



**Dynamic Asset Liability Management in Today's Complex Economic Development**

- Peter Ryan-Kane, Managing Director, Head of Portfolio Advisory, Asia Pacific
- Keith Walter, South East Asia Market Leader & Director Risk Consulting and Software
- 16 October 2013



**Agenda**

- The world out there – it matters
- Insurance realities – managing the business
- Risk....oh no....
- Measuring things
- We need to invest?
- And Eat....

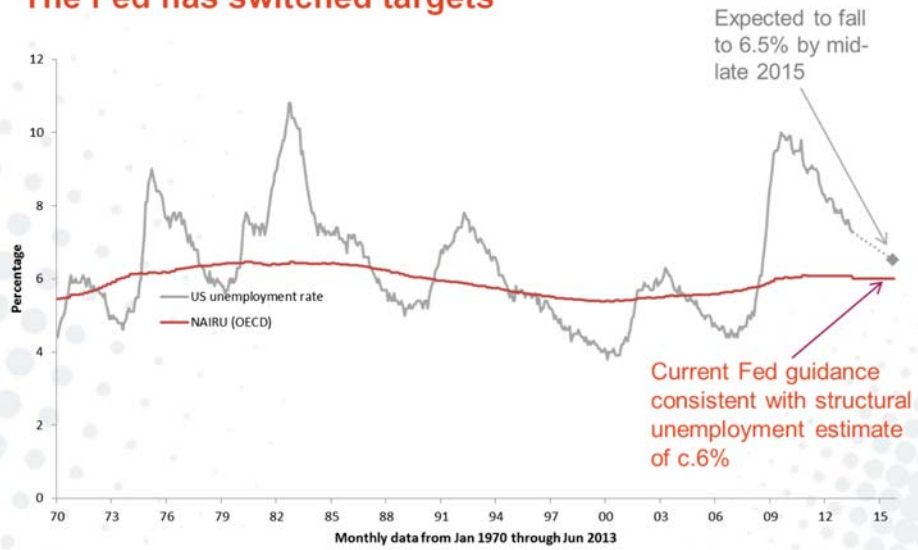


Background – The world out there...



© 2013 Towers Watson. All rights reserved.

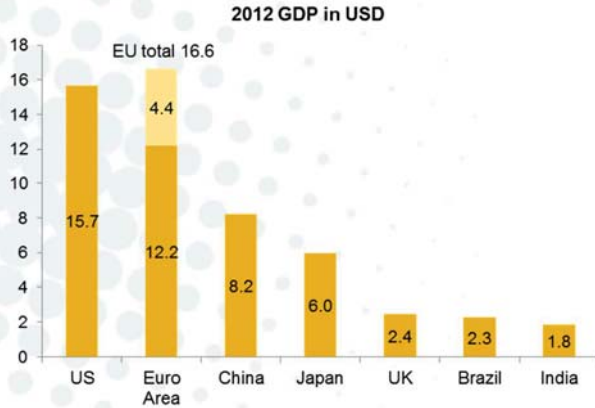
The Fed has switched targets



© 2013 Towers Watson. All rights reserved.

## Eurozone scenarios – anything from bad to *badder*

The Eurozone is the world's second largest economy



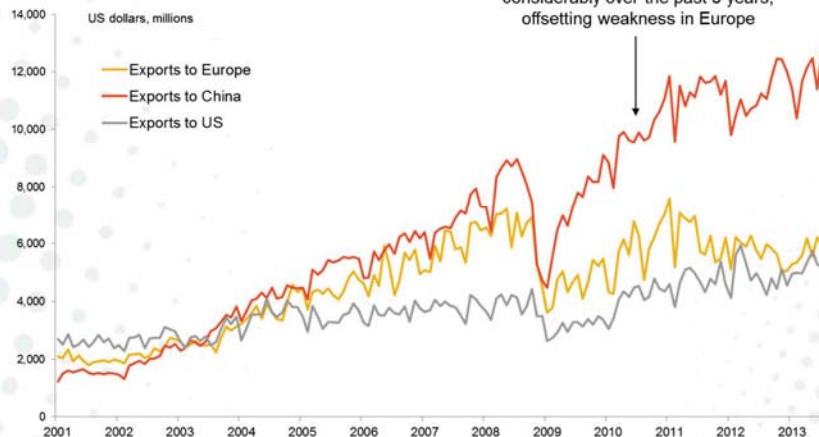
© 2013 Towers Watson. All rights reserved.

Scenario	Indicative probability
Goldilocks: Euro survives with rapid resolution	0-5%
Base case: Euro survives	40-60%
Orderly small peripheral default and exit, residual bloc survives	20-30%
Unilateral core exit	0-5%
Worst case: Full dissolution	5-10%

Level of economic / market stress: Low (top), High (bottom)

## In Asia there is a shifting focus on greater intra regional trade with a reduced reliance on Chinese growth

Korean export destinations



Source: Bloomberg, Towers Watson

© 2013 Towers Watson. All rights reserved.

## But China is very difficult to forecast

Certain indicators show improvement, while others are less favourable.

Indicators	Period	Previous 3 month average	Previous	Latest	Previous vs 3ma	Latest vs previous month
<b>Domestic Demand</b>						
Retail Sales (% y/y)	Jun	12.80	12.90	13.30	stronger	stronger
Consumer Confidence	Jun	104.8	99.0	97.0	weaker	weaker
Macroeconomic Climate leading index	May	100.3	99.6	99.6	weaker	similar
<b>Production and Trade</b>						
NBS Mfg. PMI: New Orders	Jun	51.37	51.80	50.40	stronger	weaker
China Manufacturing PMI	Jun	50.53	50.80	50.10	stronger	weaker
<b>Housing</b>						
Existing Home sales, thous, sa	Jun	4953	5140	5080	stronger	weaker
Housing Starts, thou, sa	Jun	942	928	836	weaker	weaker
Building permits, thous, sa	Jun	949	985	911	stronger	weaker
<b>Employment</b>						
Employment (thousands persons)	Feb	91427	NA	95574	NA	NA
<b>Credit</b>						
M2 Growth (y/y)	Jun	15.6	15.8	14.0	stronger	weaker
Household Consumption Loans (% y/y)	Jun	21.3	23.9	24.3	stronger	stronger

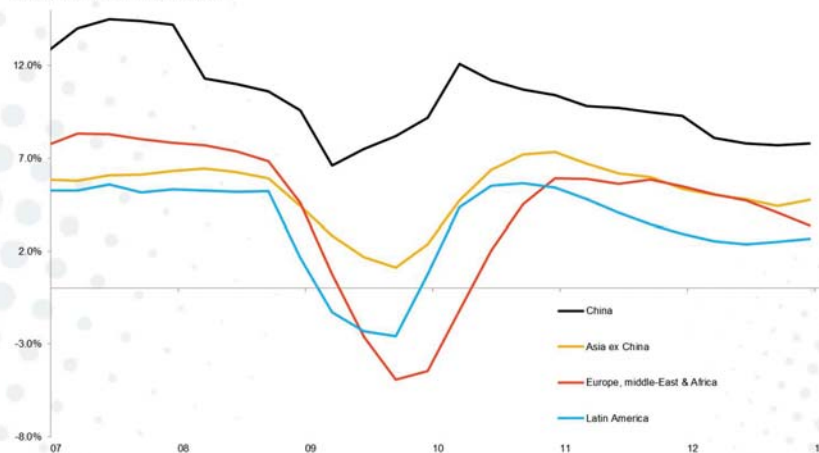
Source: Thomson, Towers Watson

© 2013 Towers Watson. All rights reserved.

## Emerging market growth overview

Emerging Asian and Latin American GDP rebounds from low levels, China stabilises, and European-focused markets continue to suffer

Year on year RGDP growth, weighted average\*

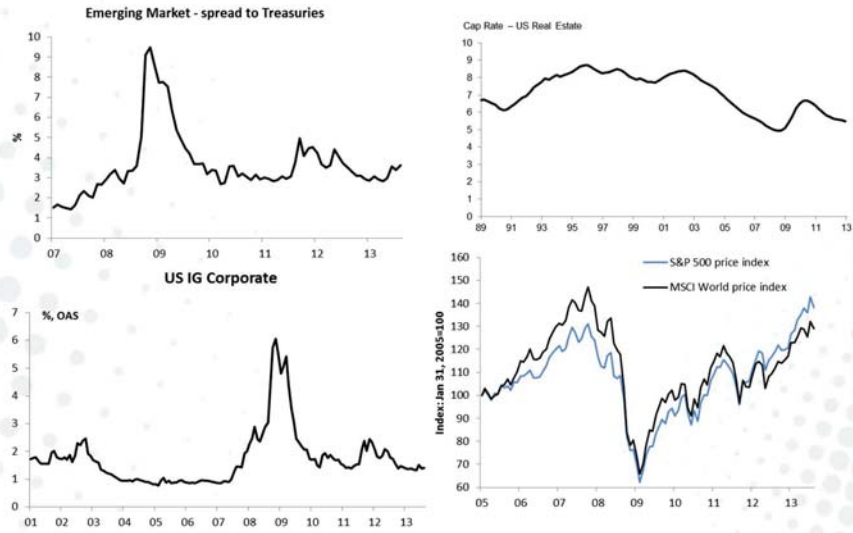


Source: Thomson, IMF, Towers Watson

\* Countries: India, Indonesia, Korea, Malaysia, Thailand; Poland, Russia, South Africa, Turkey; Brazil, Chile, Colombia, Mexico, Peru.

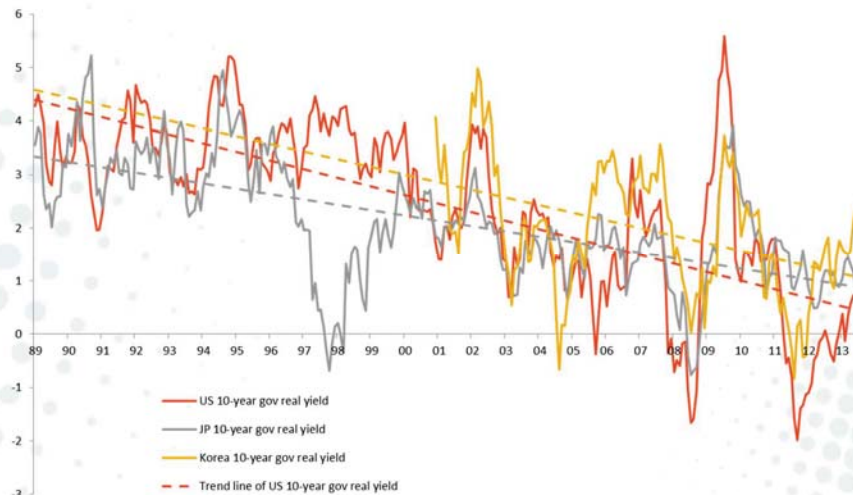
© 2013 Towers Watson. All rights reserved.

## It's working Ben...Impact of Fed policy



© 2013 Towers Watson. All rights reserved.

## Trends of government bond 10-year real yields since 1989



Source: Bloomberg, Towers Watson

© 2013 Towers Watson. All rights reserved.

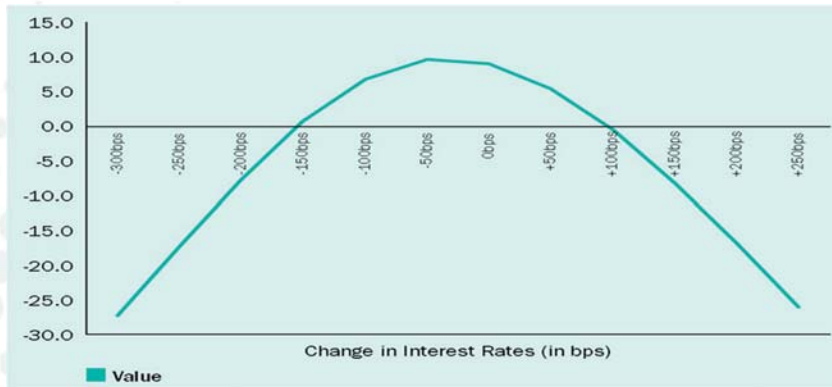


Insurance realities...

Opportunities and limitations

© 2013 Towers Watson. All rights reserved.

### Life Insurance as a Short Straddle

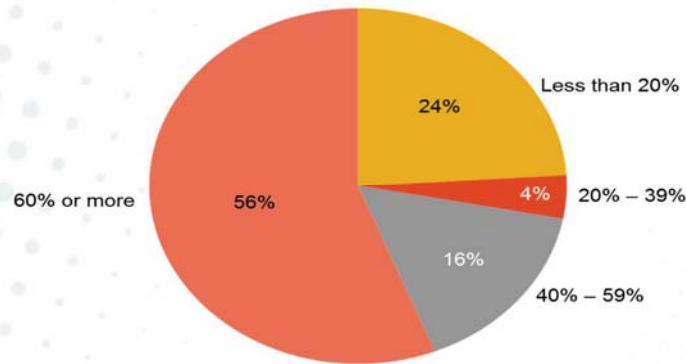


- Due to guarantees and policyholder optionality on life insurance products, insurers are adversely affected by very low and very high interest rates (or a sharp spike in rates)
- Life insurers have taken a bet that interest rates might move by a little, but not by a lot

© 2013 Towers Watson. All rights reserved.

## Results from recent TW CFO Survey show the reason for concern

What portion of your total interest-sensitive life insurance block (measured by account value) currently has the credited rate set to its minimum guaranteed rate?



Base: n = 25.

© 2013 Towers Watson. All rights reserved.

## Impact of changes in interest rates

Low Interest rates	High Interest rates
<ul style="list-style-type: none"> <li>• Reduced bond returns</li> <li>• Insurers lock-in unattractive rates</li> <li>• Reinvestment risk is an issue for markets without a liquid long-term bond market</li> <li>• Crediting rates may hit the minimum guarantee rate</li> <li>• Eroded profit margins</li> <li>• Liabilities increase (offset by rise in bond values)</li> </ul>	<ul style="list-style-type: none"> <li>• Increase crediting rates or face surrenders</li> <li>• Higher crediting rates result in lower spread earned</li> <li>• Surrenders result in negative cashflows and potentially market losses</li> <li>• Convexity risk</li> </ul>

© 2013 Towers Watson. All rights reserved.

## Insurance Business Realities

### MANAGE FOR SUCCESS

- Product design
- Adjustment mechanisms
- Client suitability
- Benefit illustration
- Risk appetite and product mix
- **Crediting strategies & investment of new business premiums**



### MAKE IT *Dynamic*



Timely response to market opportunities and changing conditions

### *Dynamic* ALM – Taking Risks... oh no...





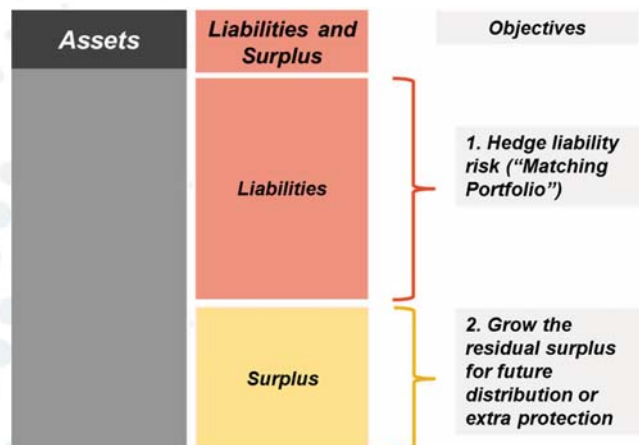
## Asset-liability, not assets and liability

Long-term investment strategy (strategic asset allocation) should be developed with a defined set of objectives in mind and based on the liability profile of the business.



© 2013 Towers Watson. All rights reserved.

## Balance Sheet View – A starting point



*"It's not that simple. The real world introduces risk...deviations or uncertainty in meeting the objectives"*

© 2013 Towers Watson. All rights reserved.

## Risk View – Risk tolerance and budgeting

### Risk Tolerance

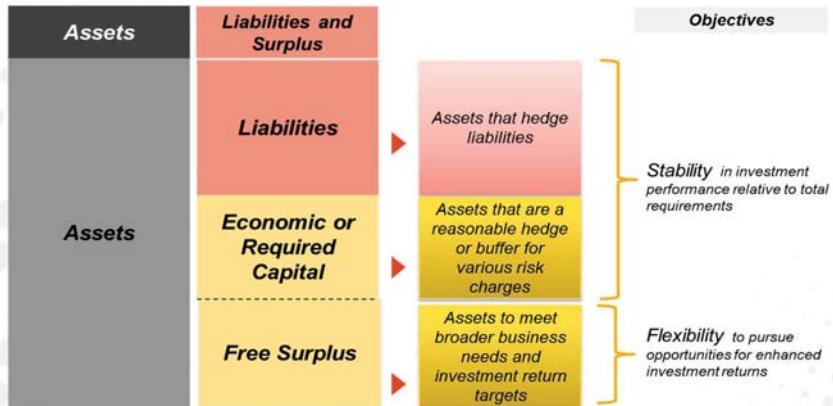
*“the acceptable level of **deviations** or **uncertainty** in meeting the objectives”*

### Risk Budgeting

*“a quantitative approach to the **allocation of risk**”*



## Balance Sheet View - Revisited



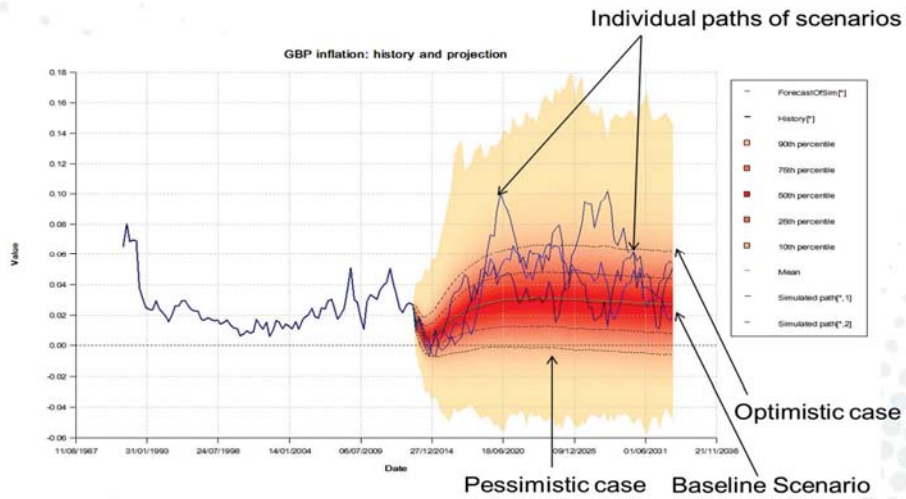
MAKE IT *Dynamic*  Regular Rebalancing Required!



**Building a *Dynamic* ALM Approach**  
**Measuring it up...**

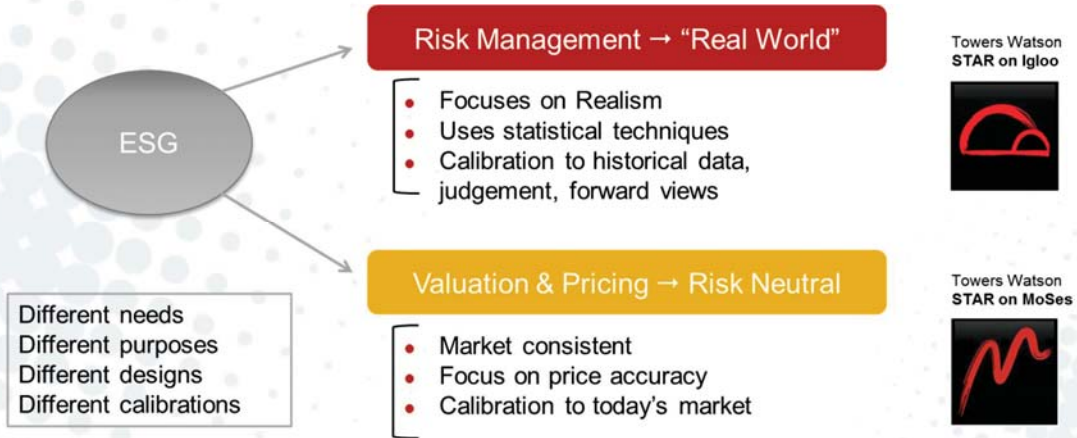
© 2013 Towers Watson. All rights reserved.

**Building Deterministic Scenarios and Full Stochastic Projections**



© 2013 Towers Watson. All rights reserved.

## Risk Neutral and Real World ESGs

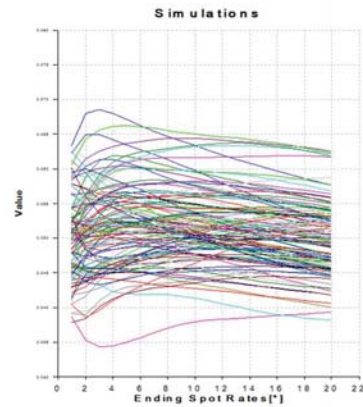
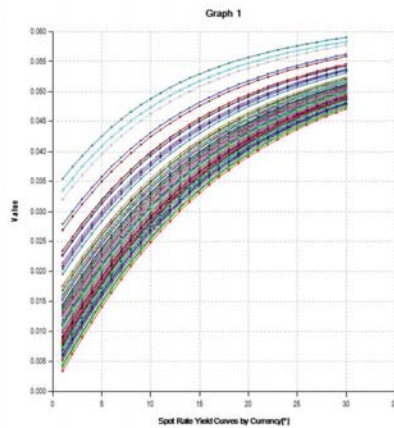


© 2013 Towers Watson. All rights reserved.

## Case study: Yield curves

The Old World: Cox Ingersoll Ross

The New World: TWRW LIBOR Market Model



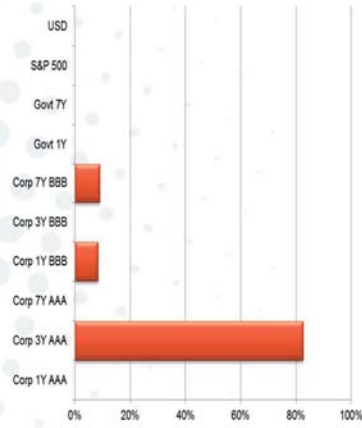
© 2013 Towers Watson. All rights reserved.

## Case study: Yield curves

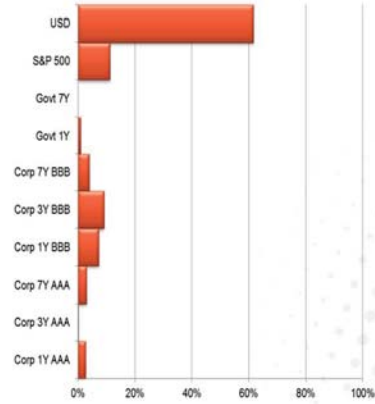
Cox Ingersoll Ross

TWRW LIBOR Market Model

Minimum Risk Allocation



Minimum Risk Allocation

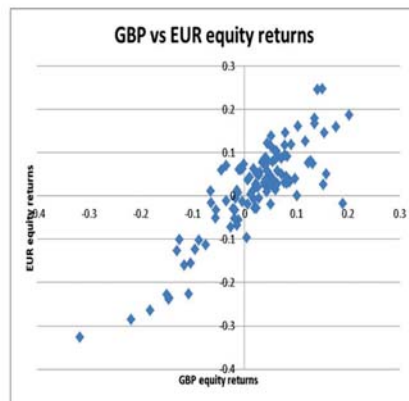
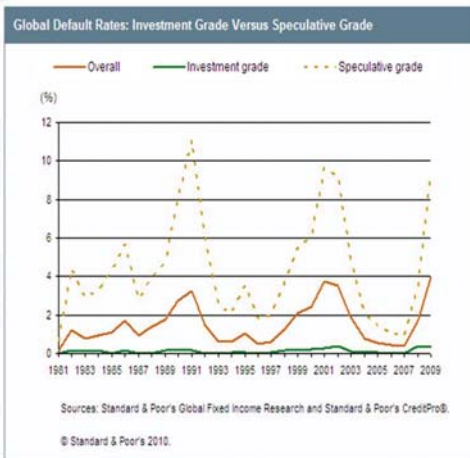


© 2013 Towers Watson. All rights reserved.

## Case Study: Defaults and Correlations

Transition and defaults – not stable over time

Correlations – tail dependencies



© 2013 Towers Watson. All rights reserved.

## Case Study: Defaults

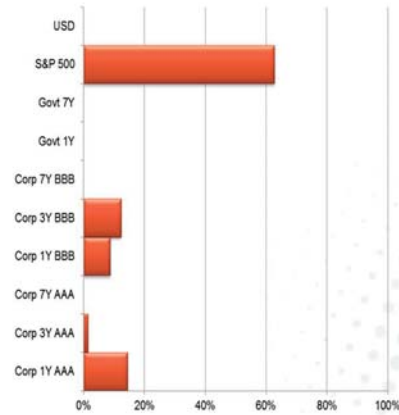
Transition probabilities: deterministic

Transition probabilities: stochastic

Optimum Allocation



Optimum Allocation



© 2013 Towers Watson. All rights reserved.

## SAA – Qualitative analysis

"Qualitative" factors		Weighting %
1 General	Investment case	●●
	Current attractiveness	●●
	Non-modelled asset risks	
2 Portfolio construction	Alpha potential	
	Liability matching	●
3 Regulatory	Current (eg Solvency I, SGAT)	●●
	Future (eg Solvency II)	●
4 Operational	Level of liquidity	●
	Concentration risk / capacity	
	Ease of implementation	
5 Tax	Tax considerations	●
	Governance burden (complexity)	
6 Governance	Belief / view of asset class	
	Commonality (peers)	●
7 Accounting	Impact on profit/loss and balance sheet	●

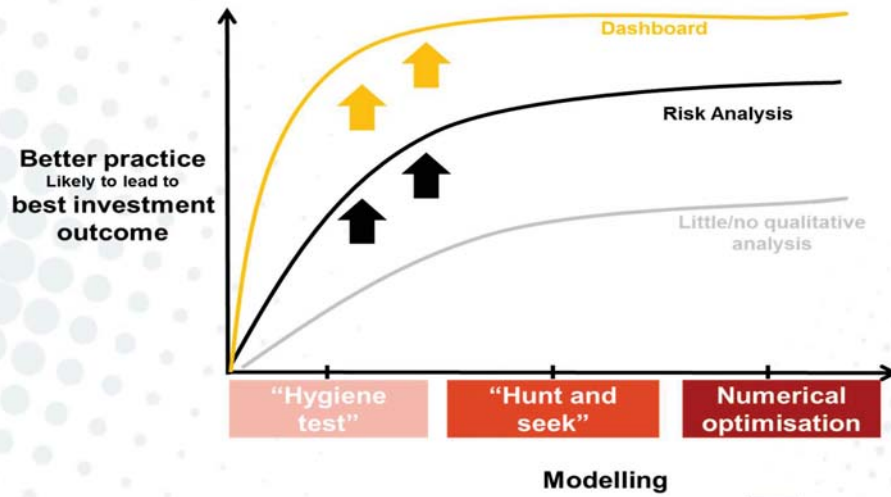
1. Basics considered – fit for purpose? Regulatory treatment?

2. More considered – risk adjusted

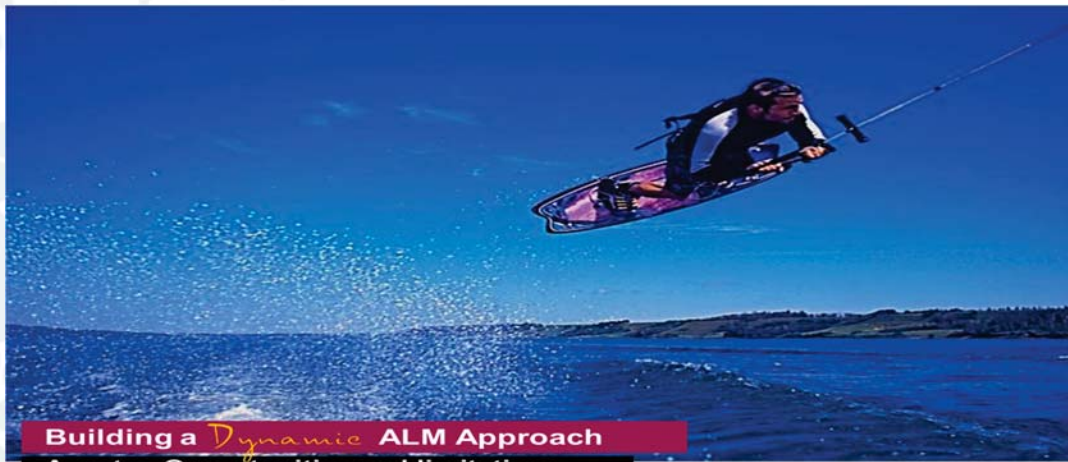
3. Further consideration – Dashboard

© 2013 Towers Watson. All rights reserved.

## SAA - combining qualitative analysis with modelling



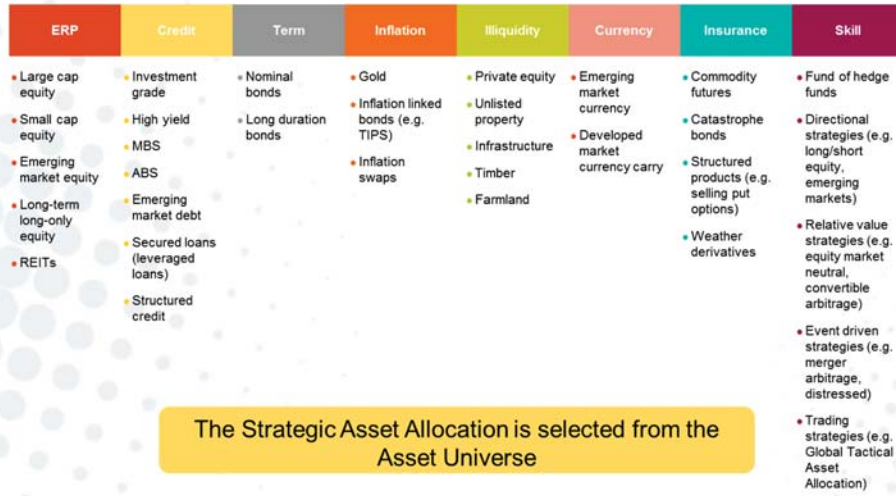
© 2013 Towers Watson. All rights reserved.



**Building a *Dynamic* ALM Approach**  
**Assets - Opportunities and limitations**

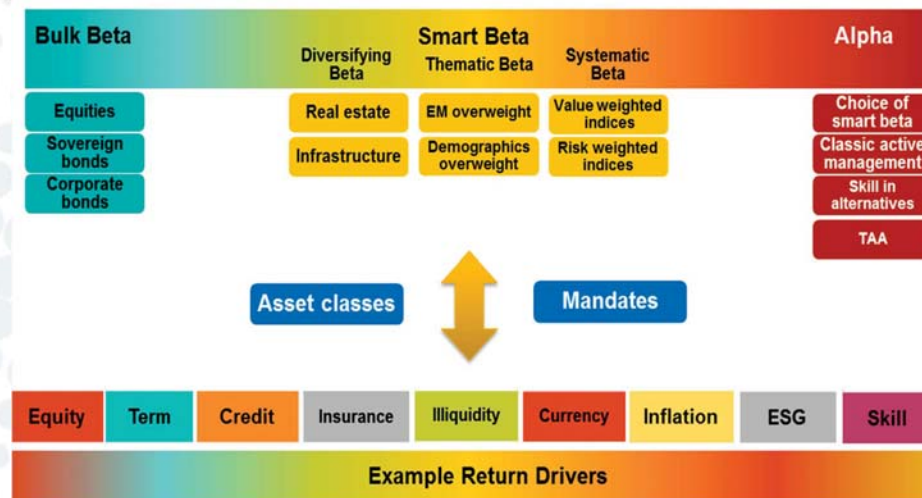
© 2013 Towers Watson. All rights reserved.

## The Universe of Assets



© 2013 Towers Watson. All rights reserved.

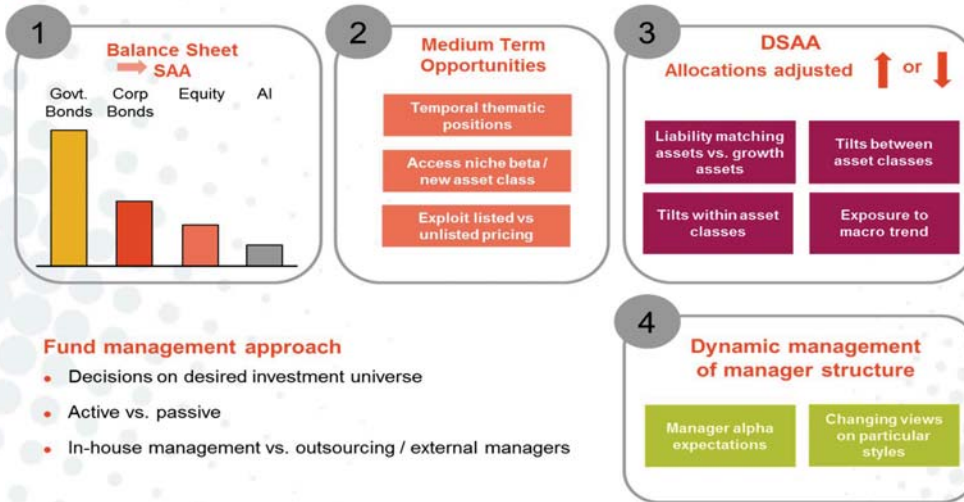
## Many ways to build a portfolio



© 2013 Towers Watson. All rights reserved.

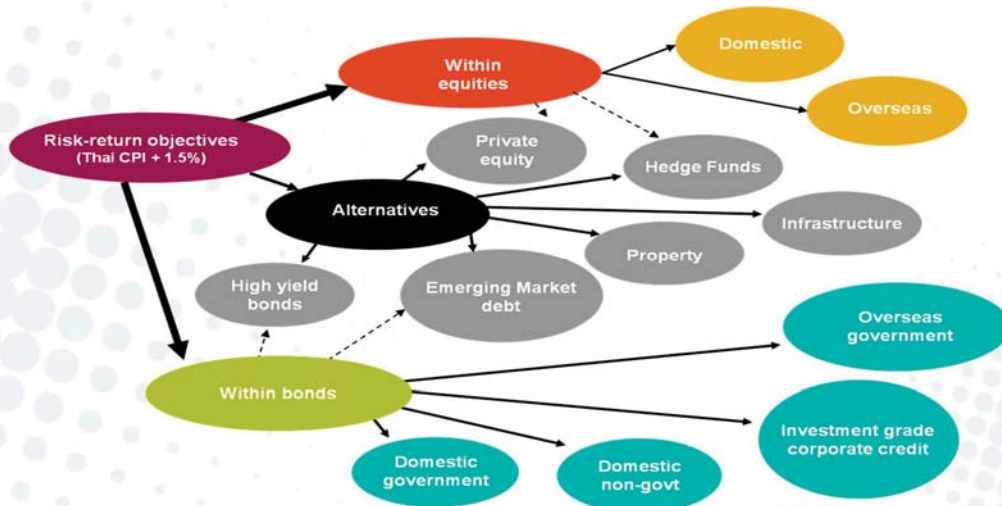


## Dynamic ways to make your portfolio work harder



© 2013 Towers Watson. All rights reserved.

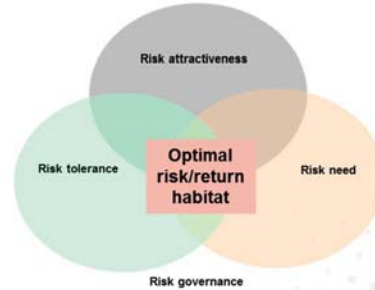
## It is not just about “equities and bonds”...



© 2013 Towers Watson. All rights reserved.

## The optimal risk/return habitat

- **Risk need.** Investors should only take as much investment risk as they need to meet their investment return objectives.
- **Risk tolerance.** Investors need to be comfortable that they can tolerate the potential downside risk arising from a given investment strategy.
- **Risk attractiveness.** There are times when taking risk is well-rewarded (eg March 2009, March 2003) and times when it is not (end 1999, summer 2007).
- **Risk governance.** Investors must be able to take the right decisions when faced with poor outcomes from investment risk taking. Poor risk governance will lead to lower realised returns as short term losses are realised.



© 2013 Towers Watson. All rights reserved.

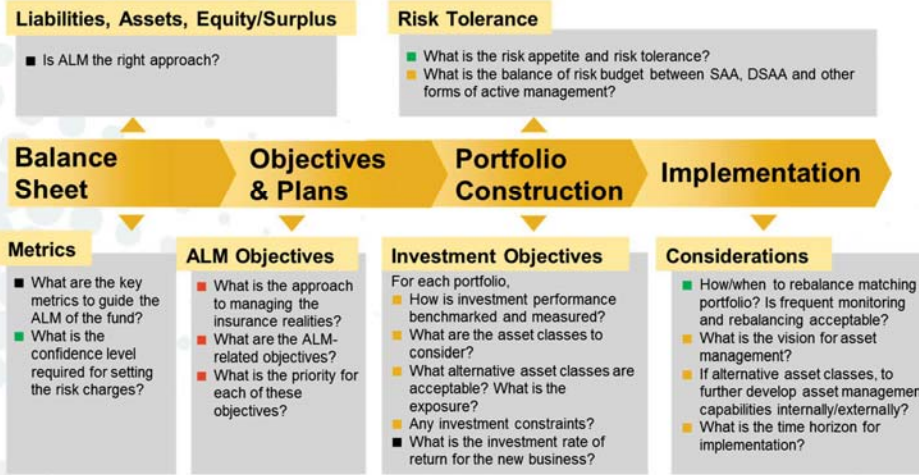
## Bringing it together... In a Dynamic ALM Framework



© 2013 Towers Watson. All rights reserved.

## ALM Decision Framework

- Risk Management
- Management and Investment
- Investment
- Management



© 2013 Towers Watson. All rights reserved.

## ALM MAKE IT *Dynamic*



### NOT JUST A PROJECT, REQUIRES ONGOING MANAGEMENT

- Regular monitoring of dashboard
- Track financial position and risk profile
- Frequent rebalancing and review
- Risk limits and triggers for management action



### IT IS A JOURNEY

- Identify triggers for decision points
- Timing market opportunities
- Incorporate into business planning
- Identify new opportunities and incorporate into ALM

© 2013 Towers Watson. All rights reserved.