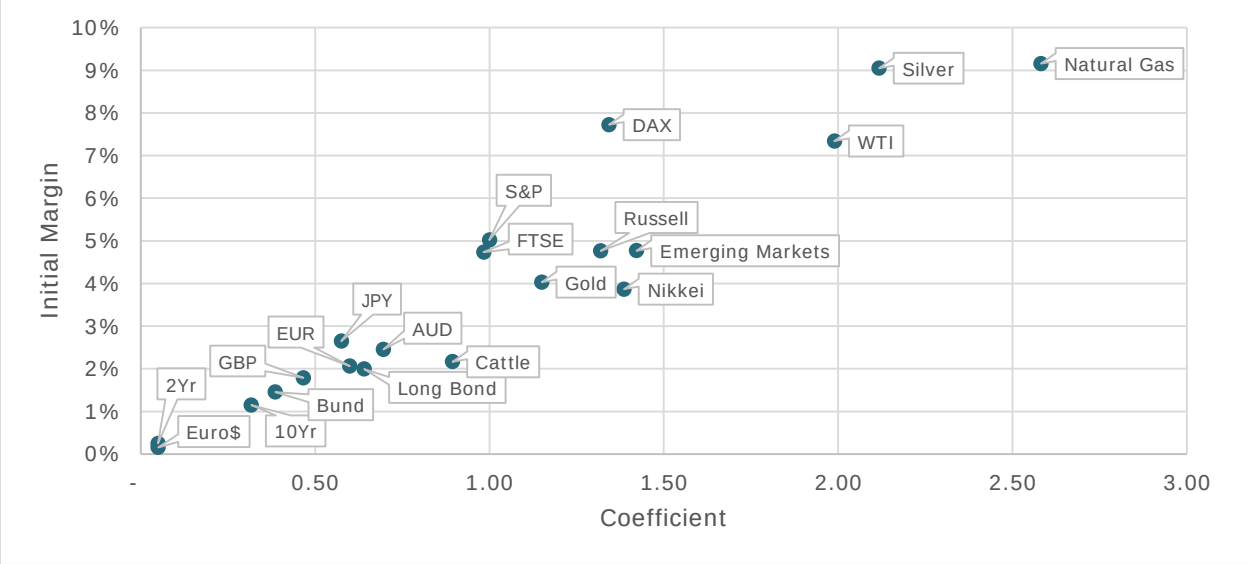
David W. Grim, Director, Division of Investment Management
Diane C. Blizzard, Associate Director, Division of Investment Management
Sarah G. ten Siethoff, Assistant Director, Division of Investment Management

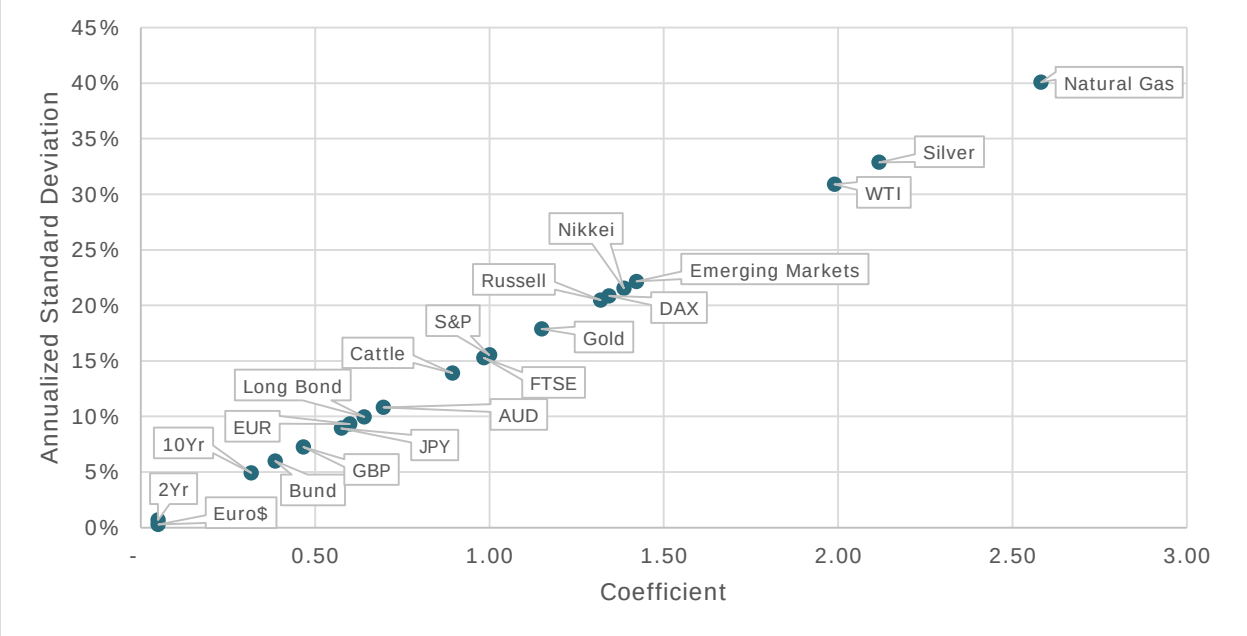
Russell L. Kane, Chief Compliance Officer, Natixis Funds

Exhibit A

Risk coefficients of various standardized derivatives contracts relative to (i) margin requirements by counterparties for these contracts and (ii) their five-year annual standard deviations.

These charts demonstrate that the AlphaSimplex-calculated risk coefficients accurately reflect the risk of different derivative contracts and are consistent with how exchanges set margin requirements.[17]





[17] In order to maintain the viability of the public exchanges, such exchanges typically set initial margin requirements for individual instruments by studying their realized volatility. This has been an effective method for ensuring that market participants meet their respective obligations from trading derivatives. These initial margin requirements exhibit a high correlation to the AlphaSimplex-calculated risk coefficients. VIX futures not shown to improve chart readability. Initial margin shown as set by exchanges as of December 31, 2015.

Exhibit B

Sample financial statement table showing notional exposure, the risk coefficients and the product of the two: the risk-adjusted notional exposure.

Derivatives Holding	Notional ($ millions)	Risk Coefficient	Risk-Adjusted Notional ($ millions)
U.S. 2-Year Note Futures	(100)	0.05	(5)
U.S. 10-Year Note Futures	80	0.32	26
S&P 500 Futures	50	1.00	50
MSCI Global Emerging Markets Index Futures	(40)	1.42	(57)
Gold 100 Oz. Futures	(20)	1.15	(23)
Crude Oil Futures	20	1.99	40
Total Gross Notional	310		200

Exhibit C

Application of risk-adjusted notional approach to Amaranth portfolio

The Amaranth example cited in the Release provides a good illustration of how AlphaSimplex's proposed risk-adjusted approach to calculating the aggregate exposure limit (the "Risk-Adjusted Approach") results in less market risk to investors than the Proposed Rule. Using data for Amaranth from Table III (showing delta-adjusted notional positions of all futures, swaps, and options held by the fund converted into futures-equivalent notional exposure) of the Chincarini study cited on page 47 of the Release, AlphaSimplex re-calculated (i.e., multiplied) those exposures using the 2.58 risk coefficient for natural gas. The result is a risk-adjusted notional value of 1350% for the portfolio. Had this been in a mutual fund that adhered to the 150% (plus % in cash) risk-adjusted limit that AlphaSimplex is proposing, the total exposures would have been reduced from $53,525 million to $9,911 million, or by approximately 81%.

	Amaranth Notional Value ($ millions)[18]	AlphaSimplex Risk-Adjusted Notional ($ millions)[19]	Hypothetical Notional Applying AlphaSimplex Approach ($ millions)[20]	Hypothetical Notional Applying SEC Proposed Rule ($ millions)[21]
Winter Longs	28,812	74,336	5,335	8,259
Winter Shorts	(5,323)	(13,733)	(986)	(1,526)
Non-Winter Longs	1,763	4,548	326	505
Non-Winter Shorts	(17,626)	(45,476)	(3,264)	(5,052)
Net Exposure	7,626		1,412	2,186
Total Exposure	53,525	138,094	9,911	15,342
Total Fund Assets	10,228			
Leverage Ratio	523%	1350%	97%	150%
Loss $	(4,942)		(915)	(1,417)
Loss %	–48%		–9%	–14%

As a result of reduced exposure, the loss suffered under the Risk-Adjusted Approach would have been about –9%, far less than the losses suffered by the funds cited by the Commission on pages 44–48 of the Release. By contrast, if the gross notional-based limits of the Proposed Rule were applied, the portfolio would have lost about one and a half times as much (or approximately –14%). Because it adjusts notional exposures by some measure of risk, the Risk-Adjusted Approach would be more effective at limiting undue risk-taking.

[18] The actual exposures of Amaranth.

[19] The exposures of Amaranth after applying the AlphaSimplex risk coefficient.

[20] The exposures of Amaranth reduced proportionally to comply with AlphaSimplex's proposal (assuming a risk-adjusted notional exposure limit of 250%).

[21] The exposures of Amaranth reduced proportionally to comply with the Commission's Proposed Rule.

Exhibit D

Worst monthly losses under the Risk-Adjusted Notional Approach and the Unadjusted Notional Approach

The following is a histogram of the worst monthly losses, simulated over the previous 20 years ending December 31, 2015, for one million randomly-generated portfolios (240 million observations) under AlphaSimplex's proposed risk-adjusted notional approach compared to the unadjusted notional approach of the Proposed Rule. The results are similar for the majority of the cases and demonstrate that a risk-adjusted notional approach (despite allowing higher gross notional amounts) avoids the extreme risk of the Proposed Rule's unadjusted notional approach. The important difference is that the Proposed Rule's approach has larger and more frequent extreme losses (i.e., "blow-ups") and increases the chances that a fund would not be able to meet its obligations. By adopting a risk-adjusted approach, the Commission could better protect investors from these extreme events.

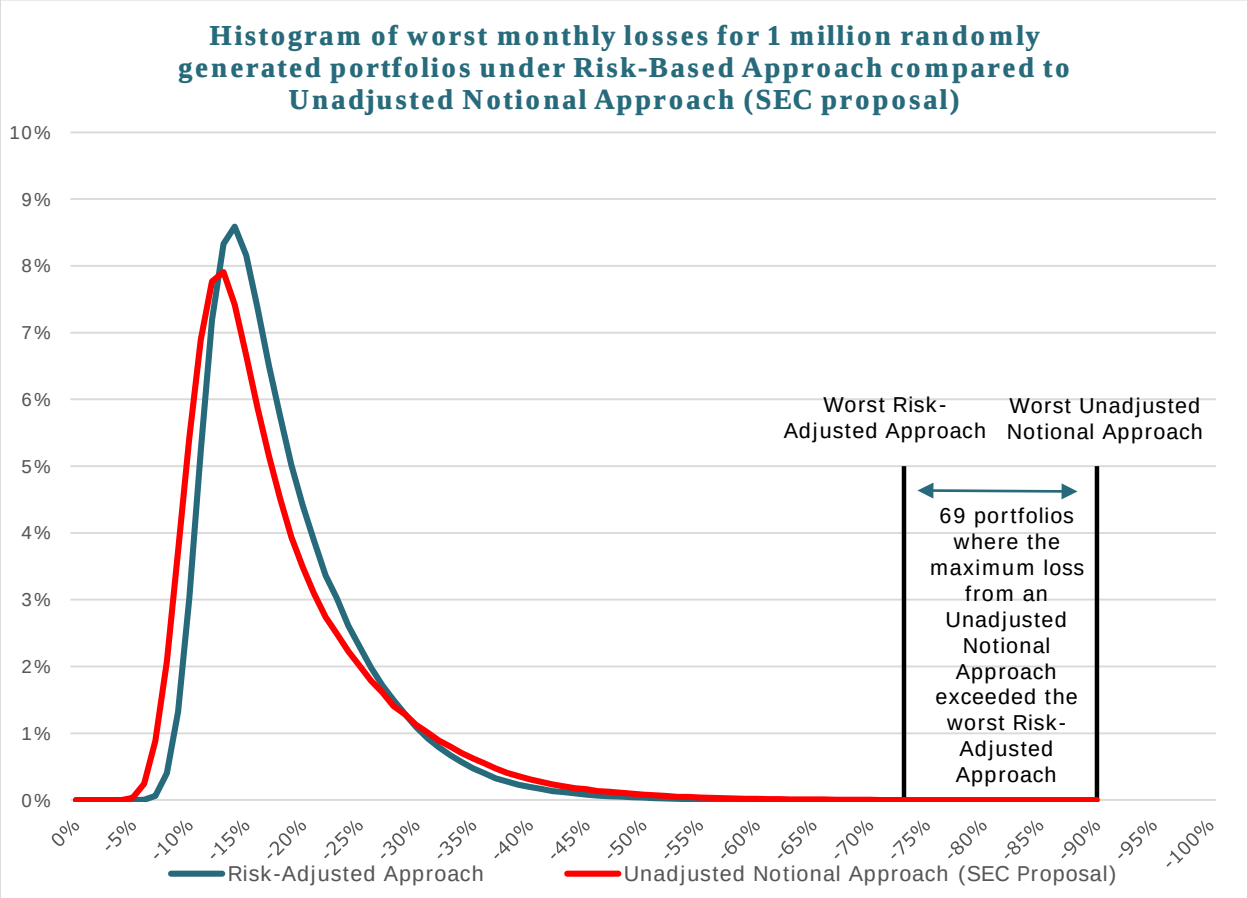
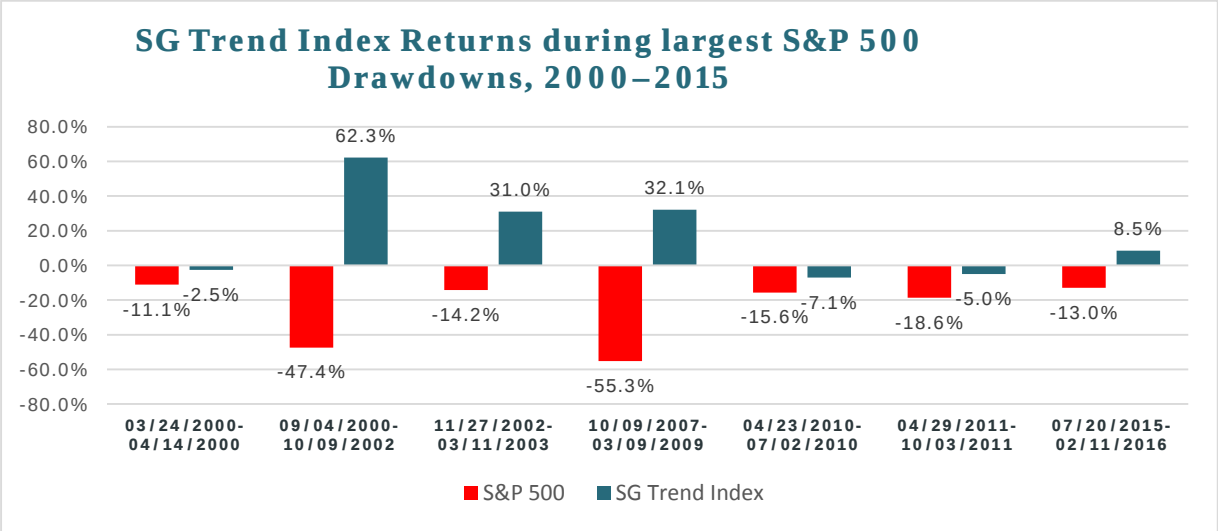


Exhibit E

Benefits of Managed Futures Strategies

As traditional assets have become more correlated with one another, investor portfolios composed of these assets have become more vulnerable to shocks. For example, 20 years ago investors could find meaningful diversification of their U.S. equity exposure in both Developed Non-U.S. and Emerging Market equities. For the five years ended 1995, the correlation between S&P 500 and MSCI EAFE monthly returns was 0.44; for MSCI Emerging Markets, 0.47. An investor looking to diversify U.S. equity exposure based on 5-year results at the end of 2015 was faced with a correlation between S&P 500 monthly returns and MSCI EAFE of 0.86; for MSCI Emerging Markets, 0.73. With this in mind, many investors are looking for truly diversifying strategies. Many are working with their financial advisers to complement their classic portfolios with alternative strategies to improve overall risk-adjusted return. While many used long/short equity strategies for this purpose, they were not always effective, as these portfolios can have correlations with equity indices above 0.8 or 0.9. Broadly diversified, derivatives-based approaches such as Managed Futures strategies ("Managed Futures") are gaining favor with investors because historically they have provided more effective portfolio diversification than other alternative categories.

The Managed Futures category (as measured using the SG Trend Index, inception January 2000 through December 2015 monthly) exhibits a long-term correlation with the S&P 500 index of –0.14; with Barclay's U.S. Aggregate Bond index of 0.22; with MSCI EAFE index of –0.03; and with MSCI Emerging Markets of –0.03. Moreover, Managed Futures have traditionally provided an unusual diversification benefit in that this group produces some of its best performance results when markets are in significant decline—Managed Futures are known for "Crisis Alpha." For instance, in 2008 the SG Trend Index rose 20.9%, while the S&P 500 was –37.0%. Since the inception of the SG Trend Index in 2000, the S&P 500 Total Return Index has had seven drawdowns of 10% or more (see chart below); the SG Trend Index generated a positive return during four of these seven periods. For the other periods, the return ranged from –2.5% to –7.1%, while its best period was 62.3%. The average return for the S&P 500 during these periods was –25.0%, while the SG Trend Index averaged 17.0%.



When looking at the returns of Managed Futures relative to the S&P 500 on a quarterly basis, there is a similar result. The tables below show performance of the S&P 500 and the SG Trend Index during the ten worst quarters for the S&P 500 and also the ten worst quarters for the SG Trend Index over the period from

the inception of the SG Trend Index in January 2000 through December 2015. These tables demonstrate the historical ability of Managed Futures strategies to produce positive results during crisis periods and provide meaningful diversification for investors.

Ten Worst Quarters for the S&P 500

Period	Event	S&P 500 Total Return Index	SG Trend Index	Difference
Q4 2008	Bear Market in U.S. Equities led by Financials	–21.94%	12.66%	34.61%
Q3 2002	WorldCom Scandal	–17.28%	18.00%	35.28%
Q3 2001	Terrorist Attacks on World Trade Center and Pentagon	–14.68%	3.90%	18.58%
Q3 2011	European Sovereign Debt Crisis	–13.87%	2.40%	16.27%
Q2 2002	Continuing Aftermath of Technology Bubble Bursting	–13.40%	15.84%	29.24%
Q1 2001	Bear Market in U.S. Equities led by Technology	–11.86%	10.61%	22.46%
Q2 2010	European Sovereign Debt Crisis, "Flash Crash"	–11.43%	–3.10%	8.33%
Q1 2009	Credit Crisis Continues	–11.01%	–2.75%	8.26%
Q1 2008	Beginning of Bear Market in U.S. Equities	–9.44%	8.46%	17.90%
Q3 2008	Bear Market in U.S. Equities led by Financials	–8.37%	–6.90%	1.47%

Ten Worst Quarters for Managed Futures

Period	Event	S&P 500 Total Return Index	SG Trend Index	Difference
Q2 2004	Broad Stock, Bond, and Commodity Reversal	1.72%	–14.08%	15.80%
Q2 2001	Reversals During the Dot Com Crisis	5.85%	–9.60%	15.45%
Q2 2015	Trend Reversals in Multiple Asset Classes	0.28%	–9.40%	9.68%
Q2 2000	Reversals During the Dot Com Crisis	–2.66%	–7.35%	4.69%
Q3 2008	Reversals During Bear Market in U.S. Equities	–8.37%	–6.90%	–1.47%
Q3 2000	Reversals During the Dot Com Crisis	–0.97%	–6.10%	5.13%
Q3 2007	CTAs Caught Short on Bear Market Rally in U.S. Equities	2.03%	–6.04%	8.07%
Q1 2014	Bond and Currencies Reversals	1.81%	–5.89%	7.70%
Q2 2009	Reversals in the Aftermath of the Credit Crisis	15.93%	–5.04%	20.97%
Q1 2005	Reversals During Equity Downturn	–2.15%	–4.89%	2.74%

Managed Futures, unlike short-bias approaches (such as an equity strategy that is always net short equity securities), do not perform well in negative markets only. Because these funds track both positive and negative trends across a wide range of global markets, they can benefit from any number of rising markets and generate positive returns even if stocks are going up. The average annual return for the SG Trend Index from inception in 2000 through 2015 is 6.5%; the S&P 500 average annual return over the same period is 4.1%.

Most investors use Managed Futures as part of a broader portfolio to provide additional diversification and reduce overall portfolio risk. These strategies have been used by institutional investors for many years, and only more recently have they become available to retail investors for the same purpose. To demonstrate the impact a Managed Futures position can have on a portfolio, consider two hypothetical portfolios. One is 60% S&P 500 and 40% Barclays Aggregate (the "Classic Portfolio") and the other is 40% S&P 500, 40% Barclays Aggregate, and 20% Managed Futures (the "Diversified Portfolio"), and each portfolio is rebalanced back to its target percentages annually at year-end. For the period January 2000 through December 2015, the Classic Portfolio had an annualized return of 5.1% with annualized standard deviation of 8.8%, producing a Sharpe Ratio of 0.35.[22] The Diversified Portfolio had a higher return at 5.7%, lower standard deviation at 6.3%, which combine for a Sharpe Ratio of 0.57. In short, by adding Managed

[22] The Sharpe Ratios assume a risk-free rate equal to the Bank of America Merrill Lynch 3-month T-Bill rate.

Futures to a Classic Portfolio over this period, returns increased, but perhaps more importantly — *risk was reduced by a substantial degree.*

Based on an analysis of 294 model portfolios in a moderate risk category during the drawdown from December 29, 2015 to February 11, 2016, model portfolios that had an allocation to Managed Futures of 10% or more outperformed the model portfolios without Managed Futures by 2.9% and reduced volatility by 1.9%.[23]

Most alternative strategies, including the long/short equity strategies described above, do not share these correlation benefits; but most long/short equity mutual funds would not be impacted by the notional limitations of the Proposed Rule despite their tendency toward concentrated and company-specific risks. Managed Futures would be more impacted by the Proposed Rule, although arguably they are better diversifiers than other alternative strategies. Managed Futures funds typically are quantitatively-managed, derivatives-based funds that tend to have lower fees and expenses than other alternative funds available to mutual fund investors. If Managed Futures strategies are faced with notional exposure limitations that significantly diminish their ability to provide the portfolio benefits highlighted, investors will lose an important means of portfolio diversification.

[23] Model investment portfolios of U.S. based financial advisers and other professionals. Source: Natixis Portfolio Clarity, Natixis Global Asset Management's portfolio consulting service.

Exhibit F(1)

Difference in trading volume of the S&P 500 futures contract relative to the five largest positions in the S&P 500

Futures can be more liquid than equities. The top five stocks of the S&P 500 below represent 12% of the market cap, but the aggregate average daily trading value of all five is only 7% of that in the S&P E-Mini futures contract. [24]

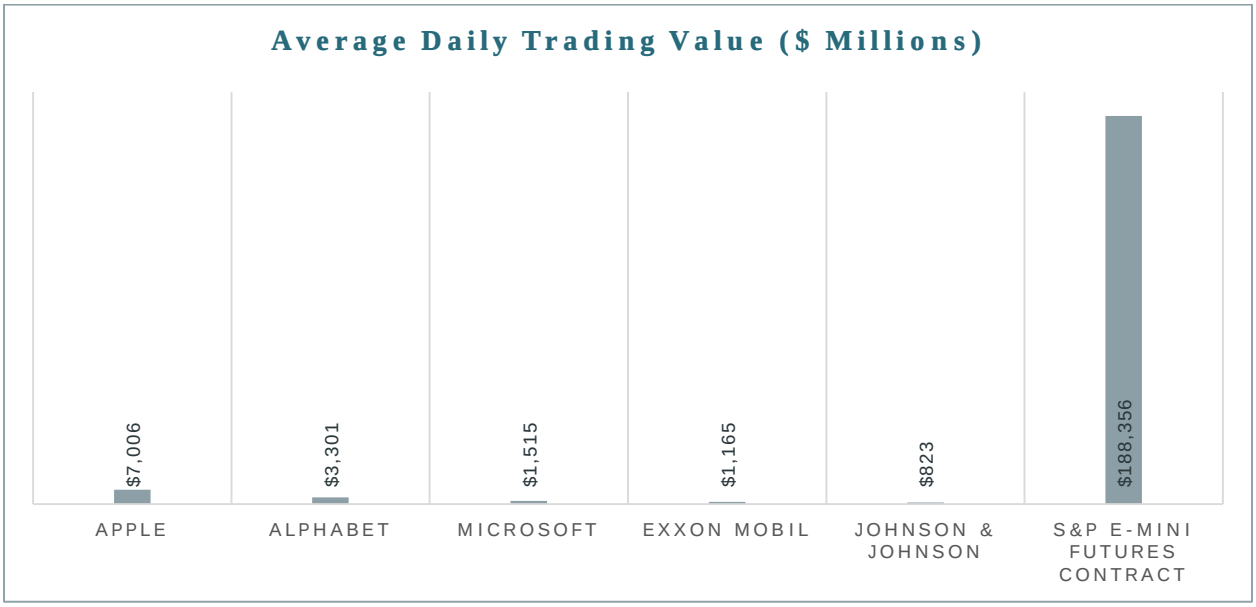


Exhibit F(2)

Transactions costs are lower for futures than for non-derivative securities

Futures can be less expensive to execute than equities. The table below compares the cost of buying $100 million using S&P e-mini futures to buying a $100 million "slice" of all 500 stocks.[25] Transaction costs for a stock-based portfolio are about four times as much as a futures portfolio.

	Shares / contracts	Bid-ask spread	Commission Rate (per share / contract)	Commission	Market Impact Estimate	Total Cost Estimate
Cash Equities	1,765,682	0.03%	$0.01	$17,657	$16,000	$33,657
Emini March 2016	1,033	0.01%	$1.92	$1,983	$6,500	$8,483

[24] Top five holdings of SPY as of February 22, 2016. Average daily value traded in Q3 2015.

[25] Data as of February 22, 2016 using SPY holdings and market estimates of low-cost execution commissions. Bid-Ask for each security sourced from Bloomberg. Market impact estimated using the bid-ask spread of the Emini contract and the index weighted bid-ask spread of the S&P 500 stocks.