

# What Multi-Asset Liquid Alternatives Can Deliver



**Thomas Zimmerer, Ph.D.**  
Head of Multi Asset US  
Product Specialists

The prevailing market conditions of historically low interest rates and elevated equity valuations have resulted in an increased demand for alternative investment strategies. In this environment, such strategies have the advantage of positive return expectations together with low correlation to equities and bonds. As of the end of 2015, the asset base of alternative investment strategies is well over \$7 trillion<sup>1</sup>.

Alternative investment strategies and their investment vehicles are well defined in terms of investment style, degree of (il)liquidity and investment format<sup>2</sup>. In this paper we try to address the following:

- What should investors expect from liquid alternatives?
- How could liquid alternatives impact a well-diversified multi-asset portfolio?



**Giorgio Carliano, CFA**  
CIO Multi Asset US

We seek to answer these questions by introducing two multi-asset alternative strategies and evaluating analytical measures of their attractiveness in a portfolio context. What we have to show may help raise an investor's return potential without a commensurate increase in risk profile.

## Dynamism for Multi-Asset Liquid Alternatives

While several categories of multi-asset liquid alternative investment strategies are available, they are typically classified as **global macro** or managed futures strategies. The term global macro reflects that the investment universe is broad and global, and the term **managed futures** points to the instruments used to implement the strategy. Multi-asset liquid alternatives may also be classified as such: Investing in global equity, fixed income, commodity and currency markets using liquid linear derivatives-like futures and swaps as well as other non-derivative instruments. The strategies dynamically adjust asset class exposures over time within predefined exposure ranges, following a combination of systematic and fundamental approaches.

Liquid alternative strategies are available in a UCITS<sup>3</sup> mutual fund format and offer daily liquidity compatible with the European Union regulatory framework for investment funds. Aside from liquidity, investors in liquid alternatives expect return outcomes comparable to a fixed income or equity investment with similar or lower risk plus a diversification benefit upon adding the strategy to their portfolio. The investment objectives of multi-asset liquid alternatives can either be to achieve a fixed-income return outcome (called Multi Asset Liquid Alternatives Version 1, or MALIA V1 for further reference) or an equity-like return outcome (called Multi Asset Liquid Alternatives Version 2, or MALIA V2 with similar or less risk, respectively). We will analyze these two approaches further below.

As is typical for alternative investment strategies, the target return is expressed as an excess return above money market over the course of a market cycle with a predefined absolute risk budget in the form of an expected annual volatility. Capitalizing on asset class trends is an important part of the investment process in realizing these investment objectives.

### Capitalizing On Asset Class Trends

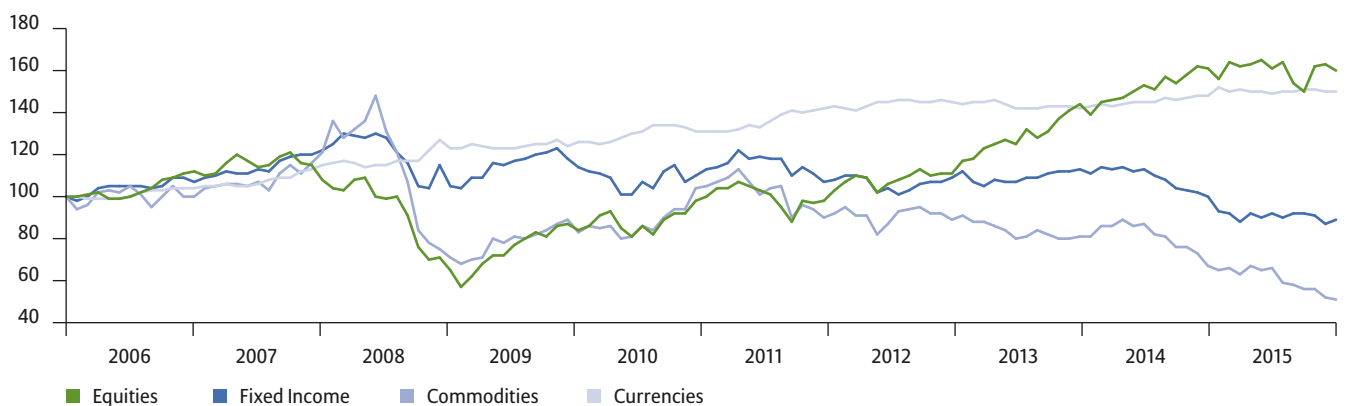
An asset class trend is a general price move in one direction over time. To qualify as an up- or down-trend rather than a trendless or sideways market, the trend has to demonstrate a certain size and duration, expressed in standard deviation units of the historical asset class returns. Exhibit 1 shows the trend patterns of the four major asset classes equities, fixed income, commodities and currencies over the decade 2006 through 2015 based on monthly data.

As the chart indicates, there are time periods of up-, down- and sideways-moving markets which do not necessarily occur at the same time across the four asset classes: while there is no asset class trending at all times, there are hardly moments where all asset classes are trendless at the same time. There is a strong body of academic research around **trend-following and momentum-based investment strategies** that supports and explains the existence, persistence and mean reversion of trends across and within asset classes<sup>4</sup>. There is a strong body of academic research that the past one- to 12-month asset class returns exhibit positive autocorrelation features that can result in persistency of their future returns combined with conditional negative autocorrelation features, resulting in their mean reversion after a certain size of the trend. These features of initial under-reaction building up "normal" trends, along with delayed over-reaction leading to "excessive" trends, are rooted in **behavioral finance concepts** like slow diffusion of news, anchoring, herding, loss-aversion and overconfidence biases.

While trends are different across asset classes in terms of their direction, strength and length, they show similar patterns in terms of **trend directionality** and **trend behavior** that can be systematically exploited by implementing long and short positions in the respective asset class. The following table shows the frequencies of up-, down- and sideways trends (trend directionality) as well as normal vs. excessive up- and excessive down-trends (trend behavior) for each asset class derived from historic rolling 12-month returns.

**Exhibit 1: Recognizing trend patterns over time**

Trends across select asset classes, 2006 – 2015



Source: Allianz Global Investors and Bloomberg. Equities are represented by the S&P 500 Index, fixed income by the Barclays US Aggregate TR Index, commodities by the Bloomberg Commodities Index and currencies by the USD/EUR exchange rate. Past performance is not a reliable indicator of future results.

**Exhibit 2: Trend frequencies and behavior – up, down and sideways vs. normal and excessive**

Historical trend patterns for equities, fixed income, commodities and currencies

Asset Class	Volatility p. a.	Trend Directionality up/sideways/down	Frequency in %	Duration in Months		Trend Behavior normal vs. excessive	Frequency in %
				Avg.	Max		
Equities	18.9%	up > 10%	57%	21	52	excessive up > 40%	7%
		sideways –10% to 10%	30%	16	38	normal –40% to 40%	92%
		down < –10%	13%	15	30	excessive down < –40%	1%
Fixed Income	4.6%	up > 2.5%	65%	25	71	excessive up > 10%	17%
		sideways –2.5% to 2.5%	32%	17	74	normal –10% to 10%	83%
		down < –2.5%	3%	14	17	excessive down < –10%	0%
Commodities	19.4%	up > 10%	46%	19	44	excessive up > 40%	8%
		sideways –10% to 10%	36%	15	36	normal –40% to 40%	89%
		down < –10%	18%	17	29	excessive down < –40%	3%
Currencies	8.9%	up > 5%	35%	17	37	excessive up > 20%	2%
		sideways –5% to 5%	34%	14	28	normal –20% to 20%	96%
		down < –5%	31%	19	44	excessive down < –20%	2%

Source: Allianz Global Investors, Ibbotson Associates and Bloomberg. Equities are represented by the Ibbotson IA SBBI US Large Stock TR USD Index, Fixed Income by the IA SBBI US IT Govt TR USD Index based on monthly rolling 12-month returns between 12/1926 and 12/2015. Commodities are represented by the S&P GSCI TR Index and Currencies by the US Dollar Spot Rate Index based on monthly rolling 12-month returns between 12/1976 and 12/2015. Past performance is not a reliable indicator of future results.

To account for different variabilities and make trend patterns comparable, they are expressed as return moves within/beyond absolute return corridors that are derived from their long-term standard deviations:

- **Trend directionality:** An up/down-trend is defined as a 12-month return that exceeds a multiple of 0.5 times the long-term annualized standard deviation. A sideways market, respectively, is defined as a 12-month return that does not exceed half the long-term standard deviation.
- **Trend behavior:** A market is defined to be in a normal (excessive) mode, if its 12-month return is within (beyond) two long-term standard deviations.

In the case of equities, trends were observed in 70% of the time periods, with up-trending markets occurring significantly more often (57%) than down trending markets (13%), with returns exceeding a corridor of plus/minus 10%. According to this categorization, equity markets went sideways in 30% of the time periods, which tended to last 16 months on average, and up to 38 months in the extreme. Based on the historic standard deviation of 18.9%, translating into a two-standard deviation corridor of approximately 40%, normal markets happened to be observed in 92% of the periods, with excessive up-markets 7% of the time, and excessive down-markets 1% of the time.

According to the empirical proven trend directionality in asset-class returns, a momentum-based multi-asset investment strategy at its simplest should add asset class exposure when markets are rising and reduce or short it when risk assets are

declining. This is pro-cyclical but does not fully exploit the cyclicity of asset class returns. As asset class returns exhibit both “trending” and “mean reverting” return patterns, their cyclicity is best captured by a strategy through a combination of pro- and anti-cyclical allocation responses to the return dynamics of asset classes. **Pro-cyclicity** is captured in the notion that “**the trend is your friend**”. That is, it increases the risk exposure of a portfolio in good markets and decreases risk exposure in declining markets. **Anti-cyclicity** is about mean reversion and reflected in the notion of “**going against the trend**” when markets have overheated. This means reducing exposure and taking profits in an asset class, although it is still performing well, and increases the exposure by reentering the asset class during market declines when it has performed excessively poorly. By combining pro-cyclicity with anti-cyclicity, it is possible to meet the target return within the target volatility while equities, fixed income, commodity and currency markets contribute in a balanced way to the overall return and risk profile due to well-designed allocation bands.

**Risk/return characteristics of liquid alternatives strategies with multiple asset classes**

In order to analyze and illustrate the potential benefits of multi-asset liquid alternative investment strategies, we report the results of historical simulations both for a “fixed income-like” MALIA V1, and “equity-like” MALIA V2, based on monthly index return data from 1994 through 2015. The following table shows model allocation bands at the asset class level for MALIA V1 and MALIA V2 as part of our case study:

**Exhibit 3: Wide latitudes in allocations**

MALIA allocation ranges for fixed-income (V1) and equity (V2) investment objectives

Investment Strategy Allocation Bands	MALIA V1		MALIA V2	
	Min	Max	Min	Max
Equities			-50%	50%
Commodities	0%	50%	-17%	17%
Currencies			-75%	75%
Fixed Income	0%	100%	-165%	165%
Total	0%	100%	-300%	300%

Source: Allianz Global Investors. The detailed simulation setup with all sub-asset classes, indices and transaction costs are outlined in the appendix. See important disclosure regarding the use of backtested and hypothetical performance at the end of this document, including a description of the backtest methodology. Hypothetical backtested data (MALIA V1 and MALIA V2) are not indicative of future performance.

Based on the dynamic nature of the strategies, the risk/return profile may change actively over time, but can be averaged over the market cycle to a “strategic” average contribution profile. A balanced average contribution to the risk and return outcome of the portfolio can be expected. The allocation bands are chosen according to the inverse volatility of the asset classes: the more volatile an asset class, the lower the allocation range within which the dynamic process is applied. **A first impression on the potential of both strategies** can be taken away by looking at mid- and long-term annualized return and risk data.

On a risk-adjusted basis, which measures the return of an investment in excess of the risk-free rate of return over the risk taken, known as the Sharpe ratio, MALIA V1 and MALIA V2 have both outperformed the major asset classes represented over the last 10 years and total backtest period of 22 years. Even over the last five years, including the strong US equity market returns, both MALIA V1 and MALIA V2 showed similar or better risk-adjusted returns than the US equity market represented by the S&P 500 Index.

**Exhibit 4: Higher return potential without a proportionate increase in risk**

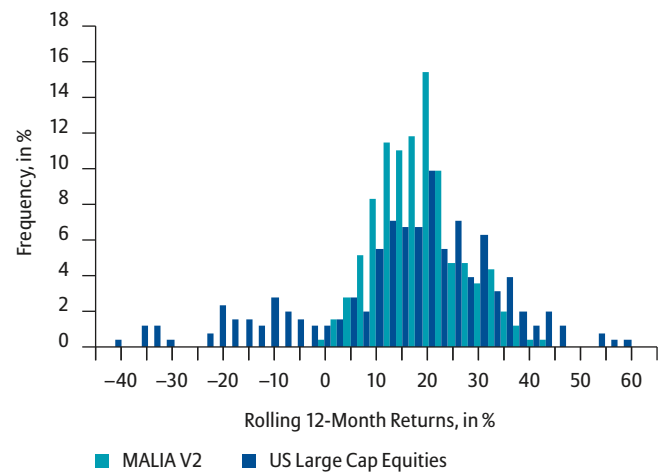
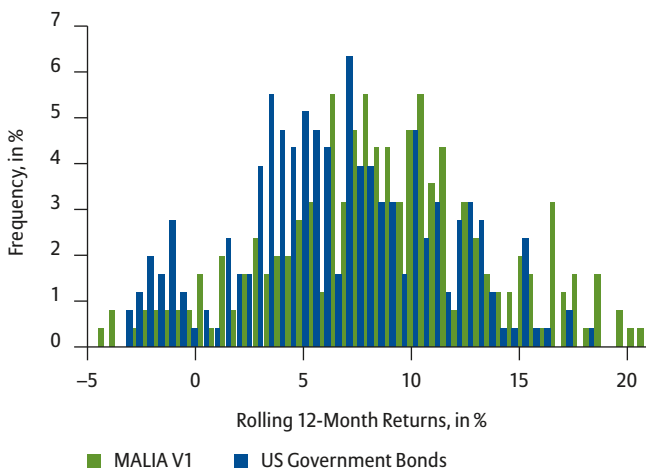
Comparison of hypothetical returns, risk and volatilities

Analysis Period	5 years through 2015			10 years through 2015			Total (1994-2015)		
	Return p.a.	Volatility p.a.	Sharpe Ratio	Return p.a.	Volatility p.a.	Sharpe Ratio	Return p.a.	Volatility p.a.	Sharpe Ratio
MALIA V1	5.1%	4.3%	1.18	5.6%	4.3%	1.04	7.2%	4.8%	0.96
MALIA V2	9.9%	8.5%	1.16	11.5%	9.0%	1.16	13.2%	9.2%	1.15
US Large Cap	12.6%	11.7%	1.01	7.3%	15.1%	0.35	9.0%	14.9%	0.41
Int. Equities	3.3%	14.8%	0.17	3.4%	18.5%	0.08	5.4%	16.4%	0.15
EM Equities	-4.5%	17.8%	-0.29	3.9%	23.6%	0.08	4.3%	23.2%	0.06
US Government	3.0%	3.5%	0.66	4.3%	4.4%	0.53	5.3%	4.6%	0.53
US Corporates	4.5%	4.2%	0.91	5.3%	6.0%	0.55	6.1%	5.5%	0.58
EM Debt	5.0%	7.4%	0.58	5.5%	8.9%	0.39	6.5%	13.4%	0.26
US High Yield	5.0%	6.2%	0.69	5.8%	10.6%	0.35	4.1%	8.9%	0.14

Source: Allianz Global Investors and Bloomberg. See important disclosure regarding the use of backtested and hypothetical performance at the end of this document, including a description of the backtest methodology. Hypothetical backtested data (MALIA V1 and MALIA V2) are not indicative of future performance. US Large Cap are represented by the S&P 500 Total Return Index, Int. Equities by the MSCI Daily TR Gross EAFE Local Index., EM Equities by the Emerging Market Equities by the MSCI Daily TR Gross EM USD Index, US Government by the Barclays US Aggregate Government Bond Index, US Corporates by the Barclays US Aggregate Corporate Bond Index. EM Debt by the JP Morgan Emerging Market Bond Index, US High Yield by the iBoxx Liquid High Yield Index. MALIA V1 is represented by the MALIA V1 Backtested Returns (Gross of Fees) and MALIA V2 by the MALIA V2 Backtested Returns (Gross of Fees). The risk-free rate of return is represented by the 3-Month US T-Bill rate. Backtested returns start at January 1, 1994, the earliest date for which data exists for all indices utilized in the report.

**Exhibit 5: Rolling ahead on performance**

Hypothetical return distributions and statistics of MALIA V1 and MALIA V2 (1995 – 2015)



Return Dispersion	US Government Bonds	MALIA V1
Maximum	17.3%	19.6%
Average	5.8%	8.0%
Minimum	-3.8%	-5.0%
Max Drawdown	-5.3%	-5.8%

Return Dispersion	US Large Cap Equities	MALIA V2
Maximum	53.6%	38.1%
Average	11.1%	14.5%
Minimum	-43.3%	-6.1%
Max Drawdown	-50.9%	-9.5%

Source: Allianz Global Investors. Past performance is not a reliable indicator of future results. See important disclosure regarding the use of backtested and hypothetical performance at the end of this document, including a description of the backtest methodology. Hypothetical backtested data (MALIA V1 and MALIA V2) are not indicative of future performance.

**Designing Equity and Bond Alternatives**

As mentioned above, multi asset liquid alternative investment strategies can function as a bond alternative with similar return and risk parameters (e.g. MALIA V1), whereas these strategies can also be designed for equity investors who seek a similar return outcome with risk mitigation (e.g. MALIA V2). If successfully doing so, the return distribution of rolling 12-month returns should reflect this accordingly. The above two exhibits illustrate the corresponding hypothetical return profiles by a pairwise visualization of the return histograms of all 253 rolling 12-month returns from 1995 through 2015.

The above exhibits indicate that MALIA V1, investing in a broad set of global asset classes, can deliver a comparable return distribution to US Government Bonds (US Govt) with similar return dispersion parameters (maximum, minimum and maximum drawdown), but with a higher average return. The return histogram further confirms that the complete return distribution of MALIA V1 looks very similar to US Government Bonds.

In contrast, MALIA V2 can be regarded as an alternative investment strategy that can deliver a similar return outcome like US large-cap equities aiming to offer a higher average return with lower volatility, significantly less drawdown in times of market stress and more positive skew.

## Exhibit 6: Diversification benefits of MALIA V1 and V2

Asset Class	MALIA V1			MALIA V2		
	All months	Up months	Down Months	All months	Up months	Down Months
US Large Cap	0.44	0.10	0.20	0.08	0.07	-0.26
Int. Equities	0.48	0.10	0.38	0.05	-0.08	-0.13
EM Equities	0.47	-0.01	0.48	0.04	-0.11	-0.09
US Government	0.38	0.08	0.40	0.50	0.23	0.47
US Corporates	0.56	0.35	0.44	0.35	0.23	0.08
EM Debt	0.58	0.25	0.53	0.20	0.11	-0.03
US High Yield	0.41	-0.05	0.21	-0.01	-0.18	-0.35

Source: Allianz Global Investors. See important disclosure regarding the use of backtested and hypothetical performance at the end of this document, including a description of the backtest methodology. Hypothetical backtested data (MALIA V1 and MALIA V2) are not indicative of future performance. Diversification does not guarantee a profit or protect against a loss.

## Dynamic Diversification Benefits

Due to the dynamic process driving multi-asset liquid alternative strategies, applied to a broad set of global asset classes, they can provide diversification benefits making interesting portfolio candidates when substituting them for existing bond or equity segments in a portfolio. The flexibility of being pro- and anti-cyclical, combined with the discretion to avoid negative trending asset classes or taking active positions through shorting them, unfolds interesting correlation structures as outlined in exhibit 6. It reports the correlations of both strategies to major asset classes based on monthly returns during all months as well as the conditional up/down-correlations when the respective counterpart asset class was positively/negatively performing.

## Exhibit 7: Achieving the appropriate allocation mix

Blending multi-asset liquid alternatives into a static 60/40 portfolio

Asset Classes	60/40	10% Blend	15% Blend	20% Blend
US Large Cap	40%	34%	31%	28%
Int. Equities	20%	20%	20%	20%
US Government	25%	21%	19%	17%
US Corporates	15%	15%	15%	15%
MALIA V1	0%	4%	6%	8%
MALIA V2	0%	6%	9%	12%
Return p.a.	7.3%	7.6%	7.8%	8.0%
Volatility p.a.	9.1%	8.4%	8.1%	7.8%
Sharpe Ratio	0.51	0.59	0.63	0.67
Maximum Drawdown	-33.9%	-30.2%	-28.3%	-26.4%

Source: Allianz Global Investors and Bloomberg. US Large Cap are represented by the S&P 500 Total Return Index, Int. Equities by the MSCI Daily TR Gross EAFE Local Index, US Government by the Barclays US Aggregate Government Bond Index, US Corporates by the Barclays US Aggregate Corporate Bond Index. MALIA V1 is represented by the MALIA V1 Backtested Returns (Gross of Fees) and MALIA V2 by the MALIA V2 Backtested Returns (Gross of Fees). The risk-free rate of return is represented by the 3-Month US T-Bill rate. All data is based on monthly returns between 12/1993 and 12/2015. See important disclosure regarding the use of backtested and hypothetical performance at the end of this document, including a description of the backtest methodology. Hypothetical backtested data (MALIA V1 and MALIA V2) are not indicative of future performance.

## How To Make Static Portfolios Dynamic

The potential benefit of using multi-asset liquid alternatives in a portfolio context by substituting equity and fixed-income sleeves with the corresponding multi asset liquid alternative strategies is to achieve return enhancement and risk mitigation both in volatility and drawdown risk terms. A portfolio-oriented approach to finding the appropriate size for allocation begins with identifying the allocation sleeves for substitution by carving out an equivalent proportion of liquid assets within the existing portfolio, such that the remainder still reflects the original composition of the portfolio. Exhibit 7 illustrates a 60% global equities/40% US fixed income portfolio with blend-sizes of 10%, 15% and 20%, where the allocation to a combination of MALIA V2 and MALIA V1 made on a pro rata-basis allocating 60% of the blend from US Large Cap into MALIA V2 and 40% of US government bonds into MALIA V1.

Blending multi-asset liquid alternatives can potentially materialize in an increase of risk-adjusted returns. If it comes to measure the impact on drawdown risk mitigation, the maximum drawdown indicates, how the allocation to multi-asset liquid alternatives could impact the downside risk without giving up the upside potential. The quantification of the impact of adding multi-asset liquid alternatives to a portfolio allows different ways to quantify and decide upon the size of their allocation. Whatever decision is made, the larger the allocation, the greater the potential effects. The effects can be expressed as a function of:

- Degree of desired return enhancement
- Degree of desired risk mitigation

The combination of MALIA V1 and MALIA V2 as a combination of fixed-income/equity substitutes allows the blended portfolio to mimic any existing strategic asset allocation. An alternative,

outcome-oriented approach to finding the appropriate size is the expected excess return over money market instruments that the investor wants to achieve. As both strategies – even operating in the same investment universe – are designed differently in terms of their allocation bands, they offer diversification potential: their long term correlation between 1994 and 2015 is 0.65.

## Multi-Asset Liquid Alternatives As a Toolkit

The benefit of allocating multi-asset liquid alternatives to a well-diversified portfolio evolves static diversification to dynamic diversification. Static diversification has one weakness: it is measured through strategic, long-term average risk/return parameters and fails in times of short-term deviation from the strategic parameters. Since asset class returns move in trends, a well-diversified, but static portfolio might be positioned properly over time, but not ideally positioned in any point in time. Dynamic diversification, introduced by multi-asset liquid alternatives, changes the portfolio allocation over time and has the potential to better position the overall portfolio in times of trends, wherever they go. Their flexibility and simple implementation via pooled vehicles into any existing strategic asset allocation, makes multi-asset liquid alternative investment strategies an interesting toolkit to take diversification to the next level.

## Important Information:

The opinions expressed herein represent the current, good faith views of the author(s) at the time of publication and are provided for limited purposes, are not definitive investment advice, and should not be relied on as such. The information presented in this article has been developed internally and/or obtained from sources believed to be reliable; however, Allianz Global Investors does not guarantee the accuracy, adequacy or completeness of such information. Predictions, opinions, and other information contained in this article are subject to change continually and without notice of any kind and may no longer be true after the date indicated. Any forward-looking statements speak only as of the date they are made, and Allianz Global Investors assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time.

The back-tested performance information contained in this presentation is being provided for institutional use only and cannot be shared, reproduced or distributed to third parties or the public without the express written consent of AllianzGI US. Back-tested performance reflects hypothetical performance an investor would have obtained had it invested in the manner shown and does not represent returns that any investor actually attained.

The backtested performance presented represents a historical simulation for the periods shown based on historical index data and gross of investment management fees. Unless otherwise noted, all figures are in USD, net of expected transaction costs listed in Appendix 1 and 2 and do not reflect the cost of custody or other fees that a client would have paid. The indexes used and the parameters for the backtest are shown in Appendix 1 and 2. Reallocations are executed monthly with asset class weightings determined by proprietary market cycle indicators. Fundamental economic cycle analysis is not considered. Additional backtests show a blend of the MALIA V1 and MALIA V2 backtests into the 60% Global Equities/40% US Fixed Income portfolio to proportionally replace segments of the original Global Equities and US Fixed Income allocations. Assumed return (or alpha) is used to illustrate the calculation of various risk metrics, and actual returns may be higher or lower.

Where gross returns are indicated, the returns do not give effect to investment advisory fees, the cost of custody or other fees that a client would have paid. Fees may vary depending on, among other things, the applicable fee schedule and portfolio size.

Investors should not assume they will have investment results that are similar to the back-tested performance shown. There are frequently material differences between back-tested performance results and actual results subsequently achieved by a particular investment strategy.

Additional information regarding policies for calculating and reporting returns is available upon request. Backtested returns have many inherent limitations, only some of which are described here. The returns were developed with the benefit of hindsight and do not reflect the impact that material economic and market factors might have had on investment decisions if client funds were actually managed in the manner shown. Furthermore, back-tested returns do not represent actual trading. The back-tested returns have been generated based on certain assumptions that may not be reasonable or applicable for particular clients. Changes in the assumptions may have a material impact on the hypothetical and back-tested returns presented. Performance is shown for a limited period of time. Performance over a different market cycle may not be as favorable as the performance shown and may result in losses. There can be no assurance that any client account will achieve profits similar to those shown or avoid incurring substantial losses.

### Appendix 1: Assumptions (backtest parameters) for customized backtest for MALIA V1

Historical simulation from 1994 through 2015

Asset Class	Index	Minimum	Maximum	Transaction Costs
Equity	S&P 500	-50%	50%	10
	DAX			10
	FTSE 100			10
	Italy			15
	Topix			10
	Emerging Markets			20
Fixed Income	US 10 YR	-165%	165%	10
	UK 10 YR			10
	Bund 10 YR			10
	Italy			15
	High Yield			15
	EM Bond			15
Commodity	Oil	-17%	17%	10
	Nat Gas			10
	Copper			10
	Gold			10
Currencies	Euro	-75%	75%	10
	Yen			10
	GBP			10

Source: Allianz Global Investors. Calculations are gross of management fees and gross, net of transaction costs using historical index performance shown above utilizing the parameters above. Reallocations are executed monthly with asset class weightings determined by our proprietary Market Cycle signals. It does not include the fundamental economic cycle analysis. Backtest performance is calculated for the period between 12/31/1993 through 12/31/2015. Past performance is not a reliable indicator of future results.

### Appendix 2: Assumptions (backtest parameters) for customized backtest for MALIA V2

Historical simulation from 1994 through 2015

Asset Class	Index	Transaction Costs	Minimum	Maximum
Equities	US Equity	S&P 500 Total Return Index	0%	50%
	US Small Cap Equity	Russell 2000 Total Return Index		
	Canadian Equity	S&P/TSX 60 Index		
	UK Equity	MSCI Daily TR Net UK Local		
	Italian Equity	FTSE MIB INDEX		
	German Equity	DAX INDEX		
	Japan Equity	TOPIX TR Index		
	Australian Equity	SP ASX 200 TR		
Opportunistic	EM Equity	MSCI Daily TR Net Emerging Mar	0%	100%
	REITs	Dow Jones US Real Estate TR Index		
	Oil	WTI Future		
	Gold	Gold Future		
	US High Yield	Barclays US Corporate High Yield TR		
	EM Bonds	JPM Emerging Markets Bond Index Plus EMBI +		
Currencies	Italian Bonds	JPM GBI EMU Italy in LOC	0%	100%
	Euro FX	Euro Spot Rate		
	GBP FX	GBP Spot Rate		
Fixed Income	JPY FX	JPY Spot Rate	0%	100%
	US Government Bond	Barclays US Agg Total Treasury		
	US MBS	Barclays US MBS Index TR		
	US Corporate IG	Barclays US Agg Corporate TR		
	US ST Government Bond	2yr US Treasury Future		
	US ST High Yield	BofA Merrill Lynch US Cash Pay High Yield Index		
Cash	German Bonds	Bund Future	0%	100%
	Cash Equivalent	US Generic Govt 3M		

Source: Allianz Global Investors. Calculations are gross of management fees and gross, net of transaction costs using historical index performance shown above utilizing the parameters above. Reallocations are executed monthly with asset class weightings determined by our proprietary Market Cycle signals. It does not include the fundamental economic cycle analysis. Backtest performance is calculated for the period between 12/31/1993 through 12/31/2015. Past performance is not a reliable indicator of future results.



# Further Publications of Global Capital Markets & Thematic Research

Active Management

Alternatives

Financial Repression

Capital Accumulation – Riskmanagement – Multi Asset

Behavioral Finance

Strategy and Investment

## Imprint

### Allianz Global Investors GmbH

Bockenheimer Landstr. 42–44  
60323 Frankfurt am Main

### Global Capital Markets & Thematic Research

Hans-Jörg Naumer (hjn), Ann-Katrin Petersen (akp), Stefan Scheurer (st)



Allianz Global Investors

[www.twitter.com/AllianzGI\\_DE](http://www.twitter.com/AllianzGI_DE)

August 2016

<sup>1</sup> Perqin, 2015 Perqin Investor Network Global Alternatives Report. <sup>2</sup> Please refer to the publications entitled “The case for alternatives” and “Liquid alternative strategies an an answer to the low interest rate environment” by Allianz Global Investors for a detailed categorization of alternative investment strategies and their investment vehicles. <sup>3</sup> “UCITS” or “undertakings for the collective investment in transferable securities” are investment funds regulated at European Union level. They account for around 75 % of all collective investments by small investors in Europe. See EU Commission, [http://ec.europa.eu/finance/investment/ucits-directive/index\\_de.htm](http://ec.europa.eu/finance/investment/ucits-directive/index_de.htm). UCITs can be distributed globally, apart from the US. <sup>4</sup> The full discussion of academic theory is beyond the scope of this paper. For further reading with literature reference, see Moskowitz, Ooi, Pedersen: Time series momentum, in: Journal of Financial Economics 104 (2012), 228-250.

References to specific securities are not intended to be, and should not be interpreted as an offer, solicitation or recommendation to purchase or sell any financial instrument, an indication that the purchase of such securities was or will be profitable, or representative of the composition or performance of any AllianzGI product. Any such references are only made to illustrate the concept of merger arbitrage. Investing involves risk. The value of an investment and the income from it will fluctuate and investors may not get back the principal invested. Past performance is not indicative of future performance. This is a marketing communication. It is for informational purposes only. This document does not constitute investment advice or a recommendation to buy, sell or hold any security and shall not be deemed an offer to sell or a solicitation of an offer to buy any security. The views and opinions expressed herein, which are subject to change without notice, are those of the issuer or its affiliated companies at the time of publication. Certain data used are derived from various sources believed to be reliable, but the accuracy or completeness of the data is not guaranteed and no liability is assumed for any direct or consequential losses arising from their use. The duplication, publication, extraction or transmission of the contents, irrespective of the form, is not permitted. This material has not been reviewed by any regulatory authorities. In mainland China, it is used only as supporting material to the offshore investment products offered by commercial banks under the Qualified Domestic Institutional Investors scheme pursuant to applicable rules and regulations. This document is being distributed by the following Allianz Global Investors companies: Allianz Global Investors U.S. LLC, an investment adviser registered with the U.S. Securities and Exchange Commission (SEC); Allianz Global Investors GmbH, an investment company in Germany, authorized by the German Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin); Allianz Global Investors Asia Pacific Ltd., licensed by the Hong Kong Securities and Futures Commission; Allianz Global Investors Singapore Ltd., regulated by the Monetary Authority of Singapore [Company Registration No. 199907169Z]; and Allianz Global Investors Japan Co., Ltd., registered in Japan as a Financial Instruments Business Operator; Allianz Global Investors Korea Ltd., licensed by the Korea Financial Services Commission; and Allianz Global Investors Taiwan Ltd., licensed by Financial Supervisory Commission in Taiwan.