TALENT • HEALTH • RETIREMENT • INVESTMENTS

SURREY PENSION FUND
INVESTMENT STRATEGY REVIEW

February 2014

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Partner **Principal**

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A change in investment strategy will incur transaction costs.

It should be noted that our analysis is sensitive to the inputs; for example the assumed level of expected returns, risk and correlations to the various asset classes and liabilities. There can be no guarantee that the assumptions will be borne out in practice.

Agenda

- Summary
- Current Investment Policy & Risk
- Destination
- Strategy Analysis
- Timing considerations
- Additional considerations

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Summary

Reviewing Investment Strategy – 5 “D” Principles

- **Determine - the current level and sources of expected return and risk relative to the liabilities**
  - Expected return is currently gilts +3.2%; 83% of this is dependent on equity market returns.
  - Deficit risk is high. 1 in 20 worst case deficit could be greater than £1.5bn to £2bn from 2016 onwards. Current investment policy provides very little liability protection.

- **Destination – its important to know “where you want to get to”**
  - Aim to restore the deficit through investment returns and agreed contributions to achieve 100% funded status but also consider what investment policy the Fund would have when fully funded. Provides a framework for identifying what policy changes should be made that are consistent with now and the future.

- **Diversify – look to capture multiple drivers of return but don’t diversify for the sake of it. Global opportunity set**
  - Proposed main areas of focus for diversifying the sources of return are Infrastructure Debt and increasing the allocation to DGF. Ideas in Emerging Markets, Multi-Asset Credit and Alternative Indexation are also highlighted for completeness.

- **Don’t forget the liabilities**
  - Size and volatility of the liabilities is a major source of risk. This can only be effectively managed by investing in a more risk aware manner relative to the liabilities. It is possible to adopt an investment policy that materially reduces deficit risk, whilst maintaining the same level of expected return (with more diversification). The level of complexity involved with various options does vary though.

- Be **Dynamic when considering the “timing” considerations of making investment policy changes**
  - Given the strong rise in equity markets over the last 5 years (and 2013 in particular), we think there is strong case for diversifying away from equities given current market conditions. This should be subject to on-going review.
  - We believe that there are compelling reasons to increase the level of liability protection, without “hoping” that real yields increase from current levels. Emphasis should be on “getting the plumbing in place” to be able to react quickly to be able to increase the level of liability protection should the funding level and market conditions improve in the future.

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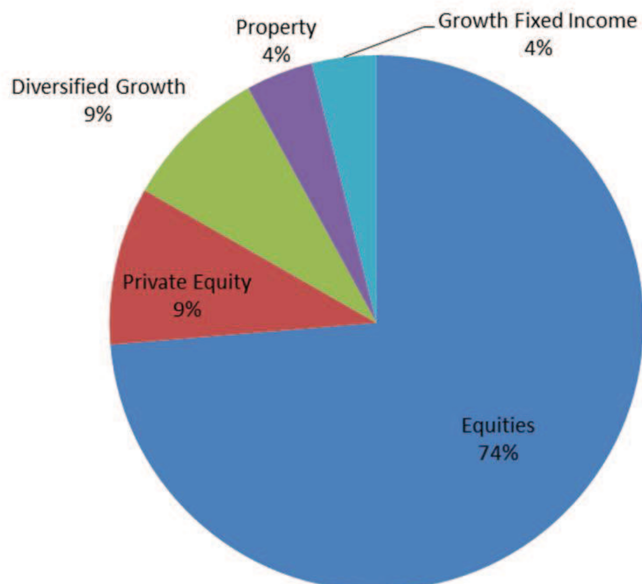
Current Investment Policy & Risk

Current investment policy

Asset Class	Benchmark Allocation (%)
Growth Assets	**91.2**
Equities (inc. currency hedging)	59.8
Private Equity	5.0
Diversified Growth	9.5
Property	6.6
Growth Fixed Income*	10.3
Protection Assets	**8.8**
Gilts	8.8
Total	**100.0**

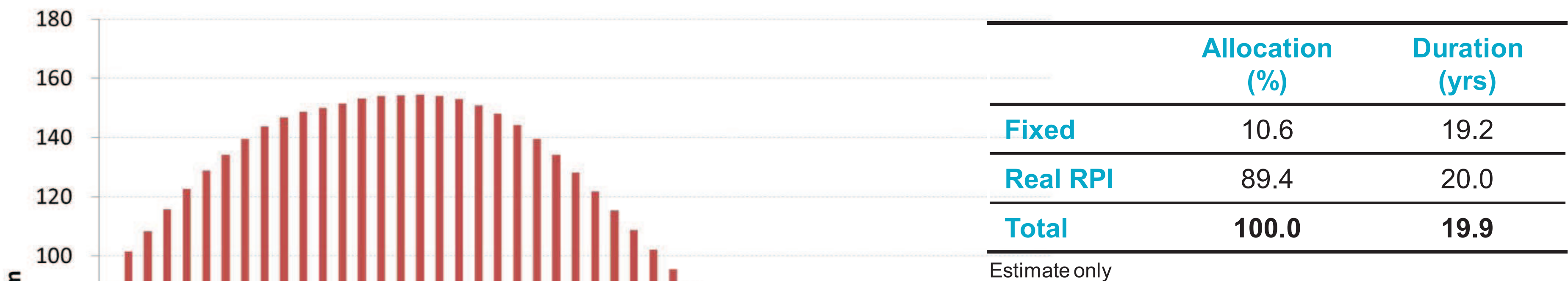
*Includes the corporate bond and total return bond allocations

Sources of excess return



- Currently, the expected return (based on best estimate assumptions) on the Fund's assets is c.3.2% p.a. over gilts.
- The Actuary assumes an excess return of 1.6% p.a. over gilts for the purposes of the actuarial valuation.
- Growth assets make up over 90% of the portfolio by allocation; equities (including private equity) account for 83% of the expected excess return.
- The funding level as at 31 March 2013 was 72.3% (broadly similar to the 2010 valuation) but the deficit has increased by c.30% to £980m.

Liability Benchmark Portfolio ("LBP")

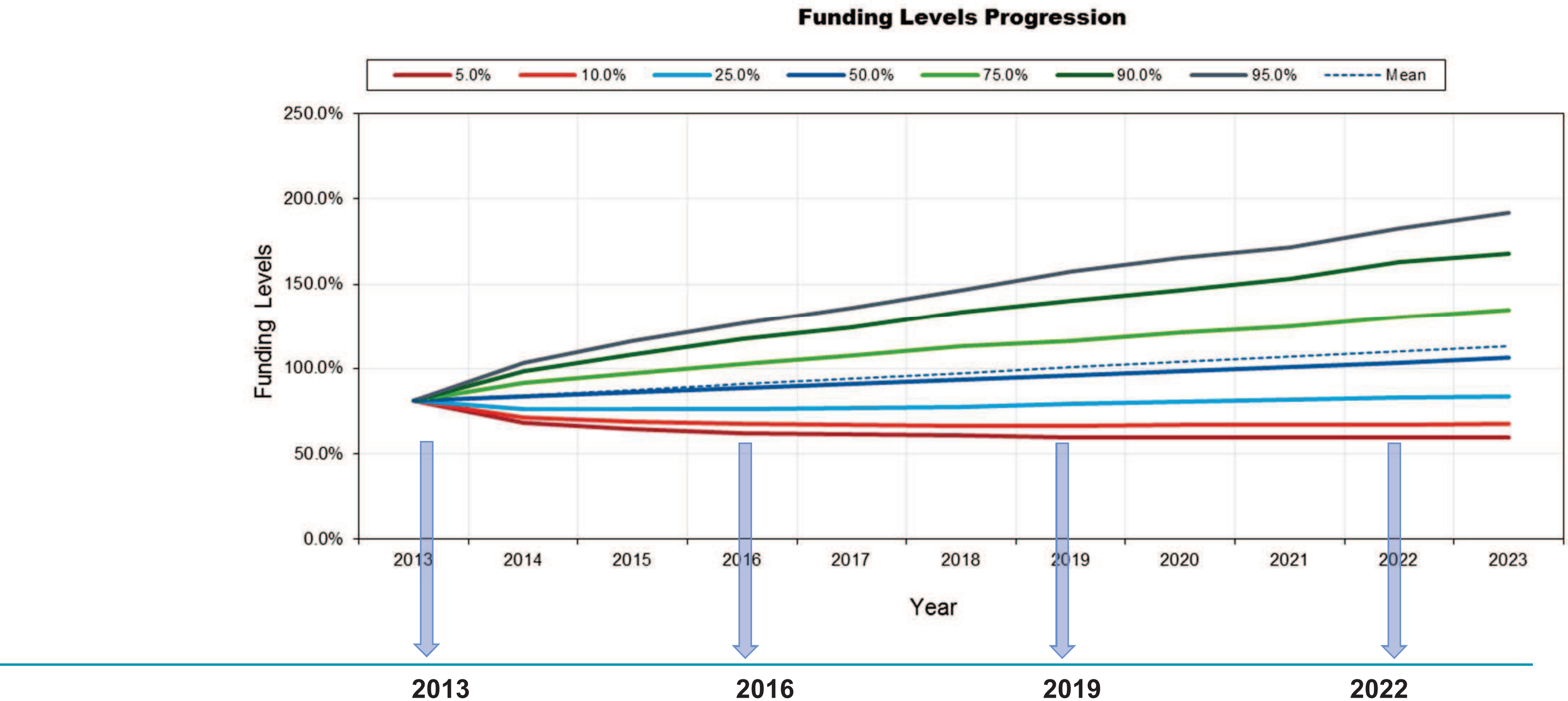


	Allocation (%)	Duration (yrs)
Fixed	10.6	19.2
Real RPI	89.4	20.0
Total	**100.0**	**19.9**

Estimate only

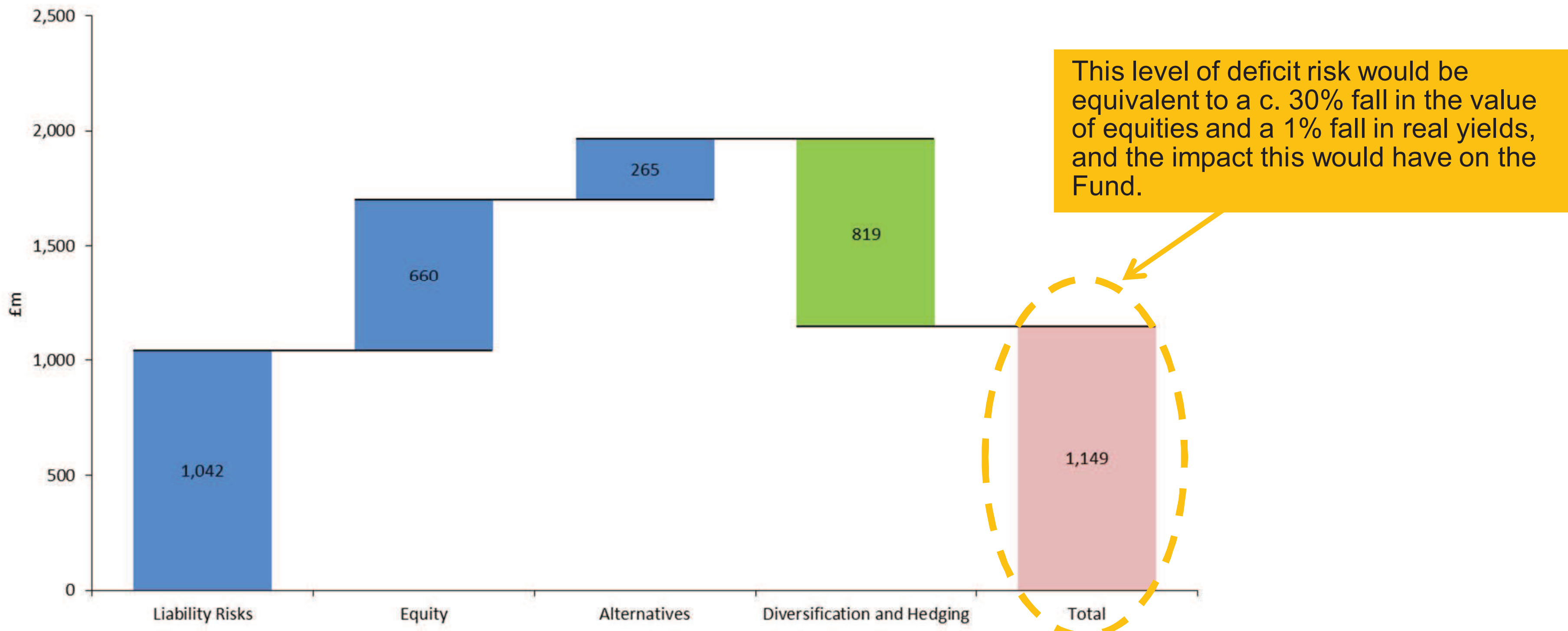
- The LBP represents the theoretical least risk (this does not mean "no" risk) investment portfolio to match the interest rate and inflation related characteristics of the liabilities. The LBP acts a reference point / benchmark on which investment risk can be assessed relative to the liabilities.
- Around 90% of the LBP is real i.e. linked to inflation expectations.
- The average weighted term to payment, or duration, is around 20 years. This means that a 1% fall in interest rates would lead to an increase in the liabilities of around 20% (and vice versa).
- Based on the initial valuation results, we estimate the funding level as at 30 September 2013 was c. 81%.

Funding level projection - based on current policy and estimated funding position as at 30 September 2013



	2013	2016	2019	2022
Expected Funding Level (%)	81	88	96	104
Expected Deficit (£m)	610	413	165	-171
95% Worst Case Deficit (£m)	n/a	1,562	2,020	2,416

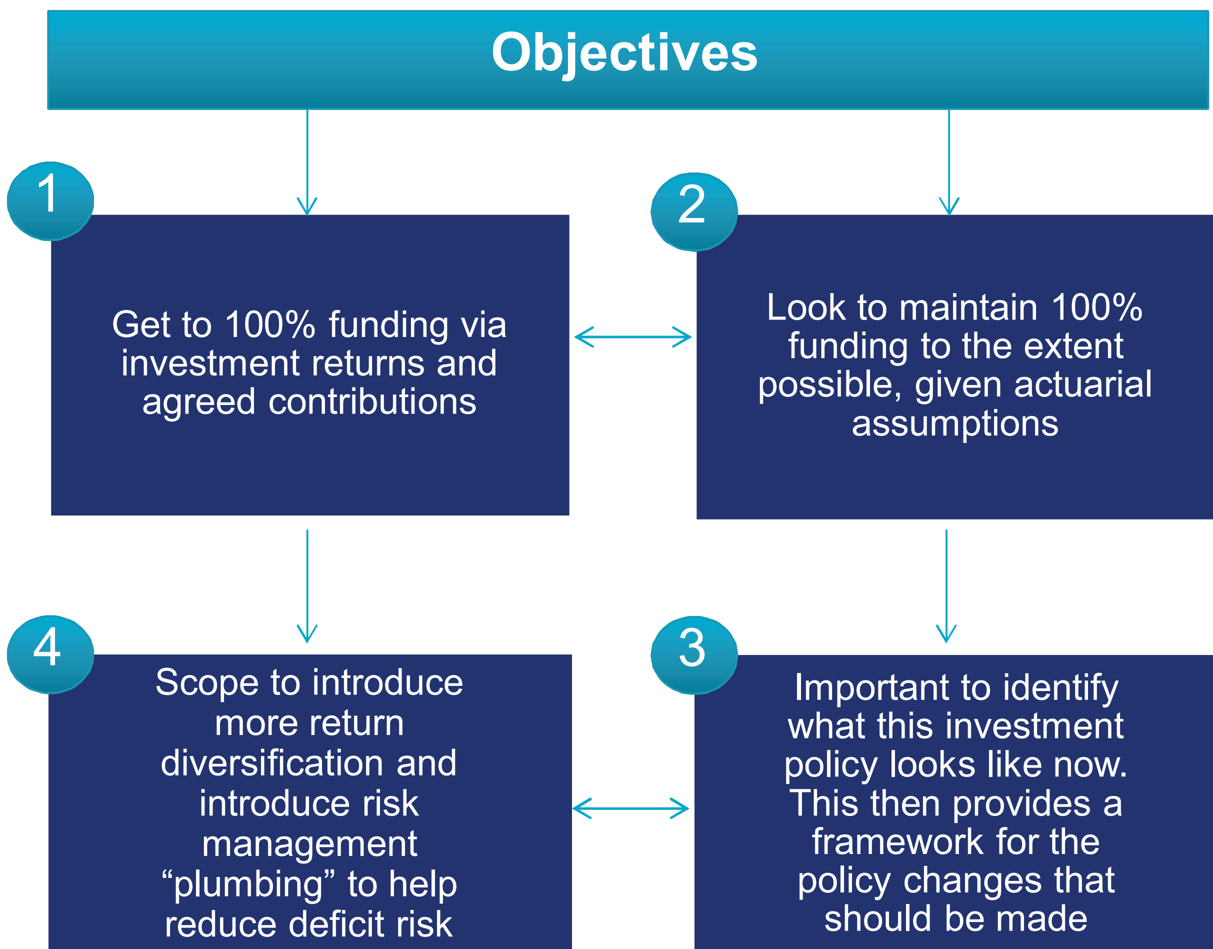
Deficit risk



- The chart above shows that there is a 1 in 20 chance that the deficit could be **£1,149m higher than expected in three years time**. (estimated potential 1in 20 deficit is £1,562m)
- The two largest risks facing the Fund are from changes to interest rates and inflation expectations (which we refer to as liability risks) and equities.
- The magnitude of the risk is significant given: (1) the low level of protection assets and current deficit; and (2) the high reliance on equities.
- Focus of any potential strategy changes should therefore be on diversifying away from equities as a source of return and a more “risk-aware” approach to investing, relative to the liabilities.

Destination

Destination
Where do you want to get to?



Destination
What this could look like

Current Policy

Growth Assets	91.2%
Gilts (no gearing)	8.8%
Liability Protection	6%
Expected Return (best estimate basis)	Gilts +3.2%
Deficit Risk	£1,149m

- Currently focused on return; equity dominated; low liability protection
- High level of deficit volatility

Policy for when 100% funded

Growth Assets	65%*
Gilts (2x geared)	35%
Liability Protection	70%
Required Return (actuarial funding basis)	Gilts +1.6%
Deficit Risk	£577m

- More balanced investment policy
- Greater funding level stability and confidence for contribution affordability

*Based on Actuary's indication that 70-60% in growth assets is needed to support a Gilts +1.6% discount rate. The allocation could be 45% on Mercer "best estimate" return assumptions (this should be viewed as indicative only). Further discussion may be required with the Actuary to explore the extent to which a lower risk investment policy could be adopted.

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Strategy Analysis

Proposed areas of focus

- Based on discussions so far between Officers, the Fund's Independent Advisor and Mercer
- The aim is to help assess the impact of further return diversification and improved risk management (emphasis on putting the "plumbing in place" first, with a view to building up over time, based on funding improvements and/or if real yields increase)

1 **Switching existing physical gilts to a leveraged gilt structure**

Rationale

Would help address low level of liability protection without reducing expected return

2 **Diversify growth assets further. Consider Infrastructure Debt and additional allocation to DGFs**

Rationale

Based on previous discussions and training on Infrastructure Debt and familiarity with DGFs

3 **Replace physical equities with derivative based exposure and use capital to increase allocation to protection assets**

Rationale

Similar to (1), but could have a potentially bigger impact on risk reduction

- We consider each of these key components in more detail (and in combination).

Summary of analysis

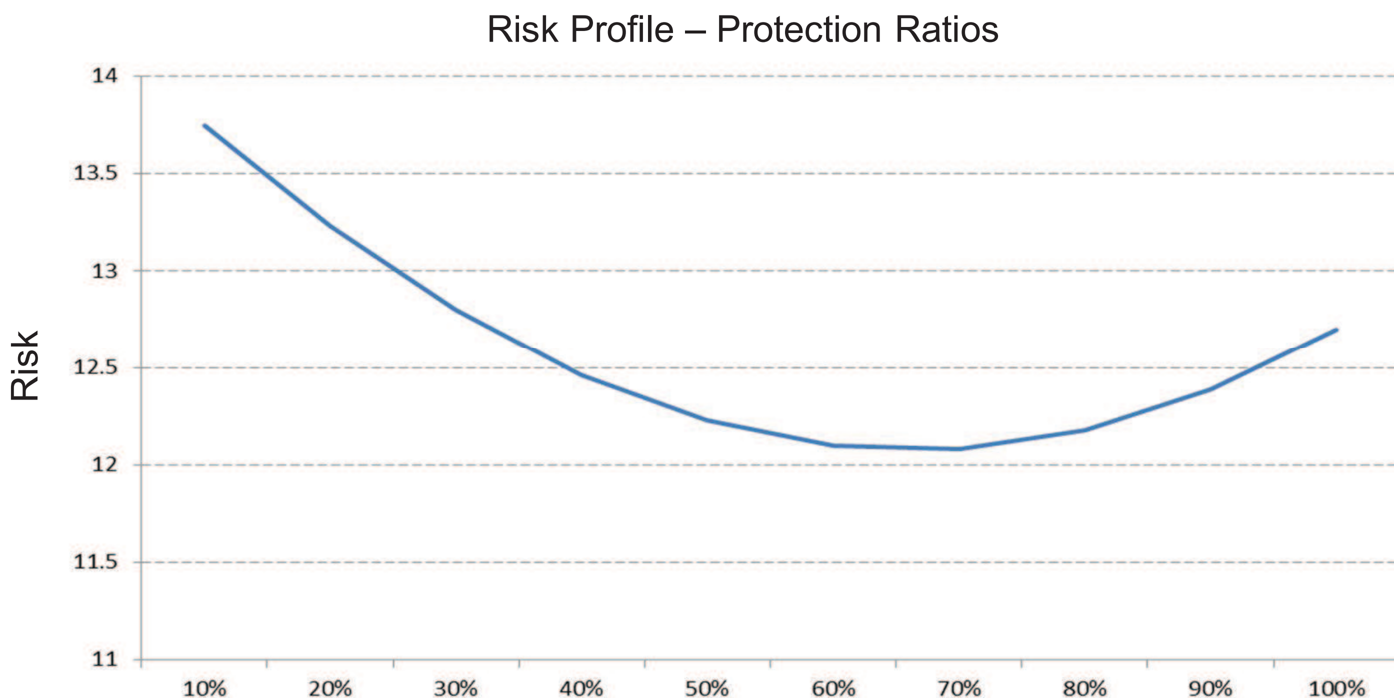
	Current Policy	1) Leveraged Gilts	2) Diversification	3) Synthetic Equity	Combined	Potential Target
Growth Assets	**91.2**	**91.2**	**91.2**	**91.2**	**91.2**	**65.0**
Listed Equities (%)	59.8	59.8	49.8	59.8	49.8	23.6
Private Equity (%)	5.0	5.0	5.0	5.0	5.0	5.0
Diversified Growth (%)	9.5	9.5	14.5	9.5	14.5	14.5
Property (%)	6.6	6.6	6.6	6.6	6.6	6.6
Corporate Bonds (%)	7.6	7.6	7.6	7.6	7.6	7.6
Total Return Bonds (%)	2.7	2.7	2.7	2.7	2.7	2.7
Infrastructure Debt (%)			5.0		5.0	5.0
Protection Assets	**8.8**	**8.8**	**8.8**	**8.8**	**8.8**	**35.0**
Gilts	8.8	26.4	8.8	38.6	70.0	70.0
Short cash exposure resulting from leverage	-	-17.6	-	-29.8	-61.2	**-35.0**
Total (%)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**
Expected Return Over Gilts (%p.a.)	**3.2**	**3.2**	**3.1**	**3.2**	**3.1**	**2.1**
3 Year Deficit Risk 95th Percentile (£m)	**1,149**	**1,048**	**1,102**	**995**	**797**	**577**

3x Leveraged

£352m reduction in risk

Based on Mercer's capital market assumptions – see Appendix

Liability Protection Ratio Analysis
What should this be?



- The chart shows the impact of increasing the liability protection ratio as a % of assets from the current strategy (c. 9% of assets or 6% of liabilities) up to 100%. The impact is not linear and we can see that there is an optimal protection ratio at the lowest point on the curve.
- The optimal protection hedge ratio for the current allocation is between 60-70%. The reason that this is not 100% is because there is some correlation between the growth assets and interest/inflation rates.
- The optimal hedge ratio is dependant on the allocation to growth assets as these assets have a small correlation to the liabilities.

Summary of analysis
Notes

- **Current**
  - We have modelled the current portfolio including the allocation to private equity. The expected return from this portfolio is c. 3.2% p.a. with a deficit risk of £1,149m.
- **Leveraged Gilts**
  - This portfolio utilises the current exposure to gilts (8.8%) and leverages it 3 times to gain economic exposure of 26.4%. This change results in a reduction in the deficit risk of c. £101m.
- **Diversification**
  - The diversified portfolio reduces the equity exposure by 10% and increases the exposure to DGFs by 5%. This portfolio also introduces an allocation to Infrastructure Debt. The impact on the deficit risk from this portfolio is relatively small (c. £47m) but will help reduce the reliance on equities for return (reduces from 83% to 74%)
- **Synthetic Equity**
  - Exposure to equities can be gained using derivatives which would free up some capital to invest in protection assets. In this portfolio, 29.8% of total assets have been replicated using synthetic equity, with the resulting cash used to supplement the current allocation to protection assets. The resultant reduction in deficit risk is c. £154m.
- **Combined**
  - The combined portfolio utilises all three of the investment themes above to create a portfolio that synthesises equity exposure and leverages the resultant capital to achieve a liability protection ratio of 70% of assets. The portfolio also diversifies the equity exposure as highlighted above. By combining all of the above themes, the Fund is able to achieve a reduction in deficit risk of c. £352m (down to £797m from £1,149m), whilst still broadly maintaining the same level of expected return
- **Target**
  - This is an example “Destination” portfolio for when the Fund reaches 100% funding. We are not suggesting that the Fund moves to the target portfolio in the near term, but rather factors in the potential to move towards the portfolio over time. As can be seen, the deficit risk is approximately half that of the current portfolio. The expected return is still expected to be consistent with the Actuarial Valuation assumptions.

Timing Considerations

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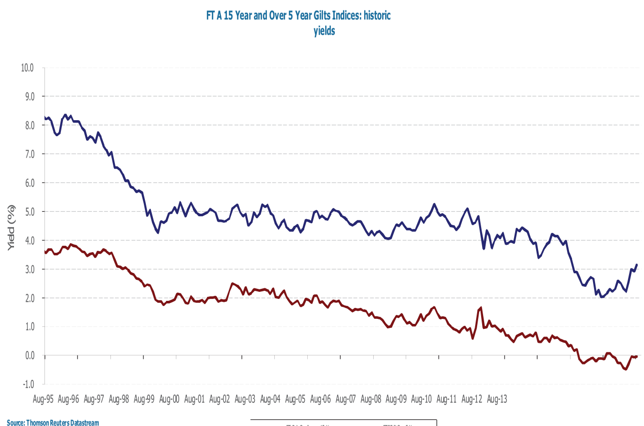
Timing considerations – equity markets
Is now a good time to reduce equity exposure?

- Since the end of 2008, both global and UK equity markets have almost doubled in value. This rate of growth should not be expected to continue.
- Following these rises, a number of developed equity markets including the US and UK are close to all time highs.
- Our Dynamic Asset Allocation ("DAA") view is still positive on equities relative to other asset classes, although our conviction has diminished following strong returns in 2013.
- **We would be comfortable for the Fund to "bank" some of the gains from equity returns by diversifying into other asset classes.**
- It should also be noted that the Fund would still retain a significant proportion of assets in equities should diversification take place.

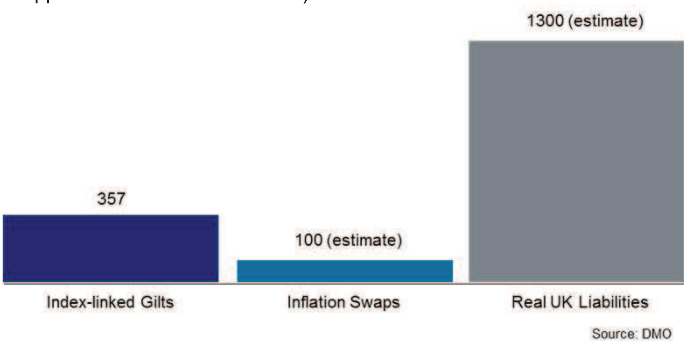
Is now a good time to increase liability protection?

1. Long-term decline in ILG yields

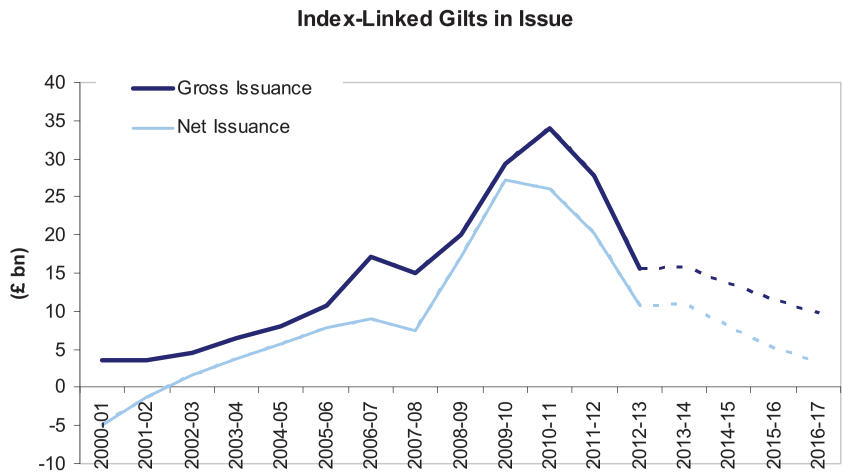


2. Demand for ILG exposure outstrips supply

Comparison of index-linked gilts in issue, plus inflation swaps transacted with UK pension scheme real liabilities (figures are very approximate estimates in £bn)



3. Net issuance of ILGs is expected to fall



Sources: Mercer based on DMO and PPF “Purple Book” data and RBS data

Real yields are likely to remain at depressed levels for an extended period of time due to massive supply and demand imbalance

Strong case to increase liability protection level given :

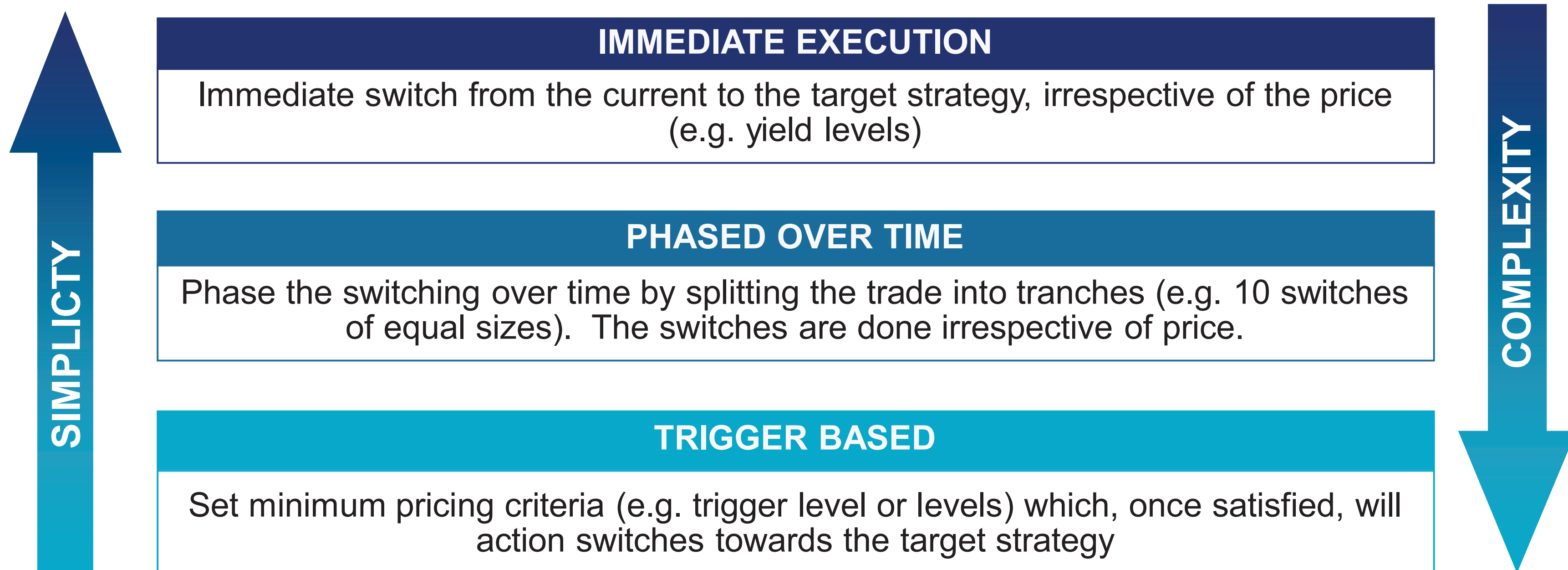
(1) increase in funding level since valuation

(2) the magnitude of the deficit risk

(3) to get the “plumbing in place” to be able to swiftly capture de-risking opportunities in the future

Liability protection implementation considerations

Overview of main approaches



No single right answer – driven by beliefs and risk tolerance

Additional considerations

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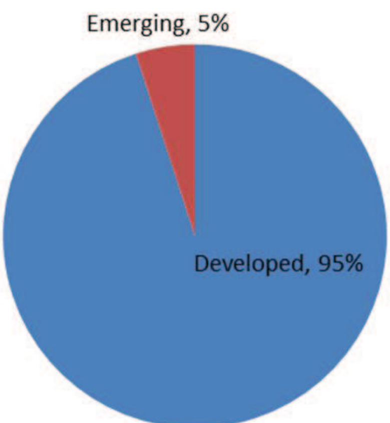
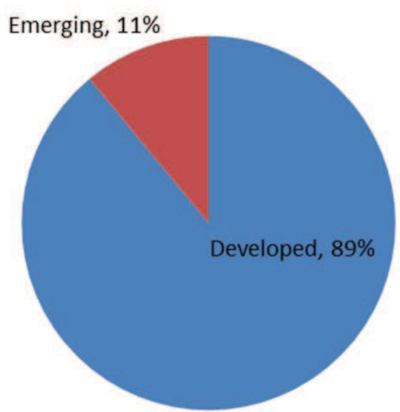
Emerging Market Equities ("EME")

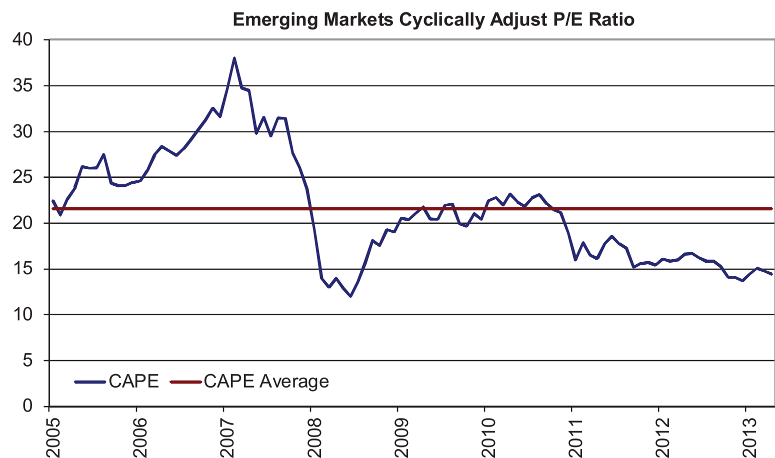
Surrey Combined Equity Portfolio est.



Global Market



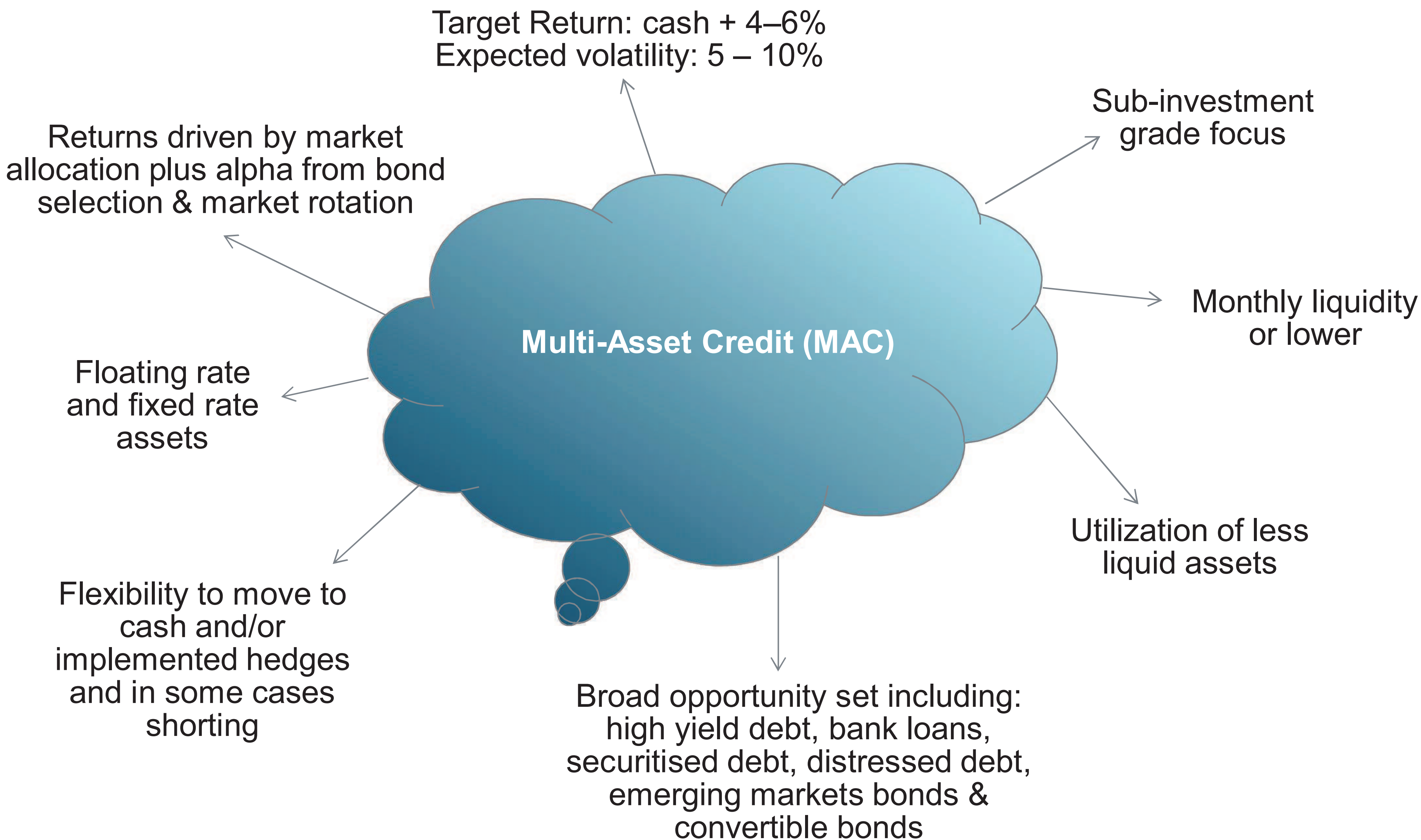
Attractive Valuations



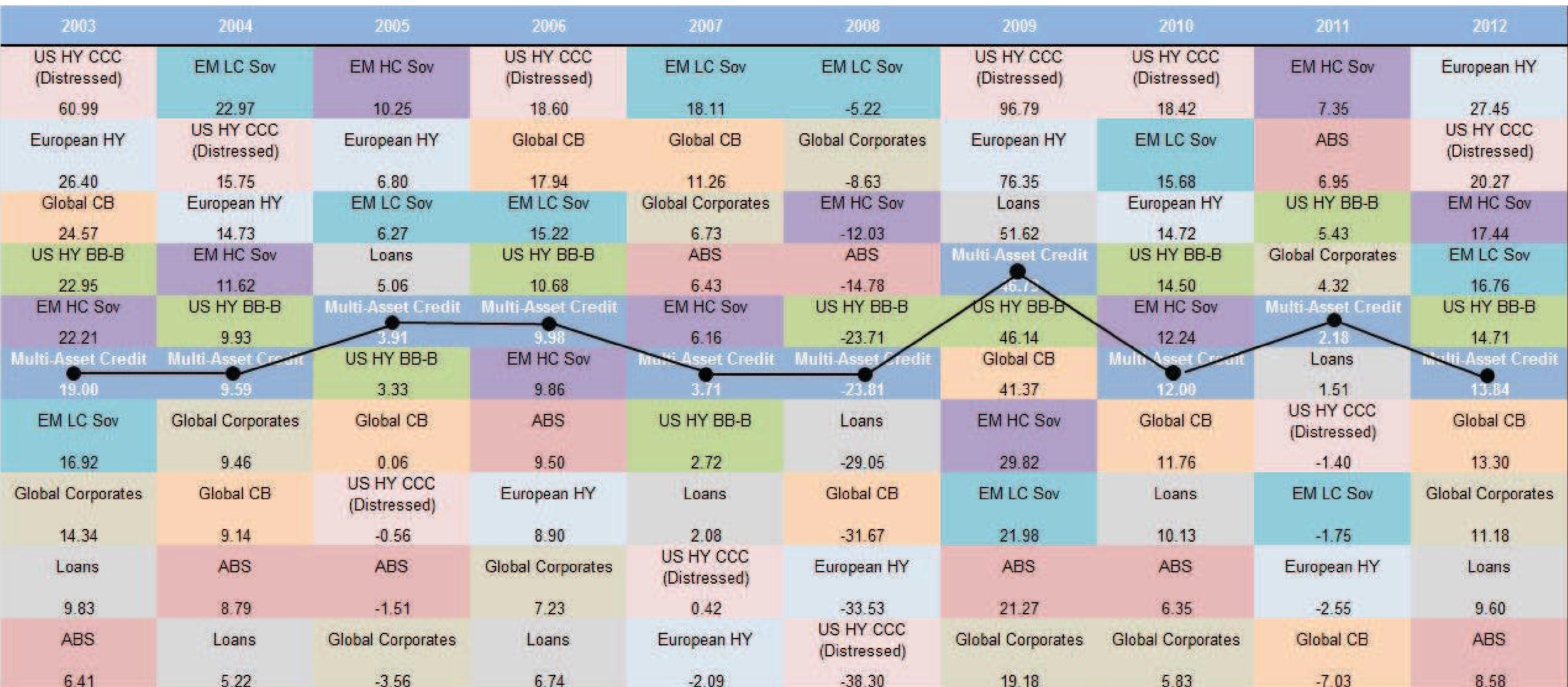
Source: Thomson Reuters Datastream, IBES

- The Fund's exposure to Emerging Market equities is materially underweight versus the global index
- We would recommend that the Fund targets an allocation in line with the global market (11%)
- EME have significantly underperformed Developed Markets since the start of 2013 (by around 30%)
- Underperformance could continue in the short to medium term but we see current market conditions as being a good "entry point" to phase in an increased allocation
- Current exposure is passively managed. We prefer active management given the diversity and risks (e.g. geo-political) involved with EME
- The Fund could also consider a direct allocation to Frontier markets

Multi-Asset Credit
"Best ideas" approach to capturing the credit risk premium



Multi-Asset Credit
Importance of Asset Allocation



2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
US HY CCC (Distressed) 60.99	EM LC Sov 22.97	EM HC Sov 10.25	US HY CCC (Distressed) 18.60	EM LC Sov 18.11	EM LC Sov -5.22	US HY CCC (Distressed) 96.79	US HY CCC (Distressed) 18.42	EM HC Sov 7.35	European HY 27.45
European HY 26.40	US HY CCC (Distressed) 15.75	European HY 6.80	Global CB 17.94	Global CB 11.26	Global Corporates -8.63	European HY 76.35	EM LC Sov 15.68	ABS 6.95	US HY CCC (Distressed) 20.27
Global CB 24.57	European HY 14.73	EM LC Sov 6.27	EM LC Sov 15.22	Global Corporates 6.73	EM HC Sov -12.03	Loans 51.62	European HY 14.72	US HY BB-B 5.43	EM HC Sov 17.44
US HY BB-B 22.95	EM HC Sov 11.62	Loans 5.06	US HY BB-B 10.68	ABS 6.43	ABS -14.78	Multi-Asset Credit 46.7[illegible]	US HY BB-B 14.50	Global Corporates 4.32	EM LC Sov 16.76
EM HC Sov 22.21	US HY BB-B 9.93	Multi-Asset Credit 3.91	Multi-Asset Credit 9.98	EM HC Sov 6.16	US HY BB-B -23.71	US HY BB-B 46.14	EM HC Sov 12.24	Multi-Asset Credit 2.18	US HY BB-B 14.71
Multi-Asset Credit 19.00	Multi-Asset Credit 9.59	US HY BB-B 3.33	EM HC Sov 9.86	Multi-Asset Credit 3.71	Multi-Asset Credit -23.81	Global CB 41.37	Multi-Asset Credit 12.00	Loans 1.51	Multi-Asset Credit 13.84
EM LC Sov 16.92	Global Corporates 9.46	Global CB 0.06	ABS 9.50	US HY BB-B 2.72	Loans -29.05	EM HC Sov 29.82	Global CB 11.76	US HY CCC (Distressed) -1.40	Global CB 13.30
Global Corporates 14.34	Global CB 9.14	US HY CCC (Distressed) -0.56	European HY 8.90	Loans 2.08	Global CB -31.67	EM LC Sov 21.98	Loans 10.13	EM LC Sov -1.75	Global Corporates 11.18
Loans 9.83	ABS 8.79	ABS -1.51	Global Corporates 7.23	US HY CCC (Distressed) 0.42	European HY -33.53	ABS 21.27	ABS 6.35	European HY -2.55	Loans 9.60
ABS 6.41	Loans 5.22	Global Corporates -3.56	Loans 6.74	European HY -2.09	US HY CCC (Distressed) -38.30	Global Corporates 19.18	Global Corporates 5.83	Global CB -7.03	ABS 8.58

EM LC Sov: JP Morgan GBI EM GD, EM HC Sov: JP Morgan EMBI GD, European HY: BofA Merrill Lynch European High Yield, US HY BB-B:BofA Merrill Lynch US High Yield BB-B, US HY CCC (Distressed):BofA Merrill Lynch US High Yield CCC, Global Corporates:Barclays Global Aggregate Corporate, ABS:Barclays Global Aggregate Securitized Asset Backed, Loans:S&P Leverage Loans, Global CB:UBS Global Convertibles

Multi-Asset Credit: static allocations comprising: JP Morgan GBI EM GD 5%, JP Morgan EMBI GD 5%, BoA Merrill Lynch US High Yield BB-B 30%, BoA Merrill Lynch European High Yield 10%, BoA Merrill Lynch US High Yield CCC 5%, , Barclays Global Aggregate Securitized Asset Backed 7.5%, S&P Leverage Loans 27.5%, Citigroup US 6 month T-Bill 5%, UBS Global Convertibles 5%

Provides a governance friendly method of accessing a diverse range of credit opportunities in a dynamic way

Alternative Indexation

Why consider?
Around 1/3 of the Fund's total assets (or 38% of total equities) are invested on an index-tracking basis

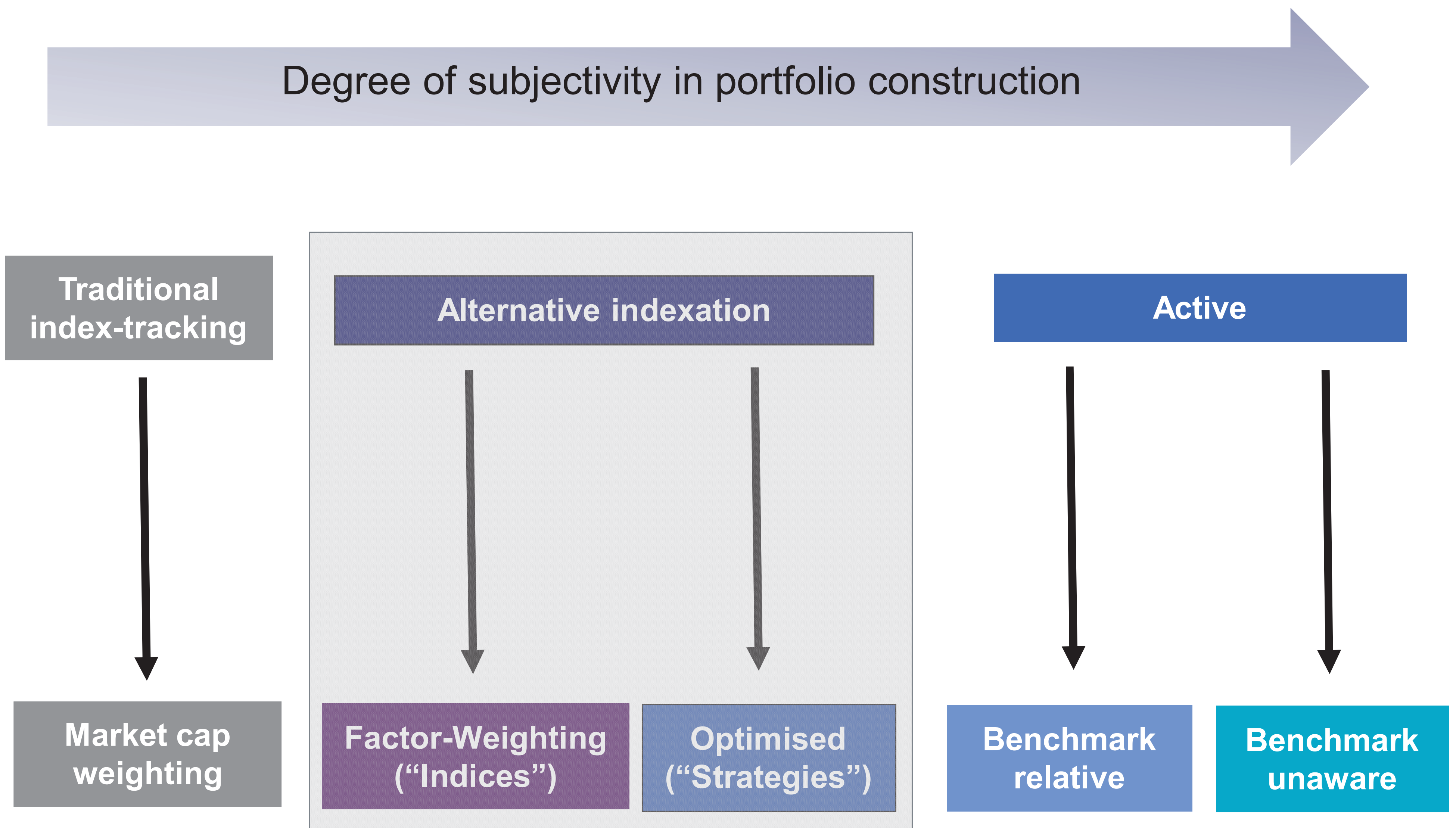
Market cap-weighted indices have become the standard measure of performance for almost all equity markets

- The reasons for this are clear – market cap-weighted indices have a number of advantages in their favour:
  - Objective and transparent construction approach
  - Representative of the available opportunity set for investors
  - Large investment capacity – the only portfolio that can be invested in by all market participants
  - Straightforward and cost-effective to track (negligible rebalancing and very little turnover)

Why consider a different approach to market-cap benchmarks?

1. Bias to past success
   - While financial theory would suggest a share price is today's sum of the future expected income from that share, it is clear that the shape of the index is driven heavily by past success
2. Market cap-weighted indices are prone to concentrations of risk
   - For example, Japan reaching half of the world index in 1989; the TMT sectors reaching around a third of the world index in early 2000
3. Market cap-weighted indices are prone to mis-pricings and asset price bubbles
   - It is widely recognised that markets do not always behave rationally and can, at times, be dominated by sentiment

Approaches to equity investing: overview

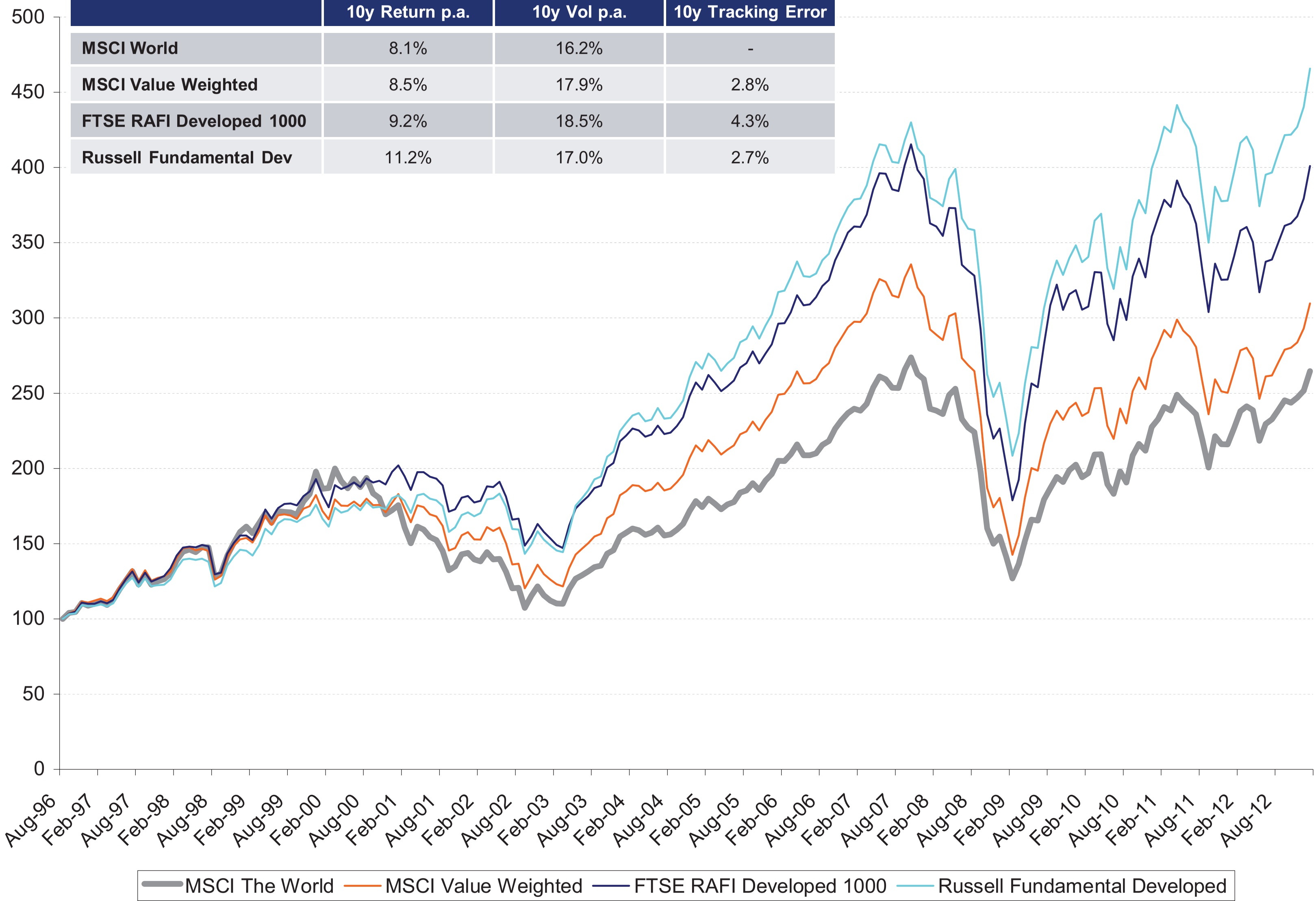


Fundamental Indexation
Overview

- **Characteristics**
  - Based on a “fundamental” measure of a company’s size, e.g. sales, dividends, cash-flow, book value etc.
  - Broad exposure to given equity market
  - Regional and sector biases (relative to market cap) will fluctuate over time
  - Relatively low portfolio turnover
  - Pattern of performance can differ materially from market cap index
- **Fundamental indices can be thought of as offering cheap value exposure**
- **No strong view on which fundamental factors are used, although there are important differences** (Russell do not use book value; MSCI do not use dividends)
- **However, we have a marginal preference for FTSE RAFI and Russell indices**
  - FTSE RAFI and Russell start with a broader universe of stocks than MSCI
  - But: MSCI has lower license fees (3bps vs. 6bps)
- **Passive pooled funds are available from Mercer’s preferred providers**

Fundamental Indexation
Performance analysis

	10y Return p.a.	10y Vol p.a.	10y Tracking Error
MSCI World	8.1%	16.2%	-
MSCI Value Weighted	8.5%	17.9%	2.8%
FTSE RAFI Developed 1000	9.2%	18.5%	4.3%
Russell Fundamental Dev	11.2%	17.0%	2.7%



Source: Datastream / Bloomberg; total returns in USD; performance/risk statistics are to 31 December 2012

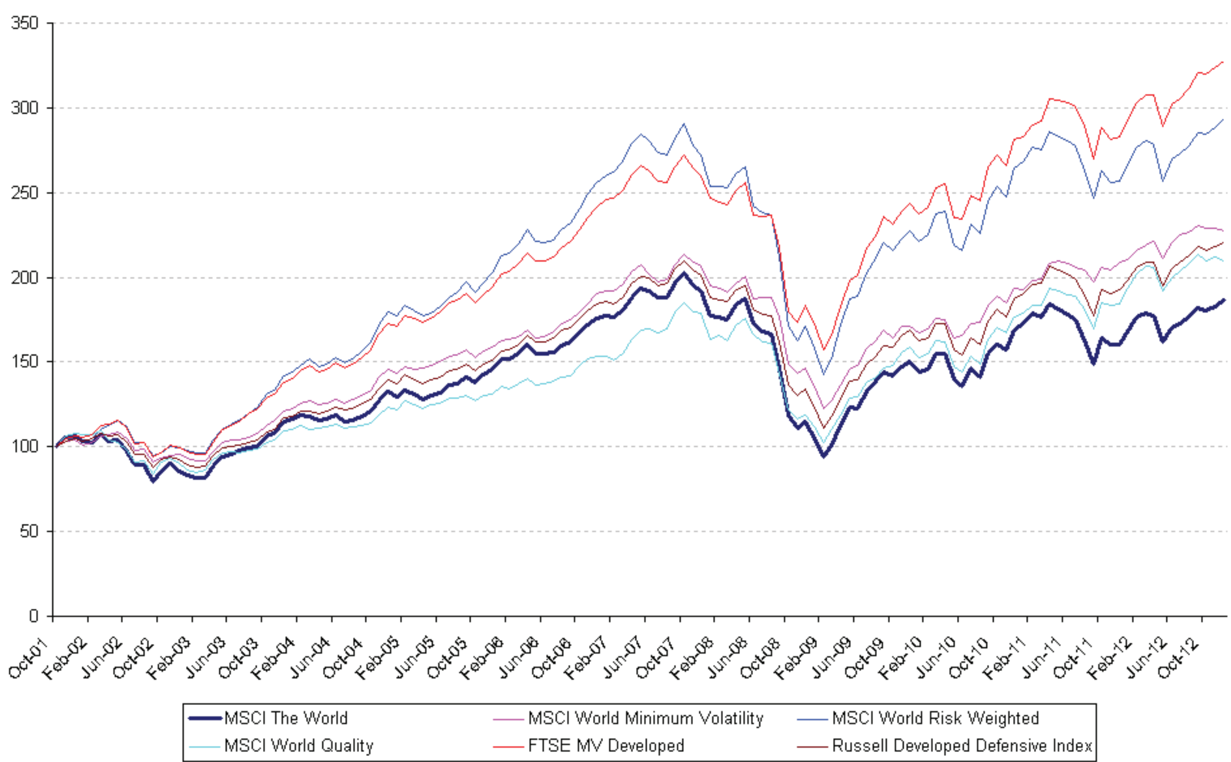
Low Volatility Indices
Overview

- **Broad construction methodology**
  - Optimised to produce the lowest volatility for a given set of constraints
- **Strong preference for active low volatility strategies**
  - More sophisticated management of risk
  - Portfolio oversight
  - Incorporation of alpha/value signals
  - Ongoing development of approach
  - But passive strategies can be useful for benchmarking
- **Deep pool of active strategies**
  - Over 30 global strategies in targeted volatility strategies
  - 3 rated preferred provider (a further 15 are known)
  - Many with long term track records

	MSCI The World	MSCI World Minimum Volatility	Analytic Investors Global Low Volatility	Acadian Global Managed Volatility Equity
5 year volatility %	20.90%	14.38%	13.01%	13.16%
5 year return %	-0.60%	1.95%	2.88%	2.42%

Low Volatility Indices
Performance analysis

	10y Return p.a.	10y Vol p.a.	10y Tracking Error (%)
MSCI World	8.1%	16.2%	
MSCI World Minimum Vol	9.1%	11.6%	6.8%
MSCI World Risk Weighted	11.4%	15.3%	3.3%
MSCI World Quality	8.8%	13.7%	5.4%
FTSE MV Developed	12.7%	13.4%	4.4%
Russell Developed Defensive	9.1%	13.6%	3.4%



Source: Datastream / Bloomberg; total returns in USD; performance/risk statistics are to 31 December 2012

Alternative Indexation
Conclusions

- Market cap based indices continue to be a reasonable way of investing in equity markets but do have some fundamental flaws which are not always well appreciated by investors
- The range of alternative indices is growing fast although investor take-up to date has been moderate
- Fundamental indexation is essentially a cheap way of accessing the "value premium"
- The Fund currently has meaningful exposure to "value" through existing managers, in particular, UBS (expected to be a persistent bias) and Majedie ("dynamic" tilt), representing around 25% of the equity assets. Other managers such as Marathon could also have meaningful "value" tilts at times as well
- In our view, accessing the equity risk premium via a low volatility equity mandate would be the most "additive" way of diversifying away from market cap. A passive approach is available but we prefer strategies with some active manager oversight
  - We think its reasonable to assume that low volatility equities could achieve broadly the same return as market cap equities but with around 20% less risk
  - Would act as a useful "counter-balance" if the allocation to Emerging Market equities is increased
  - Would suggest an allocation of around 20% of total equity assets, subject to other considerations

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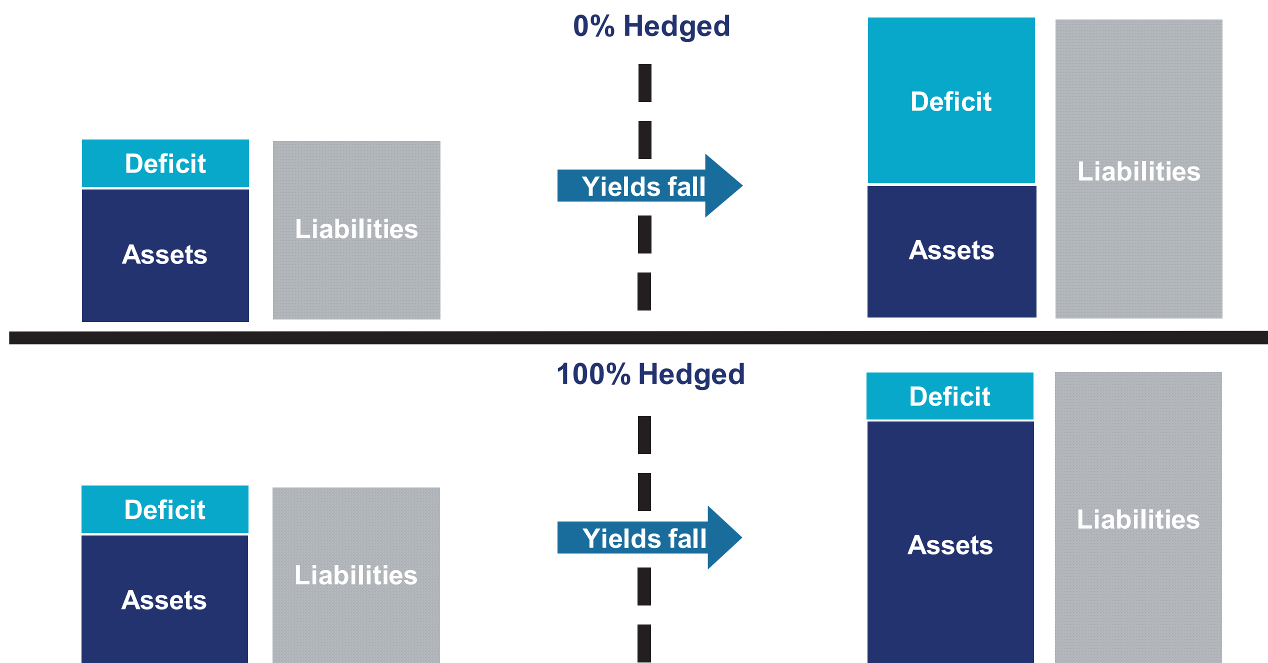
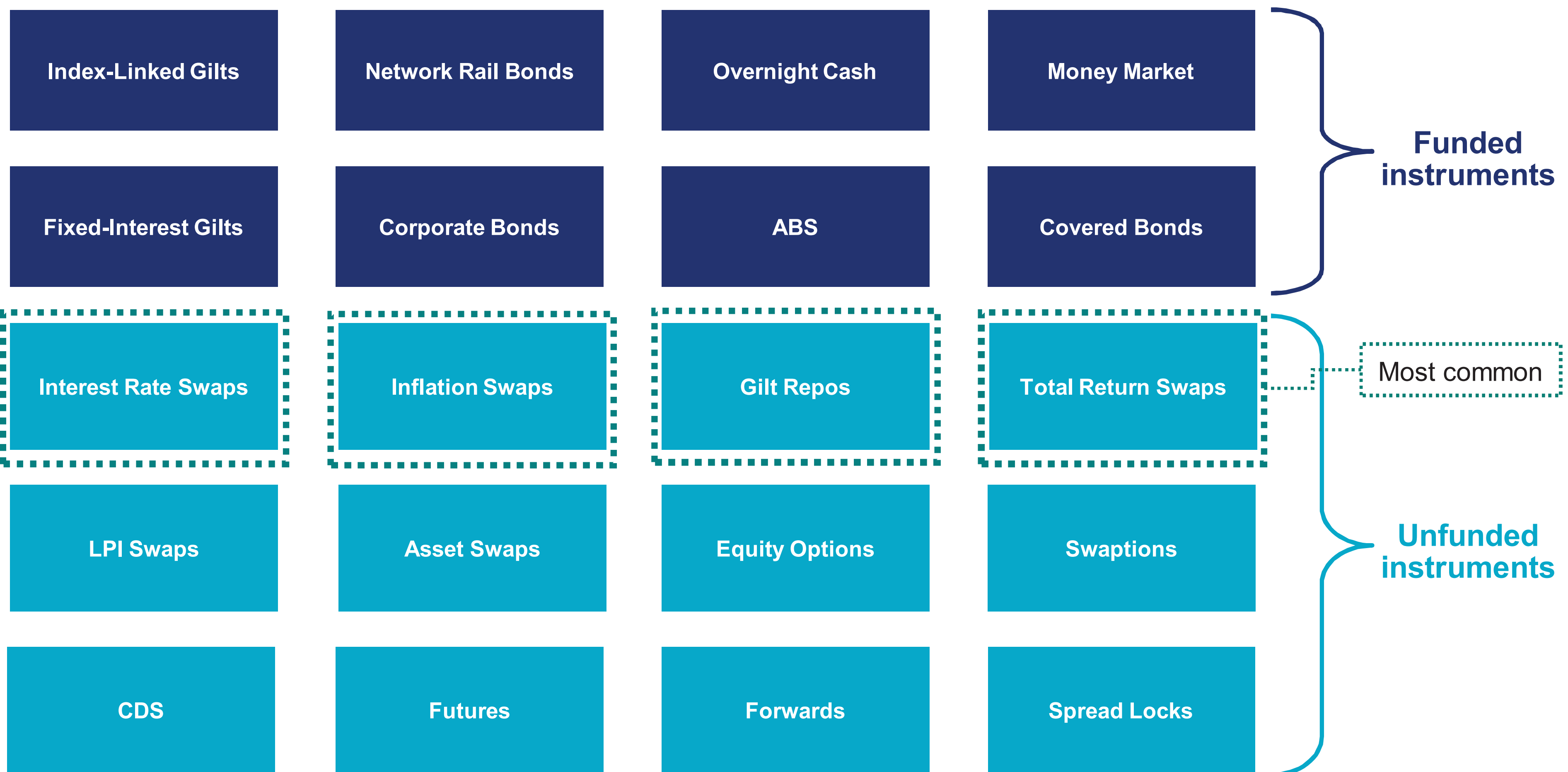
Appendix

Liability Driven Investment (LDI)
What is it?

- ‘Liability hedging’ simply means that you offset the impact of movements in interest rates and inflation on the value of the liabilities by holding an asset that responds in the same way as the liabilities to movements in interest rates and inflation. A ‘hedge ratio’ of 50% means that the change in value of the asset is expected to be around 50% of the change in the value of the liabilities.
- Assuming the Plan did not have any interest rate hedging, then a fall in interest rates results in a rise in liabilities, whilst the assets remain unchanged, thus increasing the deficit. If the Plan had been 100% hedged on interest rates, then the assets would rise by the same amount as the liabilities, and the deficit would remain the same size.
- Similar analysis applies with changes in inflation and the amount of inflation exposure that is hedged.



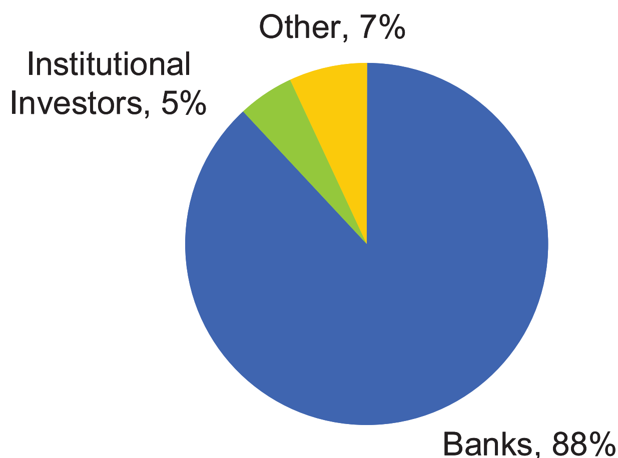
LDI
Hedging instruments



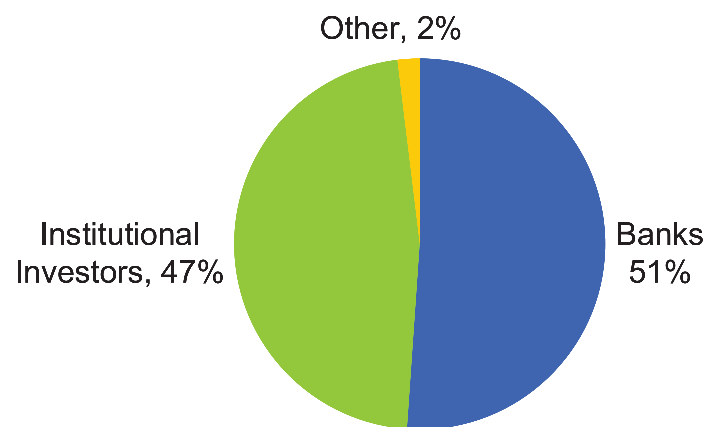
Why is Private Debt attractive?
Bank deleveraging continues across Europe

- Financial crisis
  - Reduction in bank lending
  - Loan maturities and distressed owners of assets
  - Scarcity of debt capital created attractive terms for investors
  - With more security than equity
- Now
  - More debt capital in market
  - But banks still not lending sufficiently
  - European banks in particular remain highly leveraged

% of Loan Market - 1999

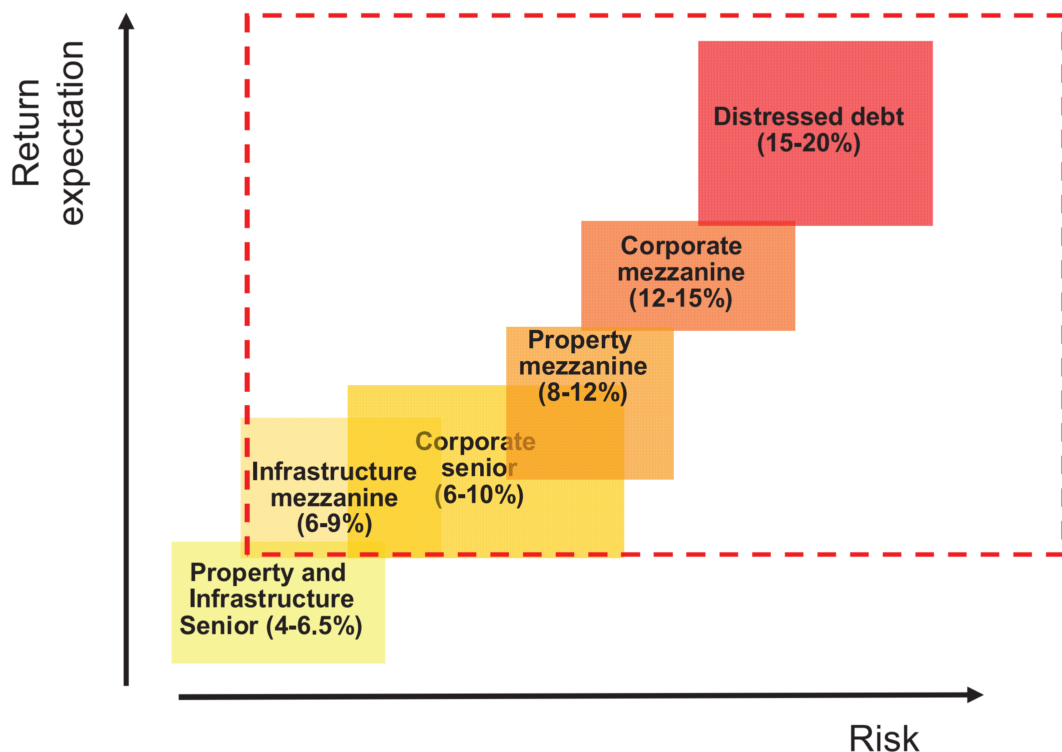


% of Loan Market - 2012



(1) Source: Ares Management; S&P U.S. / Europe Leveraged Lending Review Q3 2012

Private Debt
A strategically attractive opportunity



Credit Profile

On the whole the private debt market is sub-investment grade and on par with high yield but with higher expected returns given the illiquidity

Return Profile

Return potential can vary from around 3% - 15%+ depending on the type, issue and issuer

Funds usually have absolute return targets

Payment schedule can vary depending on class of debt. European debt is typically floating rate

Other Information

Liquidity: illiquid compared to public debt

Holding Period: capital is usually locked up for 4-10 years thus significantly shorter than private equity

Key risks: Illiquidity, credit risk, sourcing (adequate access to deal flow), high level of research required

A compelling diversifier to equities currently offering attractive risk-adjusted returns, ideally suited to LGPS funds

Mercer Assumptions

Mercer Central Assumptions	Expected Return %pa	Absolute Volatility %pa	Liabilities	Index-Linked Gilts (20-year duration)	Fixed Interest Gilts (20-year duration)	AA Index-Linked Bonds (20-year duration)	AA Fixed Interest Bonds (20-year duration)	Cash	ILGs (>5s)	FIGs (all)	FIGs (>15)	UK £ Credit(all)	UK £ Credit(>10)	Conventional Property	HLV Property	Hedge Funds	Commodities	Infrastructure (Debt)	Infrastructure (Listed Equity)	Infrastructure (Unlisted Equity)	Private Equity	Equities	Equities (Currency Hedged)	Emerging Markets	High Yield	Pure Credit	Minimum Variance Equities	Small Cap Equities	Emerging Markets Debt - Local Currency
Liabilities	2.8%	10.4%	**1.0**																										
Index-Linked Gilts (20-year duration)	2.8%	12.0%	1.0	**1.0**																									
Fixed Interest Gilts (20-year duration)	2.8%	13.2%	0.7	0.6	**1.0**																								
AA Index-Linked Bonds (20-year duration)	3.4%	15.5%	0.6	0.6	0.2	**1.0**																							
AA Fixed Interest Bonds (20-year duration)	3.4%	13.2%	0.6	0.6	0.8	0.6	**1.0**																						
Cash	2.8%	1.9%	0.1	0.1	0.1	-0.1	-0.0	**1.0**																					
ILGs (>5s)	2.8%	10.9%	0.9	0.9	0.6	0.5	0.5	0.1	**1.0**																				
FIGs (all)	2.8%	6.7%	0.7	0.6	0.9	0.1	0.7	0.2	0.7	**1.0**																			
FIGs (>15)	2.8%	10.7%	0.7	0.7	1.0	0.2	0.7	0.1	0.7	1.0	**1.0**																		
UK £ Credit(all)	3.6%	6.6%	0.5	0.5	0.6	0.4	0.7	0.2	0.5	0.7	0.7	**1.0**																	
UK £ Credit(>10)	3.6%	8.9%	0.7	0.6	0.8	0.4	0.8	0.1	0.6	0.8	0.9	0.9	**1.0**																
Conventional Property	4.8%	10.7%	-0.1	-0.0	-0.1	0.0	-0.0	-0.1	0.0	-0.2	-0.1	0.0	-0.0	**1.0**															
HLV Property	4.4%	8.5%	-0.1	-0.0	-0.1	0.0	-0.0	-0.1	0.0	-0.2	-0.1	0.0	-0.0	1.0	**1.0**														
Diversified Growth Funds	4.8%	10.9%	0.1	0.1	0.0	0.1	0.1	0.2	0.1	0.1	0.0	0.1	0.1	-0.1	-0.1	**1.0**													
Commodities	2.8%	23.0%	-0.1	-0.1	-0.3	0.0	-0.3	0.1	-0.1	-0.3	-0.3	-0.1	-0.2	0.1	0.1	0.2	**1.0**												
Infrastructure (Debt)	5.8%	12.7%	0.6	0.6	0.3	0.7	0.6	-0.0	0.5	0.2	0.3	0.3	0.4	-0.2	-0.2	0.1	-0.1	**1.0**											
Infrastructure (Listed Equity)	6.2%	18.7%	0.3	0.3	0.1	0.4	0.4	-0.0	0.3	0.1	0.1	0.3	0.3	0.1	0.1	0.5	0.1	0.2	**1.0**										
Infrastructure (Unlisted Equity)	8.2%	29.7%	0.2	0.2	-0.0	0.4	0.3	-0.0	0.2	-0.1	-0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.2	1.0	**1.0**									
Private Equity	9.0%	36.8%	0.1	0.2	-0.0	0.4	0.2	-0.1	0.2	-0.1	-0.1	0.2	0.2	0.2	0.2	0.4	0.2	0.2	1.0	1.0	**1.0**								
Equities	6.8%	16.9%	0.2	0.2	0.1	0.4	0.3	-0.0	0.3	0.0	0.1	0.3	0.3	0.2	0.2	0.4	0.1	0.2	1.0	1.0	1.0	**1.0**							
Equities (Currency Hedged)	6.8%	16.5%	0.2	0.2	0.1	0.5	0.3	0.0	0.2	-0.0	0.0	0.3	0.3	0.2	0.2	0.3	0.1	0.2	1.0	1.0	1.0	1.0	**1.0**						
Emerging Markets	8.6%	28.4%	0.1	0.1	-0.0	0.3	0.2	0.0	0.1	-0.1	-0.1	0.2	0.2	0.1	0.1	0.5	0.2	0.2	0.8	0.8	0.8	0.8	0.7	**1.0**					
High Yield	5.0%	11.3%	0.1	0.1	-0.1	0.4	0.2	-0.1	0.1	-0.1	-0.1	0.3	0.2	0.0	0.0	0.3	0.2	0.3	0.6	0.6	0.6	0.6	0.6	0.6	**1.0**				
Pure Credit	0.8%	6.6%	-0.2	-0.1	-0.4	0.7	0.2	-0.2	-0.2	-0.5	-0.4	0.0	-0.1	0.1	0.1	0.1	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.3	0.4	**1.0**			
Minimum Variance Equities	6.0%	14.3%	0.3	0.3	0.2	0.3	0.3	-0.0	0.3	0.1	0.2	0.3	0.3	0.1	0.1	0.5	0.1	0.2	0.9	0.9	0.9	0.9	0.8	0.7	0.5	0.2	**1.0**		
Small Cap Equities	7.4%	19.6%	0.1	0.1	-0.0	0.4	0.2	-0.1	0.2	-0.1	-0.1	0.2	0.2	0.2	0.2	0.5	0.2	0.2	1.0	1.0	1.0	1.0	0.9	0.8	0.6	0.4	0.9	**1.0**	
Emerging Markets Debt - Local Currency	5.4%	14.7%	0.2	0.2	0.1	0.2	0.1	0.0	0.2	0.1	0.1	0.3	0.2	-0.2	-0.2	0.6	0.1	0.1	0.5	0.5	0.5	0.5	0.4	0.5	0.4	0.1	0.6	0.5	**1.0**

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