Deutsche
Asset Management

# Deutsche AM Multi Asset Group

## Myth and reality of modern Multi Asset management

*Passion to Perform*

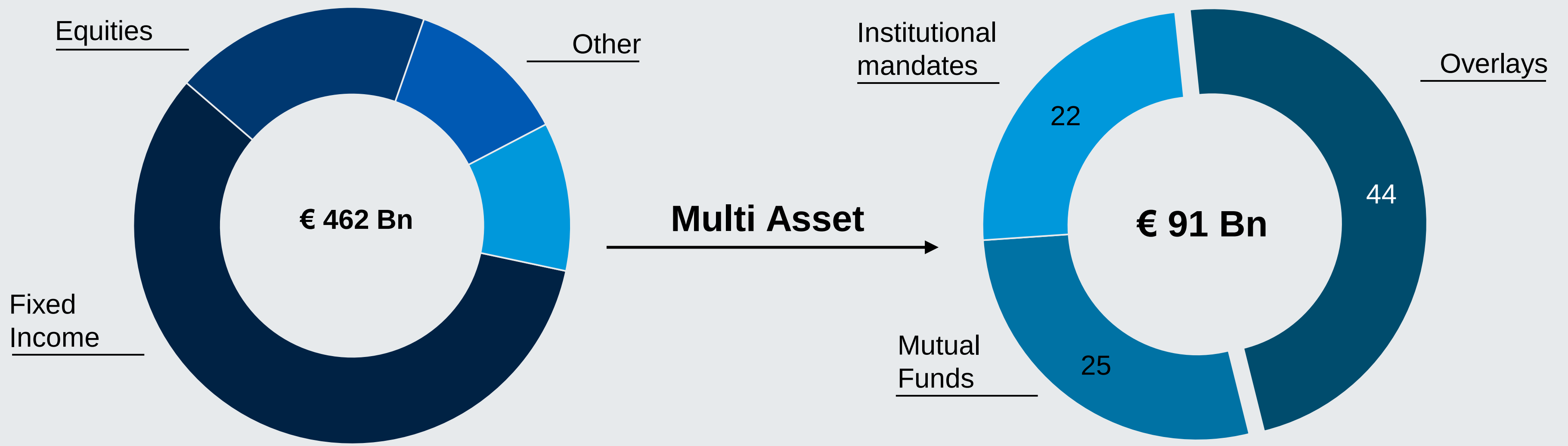
# Multi Asset at Deutsche Asset Management

Introduction

# Deutsche Asset Management

## Unique expertise in Active Asset management

### Multi Asset as integral part of Active Asset management




- With **€ 462 bn AuM**, more than **500 experts** in research and investment as well as over 80 years of client history, Deutsche AM is one of the world‘s leading active asset managers
- Deutsche AM Multi Asset Group manages **€ 91 bn** in assets across a defined set of global investment strategies with different risk characteristics
- Proven **long-term track record** in institutional composites; successful platform of mutual funds with >15x 4/5-star funds
- **In-depth expertise** in modern asset allocation and risk management and leader in MA **Innovation**

Source: Deutsche Asset Management. As of March 2016.

# Multi Asset – a growing, successful business
## Overview

**50**
Portfolio managers

AuM
**€47bn**

NNA*
**€10bn**

Notional
**€44bn**

**1st & 2nd**
**Quartile**

**>80%**
over 3y horizon

**54%** 2014 - 2015 **growth**

| | | |
|---|---|---|
| 5 ★ | 9 | Mutual funds |
| 4 ★ | 7 | |

**#**
**5** Mutual fund strategies**
**160** Inst. mandates

**%**
**16.7** **over 10 years**
Alpha*** in Inst. Composites (1.1% p.a.)

* NNA in 2015
** Total of 65 single funds, including bespoke solutions for key distribution channels.
*** Compounded annual performance, AuM weighted over Target Risk/Target Return/Benchmark composites. As of July 2015
Source: Morningstar, Deutsche Asset & Wealth Management Global MIS, own calculations. As of H1/2015

**Data for EMEA region**

# Multi Asset Group EMEA

## Providing goal-based solutions to our clients and thought leadership

### Markets

Financial markets are
- complex
- globally interconnected
- increasingly correlated

Diversification has become more difficult

The number and choice of asset classes and investment styles have grown tremendously

Financial Repression is the 'new cycle'

.. and nominal interest rates have become negative

*Filter the noise*

*Reduce complexity*

*Focus on key risk & performance drivers*

*…based on a solid investment framework*

### Multi Asset Group

Focus on four core pillars

1. Strategic Allocation
2. Tactical Allocation
3. Portfolio Construction
4. Risk Overlay Management

We offer and manage strategies that provide solutions to client objectives and goals

### Clients

**What are my goals and objectives?**

— Total Return or Income?

**Risk comfort zone**

— What drawdown can I sustain?

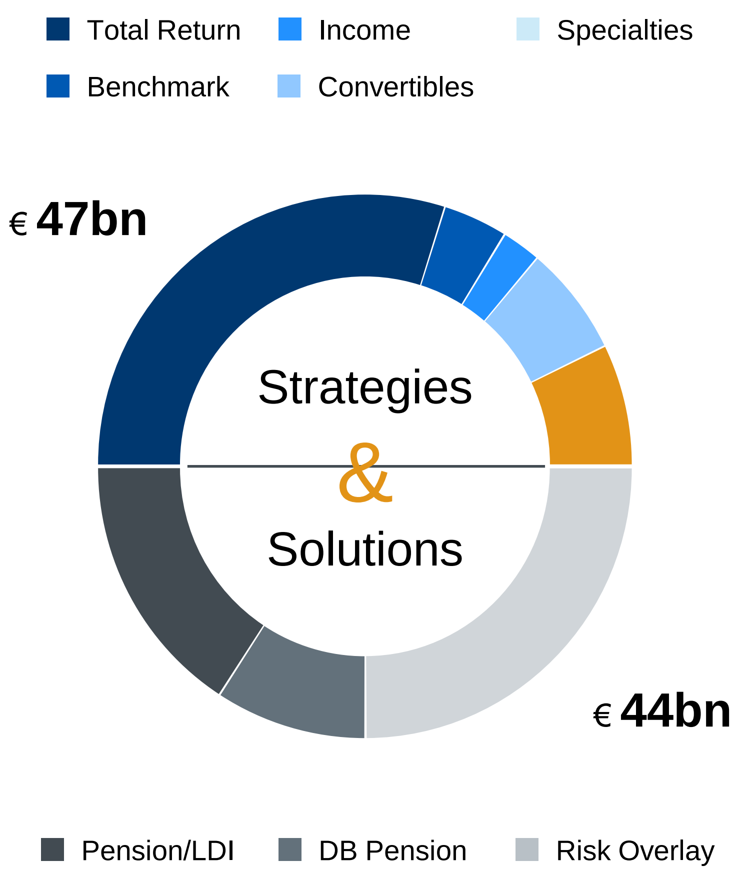
**Constraints**

— Regulatory or self-imposed?

# Book of Business

## Our investment strategies and solutions

### COMPREHENSIVE AND COMPETITIVE




### FOCUS STRATEGIES & SOLUTIONS

| | *Objective* |
|---|---|
| **Total Return** | Maximizing return for given risk budget |
| **Income** (Goal-based investing) | Maximizing probability of reaching target |
| **Pension** | Accumulation & Decumulation (LDI, DB & DC) |
| **Risk Overlay** | Managing downside risk |

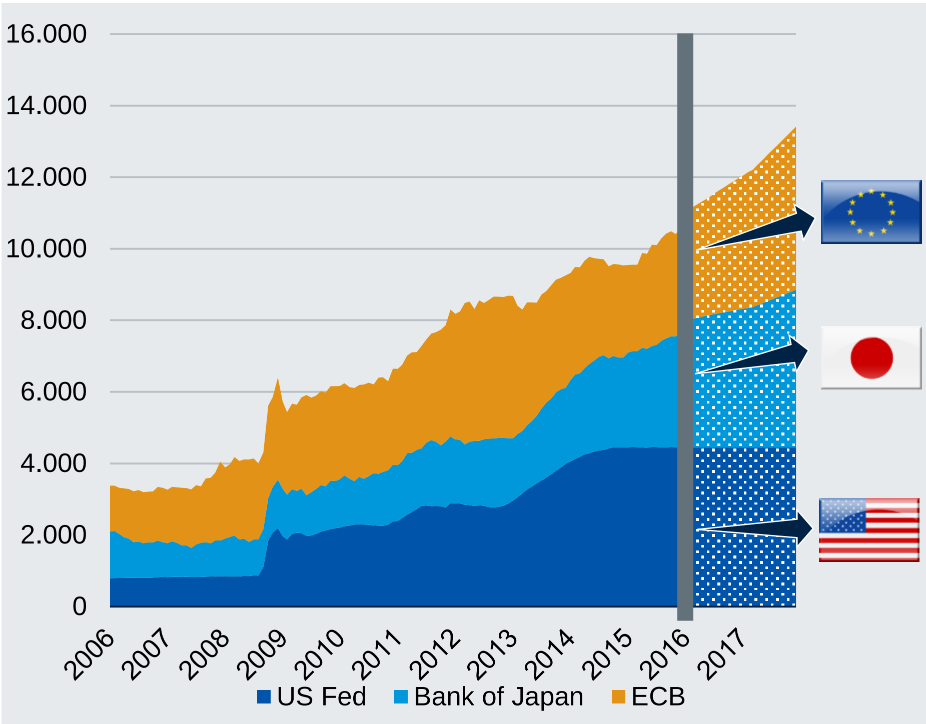
Source: Deutsche Asset Management, Global MIS. As of Febuary 2016.

# Why Multi Asset?

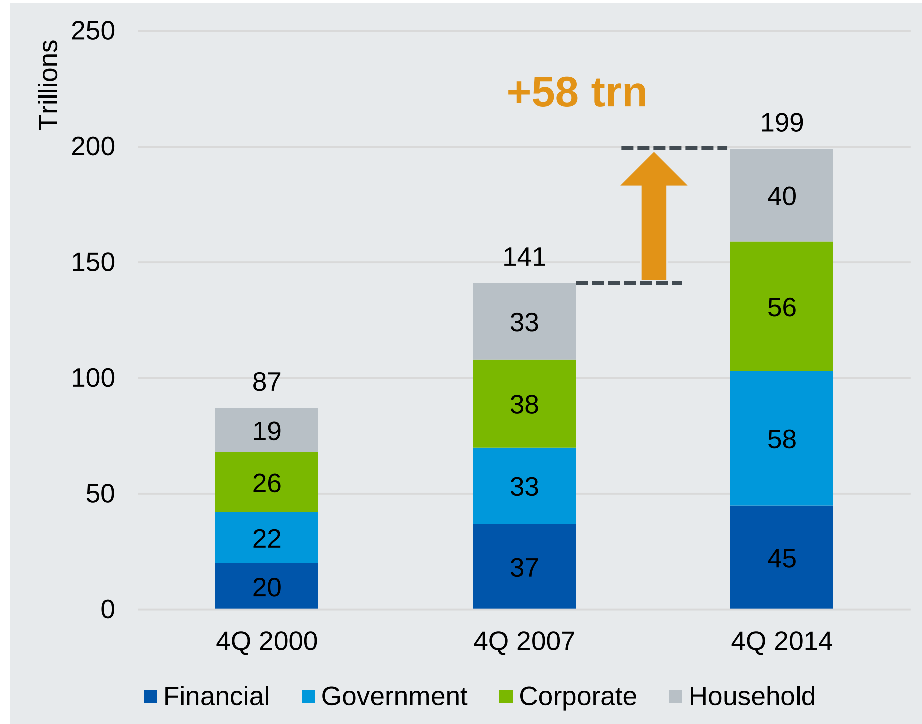
The „new market normal“ and why Multi asset is relevant

# The big picture
## Debt overhang will constrain policy normalization

### Central banks: Balance sheets ($ bn)




### Global debt increase** ($)

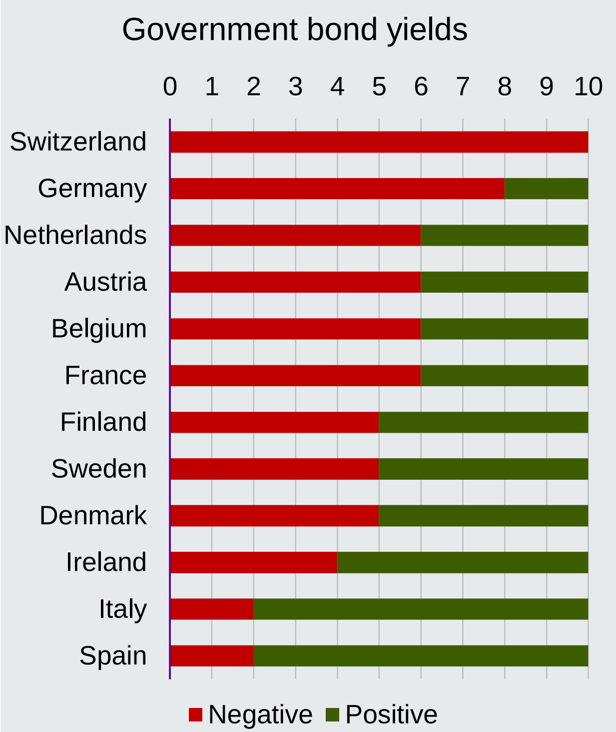



» We are living in a world of ample liquidity

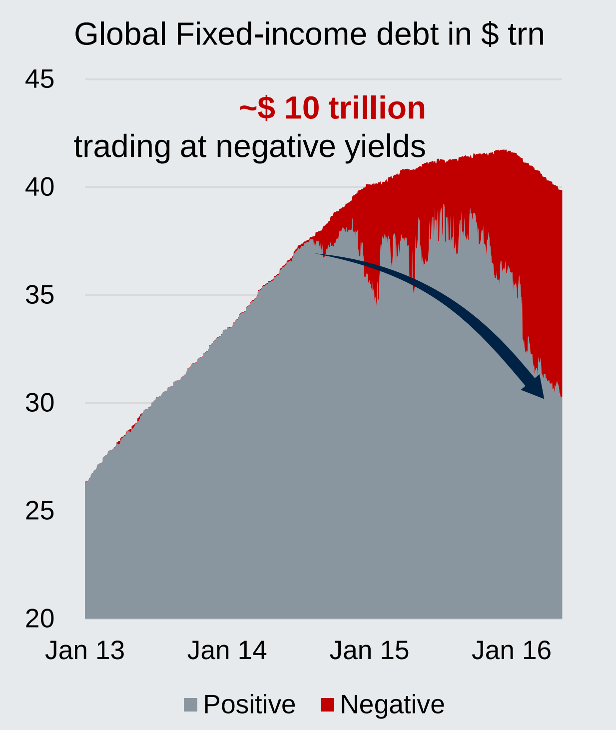
* Liabilities of private households and nonprofit organizations as a % of disposable income. As of December 2014.
** McKinsey Global Institute Report: “Debt and (not much) deleveraging”, February 2015.
Source: Bloomberg Finance L.P., Deutsche Asset & Wealth Management

# Implications
## The new market normal

### Negative yields...[1]




### ...a growing market share[2]



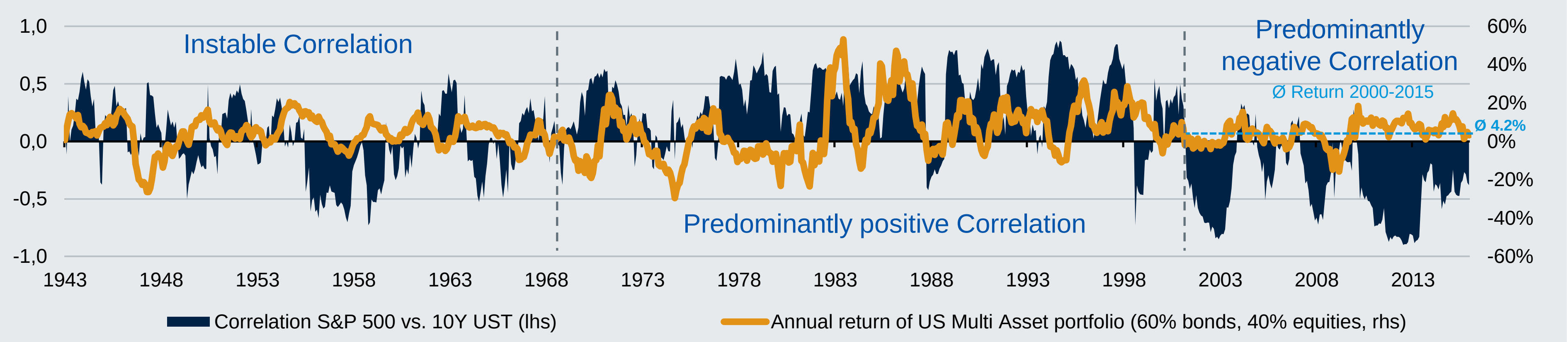

### ...combined with high volatility[3]


**The risk-return ratio has become asymmetric. Turn volatility into opportunity.**

[1] As of April 2016. Source: Bloomberg.
[2] Source: BofA Merrill Lynch Global Research. Using the BofA ML global fixed income index GFIM. Includes bonds that mature in the following 12 months. As of May 2016.
[3] DAX Index from 01.08.2015 till 29.04.2016. Source: Bloomberg.

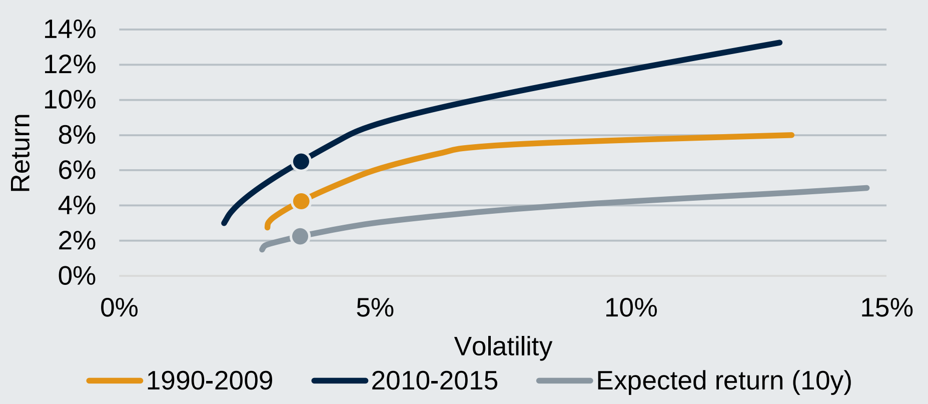
# Excursus: What is normal?
## Diversification, risk and return in the “new normal”

## Relatively “easy” diversification over the last 15 years




Source: Datastream, GFD, Shiller, Goldman Sachs Global Investment Research. As of December 2015.

## The Risk-return relationship is changing

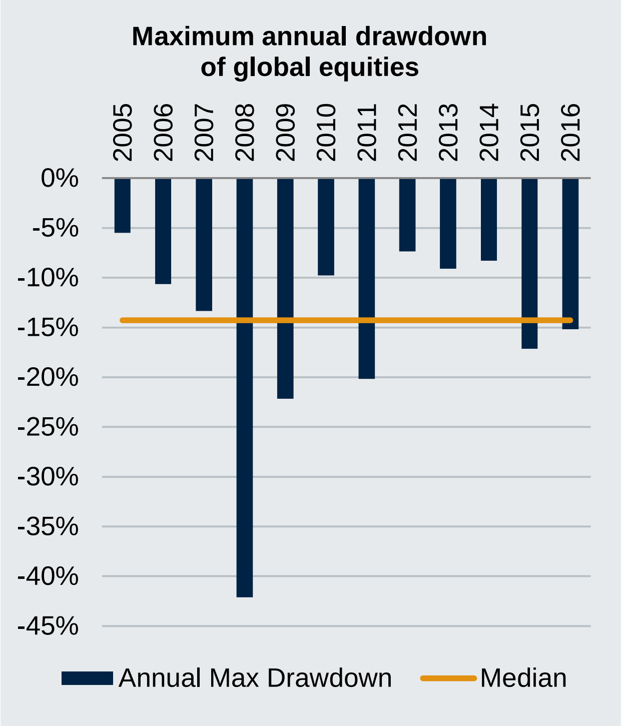


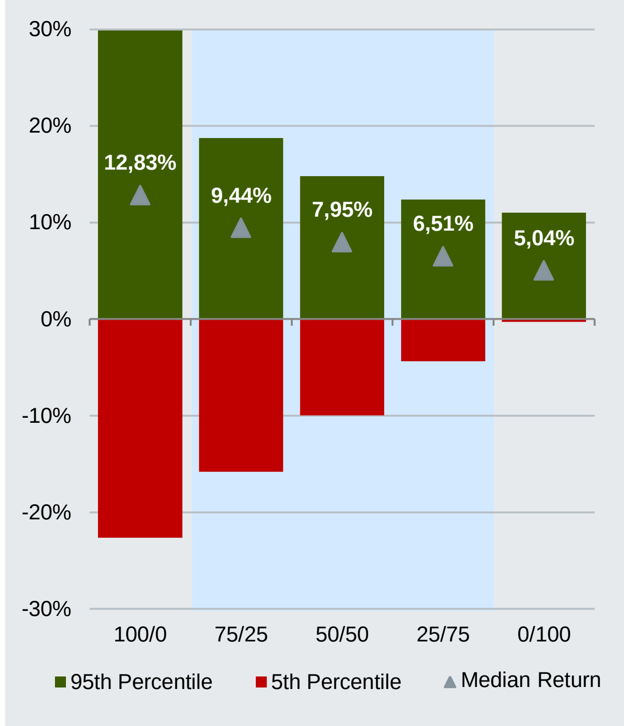

- In the past, relatively “simple” portfolios with bonds and equities have been sufficient to generate an attractive risk-return profile and good diversification
- To achieve the same returns as in the past, investors need to take significantly more risk going forward
- Diversification is becoming more difficult to achieve as correlations between traditional asset classes have been increasing

Portfolio comprised of US equities, 10 year US treasuries, US IG bonds, US HY bonds. Source: Morgan Stanley Research, Bloomberg Finance L.P. As of November 2015.

# Why Multi Asset?
## What is the (simple) Objective

| Equity* | Multi Asset “comfort” zone** | Fixed Income*** |
|---|---|---|





» Multi Asset – the diversified and managed allocation of various asset classes – matching the clients risk-return objective

Note: * MSCI World Total Return Net Dividends Index denominated in EUR to end of April 2016.
** Total Returns of weighted buckets (MSCI World denominated in EUR and Barclays Global Aggregate Corporate EUR hedged) since 2000, yearly rebalanced. 2-Year holding period.
*** Yield on 10-year generic German government bonds, in %.

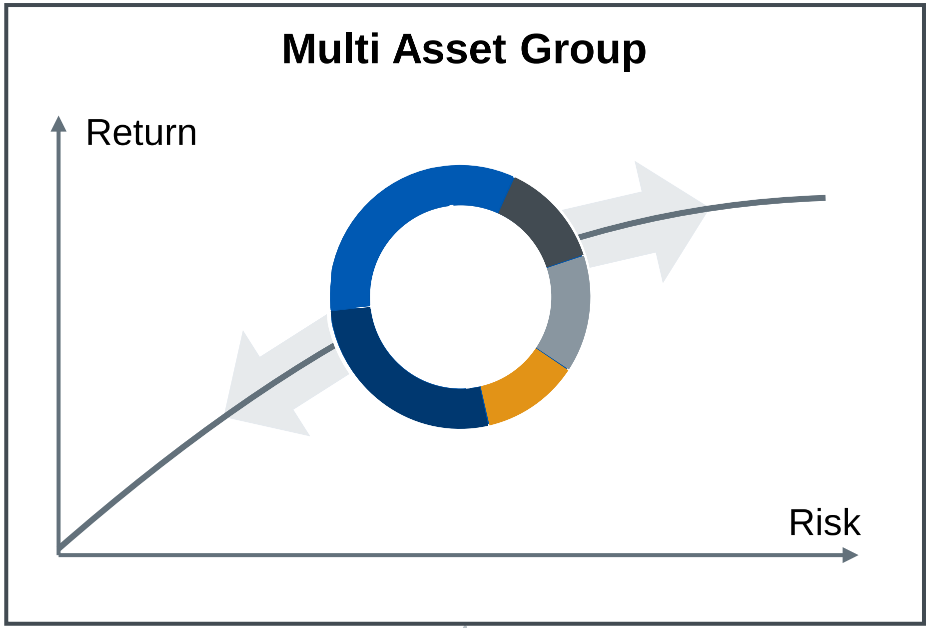
Source: Deutsche Asset Management, Bloomberg Finance L.P., May 2016. Past performance is not a reliable indicator of future returns.

# How do we manage modern Multi Asset

An introduction

# The gateway to global institutional AM expertise
## Putting together and leveraging the best-of Deutsche AM

- Strategic Asset Allocation (SAA) advisory
  - With regard to economic as well as regulatory risk (e.g. Solvency II SCR*)
- Tactical Asset Allocation (TAA)
  - Integrated or as an overlay
- Multi Strategy
  - Style diversification, e.g. through efficient allocation of active and passive** style buckets
- Gateway to best building blocks and expertise of Deutsche AM
  - Modular approach




**Equity**
- Equity Income
- European Equities
- SMC
- Quant, CROCI, …

**Fixed Income (incl. Credit, FX)**
- IG, HY
- Covered Bonds
- Loans
- …

**Alternatives (incl. Cmdty)**
- Liquid (HF, RF)
- Illiquid (RE, PE)
- …

**Passive**
- Beta
- Strategic Beta
- …

**External Strategies**
- China bonds***
- …

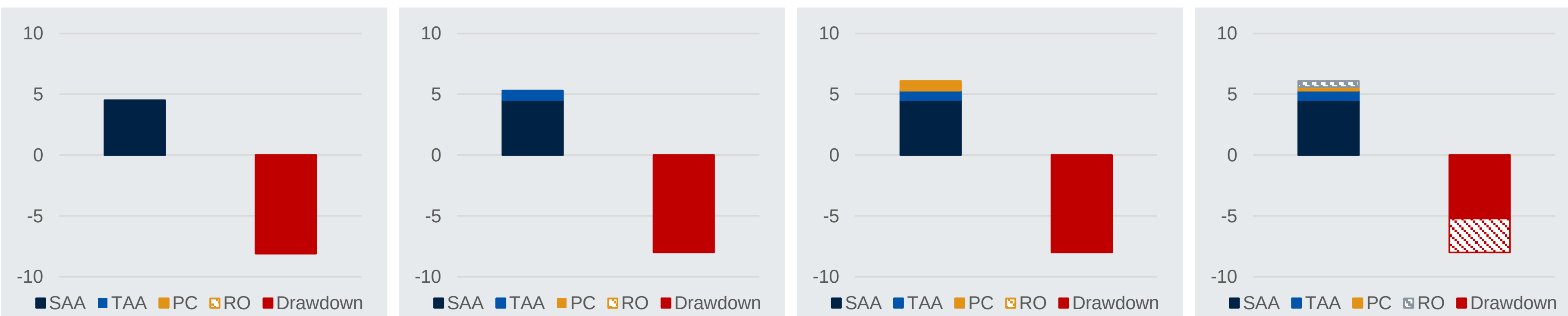
* E.g. for insurance Multi Asset solutions, in cooperation with GCG Solutions
** E.g. Smart Beta in cooperation with Passive.

# Investment approach

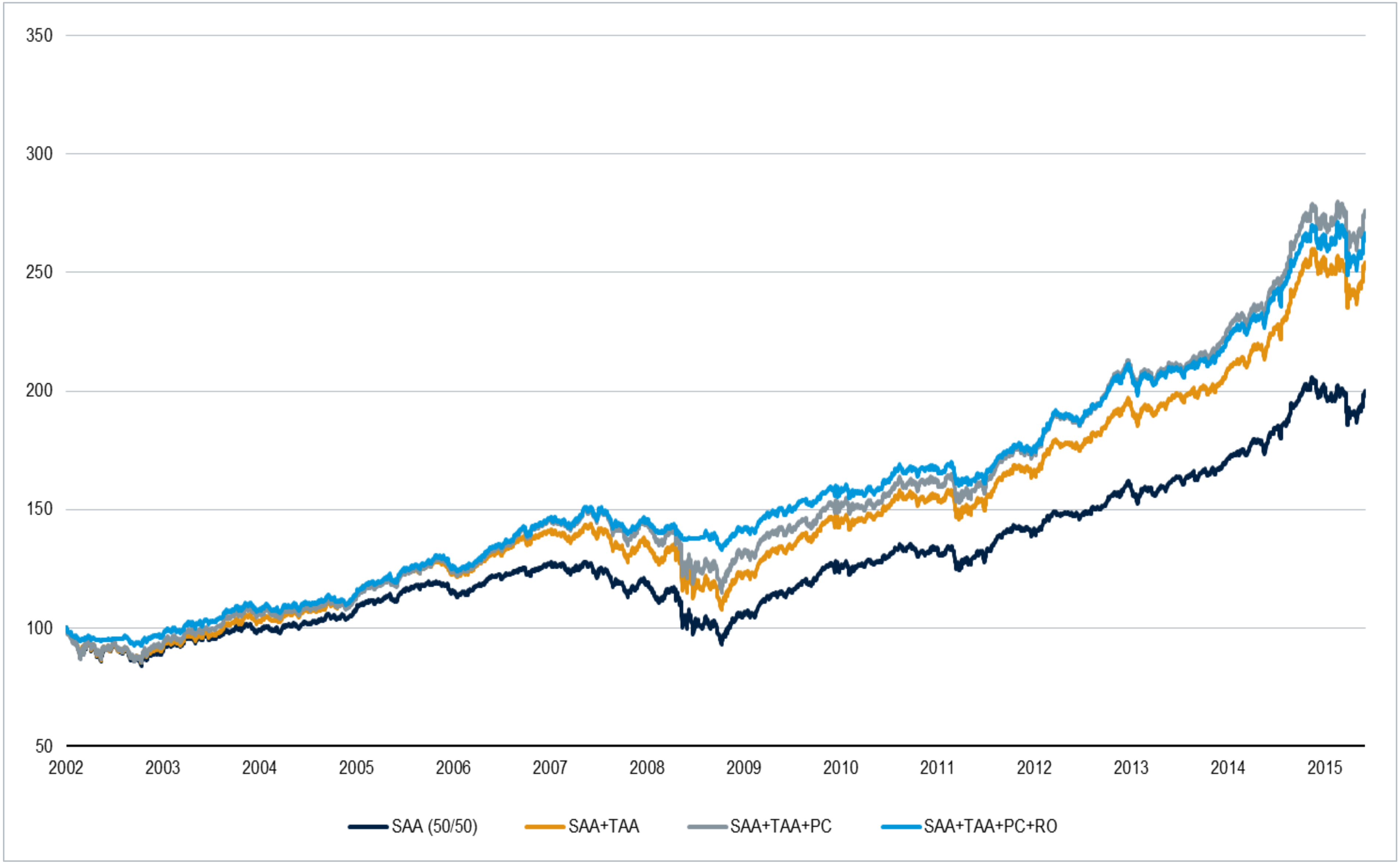
## Focusing on four core pillars of our Multi Asset investment process

| | Strategic Allocation | Tactical Allocation | Portfolio Construction | Risk Overlay Management |
|---|---|---|---|---|
| OBJECTIVE | Build optimal portfolio that achieves long-term return (or income) target within a given risk budget | Add alpha through active cross-asset risk allocation | Add active alpha through smart implementation of asset allocation | Add asymmetry/convexity through systematic risk-overlay |
| DRIVERS | — Diversification across asset classes and investment styles*<br>— Return vs. Income target<br>— Liquidity vs illiquidity premium | — High conviction cross-asset class views across CIO active platform<br>— ... combined in a risk-budgeted way<br>— Focus on risk contribution | — Conscious choice of alpha vs. beta<br>— Selection alpha (Single name and Fund selection, 'Best of AM')<br>— Structural convexity through derivative implementation | — RO is like buying an option and hence comes at a cost<br>— The benefit is that it reduces and risk-manages draw-downs<br>— … and keeps losses limited with a given comfort-zone |

IMPACT



# Investment approach
## Focusing on four core pillars of our Multi Asset investment process



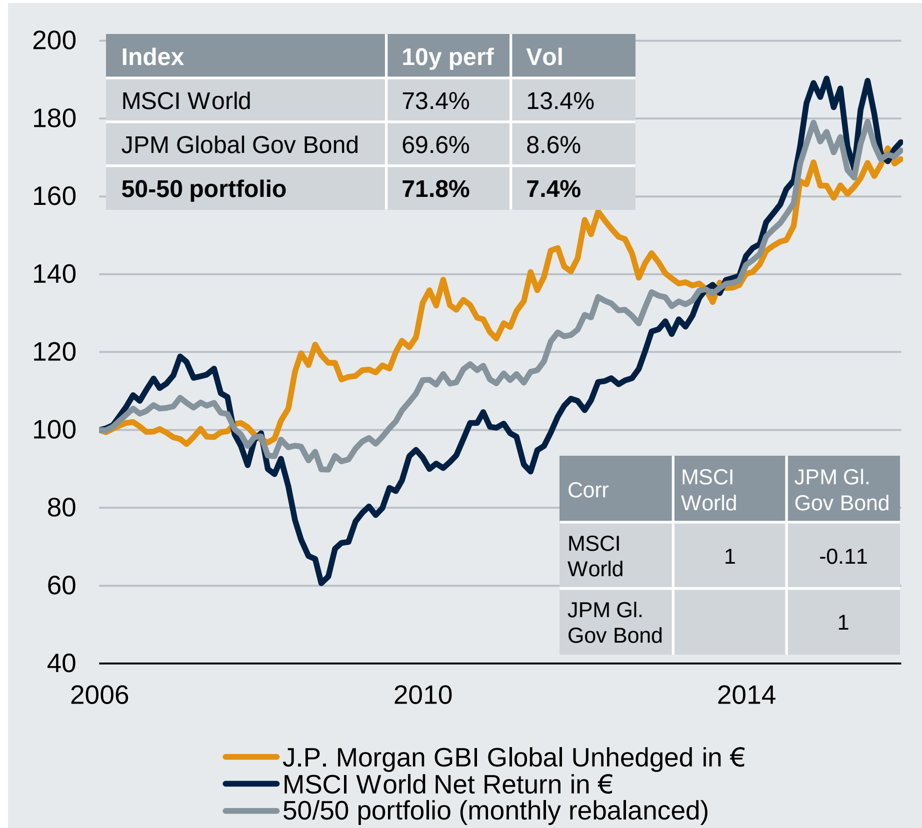
# Excursus

## Myth versus reality of Diversification

### YoY asset classes performance (ranked)*

| 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| US Sov. +12.30% | MSCI EM +78.51% | REITS +27.94% | REITS +8.29% | HY Credit +22.19% | MSCI DM +21.24% | REITS +28.03% | MSCI DM +10.39% | REITS +9.46% |
| EUR Sov. +8.70% | HY Credit +69.18% | MSCI DM +19.83% | EM Debt +8.02% | REITS +19.80% | **Portfolio +13.02%** | MSCI DM +19.58% | **Portfolio +4.31%** | EM Debt +6.85% |
| Cash +4.00% | EM Debt +28.78% | MSCI EM +18.88% | US Sov. +6.34% | EM Debt +18.62% | HY Credit +8.38% | **Portfolio +13.19%** | HY Credit +3.41% | HY Credit +5.24% |
| IG Credit +0.35% | REITS +28.00% | HY Credit +15.11% | EUR Sov. +3.11% | MSCI EM +18.22% | REITS +2.86% | IG Credit +8.17% | REITS +2.83% | IG Credit +3.20% |
| Comdty +0.00% | MSCI DM +26.56% | EM Debt +12.24% | IG Credit +2.62% | MSCI DM +13.75% | EUR Sov. +2.33% | EM Debt +7.60% | US Sov. +1.60% | US Sov. +2.80% |
| EM Debt -11.66% | **Portfolio +21.11%** | **Portfolio +11.31%** | Cash +0.88% | IG Credit +13.21% | IG Credit +1.94% | EUR Sov. +5.59% | EUR Sov. +1.47% | MSCI EM +1.37% |
| **Portfolio -19.25%** | IG Credit +13.95% | US Sov. +5.85% | HY Credit +0.04% | **Portfolio +12.89%** | Cash +0.09% | HY Credit +3.87% | EM Debt +0.81% | EUR Sov. +1.02% |
| HY Credit -37.64% | EUR Sov. +5.44% | IG Credit +4.31% | Comdty +0.00% | EUR Sov. +8.06% | Comdty +0.00% | US Sov. +2.18% | Comdty +0.00% | Comdty +0.00% |
| REITS -37.72% | Cash +0.73% | EUR Sov. +1.65% | **Portfolio -0.44%** | US Sov. +1.65% | US Sov. -0.96% | Cash +0.10% | Cash -0.11% | Cash -0.10% |
| MSCI DM -38.04% | Comdty +0.00% | Cash +0.44% | MSCI DM -2.58% | Cash +0.24% | MSCI EM -2.60% | Comdty +0.00% | IG Credit -0.80% | **Portfolio -2.28%** |
| MSCI EM -53.33% | US Sov. -0.77% | Comdty +0.00% | MSCI EM -18.42% | Comdty +0.00% | EM Debt -6.45% | MSCI EM -2.19% | MSCI EM -14.92% | MSCI DM -4.96% |

### Traditional Multi Asset yielding satisfying results**



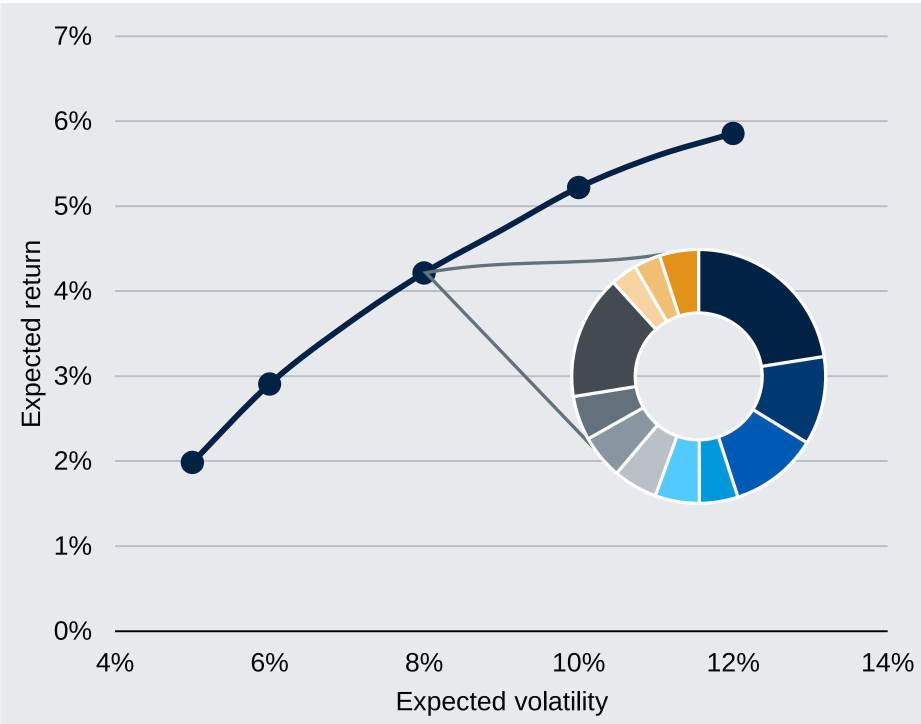

| Index | 10y perf | Vol |
|---|---|---|
| MSCI World | 73.4% | 13.4% |
| JPM Global Gov Bond | 69.6% | 8.6% |
| **50-50 portfolio** | **71.8%** | **7.4%** |

| Corr | MSCI World | JPM Gl. Gov Bond |
|---|---|---|
| MSCI World | 1 | -0.11 |
| JPM Gl. Gov Bond | | 1 |

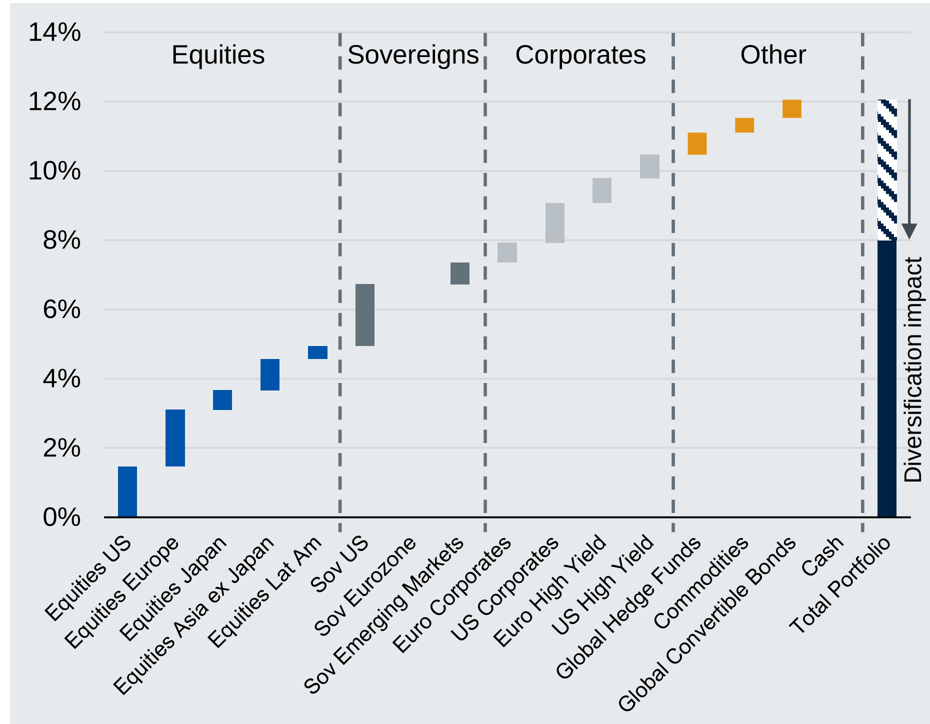
* Asset classes are represented through: Equities DM: MSCI World, Equities EM: MSCI EM Emerging Market, Cash: EONIA Index, Real Estate: FTSE NAREIT All Eq REITS; Commodities: DJUBS Commodity, US Sovereign: Barclays US Treasury 3-5yr TR, EUR Sovereign: iBoxx Sovereigns Eurozone 3-5yr TR, IG Credit: Barclays Global Agg Corporate, HY Credit: Barclays Global High Yield Tot, EM Debt: Barclays Emerging Markets Corp. Data as of Mar 2016.
** Period: 31 May 2006 – 29 Apr 2016. 31 May 2006 = 100.
Past performance is not a reliable indicator of future returns.
Source: Deutsche Asset Management, Deutsche Bank. As of May 2016.

# Strategic Asset Allocation as a starting point
## Combining strategic risk-return forecasts with diversified risk contribution

### Optimized SAA portfolios …




### … with diversified risk contribution

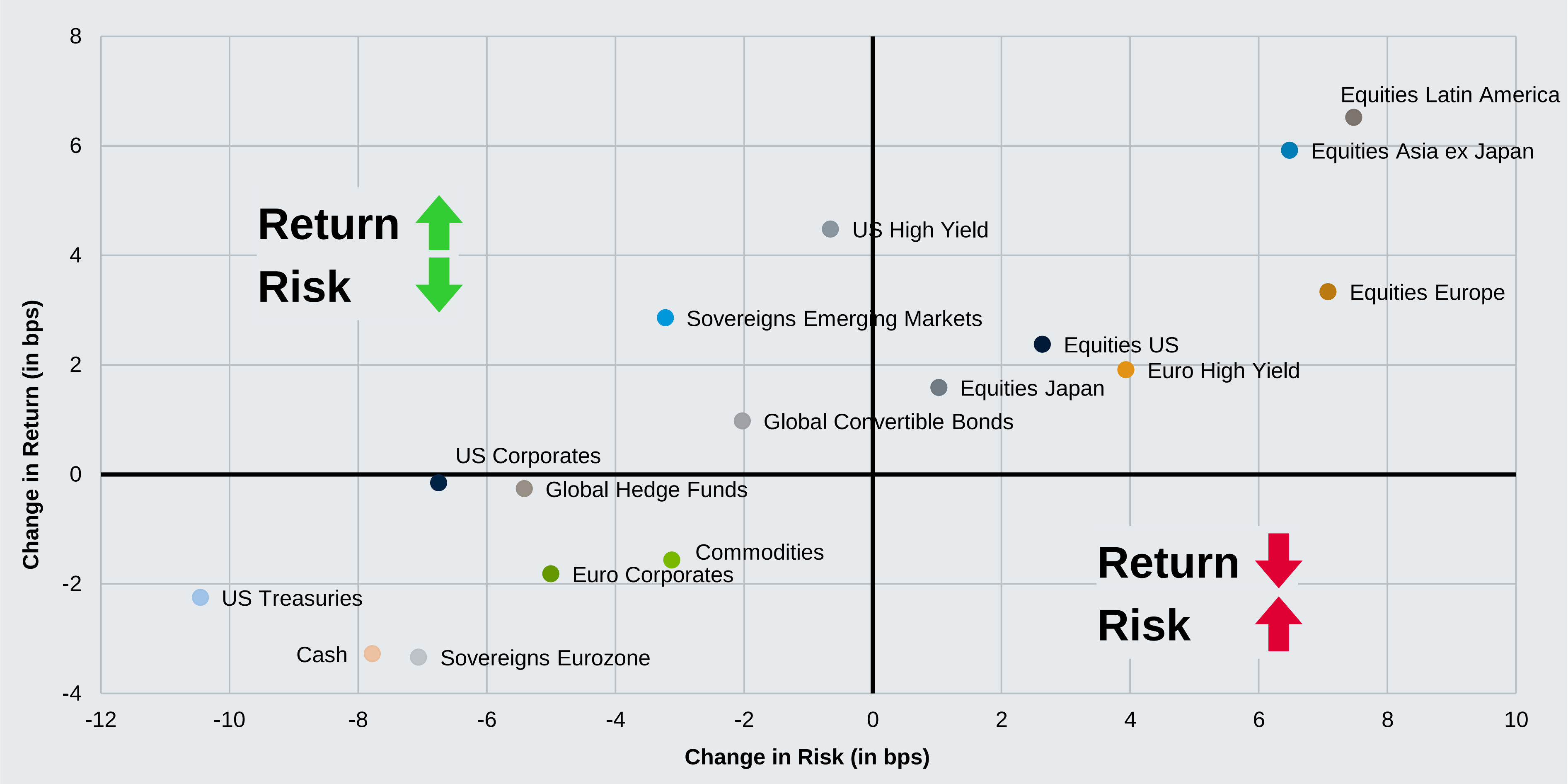



» Diversified, strategic portfolio that optimizes return for given risk profile

Source: Deutsche Asset Management. As of March 2016.

# Strategic Asset Allocation
## Using existing diversification potential

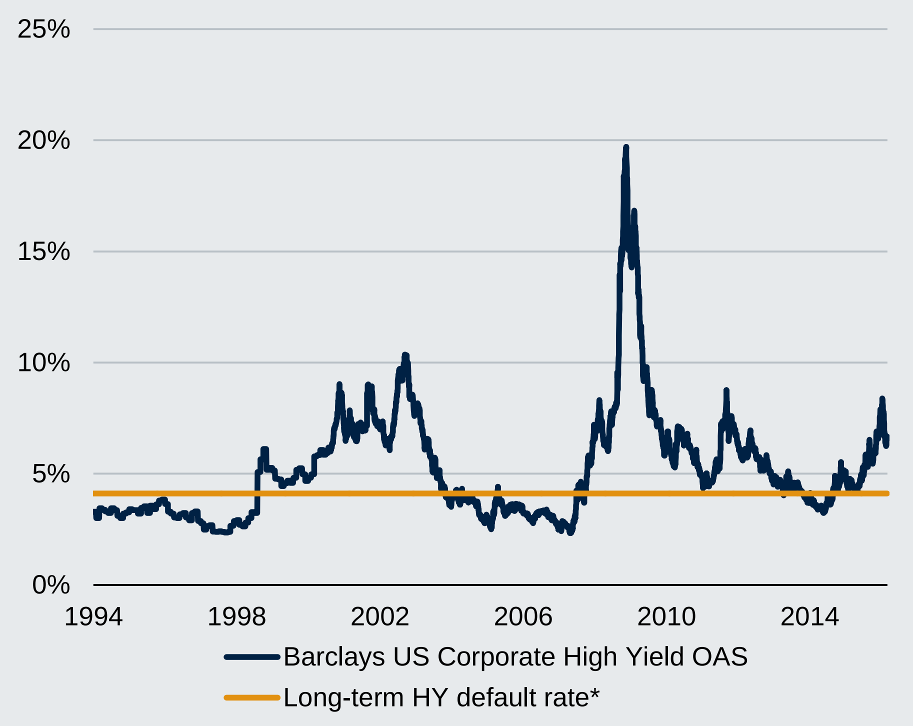
## Marginal risk-return contributions




* Change of the risk-return profile of a 50% Equities Europe / 50% Sovereigns Eurozone portfolio, when adding 1% of various asset classes.
Source: Bloomberg Finance L.P., Deutsche Asset Management. As of Marc 2016.

# Strategic: Harvesting long-term risk premia
## Risk premia in credit and equity markets

### High yield credit risk premia vs. default rate




### Small/Mid Cap versus broad equities

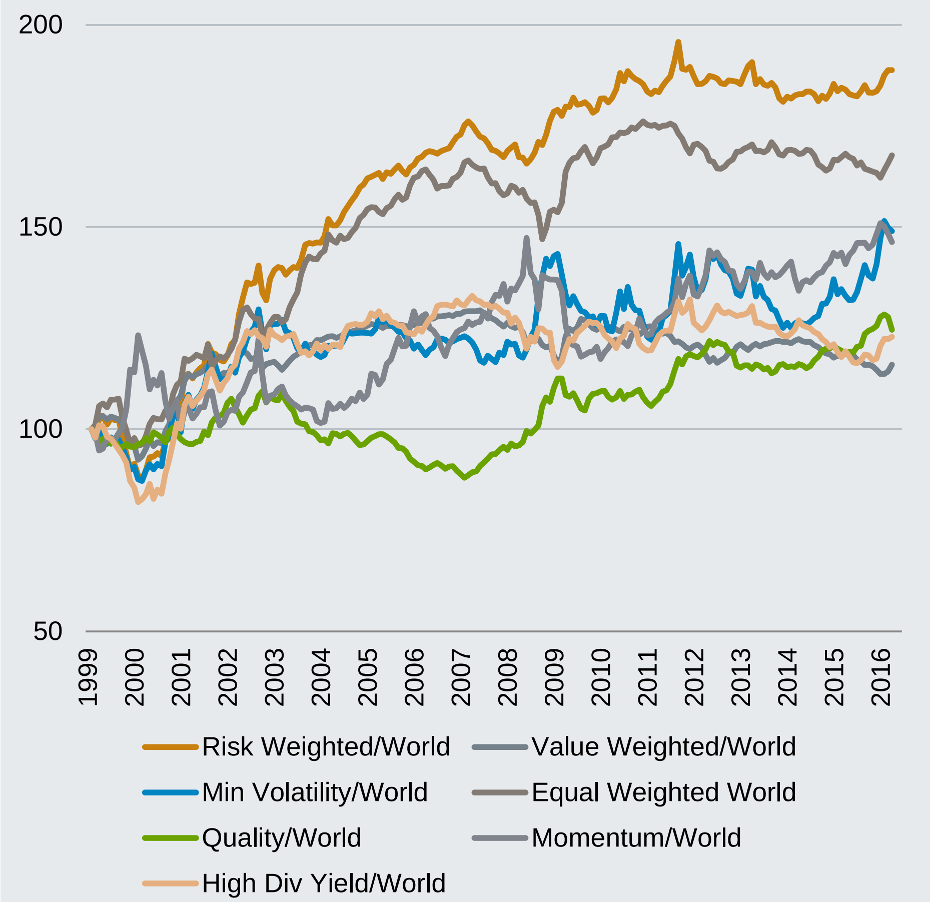

» Credit and equity risk premia are well-known and researched and exhibit long-term cycle patterns. Watch out for turning points when spreads don't compensate for defaults anymore or recessions for SMC.

* Average speculative-grade default rate (%) between 1981 and 2014. S&P RatingsDirect: "2014 Annual Global Corporate Default Study and Rating Transitions", April 2015.
Past performance is not a reliable indicator of future returns.
Source: Bloomberg Finance L.P., S&P Ratings Services, Deutsche Asset Management. As of March 2016.

# Excursus: Style investing
## Collecting risk premia over time

### Performance of Factor* and MSCI World since 1999


### Relative Performance of Factors* vs. MSCI World

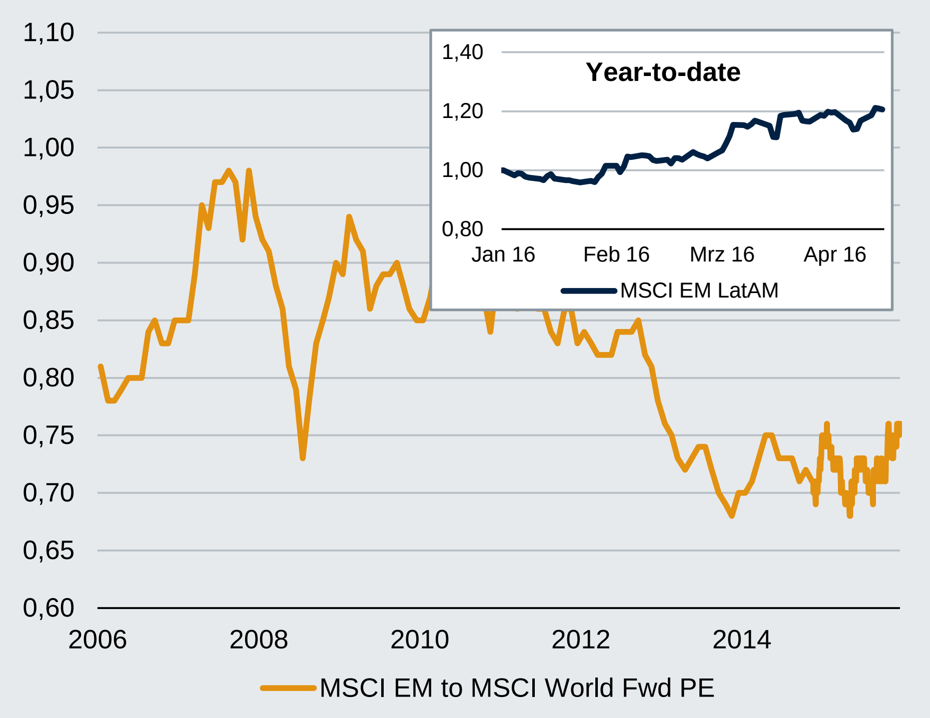



Past performance is not a reliable indicator of future returns.
* Time series refer to MSCI Factor Indexes.
Source: Bloomberg Finance L.P., MSCI, Deutsche Asset Management. As of April 2016.

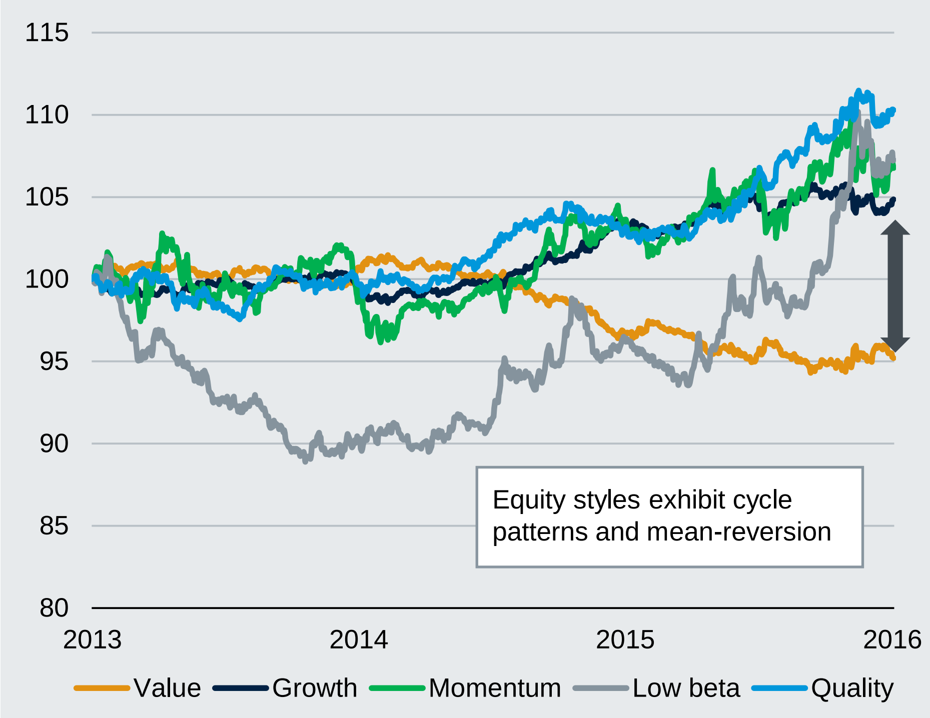
# Tactical: Flexible allocation of risk budgets

## Exploiting market opportunities across a global asset class universe

### EM Equities: Valuations at a turning point?




### Global Equity Style dispersion



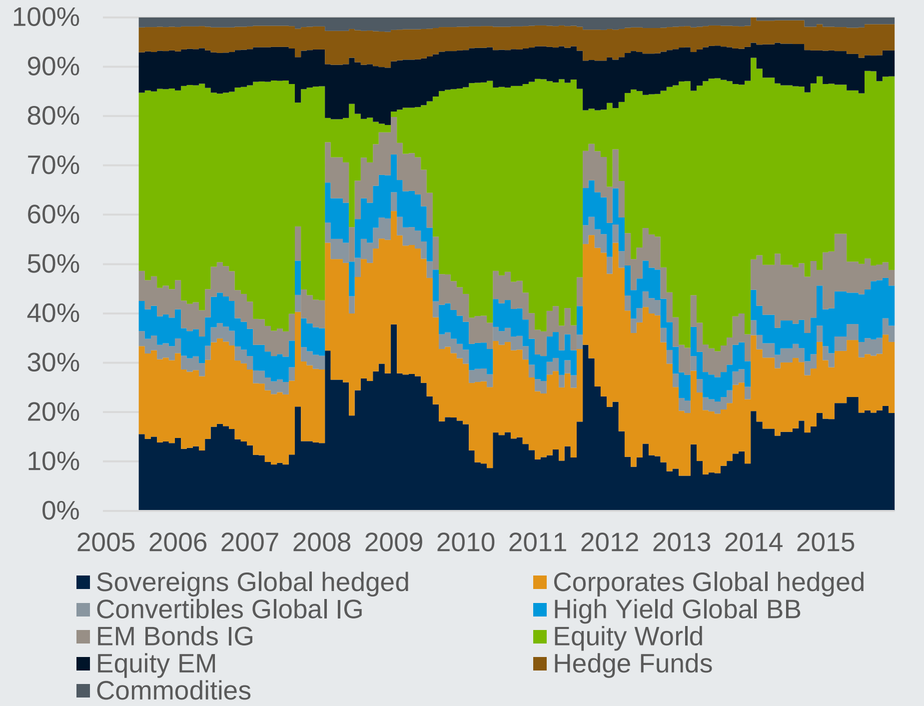

» Leveraging expertise and investment ideas across our global active investment platform

Past performance is not a reliable indicator of future returns.
Source: Bloomberg Finance L.P., Deutsche Asset Management. As of March 2016.

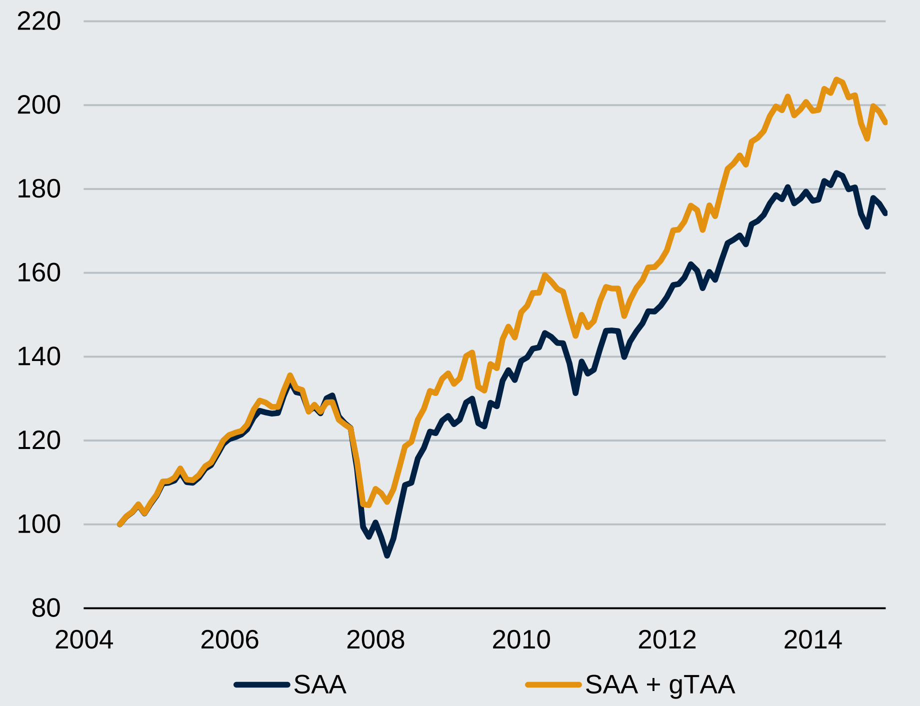
# Tactical: Global tactical asset allocation

## Implementing diversified asset allocation views

### Global TAA allocation over time




### Global TAA Track record



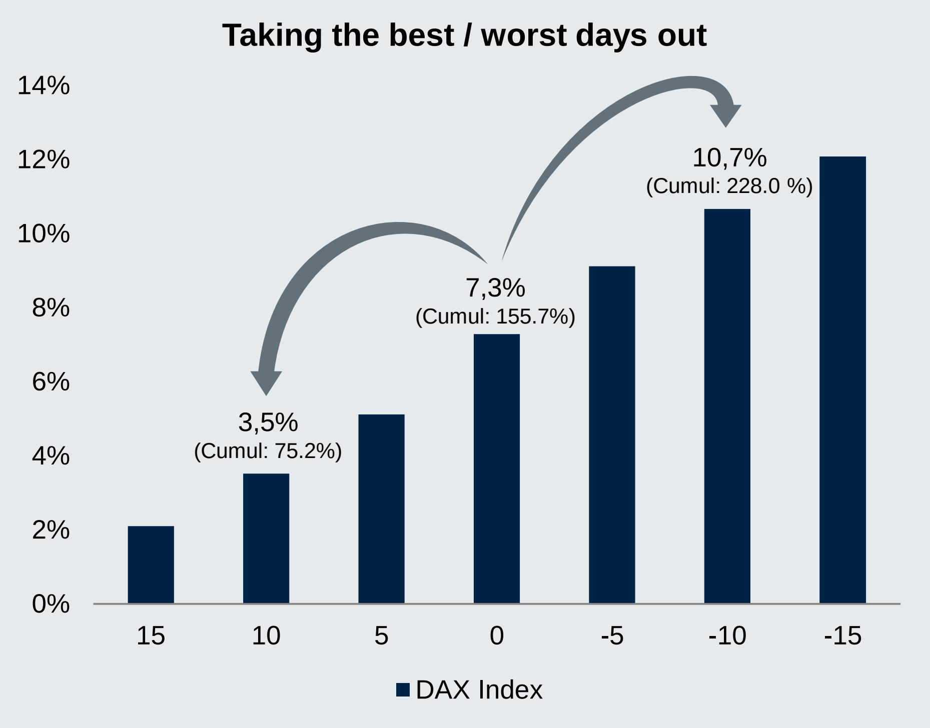

Alpha contribution through discretionary, diversified risk taking across a global asset class universe

* gTAA signals can be flexibly applied to different SAA portfolios. Please be aware, that the application is justified if the asset classes choice is close to the historical SAA break-down. Inclusion of further asset classes might lead to relative adjustments in the active weights.

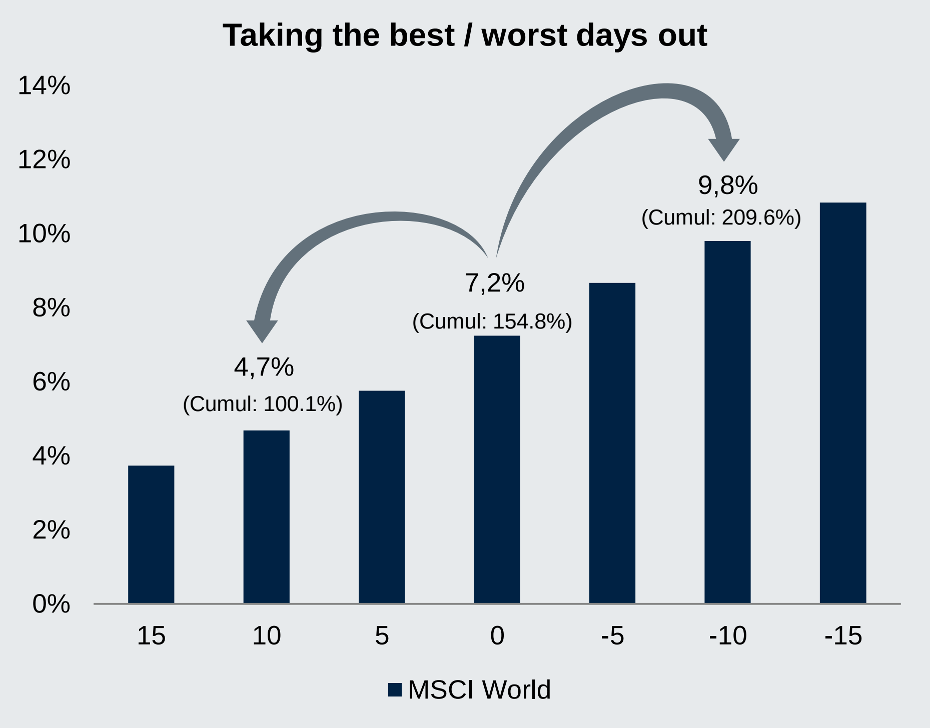
Source: Bloomberg Finance L.P., Deutsche Asset Management. As of January 2016.

# Excursus: Market timing …
## … versus “time in the market”

## DAX



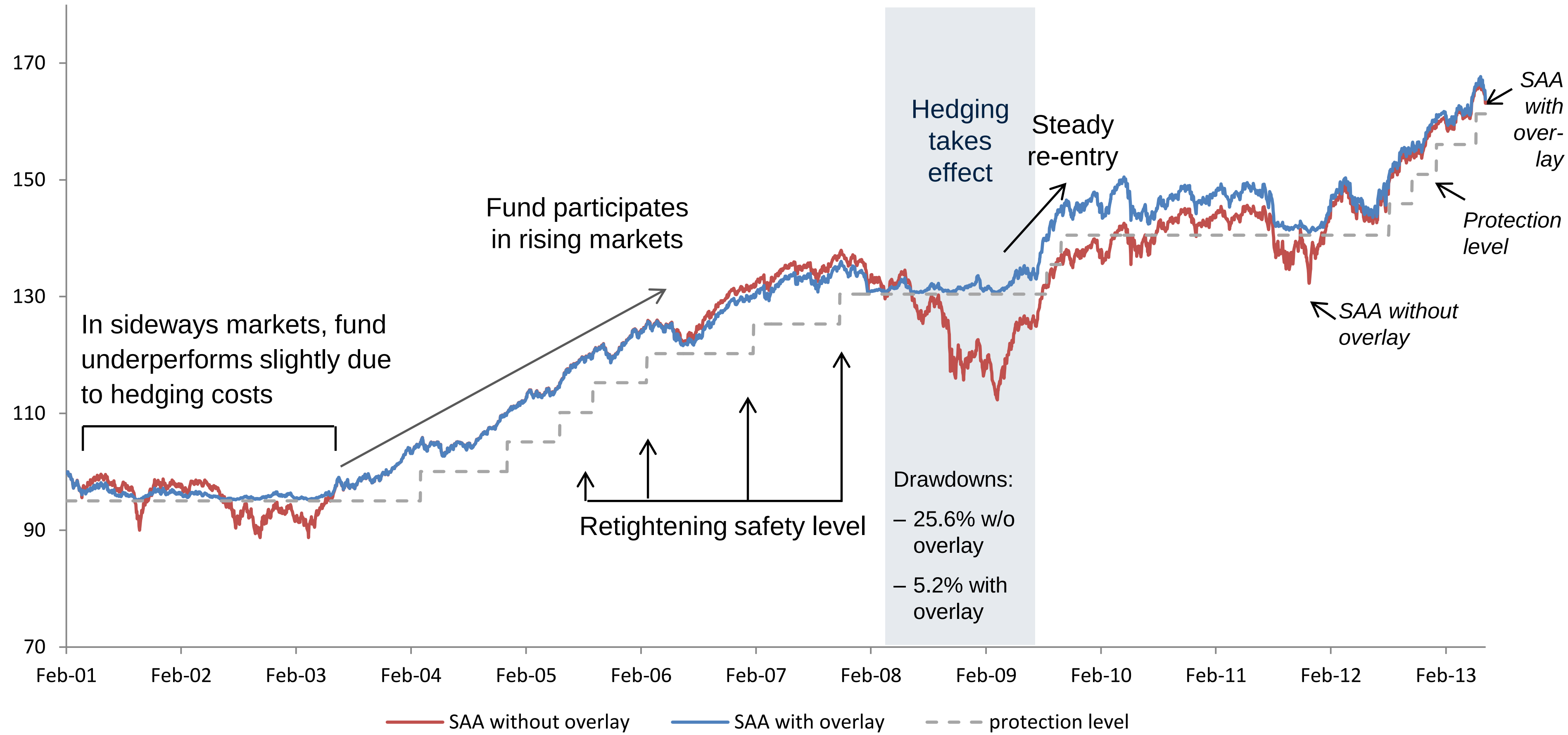

## MSCI World




» The impact of missing out on the best as well as the worst days is significant. Note, that periods of high volatility are clustered, an autocorrelation effect.

Study period since 1995 . Total returns shown are p.a., indices in € unhedged
Source: Deutsche Asset Management. As of March 2016.

# Risk overlay management – How it works over time
## Example: Strategic pension fund portfolio with and without overlay




Benchmark: 30% MSCI EMU (TR), 65% iBoxx Euro Overall Index All Mats., 5% JPMorgan Euro Cash 3 Months. Threshold level for the fund: 95%, whereas the threshold is raised by 5% if the funds is 10% above the threshold. Money market interests assumed to be reflected by JPM 3M EUR Cash. Calculation is after costs, including transaction costs

For illustrative purposes only.

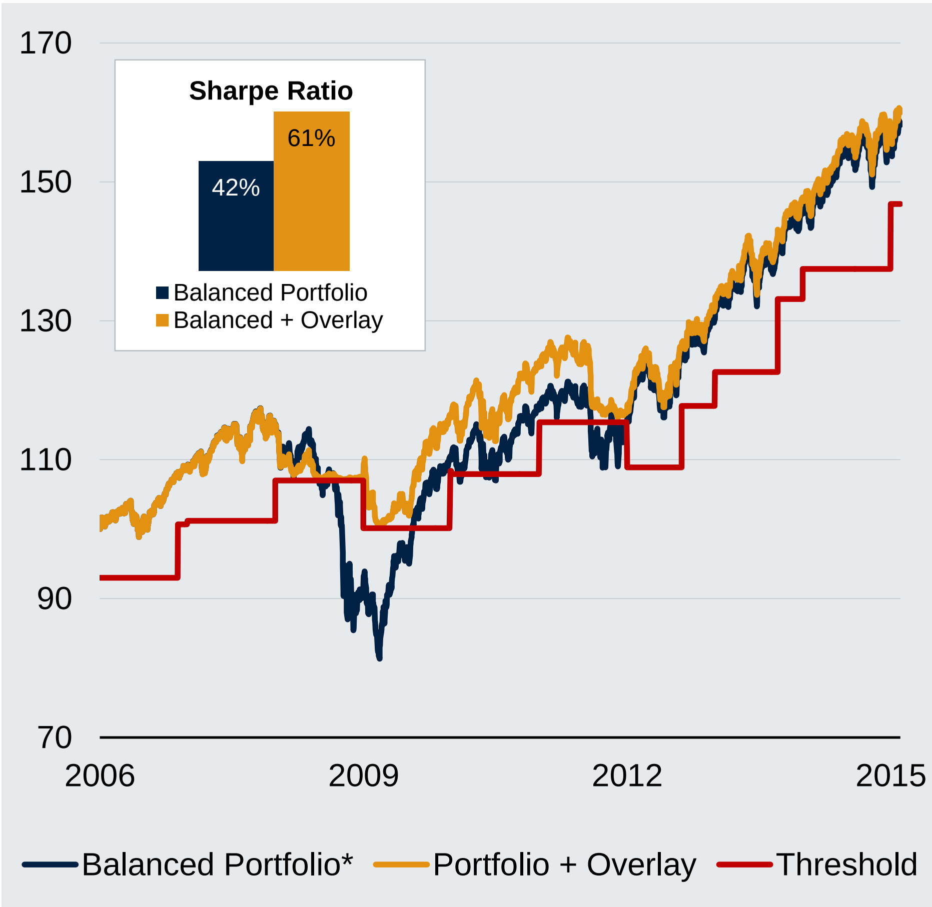
Past performance is not a reliable indicator of future returns.

Source: Deutsche Asset & Wealth Management

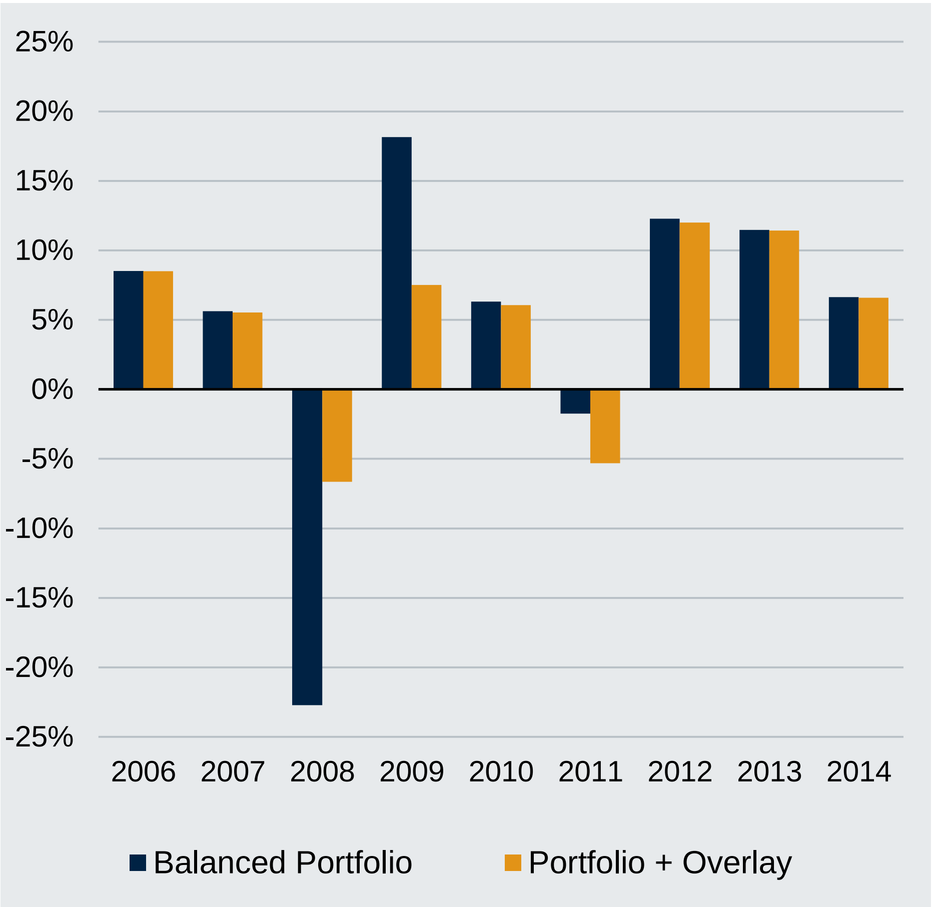
# Risk overlay management

## Increasing risk-return characteristics in the long run

### Balanced strategy with/without overlay*




### Performance year-over-year



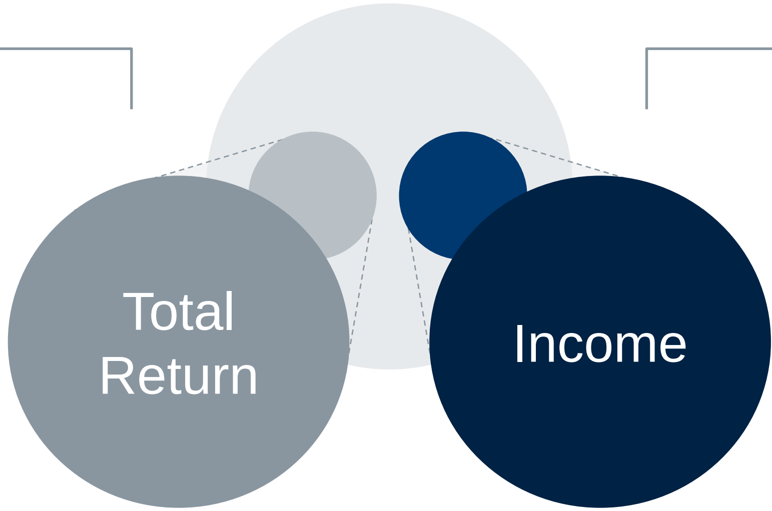

* Calculation based on the Deutsche AWM MAG RIC Germany model portfolio. Risk budget at 7%, with *ratchet* feature.
Past performance is not a reliable indicator of future returns.
Source: Bloomberg Finance L.P., Deutsche Asset & Wealth Management. As of March 2015.

# Outcome-oriented and goal-based Investing

Defining the investment objective is key

# What is your objective? The outcome matters

— „Smooth“ journey
— Maximizing return for a given risk budget
— Short(er) term investment horizon
— Convexity and asymmetry (watch the embedded option premium)




— Harvest long-term multi asset Income Premia
— Include non-traditional Income
— Long(er) term investment horizon
— Risk overlay as „airbag“. Risk-comfort-zone is larger than for TR

***Total-Return vs. Income, both Multi-Asset, but different client objective***

| | |
|---|---|
| **Risk Budgeting**<br>— Risk Allocation | **Equity Income**<br>Traditional |
| MA-Asset **Alpha**<br>— Diversified Multi strategy | **Fixed Income**<br>Traditional |
| Multi-Asset **Beta**<br>— Well diversified across all asset classes, currencies etc | **Non-traditional Income**<br>— Vol premia<br>— Convertibles, RealEstate, etc. |

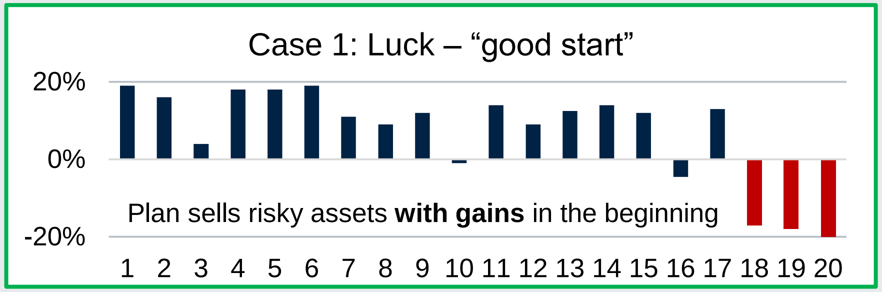
# Objective and framework matters

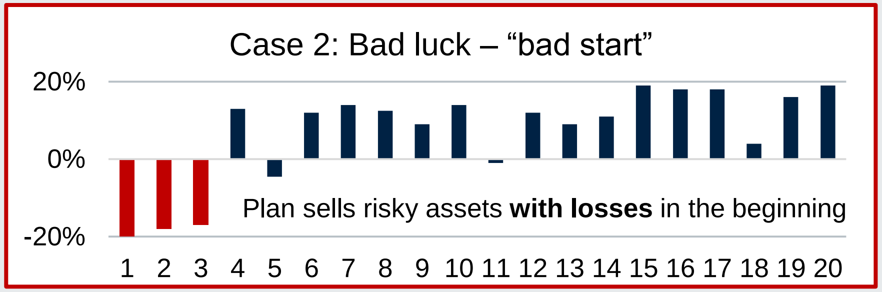
## Example: Decumulation plan under different market scenarios

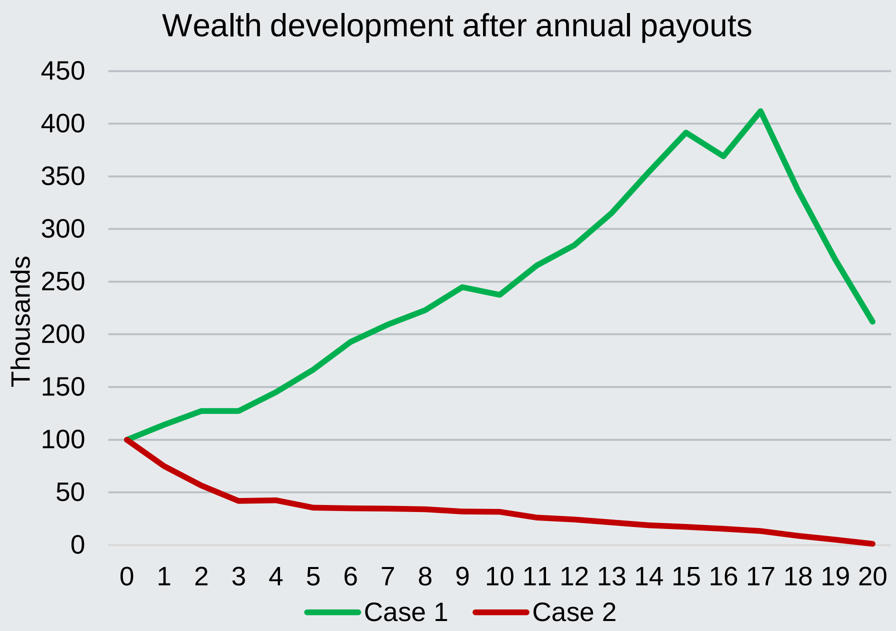
### Payout leads to very different outcome in future wealth … despite the same yield

Example:

- Initial wealth: € 100,000
- Decumulation plan: 100% in equities (7% annual return)
- Payout: € 5,000 per year over 20 years




! The issue of *ordinary* decumulation plans: Bad performance in the beginning can have significant influence on future wealth outcome

» **The Solution: Multi Asset Decumulation**
Proprietary target-oriented risk budgeting eliminates negative timing effects significantly

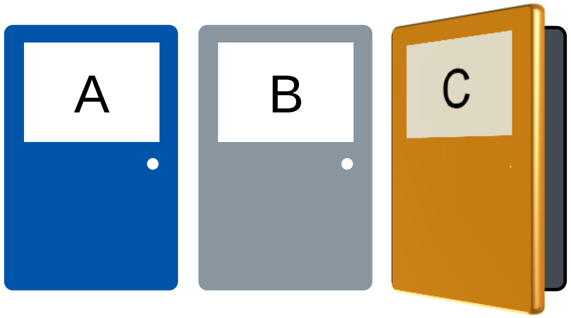
# And finally … a Quiz

Behavioural Finance

# Decision making under uncertainty
## Do investors analyse well?

### The Monty Hall problem

- There are three doors: A, B, and C
- Behind one door is the big prize, the other two are blanks
- You get to select one door
- The game show host opens a losing door that is not yours
- After one losing door has been revealed, **should you switch?**




**Analysis**

! At the start, the chance of selecting the right door is 1/3

! Obviously, picking the right door and then switching makes you lose, and vice versa.

! Imagine a series of 30 games:

- With a 1/3 chance, you would expect to have picked the correct door 10 times while choosing the losing door 20 times
- If you switch every time, you would win 20 times out of 30!

➢ **Switching doors doubles the chance to win!**

# A behavioral objection

- We just saw that switching optimizes your probability of success
- Rational theory economists would say that if you don‘t switch, you are being irrational

**But …**

- Suppose you switch and it turns out that you had the right door to begin with …
- How would you feel?
- Maybe there is more to decision making than pure rationality!
- Real investors are „regret averse“ whereas rational investors are not

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