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A New Decade: Long for Longer?

While specific equity risks can be avoided, avoiding fixed income and broad market risk premia still leads to missing out on returns. Strategically, focusing on return drivers, value destruction during drawdowns and unnecessary return dilution may become instrumental to asset selection over the next decade of investing.

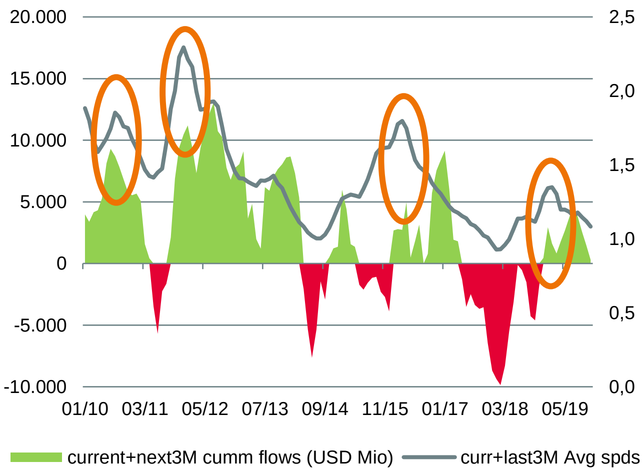
Staying invested may look like an unavoidable proposition as long-term structural shifts dampen future return outlooks but also risks. There is little doubt that investing comes with risk, but when looking back at the past decade, one of the highest risks borne by investors was certainly missing out on bull market rallies. In this short guide to staying invested, we highlight considerations important to constructing robust liquid portfolios that are fit for the next decade of central bank actions and market reactions. We introduce the concept of staying invested from a strategic perspective, by doing a statistical risk-reward analysis at the single security and benchmark index levels, while advocating that investors should not overreact to short term volatility episodes. We suggest new perspectives around **Defensive** assets and value destruction, how to exploit causality to better **Drive** returns, and redefine **Diversification** by focusing on both consistency and dilution.

A "Wall of Money" threatens long-term returns but reduces selection risks

The demand for financial assets can be assumed to further rise globally, and this can be attributed to three principal reasons.

The first is the accommodative policy of central banks. Since the global financial crisis, BoE, BoJ, ECB and Fed alone have pumped approximately USD 15tn[1] into the financial markets. Also, central banks' behaviour, and investors' perception of their expected behaviour, could tend to stabilize markets after episodes of higher volatility[2].

FIGURE 1. IG SPREADS VS UPCOMING FUND AND ETF FLOWS: THE USD CREDIT PICTURE [3]



Source: DWS Investment GmbH, Bloomberg, Morningstar; analysis covers the time frame from 01/2010 to 11/2019. Current + future 3M net flows comprise IG and HY mutual and ETF flows; shown on the left hand scale. Red designates net outflows.

The second is demographic trend, as higher life expectancy drives up savings rate to support old-age consumption[4]. For

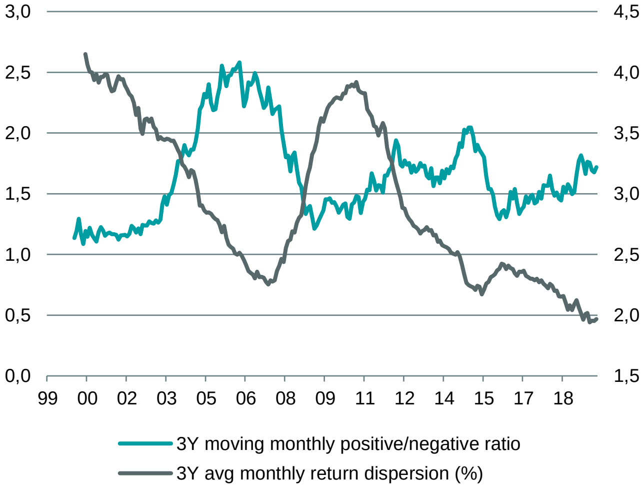
[1] Mainly sovereign debt. Source Bloomberg data as of 31.11.2019; central banks include BoE, BoJ, ECB and FED
[2] Refer to the "Greenspan put", A term coined by former FED president Alan Greenspan; also see UNCONVENTIONAL MONETARY POLICY TOOLS. A A CROSS-COUNTRY ANALYSIS, Bank for International Settlements, 2019
[3] This does not mean, however, that lowering corporate spreads is not also a trigger for more credit flows.
[4] NO END TO THE SAVINGS GLUT, Joachim Fels, 2015.

market participants faced with the necessity to invest their assets, phases of higher market volatility can create an opportunity to put cash to work. Looking at fund and ETF flows during and after phases of volatility (see Figure 1) we find confirmation of this behaviour.

The third, maybe partly a consequence of the former two, is the asset management industry's expected further substantial growth[5]. And these phenomena are currently supported by overall healthy fundamentals at corporate levels[6].

The dispersion of asset class returns has reached new lows since 2013 (see Figure 2), arguably mitigating the performance impact of taking nuanced views between markets and potentially not holding the highest returning or avoiding the lowest returning assets. Not all assets are created equal, but the opportunity cost of not being invested continues to be substantial: the ratio between high performing and low performing asset classes is still clearly skewed towards the high performing ones.

FIGURE 2. DISPERSION OF RETURNS GOES DOWN BUT POSITIVE/NEGATIVE RETURN RATIO REMAINS HEALTHY



Source: DWS Investment GmbH, Bloomberg; analysis covers the time frame from 01/1999 to 11/2019. Positive/ negative return ratio computed as a count of asset classes performing positively versus negatively for a relevant month during a 3Y period (36 months); shown on the left hand scale.

Throughout this paper, we take as a reference the asset classes covered in the DWS multi-asset investment universe. This universe is comprised, as one would expect, of Treasury, credit, hybrid, equity, commodity and hedge fund asset classes. It also comprises equity style tilts in the form of world factor indices[7]. It is balanced between safer bonds and riskier asset classes and represents the main liquid portfolio building blocks available to asset managers to generate performance and manage risks.

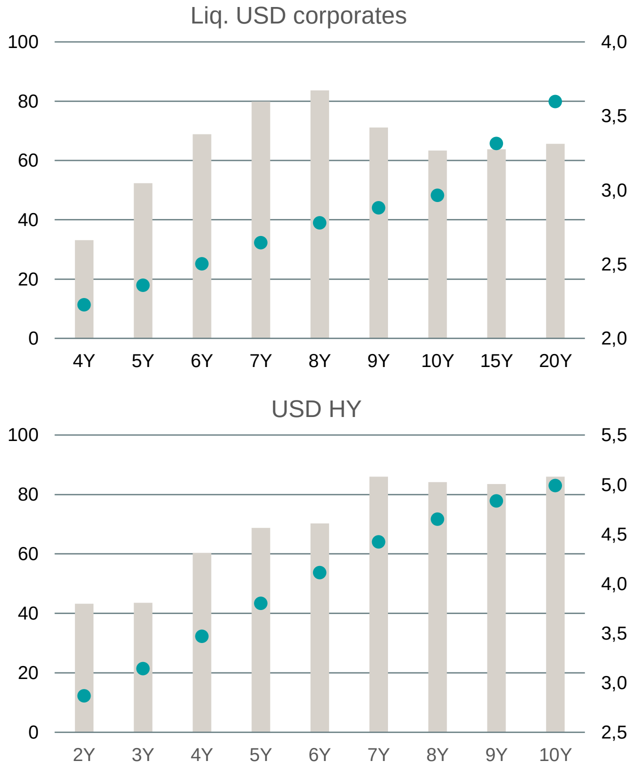
Market risks still worth taking?

In this section, we evaluate the necessity of staying invested by assessing the opportunity costs linked with either avoiding risky asset classes or with reducing risks within a given asset class.

No place to hide in fixed income: duration and credit risks still worth taking

A flat yield curve? Only in low risk Treasuries. As an example, the term value of credit currently incurs around 90 bps yield steepness between a short term corporate bond and a long term one[8]. On top of this come material roll down effects (see Figure 3) of between 30 and 50 bps p.a., such that the opportunity costs of holding short term bonds versus a vanilla benchmark index can easily exceed 1.2% p.a. in investment grade bonds and 2% p.a. for high yield bonds. Historically, in the US where Treasury yields slightly increased between November 2015 and November 2019, a broad USD corporate bond benchmark outperformed its short term (0-3Y) counterpart by more than 12%.[9]

FIGURE 3. YIELD CURVE AND ROLL DOWN EFFECTS: EXAMPLE OF USD CORPORATE AND HIGH YIELD BONDS



Source: DWS Investment GmbH, Bloomberg; analysis covers the time frame from 01/1999 to 11/2019. Positive/ negative return ratio computed as a count of asset classes performing positively versus negatively for a relevant month during a 3Y period (36 months); shown on the left hand scale.

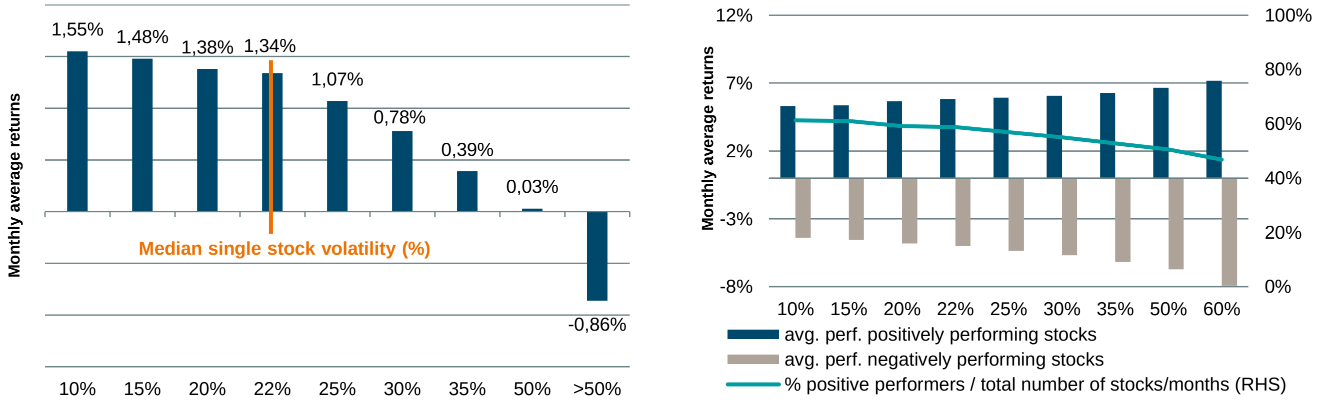
[5] Global AuM to grow by USD 27tn (approx. 6.4% annual compound growth) between end 2018 and end 2023. cf. GLOBAL ASSET MANAGEMENT 2019, Boston Consulting Group, 2019, p. 9
[6] CIO VIEW. Von TINA zu FOMO, DWS Investment GmbH, 16 December 2019
[7] Please refer to the section at the end of this document for further details
[8] As measured by the yield difference between BBB bonds with 2Y maturity and with 10Y maturity, source Bloomberg BVAL curves, 31 December 2019
[9] Bloomberg Barclays indices, DWS calculations, as of 30 November 2019

Taking on credit risk when the macro outlook becomes gloomy? Willingness to pay back debt or even to remain investment grade by debtors and lower tolerance to HY from creditors both still contribute to making higher risk credit asset classes look more attractive to unconstrained investors from a relative value standpoint. After deducting a fair spread required to compensate default (or downgrade) risks, the rewards available to investment grade credit investors remain higher the lower the credit rating (excluding one-off bid-offer costs of roughly 30 bps[10]). A similar trend can be observed in European high yield. Historically, not capitalizing on such rewards for taking credit risks has proven quite expensive in terms of opportunity costs: as an example, IG credit carry-oriented investors in EUR, while suffering temporary phases of underperformance, outperformed the standard benchmark by 3% over the period 11/2015-11/2019[11].

Broad market volatility in equities can be more rewarding than idiosyncratic risks

Surprisingly, when one turns from fixed income to equities, the story is quite the reverse. While it seems that risk avoidance could come at low to non-existing opportunity costs, a key to improvement in risk/return profile may lay in active risk management of the equity investment overall: equity investors may miss out on extensive bull market phases by not being invested in such markets at the wrong time.

FIGURE 4. DEFENSIVE STOCK INVESTING DID PRESENT LOW OPPORTUNITY COSTS, ALTHOUGH GROWTH STORIES AND VALUE DESTRUCTION TEND TO OCCUR IN MORE VOLATILE STOCKS



Left chart: Analysis based in MSCI World historical constituents, local currency returns and volatilities, from Aug. 2009 to Sep. 2019. Sources: MSCI, Bloomberg, DWS International GmbH, as of 30/09/2019. Past performance, actual or simulated, is not a reliable indicator of future results. Forecasts are based on assumptions, estimates, opinions and hypothetical models of analysis which may prove to be incorrect.
Right chart: Source: Bloomberg, MSCI, DWS Investment GmbH; analysis covers the time frame from 31/08/2009 to 30/09/2019 and is based on MSCI World historical index constituents.

The chart on the left (although it is based on volatility upon the same month where performance is measured) perfectly illustrates why minimum and low volatility indices are potentially interesting to investors[12]. A deeper insight into the anomaly of lower volatility stocks yielding relatively higher average returns can be reached by shifting attention to the chart on the right. The illustration shows that it is the number of negative performing high volatility stocks, and their average performance, that drives down the average performance of aggressive stocks. Of course, well-selected aggressive stocks that perform positively indeed seem to outperform their peers. Similarly, a focus on more fundamentally strong names (as proxied by a quality factor index), while it quantitatively provided little risk reduction, did rather bring excess returns.[13]

Coming back to our multi-asset universe of 28 asset classes, the first section of Figure 5 shows that investing in assets with empirically higher volatility[14] as measured in the past month clearly yielded above average returns. This points to the fact that there is clearly an opportunity cost in investing only in lower volatility (predominantly fixed income)

[10] Source Markit iBoxx Liquid Corporates and High Yield USD indices, 30 September 2019. Bid-offer costs for EUR high yield investors are around 80 bps.
[11] As based on the outperformance of Markit iBoxx EUR Corporates Yield Plus index versus the iBoxx EUR Corporates index at the same level of duration
[12] BENCHMARKS AS LIMITS TO ARBITRAGE: UNDERSTANDING THE LOW_VOLATILITY ANOMALY, Malcolm Baker, Brendan Bradley and Jeffrey Wurgler, 2011. Also note that Min Vol indices, mainly composed of low volatility stocks, outperformed their benchmark between 29/10/09-31/10/19 in Europe, World DM and EM asset classes between 2.2 and 2.9% p.a. Source: Bloomberg, MSCI indices.
[13] Equity quality indices between 29/10/09-31/10/19 outperformed their benchmark in Europe, World DM and EM asset classes between 1.6 and 2.9% p.a. Source: Bloomberg, MSCI indices.
[14] High volatility filters in this analysis refer to cross sectional volatility assessment (above and below the 75th percentile monthly volatility threshold upon each monthly observation). Investing in high volatility or low volatility asset class cannot be immediately linked to investing in an asset class in particular, rather to behavioral patterns of avoiding risks once such risks have become quantitatively measurable.

assets. This is a reminder that a strategy varying its investment level in equities as a function of past market volatility may have to deal with detrimental opportunity costs. Within the equities sub-asset classes, the findings are slightly more mixed. On the one hand, certain index level results point to the single stock level observations made in Figure 4. Specifically, higher volatility equity indices performed marginally better than lower volatile ones over the same period, which was not true for higher volatility single stocks.

FIGURE 5. RISK/RETURN VOLATILITY/DRAWDOWN ANALYSIS OF HIGH RISK ASSET CLASSES

All asset classes	**Since 1999**	**Since 2009**
Avg. performance higher volaltility asset classes	7.2%	7.7%
Of which equity asset classes	82.9%	82.2%
Avg. performance lower volatility asset classes	5.8%	5.0%
Equity indices only	**Since 1999**	**Since 2009**
Avg. performance positive outliers	8.0%	7.2%
Avg. performance negative outliers	-8.7%	-7.6%
No. positive outliers	14%	12.6%
No. negative outliers	11%	9.5%
Avg. performance higher volatility EQ only asset classes	7.7%	9.5%
Avg. performance lower volatility EQ only asset classes	7.7%	9.4%

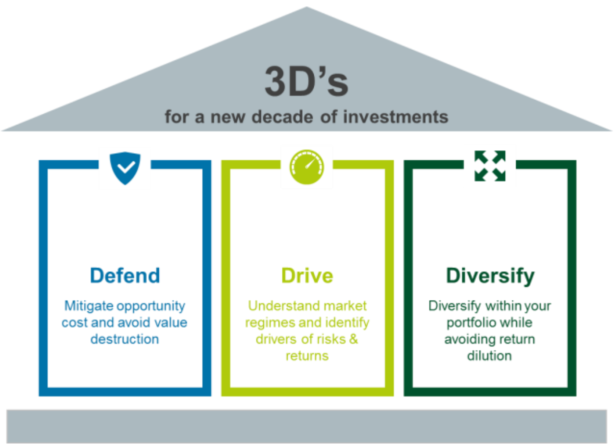
Source: DWS Investment GmbH, Bloomberg; analysis covers the time frame from 01/1999 to 11/2019, monthly returns.

While it is clear that risky assets like equities will remain unavoidable building blocks to a strategic portfolio, it is also clear that the highest risk asset classes do not necessarily have the best risk-adjusted return characteristics.

Three new dimensions to staying invested

Against this "new decade" of lower expected returns, selective rewards for risk taking, and high opportunity costs of not being invested, this section aims to provide new perspectives as to how to invest in the upcoming decade, under the assumption that the current situation persists longer than expected (see Figure 6).

FIGURE 6. "3D's" FOR A NEW DECADE OF INVESTMENTS

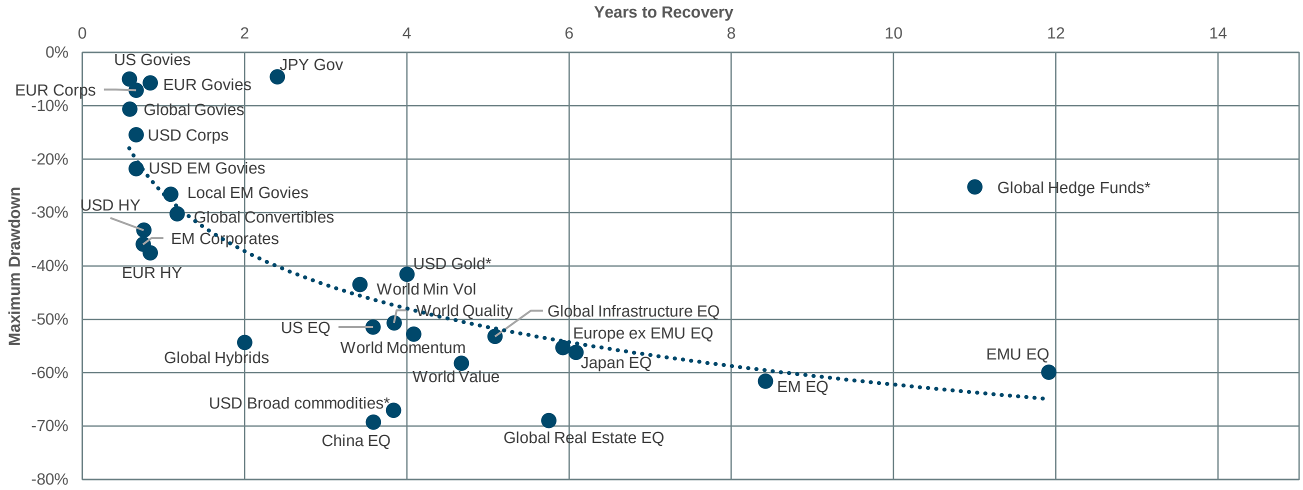


Source: DWS Investment GmbH

Defending returns: Focusing on value destruction as complement to maximum drawdowns

In a context of staying invested, defensive investors may want to look beyond volatility and drawdowns and seek to ultimately avoid value destruction. From a financial theory standpoint, shareholder value destruction arises, for example, when lower-than-expected reported earnings result in a downward adjusted P/E ratio and decrease the investor's return on equity. In credit, value destruction occurs, for example, when investors are rewarded (via spreads) less than the losses caused by defaults or (for IG-credit investors) downgrades. We suggest that the level of longer-term, intrinsic value destruction can be estimated after a drawdown: the longer the asset class needs to recover, the clearer it is that such drawdown was not only driven by a "temporary" supply vs. demand phenomenon (e.g. in the aftermath of a financial crisis).

FIGURE 7. ASSET CLASS MAX DRAWDOWN AND TIME TO RECOVERY SHOW DECOUPLING



Source: Bloomberg, MSCI indices, Bloomberg Barclays indices, DWS Investment GmbH; analysis covers the time frame from 29/01/1999 to 31/10/2019. Max DD in local currency or in USD for global indices; (*) recovery not yet achieved. Note the EMU Equities Drawdown started 2003, hence longer time to recovery. Trend line for illustrative purposes only.

Credit asset classes[15] stand out for their quick time to recovery, while understandably the higher the credit risk, the higher the drawdown[16].

Within our equity universe, minimum volatility equities had both the lowest drawdown and the shortest time to recovery, the latter of which is less intuitive because minimum volatility strategies tend to underperform when markets recover.

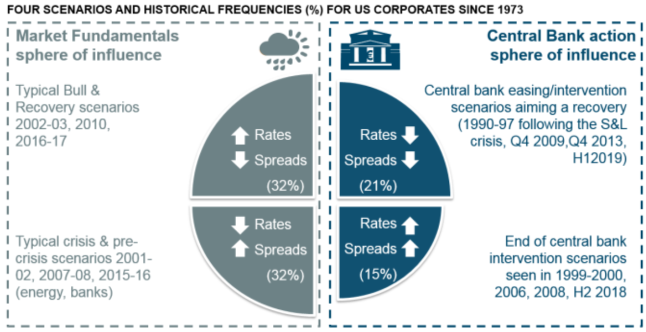
Overall, US (and strongly biased towards US) equities tended to offer shorter time to recovery, indicating potentially less value destruction for investors. Equally, the value style appeared not only to have the highest drawdown of all world indices but also the longest time to recovery.

Driving returns: Finding the causality in asset class performances

Figure 8 shows the regimes that have driven the performance of sovereign, credit and equity assets. Regimes of what we would depict today as “central bank action” influence have been present in the whole observation timeframe since 1973. This clearly poses a challenge to medium term returns and how investors need to look at diversification. However, this problem is not new and investors may consider simply bearing those periods of higher stock and bond correlations[17] and using those regimes to better understand drivers of risks and returns. More specifically, we find that the action of the US Fed drives much more than its own rates and spread curves, and has influences over the levels of EUR and JPY government yields as well[18].

FIGURE 8. THE IMPORTANCE OF CENTRAL BANK ACTION IN DRIVING RISKS, RETURNS AND DIVERSIFICATION

FOUR SCENARIOS AND HISTORICAL FREQUENCIES (%) FOR US CORPORATES SINCE 1973



Source: DWS International GmbH, Bloomberg LLP; data as of 30/11/2019. Historical frequencies of the four scenarios are shown in brackets (%). Analysis is based on historical Treasury yield variations and corporate spreads over monthly periods since 28/02/1973

Revisiting diversification: Focus on consistency of correlations and return dilution

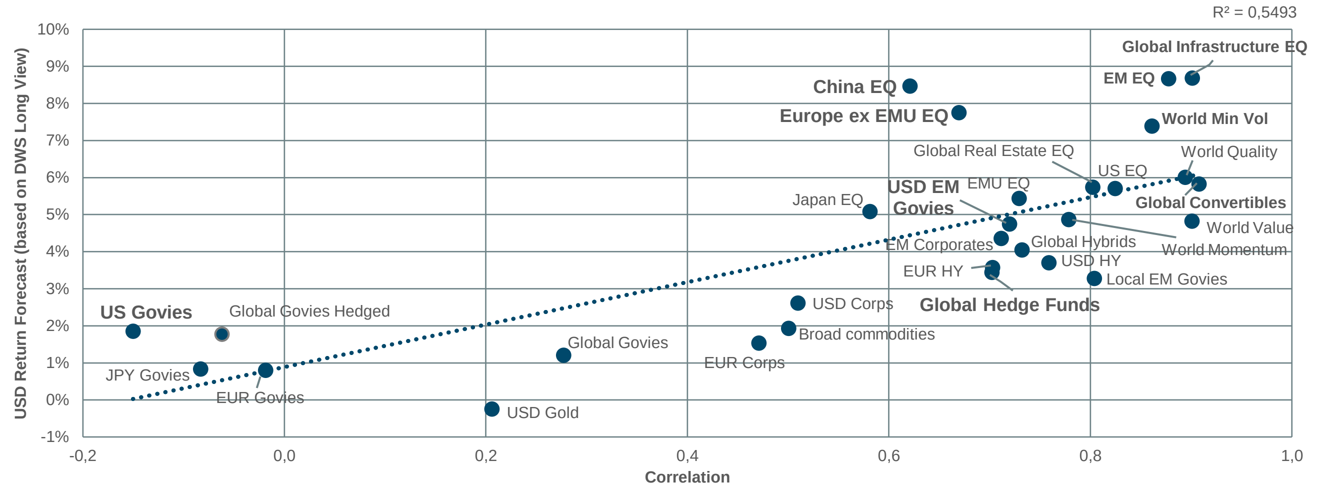
In the context of the “New Decade”, investors may want to focus on overall diversification power, stability of correlations and expected return dilution.

In this section, we suggest assessing the diversifying power of a potential asset class from our universe by computing the correlations of monthly returns over the past 20 years[19] between such asset class returns and those of an imaginary, risk-parity weighted portfolio[20] of all other 27 asset classes. We then compare such diversifying effects with the DWS long-term return forecast (“Long View”) to illustrate the diversification versus returns dilution paradigm

[15] As defined by all asset classes that embed a spread over treasuries perceived as “risk free”.
[16] The asset class seems more fundamentally resilient over the middle term than the market may perceive in times of crisis (i.e. low value destruction). The lack of conservative investment alternatives and the pull to par effect also contributed.

[17] The longest episode of consecutive monthly equity losses and simultaneous rates increases was six months, in 1974.
[18] As measured by statistical betas between US, German and Japanese government yields
[19] Or shorter if not available, subject to a minimum of 10 Y
[20] Inverse-volatility weighted

FIGURE 9. DIVERSIFICATION BENEFITS VERSUS 10Y RETURN FORECAST IN %[21] (USD INVESTOR PERSPECTIVE)



Source: DWS Investment GmbH, Bloomberg; data as of 30/09/2019. The past 20Y performance of global Hybrids and convertible bonds was considered, where available, to proxy for future returns. Long view returns for EUR investors would be roughly 1.2% lower

Practically, in order to balance return dilution and diversification benefit, a “forward-looking Sharpe ratio” analysis can be made. For illustrative purposes, we apply the usual formula[22] to see whether the addition of an asset class should enhance the overall portfolio composed of our remaining 27 asset classes:

$$\frac{E(R_{new}) - R_f}{\sigma_{new}} > \left[\frac{E(R_P) - R_f}{\sigma_P}\right] Corr(R_{New}, R_P)$$

where *R*’s are our Long-View USD returns, R_f risk-free returns forecasts, σ the standard deviation of returns, and *Corr* is asset class correlation versus existing portfolio[23]. We obtain specifically **US Government Bonds, USD EM Government Bonds, Global Convertibles, World Minimum Volatility Equities, Europe ex. EMU Equities, EM Equities, China Equities, Global Infrastructure Equities and Global Hedge Funds** as asset classes expected to materially enhance the existing portfolio, marked bold on Figure 9.

Our final remark concerns the variability of correlations. Looking at diversification benefits of US treasuries, 3Y-correlation versus our imaginary portfolio oscillated between -0.6 (start of 2013) and +0.3 (mid 2015) but provided overall clear negative correlations in 2001, 2008, 2016, end of 2018. Japanese treasuries in Yen provided even more stable correlations, only oscillating between -0.3 and +0.1 over the same timeframe. It may be useful to be reminded that longer durations will always help obtain higher decorrelation effects than shorter ones for the same asset class. Also, hedging currency risks from global bond exposure can materially help reduce variability in correlations by removing currency effects[24], while investors should be mindful of dilution.[25]

[21] Return forecast based on DWS Longview; for further details on the DWS Longview Cf. DWS Multi-Asset Long View, DWS Global Research Institute, January 2019
[22] Source: CFA material, gostudy.io
[23] Applied using monthly returns over end January 1999- end November 2019
[24] As an example, global sovereign index correlation with a risk-parity weighted portfolio of all other asset classes is 28% whereas it is -6% when looking at a USD hedged version of such global sovereign index
[25] Long term expected returns of a currency hedged Treasury investment in our DWS model is 60 bps higher, however it is 50 bps lower for a EUR hedged investment

Multi-asset investment universe

Asset class description	Index ticker	Asset class description	Index ticker
Broad Commodities	BCOMTR Index	Global Real Estate EQ	NDUWREIT Index
China EQ*	NDEUCHF Index	Japan EQ	TPXDDVD Index
EM Corporates	BSEKTRUU Index	JPY Government	CFIIJYL Index
EM EQ	NDUEEGF Index	Local EM Government	EMLCTRUU Index
EMU EQ	SX5T Index	US EQ	SPTR500N Index
EUR Corporates	LECPTREU Index	US Government	LUATTRUU Index
EUR Government	LEATTREU Index	USD Corporates	LUACTRUU Index
EUR HY	LP02TREU Index	USD EM Government	JPEIDIVR Index
Europe ex. EMU EQ	MXEUM Index	USD Gold*	GOLDLNPM Index
Global Convertibles	UCBITRUS Index	USD HY	LF98TRUU Index
Global Government	BTSYTRUU Index	World Minimum Volatility	M1WOMVOL Index
Global Hedge Funds	HFRXGL Index	World Momentum	M1WOMOM Index
Global Hybrids	G0EC Index	World Quality	M1WONQ Index
Global Infrastructure EQ	SPGTINNT Index	World Value	M1WOEV Index

(*) Asset class was manually added for the sake of completeness

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