



March 28, 2016

Submitted via electronic filing: www.sec.gov/rules/proposed.shtml

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

Re: Use of Derivatives by Registered Investment Companies and Business Development Companies, File Number S7-24-15

Dear Mr. Fields:

This letter responds to the Securities and Exchange Commission ("Commission" or "SEC") request for comment on topics covered by the proposed rules under "Use of Derivatives by Registered Investment Companies and Business Development Companies" ("Proposal").¹ BlackRock, Inc. (together with its affiliates, "BlackRock")² is supportive of the Commission's focus on modernizing regulations for derivatives use by registered investment companies and business development companies (collectively "US registered funds") and ensuring that reasonable limits on the use of economic leverage are in place. We were supportive of the Commission's 2011 Concept Release and we have encouraged the implementation of rules regarding derivatives and leverage use in several previous submissions to the Commission and the Financial Stability Oversight Council ("FSOC").³ BlackRock believes that when used appropriately, derivatives can be effective tools in seeking to achieve returns and control risks in US registered funds. For example, derivatives can be used to adjust levels of risk in a portfolio in a manner that may be more cost-effective, tax-efficient, or provide greater liquidity than replicating the same exposures through physical securities. That said, the use of derivatives can present risks, which must be properly managed. As such, we agree with the objectives of the Proposal to improve the consistency of the Commission's existing rules regarding the use of derivatives by US registered funds and to ensure that appropriate risk management practices are in place to address the risks associated with various derivatives strategies. We further

¹ SEC, Use of Derivatives by Registered Investment Companies and Business Development Companies, 80 Fed. Reg. 80884 (Dec. 28, 2015), available at <https://www.gpo.gov/fdsys/pkg/FR-2015-12-28/pdf/2015-31704.pdf> ("Proposal").

² BlackRock is one of the world's leading asset management firms. We manage assets on behalf of institutional and individual clients worldwide, across equity, fixed income, liquidity, real estate, alternatives, and multi-asset strategies. Our client base includes pension plans, endowments, foundations, charities, official institutions, insurers, and other financial institutions, as well as individuals around the world.

³ SEC, Use of Derivatives by Investment Companies under the Investment Company Act of 1940, 76 Fed. Reg. 55237 (Aug. 19, 2011), available at <https://www.sec.gov/rules/concept/2011/ic-29776fr.pdf>; BlackRock, Comment Letter, SEC – Use of Derivatives by Investment Companies under the Investment Company Act of 1940 (Nov. 4, 2011), available at <https://www.sec.gov/comments/s7-33-11/s73311-39.pdf> ("Response to 2011 Concept Release"); BlackRock, Comment Letter, Investment Company Reporting Modernization – SEC (Aug. 11, 2015), available at <http://www.blackrock.com/corporate/en-us/literature/publication/sec-investment-company-reporting-modernization-081115.pdf> ("Data Reporting Letter"); BlackRock, Comment Letter, Request for Comment on Asset Management Products and Activities – FSOC (Mar. 25, 2015), available at <http://www.blackrock.com/corporate/en-us/literature/publication/fsoc-request-for-comment-asset-management-032515.pdf> ("BlackRock Response to FSOC RFI").

support the existence of reasonable limits on the use of economic leverage by US registered funds. While we believe that the Commission's existing rules effectively limit US registered funds' abilities to obtain excessive leverage, it is important that the Commission maintain a robust regulatory framework around the use of leverage and derivatives that is updated from time to time. We appreciate the Commission's leadership on this topic as well as other ongoing initiatives to enhance the Commission's rules for US registered funds and registered investment advisers.⁴

Derivatives are financial tools that are commonly used for risk management purposes or as efficient means of implementing investment strategies. The Commission states in the Release that "a common characteristic of most derivatives is that they involve leverage or the potential for leverage."⁵ While it is true that most derivatives will introduce notional leverage into a portfolio, we would like to emphasize that while there is a potential for leverage, "undue speculation," as the Commission puts it, is not the primary objective or outcome of derivatives use by our mutual fund managers. BlackRock portfolio managers use derivatives for three main purposes: (i) to hedge (mitigate) risks to which the portfolio is subject, (ii) to replicate the characteristics of physical securities, and (iii) to generate portfolio exposures to implement an investment view. Hedging mitigates unwanted risk exposures in the portfolio. Hedging can either be targeted (a) on an absolute basis to reduce overall portfolio risk or (b) on a relative (or "active") basis to reduce tracking risk relative to a fund's benchmark. In other cases, portfolio managers use derivatives to replicate the risk-return profile of a physical security or a group of securities (e.g., an index or sector) because doing so is more efficient from a transaction cost, tax, liquidity, or operational perspective or because the physical security is not readily investable. The final use of derivatives is to generate exposures to a security or asset class to implement an investment view that cannot be easily achieved through investments in physical securities; for example the use of credit default indices and their associated options. We agree with the Commission's view that the use of derivatives in this manner should not be unlimited or unregulated. At the same time, it is important to acknowledge the other uses of derivatives and to preserve US registered funds' abilities to use derivatives for these beneficial purposes. To this end, we have made several comments throughout this letter to help the Proposal strike an appropriate balance between limiting leverage while not eliminating these important uses of derivatives.

In the context of modernizing the regulation of derivatives use by US registered funds, we encourage the Commission to consider the modern-day market challenges and risks facing US investors, which have changed over time. These challenges impact the investment strategies and products that investors use to achieve their investment objectives; they also impact the means by which portfolio managers implement various investment strategies. For example, structural changes to bond market liquidity have heightened focus on ensuring that portfolio liquidity is sufficient to meet liquidity needs.⁶ Derivatives, which are often much more liquid than the underlying physical markets, can facilitate portfolio management in such an environment. It would be hard to fathom the SEC in one rulemaking raising the bar on liquidity

⁴ SEC, Open-End Fund Liquidity Risk Management Programs; Swing Pricing; Re-Opening of Comment Period for Investment Company Reporting Modernization Release Proposed Rule, 80 Fed. Reg. 62274 (Oct. 15, 2015), available at <https://www.gpo.gov/fdsys/pkg/FR-2015-10-15/pdf/2015-24507.pdf> ("LRM Proposal"); SEC, Investment Company Reporting Modernization Proposed Rule, 80 Fed. Reg. 33590 (Jun. 12, 2015), available at <http://www.gpo.gov/fdsys/pkg/FR-2015-06-12/pdf/2015-12779.pdf>; SEC, Amendments to Form ADV and the Advisers Act, 80 Fed. Reg. 33718 (Jun. 12, 2015), available at <http://www.gpo.gov/fdsys/pkg/FR-2015-06-12/pdf/2015-12778.pdf>.

⁵ Proposal at 80886.

⁶ LRM Proposal.

risk management, and then in this rulemaking taking actions that could reduce the ability of fund managers to manage portfolio risks in light of structural changes to bond market liquidity. Further, focus on interest rate risk, which has always been a risk for fixed income investors, is heightened by today's trajectory of the Federal Reserve Board to normalize US interest rates after a prolonged period of extraordinary monetary policy. Derivatives are uniquely well-suited to manage interest rate risk. Likewise, divergent monetary policies between the US and other regions, such as the European Union ("EU"), have impacted currency valuations, in many cases resulting in the appreciation of the US Dollar ("USD") versus other currencies. This dynamic is a concern for US investors that seek to diversify their assets by investing in markets outside the US because the appreciation of the USD can erode returns earned in other currencies. Derivatives are the primary means of managing the currency exposure that arises from global investing – a practice that permits retail investors to improve the diversification of their portfolios.

In many ways, these modern-day market challenges encourage greater use of derivatives to address the aforementioned risks. For example, one adaptation, among several, to changes in bond market liquidity has been that some fixed income portfolio managers have adopted liquid derivative products such as Treasury futures, index credit default swaps, Eurodollar futures, or interest rate swaps as overlays to permit larger cash holdings while obtaining requisite bond risk exposures. Further, in the context of heightened concerns about liquidity and interest rate risk, derivatives such as interest rate futures are often used to adjust the duration of a fund without buying or selling the underlying bonds. Currency hedging is generally performed through the use of currency forwards. Currency hedging strategies permit US investors to diversify their assets across markets without taking unwanted currency risk. In other cases, investment strategies have been developed to address concerns related to heightened volatility and correlations between markets. These strategies often attain both long and short exposures in an attempt to achieve the returns of a certain market while reducing portfolio volatility. The result is that such portfolios are actually *lower risk* than a similar long-only portfolio that invests solely in physical securities. We encourage the Commission to ensure the final rule preserves the use of derivatives in the aforementioned ways. As the Commission is well-aware, US registered funds are the primary investment products available to US individual investors. This means that limiting or dis-incentivizing the availability of products designed to address modern-day market risks, or the ability of fund managers to manage these risks, will disadvantage individual US retail investors.

In considering the use of derivatives by US registered funds, we also note that the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act") included requirements for the Commission and the Commodity Futures Trading Commission ("CFTC") to issue comprehensive new regulations for the over-the-counter ("OTC") derivatives market. In addition, the US prudential regulators were tasked with promulgating rules relating to banks and their affiliated swap dealers regarding capital and margin requirements (including eligible collateral) for OTC derivatives. These new rules have fundamentally changed the derivatives markets and will continue to alter the landscape for derivatives—for both cleared and uncleared derivatives. For instance, increased central clearing, margin requirements on uncleared swaps, and capital requirements for swap dealers all impact the market structure for various types of derivatives and the ability of market participants to obtain leverage from the use of such derivatives. These new and emerging changes to derivatives markets should be taken into consideration as the Commission works to address derivatives use by US registered funds.

Finally, as we consider the Commission's broader agenda to modernize regulations for US registered funds, there needs to be an alignment among the proposed rulemakings to

ensure that the rules collectively achieve their intended objectives.⁷ For example, it would be counterproductive to the objectives of the Liquidity Risk Management Proposal (“LRM Proposal”), if this Proposal limited the use of derivatives for liquidity risk management. As such, even though each set of rules is being considered in separate rulemakings, all the rules will interact in practice and, therefore, cannot be considered in isolation. As we learned from the issues in the US equity markets on August 24, 2015, misaligned and inconsistent rules can have implications for the effective functioning of markets.⁸ As such, we encourage careful consideration of each of the new rules and how they will operate collectively so that the package of rules provides a consistent approach to the regulation of US registered funds.

Our comments on the Proposal are provided from this perspective. In this letter, we outline elements of the Proposal that we support, and we provide recommendations on how certain aspects of the Proposal could be enhanced or better aligned with the LRM Proposal to help the Commission achieve its objectives regarding both investor protection and systemic risk.

Executive Summary

- 1. We agree with the Commission’s assessment that a more comprehensive approach to regulating the use of derivatives by US registered funds is appropriate and will improve consistency of existing regulations.*

We have consistently supported a more holistic approach to the regulation of derivatives use by mutual funds.⁹ We believe that a consistent set of rules with well-defined objectives would be a far superior means of regulating derivatives use in mutual funds than through reliance upon a vast body of interpretive guidance, as has become the case over time. As such, BlackRock strongly supports the Commission in its effort to clarify and reconsider certain aspects of the regulations and interpretations of the Commission staff applicable to derivatives and to take a more modern approach to such regulations. We believe that greater consistency in the Commission’s rules will benefit US registered fund investors and US registered investment advisers alike.

- 2. We agree that fund managers employing more than a de minimis amount of derivatives should have a risk management program in place to address the risks associated with the financial instruments and investment strategies being employed.*

As we explained in our January 13, 2016 letter regarding the Commission’s LRM Proposal,¹⁰ effective portfolio management necessarily entails effective risk management. Therefore, we agree with a formal requirement that US registered funds have policies and procedures in place to identify, monitor, and mitigate risks associated with the use of

⁷ SEC Chair Mary Jo White, Speech, Enhancing Risk Monitoring and Regulatory Safeguards for the Asset Management Industry (Dec. 11, 2014), available at <https://www.sec.gov/News/Speech/Detail/Speech/1370543677722>.

⁸ BlackRock, *ViewPoint*, US Equity Market Structure: Lessons from August 24 (Oct. 2015), available at <http://www.blackrock.com/corporate/en-us/literature/whitepaper/viewpoint-us-equity-market-structure-october-2015.pdf>.

⁹ BlackRock Response to FSOC RFI; Response to 2011 Concept Release.

¹⁰ BlackRock, Comment Letter, SEC – Open-End Fund Liquidity Risk Management Programs and Swing Pricing (Jan. 13, 2016), available at <http://www.blackrock.com/corporate/en-us/literature/publication/sec-liquidity-risk-management-proposal-011316.pdf> (“LRM Letter”).

derivatives. We agree that this should entail a risk management function that is independent of portfolio management to ensure independent oversight of investment, liquidity, counterparty credit, operational, and technology risks. Therefore, we agree with the Commission's Proposal that funds maintain a derivatives risk management ("DRM") function that is independent of portfolio management. We note that in some cases, it may be more appropriate to delegate this responsibility to more than one individual, and therefore, suggest that the Commission leave the decision to the fund manager and fund board to determine the appropriate person or persons that should be tasked with DRM oversight.

3. *We are concerned that limiting Qualifying Coverage Assets ("QCA") to cash and cash equivalents will impede funds' abilities to meet redemptions through risk-constant selling of holdings, which conflicts with the objectives of the LRM Proposal. QCA should be expanded to include additional liquid assets with haircuts to address the volatility of asset values.*

If QCA are limited to only cash and cash equivalents, it may be harder for certain funds to meet redemptions through pro rata or risk constant selling of fund holdings as funds may be required to maintain a static cash balance or to quickly close out derivatives positions in a manner that may be inconsistent with the fund's investment strategy. This will result in funds either selling a greater amount of physical securities more quickly than they otherwise would and/or unwinding derivatives positions in order to meet redemptions, thereby encouraging pro-cyclical behavior by funds. We do not believe this outcome would be in the best interest of investors or financial stability more generally. Furthermore, it conflicts with the objectives of the LRM Proposal by impeding the ability of fund managers to meet redemptions while maintaining the liquidity profile of the fund. These requirements may also conflict with the contractual obligations of fund managers to provide a portfolio in line with the risk profile described in the fund's prospectus. Specifically, requiring funds to maintain static amounts of cash could alter a fund's risk profile, potentially jeopardizing a fund's ability to provide the risk profile that investors expect. For example, investors in index funds designed to track global or international indices and provide currency-hedged market exposure, expect that such products will effectively track their respective indices. Introducing the requirement to hold cash against the currency forwards used to hedge currency risk will result in greater tracking error, meaning that such products will be less efficient in providing the index exposure that clients expect. Further, limiting QCA to cash and cash equivalents may result in performance drag, which will increase the costs of the product to investors by requiring closed-end funds (and, in certain instances, exchanged-traded funds) that do not typically need cash to meet redemptions to hold levels of cash that are inconsistent with their investment mandates.

We support the twenty-year established precedent for use of any liquid security for asset segregation purposes.¹¹ Many regulators have addressed concerns similar to those expressed by the Commission in the context of posting margin for derivatives transactions.¹² In particular, these regulations permit a more expanded list of securities to be used as margin so long as an

¹¹ See Merrill Lynch Asset Management, L.P., SEC Staff No-Action Letter (July 1, 1996), available at <http://www.sec.gov/divisions/investment/imseniorsecurities/merrilllynch070196.pdf> ("Merrill Lynch No-Action Letter") (permitting funds to use any asset, including equity securities and non-investment grade debt, in a segregated account as long as the asset is liquid and marked to the market daily).

¹² Department of the Treasury, Federal Reserve System, Federal Deposit Insurance Corporation, Farm Credit Administration and Federal Housing Finance Agency, Margin and Capital Requirements for Covered Swap Entities, 80 Fed. Reg. 74840 (Nov. 30, 2015), available at <https://www.gpo.gov/fdsys/pkg/FR-2015-11-30/pdf/2015-28671.pdf> ("Swap Margin Rule"); Commodity Futures Trading Commission, Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants, 81 Fed. Reg. 636 (Jan. 6, 2016), available at <https://www.gpo.gov/fdsys/pkg/FR-2016-01-06/pdf/2015-32320.pdf> ("CFTC Margin Rule").

appropriate haircut of the value of the security is made. This effectively results in over-collateralization to ensure that even if the value of securities falls, there will be sufficient margin to cover the liability. We believe that a similar haircutting approach for asset segregation in addition to the proposed risk-based coverage amount and daily mark-to-market valuation of assets and derivative obligations will ensure sufficient asset coverage for derivatives positions. Indeed, the existing asset segregation regime, which does not require haircuts for non-cash assets used for coverage purposes, has been sufficient, and to our knowledge has not resulted in any significant issues for US registered funds, including during the 2008 Financial Crisis.

Further, we recommend that the Commission consider a carve-out from the segregation requirement that would permit fund-of-funds, in which derivatives are utilized to mitigate a particular exposure (e.g., currency exposure), to segregate underlying fund shares to satisfy asset segregation requirements. This is because (a) fund-of-funds that operate pursuant to Section 12(d)(1)(G) of the Investment Company Act of 1940 (“1940 Act”) often have no holdings other than underlying funds and derivatives are utilized to mitigate a risk inherent in the underlying funds, and (b) absent an ability to pledge underlying fund securities, in order to fulfill their investment objectives, such funds would have to alter their investment methodology to invest in securities (including cash and other eligible collateral) directly, which would lead to greater complexity and potentially higher costs for shareholders.¹³

4. *Gross Notional Exposure (“GNE”) is not a measure of derivatives exposure, leverage, or risk. We believe that leverage limits should be based on a measure of economic exposure instead of GNE.*

Today, the Commission effectively limits US registered funds’ balance sheet leverage that can be obtained through borrowing¹⁴ and separately regulates derivatives exposure through the existing asset segregation rules. We support existing rules around leverage obtained through borrowings. We are also supportive of the SEC defining a comprehensive measure of leverage that includes borrowings and derivatives. In order to properly restrict the use of leverage, a leverage limit should incorporate a measure of *economic exposure* obtained through the use of leverage (accounting for the fact that derivatives used for hedging do not create leverage). GNE – which is defined as financial commitments plus the absolute value of the notional amount of derivatives in a portfolio – could be used alongside a measure of economic exposure to provide information about whether or not a fund is utilizing derivatives as part of the portfolio construction process. However, by construction, GNE is not a measure of economic exposure and relying on GNE alone can result in misleading conclusions about the risk exposure of a fund.

A comprehensive measure of economic exposure obtained from the use of leverage (“economic leverage”) that incorporates borrowings and derivatives and is consistent with global standards is the best approach to introducing a leverage limit for US registered funds. There

¹³ 15 U.S.C. §80a-12(d)(1)(G).

¹⁴ US registered funds are subject to the 1940 Act rules regarding limits on borrowing and on collateralizing derivative exposures. Borrowings are limited to 33.3% of total fund assets (i.e., the fund must have asset coverage of 300%), which equates to a total asset limit of 1.5 times net assets. US registered closed-end funds may also issue a single class of preferred stock (subject to a 200% asset coverage requirement). 15 U.S.C. § 80a-18(a)(1)(B). In addition, although the Internal Revenue Code does not contain explicit limitations on leverage, borrowing may impact the tax character of distributions paid to shareholders and interest expense may not be deductible for tax purposes in certain circumstances. In addition, income received from certain derivatives contracts may not constitute qualifying income for purposes of the gross income test applicable to regulated investment companies. Together, the provisions further limit the ability of US registered funds to utilize leverage.

are many different methodologies that could be used to calculate economic leverage. We have provided a step-by-step analysis of one methodology that can be used to calculate economic leverage in Appendix A. We urge the Commission to consider an approach to limiting leverage that incorporates a measure of economic leverage as opposed to GNE.

5. *If the Commission is committed to limits based on GNE, there are some adjustments that, while not resulting in a measure of economic leverage, could improve the proposed portfolio limits' effectiveness while avoiding dis-incentivizing or prohibiting certain uses of derivatives, focusing on two main aspects: (i) expanded methodologies for the "value-at-risk" ("VaR") test to account for additional uses of derivatives; and (ii) GNE adjustments to better align GNE with risk.*

The first set of adjustments we recommend focuses on the proposed VaR test. In particular, mutual funds use derivatives in different ways but the proposed VaR test only considers one use of derivatives – to reduce total portfolio risk. The VaR test should be expanded to include three optional VaR tests (including the Commission's proposed VaR test) that incorporate three uses of derivatives. We suggest that funds be permitted to rely on one of these three tests to obtain the 300% portfolio limit:

1. Option A: Proposed VaR test for funds that use derivatives to hedge (reduce) overall portfolio risk.
2. Option B: An active VaR test for funds that use derivatives to align portfolio risks to benchmark risks (i.e., hedge relative to a benchmark).
3. Option C: For funds that use derivatives to obtain economic exposures, a risk limit should be applied to determine whether funds can rely upon the 300% limit. We believe that an absolute VaR test where 1-month 99% VaR would need to be less than or equal to 15% would be reasonable.¹⁵

Permitting three VaR tests will avoid precluding certain uses of derivatives that we believe are consistent with the Commission's intentions in proposing the VaR test, while continuing to ensure that all funds are limited in their ability to obtain leverage through the 300% limit. Alternatively, if the Commission is committed to a "one-size-fits-all" approach, we suggest the Commission pursue an "absolute VaR" methodology (Option C above) that limits 1-month 99% VaR to 15% for all funds. Funds whose 1-month 99% VaR was less than 15% would be permitted to rely on the 300% exposure-based portfolio limit. We believe that the use of an absolute VaR test as a means of permitting funds to rely upon the exposure-based portfolio limit of 300% would be appropriate, given that such funds would still be required to abide by the 300% limit, which will significantly curtail their ability to use substantial amounts of derivatives.

The second set of adjustments we recommend focuses on interest rate derivatives with a duration of less than one year. Consistent with the methodology employed in the Division of Economic and Risk Analysis ("DERA") study of the Proposal's impact,¹⁶ funds should be

¹⁵ In order to determine a proposed VaR threshold to be coupled with the 300% limit, we measured 99% 1-month VaR for a sample of BlackRock-managed funds with GNEs between 150% and 300%. Historical VaR results were reviewed based on actual portfolios from January 2011 through March 15, 2016 to evaluate ranges and levels of VaR, including loss outliers. To ensure that "crisis" periods were included, VaR for funds with the highest levels over the period, were calculated (based on current portfolio holdings) using historical volatility and correlation data from January 2008 through March 15, 2016. Our results found that with a 15% limit, consistent with the confidence interval and time horizon applied, sample funds would pass the VaR test the overwhelming majority of the time, but as expected statistically, certain funds would be outliers and fail the VaR test during adverse historical market environments (such as the financial crisis).

¹⁶ SEC, Division of Economic and Risk Analysis, Use of Derivatives by Registered Investment Companies (Dec. 2015) at 11, available at <https://www.sec.gov/dera/staff-papers/white-papers/derivatives12-2015.pdf> ("DERA Study").

permitted to divide the GNE of short-term (less than one year) interest rate derivatives by the appropriate divisor based on the length of the contract as a fraction of one year (e.g., divide GNE of 90-day Eurodollar futures contracts by four). We also support risk-adjusted haircuts to notional values for different types of assets as described in letters submitted by the Securities Industry and Financial Markets Association Asset Management Group (“SIFMA AMG”) and other industry trade associations. We further recommend that funds be permitted to exclude interest rate and currency derivatives from the GNE calculations if such positions are used to hedge interest rate or currency risk. While we recognize the Commission’s concern regarding the subjective nature of determining which positions qualify as hedges, we have suggested an objective approach in Appendix A.

6. *We recommend that GNE and VaR be measured at the end of each business day instead of prior to each derivatives transaction and that an appropriate “grace period” be provided to address passive breaches (e.g., breaches due to market movement or fund redemptions, but not due to changes in fund strategy) of the applicable portfolio limits.*

We believe that it is reasonable to expect funds to monitor their adherence to both the applicable portfolio limits and the VaR test regularly throughout the trading day. However, we do not believe it is operationally feasible nor necessary to require such calculations to be performed prior to each derivatives transaction. Such a requirement would materially increase the amount of time needed to perform a derivatives transaction and would also materially increase the compliance and recordkeeping burden with little added benefit. We recommend instead that portfolio limits be tested at the end of each business day.

Further, it is important to recognize that VaR is not static and can change rapidly with market conditions. We believe that it is conceivable that during certain market stress scenarios, the results of the proposed VaR test could change, and a fund that at one point was passing the proposed VaR test may very well find itself in breach. This could be highly problematic to investors in US registered funds during market stress scenarios if a fund that was using the portfolio limit of 300% no longer continues to pass the VaR test. As proposed, such a scenario will result in a fund being prohibited from entering any new derivatives transactions. In a time of actual severe market stress, when portfolio managers may urgently need to reduce portfolio risk through the use of derivatives that offset risks to which the fund is exposed, such an immediate prohibition on entering into new derivatives transactions could be harmful to a fund manager’s ability to protect a fund from adverse market moves. Likewise, this scenario could prohibit a fund from rolling existing derivatives positions that are expiring, which could materially disrupt the fund’s overall risk profile.

As such, we recommend two grace periods: one for the VaR test and one for the leverage limits, both of which will allow funds that fall out of compliance with a respective test (either leverage limit or VaR) due to market movements to continue to enter into derivatives transactions for a certain number of days (i.e., a grace period) to mitigate the potential impact noted above. First, we recommend a grace period of at least 30 days if a fund passively fails the VaR test thereby permitting such a fund to continue to enter into new derivatives positions (or roll existing positions), provided that the fund meets the risk-based portfolio limit of 300%. This would allow enough time to discern whether the failure to pass the VaR test is temporary. If the situation is not temporary, this grace period would permit the fund to restructure its investment strategy to comply with the 150% limit. Second, for breaches that occur if a fund’s GNE exceeds its respective limit, which could conceivably occur at times when a fund meets a large redemption, we recommend a grace period of 15 days to comply with the limit during

which time the fund can continue to exceed the GNE test but must make a best effort to come back into compliance as quickly as is feasible and in the best interest of fund shareholders.¹⁷ At the most fundamental level, these grace periods would be intended to avoid situations where funds are forced to unwind derivatives positions in a pro-cyclical manner that is harmful to fund investors. As such, we note that there may be circumstances where challenging market conditions could preclude a fund from returning to compliance with the portfolio limits, even with the grace periods mentioned above. As such, we would recommend that if funds are unable to return to compliance during the grace periods noted above, the fund manager should be required to notify the fund board and request an extension to the grace period of up to 30 days.

7. *Exchange-traded funds (“ETFs”) are different from open-end mutual funds and have unique issues that should be addressed through a standalone set of rules specifically designed for ETFs.*

The vast majority of ETFs are designed to track an index and do not incorporate any leverage. In contrast, there are risks associated with leveraged ETFs that certainly deserve further attention from the Commission. However, leveraged ETFs represent a small subset (only approximately 2% of US exchange-traded product assets under management) of the universe of exchange-traded products.¹⁸

ETFs are substantially different from open-end funds and should be addressed in a manner that reflects their unique structure. We have recommended that the Commission develop a comprehensive ETF rule, which would include a classification system to help investors better understand risks associated with different types of ETFs and enable regulators to directly address these risks. In a recent speech, Commissioner Stein echoed the need for such an approach stating: “Fundamentally, these questions lead to the same place – we need to take a holistic look at these products, their transparency, and how they interact in our capital markets. This should include not only looking at ETFs, but other exchange traded products that hold commodities, currencies or derivatives.”¹⁹ This approach is particularly important to help the SEC and investors understand the risks associated with different types of ETFs, including those that use leverage or other strategies that entail the use of derivatives. As we suggested in our comment letter regarding the LRM Proposal, we recommend that the Commission exclude ETFs from this rule and issue a separate proposed rulemaking that includes a comprehensive set of rules designed to address ETF-specific issues.

¹⁷ One example of a grace period can be found in the Internal Revenue Code. A registered investment company's quarterly compliance with the 25% diversification test includes a safe harbor provision allowing for a 30-day grace period. I.R.C. § 851(d)(1). Furthermore, the rationale for a grace period for breaches of GNE is similar to that articulated by the Commission for permitting flexibility under other requirements under the 1940 Act. See SEC, Investment Company Names, 66 Fed. Reg. 8513 (Feb. 1, 2001), available at <https://www.gpo.gov/fdsys/pkg/FR-2001-02-01/pdf/01-1967.pdf> (“Investment Company Names Rule”) (noting that for the 80% test under Rule 35d-1 deviations are permitted under unusual circumstances). The flexibility was given by the Commission in order to allow “investment companies to take temporary defensive positions to avoid losses in response to adverse market, economic, political, or other conditions. In addition, it will permit investment companies to depart from the 80% investment requirement in other limited, appropriate circumstances, particularly in the case of unusually large cash inflows or redemptions.” Investment Company Names Rule at 8513 (internal quotation marks omitted). We believe that reasons for breaching the GNE limit would be similar to those that lead to “unusual circumstances” under Rule 35d-1.

¹⁸ BlackRock obtained this data from Markit and Bloomberg as of Feb. 2016.

¹⁹ SEC Commissioner Kara M. Stein, Speech, Remarks at the “SEC Speaks” Conference: What Lies Ahead? The SEC in 2016 (Feb. 19, 2016), available at <https://www.sec.gov/news/speech/stein-sec-speaks-2016.html> (“Stein ETF Speech”).

Our comments on specific provisions of the Proposal are explained in greater detail below.

I. Asset Segregation Requirements for Derivatives Transactions

Under the asset segregation aspects of the Proposal, funds would be required to calculate the mark-to-market (“MTM”) value of derivatives in the portfolio and hold QCA equal to the MTM value of derivatives plus a risk-based coverage amount that is designed to address potential future losses and resulting payment obligations under stressed conditions. Under the Proposal, both MTM and the risk-based coverage amount must be identified on the books and records of the fund and calculated at least once each business day.²⁰

We agree that asset segregation is a sound practice that limits the risk that funds would be unable to cover losses arising from derivatives obligations. We also agree that MTM plus a risk-based coverage amount is appropriate for calculating the amount of asset coverage needed and that this approach is more consistent than the current practices with respect to asset segregation. We have significant concerns, however, about the unintended consequences associated with limiting QCA to cash and cash equivalents.

A. Mark-to-Market and Risk-Based Coverage Amounts for Derivatives

We believe that the MTM coverage amount is reasonable to cover potential obligations resulting from a fund’s use of derivatives. Assuming that QCA are expanded beyond cash and cash equivalents, we believe the risk-based coverage requirement is reasonable to address the payment required of a fund if it were to exit a derivatives transaction under stressed conditions. We recommend that the Commission provide guidance on appropriate stress scenarios for calculating the risk-based coverage amount for different asset classes to ensure consistent application for similar types of funds. Without such guidance, some managers may take on more risk by segregating a smaller risk-based coverage amount, whereas others may be more conservative. Guidance from the Commission on appropriate stress conditions would better ensure consistency in application across different funds and fund managers. We recommend the methodology for determining appropriate stress scenarios be based on established market practices, such as the stress scenarios used for calculating margin requirements at clearinghouses. This will ensure consistency between the Commission’s Proposal and comparable regulatory standards designed for similar purposes. This will also reduce the amount of complexity associated with calculating the risk-based coverage amount since it will be based on existing standards. Furthermore, we recognize that the Commission’s framework for the MTM and risk-based coverage amounts is analogous to the initial margin (“IM”) and variation margin (“VM”) that is posted with clearinghouses. In fact, the Commission permits margin offsets because it recognizes that VM serves the same purpose as MTM and IM serves the same purpose as the risk-based coverage amount. Given these parallel purposes, we recommend that the Commission simplify the segregation requirements by excluding cleared derivatives from the segregation rules altogether. Cleared derivatives will already be meeting the Commission’s requirements through the posting of IM and VM; consequently, the segregation rules do not provide any benefit and only create additional recordkeeping burdens.

²⁰ Proposal at 80994.

B. Margin Offsets and Netting Agreements

With respect to the implementation of margin offsets from the segregation requirements (for cleared and OTC derivatives or OTC only if the Commission takes our recommendation above), we recommend that both IM and VM be permitted to offset either the MTM or the risk-based coverage amounts. Under industry practice today, both IM and VM are used for cleared and OTC derivatives transactions by the clearinghouse and counterparties, respectively, when a derivatives transaction is exited. Distinguishing between the use of IM and VM will introduce complexity, which is not necessary given that both forms of margin serve the same purpose from the perspective that they are both available to cover potential obligations under derivatives in the event of a party's default.

With respect to netting agreements, we recommend, consistent with current industry practice, that the Commission clarify that for cleared derivatives transactions netting across contracts is permitted when these contracts are cleared by the same futures clearing merchant ("FCM") and with the same central clearing counterparty ("CCP"). In the case of centrally cleared derivatives, although a netting agreement is not in place between end users and the CCP, offsetting positions are generally netted against one another, resulting in a similar outcome to a netting agreement. That said, as noted above, we believe the best approach would be to exclude cleared derivatives from the asset segregation requirements.

C. Qualifying Coverage Assets

We agree with the Commission that asset segregation is a useful tool to "reduce the risk that the fund would be required to sell portfolio assets in order to generate assets to satisfy the fund's derivatives payment obligations, particularly in an environment where those assets may have experienced a temporary decline in value, thereby magnifying the fund's losses on the forced sale."²¹ However, we are concerned that the list of qualifying assets contained in the definition of QCA, as proposed, may result in a number of unintended consequences for investors. The challenge presented by the Proposal is that the Commission departs from current practice by proposing that, with limited exceptions, QCA for derivatives will consist of cash and cash equivalents only. This limitation is far more restrictive than the asset segregation guidance today, which permits a variety of assets to be used for segregation purposes.²² The Commission indicates that it did not include other assets, such as equities or debt, because it is concerned that assets other than cash would depreciate in value far more than cash would.²³ In particular, the Commission indicated that it is concerned that "such assets could decline in value at the same time the fund's potential obligations under the derivatives transaction could increase, thereby increasing the possibility that such assets could be insufficient to cover the fund's obligations under derivatives transactions."²⁴

²¹ Proposal at 80967.

²² See Securities Trading Practices of Registered Investment Companies, Investment Company Act Release No. 10666, 44 Fed. Reg. 25128 (Apr. 27, 1979) ("Release 1066") (describing a segregated account approach that requires a fund to segregate liquid assets, inclusive of cash, U.S. government securities, or other appropriate high-grade debt obligations, equal in value to the full amount of the obligations incurred by the fund); Merrill Lynch No-Action Letter (providing guidance that broadens the types of liquid assets that a fund can segregate from the more narrow range of high-quality assets described in Release 10666).

²³ Proposal at 80932.

²⁴ Proposal at 80932.

We are concerned that the unintended consequences of the Proposal's limitations on QCA will be to impede the ability of funds to meet redemptions through pro rata or risk constant selling of fund holdings. We are also concerned that limiting QCA to cash and cash equivalents may undermine the ability of funds to provide the investment and risk profile that clients expect based on the investment guidelines stated in the fund's prospectus. Further, the Proposal, together with certain aspects of the LRM Proposal, will encourage pro-cyclical investment behavior by open-end funds during times of market stress. Specifically, under the Proposal, open-end funds will be compelled to meet redemptions with sales or closeouts of derivatives positions or sales of greater amounts of securities than would constitute risk-constant selling of holdings, given the need to maintain a static portion of the fund in cash and cash equivalents to maintain sufficient QCA to cover remaining derivatives positions. At the same time, the three-day liquid asset minimum proposed in the LRM Proposal would require funds to maintain a minimum level of highly liquid assets.²⁵ Funds may, therefore, have to hold cash far in excess of what is appropriate given the fund's investment mandate and strategy. This could undermine the ability of funds to deliver investment outcomes that are in line with investor expectations based on the fund's investment mandate. It could also impact fund performance in a manner not contemplated by the fund's investment policies. Together, both proposals make it extremely difficult for funds to manage liquidity by meeting redemptions through risk-constant selling of fund holdings, such as through selling *pro rata* slices of the fund. Pro rata or risk constant selling of fund holdings to meet redemptions is a market standard and a necessary best practice in appropriately managing liquidity and redemption risks in open-end funds.²⁶

Additionally, the impact of limiting QCA to cash and cash equivalents will be felt acutely by certain investment strategies and US registered fund structures (e.g., closed-end funds, exchange-traded funds), where holding significant amounts of cash is not consistent with the fund's investment objectives or liquidity needs. Additional examples include index funds tracking global and international indices that provide currency-hedged market exposure, which will incur tracking error in order to comply with the rules, essentially impeding these funds' abilities to effectively meet their investment objectives. Further, funds with names that suggest a focus on a particular type of investment (e.g., emerging markets) must generally invest at least 80% of fund assets in the type of investment suggested by the fund's name.²⁷ If such funds are required to hold greater amounts in cash, they may be unable to simultaneously comply with this Proposal and the existing guidance. Furthermore, requiring funds to hold unnecessary amounts of cash can reduce returns for long-term savers. The result will be that investors who have the ability to select other types of investment products that are not US registered funds (e.g., those investors who meet the Accredited Investor criteria making them eligible to invest in private funds) will do so, while those investors who do not have access to other types of professionally managed investment products will be disadvantaged in their ability to access investment solutions that can effectively meet their savings and investment needs. We do not believe that this would be an acceptable policy outcome, particularly from the perspective of the individual investor.

²⁵ We note that three-day liquid assets arguably consist of a wider range of assets than cash and cash equivalents alone, making the two proposals inconsistent.

²⁶ LRM Letter.

²⁷ See 15 U.S.C. §80a-35(d); 17 CFR §270.35d-1 (requiring the funds operating under certain types of names adopt investment policies with respect to investments of 80% of the fund's net assets to comply with Rule 35d-1 of the Investment Company Act).

The cash requirements are particularly incongruous for closed-end funds. Closed-end funds are, by definition, funds that do not issue redeemable securities.²⁸ As such, closed-end funds do not have the same need for liquidity as open-end funds. This flexibility allows them to engage in investment strategies that are distinct from those of open-end funds. Mandating that closed-end funds hold cash to meet asset segregation requirements runs counter to their design and purpose. Furthermore, closed-end funds have greater flexibility to use leverage than open-end funds because of their ability to issue a class of preferred stock subject to an asset coverage requirement of at least 200 percent.²⁹ Imposing the same segregation requirements on closed-end funds diminishes their value as an investment product distinct from open-end funds (that may offer investors certain advantages with respect to their investment objectives).

Another unintended consequence of the QCA definition as proposed is that limiting QCA to cash and cash equivalents will limit the availability of currency-hedged funds, or eliminate such funds altogether; thereby impeding US investors' abilities to mitigate a key risk facing USD-based investors today. There are a growing number of funds that offer FX hedging as an option to investors in order to mitigate the currency risk that US investors are exposed to when investing in non-US securities. Such funds permit investors who wish to diversify their holdings beyond US markets but are concerned about currency risk to choose currency-hedged products. As such, the growth of these products is not surprising in an environment where the appreciation of the USD in relation to other currencies has significant implications for USD-based investors investing in foreign markets. In this environment, investors who seek the diversification of investing outside the US often find currency-hedged offerings attractive.

Exhibit 1: Foreign Exchange Rates 2013-2016



Source: Thomson Reuters Datastream, BlackRock Investment Institute, as of March 17, 2016

Today, currency-hedged products often employ an FX overlay through currency forwards to hedge the currency risk associated with the securities held in the fund. Currency-hedged funds typically cover their FX exposure using the underlying fund holdings. Therefore, the requirement for these funds to hold cash or cash equivalents against FX exposures will result in cash drag and introduce significant tracking error, making these products less palatable and less available to investors. In an environment where currency risk is an important risk for USD-based investors to consider, limiting the availability of these offerings does not further the Commission's mission of investor protection.

In order to prevent these unintended consequences, a broader set of assets should be considered QCA, consistent with current practice, to ensure that the Proposal does not inadvertently result in significant costs to investors or hamper funds' abilities to employ their

²⁸ 15 U.S.C. §80a-5(a). Compare §80a-5(a)(1), which defines an open-end company to mean a management company that offers for sale or has outstanding any redeemable security of which it is the issuer, to the definition of closed-end company in §80a-5(a)(2), which means any management company other than an open-end company.

²⁹ 15 U.S.C. §80a-18(a).

investment mandate in accordance with fund constituent documents and other existing SEC rules. As the Commission notes, cash is posted as margin for swaps transactions,³⁰ but under the margin rules for uncleared swaps adopted by the US prudential regulators, other assets are also permitted.³¹ In the case of the Swap Margin Rule, the US prudential regulators determined that applying appropriate haircuts to non-cash assets was “consistent with the Dodd-Frank Act, because the use of such non-cash collateral is consistent with preserving the financial integrity of markets by trading swaps and preserving the stability of the US financial system. The non-cash collateral permitted is highly liquid and resilient in times of stress and the rule does not permit collateral exhibiting significant ‘wrong-way’ risk. The use of different types of eligible collateral pursuant to the requirements of the final rule should also incrementally increase liquidity in the financial system.”³² We believe that the rationale of the US prudential regulators in permitting eligible assets other than cash to qualify as margin applies here as well; allowing QCA to include other types of liquid assets, with appropriate haircuts, will promote liquidity and preserve financial stability. As we stated above and in previous letters, requiring funds to hold significant amounts of cash in a manner that is inconsistent with fund mandates and client expectations will likely incentivize a migration away from US registered funds by those investors who have access to other types of investment products (e.g., private funds or separate accounts) or who can manage their assets directly. In this scenario, individual investors who do not generally have other means of accessing professional investment management services will be disadvantaged.

D. Eligible Liquid Assets and Application of Haircuts

Recognizing the Commission’s concerns about negative correlations between QCA and liabilities associated with derivatives, we recommend adoption of a haircutting method based on existing rules and practices to permit assets, other than cash, to be eligible as QCA. One example of such a haircut schedule is that which has been established under the Swap Margin Rule.³³ Other haircut options also exist, such as those used by clearinghouses for margin.³⁴ In addition to materially addressing the concerns noted above, this approach would result in harmonization of the Proposal with existing regulations and practices.

Under the haircutting approach, the Commission should include, at a minimum, as QCA the assets listed in Appendix B. These assets are those permitted in the Swap Margin Rule along with ETF shares. ETF shares are permitted in other haircut schedules, such as those used by the CME Group,³⁵ and are a significant source of collateral for fund-of-fund structures.

³⁰ Proposal at 80932.

³¹ Swap Margin Rule at 74910. See CFTC Margin Rules. These rules generally permit the following types of assets, among others, to satisfy both initial margin and variation margin requirements: (i) high-quality government and central bank securities; (ii) high-quality corporate bonds; and (iii) equities included in major stock market indices. See also Margin requirements for non-centrally cleared derivatives, Basel Committee on Banking Supervision and Board of the International Organization of Securities Commissions (Sep. 2013), available at <http://www.bis.org/publ/bcbs261.pdf>. As part of the G20 commitments to provide greater oversight and transparency of the derivatives markets, the Basel Committee on Banking Supervision (“BCBS”) and International Organization of Securities Commissions (“IOSCO”) undertook significant efforts to establish an international framework of minimum margin requirements for uncleared derivatives. The prudential regulators Margin Rules, the CFTC Margin Rules and the BCBS/IOSCO Final Margin Policy Framework each permit equities and other assets to be posted as margin for uncleared derivatives.

³² Swap Margin Rule at 74873.

³³ Swap Margin Rule at 74910.

³⁴ See e.g., CME Group, Acceptable Performance Bond Collateral for Base Guaranty Fund Products (2016), available at <http://www.cmegroup.com/clearing/files/acceptable-collateral-futures-options-select-forwards.pdf> (“CME Haircut Table”).

³⁵ CME Haircut Table.

We have attached a suggested schedule of haircuts as Appendix B showing the haircuts from the Swap Margin Rule with the addition of ETF shares suggesting that the haircut be consistent with that of the underlying holdings of the ETF. These haircuts are designed to address the fact that asset values of securities can change, effectively requiring overcollateralization when non-cash assets are posted as margin.

We believe that assets approved as margin by the US prudential regulators as well as those approved by clearinghouses are appropriate and have already been acknowledged by other regulators to be sufficiently risk mitigating. Furthermore, given that the Commission has proposed to permit posted margin to offset the required asset segregation amounts,³⁶ it is inconsistent not to permit directly what the Commission is permitting indirectly. Specifically, if the Commission is comfortable with these offsets when margin is posted, then it should be equally comfortable with permitting the same regime to be used with respect to QCA.

E. Fund-of-Funds

If the Commission does not accept our recommendations regarding QCA, including the recommendation to permit ETF shares as QCA, we recommend that the Commission consider a carve-out from the segregation requirement that would permit fund-of-funds in which derivatives are utilized to mitigate a particular exposure (e.g., currency exposure) to segregate underlying fund shares to satisfy asset segregation requirements. This is because (a) fund-of-funds that operate pursuant to Section 12(d)(1)(G) of the 1940 Act often have no holdings other than underlying funds, and derivatives are utilized to mitigate a risk inherent in the underlying funds, and (b) absent an ability to pledge underlying fund securities, in order to fulfill their investment objectives, such funds would have to alter their investment methodology to invest in securities (including cash and other eligible collateral) directly, which would lead to greater complexity and potentially higher costs for shareholders. This recommendation would include an appropriate haircut for ETF shares as discussed above.

II. Portfolio Limitations for Derivatives Transactions

Today, the Commission effectively limits leverage that can be obtained through borrowing and separately regulates derivatives exposure through asset segregation rules. We support existing rules around leverage obtained through borrowings and appreciate the Commission's attempt to define a comprehensive measure of leverage that includes borrowings and derivatives. As a general matter, we respectfully disagree that the use of GNE to measure or limit leverage is appropriate. We recognize that calculating an accurate measure of leverage entails a level of complexity and that there are tradeoffs between precision and simplicity of calculation and implementation. However, there exists a spectrum of different methods for calculating leverage each with their own benefits and limitations. On this spectrum, we view GNE as the most simplistic measure, where GNE is simple to calculate and understand but does not provide an accurate measure of risk. On the other end of the spectrum is true economic exposure, which is the most precise measure of leverage but also the most complex to calculate. As such, it is important to acknowledge what GNE measures and what information can and cannot be gleaned from GNE. Specifically, GNE is *not* a measure of derivatives exposure, leverage, or risk. GNE is defined as the financial commitments plus the absolute

³⁶ Proposal at 80995.

value of the notional amount of derivatives in the portfolio. High levels of GNE can indicate that several things could be going on in a portfolio:

- (i) The portfolio could be using a significant amount of derivatives for hedging or other reasons;
- (ii) There may be complexity in the portfolio construction process due to the use of derivatives;
- (iii) There may be process inefficiencies that result in offsetting positions that should be closed out; or
- (iv) The portfolio is obtaining high levels of risk or leverage by using derivatives.

As such, GNE can be useful in providing information about the portfolio's overall use of derivatives, or the "derivatives footprint". However, GNE only provides a baseline measure of a fund's derivatives use, and it fails to quantify the risks associated with different types of derivatives or the purpose of the derivatives use. GNE does not indicate whether a portfolio is using derivatives to obtain high levels of risk or leverage or whether derivatives are being used for hedging or other purposes. In other words, funds can have high levels of GNE without necessarily having high levels of risk or economic leverage. As such, attempts to identify risk or "undue speculation" associated with US registered funds should not be based on GNE; GNE is misleading with respect to risk and economic leverage and will result in incorrect assumptions about the risks associated with various funds. Rather, GNE could be a useful metric that could be reported to the Commission for informational purposes to identify funds that are heavy users of derivatives and may require further inquiry from the Commission as to the reasons for high levels of GNE. When used as a "bright-line" test to limit the use of economic leverage by US registered funds, however, GNE is not an appropriate measure.

We recognize the challenge that selecting an appropriate measure of leverage presents for regulatory purposes, particularly given the need to ensure that any measure of leverage prescribed by regulation can be applied consistently to a wide range of funds and can pass the test of time. Indeed, other regulators, such as the European authorities that oversee both the AIFMD and Undertakings for Collective Investments in Transferable Securities requirements, have faced similar challenges and have come to very workable solutions to appropriately balance precision with simplicity. As we stated in several previous submissions to the Commission and to FSOC, we recommend that regulators globally seek to better harmonize the measurement of leverage. By leverage, we are specifically referring to a measure of economic exposure that can be obtained either through borrowings or derivatives. Such a measure of leverage should account for the fact that derivatives used for hedging or that are offsetting other positions do not create leverage. At present, we believe that the most sophisticated measure of leverage included in regulation is the AIFMD commitment leverage. Recognizing the Commission's concern with regard to the AIFMD approach that "it would be difficult to develop standards for determining circumstances under which transactions are offsetting other transactions,"³⁷ we are submitting a discussion regarding a more objective means of calculating economic leverage, which has been included as Appendix A – we have also included a conceptual discussion on how to calculate economic leverage below.

To the extent the Commission is already committed to pursuing the approach based on GNE, our suggestions on defining a more accurate and comprehensive approach to measuring economic leverage are followed by specific comments that seek to make several basic adjustments to improve the efficacy of the proposed portfolio limits. While the result of making

³⁷ Proposal at 80906.

these adjustments will not be a measure of economic leverage, the adjustments attempt to incorporate elements of the economic leverage calculations in order to improve the efficacy of the proposed portfolio limits while preserving funds' abilities to use derivatives for other purposes, albeit in an imprecise manner with many remaining limitations.

A. Overall Approach to Portfolio Limits on Leverage

Leverage limits should be aimed at limiting the amount of *economic* leverage that is introduced through the use of derivatives and borrowings. This can be achieved by the following high level process:

- (i) Define and measure risk factors using appropriate units of risk;
- (ii) Calculate *net* exposure to each risk;
- (iii) Net derivatives positions used for hedging using an objective methodology;
- (iv) Divide by portfolio NAV.

We explain the calculations that would need to be performed for a representative global bond portfolio to calculate economic leverage using this approach in Appendix A. We have provided a high level discussion below, focusing specifically on interest rate and currency risk, as derivatives are most commonly used by portfolio managers to manage these risks.

i) Define and Measure Risk Factors Using Appropriate Units of Risk

When measuring risk, it is important to start by defining appropriate units of measurement that reflect the level of risk associated with different kinds of investments. The unit of measurement differs by the type of risk one is trying to measure. Exhibit 2 shows appropriate units of measurement that could be used to quantify the presence of various types of investment risks in portfolios.

Exhibit 2: Defining Primary Risk Factor Units of Measurement to Measure Different Investment Risks

Risk	Unit of Measurement
Interest Rate Risk	Duration Dollars or the dollar value of a one basis point change in an instrument's yield ("DV01").
Credit Spread Risk	Duration times Spread ("DxS")
Inflation Risk	Real duration dollars
Equity Risk	Delta-adjusted equity beta
Currency Risk	Unhedged (active) currency exposure
Commodity Risk	Delta-adjusted commodity beta

Looking at the first type of risk shown in Exhibit 2 – interest rate risk – DV01 is a standardized measure of interest rate risk that calculates a position's price sensitivity to interest rate movements. Expressing funds' interest rate risk exposures in these terms will better reflect the risks that may be associated with a given interest rate derivative position. Specifically, using DV01 reflects the amount in dollar-terms that will be gained/lost when there is a 1 basis point parallel shift in the yield curve. This results in more consistent treatment of different types of interest rate derivatives that are used to achieve the same economic outcome from a duration (i.e., interest rate risk) perspective. Using DV01 also demonstrates why GNE is not appropriate to measure risk or leverage associated with interest rate derivatives. Exhibit 3 illustrates several examples of portfolios that have the same interest rate risk as the aforementioned portfolios, but with very different GNE (ranging from \$17.1 million to \$2 billion), illustrating that there is no correlation between GNE and interest rate risk.

**Exhibit 3: Contracts and Notional Amounts Required to Attain \$50,000 of DV01
Equivalent Risk among Interest Rate Derivatives**

Contract/Notional Needed to Replicate 50k DV01 Equivalent Risk				
Futures	DV01 per Contract	Futures Contract Size*	DV01 per Position	Notional
Eurodollar Future	25	2,000	50,000	2,000,000,000
US 2Y Treasury Note	43	1,163	50,000	232,600,000
US 5Y Treasury Note	52	962	50,000	96,200,000
US 10Y Treasury Note	82	610	50,000	61,000,000
US 10Y Ultra Future	121	413	50,000	41,300,000
US Long Bond	228	219	50,000	21,900,000
US Ultra Bond	293	171	50,000	17,100,000
Swaps	DV01 per 1mm Notional	Swap Notional*	DV01 per Position	Notional
2Y Swap	173	289,000,000	50,000	289,000,000
5Y Swap	461	108,500,000	50,000	108,500,000
10Y Swap	905	55,200,000	50,000	55,200,000
30Y Swap	2,262	22,100,000	50,000	22,100,000

*Swap notionals rounded to the nearest 100,000. Futures rounded to the nearest contract. Contract size and swap notional equal 50,000 divided by DV01 per contract or 1 million notional, respectively.

Source: BlackRock.

In Appendix A, we show how this could be applied to a representative bond portfolio to reflect the portfolio's exposures to different types of risks.

ii) Calculate Net Exposure to Each Risk

In many cases, long and short positions offset one another, meaning that the absolute value component of GNE does not appropriately capture the risks associated with long and short positions. For example, consider a portfolio that is 100% long 10-year bond futures and 100% short 10-year bond futures. Such a fund would have a GNE of 200% and would fail the proposed VaR test – meaning that it would not be compliant with the proposed portfolio limits – even though the portfolio's risk is effectively zero.

iii) Objective Means of Netting Derivatives Positions Used for Hedging

Since derivatives can be used to offset or hedge portfolio risks in certain portfolios, GNE can overstate a fund's actual economic exposure. For example, many portfolios purchase investment grade or Agency mortgage-backed security ("MBS") debt and hedge the interest rate risk using Treasury futures. A portfolio that uses this hedge (see Portfolio 1 in Exhibit 4) will have a lower risk than the unhedged portfolio (see Portfolio 2 in Exhibit 4), but twice the GNE because GNE is the sum of the absolute value of notional positions. Similarly, GNE does not take into account the volatility of the security. For example, at equal notional sizes, the volatility of a 10-Year Note Treasury future is approximately 70 times greater than that of a Eurodollar future. This is due to differences in the duration of these two instruments and the different volatilities of the key rate points on the yield curve to which they are exposed. Yet, GNE would only count the notional value, treating Eurodollar contracts the same as 10-Year Note futures.

Exhibit 4: Hedged vs. Unhedged Bond Portfolio

	Weight		Duration		Volatility (bps)	Rates Stand Alone Risk (bps)
	TSY	Bond	TSY	Bond	Total	Total
Portfolio 1	-130	100	-8.14	8.14	472	100
Portfolio 2	0	100	-	8.14	533	548

In another example, a US-based currency fund that holds 100% in an MSCI Japan Index Futures contract and hedges with 100% Japanese Yen ("JPY")/USD would be viewed to have 200% GNE (see Portfolio 1 in Exhibit 5), twice that of a USD fund that holds simply 100% in an MSCI Japan Index Futures contract (see Portfolio 2 in Exhibit 5). However, the fund that hedges JPY currency risk has less risk than the fund that does not use derivatives to hedge currency risk, as the FX hedges mitigate exposure to portfolio swings as a result of currency moves.

Exhibit 5: Hedged vs. Unhedged International Equity Fund

	Portfolio 1	Portfolio 2
Future	100%	100%
FX Forward	-100%	-
GNE	200%	100%

We recognize the Commission's concern regarding the potentially subjective nature of determining which positions qualify as hedges. With this concern in mind, we suggest the use of an objective approach that involves calculating net exposures of physical securities and derivatives positions and compares those exposures to determine positions that can be netted because they are used for hedging purposes. This process does not require subjective decision-making regarding which positions are hedges. Although different units of measurement are used, essentially the same methodology can be applied to all types of risk exposures once net exposures for both physical securities and derivatives have been calculated:

- If the sign of net physical securities and net derivative positions is the same, take the absolute value of the derivatives exposure.
- **If the sign of net derivative positions is opposite from the net physical securities position, this means that the derivatives are being used as a hedge and should be excluded from the exposure calculation.**
- If net physical securities exposure is less than the net derivative exposure, use the absolute value of the difference, as this signifies that derivative usage is above and beyond that needed for hedging or risk management purposes.

Exhibit 6 shows how net exposures can be used to discern interest rate hedges for a representative bond portfolio with interest rate exposure in different currencies.

Exhibit 6: Example Calculations for Interest Rate Duration Risk Exposure

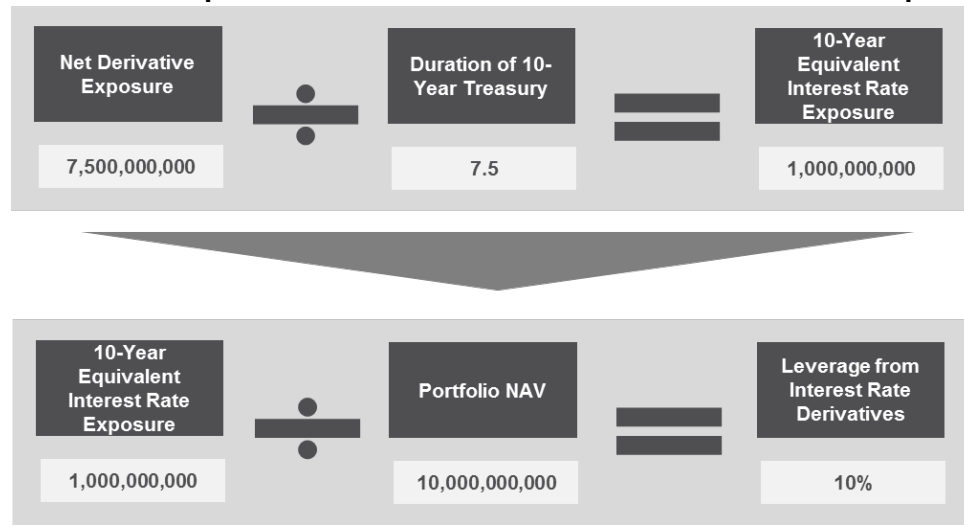
Currency	Step 1A - Duration Dollars					Step 1B - Net Exposures		Step 2 - Net Hedges	
	Cash.Long	Cash.Short	Deriv.Long	Deriv.Short	Total	Cash Net	Deriv Net	Sign Check	Deriv Net Hedges
AUD	19,958,159	(17)	5,347,693,981	(2,413)	5,367,649,710	19,958,142	5,347,691,567	Same	5,347,691,567
BRL	0	0	1,649,607,671	(530,509,740)	1,119,097,932	0	1,119,097,932	Same	1,119,097,932
CAD	149	(779)	446,387,546	(442,335,457)	4,051,459	(630)	4,052,090	Opposite	4,051,459
CLP			0	(0)	(0)	-	(0)	Opposite	0
CNH	75,096,255		(0)	0	75,096,255	75,096,255	(0)	Opposite	-
CNY	6,411,706		1,142,016,674		1,148,428,380	6,411,706	1,142,016,674	Same	1,142,016,674
USD	69,495,401,259	(7,903,643,237)	10,840,660,067	(65,747,819,118)	6,684,598,971	61,591,758,022	(54,907,159,052)	Opposite	-
Grand Total	69,596,867,529	(7,903,644,033)	19,426,365,939	(66,720,666,728)	14,398,922,707	61,693,223,496	(47,294,300,789)		-

iv) Divide by portfolio Net Asset Value (“NAV”)

Once all of these steps are completed for each of the risk factors that the portfolio is exposed to, the exposures can be converted to a dollar unit, which can then be compared to NAV to determine the economic exposure above and beyond the portfolio’s net assets – in other words, leverage. For example, for interest rate derivatives, the steps would be:

- Convert duration dollars into ‘ten year equivalents’ as a percentage of NAV.
- Divide derivative exposure by duration of the ten-year Treasury.³⁸
- Divide by portfolio NAV to express in percentage terms. This percentage would be substituted for notional in the proposed portfolio limit calculation.

Exhibit 7: Example Calculations for Interest Rate Duration Risk Exposure



B. Adjusting Proposed Portfolio Limit Tests to Better Achieve Objectives

While our overall approach, as described in the previous section, would be a better measure of economic leverage and the most appropriate means of limiting leverage in US registered funds, if the Commission is committed to an approach based on GNE, there are several technical changes to the GNE calculation and the VaR test that could be made to help the proposed portfolio limits better achieve the objective of limiting the use of leverage for “undue speculation”, while not disallowing or dis-incentivizing the use of derivatives for hedging portfolio risks or to replicate the risk-return profile of physical securities in a more cost-effective or efficient means than investing directly in those securities. As described in the following sections, adjustments to the GNE calculations are needed, while an expanded set of VaR tests should be permitted to account for the fact that funds use derivatives in different ways.

i) Expand Methodologies for VaR Test to Account for Additional Uses of Derivatives

We agree with the Commission that using VaR to assess overall derivatives usage and leverage is very important, particularly since looking at leverage in isolation can misstate the

³⁸ It may also be prudent to normalize for volatility before converting exposures to 10-year bond equivalents. This is discussed in Appendix A but has been omitted in the above discussion for simplicity.

fund's economic exposure and overall risk. However, US registered funds use derivatives in different ways and, in many instances provide retail investors with investment strategies that provide exposure to more difficult to access markets or to obtain exposures more efficiently. The Commission's proposed VaR methodology, which compares the VaR of the total portfolio to the VaR of the portfolio excluding derivatives, only gives consideration to funds that use derivatives primarily to reduce overall portfolio risk. However, funds that use derivatives to hedge risk relative to the benchmark may not pass the proposed VaR test. This outcome could discourage managers from using derivatives that would otherwise provide a return stream for the fund that more closely mirrors these funds' underlying benchmarks. In addition, absolute return funds often invest in derivatives in an attempt to achieve stable returns and low correlations to market risks, reduce operational complexity, and increase liquidity. However, these funds, while they have high levels of GNE, often have risk levels far lower than a long-only portfolio. Therefore, we believe that limiting the proposed VaR test to a single methodology, may dis-incentivize or eliminate certain uses of derivatives and certain investment strategies that are beneficial to investors. We described a recommended alternative approach below.

Specifically, we recommend that the proposed VaR test be expanded to include three optional VaR tests to better account for funds that use derivatives in different ways. Given the nature of their derivatives use, these types of funds should be permitted to use leverage up to a 300% limit. Permitting three separate VaR tests will avoid precluding certain uses of derivatives by funds, while ensuring that all funds remain limited in their ability to obtain leverage through the 300% limit. The VaR test should be expanded to include three optional VaR tests (including the Commission's proposed VaR test) that incorporate three uses of derivatives which funds can use to rely on the 300% GNE limit:

1. Option A: Proposed VaR test for funds that use derivatives to hedge (reduce) overall portfolio risk.
2. Option B: An active VaR test for funds that use derivatives to align portfolio risks to benchmark risks (i.e., hedge relative to a benchmark).
3. Option C: For funds that use derivatives to obtain economic exposures, a risk limit should be applied to determine whether funds can rely upon the 300% limit. We believe that an absolute VaR test where 1-month 99% VaR would need to be less than or equal to 15% would be reasonable.

Funds that use derivatives primarily to hedge portfolio risk would be subject to the Commission's proposed VaR test to assess their ability to obtain a 300% limit. Funds that use derivatives to align a portfolio to a benchmark or to create an absolute return portfolio could then be subject to one of the two VaR tests, described below. Note that these funds would remain subject to the 300% limit.

The additional VaR tests we propose would be used to permit the higher limit of 300% to be used by funds that employ derivatives in ways other than those contemplated in the Commission's proposal. Funds that do not use derivatives primarily in that way could determine that one of the other two VaR tests is more appropriate. In all cases, the 300% limit serves as a backstop, regardless of which VaR test is selected. To administer this three-option approach, we recommend requiring funds to define how they use derivatives in their policies and procedures, and requiring each fund to select the VaR test that is most applicable to its investment strategy and identified in its prospectus. If a fund's investment strategy changes and the fund manager determines that the initial VaR test is no longer appropriate, the fund's board should be required to approve a change to the selection of VaR test. Board oversight and

approval of which VaR test each fund uses will ensure that the fund's VaR test choice is in line with how the fund use derivatives in its investment strategy.

a) Option A: Funds that Use Derivatives to Reduce Overall Portfolio Exposure

Funds that primarily use derivatives to hedge portfolio risk would be subject to the Commission's proposed VaR test to assess their ability to obtain a 300% limit. We agree that the proposed VaR test is effective at capturing funds that use derivatives to reduce overall portfolio risk exposures. We further believe that a large number of funds would select Option A (the proposed approach), even if given multiple VaR test options.

b) Option B: Funds that Use Derivatives to Align a Portfolio to their Benchmark

While the proposed VaR test accounts for absolute risk, it does not account for funds that use derivatives to reduce risk relative to the fund's benchmark. For example, bond funds may use interest rate derivatives to align portfolio duration to the benchmark's duration. Global funds, meanwhile, may use currency forwards to hedge currency risk to a global benchmark. Finally, balanced or equity funds may use combinations of derivatives, including index futures, to hedge risk relative to their benchmark and to help manage flows. These funds may not pass the proposed absolute VaR test because their derivatives do not hedge overall portfolio risk but rather hedge risks relative to the fund's benchmark. We believe that providing funds with the option to use the active VaR will be beneficial from an investor protection standpoint for investors in funds that are managed relative to a benchmark, without introducing the potential for systemic risk to arise because of the 300% limit as a backstop.

For these funds, when VaR is calculated relative to a benchmark, derivatives are shown to be risk reducing, an outcome which should raise their limit to 300%. Therefore, we recommend that the Proposal permit the use of an active VaR test, where VaR is calculated relative to a fund's stated benchmark. Operationally, the active VaR test would use the same underlying model and calculations as the proposed VaR test. The only difference between the two tests is that the active VaR test uses inputs of active (portfolio minus benchmark) exposures/weights, while the proposed VaR test would use the total portfolio exposures/weights. In the event that a historical VaR calculation is used, the active VaR test would use active returns, while the proposed VaR test would use total portfolio returns. The active VaR test could then determine what the impact of the use of derivatives is on the portfolio's risk relative to its benchmark.

The example in Exhibit 8 shows a sample portfolio that uses interest rate derivatives. On an absolute basis, the fund with derivatives has more risk than the Securities Only portfolio, as the derivatives introduce a large negative exposure to the portfolio. The Securities Only portfolio has 1.01% VaR as compared to 4.56% VaR for the Total Portfolio. Using the proposed VaR test, the fund would not be permitted to obtain the 300% limit, as derivatives are not risk to the portfolio itself. However, relative to the sample portfolio's stated benchmark, the derivatives reduce the interest rate exposure relative to the benchmark, thereby reducing risk relative to the Securities Only portfolio. The Securities Only portfolio has an active VaR of 5.18%, as compared to a Total Portfolio active VaR of 0.69%. Since the derivatives are shown to be risk reducing on an active basis, we believe this type of portfolio should be permitted to rely on the 300% limit.

In order to ensure that fund managers do not subjectively select a benchmark for the active VaR test, funds should be required to perform the active VaR test against the benchmark

stated in their prospectus. Furthermore, fund boards should be required to approve any proposed change to the fund's stated benchmark, if the Fund is using Option B.

Exhibit 8: Example Portfolio using Interest Rate Derivatives

Proposed VaR Test			Active VaR Test		
	Securities Only Absolute Exposure	Total Portfolio Absolute Exposure		Securities Only Active Exposure	Total Portfolio Active Exposure
Rates	2.4	-8.2	Rates	18	8
	Securities Only Absolute Risk (%)	Total Portfolio Absolute Risk (%)		Securities Only Active Risk (%)	Total Portfolio Active Risk (%)
Total	1.01	4.56	Total	5.18	0.69

c) Option C: Funds that Use Derivatives to Obtain Economic Exposures

In order to achieve their investment objectives, certain funds (often absolute return funds) obtain exposure through derivatives to reduce costs to investors, to achieve operational efficiencies, to obtain tax efficiencies, or to increase portfolio liquidity, or in cases where the physical assets with the requisite exposure may not be readily investable. Derivatives used in these investment strategies will often have less risk than a long-only equity portfolio of physical securities, as well as lower correlations with broad market risks. For example, long/short strategies may trade swaps or futures to gain exposure in order to reduce costs of trading and shorting physical securities. Moreover, multi-asset funds use derivatives to express their views efficiently, to maintain liquidity, and to dynamically manage their risk.

These types of funds will not pass the proposed VaR test because derivatives are not being used exclusively to reduce risk in the portfolio. In these portfolios, derivatives are also used to gain exposure. These funds will often show relatively high levels of GNE; however, their GNE levels do not equate to high risk levels because as mentioned previously, GNE is not a measure of risk. We believe that requiring these funds to employ the proposed VaR test may limit or eliminate certain products that are valuable to investors. For example, funds that employ long/short strategies typically have much lower risk than a long-only portfolio of physical securities, despite having a higher GNE. Constraining these products to the proposed VaR test might exclude the use of derivatives in ways that increase the efficiency of the portfolio management process, which ultimately benefits the end investors in these types of products.

In Exhibit 9, we show two sample portfolios. Portfolio A is a long-only portfolio with 100% physical equities. Portfolio A has 0% GNE, a 10 Day VaR of 6.56%. 97% of Portfolio A's risk comes from the Market, due to its beta of close to 1. Portfolio B is a Long/Short portfolio, primarily composed of equity swaps and futures. Portfolio B has a GNE of 220%, however, and thus would be subject to the proposed VaR test. Because Portfolio B implements its investment strategy through the use of derivatives, it will fail the Commission's proposed VaR test. However, the fund is 81% less risky than the long-only physical equity portfolio, with a 10 day VaR of just 1.2%. Portfolio B has a beta close to zero, at 0.06, and only 10% market risk.

Exhibit 9: Long/Short Example

	Portfolio A	Portfolio B
	Long Only 100% Physicals Portfolio	Long/Short Derivatives Portfolio
GNE	0%	220%
10 Day VaR	6.56	1.24
Beta	0.96	0.06
Factor/Specific Risk (%)	3%	90%
Market Risk (%)	97%	10%

For funds such as those in the above example, we recommend an “absolute VaR” methodology that limits 1-month 99% VaR to 15%. Funds whose 1-month 99% VaR was less than 15% would be permitted to rely on the 300% exposure-based portfolio limit. In order to determine a proposed VaR threshold to be coupled with the 300% limit, we measured 99% 1-month VaR for a sample of BlackRock-managed funds with GNE between 150% and 300%. Historical VaR results were reviewed based on actual portfolios from January 2011 through March 15, 2016 to evaluate ranges and levels of VaR, including loss outliers. To ensure that “crisis” periods were included, VaR for funds with the highest levels over the period, were calculated (based on current portfolio holdings) using historical volatility and correlation data from January 2008 through March 15, 2016. Our results found that with a 15% limit, consistent with the confidence interval and time horizon applied, sample funds would pass the VaR test the overwhelming majority of the time, but as expected statistically, certain funds would be outliers and would not pass the VaR test during adverse historical market environments (e.g., 2008 Financial Crisis).

We believe that the use of an absolute VaR test as a means of permitting funds to rely upon the portfolio limit of 300% would be appropriate, given that such funds would still be required to abide by the 300% limit, which will significantly curtail their ability to use substantial amounts of derivatives to create leverage.

Alternatively, if the Commission is committed to a “one-size-fits-all” approach, we suggest the Commission pursue an absolute VaR test that limits 1-month 99% VaR to 15% for all funds that rely upon the 300% portfolio limit.

ii) Duration Adjustments for Interest Rate Derivatives

As noted in Section II(A), the best approach would be to calculate economic leverage as opposed to focusing on GNE. However, to the extent the Commission is committed to an approach based on GNE, we suggest several basic adjustments to help improve the precision of the calculations in order to obtain a figure that is a more accurate reflection of economic exposure than GNE, without adding significant complexity. Firstly, in the Proposal, the Commission states, “Eurodollar futures are often referenced by market participants by dividing the amount of the contract by 4 in order to reflect the 3-month length of the interest rate transaction...For these very short-term derivatives transactions, calculating notional amounts

without dividing by 4 would reflect a notional amount that could be viewed as overstating the magnitude of the fund's investment exposure."³⁹ The release then asks, "Should the proposed rule permit or require this practice?" We agree that dividing the notional value of Eurodollar futures by 4 would be an improvement to the use of GNE and would address high notional values associated with Eurodollar futures, as this is a much better estimate of the exposure associated with these instruments than the full notional value.

Eurodollar futures are used by fixed income portfolio managers to hedge monetary policy risk with precision. Given the outsized influence of monetary policy on fixed income assets, precise hedges are critical. Often, Eurodollars are used in yield curve trades to target specific risk exposures, where for example a portfolio manager may be long Eurodollars for one year and short them for the next year. The economic risk to the portfolio is the difference in rates between the two years.⁴⁰ These trades certainly do bear economic risk, but the risk is not as large as the sum of the GNE would suggest; as these instruments have one-quarter year durations, their full notional value often overstates the risk of the exposure by a factor of 4.

In addition, we believe that other short-term interest rate contracts with maturities less than one year should be permitted to have the same treatment with an appropriate divisor, consistent with the methodology in the DERA study that assessed the impact of the Proposal on US registered funds.⁴¹ For example, we believe that other 90-day contracts should be permitted to divide their GNE by 4, in line with the fact that ninety days represent approximately one quarter of one year. Examples of these contracts include: Euroyen (3M), Euribor (3M), Euro Euribor (3M), Euro Swiss Franc (3M), US T-Bill (3M), 90 Day Sterling, AUD 90-day bank bill, 91 day T-Bill, and 91 day Mexican T-Bill. As these instruments also have one-quarter year durations, their full notional values grossly overstate the risk of the exposure. Without adjustments for short term interest rate derivatives, the GNE will materially overstate the exposure associated with these derivatives contracts, potentially limiting fixed income fund managers' abilities to employ these widely used instruments to manage interest rate risk. As such, if the Commission moves forward with portfolio limits based on GNE, we strongly urge the Commission to permit this adjustment for short-term interest rate derivatives.

iii) Netting of Interest Rate and FX Hedges

In addition to adjustments for short term interest rate derivatives, calculating adjustments that account for interest rate and FX hedges is critical to managing the risk in a portfolio. Hedging is an important component of portfolio management in today's market environment, particularly as it relates to interest rate risk and currency risk. In a period when monetary policy is a key driver of asset prices, interest rate derivatives allow fund managers to hedge interest rate risk in a precise and cost-effective manner. Given the increasing volatility in currency prices, currency risk also has become a greater driver of market and portfolio risk. USD appreciation, for example, is now a key risk facing US investors with exposure to global markets, and fund managers rely on their ability to hedge this risk where appropriate.

³⁹ Proposal at 80908.

⁴⁰ This risk is appropriately accounted for in the methodology suggested in Appendix A.

⁴¹ A December 2015 study by DERA on the use of derivatives by registered investment companies states that "for short term interest rate futures, such as 90-day Euro-dollar futures, we followed the apparent industry convention to divide the notional amount by the appropriate divisor to adjust any interest rate future having a term shorter than one year. For example, with respect to 90-day Eurodollar futures, the notional amount is divided by four." DERA Study at 11.

While interest rate risk and currency risk are not the only risks that US registered funds need to manage, they are two of the most important and widely hedged risks. We believe that limiting such hedging activities through the proposed portfolio limits may jeopardize funds' ability to manage these risks, which would be detrimental to investors in US registered funds. Therefore, we recommend that funds be permitted to exclude interest rate derivative and currency derivative positions from their GNE calculations if such positions can be identified as hedges using the methodology we described in Section II(A)(iii) and Appendix A. We believe at the very least, the Commission should permit the output of those calculations for interest rate and currency risk to be substituted instead of GNE to ensure that an economic leverage figure is being used for these two very common hedges. Absent netting allowances for hedging, relying on GNE alone will significantly overstate funds' leverage. We are concerned that if funds are required to adhere to portfolio limits based on GNE without adjustments for hedges, portfolio managers could be precluded from hedging these important market risks, disadvantaging investors in US registered funds.

iv) Adjustments for Options Contracts with Different Strike Prices

We recommend that funds be permitted to exclude covered options from the calculation of exposure. This principle should apply regardless of whether the option is covered through holding the reference asset directly or through an offsetting option position. For options contracts, netting across different strike prices should be permitted (provided the options have the same reference asset and expiration). In these covered transactions, a fund either owns or has the ability to enter an offsetting position in the underlying asset, thus mitigating risk. Similar to the offsetting derivatives transactions for which netting would be permitted under the Proposal, the exposure calculation should distinguish between an uncovered and a covered position. We believe that addressing covered options and permitting netting across different strike prices is sufficiently narrow to address the Commission's concern regarding the difficulty in developing standards to address offsetting risk characteristics, while simultaneously recognizing the different risk profile of covered and uncovered positions.

C. Operational Comments Related to Implementation of Portfolio Limits

i) VaR Should be Reported as a Percentage of Assets

The Proposal defines VaR as "an estimate of potential losses on an instrument or portfolio, expressed as a positive amount in US dollars, over a specified time horizon and at a given confidence level."⁴² Basing a VaR calculation on dollar amounts, and not percentages, could inadvertently impact funds that would otherwise pass the proposed VaR test. Consider a fund that has \$100 million in net assets, with eighty percent (80%) of those assets in securities and twenty percent (20%) in unrealized gains from derivatives. Under the proposed VaR test, the fund's securities VaR would have a dollar amount of \$80 million, while its full portfolio VaR would have a dollar amount of \$100 million. If the fund determines that its securities VaR (measured as a percentage) is ten percent (10%) but its full portfolio VaR (measured as a percentage) is nine percent (9%), then the fund's derivatives are risk reducing and it should be permitted to use the 300% leverage limit. If the VaR is required to be measured in USD (rather than as a percentage), however, the securities VaR would be equal to \$8 million (10% of \$80 million) and the portfolio VaR would be equal to \$9 million (9% of \$100 million). Thus, even though the full portfolio VaR is lower than the securities VaR in percentage terms, the full

⁴² Proposal at 80916.

portfolio VaR would be higher than the securities VaR if measured by a dollar amount. We urge the Commission to require the calculation of VaR as a percentage of assets rather than as a dollar amount. If the Commission adopts our proposed three optional VaR tests, VaR should be reported in percentage terms in those instances as well.

ii) Frequency of Testing Adherence to VaR and Portfolio Limits

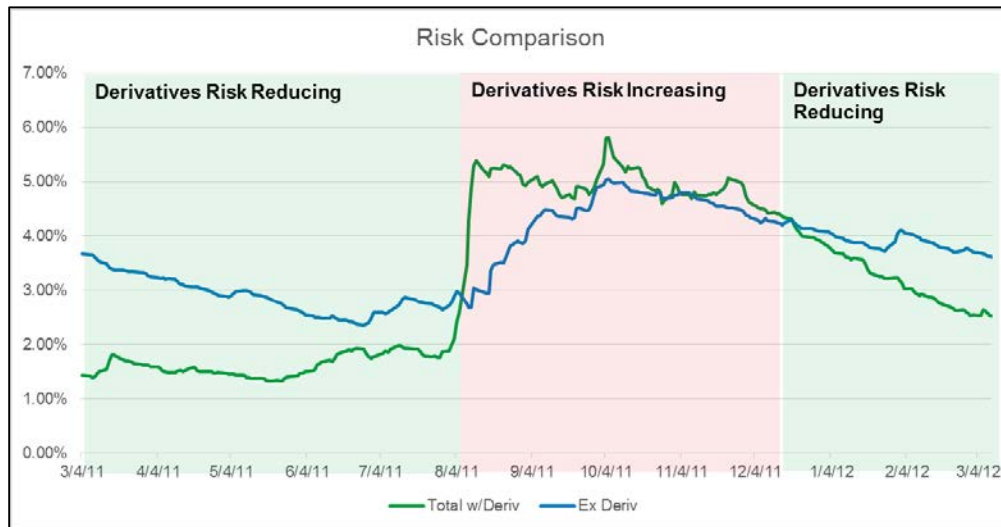
We believe that it is reasonable to expect funds to monitor their adherence to both the applicable portfolio limits and VaR test regularly throughout the trading day. However, we do not believe that it is appropriate or prudent to require such calculations to be performed prior to each derivatives transaction. Such a requirement would materially increase the amount of time needed to perform a derivatives transaction and would materially increase the compliance and recordkeeping burden with little added benefit. We recommend instead that portfolio limits be tested at the end of each business day to strike an appropriate balance between the objectives of the rule and making the compliance process more workable.

iii) Grace Period for Passive Breaches of VaR Test and Portfolio Limits

Risk measures are not static and can change rapidly with market conditions. It is conceivable that during certain market stress scenarios, the results of the proposed VaR test could change and a fund that at one point was passing the proposed VaR test may very well find itself in breach. For example, the time-series in Exhibit 10 below shows the risk level through time of a sample portfolio of rates and spreads that shorted interest rate derivatives to hedge duration risk. During the period shown in 2011, this portfolio would have suddenly failed the proposed VaR test, as a result of rapidly increasing volatility in the high yield versus the Treasury market, even though it would previously have passed the VaR test. Therefore, even a portfolio that was very long interest rates would have had lower risk than the one hedging its duration, due to the influence of high yield volatility in the duration-hedged portfolio. Subsequently, these managers would have had to incur transaction costs to take off derivatives, only to incur additional transaction costs to put these trades back on when volatilities returned to more normal levels.

Exhibit 10: Example Time-Series of Derivative Usage to Mitigate Risk

Exposure	
10 Yr Tsy (Cash Bonds)	5
Duration (Derivatives)	-4
Net Duration	1
High Yield	2



A scenario such as the one described above could be problematic under the Proposal if a fund that was using the risk-based portfolio limit of 300% no longer passed its VaR test due to market-driven changes in volatilities or correlations. Such a scenario will result in a fund being prohibited from entering any new derivatives transactions. In a market stress scenario where portfolio managers may need to urgently reduce portfolio risk through the use of derivatives that offset risks to which the fund is exposed, such an immediate prohibition on entering derivatives transactions could be harmful to a fund manager's ability to protect a fund from adverse market moves, resulting in unnecessary losses to investors. Likewise, this scenario could prohibit a fund from rolling existing derivatives positions that are expiring, which could materially disrupt the fund's overall risk profile.

As such, if a fund fails the VaR test through a change in market movements (rather than a change in fund strategy), we recommend a grace period of 30 days that would permit such a fund to continue to apply the risk-based portfolio limit of 300%. This would allow enough time to discern whether the in breach of the VaR test is temporary. If the situation is not temporary, this grace period would permit time to restructure the fund's portfolio composition in an orderly manner to comply with the portfolio limit of 150%. While a sudden change in market structure may warrant a change in a fund's investment and derivatives strategies, we believe it is in investors' best interests to allow portfolio managers time to assess the right approach to returning to compliance with the portfolio limits.

We recommend a grace period for such situations that permits funds to act in the best interest of their investors, while also working toward compliance with the exposure limit. For passive breaches to portfolio limits resulting from increases to GNE divided by NAV, which could conceivably occur at times when a fund meets large redemptions, we recommend a grace period of 15 days to comply with such limits.

During either grace period funds should be expected to make a best effort to come back into compliance as quickly as is feasible and in the best interest of fund shareholders. At the most fundamental level, these grace periods would be intended to avoid situations where funds are forced to unwind derivatives positions in a pro-cyclical manner that is harmful to fund investors. As such, we note that there may be circumstances where challenging market conditions could preclude a fund from returning to compliance with the portfolio limits, even with the grace periods mentioned above. Thus, we would recommend that if funds are unable to return to compliance in the grace periods noted above, the fund manager should be required to notify the fund board and request an extension to the grace period of up to 30 days.

III. Derivatives Risk Management Program

We support the establishment of required DRM programs, and we agree that funds using a material amount of derivatives should be able to articulate a DRM program and regularly monitor key risks associated with derivatives use. We strongly support a DRM function that is independent from portfolio management. The DRM function should have direct reporting lines to senior leadership and a regular role in communicating with the fund management company board of directors (or other governing body) and US registered fund boards to ensure that risk is evaluated independently to verify that portfolio managers are constructing portfolios in a manner that is consistent with client expectations and regulatory requirements. We believe it would be beneficial to allow the responsibilities for the DRM program to be delegated to a group of people, such as a risk committee, rather than mandating that the responsibility for the DRM program only be given to a single individual. This would allow firms some flexibility to incorporate the DRM program into their existing compliance and oversight structures. Funds should have discretion as to what specific responsibilities are delegated to the Chief Risk Officer and Chief Compliance Officer, as is appropriate for each fund.

IV. Additional Mutual Fund Board Responsibilities

Under the Proposal, the board must approve the fund's DRM program.⁴³ Specifically, the Proposal intends for the Board to have the responsibility to:

- Approve and oversee compliance with the particular portfolio limitation(s) under which the fund will operate (and any changes thereto) with respect to its derivatives transactions;
- Approve and oversee policies and procedures reasonably designed to provide for the fund's maintenance of QCA with respect to its derivatives transactions and financial commitment transactions, including procedures to determine calculations for risk-based coverage amounts with respect to any derivatives transactions; and, if required, comply with the approval and oversight requirements of the fund's DRM program;⁴⁴

⁴³ Proposal at 80994.

⁴⁴ Proposal at 80994.

- Designate a derivatives risk manager responsible for administering the DRM program who is independent of portfolio management; and
- Approve material changes to the DRM program.⁴⁵

Mutual fund boards of directors should and do already provide oversight of an investment adviser's management of fund assets. We believe that fund boards should understand the DRM program and the risks the program is designed to manage. We believe that some of the board responsibilities noted above would suggest the board is expected to be involved in the day-to-day management of a fund. We believe such an expectation would go far beyond the board's oversight role and is not an appropriate expectation of fund boards. We support mutual fund board engagement, oversight, and awareness of DRM practices and issues. While we agree that fund boards should be responsible for oversight of DRM, we do not believe that they should be responsible for administering the DRM program. As we articulated in our LRM Letter, we believe that risk management should be delegated by the board to appropriate risk managers. As we stated in our LRM Letter, we think it is appropriate to have the board provided with notice of changes to the DRM policy and conduct a periodic (e.g., annual) review.⁴⁶

In the case of DRM, we have also stated above that the board would approve the VaR test under which a fund operates. Because the VaR test is linked to the fund's investment strategy, we believe that such an approval is appropriate. Which portfolio limit the fund adheres to – either 150% or 300% – can change as a result of market movements that may cause a fund that was passing the VaR test to unexpectedly fail. Consequently, seeking board approval each time the fund needs to operate under a different limit would be cumbersome and limit the ability of portfolio and risk managers to make timely decisions. In the case of DRM, we believe that it is appropriate that risk managers have the flexibility to respond to market movements, which, in some cases, may require that the fund operate under a different portfolio limitation, and such a decision may need to be made quickly. Obtaining board approval could hamper a risk manager's ability to make and implement such determinations.

V. ETFs

In June 2015, the Commission requested comment on numerous topics relating to Exchange-Traded Products ("ETPs")⁴⁷ and received a range of responses, including one from BlackRock,⁴⁸ seeking to provide information and feedback. BlackRock commends the Commission for recognizing the differences between ETFs and open-end mutual funds and seeking to better inform itself on issues unique to ETFs through the ETF Issues Release. ETFs differ from open-end mutual funds in many respects. We have recommended in several instances that the Commission develop a holistic rule that is specific to ETPs, covering a wide range of ETP-specific issues. We recommend that such a rule include an ETP classification

⁴⁵ Proposal at 80994.

⁴⁶ LRM Letter at 25-26.

⁴⁷ SEC, Request for Comment on Exchange Traded Products, 80 Fed. Reg. 34729 (Jun. 17, 2015), available at <https://www.gpo.gov/fdsys/pkg/FR-2015-06-17/pdf/2015-14890.pdf> ("ETF Issues Release").

⁴⁸ BlackRock, Comment Letter, SEC – Exchange-Traded Products (Aug. 11, 2015), available at <https://www.blackrock.com/corporate/en-us/literature/publication/sec-request-for-comment-exchange-traded-products-081115.pdf> ("BlackRock ETF Comment Letter").

system to help investors better understand the risks associated with different types of ETPs and enable regulators to directly address these risks, including the specific risks associated with leveraged ETFs. As part of a holistic ETP rule, we suggest an ETP classification system using risk-based distinctions be included. We outline a suggested classification scheme in Appendix C.

While it is true that there are unique issues and risks associated with leveraged ETFs, leveraged ETFs represent a small subset (only approximately 2% of US ETP assets under management) of the universe of ETPs.⁴⁹ A separate ETP rule should appropriately differentiate this type of ETP from the vast majority of unlevered ETFs and address the risks specific to different types of ETPs. Not only would this better address the specific issues associated with ETPs, it would also avoid unintended consequences associated with the application of this Proposal to unlevered ETFs, some of which employ currency hedges when providing exposure to an international index. Such funds do not employ leverage but simply provide currency-hedged exposure to international markets. We do not believe that the intention of the Proposal is to limit currency hedging by any funds, including unlevered ETFs. As such, this issue should be addressed in the Adopting Release by excluding unlevered ETFs from the scope of the Proposal.

For more detail on BlackRock's views regarding ETPs, please see BlackRock's ETF Comment Letter.⁵⁰

VI. Compliance Period

Fund managers will need a significant amount of time in order to effectively implement the provisions of the Proposal, including time for mutual fund boards to review and approve changes required to comply with the Proposal. Allowing adequate time for both fund managers and mutual fund boards to thoughtfully develop the documentation and review, test, and update operational processes and procedures will be essential to the success of the Proposal. In order to comply with these requirements, fund managers will need time to ensure that the appropriate research and review of funds can be performed and to update the operational and recordkeeping processes related to the management each fund. Mutual fund boards will need time to develop an understanding of the DRM programs, ask questions of risk officers and other knowledgeable individuals, and receive thorough responses to these questions. Further, complying with the proposed changes will necessarily include reprogramming compliance and trading systems and software to account for additional compliance and recordkeeping measures associated with this rule. This will require testing of the various controls to ensure funds can comply with the complex changes associated with the Proposal.

We note that the Commission has requested comment on two separate compliance deadlines for large and small fund managers. In particular, the Commission asked whether larger entities (funds that together with other funds in the same "group of related investment companies" have net assets of \$1 billion or more) should have a compliance period of 18 months. The Commission further asked whether smaller entities should have 30 months to comply. Given the complexity of this rulemaking and the need to tailor DRM policies and

⁴⁹ BlackRock obtained this data from Markit and Bloomberg as of Feb. 2016.

⁵⁰ BlackRock ETF Comment Letter.

procedures to the unique nature of many different funds, we recommend that all funds be given at least 30 months to comply with these requirements to ensure that the appropriate research and review can be performed and that updates to operational processes can take place. Furthermore, the Commission should take into account the combined compliance requirements of related proposals, including the LRM Proposal and the Data Reporting Proposals. Funds will need sufficient time to implement all of these regulations in an integrated manor.

VII. Recordkeeping Requirements

We believe that funds should be required to calculate GNE and results of the VaR test on an end-of-day basis, and that funds should keep records for how these calculations were performed. Given that funds perform a number of transactions throughout the day, we believe that it would not be feasible to expect funds to store calculations of GNE and VaR on a transaction-by-transaction basis throughout the day. We suggest conducting a VaR test and measuring GNE at the end of each day and recording these calculations.

VIII. Data Collection & Data Confidentiality

We are supportive of the Commission's efforts to obtain more data about mutual funds. However, we believe it is important to re-consider the volume and detailed nature of additional position-level data and portfolio limitations that the Commission has proposed to be publicly disclosed on Form N-PORT and Form N-CEN. As outlined in the Proposal, the SEC is well-aware of the tradeoffs between simplicity and precision in measuring leverage. However, this may not be the case for members of the public who will view the information if the proposed Forms N-PORT and N-CEN are made public. While this transparency may be helpful to some investors, the downside and risk of misinterpretation of the data may exceed the potential benefits.

For example, some investors may not be familiar with the information or lack thereof provided by GNE. Should a measure of GNE divided by NAV as contemplated in the portfolio limits be disclosed to the public, the Commission should ensure that there is an explanation of the data that explains that GNE is not a measure of risk and should not be used by investors to understand the risks associated with a given US registered fund. Results of the VaR test may change from time to time, depending on how derivatives are being used with respect to a fund's investment strategy and, therefore, which portfolio limit the fund operated under during a given reporting period should not be required to be reported as it may not be constant throughout the reporting period. As such, given that the GNE limit being used may change over time, it does not seem particularly useful to have funds list which portfolio limit they relied upon during the year in Form N-CEN.

Last, as we have noted in previous submissions, publicizing detailed information about each fund position (even with a time lag) could lead to predatory use of the data by other market participants to the detriment of US registered funds and their shareholders. Therefore, we suggest that the Commission collect data on derivatives positions confidentially, such as through Form PF. Given that Form PF is a private form reported directly to the Commission, the inclusion of detailed position-level data on Form PF instead of the public Form N-PORT would

enable the Commission to obtain data for oversight and analysis without creating public disclosure.

We thank the Commission for providing BlackRock the opportunity to express our support for your efforts and to provide our comments and suggestions on the Proposal. Please contact the undersigned if you have any questions or comments regarding BlackRock's views.

Sincerely,

Barbara Novick
Vice Chairman

Benjamin Archibald
Managing Director

cc:

The Honorable Mary Jo White
Chairman
Securities and Exchange Commission

The Honorable Michael Piwowar
Commissioner
Securities and Exchange Commission

The Honorable Kara M. Stein
Commissioner
Securities and Exchange Commission

David Grim
Director
Division of Investment Management
Securities and Exchange Commission

Appendix A: High Level Framework for Measurement of Economic Leverage

Introduction & Overview

There are many ways to calculate economic leverage with varying levels of complexity and precision. In the discussion below, we have outlined an example of an approach that strikes a balance between precision and objectivity while minimizing, to the extent possible, the level of complexity in the calculations. The approach is conceptually consistent with the AIFMD Commitment Leverage approach in that both borrowings and economic leverage from derivative positions used as part of investment strategies in a portfolio are included in the leverage measure. Further, the approach appropriately recognizes that derivatives used for hedging positions and offsetting long and short positions do not create leverage and does so in an objective manner. We note, however, that the specific calculations we describe deviate from the AIFMD rules for the purpose of simplification and clarity. We do not view the calculation of leverage described below as the most precise measure of economic leverage as, given its simplicity, there are several known limitations with this approach. Further, we note that the calculation of a reasonable and comprehensive measure of economic leverage naturally introduces complexity, which can increase costs of implementation and the operational difficulty associated with producing this figure for multiple portfolios on a regular basis. These considerations would need to be addressed in order to implement such a measure of leverage.

That said, we believe that the approach described below is a reasonable starting point that could help begin a robust conversation about leverage between the Commission and the industry. In particular, this approach only requires data on the positions in the portfolio and it does not introduce a significant amount of subjectivity into determining the existence of a hedge or offsetting position, which will help promote consistency in the calculations provided by various managers. As such, we believe that with enhanced precision on approaches for risk bucketing and normalization of risk into common units (described below), managers could calculate this figure in a relatively consistent manner, albeit with a workable implementation timeframe that takes into account the associated level of complexity.

To provide greater perspective, after we demonstrate the calculation of economic leverage, we compare and contrast it with GNE. This demonstrates the relative strengths and weaknesses of the various approaches. We recommend that the Commission engage with the asset management industry through industry forums or other means to determine: (a) enhancements to improve precision, add granularity, and eliminate simplifying assumptions; as well as (b) obtain the appropriate balance between precision and the need for consistent computability across the broad and diverse range of US registered funds under the scope of this Proposal. We would welcome participation in such forums as well as the opportunity to consider other ideas that may better achieve the Commission's objectives.

Conceptual Discussion

Below is a high level overview of the steps that one would take to calculate economic leverage, which includes borrowings (e.g. repo, bank lines of credit, and inter-fund lending) and economic leverage from derivatives positions (after removing positions that are offsetting or hedging positions in a fund).

Step 1: Define and Measure Risk Factors Using Appropriate Units of Risk

- 1A: Determine units of measurement for each risk exposure type. For example:
- o **Interest Rate Exposure:** Duration dollars by currency
 - o **Spread Exposure:** Duration times Spread (“DxS”) by market (e.g., investment grade credit, high yield credit, agency MBS, CMBS, etc.), and currency
 - o **Inflation Exposure:** Real duration dollars by currency
 - o **Equity Exposure:** Delta-adjusted equity beta by country
 - o **FX Exposure:** Unhedged (active) currency exposure by individual currency.
 - o **Commodity Exposure:** Delta-adjusted commodity beta by commodity

**We recognize that guidance around appropriate risk buckets would need to be given to ensure consistent application of this approach. This guidance should include sufficient granularity of risk buckets. For example, for spread risk, there are a multitude of distinct risks that would need to be defined and captured (e.g. Investment Grade, High Yield, Bank Loan, Agency MBS, CMBS, Structured Products, Emerging Markets, Sovereign, etc.) Additionally, enhanced methods to normalize varying risks into common equivalents should be considered.*

- 1B: For each derivative in a portfolio, identify its primary risk exposure.
- o While certain derivatives have exposure to a variety of risk factors, define the primary risk exposure to be used in the netting calculations.
 - o For instance, a Treasury future or an interest rate swap would be categorized as having exposure to the US interest rate curve. The portfolio's benchmark duration or the 10-year Treasury's risk factor should be the exposure mapping point. For investment grade CDS, a corporate bond risk exposure should be used. For an option, the option's delta equivalent exposure could be applied to the risk factor exposure of the reference security of the option.
 - o Some derivatives may not have straightforward primary risk exposures, in which case the below netting would not need to be applied.
- 1C: Calculate long and short exposure of each by risk factor block for cash securities and derivatives separately.
- o Offsetting exposures from reverse repo transactions should not be included in this calculation. For example, bookkeeping positions for a repo transaction typically include a long position for the security being used as collateral and an offsetting short repo position. This means that a repo position would only count towards leverage, if the resulting cash that is raised is used towards the purchase of another asset.

Step 2: Calculate Net Exposure to Each Risk Factor

- 2A: Calculate net exposure for cash positions and derivatives positions by subtracting short exposure from long exposure.

Step 3: Net Derivatives Positions Used for Hedging

- 3A: Compare net exposure from cash securities to net exposure from derivatives to the primary risk factor and net the derivatives exposure being used for hedging or risk reduction, which is determined as follows:
- o If sign of cash and derivative positions is the same, take the absolute value.
 - o If sign of each derivative position is opposite from the cash position, this means that the derivatives are economically hedging the cash position and should be excluded from leverage calculation completely or to the extent that they offset the cash position.
 - o If the cash position exposure is less than the derivative exposure, use the absolute value of the difference, as this signifies that derivative usage is above and beyond that needed for hedging or risk management purposes.

Step 4: Convert Risk Factor Exposure to Percentage of Portfolio NAV.

- 4A: Normalize net derivative exposure by volatility. This step is optional and entails adjusting each risk block exposure based on its long term historical volatility to normalize to a common unit.
- 4B: Convert risk exposures to an appropriate dollar amount (e.g., convert duration dollars to 10-year bond equivalents).
- 4C: For borrowing, divide outright borrowing by NAV.

Step 5: Repeat steps 1 to 4 for all risk exposures and add to obtain economic leverage.

Illustrative Example

Exhibit A.1: Calculations for Interest Rate Duration Risk Exposure

Step 1A - Determine Units of Measurement (Dollar Duration)

Step 1B - Identify Primary Risk Exposures

Step 1C - Calculate Long and Short Exposures						Step 2A - Calculate Net Exposure to Each Risk Factor		Step 3A - Net Derivatives Positions Used for Hedging		Step 4A - Normalize Net Derivative Exposures by Volatility	
Currency	Cash Long	Cash Short	Deriv Long	Deriv Short	Total	Cash Net	Deriv Net	Sign Check	Deriv Net Hedges	10Yr Vol	Norm Deriv
AUD	6,652,720	(6)	1,782,564,660	(804)	1,789,216,570	6,652,714	1,782,563,856	Same	1,782,563,856	0.84%	1,773,903,407
BRL	0	0	549,869,224	(176,836,580)	373,032,644	0	373,032,644	Same	373,032,644	1.61%	715,094,886
CAD	50	(260)	148,795,849	(147,445,152)	1,350,486	(210)	1,350,697	Opposite	1,350,486	0.68%	1,086,587
CLP	-	-	0	(0)	(0)	-	(0)	Opposite	0	0.74%	0
CNH	25,032,085	-	(0)	0	25,032,085	25,032,085	(0)	Opposite	-	0.58%	-
CNY	2,137,235	-	380,672,225	-	382,809,460	2,137,235	380,672,225	Same	380,672,225	0.48%	217,729,747
COP	-	-	0	(0)	(0)	-	(0)	Opposite	0	1.31%	0
EUR	6,924,876,550	(1,012,860,313)	953,459,757	(3,493,652,121)	3,371,823,873	5,912,016,237	(2,540,192,364)	Opposite	-	0.74%	-
GBP	1,184,410,326	(430,451,094)	-	(3,458,834,838)	(2,704,875,605)	753,959,232	(3,458,834,838)	Opposite	2,704,875,605	0.83%	2,662,736,010
HKD	8,192,974	-	-	-	8,192,974	8,192,974	-	Opposite	-	0.82%	-
HUF	-	-	-	(148,397,406)	(148,397,406)	-	(148,397,406)	Opposite	148,397,406	1.85%	326,113,134
IDR	824	-	(0)	0	824	824	0	Same	0	1.66%	0
INR	444,108,932	-	(282,897)	(38,898,164)	404,927,871	444,108,932	(39,181,061)	Opposite	-	0.83%	-
JPY	1,782,539,231	(1,671)	381,193	(1,744,972,685)	37,946,067	1,782,537,560	(1,744,591,492)	Opposite	-	0.28%	-
KRW	-	(773)	1,326,191,576	(17,282,371)	1,308,908,432	(773)	1,308,909,205	Opposite	1,308,908,432	0.59%	921,527,056
MYN	414,229,832	0	711,413,109	(184,798,657)	940,844,283	414,229,832	526,614,451	Same	526,614,451	1.13%	704,989,172
MYR	-	-	0	(0)	0	-	0	Opposite	0	0.49%	0
NOK	1,387	-	-	(0)	1,387	1,387	(0)	Opposite	-	0.74%	-
NZD	132,125,234	-	-	-	132,125,234	132,125,234	-	Opposite	-	0.90%	-
PLN	0	-	214,345,561	(882,190,748)	(667,845,187)	0	(667,845,187)	Opposite	667,845,187	0.96%	764,100,760
RUB	83,262,789	-	(0)	0	83,262,789	83,262,789	(0)	Opposite	-	1.97%	-
SEK	2,865,984	-	-	-	2,865,984	2,865,984	-	Opposite	-	0.74%	-
SGD	2,791	-	-	-	2,791	2,791	-	Opposite	-	0.81%	-
THB	320,198	-	-	-	320,198	320,198	-	Opposite	-	0.71%	-
TRY	7,874	-	-	(0)	7,874	7,874	(0)	Opposite	-	2.28%	-
USD	23,165,133,753	(2,634,547,746)	3,613,553,356	(21,915,939,706)	2,228,199,657	20,530,586,007	(18,302,386,351)	Opposite	-	0.84%	-
ZAR	4,643	-	(0)	0	4,643	4,643	(0)	Opposite	-	1.25%	-
Grand Total	34,175,905,413	(4,077,861,862)	9,680,963,610	(32,209,249,232)	7,569,757,930	30,098,043,551	(22,528,285,621)	-	-	-	8,087,280,760

Step 4B - Convert US Duration Dollar Exposures into US 'Ten Year Bond Equivalents' as a Percentage of the Portfolio's NAV

Step 4C - For Borrowing, Divide Outright Borrowing by NAV

Step 5 - Repeat Steps 2 through 4 for All Primary Risk Factor Exposures and Add to Obtain Portfolio's Commitment Leverage

Net Norm Deriv	10Yr Duration	10Yr Equiv	NAV	Leverage
8,087,280,760	7.5	1,078,304,101	10,000,000,000	10.8%

Step 1: Define and Measure Risk Factors Using Appropriate Units of Risk

- 1A: Determine units of measurement for each risk exposure type. Exhibit A.1 focuses on interest rate risk, where the appropriate unit of measurement is dollar duration.
- 1B: For each derivative in a portfolio, identify its primary risk exposure. Other risk exposures in this portfolio include FX and spread risk.
- 1C: Calculate long and short exposure of each by risk factor block for cash securities and derivatives separately. The green table in Exhibit A.1 shows this breakdown for interest rate risk by currency.

Step 2: Calculate Net Exposure to Each Risk Factor

- 2A: Calculate net exposure for cash positions and derivatives positions by subtracting short exposure from long exposure. USD example from Exhibit A.1 discussed below:
 - o USD Cash: Long \$23.2 billion duration dollars and Short \$2.6 billion → Net = \$20.5 billion (red circles).
 - o USD Derivatives: Long \$3.6 billion duration dollars and Short \$21.9 billion → Net = -18.3bn (blue circles).

Step 3: Net Derivatives Positions Used for Hedging

- 3A: Compare net primary risk exposure from cash securities to the net primary risk factor exposure from derivatives and exclude derivative exposure being used for hedging or risk reduction purposes. Examples from Exhibit A.1 discussed below:
- o USD: Net duration dollars of derivatives is opposite sign of the cash positions and absolute value is less than cash position exposure. Derivatives are resulting in a hedge or for risk reduction and should therefore be excluded from the economic leverage calculation, hence the zero amount in the purple box.
 - o Mexican Peso ("MXN"): Both net cash and derivative exposure are long (same sign), therefore include the entire derivative exposure in the leverage calculation since the derivatives are resulting in an increased exposure to MXN interest rates (purple box).

Step 4: Convert Risk Factor Exposure to Percentage of Portfolio NAV.

- 4A: Normalize net derivative exposure by volatility. This step entails adjusting each risk block exposure based on its long term historical volatility to normalize to a common unit. Steps include:
- o Apply the ratio of long term volatilities of each currency's dollar duration relative to the US dollar yield curve to express them in US interest rate terms.
 - o For instance, the volatility of the Canadian dollar yield curve is 0.68, while the volatility of the US dollar yield curve is 0.84, leading to a volatility ratio of approximately 81% (green boxes in Exhibit A.1).
 - o The Canadian duration dollar exposure of CAD \$1,350,486 is converted into \$1,086,587.
 - o Total portfolio exposure is \$8.1bn (yellow box in Exhibit A.1).
- 4B: Convert US duration dollar exposures into US 'ten year bond equivalents' as a percentage of the portfolio's NAV.
- o Divide US dollar normalized derivative exposure by the duration of the US ten-year bond. The approximate duration of the ten-year is 7.5 years. [8.1 billion / 7.5 = 1.08 billion]
 - o Divide the derivatives' US 10-year bond equivalents by portfolio NAV to express in percentage terms. [1.08 billion / 10 billion = 10.8%]
 - o See red table in Exhibit A.1.
- 4C: For borrowing, divide outright borrowing by NAV. Outright Borrowing using repo = \$280 million / \$10 billion or 2.8% of NAV.

Step 5: Repeat Steps 1 to 4 for All Primary Risk Factor Exposures and Add to Obtain Portfolio's Economic Leverage

- A. Interest Rate Leverage – 10.8% using US 10 year equivalent exposures by currency (see step 4 under the illustrative example above for details on this calculation).
- B. Spreads – 1.9% using Investment Grade Corporate Equivalents. In this case, spread risk exposure (as measured by duration times spread 'DxS') is segmented by currency, sector and position type (i.e. Investment Grade, High Yield, Foreign Agency, Agency

MBS, Municipal and Structured Bonds) and converted to Investment Grade Corporate Equivalents to obtain exposures in common units and capture derivative hedges. The Barclays Investment Grade Corporate Index was chosen given its prevalence as a component of the Barclay's US Aggregate Index.

Exhibit A.2: Spread Risk Exposure

Currency	Sector	Net Exposure (DxS)		Sign Check	Net Hedges	
		Cash Net	Deriv Net		Deriv Net Hedges	
AUD	Credit	952,106,355	-	Opposite	-	-
CNH	Credit	14,462,570,659	-	Opposite	-	-
EUR	Credit	1,080,221,075,016	117,597,806,957	Same	117,597,806,957	-
EUR	Foreign Agency	20,861,462,581	-	Opposite	-	-
EUR	Structured Products	111,773,713,839	-	Opposite	-	-
GBP	Credit	158,186,505,332	-	Opposite	-	-
GBP	Structured Products	261,829,862,257	-	Opposite	-	-
HKD	Credit	15,542,209,335	-	Opposite	-	-
INR	Credit	4,773,612,253	-	Opposite	-	-
JPY	Credit	1,312,082,689	(1,114,496,820)	Opposite	-	-
SEK	Structured Products	4,748,945,144	-	Opposite	-	-
SGD	Credit	1,833,050,457	-	Opposite	-	-
THB	Credit	1,387,046,735	-	Opposite	-	-
USD	Agency MBS	186,836,416,357	(130,335,846,858)	Opposite	-	-
USD	Credit	1,719,613,210,898	88,818,225,556	Same	88,818,225,556	-
USD	Municipal Bond	128,517,072,286	-	Opposite	-	-
USD	Structured Products	2,283,584,798,795	-	Opposite	-	-

Calculations related to Spreads:

Total DxS = \$206bn

DxS of Barclay's Investment Grade Corporate Index = 1090

Exposure Equivalents = \$189MM

NAV = \$10bn

= Spread Derivative Leverage = 1.9%

C. FX – 7.1% using exposure relative to the DXY US dollar index.

A similar approach is used for currency exposures. Under this approach, convert unhedged portfolio level exposure to equivalent units of the DXY Index, and sum the absolute values. The DXY Index is a weighted average of the US Dollar versus a basket of other major currencies and provides an indication of the international value of the US Dollar.

Exhibit A.3: FX Exposure

Currency	Exposure	LT Volatility	Abs Val DXY Equiv
AUD	-1.3	12.8%	2.0
CHF	0.2	11.2%	0.2
EUR	-1.8	10.6%	2.3
HKD	0.1	0.4%	0.0
JPY	-0.8	9.5%	0.9
NOK	0.4	12.8%	0.6
PLN	0.3	15.2%	0.6
TRY	0.1	11.0%	0.2
DXY		8.3%	
Total			7.1

D. Outright Borrowing using repo⁵¹ - \$280 million or 2.8% of NAV

E. Short Positions - \$601 million or 5.9% of NAV



Result

When added to NAV, total economic exposure in this example 128.5% meaning that under this approach this fund is levered 1.285 times.

Tradeoffs between Precision versus Tractability

The above example demonstrated the calculation of leverage, an estimate of the degree to which borrowings and derivatives are used as economic leverage in a fund (taking into account hedges and offsets that are manually calculated using risk bucketing approaches and normalization of risk to common units). Note that the units of leverage are meant to represent the economic equivalent of borrowing, and when trying to assess the impact of derivatives on economic leverage, there is no perfect solution. This leverage measure necessarily does not fully-capture the full range of basis and other risks that are embedded in a fund's risk profile. One way to compensate for this limitation is to use an additional risk metric, such as ex-ante portfolio risk, to get a more holistic understanding of the portfolio, albeit in a different measurement unit.

Portfolio risk can be measured directly by estimating ex-ante risk of all positions in the portfolio based on a variance / covariance matrix (e.g., estimated from a historical time series of volatilities and correlations of market risk factors). Measuring a portfolio's factor exposures (i.e., portfolio risk sensitivities such as duration, convexity, spread duration, etc.) only provides an indirect and incomplete set of metrics. The ex-ante risk calculation attempts to provide a more

⁵¹ Borrowing could also include the use of bank credit lines or inter-fund lending.

comprehensive metric that integrates the portfolio's factor exposure with an estimate of the variance/covariance structure in the markets. In typical asset management practice, ex-ante market risk is generally measured on an annualized basis and in terms of one standard deviation of total returns. The measure captures volatilities at the individual risk factor level as well as correlations across risk factors, thereby incorporating the effects of diversification among portfolio positions. This measure captures volatilities at the individual risk factor level as well as correlations across risk factors based on the variance/covariance matrix structure and market price levels for risk factors. This means that diversification is captured explicitly by the model.

The proposed approach leans more heavily on a portfolio's factor exposures and may miss certain elements of the underlying risk dynamics. The grid of exposure types (e.g., US interest rates) is used to net factor exposures one-to-one against each other, implicitly assuming that all such exposures within a given "risk bucket" are perfectly positively or negatively correlated. This is a simplification that does not generally hold true, although the result of this simplifying assumption will often be reasonable if the grid of risk buckets used is sensible.

Gross Notional Exposure

GNE can be useful in providing information about the portfolio's use of derivatives (i.e., derivatives footprint). In this example, the fund's GNE is 293% of NAV or \$29.3 billion. This shows that the fund in this example uses a significant amount of derivatives, which may signal a degree of complexity in the portfolio. However, actual economic leverage as measured by our economic leverage calculation shown above is only 28.5% of NAV.

For illustrative purposes, we have provided the components of GNE below.

Exhibit A.4: GNE from Interest Rate Derivatives

Currency	Derivative Gross Notional (% of NAV)	Derivative Gross Notional (\$ billions)
AUD	9%	0.9
BRL	5%	0.5
CAD	12%	1.2
CNY	1%	0.1
EUR	8%	0.8
GBP	43%	4.3
JPY	3%	0.3
KRW	6%	0.6
MXN	3%	0.3
PLN	4%	0.4
USD	120%	12.0
Other	2%	0.2
Grand Total	216%	21.6

Exhibit A.5: GNE from Spread Derivatives

Currency	Derivative Gross Notional (% of NAV)	Derivative Gross Notional (\$ billions)
EUR	5%	0.5
GBP	0%	-
JPY	0%	-
USD	47%	4.7
Other	1%	0.1
Grand Total	53%	5.3

Exhibit A.6: GNE from FX Derivatives

Currency	Derivative Gross Notional (% of NAV)	Derivative Gross Notional (\$ billions)
AUD	1%	0.1
EUR	16%	1.6
GBP	2%	0.2
HKD	0%	-
JPY	2%	0.2
MXN	1%	0.1
NOK	0%	-
PLN	0%	-
Other	2%	0.2
Grand Total	24%	2.4

As this example demonstrates, GNE can be misleading from a risk perspective, particularly if it is used in isolation from other measures. Specifically, in the case of US interest rates, derivatives are primarily being used to express front end interest rate views, which require large notional positions, and for risk reduction purposes. As the economic leverage calculations showed, the majority of these positions are not being used to introduce additional risk into the portfolio.

Appendix B: Haircut Schedule by Asset Class

Asset Class	Discount (%)
Eligible government and related debt: residual maturity less than one-year	0.5
Eligible government and related debt: residual maturity between one and five years	2.0
Eligible government and related debt: residual maturity greater than five years	4.0
Eligible GSE debt securities: residual maturity less than one-year	1.0
Eligible GSE debt securities: residual maturity between one and five years:	4.0
Eligible GSE debt securities: residual maturity greater than five years:	8.0
Other eligible publicly traded debt: residual maturity less than one-year	1.0
Other eligible publicly traded debt: residual maturity between one and five years	4.0
Other eligible publicly traded debt: residual maturity greater than five years	8.0
Equities included in S&P 500 or related index	15.0
Equities included in S&P 1500 Composite or related index but not S&P 500 or related index	25.0
Gold	15.0
ETF Shares	% Consistent w/Underlying Holdings

Appendix C: BlackRock's Recommended Classifications for ETPs

ETP	Exchange Traded Product	• Catch-all term for any portfolio exposure product that trades on an exchange. • ETFs, ETCs, ETNs, and ETIs, are all subsets of ETP.
ETF	Exchange Traded Fund	• ETFs are publicly-offered investment funds that trade on an exchange. • ETFs can be passive (tracking a specific index) or active (via a transparent basket) that meet diversification and liquidity thresholds set by regulators and exchanges. • ETFs' underlying securities can include stocks, bonds or other investment instruments (e.g., bank loans) • As noted below, this category should exclude funds with embedded leverage or inverse features
ETN	Exchange Traded Note	• Debt instruments that provide an index-based return. ETNs may or may not be collateralized, but depend on the issuer's solvency and willingness to buy and sell securities to deliver fully to expectations. • As noted below, this category should exclude notes with embedded leverage, inverse features or options
ETC	Exchange Traded Commodity	• A variety of fully-collateralized legal structures that are not ETNs but seek to deliver the unleveraged performance of a commodity, or basket of commodities. • Some ETCs may hold physical commodities, while others invest in commodity futures. • ETCs that invest in commodity futures may raise special issues because futures do not precisely track spot commodity prices.
ETI	Exchange Traded Instrument	• An ETI is any ETP that has embedded structural features designed to deliver performance that will not track the full unlevered positive return of the underlying index or exposure (that is, products that seek to provide a leveraged or inverse return, a return with caps on upside or downside performance or "knock-out" features).