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Asset Allocation and the Economic Cycle

Trevor Greetham

02 May 2014

What is Tactical Asset Allocation?

Active, uncorrelated, low cost alpha

- Tactical Asset Allocation seeks to add value through deviating from the market exposures in a fund's long term strategic benchmark.
- Alpha is uncorrelated with markets so a tactical overlay rarely adds to risk and a tactical long-short fund is a diversifying equity alternative
- Done badly Tactical Asset Allocation is prone to committee dynamics and behavioural traps, added value can be lumpy and risk control unscientific
- We believe a model-based framework is essential but one with room to express fundamental convictions – with major economies embarking on a re-run of the desynchronised 1990s opportunities abound



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2



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Improving the Process

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 Thought leadership
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 Sessional Meetings
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 Volunteering
 Research
 Shaping the future
 Networking
 Professional support
 Enterprise and risk
 Learned society
 Opportunity
 International profile
 Journals
 Support

Avoiding Committee Dynamics

Tactical models focus attention on what's different

- **Minimal list** of experts in the room, **all with a stake** in the outcome
- **Small core** of final decision makers with **no artificial time pressure**
- **Tactical models** capture what usually works, freeing time for what's different



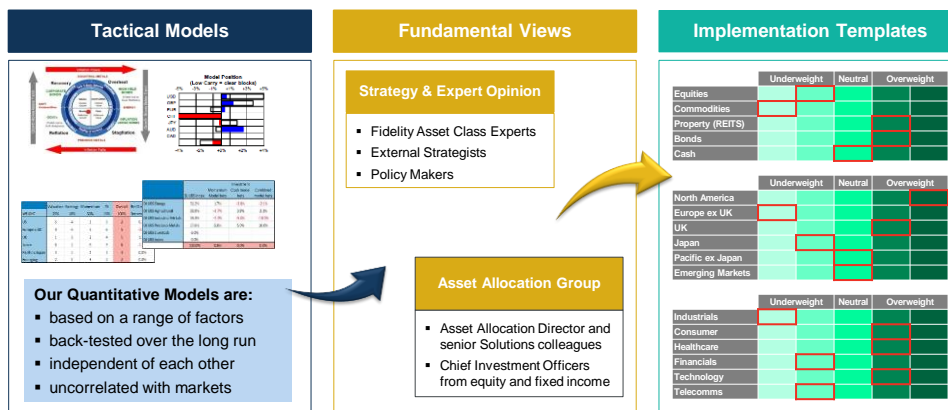
■ Fidelity Solutions members
 ■ Non-Fidelity Solutions members
 Source: Fidelity Worldwide Investment.



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Avoiding Behavioural Traps and Biases

Tactical models provide a rational anchor point



Source: Fidelity Worldwide Investment.

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Dealing with Limited Opportunity Sets

Tactical models increase breadth

- The **Fundamental Law of Active Management** says demonstrate skill, and often:

$$IR = IC \cdot \sqrt{BR}$$

where IR = information ratio
 IC = information coefficient ("skill")
 BR = independent bets per year ("breadth")

- Ensure the tactical decision making process is broad and deep
 - Increase the **number of active instruments** in a portfolio
 - Review decisions frequently**, adjusting position sizes as the odds vary
 - Try to **average in and out** of positions to dampen volatility
 - Diversify over time** with structural views alongside shorter term trades
- Using a variety of **tactical models** helps deliver these outcomes

Source: Fidelity Worldwide Investment.

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Managing Risk

Tactical models create a synthetic return stream

- **Position sizing** can be made consistent with investment objectives on the basis of long run analysis not ad hoc judgement
- Model-based simulation of returns allows us to set **expectations for drawdown and volatility**
- Models can be used to **balance contributions to risk** from different decisions taking into account variations in volatility
- All of this is in addition to the **portfolio oversight** you would get with a pure equity or bond fund



Source: Fidelity Worldwide Investment.



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7



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Models and Backtesting

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Considerations When Building Models

Models need to be intuitive, effective and practical

- Look for models that are **intuitive and make sense**, especially in a framework that allows overrides
- Combine a range of **separately tested, independent models** to improve the information ratio
- Ensure models are **practical and implementable** with little noise and outputs that evolve gradually

Source: Fidelity Worldwide Investment.



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9

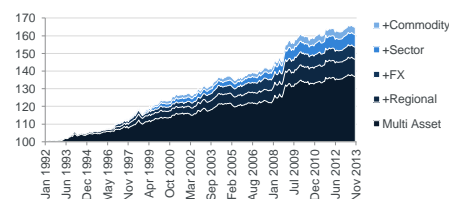
A Wide Range of Decision Sets

Long run backtests uncorrelated with the markets



Correlation since 01/93	Multi Asset	Equity Regions	Equity Sectors	FX	Comdty Sectors	MSCI AC World
Multi Asset	1.0	0.2	0.0	0.1	0.1	-0.2
Regions		1.0	-0.1	0.1	0.0	0.0
Sectors			1.0	0.0	0.0	0.1
FX				1.0	-0.1	0.2
Commodity					1.0	-0.1
MSCI AC World						1.0

Backtested performance of TAA models



Source: Fidelity Worldwide Investment, November 2013. For illustrative purposes only.

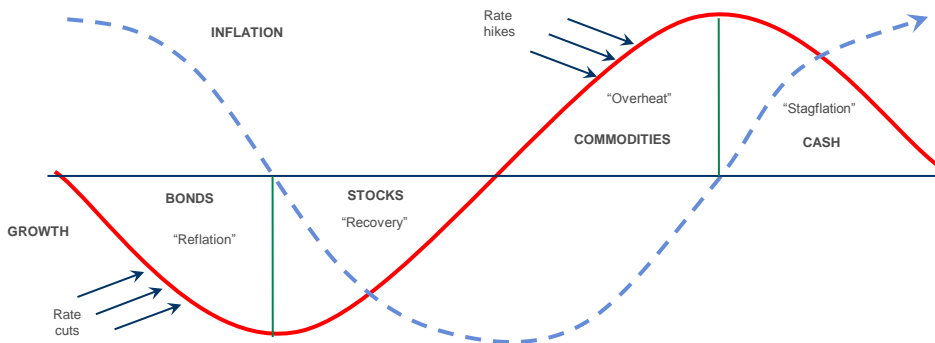


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10

Intuition Behind The Multi Asset Model

Asset classes perform at different stages of the cycle



Source: Fidelity Worldwide Investment, May 2014.

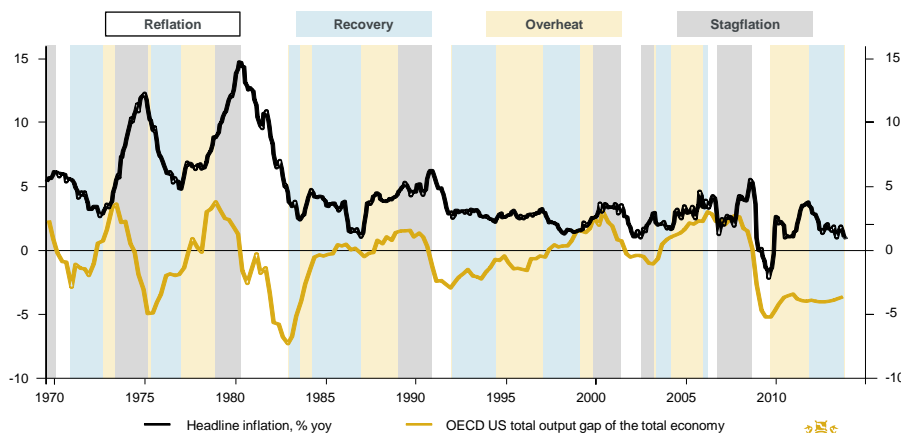


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11

Hindsight Investment Clock Analysis

Cycles in the US economy since the 1970s



Source: Datastream, December 2013.



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12

Long Run Analysis Supports The Intuition

Growth and inflation cycles are key

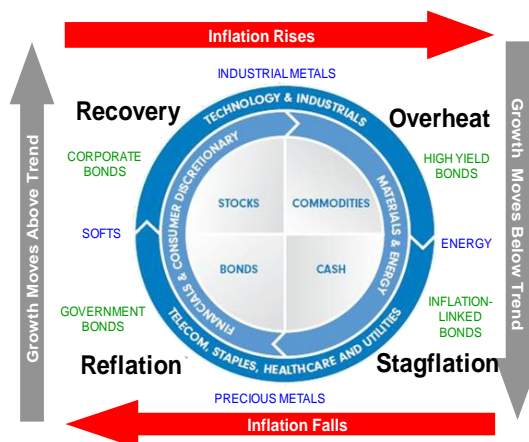
	GROWTH	INFLATION	Bonds	Stocks	Commodities	Cash
Reflation	↓	↓	10.3%	-1.1%	-25.3%	3.5%
Recovery	↑	↓	5.2%	20.3%	-8.4%	1.6%
Overheating	↑	↑	0.7%	6.2%	18.7%	0.3%
Stagflation	↓	↑	-1.3%	-13.5%	32.8%	-0.8%
Average Return			3.2%	5.8%	3.7%	1.0%

Source: Fidelity Worldwide Investment, April 1973-November 2013. This represents the opinion of the Portfolio Manager. Note: A back test is a simulated exercise for illustration purposes only. It is not based on an actual portfolio's performance and should not be relied upon. Past performance is not a reliable indicator of future results. Figures show annualised geometric average US\$ total returns in real terms using the ML U.S. Treasury/Agencies Master index for bonds, S&P 500 Composite for stocks, GSCI Total Return for commodities and 3-Month T-Bills for cash.



The Investment Clock

What usually does best at each stage of the cycle



Source: Fidelity Worldwide Investment, May 2014. For illustrative purposes only. This represents the opinion of the Portfolio Manager.

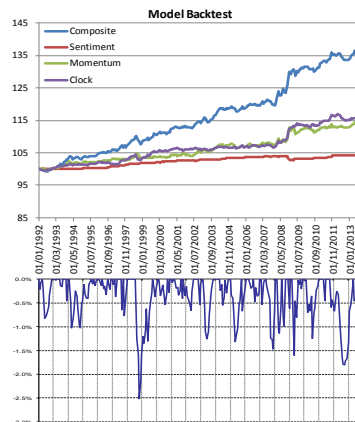


The Multi Asset Model

Combining three factors improves risk-adjusted returns

- Combined approach also includes independent **momentum** and investor **sentiment** models
- Analysis good positive risk adjusted return, consistent added value and limited drawdown (bottom chart)

Investment Clock max bet size	10%
Momentum max bet size	5%
Average active money	7.2
Number of years	21.8
Total Return	29.5%
Total Return p.a.	1.19%
Standard Deviation	1.7%
Information Ratio (ex post)	0.69
Hit rate	60%



Source: Fidelity Worldwide Investment.



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15

Broad Range of Inputs for each Decision

Each component model independently tested

	Fundamental	Momentum	Valuation	Technical
Multi Asset	Investment Clock	Momentum	-	Sentiment and Seasonality
Regional Equity	Earnings revisions	Momentum	Relative Valuation	-
Equity Sector	Investment Clock	Momentum	-	-
FX	Carry	Momentum	Purchasing Power Parity	Risk aversion
Commodity Sector	Investment Clock	Momentum	-	-
Fixed Income Sector	Spread	-	Duration	-

Source: Fidelity Worldwide Investment.



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16

Why We Allow Ourselves to Override Models

A pure quant approach has its drawbacks

*“We were seeing things that were 25-standard deviation moves, several days in a row”,
David Viniar, Chief Financial Officer, Goldman Sachs, August 2007*

- The **investment landscape is always changing** and the regime that applied during a backtest period may no longer apply
- There are geopolitical and policy **events that cannot be modelled** that we should respond to or anticipate based on experience
- There may be **short term considerations** in the timing of trades or **long term themes** we'd also like to exploit
- **Investment judgement** is always required

Source: Fidelity Worldwide Investment.



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17



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Risk-Conscious Implementation

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Example 2: A Diversified Tactical Alpha Fund

Using return streams to balance risk contributions

- **Objectives**
 - Average returns across the cycle of Cash + 5%
 - Expected volatility of 6-8%
- **Investment Process**
 - Blending four tactical decision sets to target equal risk contribution over time
- **Implementation**
 - Long/short positions in liquid instruments including futures, forwards and CFDs
- **Risk Characteristics**
 - Risk management by construction and through volatility cap

Source: Fidelity Worldwide Investment.

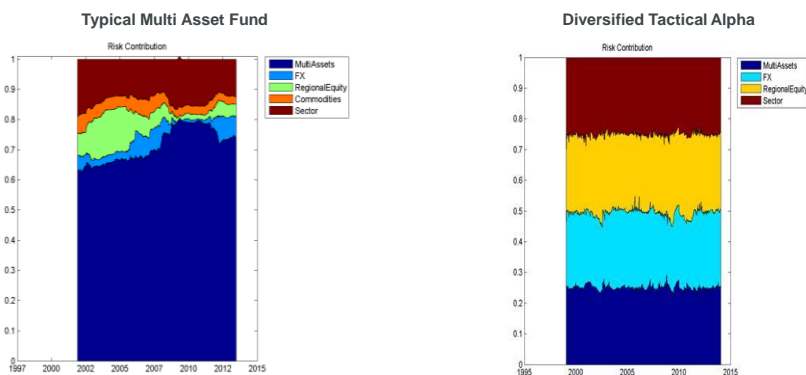


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21

Futures Implementation Can Balance Risk

Flexibility to determine importance of each decision set



Source: Fidelity Worldwide Investment.



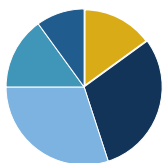
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22

Positions Can Be Scaled

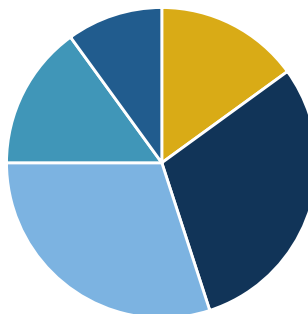
To be consistent with the required return target

Blended Portfolio
Alpha expectation of 1%



- Multi Asset 1.5%
- Regional 3%
- FX 3%
- Sectors 1.5%
- Commodities 1%

Blended & Scaled Portfolio
Alpha expectation of 5%



- Multi Asset 7.5%
- Regional 15%
- FX 15%
- Sectors 7.5%
- Commodities 5%

Source: Fidelity Worldwide Investment.



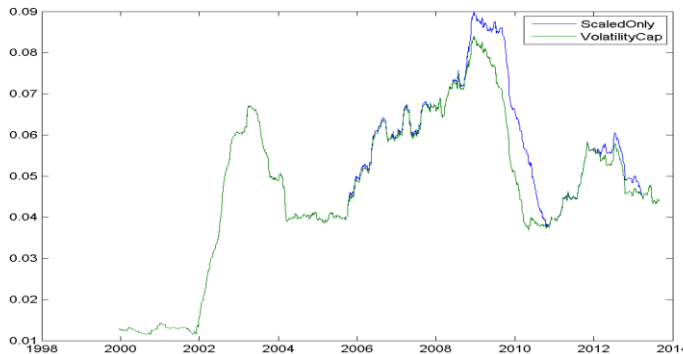
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23

We Actively Cap Volatility

Scaling back when expected volatility is too high

1 Year Ex-Post Volatility showing 7% Vol Cap



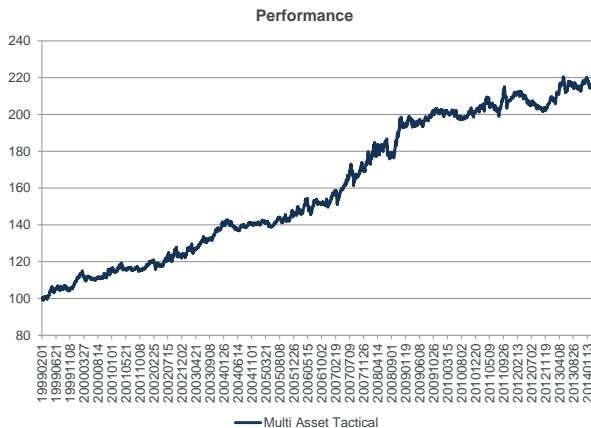
Source: Fidelity Worldwide Investment.



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24

Long Run Backtest Shows good return profile



	Multi Asset Tactical
Number of years	15.7
Total Return	115.5%
Total Return p.a.	5.02%
Standard deviation	5.80%
Information Ratio (ex post)	0.87
Max Drawdown	-6.8%
Drawdown in Alpha Years	1.36

Source: Fidelity Worldwide Investment.



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25

Correlation Near Zero TAA is a strongly diversifying asset

- TAA overlays can **add value without changing the risk characteristics** of a typical multi asset portfolio

	CASH	ESTOXX	ATX	AAA EUR Govt 1-10Y	EUR Covered	EUR NonFin Corp	EUR HY	GBI-EM Gdiv	Diversified TAA
CASH	1.00	-0.20	-0.21	0.08	0.08	-0.23	-0.35	-0.05	0.20
ESTOXX	-0.20	1.00	0.78	-0.41	-0.30	0.11	0.66	0.32	-0.14
ATX	-0.21	0.78	1.00	-0.36	-0.22	0.22	0.76	0.39	-0.18
AAA EUR Govt 1-10Y	0.08	-0.41	-0.36	1.00	0.93	0.62	-0.28	0.20	0.01
EUR Covered	0.08	-0.30	-0.22	0.93	1.00	0.68	-0.09	0.26	-0.02
EUR NonFin Corp	-0.23	0.11	0.22	0.62	0.68	1.00	0.48	0.43	-0.23
EUR HY	-0.35	0.66	0.76	-0.28	-0.09	0.48	1.00	0.36	-0.27
GBI-EM Gdiv	-0.05	0.32	0.39	0.20	0.26	0.43	0.36	1.00	-0.12
Diversified TAA	0.20	-0.14	-0.18	0.01	-0.02	-0.23	-0.27	-0.12	1.00

Source: Fidelity Worldwide Investment.



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26

Correlation Near Zero

TAA is an Equity alternative

- Replacing equity assets with a tactical asset allocation fund can **reduce risk without impacting returns**

	Cash Exposure	European Equities	Austrian Equities	Euro Government Bond	Euro Covered Bond	Euro Non-Financial Corporates	Euro High Yield	EM Debt-Local Currency	Diversified TAA	Expected Volatility	Expected Return	Probability Rolling 1Y Max Drawdown < 5%
Cash	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	3.8%	100%
European Equities	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.0%	7.8%	9%
Austrian Equities	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	23.5%	7.8%	3%
Euro Government Bond	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	4.5%	99%
Euro Covered Bond	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	2.5%	4.8%	99%
Euro Non-Financial Corporate Bond	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	3.5%	5.5%	98%
Euro High Yield	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	12.0%	6.5%	22%
Emerging Market Debt - Local Currency	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	9.0%	6.5%	43%
Policy Benchmark	0.0%	17.5%	7.5%	35.0%	10.0%	10.0%	10.0%	10.0%	0.0%	5.7%	5.8%	79%
Suggested Benchmark	15.0%	2.5%	7.5%	35.0%	10.0%	10.0%	10.0%	10.0%	0.0%	3.7%	5.2%	97%
15% from European Equities to Diversified TAA Exposure	0.0%	2.5%	7.5%	35.0%	10.0%	10.0%	10.0%	10.0%	15.0%	3.6%	6.0%	98%

This analysis was performed on a forward looking basis.

Fund benchmark is composed of 25% Equities: 17.5% European Equities (Euro Stoxx 50); 7.5% Austrian Equities (ATX);

75% Fixed Income: 35% Government Bond (Barclays Euro Treasury 1-10 years AAA); 10% Covered Bond (Custom Blend of Barclays Euro Covered Bond

Indices for: Austria, Germany, Netherlands, Finland, Norway, Denmark and Sweden); 10% Non-Financial Corporate Bonds - (BAML Euro Non-Financial);

10% Euro High Yield (BAML Euro High Yield); 10% (JPM GBI-EM Global Diversified unhedged in Euro)

One Month EURIBOR Rate was used as the Cash Benchmark.



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27



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Current Views: Back to the 90s

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Big Picture Themes

The post financial crisis world creates opportunity



Disinflationary Recovery is Good for Stocks

- Similarities to the bull market of the 1990s with US tightening and China slowing



The 'Great Exit' is bad for bonds and commodities

- Gradual normalisation of US rates a headwind for bonds, REITs and commodities



Regional divergences matter

- US and Japan best placed to do well with emerging markets under pressure

Source: Fidelity Worldwide Investment, May 2014. This represents the opinion of the Portfolio Manager.



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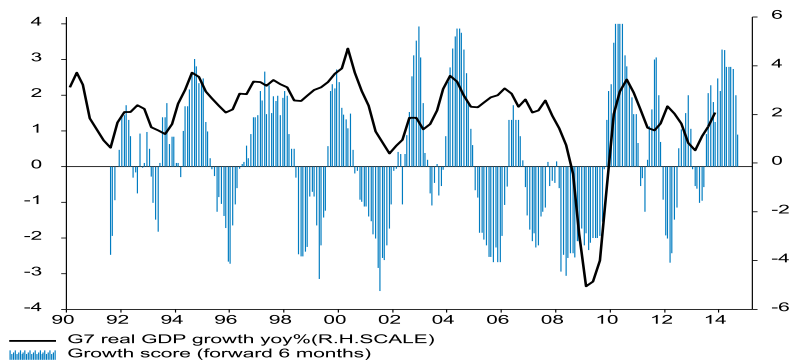
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29

Global Growth Outlook Positive

A temporary slowdown

Global growth scorecard, forward 6 months



Source: Datastream. GDP % to Q3 2013 (Fidelity Solutions' calculations). Note: the Lead Indicator (global growth score) is a diffusion index which level varies between +4 and -4. It is pushed forward 6 months on this chart.



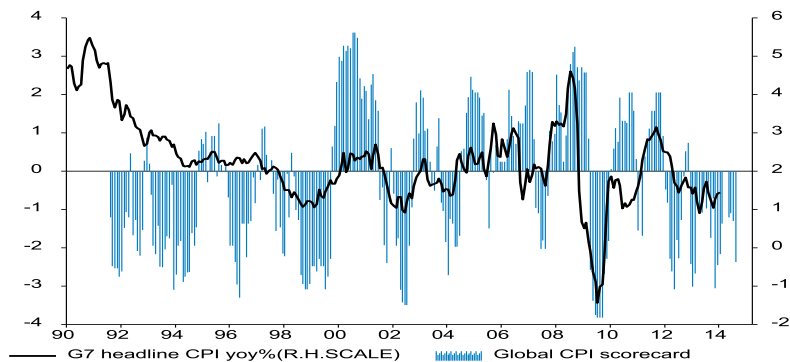
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Muted Inflation Outlook Back to the 1990s

Global growth scorecard, forward 6 months



Source: Datastream, CPI% to January 2014 (Fidelity Solutions calculations). Note: the Lead Indicator (global growth score) is a diffusion index which level varies between +4 and -4. It is pushed forward 6 months on this chart.



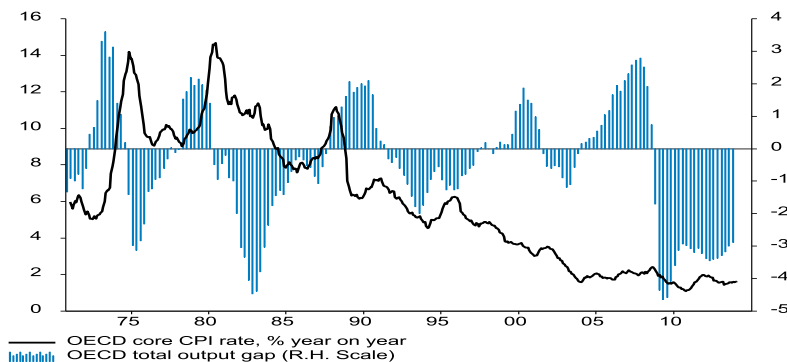
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Ample Spare Capacity in Major Economies Back to the 1990s

OECD Total Output Gap Estimate and G7 Core Inflation Rate



Source: Datastream, April 2014.



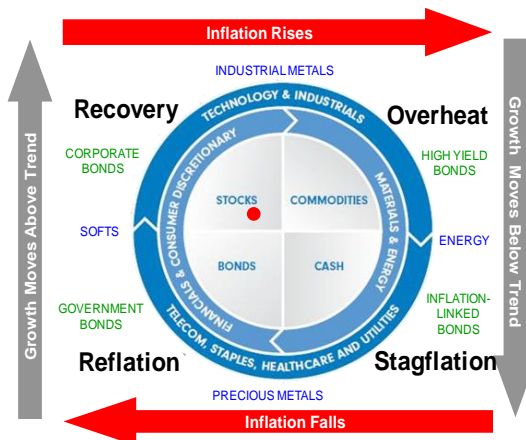
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The Investment Clock

With current model portfolio position shown



Source: Fidelity Worldwide Investment, March 2014. For illustrative purposes only. This represents the opinion of the Portfolio Manager.

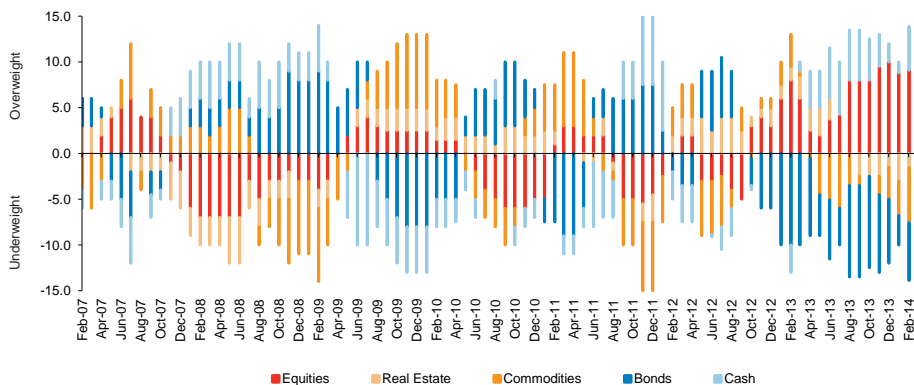


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33

Multi Asset Positions

Overweight equities since September 2012



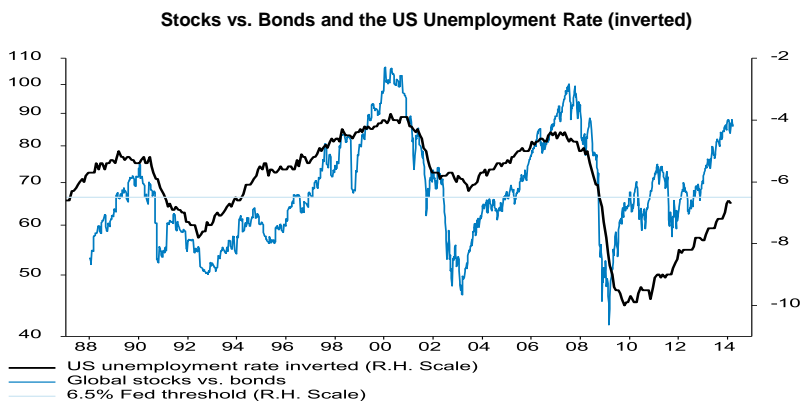
Source: Fidelity Worldwide Investment, 31 March 2014. FIF MASF (FIF Multi-Asset Strategic Fund) launch date: 22 January 2007.



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34

Stocks Beat Bonds While Growth is Strong Falling US unemployment rate is a positive



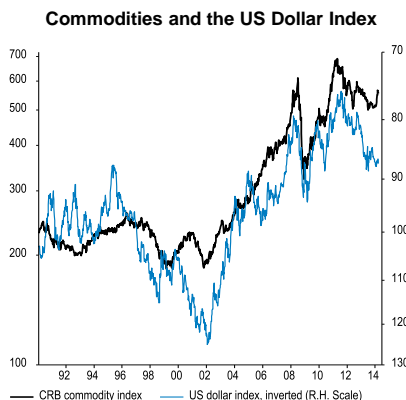
Source: Datastream, March 2014.



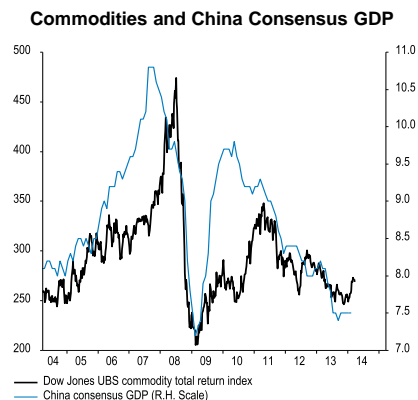
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35

Commodities Face Fundamental Headwinds Dollar strength, excess capacity, slowdown in China



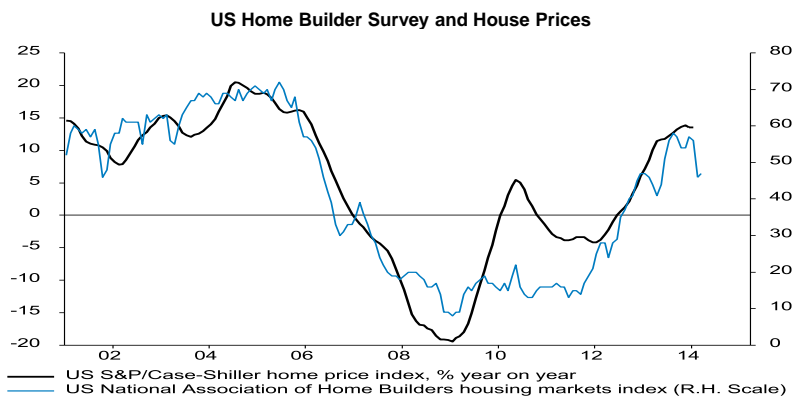
Source: Datastream, April 2014.



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36

Self-Sustaining US Recovery Driven by housing



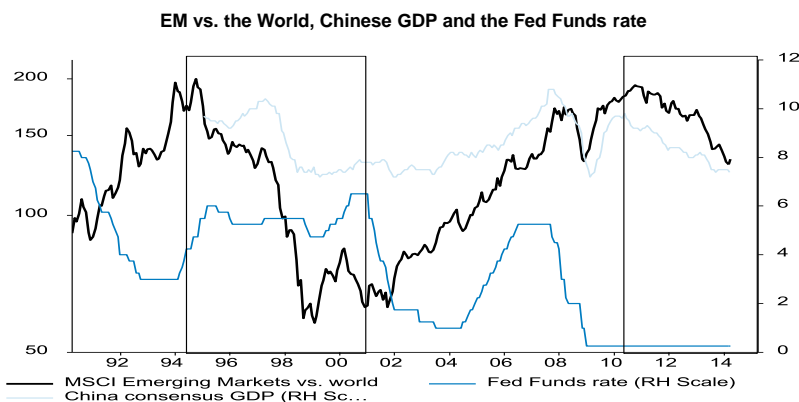
Source: Datastream, April 2014.



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37

Fed Hikes and Weak China in Prospect A bad combination for Emerging Markets



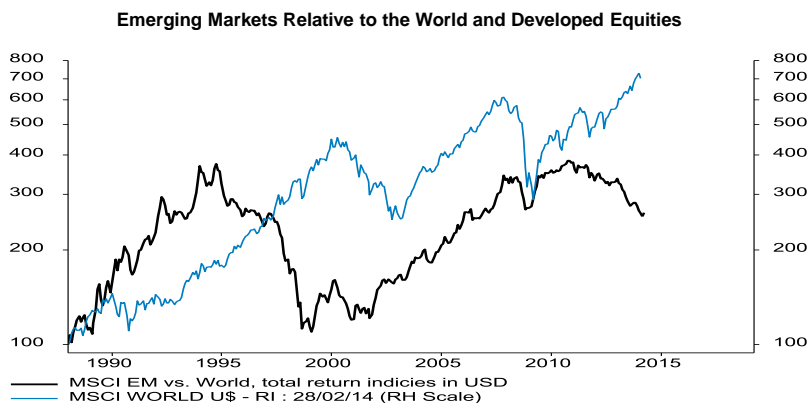
Source: Datastream, April 2014.



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38

Developed and Emerging Markets De-Couple As in the 1990s



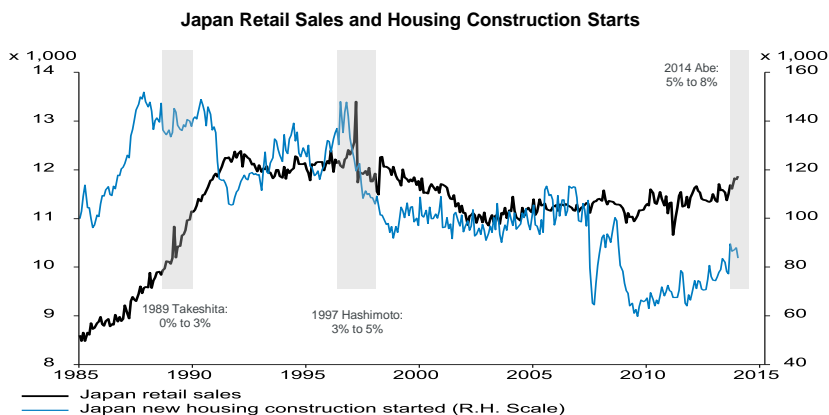
Source: Datastream, April 2014.



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39

Japan's Sales Tax Rise A Mistake But further offsetting policy actions are likely



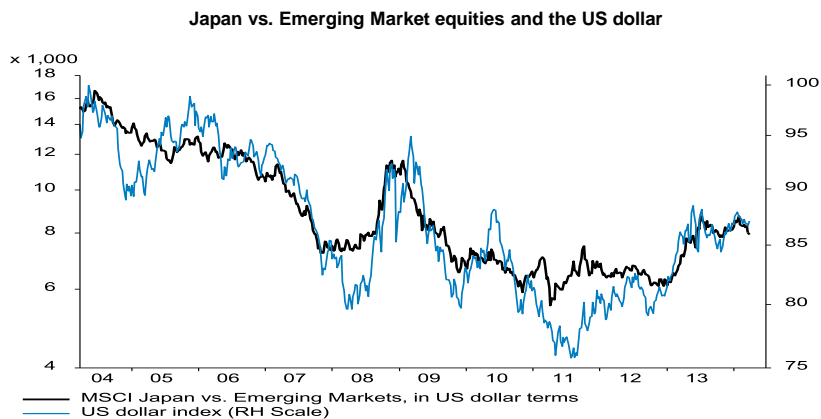
Source: Datastream, April 2014.



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40

Japanese the Best Play on Global Growth When the dollar is strong



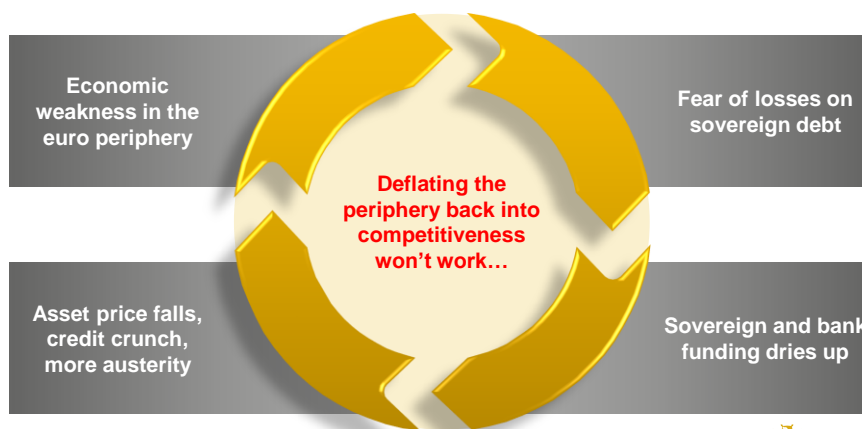
Source: Datastream, April 2014. Note: rebased to 100 and on a logarithmic scale.



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41

The Euro Crisis Is In Remission Only while growth remains strong we suspect



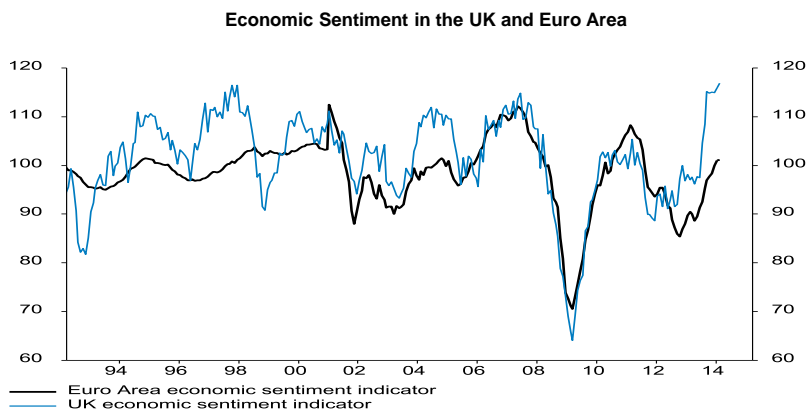
Source: Fidelity Worldwide Investment, May 2014. This represents the opinion of the portfolio manager.



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42

European Economies Are Recovering But the UK is booming!



Source: Datastream, April 2014.

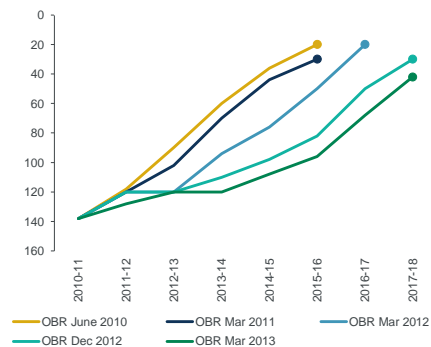


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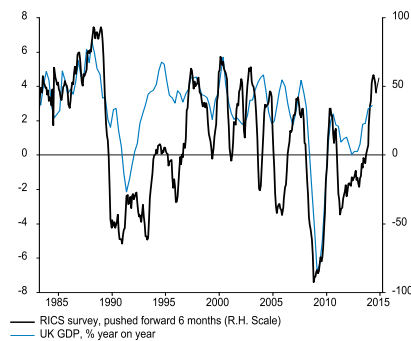
43

Forget Austerity, Buy A House! Strong growth likely until the 2015 Election

OBR Budget Deficit Forecasts – During Rolling Austerity



UK House Prices and GDP
RICS Survey as UK GDP Lead Indicator



Source: The Financial Times, March 2013 (left), Datastream, April 2014 (right). This represents the opinion of the portfolio manager.



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44

Current Positions

Long developed equities and dollar in line with models

	Overweight	Neutral	Underweight
Multi Asset	Equities, High Yield Bonds	Investment Grade Bonds	Government Bonds, Property (REITs), Commodities
Equity Regions	USA, Japan	Mid cap UK	Emerging Markets, Asia Pacific, Europe ex UK, UK Large cap
Equity Sectors	Consumer Discretionary, Healthcare, Technology, Industrials	Financials	Utilities, Consumer Staples, Energy, Materials
Currencies	US dollar, Pound Sterling	Euro, Australian dollar	Japanese yen, Swiss franc, Canadian dollar
Commodity Sectors	Agriculture	Industrial Metals, Energy	Precious Metals

Source: Fidelity Worldwide Investment, May 2014. This represents the opinion of the Portfolio Manager.



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Summary

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What is Tactical Asset Allocation?

A valuable investment discipline but process is critical

- Tactical Asset Allocation is a low cost and diversifying source of added value that can play a valuable role in institutional portfolios
- Good tactical asset allocation is not just a collection of long and short trade ideas
- A robust investment process is grounded in quantitative and macro-economic analysis and it should draw on the fundamental convictions of the most experienced investors

Source: Fidelity Worldwide Investment.



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47

Asset Allocation Views

Keeping in touch

Clockwise
Asset allocation perspectives from Fidelity's Investment Solutions Group

Disinflation is Good News for Stocks

Fidelity's Investment Solutions Group highlights the benefits of disinflation for stocks, particularly in the context of the US economy. The article discusses how the Fed's actions to reduce inflation are likely to be followed by a period of disinflation, which is good for stocks. It also notes that the Fed's actions are likely to be followed by a period of disinflation, which is good for stocks.

Key Points:

- Disinflation is good news for stocks, particularly in the context of the US economy.
- The Fed's actions to reduce inflation are likely to be followed by a period of disinflation, which is good for stocks.
- The Fed's actions are likely to be followed by a period of disinflation, which is good for stocks.

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Related Links:

- US house prices - hot but below their 2008 peak

Source: Fidelity Worldwide Investment.



02 May 2014

48



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Appendix

Artise
 Sponsorship
 Thought leadership
 Progress
 Community
 Sessional Meetings
 Education
 Working parties
 Volunteering
 Research
 Shaping the future
 Networking
 Professional support
 Enterprise and risk
 Learned society
 Opportunity
 International profile
 Journals
 Support

Head of Tactical Asset Allocation

Develops and implements tactical strategies



Trevor Greetham
 Based in: London
 Investment
 experience since:
 1992

Responsibilities

Asset Allocation Director and Portfolio Manager 2006 – present

Previous Experience

Director of Asset Allocation – Merrill Lynch

Thomson Reuters Extel Survey ranked his team no.1 for Global Strategy research in 2000. He was individually ranked as the no.1 Global Strategy specialist in Europe in 2004 and no.2 in 2005. 1995 – 2005

Qualified Actuary, Assistant Fund Manager, asset allocation and UK equities – Provident Mutual 1990 – 1995

Education

MA in Mathematics, Cambridge
 Fellow of the Institute of Actuaries

"With major world economies embarking on a re-run of the desynchronised 1990s, opportunities to add value through tactical asset allocation abound. A robust approach combines macroeconomic analysis, quantitative research and investment experience with risk-conscious implementation."

Source: Fidelity Worldwide Investment, May 2014.

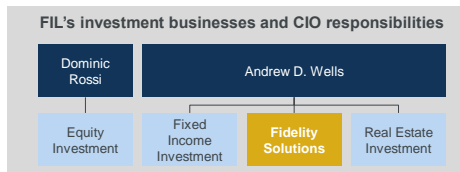
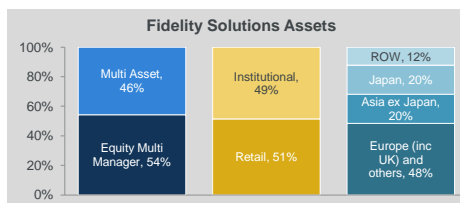


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Fidelity Solutions

An established player in retail and institutional space

- Fidelity Solutions
 - 23 Investment Professionals
 - 300 combined years experience
 - £28bn in AUM globally
- Experts in:
 - Solutions Design
 - Tactical Asset Allocation
 - Manager & Instrument Selection
 - Risk Management
- Provider of investment products and services



Source: Fidelity Worldwide Investment, 31 March 2014.



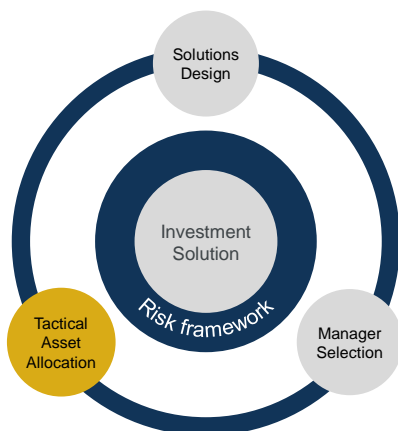
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51

Fidelity Solutions

Three areas of investment expertise



Source: Fidelity Worldwide Investment.

Solutions Design: Delivering client outcomes

- Which asset classes?
- What is my benchmark?
- How should my portfolio change through time?

Tactical Asset Allocation: Taking advantage of shorter term opportunities

- What's happening in the economy?
- Which asset classes now?
- Which region?

Manager Selection: Selecting the best talent from within and outside of Fidelity

- Which instruments give me the best exposure?
- Which fund managers should I own?
- How should I tilt between styles?
























































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



02 May 2014

52

Fidelity Solutions

Global team

 Andrew D. Wells Global CIO of Fixed Income, Fidelity Solutions and Real Estate							
 James Bateman Head of Portfolio Management					 Martin Smith Head of Investment Operations		
Portfolio Management	Tactical Asset Allocation	Equity Research	FI & Alternatives Research	Solutions Design	Product Management	Operations	Solutions Implementation
 Avesha Akbar Portfolio Manager	 Trevor Greenham Portfolio Manager and Asset Allocation Director	 Nick Peters Portfolio Manager and Team Leader	 Eugene Philalithis Portfolio Manager and Team Leader	 Joo Hee Lee Portfolio Manager and Team Leader	 Katie Roberts Product Director	 Brian Mitchell Investment Operations Manager	 Shilan Leach Head of Solutions Implementation
 Pek Ng Portfolio Manager	 Kevin O'Nolan Assistant Portfolio Manager	 Ricardo Muscio Research Analyst	 George Elstathopoulos Assistant Portfolio Manager	 Hiroki Hashimoto Research Associate	 Christian Goldsmith Product Director	 Simon Maggs Quantitative Analyst	 Richard Bannister Solutions Implementation Analyst
 Rita Grewal Portfolio Manager	 Charlotte Harington Research Associate	 Eileen Rowsome Research Analyst	 Michael Costa Research Analyst	 Mark Hoyle Quant Technology (Shared Resource)	 Charles-Hend Kerkhove Product Specialist	 Alex Allsop Data Analyst	 Peter Holland Solutions Implementation Analyst
 David Ganozzi Portfolio Manager	 TBA Economist	 Ian Samson Research Associate	 Cataldo Azzariti Research Associate	 Matt McDonnell Quant Developer (Shared Resource)	 James Pearson Product Specialist	 Alicia Logue Data Analyst	 Aaron Monk Solutions Implementation Analyst
 Keiko Mitsuada Portfolio Manager		 Tadashi Shirai Research Analyst	 Tigran Manukyan Research Associate	 TBA Research Analyst	 Leslie Kiddoo Investment Writer	 Rory Bourne Data Analyst	 Sonel Patel Solutions Implementation Analyst
			 TBA Research Analyst	 TBA Quant Specialist	 Lucy Wallcraft Product Associate	 TBA Risk Analyst	 Fadia Ramjaun Solutions Implementation Analyst
					 Leone Kleyn Presentation Specialist		 Gemma Roberts Data Analyst
					 Mamata Singh Senior Product Specialist		 Christophe Fassi Portfolio Services Analyst
					 Shipri Kansal Product Specialist		
					 Graduate		

KEY:
 Operating Committee
 France based
 Hong Kong based
 India based
 London based
 Singapore based
 Tokyo based

Source: Fidelity Worldwide Investment, May 2014.

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53

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54



Questions



Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

