For professional investors - Marketing communication

BENEFITS OF AN ALLOCATION TO LOW-VOLATILITY EQUITIES FOR RISK-AVERSE INVESTORS

BNP PARIBAS
ASSET MANAGEMENT

The asset manager for a changing world

The current "low-yield" environment is particularly challenging for equity investors looking for long-term performance. While equities may at first view seem attractive relative to fixed income assets, many investors are hesitant to reach for the equity risk premium given increasing market uncertainty.

We suggest risk-averse investors to consider investing in a low-volatility equity strategy, which offers the potential for better risk-adjusted returns in the long term, and significant outperformance in moderate and full-blown equity bear markets.

THE LOW-VOLATILITY ANOMALY IS EVERYWHERE

While empirical evidence of the low-volatility factor has existed since the 1970's, interest among investors grew in the wake of the global financial crisis, through exposure to low-risk strategies. The low-volatility factor became the "Hot Topic" from both an academic and an investment standpoint.

BNP Paribas Asset Management participated in the educational process with some key academic research papers. Arguably the most iconic paper, written in 2015 by our Quantitative Research Group (QRG), is named "Low Risk Anomaly Everywhere - Evidence from Equity Sectors".

Our research provided some evidence of a low risk premium in all sectors of equity markets, across a large number of regions/countries.

We argue that investor behaviour, in particular the behavioural traits of discretionary portfolio managers, goes a long way to explaining why the low risk premium exists in all sectors.

We also show that investing in a diversified low-volatility strategy is superior to investing in high-volatility portfolios, especially when we measure the Sharpe Ratio by sectors.

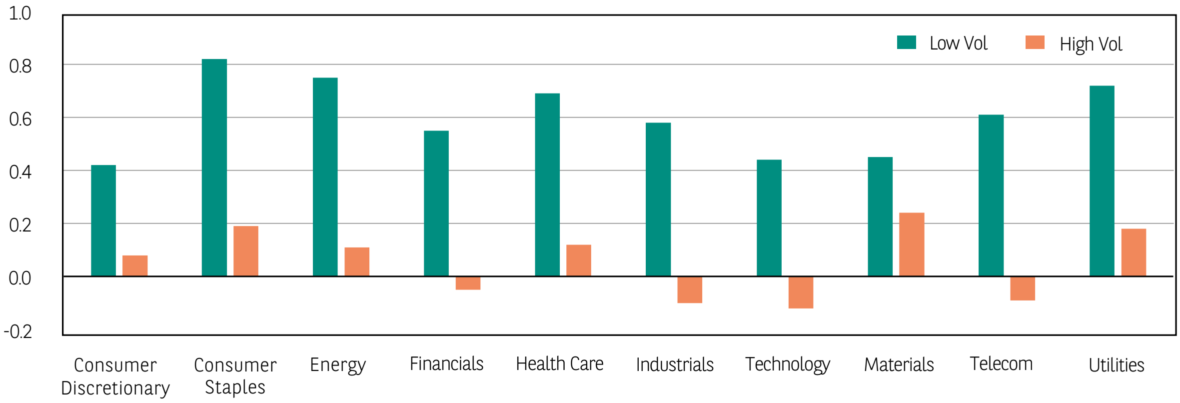
The graphic below illustrates the higher risk-adjusted returns of our low-volatility equity strategy compared to a high-volatility equity strategy. The Sharpe Ratio of a low-volatility portfolio is significantly higher than that of a portfolio of high-volatility stocks. This measure is consistently higher across all sectors. It demonstrates that the low risk is omnipresent in equity portfolios.

The global low-volatility strategy developed by BNP Paribas Asset Management's quantitative equity team is based on the methodology described in this academic paper. The objective is to select the least volatile stocks in each sector and to avoid any sector bias in the factor calculation process.

Instead of just reducing the overall volatility of the portfolio (as would be the case in a minimum-variance portfolio), our objective is to build a diversified portfolio exclusively composed of low-volatility stocks, which over the long term will generate higher risk-adjusted returns than a market capitalisation index.

In addition to the low-volatility stock selection, our investment process involves stringent risk management. Of particular importance is the tracking error minimisation objective. This specific risk control aims to reduce deviation of the strategy's performance relative to that of the respective index.

SHARPE RATIO BY SECTOR - LOW VS. HIGH-VOLATILITY EQUITIES



Source: Source: R Leote de Carvalho, X Lu, M Zakaria, P Moulin, BNP Paribas Asset Management. Low-volatility anomaly everywhere: evidence from equity sectors. in "Risk Based and Factor Investing" (2015), Elsevier, 31 May 2015.

OUTSTANDING RISK-ADJUSTED RETURNS SINCE INCEPTION

Our Quantitative Equity team has managed a Global Low-Volatility strategy since March 2011. The strategy has delivered significant outperformance since inception (+1.3% gross of fees), and most recently in 2018 outperforming the MSCI World Index (+4.9% gross of fees), while at the same time reducing the overall equity volatility over time.

	PERFORMANCE GROSS OF FEES (SINCE 03/2011)								
	1 Y	2 Y	3 Y	Since inception*	2014	2015	2016	2017	2018
Global Low-Volatility Equity	14.1%	13.8%	11.0%	12.8%	23.65%	10.66%	9.79%	4.99%	0.79%
MSCI World Net Return Index	8.9%	10.8%	10.6%	11,5%	19.50%	10.42%	10.73%	7.51%	-4.11%

*Inception date: 31.03.2011
Returns in EUR (gross of fees)as of July 2019
Source: BNP Paribas Asset Management as of July 31st 2019. Past performance is not indicative of future performance

On a risk-adjusted basis, the strategy has delivered a better Sharpe Ratio than the MSCI World Index since inception. This is a function of :

1. Positive incremental performance relative to the MSCI World Index since inception
2. Lower volatility than that of the MSCI World Index since inception

SHARPE RATION BY SECTOR - LOW VS. HIGH-VOLATILITY EQUITIES

	GLOBAL LOW-VOL EQUITY	MSCI WORLD INDEX
Performance	12.8%	11.5%
Volatility	12.4%	13.5%
Sharpe Ratio	1.01	0.83
Jensen's Alpha	2.75%	
Tracking Error	3.86%	
Equity beta	0.85	

Source: BNP Paribas Asset Management, as of July 2019

Overall, the strategy has delivered what an investor should be able to expect from a global low-volatility equity portfolio:

- Selection of diversified low-volatility stocks
- A portfolio with higher risk-adjusted returns than those of the market capitalisation index
- A defensive equity exposure with an equity beta of 0.85
- Stringent risk management and controls
- ESG (Environmental, Social and Governance) integration and carbon reduction objectives

LOW VOLATILITY EQUITY STRATEGY → BE SELECTIVE!

We believe that the low-volatility factor is a great diversifier in an equity portfolio and should be considered by every risk-averse investor as a means of protection[1] against downside in equities.

Performance of the low-volatility factor is strongest when equity markets fall sharply: this factor helps to mitigate the underperformance of equity markets and deliver, over time, higher risk-adjusted returns.

Investors see the benefits of the low-volatility factor in bear or moderately falling markets. For instance, our Global Low-Volatility strategy outperformed significantly in moderately falling markets by +231bp (when 12-month index performance was between 0% and +10%) and in down markets by +328bp (when 12-month index performance was below 0%). In addition, the Hit ratio in moderate and down markets reached 68% and 89%, respectively.

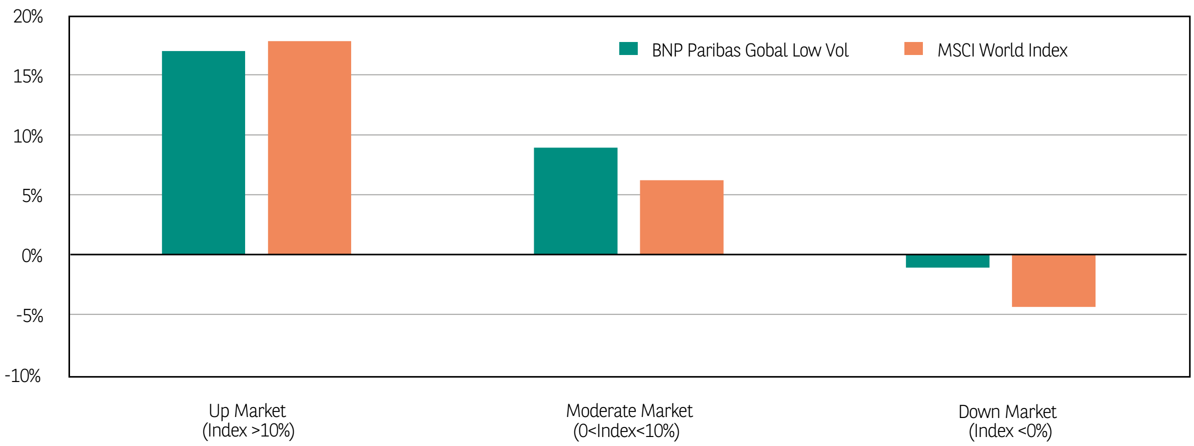
	UP MARKET (INDEX >10%)	MODERATE MARKET (0<INDEX<10%)	DOWN MARKET (INDEX <0%)
Excess return	-0.81%	2.31%	3.28%
Hit ratio	40%	68%	89%

Source: BNP Paribas Asset Management as of July 31st 2019. Past performance is not indicative of future performance
Performance gross of fees since strategy's inception (31/03/2011 to 31/07/2019)

On the other hand, when equities are in a bull market (that is to say when an equity index rises by more than 10% over a 12-month period), our strategy has underperformed marginally, by 81bp on average since inception.

Low-volatility strategies faced some criticism during the recent bull market, with some analysts arguing that positioning in the low-volatility factor was over-crowded while others suggested that sensitivity to interest rates was the main explanation for the underperformance of the low-volatility factor. Recent research suggests that such risks are overstated. Low risk is a distinct performance factor, although it can experience periods of underperformance.

PERFORMANCE (ROLLING 1 YEAR)



Source: BNP Paribas Asset Management as of July 31st 2019. Past performance is not indicative of future performance
Performance of the BNP Paribas Global Low Vol fund, gross of fees, since inception (31/03/2011 to 31/07/2019)

BNP Paribas Asset Management doesn't provide any formal capital guarantee of the funds. No information given or any term used herein shall be interpreted to provide such a guarantee.

Finally, a comment on the profusion of low-volatility equity strategies. The vast array of strategies can be puzzling for investors. Some strategies target volatility minimisation; others are disguised multi-factor strategies with higher exposure to the low-volatility factor. Finally, some low-volatility strategies are purely systematic and others integrate fundamental overrides.

What is important for investors to understand at the outset is that low-volatility strategies are active strategies rather than traditional indexation. Their geographical, sector and stock allocations will differ significantly from those of the market capitalisation index.

CONCLUSION

In our opinion, investors should consider making a strategic, rather than a tactical allocation to low volatility equity investing.

A low volatility equity strategy has the potential to generate higher risk-adjusted returns than those of a market capitalisation index, and help mitigate the long-term equity risk.

Since 2011, BNP Paribas Asset Management has managed a Global Low Volatility Equity strategy, which has outperformed the MSCI World Index and reduced overall volatility over the long term.

BNP PARIBAS ASSET MANAGEMENT France, "the investment management company," is a simplified joint stock company with its registered office at 1 boulevard Haussmann 75009 Paris, France, RCS Paris 319 378 832, registered with the "Autorité des marchés financiers" under number GP 96002.

This material is issued and has been prepared by the investment management company.

This material is produced for information purposes only and does not constitute:

1. an offer to buy nor a solicitation to sell, nor shall it form the basis of or be relied upon in connection with any contract or commitment whatsoever or

2. investment advice.

This material makes reference to certain financial instruments authorised and regulated in their jurisdiction(s) of incorporation.

No action has been taken which would permit the public offering of the financial instrument(s) in any other jurisdiction, except as indicated in the most recent prospectus and the Key Investor Information Document (KIID) of the relevant financial instrument(s) where such action would be required, in particular, in the United States, to US persons (as such term is defined in Regulation S of the United States Securities Act of 1933). Prior to any subscription in a country in which such financial instrument(s) is/are registered, investors should verify any legal constraints or restrictions there may be in connection with the subscription, purchase, possession or sale of the financial instrument(s).

Investors considering subscribing to the financial instrument(s) should read carefully the most recent prospectus and Key Investor Information Document (KIID) and consult the financial instrument(s') most recent financial reports. These documents are available on the website.

Opinions included in this material constitute the judgement of the investment management company at the time specified and may be subject to change without notice. The investment management company is not obliged to update or alter the information or opinions contained within this material. Investors should consult their own legal and tax advisors in respect of legal, accounting, domicile and tax advice prior to investing in the financial instrument(s) in order to make an independent determination of the suitability and consequences of an investment therein, if permitted. Please note that different types of investments, if contained within this material, involve varying degrees of risk and there can be no assurance that any specific investment may either be suitable, appropriate or profitable for an investor's investment portfolio.

Given the economic and market risks, there can be no assurance that the financial instrument(s) will achieve its/their investment objectives. Returns may be affected by, amongst other things, investment strategies or objectives of the financial instrument(s) and material market and economic conditions, including interest rates, market terms and general market conditions. The different strategies applied to financial instruments may have a significant effect on the results presented in this material. Past performance is not a guide to future performance and the value of the investments in financial instrument(s) may go down as well as up. Investors may not get back the amount they originally invested.

The performance data, as applicable, reflected in this material, do not take into account the commissions, costs incurred on the issue and redemption and taxes.

All information referred to in the present document is available on www.bnpparibas-am.com

October 2019 - CREATIVE SERVICES AM - P1910014

www INVESTORS' corner

BNP PARIBAS
ASSET MANAGEMENT

The asset manager for a changing world