The role of fixed income and the missing middle

J.P. Morgan Asset Management

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2017 Long-Term Capital Markets Assumptions

- **Economic growth forecasts trimmed again** – poor demographics and weak productivity remain a drag
- **Expected returns fall** – loose monetary policy borrowed returns from the future; return outlook for most assets is tough
- **Active investing critical** – full valuations and reduced growth expectations make active investing a key source of return
- **Duration premia collapsed to near zero** – duration returns are now at, or below cash returns in major currencies
- **Income seekers forced further into credit or equity** – erosion of duration premia pushes capital into corporate assets
- **Alternatives becoming more mainstream** – scarce returns from mainstream assets focuses attention further on illiquid alternative assets where manager selection is a primary driver of returns

In a low return world successful investors will need to be more active, more diversified, and more inventive

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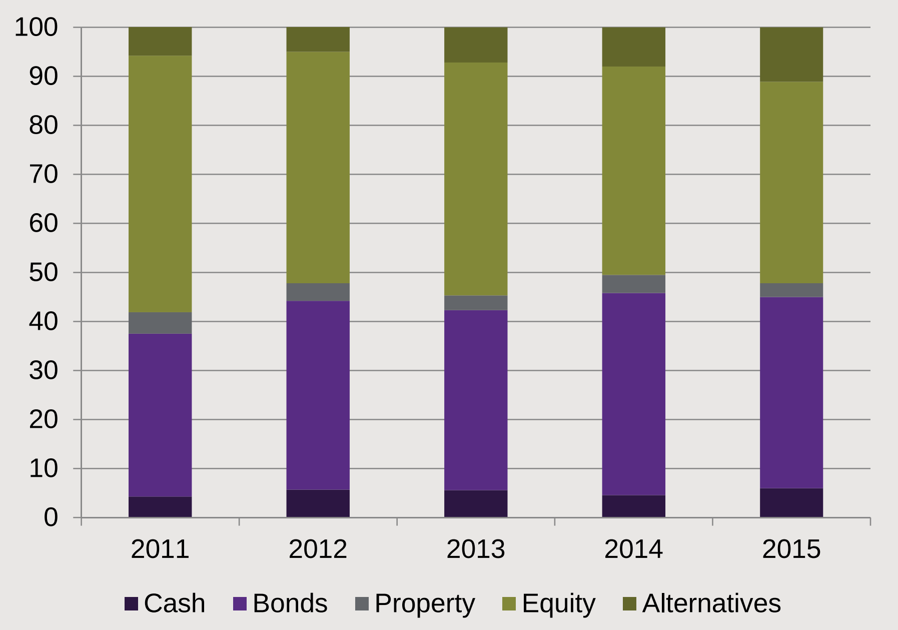
Derisking has become increasingly unaffordable

Average Irish Defined Benefit Plan Asset Allocation 2011-2015



KEY OBSERVATIONS

- Bond plus cash allocations have varied between 40%-45% since 2012, with increasing levels of cash
- Bond allocations are 81% Euro denominated, 87% government bonds, 86% fixed and 59% longer-duration
- Derisking on the margin through diversification into alternatives

Source: J.P. Morgan Asset Management's assessment as at 21 March 2017 based on IAPF Investment Survey 2015.

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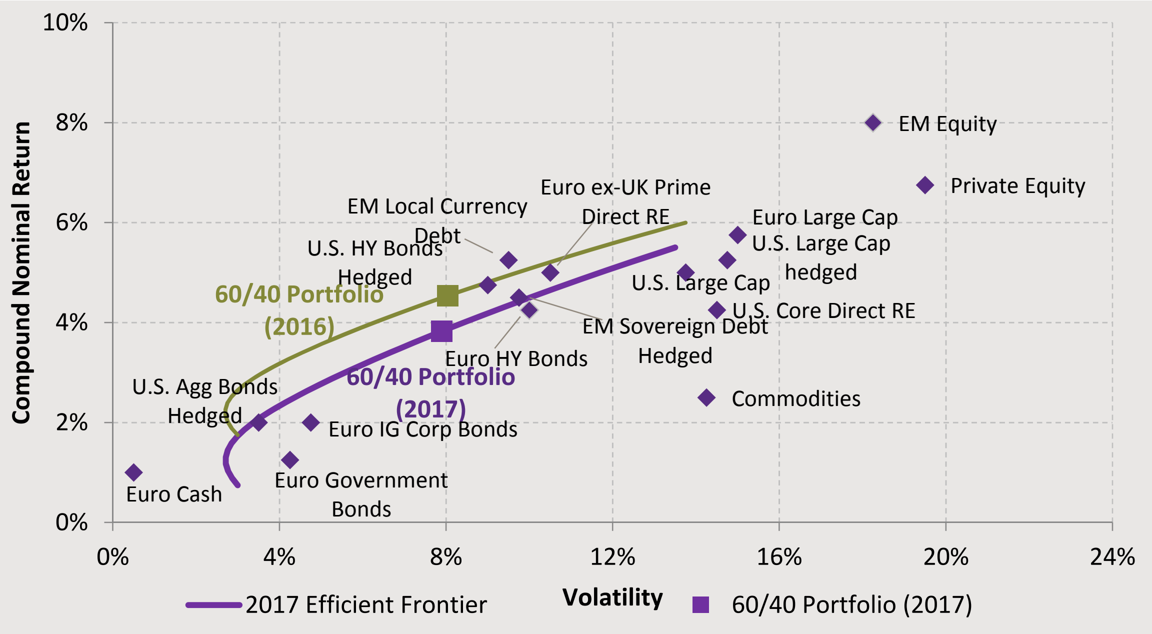
Diversification does not guarantee investment returns and does not eliminate the risk of loss.

Slow growth and vanishing term premium to weigh on returns (EUR)

Efficient frontiers: 2017 vs. 2016 assumptions (EUR)



Source: J.P. Morgan Asset Management, estimates as of 30 September 2015 and 30 September 2016.

KEY PORTFOLIO CONSIDERATIONS

- 60/40 stock-bond returns down 70bps – static balanced allocation has run out of road
- Efficient frontier steepens further as return outlook for fixed income deteriorates
- Emerging Markets (EM) equity, high-yield bonds and EM debt are still attractive
- Real assets are relatively more attractive than last year
- Currency is a key driver of returns as expected EUR appreciation depresses returns

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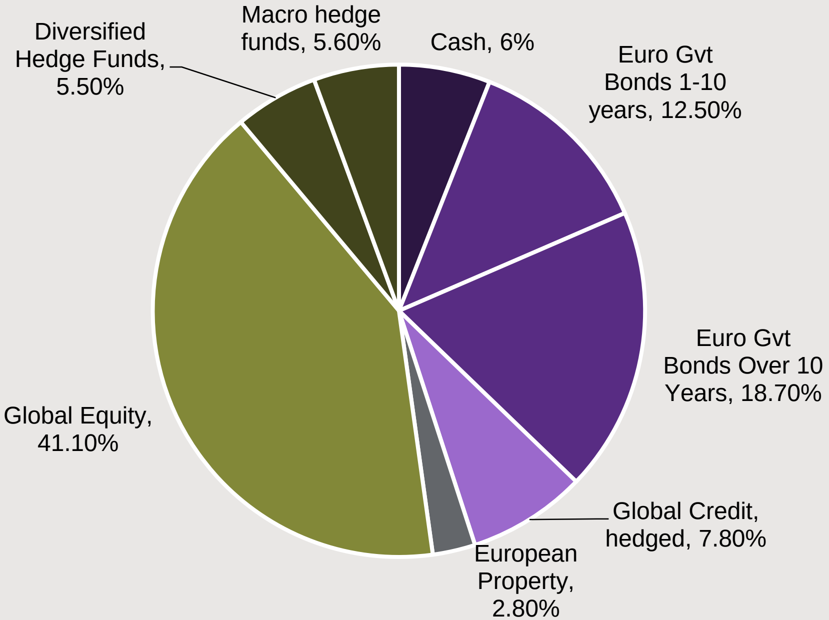
The ‘missing middle’ – credit and real assets

Representative Irish Defined Benefit Plan Asset Allocation



KEY OBSERVATIONS

- Expected return on this allocation based on our long-term capital markets assumptions is 3.88%
- Representative fund would enhance efficiency by diversifying into credit and real assets in particular
- Funding new allocations primarily from equity is expected to reduce risk with little detriment to return
- Funding new allocations primarily from bonds is expected to enhance return with little impact on risk

Source: J.P. Morgan Asset Management’s assessment as at 21 March 2017 based on IAPF Investment Survey 2015. Return estimates based on ‘2017 Long-Term Capital Markets Assumptions’.

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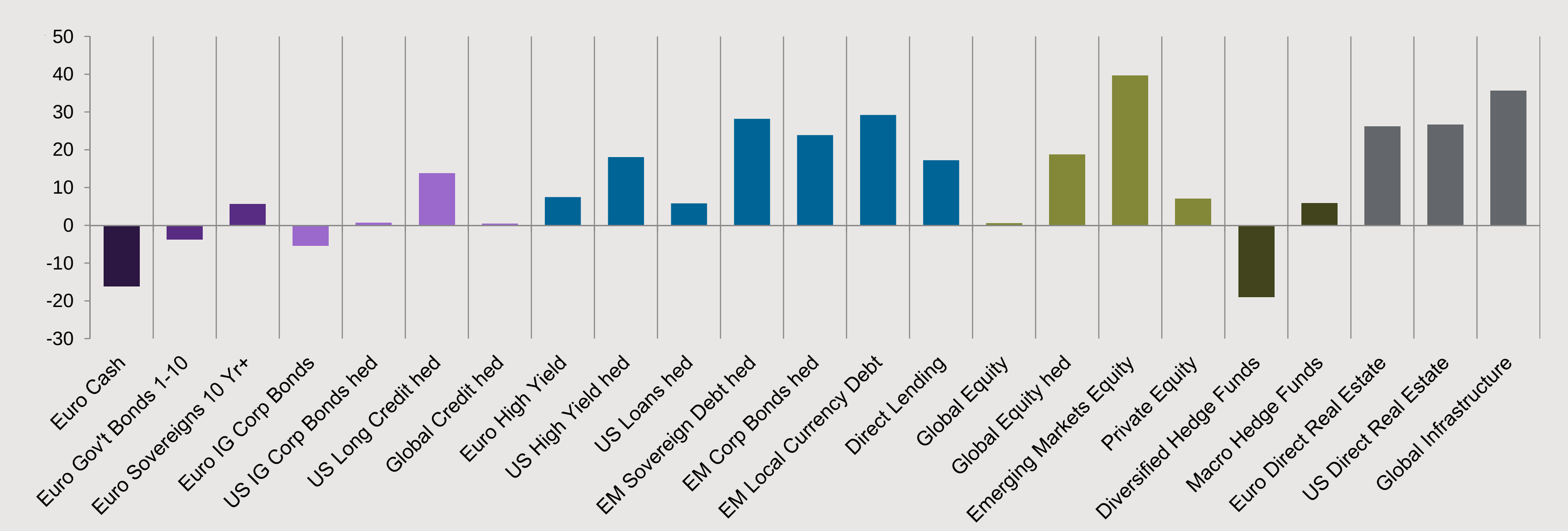
Using the missing middle to improve portfolio efficiency

Marginal change in Portfolio Efficiency for a 1 % allocation to:



Source: J.P. Morgan Asset Management, based on J.P Morgan '2017 Long-Term Capital Market Return Assumptions'. For illustrative purposes only. Base portfolio as shown on slide 4.
Marginal efficiency measured as marginal change in surplus Sharpe Ratio.

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Role can be to reduce risk, or to enhance return

Representative Pension Plan

	Representative Portfolio	Reduce Risk	Enhance Return
			
- LDI assets - Investment Grade Credit - Extended Credit - Real assets - Equities - Alternatives	37.0% 7.8% - 2.8% 41.1% 11.1%	40.0% 7.1% 10.0% 15.0% 14.5% 13.4%	23.0% 1.8% 15.0% 15.0% 29.9% 15.0%
Expected return	3.88%	3.88%	5.00%
Surplus volatility	7.24%	4.66%	7.25%
Surplus Sharpe Ratio	0.350	0.544	0.504
Funding Risk Reserve (% of liabilities)	12.2%	9.2%	11.6%

Source: J.P. Morgan Asset Management, based on '2017 Long-term Capital Markets Assumptions', data as of September 30, 2016

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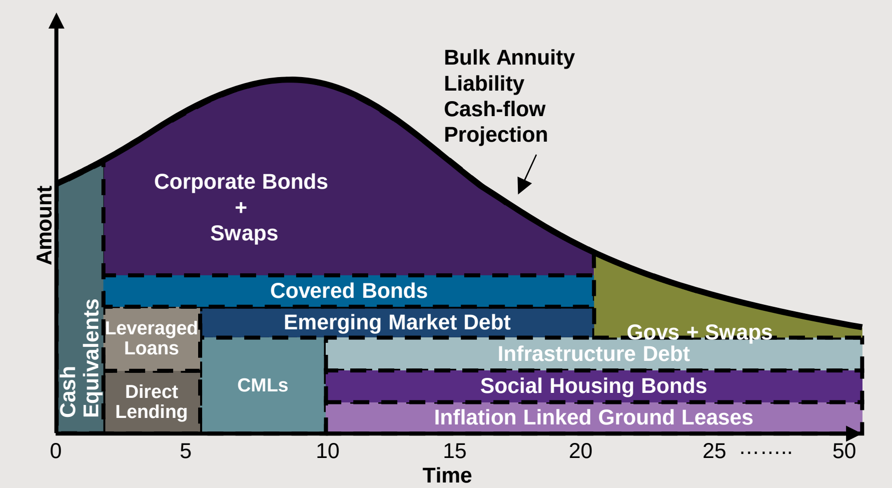
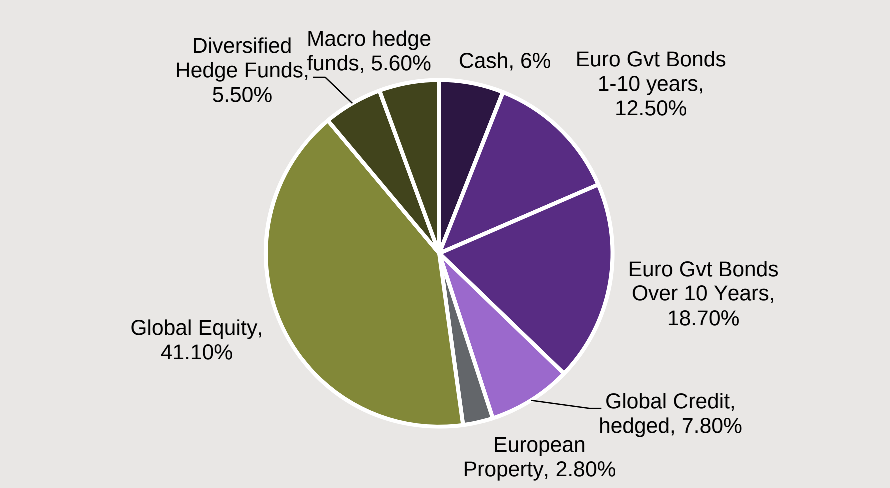
Taking a leaf from insurers

Illustrative strategy for insured annuity book



Source: J.P Morgan Asset Management. For illustrative purposes only.

Representative Irish Defined Benefit Plan Asset Allocation



Source: J.P. Morgan Asset Management's assessment as at 21 March 2017 based on IAPF Investment Survey 2015. For illustrative purposes only. The Fund is an actively managed portfolio, holdings, sector weights, allocations and leverage, as applicable are subject to change at the discretion of the Investment Manager without notice. Past performance is not an indication of current and future performance.

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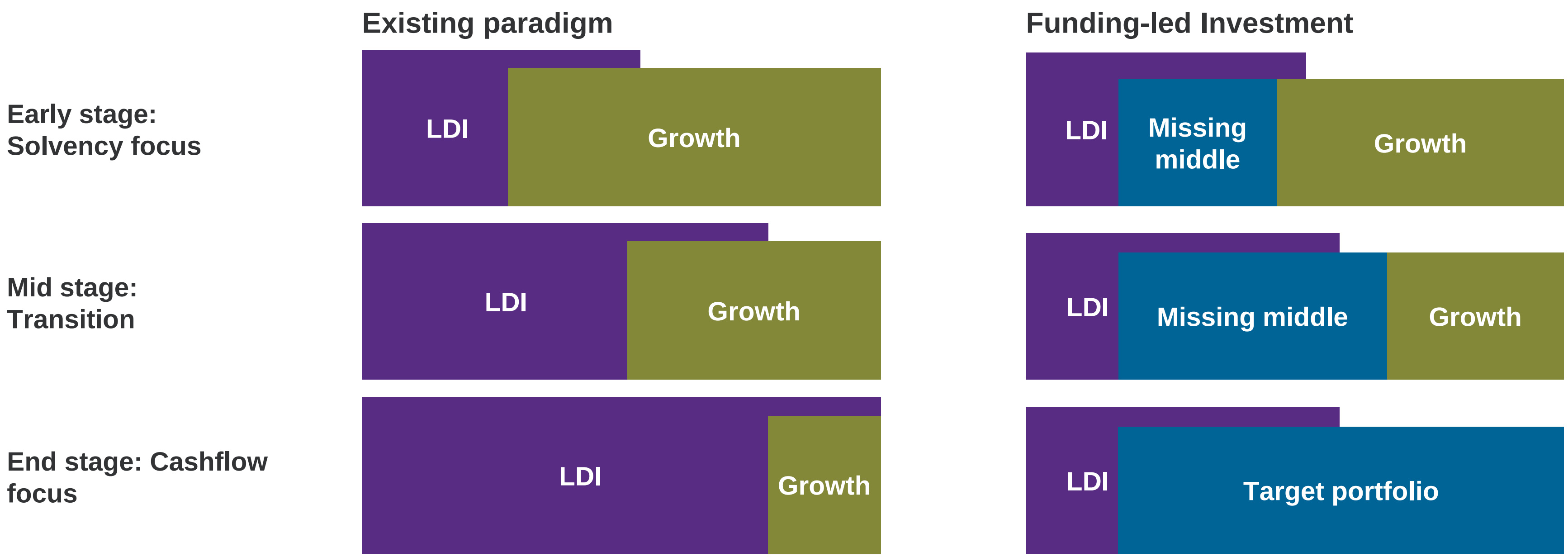
The missing middle is the seed of a portfolio that should be grown through time



In conclusion

- **The 'missing middle' can improve portfolio efficiency** – credit and real assets offer yield and diversification
- **Funding Risk Reserve has created a barrier to investing in the missing middle** – only Euro denominated bonds count
- **LDI assets can be reshaped to form better match to liabilities** - creates room for missing middle
- **Missing middle is the seed that can grow to a self-sufficiency portfolio** – taking a leaf from insurers

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