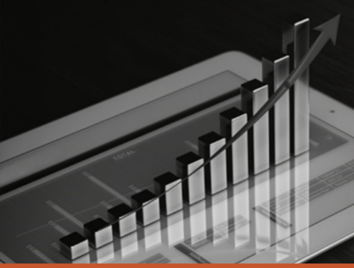

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Funds and Solutions

11 March 2022

Meeting new challenges of capital markets with flexible multi asset strategies

The following publications are part of the series Berenberg Funds and Solutions:

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  - Equities
  - Fixed Income
  - Multi Asset
  - Risk-focused solutions
  - Sustainability
  - Consulting

*Within **Insights** we provide you with a deeper understanding of our investment philosophy and thinking.*

A look at the recent past makes it clear: the number of extreme events in capital markets has increased significantly. 2018 was already impressive, with almost the same number of extreme events as during the 2008 financial crisis - one of the worst recessions historically! However, 2020 was even more extreme (see Fig. 1). The number of daily moves greater than four times the standard deviation of daily moves over the last 100 days had almost tripled. Markets have become more susceptible to quick, sharp movements. During the Covid-19 crisis, for example, we had the fastest bear market ever, followed by the fastest bull market ever. This behaviour can also be seen in Fig. 2: 2020 saw the sharpest increase in realised volatility since 1928, despite a much smaller drawdown than in 1928, 2008 or during the TMT bubble. Even smaller drawdowns lead to higher volatility shocks!

Increased abrupt, extreme market movements are only one of the challenges investors have to face. Market behaviour has changed dramatically over the last 10 years. Why is this and how can investors respond to these challenges?

Changed market structure as the main driver of changed market behaviour

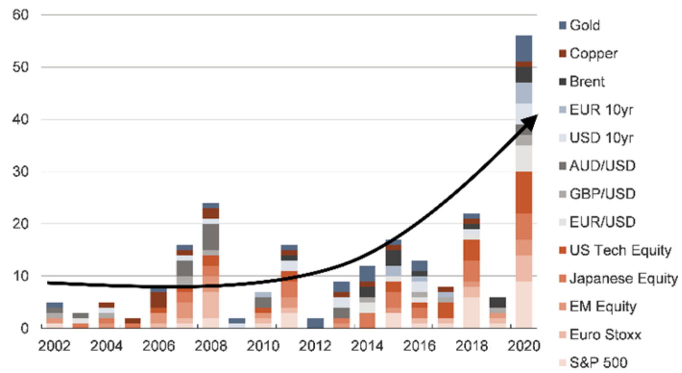
Three developments pose particular challenges for investors in the coming years

The structure in capital markets has changed significantly in recent years. Figure 3 provides an overview of the multitude of developments that have contributed to this. In our view, there are three developments in particular that are likely to continue to pose challenges to investors in the coming years.

- Increased passive investing
- Increased pro-cyclical behaviour of many investors, especially systematic investment strategies, while at the same time less anti-cyclical value investors
- Stronger synchronisation of risk assets and safe government bonds

Fig. 1: Extreme market movements in all asset classes ...

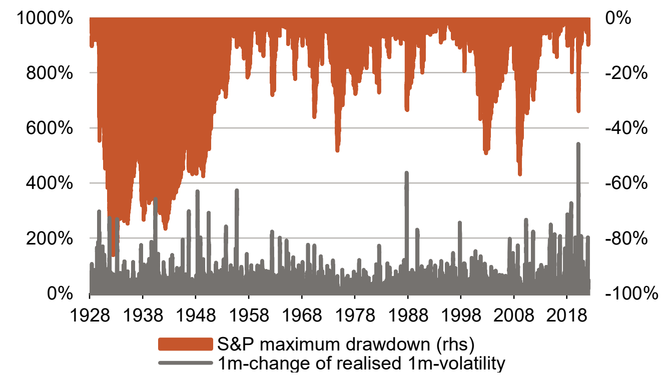
Number of daily movements at least 4 times greater than the standard deviation of the daily movements of the last 100 days in 13 different plants.



Time period: 01/01/2002 – 31/12/2020
Sources: Bloomberg, Berenberg

Fig. 2: ... with extreme stock market volatility in 2020

The March '20 shock led to the largest volatility spike in the S&P 500 in history (since 1928), although the stock sell-off was far from record-breaking.



Time period: 03/01/1928 – 16/02/2022
Sources: Bloomberg, Berenberg

Fig. 3: Changing market behaviour requires new thinking
Characteristics of the changed market behaviour

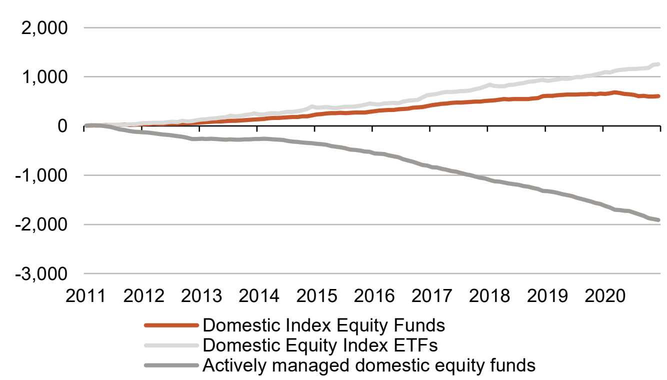
Sources: Berenberg

1. Passive investing on the rise

According to the Investment Company Institute (ICI), from 2011 to 2020, approximately $2 trillion flowed out of active US-based funds, while just under $2 trillion went into domestic index funds (see Fig. 4). In 2021, the year of record equity fund inflows, active funds also saw inflows, but these were only 7% of total equity fund inflows (see Fig. 5). A major driver of this development is the US pension market. According to the ICI, the US retirement market is now worth nearly $35 trillion and 64% of all US households own tax-advantaged retirement plans[1]. While the older generation still primarily invested in active funds - partly due to there being no broad availability of ETFs before the turn of the millennium - and they are now selling them at retirement age, the younger generations are relying more on passive products for retirement provision. In addition to the sometimes poor performance of active funds, this is probably one reason why active funds are struggling with outflows while passive funds are recording inflows. Systematic strategies as well as robo-advisors also rely predominantly on index products due to their simplicity and supposed liquidity.

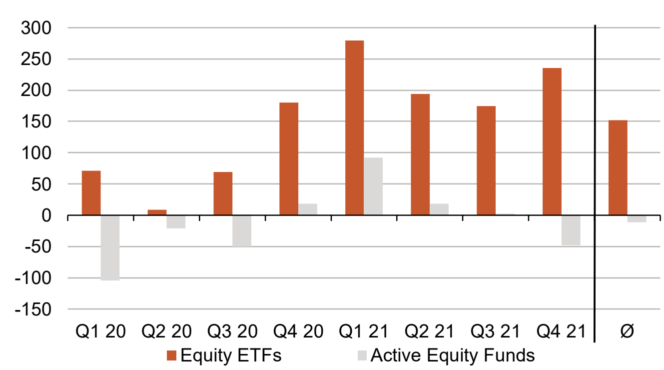
Retirement products and systematic strategies in particular are driving the trend towards passive investments

Fig. 4: Two Worlds - Strong outflows among active managers ...
Cumulative inflows into US-domiciled equity funds and net issuance of US-domiciled equity index ETFs, in billions of US dollars, monthly



Time period: 01/01/2011 - 31/12/2020
Sources: 2021 Investment Company FACT BOOK

Fig. 5:... compared to significant inflows in ETFs
Global net equity fund inflows for ETFs and active funds per quarter since 2020 in billion dollars



Time period: 01/01/2020 - 02/02/2022
Sources: BofA Global Investment Strategy, Berenberg

[1] See 2021 Investment Company FACT BOOK

Index fund and ETF providers have now risen to become the largest asset managers in the world. The Vanguard 500 index fund overtook Fidelity's Magellan Fund as the world's largest mutual fund in April 2000. For nine out of ten companies in the S&P 500, the largest single shareholder is one of the big three ETF providers, BlackRock, Vanguard and State Street. Index funds and ETFs now control at least 20 to 30 per cent of the US stock market. Although many financial institutions offer index funds, the big three dominate the passive product market with an 80% or more share and are gaining increasing power as well as control[2]. Why does this matter?

Index funds and ETFs already control 20 to 30 per cent of the US stock market today

On the one hand, the increase in passive products leads to higher correlations within an index, especially in stress situations. ETFs are easy and cheap to trade, which is why they are often sold first in stressed market phases, which then increases the correlation between different stock regions.

Rising passive investing increases correlation within indices...

On the other, passive investing leads to higher valuations. When an ETF provider experiences inflows, the underlying index components are bought in proportion to the index weighting, regardless of how expensive or cheap the stocks are fundamentally, i.e. investors invest more in stocks that have already performed very well and have a higher weighting - a momentum strategy. Active investors tend to react to inflows in a more differentiated way. If markets are expensive, they hold more cash or invest in securities that appear relatively cheap. In our view, the huge rise in valuations in recent years has not only been a result of low interest rates, but also, at least in part, a result of the increase in price-inelastic capital flows. If there is a crisis and ETFs are sold massively, this creates a gap risk. Given the high valuations, fundamental investors are not prepared to buy, for example, extremely ambitiously valued shares if the price falls by 10%. They would, for example, only buy when the price falls by 30% or more - they act price-elastically.

...and as largely price inelastic investing possibly also the valuations

There are also fewer and fewer value investors who act counter-cyclically, buying stocks cheaply and selling them expensively. Value companies have performed much worse than growth companies since the financial crisis, and money has been withdrawn from value funds accordingly. The demographic trend is exacerbating the situation: baby boomers who made private provisions with value funds in the 1970s and 1980s, partly because there were no index funds back then, are now gradually retiring. This also puts pressure on the assets under management of value equity funds.

2. Increased pro-cyclical behaviour of many investors, especially systematic investment strategies

In addition, there are more and more systematic strategies such as robo-advisors, momentum, risk parity and target volatility approaches that also do not take valuations into account in their investment decisions. They also invest mainly in index products. Simply put, they increase the equity allocation when momentum is positive and volatility is low, and they reduce it when momentum decreases and volatility increases. They behave very pro-cyclically and amplify trends up and down. The good thing is that as an active investor, you can simulate the equity exposure of these rule-based strategies to get a sense of how vulnerable the markets are. When most of these strategies are almost fully invested in equities, the downside potential for the markets is higher, such as in early, mid-2018 and early 2020. This is why we watch these strategies very closely.

Increasingly pro-cyclical behaviour reinforces upward and downward trends - positioning of systematic investors should be taken into account

[2] See "The New Money Trust: How Large Money Manager Control Our Economy and What We Can Do About It", Graham Steele, American Economic Liberties Project, November 2020.

3. **Stronger synchronisation of risk assets and government bonds of safe issuers**

What is new now is higher inflation - especially in the US, but also in Europe. And as the long-term relationship in Fig. 6 impressively shows, the correlation between equities and bonds increases with higher inflation - see the 1960s and 1970s. Above a 3% core inflation rate, a positive correlation between equities and government bonds has historically been observed almost exclusively. Moreover, a stronger correlation between risk assets and government bonds is usually also observed in a mid-cycle environment with more restrictive monetary policy (Fig. 7).

Increasingly pro-cyclical behaviour reinforces upward and downward trends - positioning of systematic investors should be taken into account

If the correlation increases, diversification through bonds decreases, i.e. multi-asset portfolios that rely purely on equities and bonds will have a more difficult time in this environment. Rather, a broad diversification across different risk assets is necessary, because Fig. 7 also illustrates that as the correlation between government bonds and risk assets increases, the average correlation between risk assets decreases and the diversification effects of, for example, equities, commodities or high-yield bonds increase.

Seeing new challenges as opportunities

Investors must accept the change in market behaviour and adapt their behaviour to it

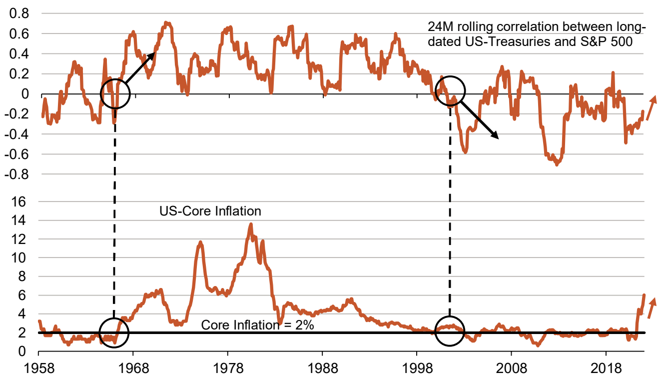
There is no way around it. Investors must accept the changed market behaviour and adjust their behaviour accordingly. We assume that we will continue to see more extreme events in the future, with upward and downward exaggerations - rapid and sharp sell-offs followed by a V-shaped recovery. It seems to us promising to take the following behavioural patterns to heart in order to invest successfully even in the changed market environment - behavioural patterns that can ultimately only be implemented in their entirety by flexible multi-asset strategies. Such approaches thus seem particularly suitable for investors to meet the new challenges.

Act flexibly, recognise opportunities and use degrees of freedom

- Flexible asset allocation and tactical use of market opportunities - also counter-cyclical.
- Avoid static multi-asset approaches or approaches with target volatility or risk parity, as these are likely to continue to have difficulties.

Fig. 6: Higher inflation negatively affects the diversification effect of bonds

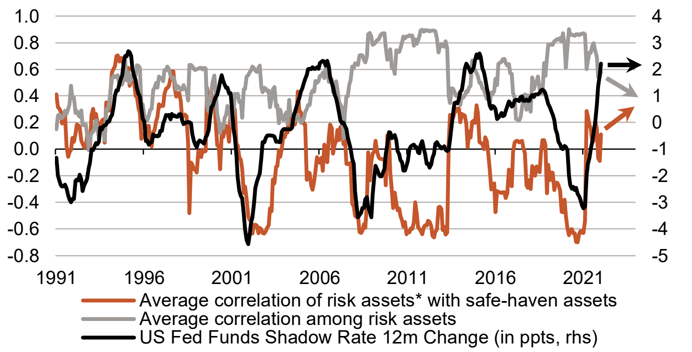
Path of the 24M rolling correlation between long-dated US government bonds and the S&P 500 Index and path of US core consumer price inflation



Time period: 01/01/1958 – 31/01/2022
Sources: Bloomberg, Berenberg

Fig. 7: 2022 - stronger synchronisation of risk assets and US government bonds

Average pairwise 12M correlation between US risk assets* and US government bonds (7-10 year maturity) and the 12M change in the fed funds shadow rate



Time period: 01/01/1991 – 31/01/2022
Sources: Bloomberg, Berenberg
* US-Large Caps, US-Small Caps, US-High Yield, Commodities, REITs

Balanced positioning, broad diversification and hedging

- No strong focus on one investment style
- Use of all diversification opportunities offered by the market, i.e. "true multi-asset".
- Investments with hedging character are likely to become or remain expensive in historical comparison. One must also hedge opportunistically.

Use knowledge about systematic and passive investors and look for niches

- Active investors should be aware of the opportunities and risks of passive and systematic capital flows, and make use of this knowledge. The analysis of sentiment, flows and positioning data takes on a more central role.
- Use of ETFs especially for tactical positions or in efficient markets. Otherwise, moves are made into niche markets that have little or no ETF penetration.

Berenberg Variato - Our response to the changed market environment

Restrictions often do not allow all desirable behaviours to be implemented

At Berenberg, we take these behaviours to heart in all multi-asset strategies to the extent that the respective strategy allows. However, a market benchmark, predefined quotas, a dedicated ESG or distribution focus, investment restrictions and/or a lack of derivatives capability often limit flexibility and thus the exploitation of opportunities.

The Berenberg Variato Fund is free of restrictions and the most flexible strategy of our multi-asset funds

That is why we launched the Berenberg Variato Fund in December 2018 in response to the changing market structure. "Variato" is derived from "Variatio Delectat" - "Variety delights"! The fund has no benchmark, no fixed asset class quotas, invests in a broad range of asset classes and financial instruments, is very flexible and aims for a target return of 4% or more p.a. over a five-year cycle (after costs). The fund has an innovative portfolio concept consisting of a core portfolio, thematic investment, tactical opportunities and a risk overlay (Fig. 8).

Innovative portfolio structure with core portfolio, …

Variato invests around 40% of its assets in a core portfolio where we believe a return of 4% or more is likely over the long term. In the core portfolio, we focus on low-correlated niche segments such as micro caps, convertible bonds, frontier

Fig. 8: Multi-asset funds at a glance

Portfolio structure Berenberg Variato

Sources: Berenberg

market bonds, etc. micro caps, convertible bonds, frontier market bonds, etc. These are intentionally, mostly, segments for which no/hardly any ETFs are available. ETFs are often the first to be sold in times of crisis and thus increase the volatility and drawdown of the portfolio.

... thematic investments, ...

In the thematic area, we invest mainly in megatrends such as robotics, platforms, artificial intelligence, security, but combine these often technology-heavy megatrends with more defensive themes such as ageing populations, urbanisation (e.g. real estate) etc., in order to dampen the volatility of the portfolio and be less dependent on one risk factor.

... tactical opportunities ...

Tactical ideas can be very short-term. On the shelf, however, we keep tactical ideas 3-6 months. These ideas are often macro- or event-driven. We mainly want to take advantage of the changing market structure. To do this, we use individual stocks, ETFs, certificates or derivatives. With so-called pair trades, we also bet on the relative developments of two investments.

A changed market environment requires modern risk management

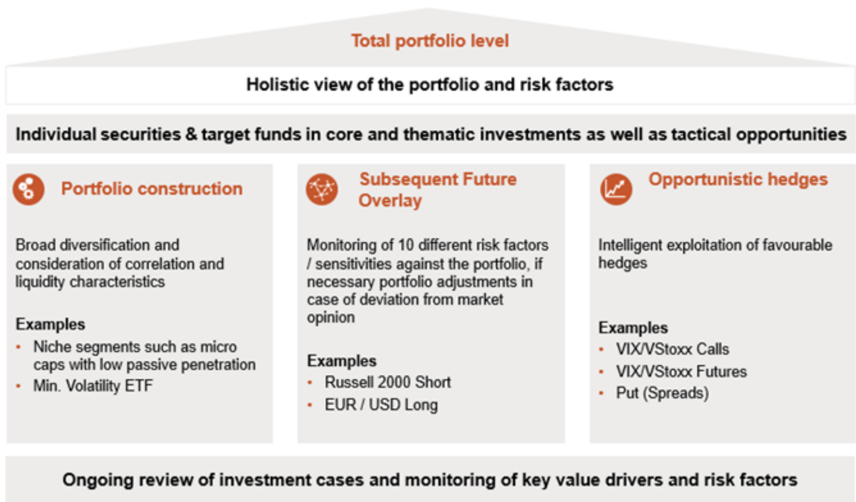
... and a modern risk management with three pillars

As a flexible multi-asset fund, risk management is key. We want to participate in upward market movements, but above all we want to achieve a better performance when the market moves significantly downwards. Therefore, we rely on three different pillars for risk management: a diversified portfolio construction, a risk overlay and opportunistic hedges (Fig. 9).

In portfolio construction, we pay attention to correlations, but also to some softer factors such as ETF penetration. In the overlay, we always have a set of limit orders for short positions in equity indices (short triggers) in our portfolio to automatically reduce our equity exposure when markets fall by around 3-5%. These short levels are discretionary. When they are triggered, we decide on an ad-hoc basis what to do. We usually set a stop-buy above these triggers, which we adjust downwards if markets continue to fall, to protect our overlay profits in case there is a quick rebound. And the final pillar consists of opportunistic hedges. If there are cheap hedges, we include them in our portfolio. These can be puts, puts spreads, pair trades or VIX calls.

Our risk management approach has so far allowed us to (significantly) mitigate the maximum loss in the Berenberg Variato during most equity market stress periods - in December 2018, during the US-China trade war in 2019 and ahead of the US

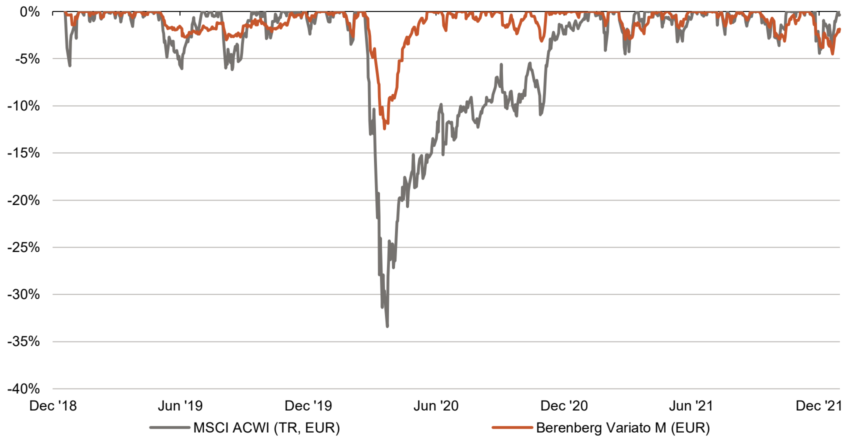
Fig. 9: Berenberg Variato
Risk management



Sources: Berenberg

Fig. 10: Losses could be limited so far

Maximum loss of MSCI All Country World Index and Berenberg Variato (since inception)



Time period: 18/12/2018 - 30/12/2021
Sources: Bloomberg, Berenberg

elections in November 2020. During the Covid-19 crisis in Q1 2020, the Berenberg Variato peaked down around 12% on a daily basis, while most global equity markets lost between 35 and 40% (Fig. 10).

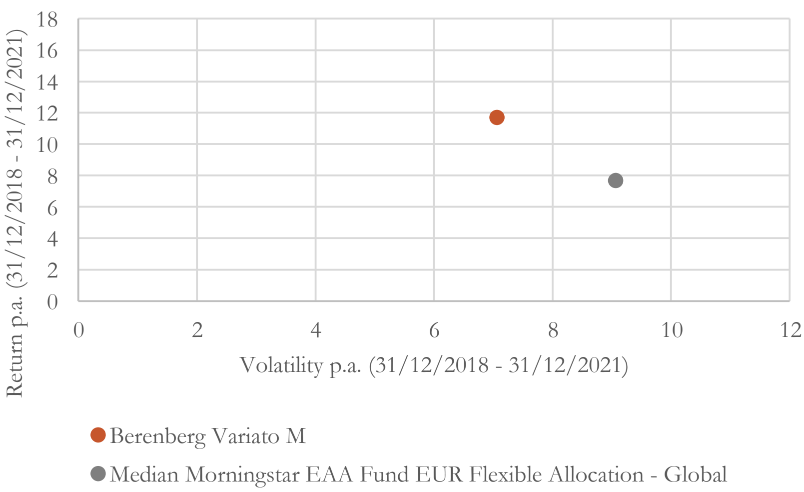
Maximum loss could be significantly reduced...

We managed this relatively small loss in value during the Covid-19 crisis thanks to our flexible approach. For example, we lowered our equity exposure from around 55% in January to around 25% in mid-March 2020, before raising it to over 40% at the end of March. We benefitted from the fact that we bet on falling US small caps, among other things. Our extensive positioning and sentiment analyses, which we have been following for more than a decade, helped us with these allocation decisions.

... and a very good ratio of return to risk can be achieved

Thanks to this flexibility, we were thus able to limit our quarterly loss in Q1 2020 to below 7%. Due to the subsequent recovery rally, the Berenberg Variato was one of a few funds that was already up on a YTD basis at the end of April. Since the end of 2018, we have thus outperformed the median fund in our Morningstar peer group - and with lower volatility (Fig. 11).

Fig. 11: Berenberg Variato so far with higher performance at lower risk than the Morningstar peer group since inception



Time period: 31/12/2018 - 31/12/2021
Sources: Morningstar

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