MEMORANDUM

TO: Proposed Rule: Use of Derivatives by Registered Investment Companies and Business Development Companies (Release No. IC-33704; File No. S7-24-15)

FROM: Amy Miller, Senior Counsel, Division of Investment Management

RE: Teleconference with Representatives of AQR Capital Management

DATE: May 19, 2020

On May 15, 2020, the SEC met telephonically with representatives of AQR Capital Management, LLC ("AQR"). Participants included: Sarah ten Siethoff (Associate Director, Division of Investment Management ("IM")), Brian McLaughlin Johnson (Assistant Director, IM), Thoreau Bartmann, (Senior Special Counsel, IM), Amanda Wagner (Branch Chief, IM), Joel Cavanaugh (Senior Counsel, IM), Mykaila DeLesDernier (Senior Counsel, IM), John Lee (Senior Counsel, IM), Amy Miller (Senior Counsel, IM), Tim Dulaney (Senior Financial Analyst, IM), Dan Rooney (Assistant Chief Accountant, IM), Penelope Saltzman (Senior Special Counsel, IM), Dennis Sullivan (Contractor, IM), Narahari Phatak (Associate Director, Division of Economic and Risk Analysis ("DERA")), Alexander Schiller (Financial Economist, DERA), and Christian Jauregui (Financial Economist, DERA), and the following representatives of AQR:

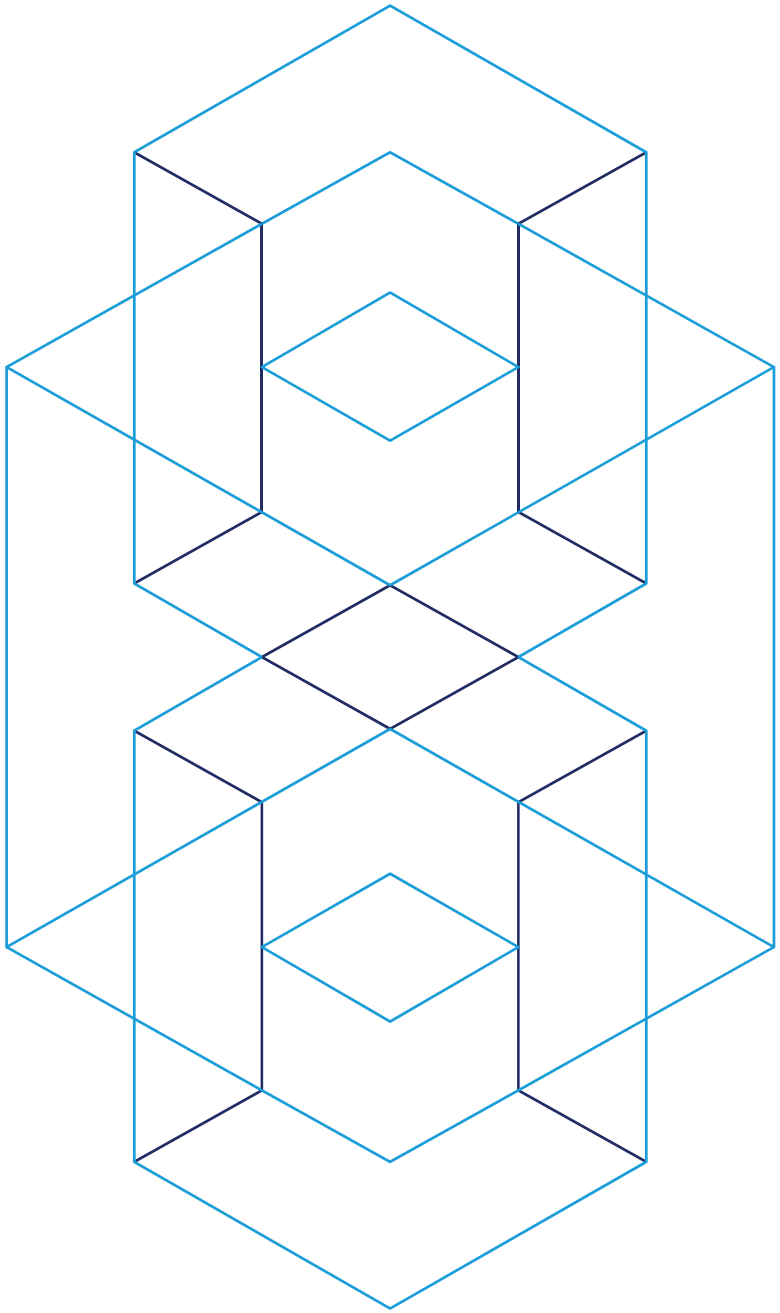
- Richard Grant, Global Head of Regulatory and Government Affairs, Associate General Counsel;
- Michael Mendelson, Principal Portfolio Manager; Member of AQR's Executive Committee; and
- Mike Patchen, Principal, Chief Risk Officer.

Among other things, the participants discussed the SEC's proposal relating to the use of derivatives by registered investment companies and business development companies.

Immediate Impacts of SEC Proposal on Fund Use of Derivatives

AQR Meeting with SEC Staff

May 15, 2020



Negative Impacts of the Proposed VaR Test are Not Theoretical

Recent market volatility ensures an immediate impact

Multiple commenters have expressed concerns about the unnecessarily constraining impacts of the proposed VaR thresholds in the SEC's Proposal on the Use of Derivatives by Registered Investment Companies and Business Development Companies (File No. S7-24-15)* on funds not otherwise engaging in undue speculation.

- These concerns were based on data covering historical fund, strategy, and asset class returns as well as industry surveys.
- Theoretical concerns about the proposal's implications have now become a reality given the recent large spike in volatility driven by the Covid-19 crisis.
- Without changes the proposed VaR test will no longer act as an outer bound limit, but rather a severely binding constraint on a variety of funds both during and post the Covid-19 crisis, despite the relatively low risk profiles of these funds.
- This will impact the expected returns available to investors, force funds to run with a less than optimal level of risk, and likely cause market dislocations as funds would be required to trade into an already stressed liquidity environment.

- Funds immediately impacted include:
  - Mid-Crisis: A Variety of Fixed Income Funds (Relative VaR Test); and
  - Post-Crisis: Volatility Targeting Funds (Absolute VaR Test).

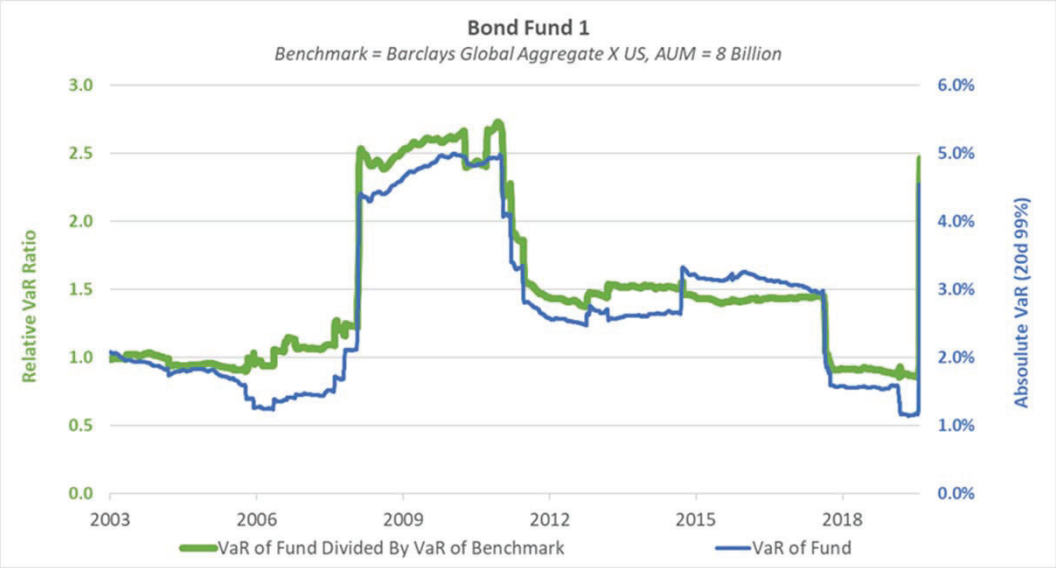
- Modifications recommended in the AQR Comment Letter would help address the proposal's disproportionate impacts on funds not engaging in undue speculation, without compromising the robust oversight provided by the proposal.

**See, e.g.*, Letter from AQR Capital Management LLC to Vanessa Countryman, Secretary, SEC (April 21, 2020), *available at* https://www.sec.gov/comments/s7-24-15/s72415-7100727-215810.pdf ("AQR Comment Letter").

Immediate Impact of Proposed Relative VaR Threshold

Fixed income funds with modest actual VaR would be severely constrained

Figure 11 from AQR Comment Letter: VaR of Bond Fund 1



- Note that as a result of the Covid-19 crisis, while the relative VaR for this fund is currently elevated, the absolute level of VaR is still quite moderate.
- The proposal would force selling by fixed income funds during a volatile and liquidity constrained period, exacerbating challenges to an already constrained credit market.
- **Recommendation (from AQR Comment Letter):** Revise the relative VaR threshold to be the maximum of the benchmarked relative VaR limit and an absolute VaR of 10% of the fund's net assets.

Data from Bloomberg. VaR is calculated at a 99% confidence level with a 3-year lookback, using 20-day rolling demeaned returns.

Immediate Impact of Proposed Absolute VaR Threshold

Would become an inevitable constraint for many moderate volatility funds

Figure 7 from AQR Comment Letter: Impact of Current Market Environment on Future Calculation of VaR

	Normal Volatility Environment *12/31/2019*		High Volatility Environment *Current COVID-19 Crisis*		Hypothetical Future Return to a Normal Volatility Environment *Any Time in the Next 3 Years*	
	Ex-Ante Volatility	**20D 99 VaR**	**Ex-Ante Volatility**	**20D 99 VaR**	**Ex-Ante Volatility**	**20D 99 VaR**
S&P 500 (Constant Unit Exposure)	12%	10%	40%	**21%**	12%	**21%**
S&P 500 (15% Ex-Ante Volatility)	15%	12%	15%	8%	15%	**26%**
Risk Parity (15% Ex-Ante Volatility)	15%	12%	15%	7%	15%	**44%**

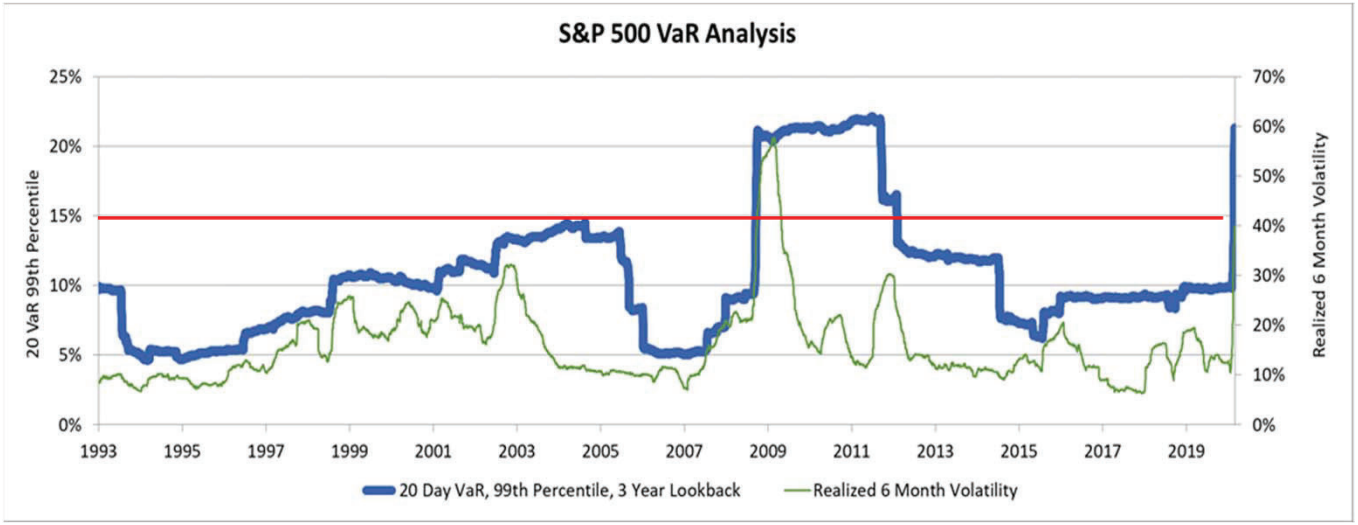
- As a result of the Covid-19 crisis, the proposed absolute VaR threshold would require funds to significantly reduce position sizes during future periods of normal market volatility, despite having relatively modest risk profiles.
- **Recommendations (from AQR Comment Letter):**
  - Raise the absolute VaR threshold to at least 20%.
  - Revise the threshold to be the maximum of the fixed threshold and 150% of the then current VaR of the S&P 500.
  - Allow the use of VaR at a 95% confidence level extrapolated to a 99% confidence level.
  - Allow funds that explicitly target volatility to use a VaR model that is more consistent with the underlying risk profile.

S&P 500 volatility is computed using a 6-month lookback window. Risk parity strategy volatility is computed using a 3-month lookback window. The "Hypothetical Future Return to a Normal Volatility Environment" VaR is computed by using 12/31/2019 positions any time in the 3 years after the current spike in market volatility. This is a proxy for the VaR that would be observed if the more moderate market risk profile from 12/31/2019 occurs anytime in the next 3 years. VaRs are calculated at a 99% confidence level with a 3-year lookback, using 20-day rolling demeaned returns.

Analysis of S&P 500 Justifies Raising Absolute VaR Threshold

The S&P 500 meaningfully breaches the proposed limit

Figure 1 from AQR Comment Letter: S&P 500 VaR Analysis



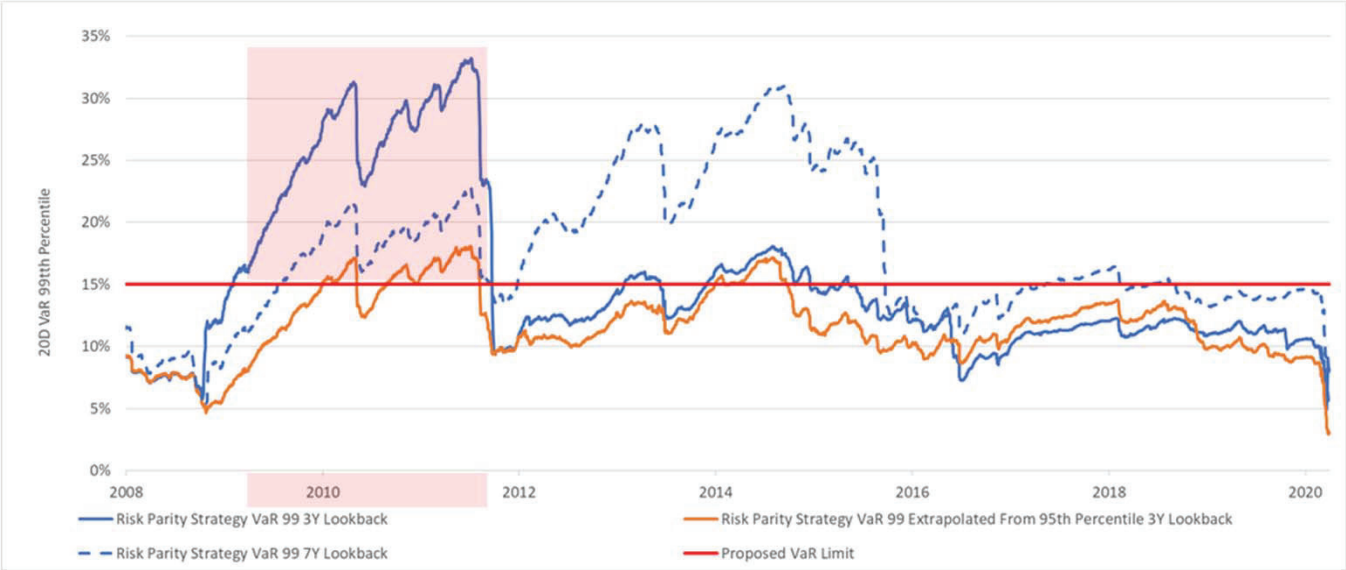
- In the proposal, the S&P 500 was used as a benchmark for setting the outer bound VaR limit.
- Note that after the Global Financial Crisis the proposed VaR limit would significantly bind the S&P 500 and do so well after the period of increased volatility had subsided, despite the S&P 500 itself not reflecting undue speculation.
- The recent spike in volatility from the Covid-19 crisis would lead to the same result, causing the S&P 500 to meaningfully exceed the proposed VaR limit both during the volatile period and well after volatility returns to more normal levels.
- **Recommendation (from AQR Comment Letter):** Raise the absolute VaR threshold to at least 20%.

Data from Bloomberg. VaR is calculated at a 99% confidence level with a 3-year lookback, using 20-day rolling demeaned returns.

Recent Market Volatility Supports VaR Calculation Adjustments

Funds can obtain more accurate VaR results by rescaling confidence level

Figure 3 from AQR Comment Letter: Extrapolating From 95% to 99% Confidence Level



- Extrapolating VaR calculations from a 95% confidence level to a 99% confidence level would provide more accurate estimates of risk by incorporating a far greater number of observations.
- The imprecision and instability of a 99% confidence level makes it problematic for use as a binding limit.
- **Recommendation (from AQR Comment Letter):** Allow funds to extrapolate the VaR calculations from a 95% confidence level to a 99% confidence level.

Data from AQR. The risk parity strategy data is for a backtested, 15% volatility targeted fund. The 99% confidence level VaR calculations include 3-year and 7-year lookbacks, each using 20-day rolling demeaned returns. Extrapolation is done by using the normal relationship between 99th and 95th percentiles (effectively 99th percentile z-score/95th percentile z score * VaR 95).

Recent Market Volatility Supports VaR Calculation Adjustments

Adjust the VaR model to align with how volatility targeting funds operate

Figure 10 from AQR Comment Letter: Adjusted VaR Calculation

- The proposed VaR calculation methodology inaccurately assumes constant positions during the entire lookback period, resulting in an inaccurate picture of risk for volatility targeting funds. This mismatch will be exacerbated by recent market volatility.
- The inaccurate picture of risk occurs because when volatility subsides in the future, funds that target a level of risk will moderately increase leverage. However, the proposed VaR calculation asserts that these larger positions would have been held constant during the entire 3 year lookback (*i.e.*, during the Covid-19 crisis), despite the fact that these funds would necessarily have held smaller position sizes during the highly volatile Covid-19 period.
- **Recommendation (from AQR Comment Letter):** Allow funds to use a VaR model that adjusts position sizes consistent with a publicly disclosed volatility targeting strategy.

Data from AQR. The risk parity strategy data is for a backtested 15% volatility targeted fund. The alternative VaR model adjusts historical returns data by considering the ex-ante volatility of the holdings on each day in the lookback window and scaling those returns to reflect the target volatility of the fund.

Revise Remediation Period and Proposed Time Out

Proposal's immediate impact heightens risks of remediation period

The proposed remediation time frame and three-day time out after a fund's VaR is below the limit following a breach of the remediation period could each present unnecessary risks to funds and their investors.

- These potential risks must be addressed because the proposed VaR test would result in immediate breaches by a variety of funds requiring meaningful trading into a market that already faces stressed liquidity.
- **Recommendation (from AQR Comment Letter):** Extend the VaR breach remediation period from three business days to five business days and remove the time out period altogether.

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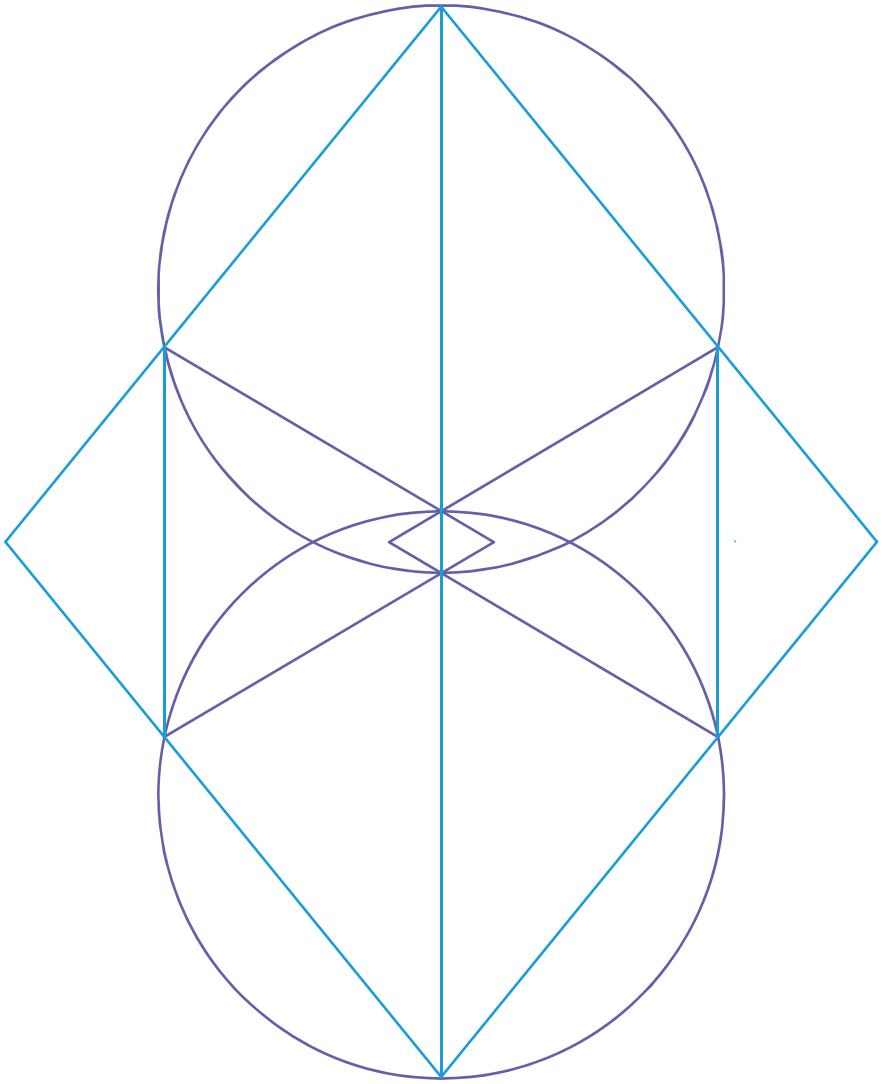
Appendix

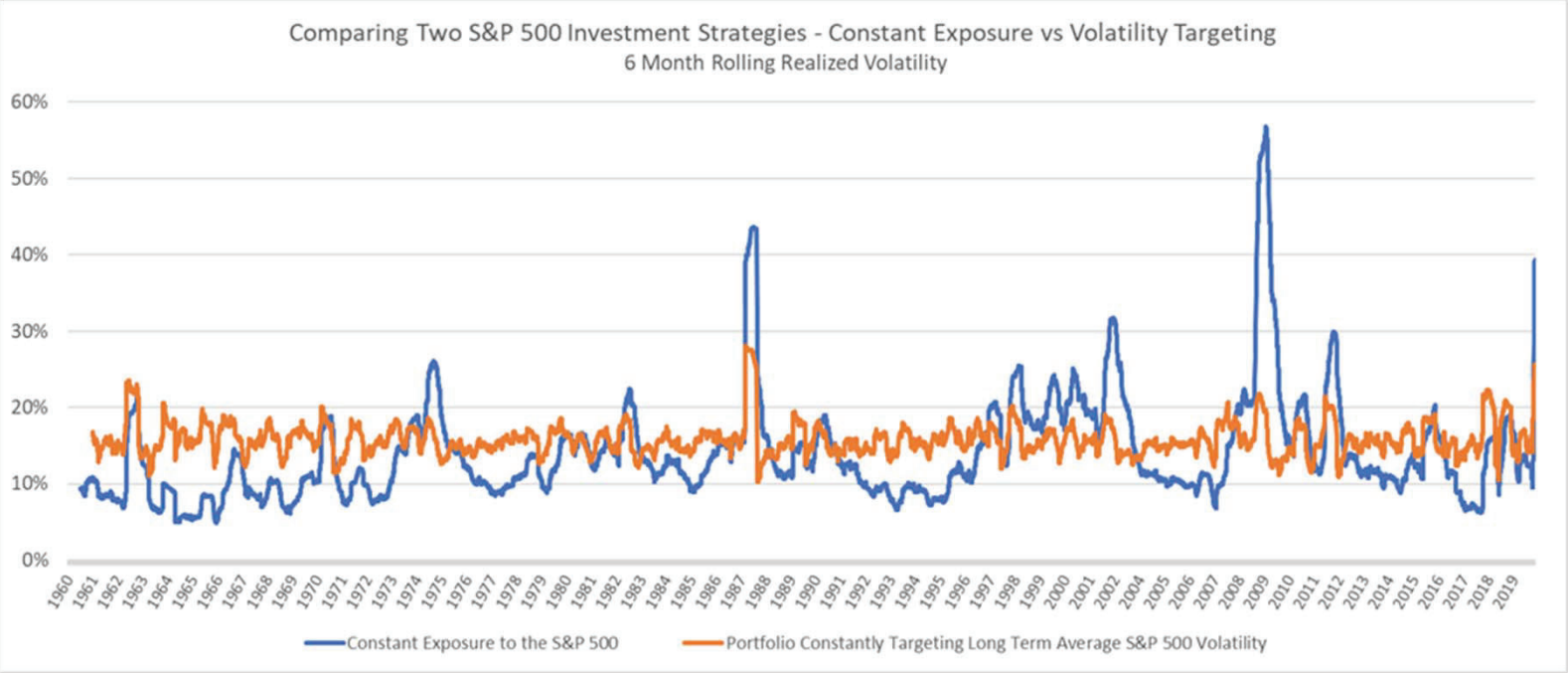
Disproportionate Impact of VaR Calculation Methodology on Volatility Targeting Funds



Volatility Targeting Strategies Help Investors Manage Risk

These strategies experience less volatility than constant market exposure

Figure 4 from AQR Comment Letter: Constant Exposure Versus Volatility Targeting of the S&P 500



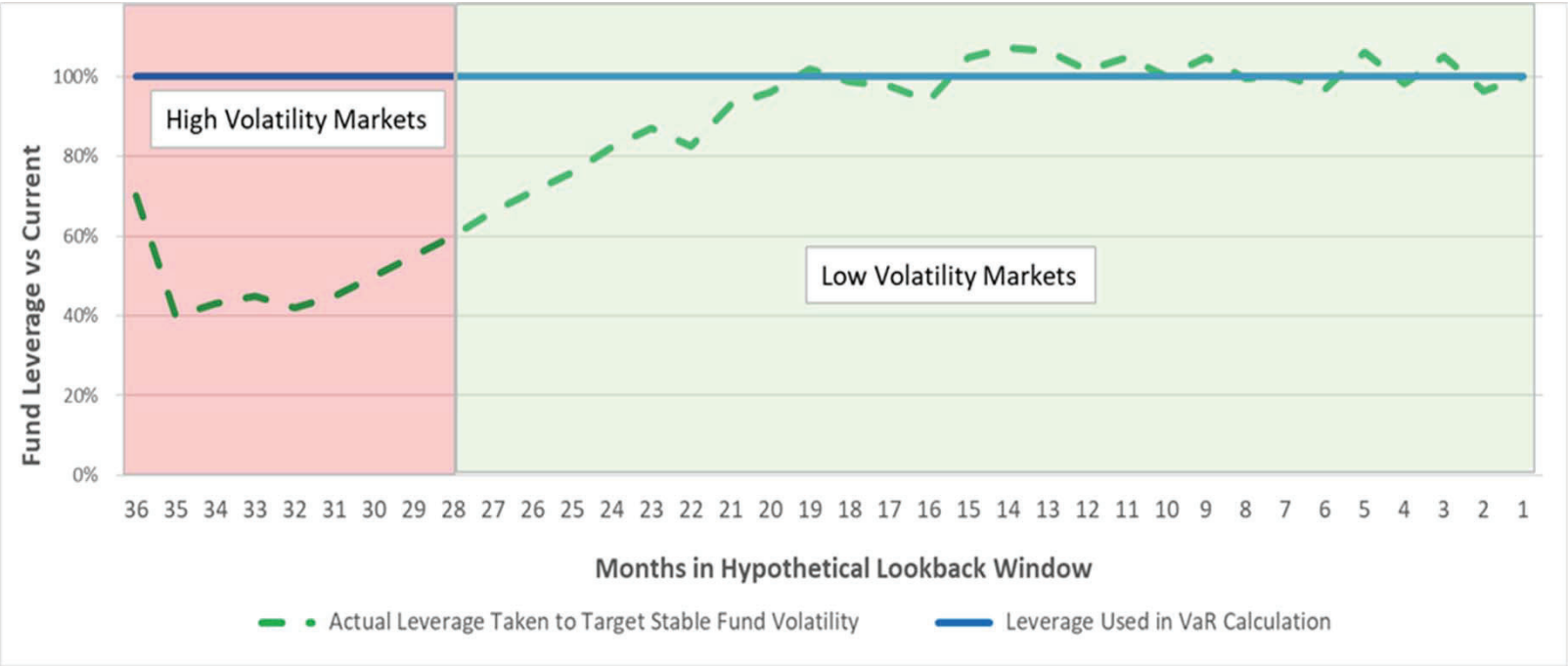
- Funds that target a level of volatility provide investors with a valuable alternative to funds targeting static exposures. The benefits are most pronounced during spikes in market volatility.
- The proscribed VaR thresholds and calculation methodology should not disproportionately restrict this important class of investments.

Data from Bloomberg. The chart compares the returns of a portfolio of the S&P 500 resized daily to 15% ex-ante volatility (the long-term average volatility of the fully invested index), to a constant notional S&P 500 exposure. Three month realized volatility is used as an ex-ante volatility estimate.

Historical VaR Calculations Assume Constant Position Sizes

Vol target funds adjust position sizes based on underlying market volatility

Figure 5 from AQR Comment Letter: Mismatch of Construction of Volatility Targeting Funds and Construction Implicit in Historical VaR Calculation



- The VaR methodology assumes that funds hold their total level of exposures constant through all market environments.
- Volatility targeting funds necessarily adjust the total level of exposures as market conditions evolve.
- This results in inflated VaR levels during periods of normal volatility coming after periods of high volatility (*e.g.*, Covid-19).

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