

March 21, 2016

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

Risk Management Principles for Use of Derivatives in Registered Funds (Response)

Dear Mr. Fields:

The Global Association of Risk Professionals¹ members include a large number of risk managers who work in asset management organizations and who deal every day with the issues raised in the proposed rule, *Use of Derivatives by Registered Investment Companies and Business Development Companies* (the "Proposal"). As an education-based organization, GARP does not engage in lobbying related activities. As such, we are not submitting this letter in support of, or against any aspect of the Proposal, nor are we suggesting any specific rules or language. Our member's firms (GARP's membership consists of individuals only, no firms are members) can comment on the specifics of the Proposal directly.

Rather, this comment letter sets out eleven risk management principles that we believe serves as a risk-management foundation for any retail investment fund². Understanding these principles and their applicability will allow for the writing and ultimate adoption of regulations that incorporate and reflect a practitioner orientation, resulting in final rules that will more readily accomplish their purpose. They will also result in practices that will allow risk managers to continue to act in the best interests of fund investors by avoiding the unintended consequences of a rule issued without a full understanding of the broad array of possible consequences which may literally require risk managers to make sub-optimal decisions that would ultimately affect their fund investors, and restrict risk management options which, in turn, will directly affect a risk manager's ability to deal with future risks. This letter is intended to

¹ The Global Association of Risk Professionals (GARP), <http://www.garp.org>, is a not-for-profit global membership organization dedicated to preparing professionals and organizations to make better-informed risk decisions. The GARP community represents over 150,000 risk management practitioners and researchers from banks, investment management firms, government agencies, academic institutions and corporations from more than 195 countries. GARP's mission is to educate, train and set global standards in financial and energy risk management. The Association administers the Financial Risk Manager (FRM®) and Energy Risk Professional (ERP®) exams; certifications recognized and valued by risk professionals worldwide. GARP also helps advance the role of risk management via comprehensive professional education and training for professionals of all levels.

² The principles enumerated herein were developed with the assistance of asset management firms affiliated with GARP through its GARP Buy-Side Risk Managers Forum.

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provide the Commission with a risk manager's perspective, enlisting them as partners in crafting a rule that will be responsive to regulatory concerns while also protecting the interests of fund investors.

The eleven principles are divided into three sections: use of derivatives, asset segregation and definition of leverage.

Risk management principles for use of derivatives in registered funds

The Proposal defines "derivatives" as "any swap, security based swap, futures contract, forward contract, option, any combination of the foregoing, or any similar instrument ('derivatives instrument') under which a fund is or may be required to make any payment or delivery of cash or other assets during the life of the instrument or at maturity or early termination."

We understand the need to define the term "derivatives" for the purpose of this Proposal. However, in the eyes of a risk manager, whether in an asset management firm or any other financial institution, what is of prime importance are the attributes of a position, its market exposure, liquidity characteristics (and the related issues of reporting, transparency and valuation accuracy) and the operational and credit risks associated with it.

It is also important to recognize that a distinction exists from a risk practitioner's viewpoint between "vanilla" and "exotic" derivatives, and how that distinction relates to managing the risk of a position and/or portfolio. These distinctions, their differences and risks, particularly as they relate to holding their underlying asset(s) are described below.

Derivatives

1. Derivative versus Holding Underlying Instrument Risks

- a. Vanilla Derivative Instruments: are generally considered to be defined by practitioners as exchange-traded futures and options, and vanilla OTC forwards and swaps (standardized interest rate, foreign exchange, index, credit and total return forwards and swaps, on liquid underlyings with terms not exceeding liquid markets for the underlyings). They are considered to be among the most liquid securities in the market, with the most straightforward market exposures.

Vanilla derivatives possess different risks, and require differing risk management approaches and analysis than the risks associated with directly holding the derivative's underlying asset (see below). But, the derivative product's risk(s) to the holder are not necessarily greater than the risks of holding the underlying financial instrument just because it's called a derivative, they are just different.

- b. Risks Associated With Vanilla Derivatives: There are examples of material losses caused by the use of vanilla derivatives, although none that we are aware of are associated with their use by registered funds. E.g., Metallgesellschaft, Long Term Capital Management, Amaranth Advisors.

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- c. Derivatives create counterparty credit exposure(s) to Futures Commission Merchants and clearinghouses (for exchange-traded derivatives) or to swap counterparties (in the OTC marketplace), and increases the demand for, and risks related to liquidity for margining purposes. However, there are well established best practices for managing these risks.
2. Direct holding of Underlying Instruments: Directly holding the underlying asset(s), e.g., a bond or stock, can pose similar liquidity or other risks if, for example, a stock loan, repo or other securities lending activity is involved. Moreover, there may be instances where operational considerations may make the trading and liquidity management of the underlying instrument riskier than those of the related derivative.

E.g., faced with an unexpected redemption request an asset management risk manager would much prefer to have a single one day settlement trade of an S&P500 future (a derivative) than 500 individual stock trades with T+3 settlement. Another example would be the holding of a physical commodity. In many cases this is considerably riskier than gaining the same exposure via exchange-traded commodity futures. Also, in areas such as emerging markets equities and currencies, the operational advantages of derivatives often far outweigh the counterparty credit risks and liquidity uncertainty associated with holding these instruments outright.

3. Exotic Derivatives: There is another category of derivatives that involve more complicated risks. These are over-the-counter derivatives, or more commonly structured products that have some or all of illiquid underlyings, unobservable underlyings, complex payoff formulae, nonstandard terms, varying margin arrangements or terms beyond the horizon of liquid market transactions contained in the underlying.
 - a. Examples of OTC derivatives are structured mortgage products, swaps with complex payoffs, or long-term energy and weather derivatives and Collateralized Debt Obligations. Historically, some uses of these financial instruments caused material losses or contributed to systemic risk. Although there is a history of questionable OTC or exotic derivative use, as with most any other type of financial instrument, when exotics or OTC derivatives are used properly they can be valuable investment and hedging tools. But, they require risk management attention, including sophisticated modeling, intraday monitoring, credit valuation adjustments, complex contingency planning, and rigorous negotiation of legal arrangements, detailed disclosure and adequate liquidity buffers. Exotic derivatives have a long history. However, given their complexities, uniqueness and varying purposes, a consensus has not yet emerged as to best practices in risk management for these instruments.
 - b. Exotic derivative risk considerations: Aside from the varying operational, market and credit risk considerations inherent to each unique OTC derivative, exotic derivatives may possess valuation, liquidity and disclosure issues that may pose challenges to their use in registered funds. But this is equally true of exotic structured products, direct investments in entities with exotic dynamic strategies, synthetic securities, exotic exchange traded notes or other non-derivative methods for accomplishing similar

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exposures. Exotic holdings—derivative or not—if not used and risk managed properly, may result in inappropriate losses. Vanilla derivatives, as any other investment instrument, can also result in losses. While both types of derivatives can provide material benefits, vanilla derivatives in contrast to OTC derivatives pose less challenges from a risk management context.

The above noted failures associated with the use of vanilla and exotic derivatives were unfortunate. But, the losses were mostly limited to institutions and hedge funds. Had those losses been directly experienced by retail investors, the losses would have been deemed considerably worse, and their impact much greater.

Given the above, the Proposal's requiring of a formalized derivatives risk management program, as well as regulations surrounding leverage and risk may be appropriate additions to the regulatory environment. *But, in considering any rule, the Commission should base its approach on the proposition that a fund should have in place a formalized risk management program that addresses the market, credit, operational, liquidity and funding risks of all its positions, and that it is total portfolio leverage and risk that matter, not just the subset of risks acquired via derivative transactions.*

Below are three principles for derivative use in registered funds for your consideration. The principles are not intended to favor or inhibit any business model or investment process. They are designed through the eyes of a risk manager, with the objective of allowing a risk manager the necessary latitude to effectively do his or her job. They are also intended to assist in designing appropriate and practitioner-driven rules that are effective and responsive to regulator and end-user concerns.

The following three principles relate to operational derivatives, position hedges and portfolio hedges respectively.

Principle 1. When vanilla derivatives are used to gain market exposure, all means of gaining the market exposure should be treated equally.

A fund manager who wants long exposure to the S&P500 can buy the individual 500 stocks in the index, buy an S&P500 ETF or go long an S&P500 future. These positions are almost identical economically, but they can differ in cost, liquidity, taxes, operational risks, and the degree of cash outlay. Any risk manager will insist that the portfolio manager investigate all reasonable ways of gaining the exposure, and select the combination with the best interests of investors in mind while balancing the above considerations. Any of the three methods noted for gaining the requisite exposure can be the right choice depending on the circumstances, and a combination will often be best. *E.g.*, buying the individual stocks for the core holding, but using futures temporarily to keep the portfolio Beta exposure constant after inflows or outflows.

To the extent a rule treats vanilla derivatives differently from direct investments in the underlying instruments with the same economic exposure, it can tie risk managers' hands, forcing them to approve suboptimal combinations of instruments in order to comply with regulations, increase costs to end investors or subject them to unnecessary risk. Therefore, whenever vanilla derivatives are used to gain

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market exposure, the fund should be allowed to treat them for regulatory purposes as if they were a direct investment in the underlying instrument(s).

However, this Principle requires a carve-out for exchange-traded options. In registered funds exchange-traded options are generally used to hedge exposures, not to gain market exposure. But, in those rare instances where options are used to gain market exposure, treating them as delta-adjusted exposures to the underlying misstates the tail risk since the exposures are non-linear. The conservative approach is to treat written, uncovered options as full exposures to the notional underlying, which will never understate tail risk.

Principle 2. When vanilla derivatives are used to hedge positions, the hedge should be evaluated at the position level, not the portfolio level.

Consider a diversified alternative fund that includes a convertible bond arbitrage strategy. That strategy buys convertible bonds and hedges them by shorting the issuers' equity and entering into vanilla interest rate and credit swaps. The hedged position is clearly less risky than the unhedged position, and can be demonstrated by comparing VaRs, or using any other reasonable method to determine the associated risk. However, a rule that treats the hedged position as riskier than the unhedged position would create perverse incentives.

It is entirely possible that convertible bond hedges increase VaR at the portfolio level. This will be true if the other strategies in the portfolio have sufficient short equity, credit or interest rate risk; the unhedged, long convertible bonds would have had the effect of mitigating the overall short risks in the portfolio prior to the bonds being hedged. More importantly, the portfolio level VaR will be cross asset class and dependent on assumptions to a much greater extent than the position level VaR.

Fund level relative VaR of the portfolio with and without derivatives will always be an opinion. *Position level* relative VaR will generally be as close to an objective fact as we get in finance. Moreover, small changes in unrelated positions or market conditions can cause a VaR-reducing hedge to switch to a VaR-increasing one at the portfolio level, something that is not true at the position level.

Vanilla derivatives that substantially reduce the VaR of a position should be ignored for regulatory purposes, and the fund treated as if it holds the unhedged position for leverage and other purposes. This is conservative, as no benefit is given for the hedge. Any treatment that actively penalizes the fund for the hedge is counterproductive and inhibits risk managers' use of one of their most important tools.

Principle 3. When vanilla derivatives are used to adjust market exposure, the risk should be evaluated on an absolute basis, not a relative to a portfolio without derivatives.

Consider a bond fund manager who seeks out the best available values in bonds. The manager will also generally have targets for duration and credit exposure, either to match a benchmark or to reflect the manager's views about interest rates and credit conditions. Approximately half the time these targets will require the manager to increase portfolio risk using interest rate and credit derivatives in order to meet the benchmark or respond to interest rate and/or credit conditions. Any regulatory constraints on a portfolio manager's derivative use may require the manager to select less desirable individual bonds

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that happen to have longer maturities or worse credit quality, or to run the fund with different duration and credit exposures than desired. Either option would be contrary to investor interests.

Any risk manager will place limits on the use of derivatives to increase exposure. But those limits will be absolute—based on the maximum risk appropriate for the fund, or the maximum deviation from the benchmark—not relative to the risk of the portfolio without derivatives.

This introduces an issue omitted in Principle 2, defining risk across asset classes. The Commission’s staff is commended for its reluctance to place too much confidence in these risk estimates. Given the current state of financial risk management science, a consensus has yet to emerge on how to make precise determinations of the absolute or relative risk of portfolios unless both hold positions only in the same single asset class. This problem is now addressed by using multiple overlapping assessments of risk that are back tested rigorously, and are supplemented by quantitative analysis with expert judgment. But complex and partially subjective views such as exist here cannot be translated into clear regulations.

This is equally an issue for the relative and absolute tests proposed in the Proposal. Fund best practices should incorporate a consistent VaR methodology and back test it rigorously. Diversified asset managers will then have little opportunity to game any rule. But a narrowly focused rule may allow asset managers to choose reasonable industry-standard VaR methodologies that assign their portfolios less absolute risk than reasonable alternative methodologies. However the scope for this is limited, and the incentives are not great. It is far more common for asset managers to take too much risk because they are unaware of it than because they have selected favorable VaR methodologies. And, if weak risk managers and lax boards allow aggressive portfolio manager VaR-shopping, the choice of VaR is effectively not the biggest problem with the fund.

Funds using vanilla derivatives as portfolio hedges should specify typical VaR ranges and maximum values in the fund prospectus (perhaps with a regulatory ceiling value for a defined VaR). In a passive breach when, for example, a fund exceeds its maximum VaR due to changes in market prices and risks, the manager should correct the situation with prudent speed. Generally this can be accomplished by adjusting the portfolio hedge. Active breaches should be corrected immediately with consideration being given for any fund loss.

Risk management principles for asset segregation to ensure liquidity to meet derivative obligations in registered funds

When a fund makes financial commitments—whether that means borrowing money, committing to future transactions or entering into derivative transactions—the risk manager has to consider whether it will have sufficient liquidity to honor those commitments. Failure can be disastrous for fund investors. Private funds and individual investors have “blown up” for failure to meet margin calls or other commitments, with their assets seized and sold, often at the worst time and on disadvantageous terms. Regulators understandably put great focus on preventing the blow up of a registered fund.

Principle 4. Dual purpose risk regulations can lead to unnecessary complexity and pro forma compliance.

The Proposal appears to use asset segregation rules both to limit leverage in registered funds and to ensure liquidity to meet derivative obligations. Dual purpose rules are difficult for risk managers to integrate within their internal frameworks for a wide variety of reasons. The preference is for clear and unambiguous rules addressing a specific issue. The danger with regulations that are not compatible with internal risk management is that they will be enforced by Compliance and Legal departments as nominal exercises rather than actively incorporated into Risk Department limits.

Dual purpose regulations can also lead to unexpected consequences when the two purposes operate in opposite directions. Potential scenarios exist where gaining liquidity requires increasing leverage, and others where reducing leverage requires giving up liquidity. In those, and other cases, a dual purpose regulation can limit or remove the risk manager's flexibility to choose the action in the best interest of fund shareholders.

The role of asset segregation should be directed to ensuring the fund can meet its near term obligations in stressed markets with liquid assets. Leverage restrictions can be accomplished in a more straightforward way in other parts of the Proposal. And, to avoid distortion, the same notional leverage restrictions should be applied to financial commitment transactions. With those, plus risk-based segregation to ensure liquidity, the complexities of Rule 10666 might become redundant.

Principle 5. Liquidity and potential derivative losses are portfolio concepts and should not be regulated at the position level.

Risk managers try to ensure that liquid, unpledged assets exceed the total current and stressed obligations of the fund. There is no economic reason for them to do separate calculations for the current mark-to-market and the risk based amount; and little reason to consider liquidity of individual positions. It is worth noting that futures commission merchants rarely provide variation margin on a per-transaction basis—they provide an undifferentiated figure reflecting certain offsets across transactions. This makes it difficult to line up each exchange traded derivative position with its specific variation margin. A portfolio level sum is the most practical and meaningful approach.

For OTC transactions, to arrive at the derivative obligation that needs to be covered, netting of the current market value and risk based amount for all transactions covered by the same ISDA or FCM agreement with a given counterparty would be more efficient and represent the actual moment of any forced settlement better than would disallowing netting across derivative contracts with their underlying in differing asset classes.

Netting across counterparties may miss the risk of multiple counterparty failures, but not allowing transactions to net across counterparties may have the unwanted consequence of discouraging funds from diversifying across counterparties. Risk managers consider potential exposures on both bases. If one or the other has to be chosen, disallowing netting across counterparties may be more appropriate for managing the systemic risk of multiple counterparty failures, while allowing such netting may make more sense for investor protection against the much more likely single counterparty failure event.

Principle 6. Derivatives, financial commitment transactions and senior securities should be treated similarly to avoid regulatory distortion of the risk manager's judgment.

Market stresses do not affect only derivatives. The counterparties in financial commitment transactions establish their collateral requirements based on their estimation of the potential for these events and require collateral top-ups when values erode; the lenders of senior securities often require actions when portfolio characteristics deteriorate. Isolating derivatives as being sensitive to market price changes, when compared to the treatment of financial commitment transactions and senior securities, would appear distortive and not reflective of risk management practices.

Principle 7. Risk-based amount calculations need further specification in terms of time and likelihood.

Language bounding the concept of stressed markets in time and likelihood would help for there to be reasonably comparable approaches across market participants. Definitions of time and likelihood from the option and futures clearinghouses may form the best, most consistent source. For example, language such as “a movement representing twice the loss of the expected worst month in a five year period” would help risk managers develop approaches with meaningful comparability. This can be a sensitive issue with mutual fund boards as it is difficult for them to perform meaningful oversight if they have no guidance about the standard to be applied.

Principle 8. Portfolio liquidity is what matters, not cash.

The Proposal is clear that whatever form of collateral that has been accepted by the counterparty for a financial commitment transaction can be applied to the asset segregation requirement. It is less direct about the treatment of non-cash collateral that has been accepted by counterparties in the case of derivative products.

A risk manager will insist that a portfolio's available liquid assets exceed the absolute value of its potential liquidity needs. Those needs include possible redemptions plus possible payments required by derivatives, financial commitment transactions and senior obligations.

A reasonable definition of available liquid assets is the fund's holdings in the three-day or shorter liquidity buckets (including cash), excluding securities pledged in custodial accounts for the benefit of a lender to the fund, delivered as collateral for financial commitment transactions, used to provide coverage for senior securities or delivered as derivatives collateral.

Risk management principles for defining leverage in registered funds

The Risks of Leverage.

- **Two-sided Results:** The use of leverage is two-sided. For example, if a fund with \$100 in NAV buys \$200 worth of assets, then a 10% decline in asset price inflicts a 20% loss on the fund. But, a 10% increase in asset price may also generate a 20% gain in the fund. Although this multiplication of returns is the most obvious risk associated with leverage, it is not the most

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important to a risk manager. Leverage is often chosen specifically because this risk is judged to be prudent.

But, a more concerning aspect of leverage becomes apparent after a price decline. If a manager does not adjust positions, leverage has increased from 2:1 to 2.25:1 (the fund's assets fell from \$200 to \$180, the fund's NAV fell from \$100 to \$80, $\$180 / \$80 = 2.25$). Increasing leverage as losses mount can lead to rapid disaster. This is not a symmetrical risk, because on the upside leverage decreases as gains mount, so the investor is hurt either way.

Risk managers generally try to mitigate this risk by insisting positions be adjusted after price moves. For example, after the 10% asset price decline the manager could sell \$20 worth of assets so the fund held \$80 of NAV against \$160 of assets to keep leverage constant at 2:1. While this is generally more prudent than failing to adjust positions, it introduces new risks. Markets may be illiquid, especially during rapid price declines, so the fund may be unable to keep leverage down, or may pay a high cost to do so. Moreover the forced sales can induce further asset price declines, which force more sales, leading to a death spiral (and if this is a crowded trade, perhaps to market-wide disturbances).

- **Increased Costs:** Even if all the problems in the previous paragraph are avoided, there is a cost to investors. If the portfolio manager sells \$20 of assets when prices are down 10%, and prices go back up to the original level, fund investors have lost \$2.22 (asset prices fall 10%, the fund NAV goes to \$80, it sells \$20 of assets so it holds \$160 of assets, those assets go back up to \$177.78, subtract the \$80 of debt and the fund NAV is \$97.78 versus the \$100 an unlevered investor in the same assets would have after the round trip). This is a one-sided risk, the levered investor also loses if prices go up and then back down. Rebalancing more frequently means more smaller losses and more transaction costs, rebalancing less often means fewer but larger losses, and more risk of a death spiral.
- **Additional Transactions:** Leverage also means more transactions, both to put on larger positions in the first place, and to manage those positions. That means more cost to fund investors, and also more exposure to exchange risks in the market such as flash crashes, manipulation, front running, settlement issues and market closures.
- **Funding:** Another risk of leverage comes from the funding side. The examples above all assumed that leverage remains available to the manager on the same terms. In practice, leverage may become more expensive, or may be withdrawn altogether, and this is most likely to happen when asset prices and liquidity are down, and volatility is up. Forced deleveraging at these times is expensive at best, fatal at worst. More generally, leverage requires ceding some portfolio control to the creditor in some conditions, and that control will be exercised in creditor interest, not fund investor interest.
- **Disclosure Issues:** Finally, leverage can create disclosure issues. Even if the fund makes prominent and easily understood disclosures in its offering documents, investors may be surprised at the results from the use of leverage. It is common in financial disasters for leverage ratios at the crisis point to be much higher than the last official leverage ratios reported to

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investors. Long Term Capital Management, for example, did not set out to lever their assets 100:1, but as their asset values declined and they were unable to shed positions leverage increased quickly and dramatically. Similar things happened at Lehman Brothers and MF Global, to name just some of the more prominent examples.

- Redemptions: Another issue is that if a fund has the option of borrowing to pay redemptions it can avoid testing its valuations in the market, leaving remaining investors with over levered positions of uncertain value.

Considering all the above, leverage requires serious risk management attention. Funds that employ leverage should have vigorous risk management oversight, clear disclosure and sound policies approved by an informed board. With those controls in place, risk managers can recommend leverage as a tool for accomplishing investors' financial goals.

A little math demonstrates one essential use of leverage. A standard financial planning example is a person who saves 10% of her income for a 40-year working life during which her income keeps pace with inflation, who then retires on 70% of her real working income for a 20-year retirement. This requires a 4% annual return after inflation, expenses and taxes. Institutional pension funds typically assume real annual returns between 4% and 5%. Given that national savings rates are closer to 5% than 10%, and few people have 40 year working lives without employment disruptions or financial emergencies that interfere with savings, life expectancies are increasing, and many pension funds are underfunded at their assumed rates of return; it's clear that anything less than a 4% real after-tax return will not meet the nation's retirement needs.

A generous forward-looking estimate of the Sharpe ratio available to retail investors after expenses and taxes (and assuming the risk-free rate is equal to inflation) is 0.2. That means an investor has to accept 20% annual volatility to get a 4% annual expected real after-tax return. The only way to do that without leverage is to be 100% in stocks, and probably overweight in riskier stocks (small caps, growth stocks, emerging market stocks). Even if such a high risk, concentrated portfolio were appropriate for someone decades away from retirement, it's far too risky for someone near or in retirement.

There are several sources of positive expected return available in the market that have low correlation with equities. A good deal of academic research suggests that many of these have higher Sharpe ratios than equities, perhaps in part due to leverage aversion. However since only equities have embedded leverage, these sources of uncorrelated return have lower volatility than equities, and require leverage to be brought up to a level of expected return that can meet investors' needs. A diversified portfolio of equities plus non-equity risk premium assets has at least a chance of providing an acceptable level of return to fund retirements, without requiring an unacceptable level of risk.

But the compelling rationale for a more flexible approach to regulating leverage is to assume that leverage encompasses distinct risks, but not all forms of leverage incur all the risks, and risks can creep into portfolios without the use of leverage. Blindly restricting leverage can actually increase investors' exposures to the problems the restrictions are designed to avoid.

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Principle 9. Leverage need not multiply exposures, and exposures can be multiplied without leverage.

In the example above, the fund manager used leverage to buy \$200 of stocks with \$100 of NAV. Such 2x levered funds may provide investors with negative surprises, losing 2x or more when things go against the fund, but not making 2x (sometimes even losing money) when things go in its favor. This is due to some of the problems associated with the use of leverage discussed above.

But most financial leverage in funds is used to reduce or adjust exposures. It should not be assumed that a fund with 2:1 leverage has twice the risk of an unlevered fund, it will often have less risk. Restricting leverage can interfere with the risk manager's hedging, an important risk management tool. It can also prevent portfolio managers from putting on a precise desired position. For example, the portfolio manager might like the management and long-term prospects of an oil company, but not want to take the oil price risk. Buying the stock and hedging with short oil futures uses leverage, but the position might deliver an improved risk/return ratio for fund investors. Other important risk-reducing uses of leverage are to translate a foreign currency asset into the fund's domestic currency, to insure against tail events and to take a position on the price spread between two assets.

It should be noted however, that alternatively a portfolio manager does not need to use leverage in order to multiply exposures. For example a Treasury bond fund can increase the maturity of holdings, or switch to STRIPs, in order to multiply exposure to interest rates without leverage. Or, a corporate bond manager can multiply exposure to credit by reducing the average credit quality of the portfolio. And, an equity fund manager can switch to stocks with more Beta and volatility, with a commodity fund manager moving to the most volatile commodities.

Gross notional leverage does not reflect economic leverage. There are numerous ways to measure economic leverage, from simpler methods that net out derivative positions used for hedging to more precise measures such as the Alternative Investment Fund Managers Directive's (AIFMD) commitment leverage method.

Principle 10. Gross notional exposure (GNE) is not leverage.

Gross notional exposure (which is calculated by summing borrowings and the absolute value of derivatives notionals and dividing by fund NAV) is a measure that risk managers may use for informational purposes. A high GNE ratio provides an indication to risk managers that derivatives are being used in a portfolio. This serves as a flag to risk managers that should result in a review at how derivatives are being used in the fund. When derivatives are being used for hedging purposes or as an alternate way (versus physical securities) to obtain economic exposure in order to reduce transaction costs or because securities markets are difficult to access, they do not introduce leverage. By construct, GNE treats these exposures incorrectly as leverage.

Principle 11. Leverage limits should be risk based.

Leverage limits should be related to the volatility of the portfolio being levered. This is how any risk manager would approach the issue. Unfortunately estimating portfolio volatility requires assumptions

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about asset correlations, which can be problematic, especially if the portfolio includes more than one asset class. Misestimated correlations could lead to excessive leverage.

Unfortunately, there is a conflict between simplicity (and rules that cannot be gamed) and accurate risk adjustments. A reasonable compromise is to apply haircuts by asset class and tenor. The most important adjustment is for interest rate derivatives, whose notional amounts by accounting convention are much greater relative to their risk than other instruments. This approach is common in regulation, and corresponds with tolerable accuracy to risk managers' views.

Conclusion

We are supportive of enhancing regulations for derivatives use by US mutual funds. Risk management, disclosure, and reasonable limits on structural leverage are important to the prudent management of mutual funds. However, it is important that such regulations account for the fact that derivatives are used in many cases and in many different ways to address modern-day market risks. Regulators should take care to differentiate the many investor appropriate uses of derivatives from simply using leverage to gain economic exposure and amplify portfolio returns.

We want to thank you for allowing us this opportunity to comment on these issues. Should you require any additional information, or have any inquiries, please feel free to contact me at:

Rich.Apostolik@garp.com, or +1 201 719-7250.

Yours truly,

/s/ Richard Apostolik

Richard Apostolik
President and CEO