ADVANTAGES OF MARKET PARTICIPATION STRATEGY (MPS)

ABOUT PGIM QUANTITATIVE SOLUTIONS

As the quantitative equity and multi-asset solutions specialist of PGIM, we seek to help solve complex investment problems with custom systematic solutions across the risk/return spectrum. We can customize down to the stock level for portfolio considerations, with product offerings that range from core solutions and systematic macro to multi-asset portfolios and overlays. We manage portfolios for a global client base with $113.7 billion in assets under management as of 9/30/2021.

FOR MORE INFORMATION

To learn more about our capabilities, please contact PGIM Quantitative Solutions by email at contactus@pgim.com or by phone in the US at +1 (866) 748-0643 or in the UK at +44 (0) 20-7663-3400

WHAT IS MPS?

PGIM Quantitative Solutions' Market Participation Strategy (MPS) is a risk-mitigation strategy (RMS) designed to deliver consistent returns by providing upside market capture while limiting portfolio losses during market downturns*.

HOW DO INVESTORS TYPICALLY UTILIZE MPS?

A LOWER VOLATILITY EQUITY REPLACEMENT

Adding MPS to a well-diversified portfolio may lower overall standard deviation with similar returns, resulting in an improved risk/return profile.

A COMPONENT OF RISK MITIGATION

Risk, particularly the risk of large drawdowns, can be costly. MPS has limited losses during periods of market turbulence.

AN ALTERNATIVE INVESTMENT ALLOCATION

Similar to hedge funds, MPS may enhance diversification and risk-adjusted returns but with much more attractive fees.

*There is no guarantee this objective will be achieved.

For Professional Investors only.
All investments involve risk, including the possible loss of capital.

WHY INCLUDE MPS IN YOUR PORTFOLIO?

MPS may help clients achieve their long-term return objectives by capturing approximately 60% of an equity index upside while participating in only 30% of the downside, resulting in performance similar to the index with substantially lower volatility.

MPS can be an important and positive relative contributor to your overall portfolio risk budget due to its natural risk-reward characteristics, typically measured by Sharpe ratio. As a result, it can help free up additional risk within your risk budget to redeploy elsewhere as needed from a portfolio construction perspective. MPS is particularly compelling during periods of market crises when asset classes can become highly correlated and the benefits of diversification are less pronounced.

We have extensive experience creating customized solutions that target investors' desired equity market upside participation while limiting downside. We do this by investing in both Treasury bonds and long-dated equity call options and varying the allocations to each according to investor specifications. This approach has historically delivered on, or exceeded, client expectation while also having almost zero correlation to bonds and a low beta to equities, and when added to a diversified investment portfolio, can enhance the overall risk-reward profile. With its 30-year track record, MPS has demonstrated its ability to meet both upside participation during bull markets and downside protection targets during bear markets.

HOW WE'RE DIFFERENT

EXPERIENCED TEAM

MPS is managed by an experienced portfolio management team with a 30-year track record and no personnel turnover since inception (Jan 1992).

HISTORICAL OUTPERFORMANCE

MPS has performed compellingly relative to other RMS strategies, with lower maximum drawdowns and therefore higher Sharpe and Sortino ratios. The MPS' risk/return profile is similar to that of various hedge funds, but at a far more affordable fee structure.

HIGHLY LIQUID

Treasuries and options are typically highly liquid, regardless of market conditions. With an average 80% invested in bonds, this allows for liquidity even during a market crisis.

LOW TURNOVER

Because MPS holds long-term call options, we eliminate the need for frequent trading, thus keeping the portfolio turnover low. Low turnover can be especially beneficial during periods of equity market turbulence/drawdowns, when liquidity is often an issue.

LOW BETA AND UNCORRELATED TO BONDS

MPS has a low beta to the S&P 500 Index and virtually zero correlation to bonds.

ACTIVE MANAGEMENT

PGIM Quantitative Solutions tactical views are incorporated into the portfolio as an overlay to our systematic parameters, implemented by modifying the timing and magnitude of our equity exposure and duration resets – two key levers driving portfolio performance.

RISK CONTAINMENT

MPS incurs no counterparty risk. Call options are designed with brokers and then listed on the CBOE. The strategy is also "long" volatility, which means we have positive exposure to volatility, a key component in reducing risk.

HIGHLY COMPETITIVE FEES

MPS has much lower fees compared to most RMS and other alternative investment strategies. We charge a competitive, asset-based management fee only, and do not use carried interest or performance-based fees.

THE NUMBERS SPEAK FOR THEMSELVES

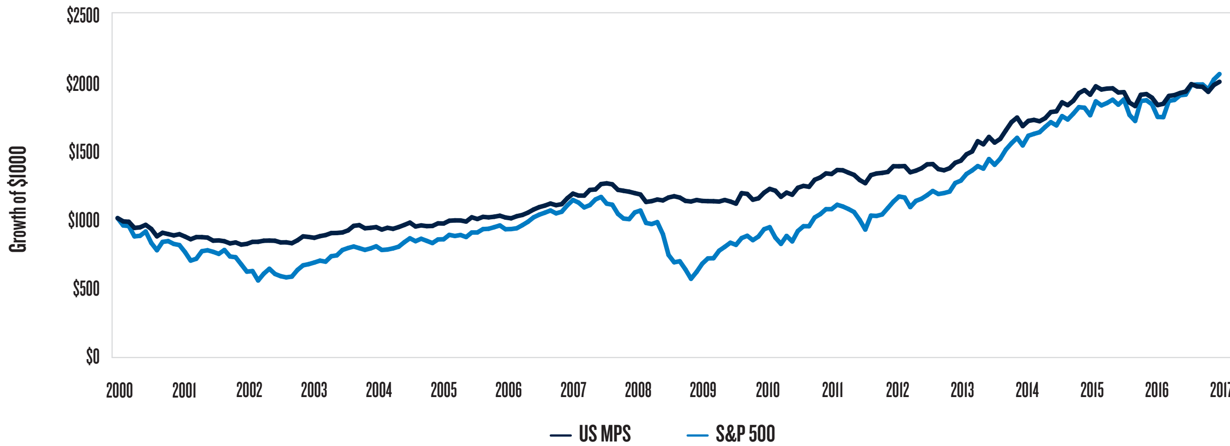
Attractive Track Record: MPS has a 30-year track record of mitigating large losses through its bond-like defensive features in turbulent markets, while also providing growth through upside participation in rising equity markets.

Protection During Market Crises: MPS particularly shines during significant drawdowns such as the Tech Bubble burst, the Global Financial Crisis, and most recently, during the sharp COVID correction. MPS' strength as a true downside protection strategy during times of significant crises is compelling, but longer-term performance shows that MPS provides upside participation during rising markets as well.

MPS dramatically reduces the largest drawdowns: It can take a long time to recover from big drawdowns.

Downside Protection

After the Tech Bubble, 16 years until S&P matched MPS



Source: PGIM Quant, S&P Dow Jones Indices LLC.
Past performance is not a guarantee or a reliable indicator of future results. This chart demonstrates the growth of $1000 and is shown for illustrative purpopses only.

LARGEST DRAWDOWNS SINCE 2000

US MPS dramatically reduces the largest drawdowns

Coronavirus Crisis (2/20/20 – 3/20/20)

US MPS (Gross)	BXM Buy Write	PPUT Put Protection	60/40	SP5LVIT S&P Low Volatility	P0P1 Preferreds	VXAO Convertible	S&P 500 Index
-10.6%	-29.1%	-10.0%	-19.9%	-32.4%	-20.1%	-26.1%	-31.8%

Tech Bubble Burst (9/1/00 – 9/30/02)

US MPS (Gross)	BXM Buy Write	PPUT Put Protection	60/40	SP5LVIT S&P Low Volatility	P0P1 Preferreds	VXAO Convertible	S&P 500 Index
-17.0%	-30.2%	-32.3%	-22.8%	9.0%	-32.8%	-31.8%	-44.7%

Global Financial Crisis (11/1/07 – 2/28/09)

US MPS (Gross)	BXM Buy Write	PPUT Put Protection	60/40	SP5LVIT S&P Low Volatility	P0P1 Preferreds	VXAO Convertible	S&P 500 Index
-10.0%	-35.8%	-38.2%	-32.5%	-33.5%	-45.3%	-40.5%	-50.9%

BXM – CBOE S&P 500 BuyWrite Index, PPUT – CBOE S&P 500 5% Put Protection Index, 60/40 Balanced Portfolio (60% S&P 500 Index, 40% Bloomberg Barclays US Aggregate Bond Index), SP5LVIT – S&P 500 Low Volatility Index, P0P1 – ICE BofA Fixed Rate Preferred Securities Index, VXAO – ICE BofA Merrill Lynch All US Convertible Index, SPTR – S&P 500 Total Return Index.

Source: PGIM Quant, Bloomberg, FactSet and Markit. ***Past performance is not a guarantee or a reliable indicator of future results.***

HOW WE CAN WORK WITH YOU

Exposure: MPS typically targets 60% equity exposure at reset but is completely customizable to various market exposures.

Global Reach: MPS is available on both a US and Global Equity market basis. In the past several years, we have witnessed a significant improvement in the availability and liquidity of global long-dated options. As such, we are able to create versions using US Small Cap, Non-US, and Global indices which capitalize on the same competitive advantages as the US MPS strategy.

Implementation: MPS can be used as a lower volatility equity replacement, a component of risk mitigation, or an alternative investment allocation. Similar to hedge funds, MPS aims to decrease volatility while increasing risk-adjusted returns and reducing drawdowns. It has generally provided superior risk-adjusted returns and lower maximum drawdowns with a far more cost-effective fee structure. While hedge fund (long/short) allocations are typically sought for reasons mentioned above, and may deliver results, they do so in a much more costly fashion.

MEET THE TEAM

MPS is managed by an experienced portfolio management team with no turnover since inception (Jan 1992).

DEVANG GAMBHIRWALA

Portfolio Manager

DEVANG GAMBHIRWALA →

JOEL M. KALLMAN

Portfolio Manager

JOEL M. KALLMAN →

MARCUS M. PERL

Portfolio Manager

MARCUS M. PERL →

PRODUCT SPECIALIST

STEPHEN BRUNDAGE

Head of Affiliate Solutions

STEPHEN BRUNDAGE →

PUTTING IT ALL TOGETHER

MPS can be part of a well-designed strategic asset allocation framework. MPS leverages the skill of our portfolio managers, who work together across investment teams to combine equity/options expertise with asset allocation experience in the application of tactical views to determine portfolio exposures. Portfolio managers consider current market conditions, their overall economic outlook, and the liquidity available in the marketplace, along with the quantitative parameters used as a guide to reset equity exposures. With its proven 30-year track record, MPS has met its objective of decreasing total portfolio standard deviation while increasing Sharpe and Sortino ratios and lowering maximum drawdown. See how MPS can help you achieve your investment portfolio objectives through participation in equity market upside while limiting the downside.

Notes to Disclosure

For Professional Investors only. All investments involve risk, including the possible loss of capital. Past performance is not a guarantee or a reliable indicator of future results.

These materials represent the views and opinions of the author(s) regarding the economic conditions, asset classes, securities, issuers or financial instruments referenced herein and are not necessarily the views of PGIM Quantitative Solutions. PGIM Quantitative Solutions LLC (PGIM Quantitative Solutions or PGIM Quant), formerly known as QMA LLC, is an SEC-registered investment adviser and a wholly-owned subsidiary of PGIM, Inc. (PGIM) the principal asset management business of Prudential Financial, Inc. (PFI) of the United States of America. Registration with the SEC does not imply a certain level of skill or training. PFI of the United States is not affiliated in any manner with Prudential plc, which is headquartered in the United Kingdom or with Prudential Assurance Company, a subsidiary of M&G plc, incorporated in the United Kingdom.

Any reproduction of these materials, in whole or in part, or the divulgence of any of the contents hereof, without prior consent of PGIM Quantitative Solutions is prohibited. Certain information contained herein has been obtained from sources that PGIM Quantitative Solutions believes to be reliable as of the date presented; however, PGIM Quantitative Solutions cannot guarantee the accuracy of such information, assure its completeness, or warrant such information will not be changed. The information contained herein is current as of the date of issuance (or such earlier date as referenced herein) and is subject to change without notice. PGIM Quantitative Solutions has no obligation to update any or all of such information; nor do we make any express or implied warranties or representations as to the completeness or accuracy or accept responsibility for errors. These materials are not intended as an offer or solicitation with respect to the purchase or sale of any security or other financial instrument or any investment management services and should not be used as the basis for any investment decision. The underlying assumptions and our views are subject to change. No liability whatsoever is accepted for any loss (whether direct, indirect, or consequential) that may arise from any use of the information contained in or derived from this report. PGIM Quantitative Solutions and its affiliates may make investment decisions that are inconsistent with the views and opinions expressed herein, including for proprietary accounts of PGIM Quantitative Solutions or its affiliates.

This material may contain examples of the firm's internal ESG research program and is not intended to represent any particular product's or strategy's performance or how any particular product or strategy will be invested or allocated at any particular time.

In the United Kingdom, information is issued by PGIM Limited with registered office: Grand Buildings, 1-3 Strand, Trafalgar Square, London, WC2N 5HR. PGIM Limited is authorised and regulated by the Financial Conduct Authority ("FCA") of the United Kingdom (Firm Reference Number 193418). In the European Economic Area ("EEA"), information is issued by PGIM Netherlands B.V. with registered office: Gustav Mahlerlaan 1212, 1081 LA Amsterdam, The Netherlands. PGIM Netherlands B.V. is authorised by the Autoriteit Financiële Markten ("AFM") in the Netherlands (Registration number 15003620) and operating on the basis of a European passport. In certain EEA countries, information is, where permitted, presented by PGIM Limited in reliance of provisions, exemptions or licenses available to PGIM Limited under temporary permission arrangements following the exit of the United Kingdom from the European Union. These materials are issued by PGIM Limited and/or PGIM Netherlands B.V. to persons who are professional clients as defined under the rules of the FCA and/or to persons who are professional clients as defined in the relevant local implementation of Directive 2014/65/EU (MiFID II). PGIM Quantitative Solutions, PGIM Limited and/or PGIM Netherlands B.V. are indirect, wholly-owned subsidiaries of PGIM. These materials are not intended for distribution to, or use by, any person in any jurisdiction where such distribution would be contrary to local or international law or regulation.

In Japan, investment management services are made available by PGIM Japan, Co. Ltd., ("PGIM Japan"), a registered Financial Instruments Business Operator with the Financial Services Agency of Japan. In Singapore, information is issued by PGIM (Singapore) Pte. Ltd. ("PGIM Singapore"), a Singapore investment manager that is licensed as a capital markets service license holder by the Monetary Authority of Singapore and an exempt financial adviser. These materials are issued by PGIM Singapore for the general information of "institutional investors" pursuant to Section 304 of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA") and "accredited investors" and other relevant persons in accordance with the conditions specified in Sections 305 of the SFA. In South Korea, information is issued by PGIM Quantitative Solutions, which is licensed to provide discretionary investment management services directly to South Korean qualified institutional investors.

These materials are for informational and educational purposes. In providing these materials, PGIM Quantitative Solutions is not acting as your fiduciary.

PGIM Quantitative Solutions – 20211231-333