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# Cashflow-Driven Investing

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# Contents

- Why cashflow driven investing?
- What does a cashflow driven investment strategy look like?
- How do you build a cashflow driven strategy?
- Starting on the journey

# Being cashflow negative creates important challenges

## Funding Drag

Underfunded schemes pay out a larger portion of assets than of liabilities

Rule of thumb:

$$\text{Drag} \sim \frac{\text{Cashflow} \times \% \text{ Deficit}}{\text{Funding Level}}$$

For example, drag for a 90% funded plan with 5% negative cashflow is ~0.55% per annum

## Volatility

Being a forced seller of assets locks in losses and amplifies volatility

Rule of thumb:

@ 10% surplus volatility,  
5% negative cashflow adds  
~ 5% to Deficit VaR

For example, a plan with a deficit VaR of 70% will see that fall to ~ 65% with 5% negative cashflow

## Administrative Burden

Identify and process required transactions, suffer transaction costs and risk liquidity squeezes

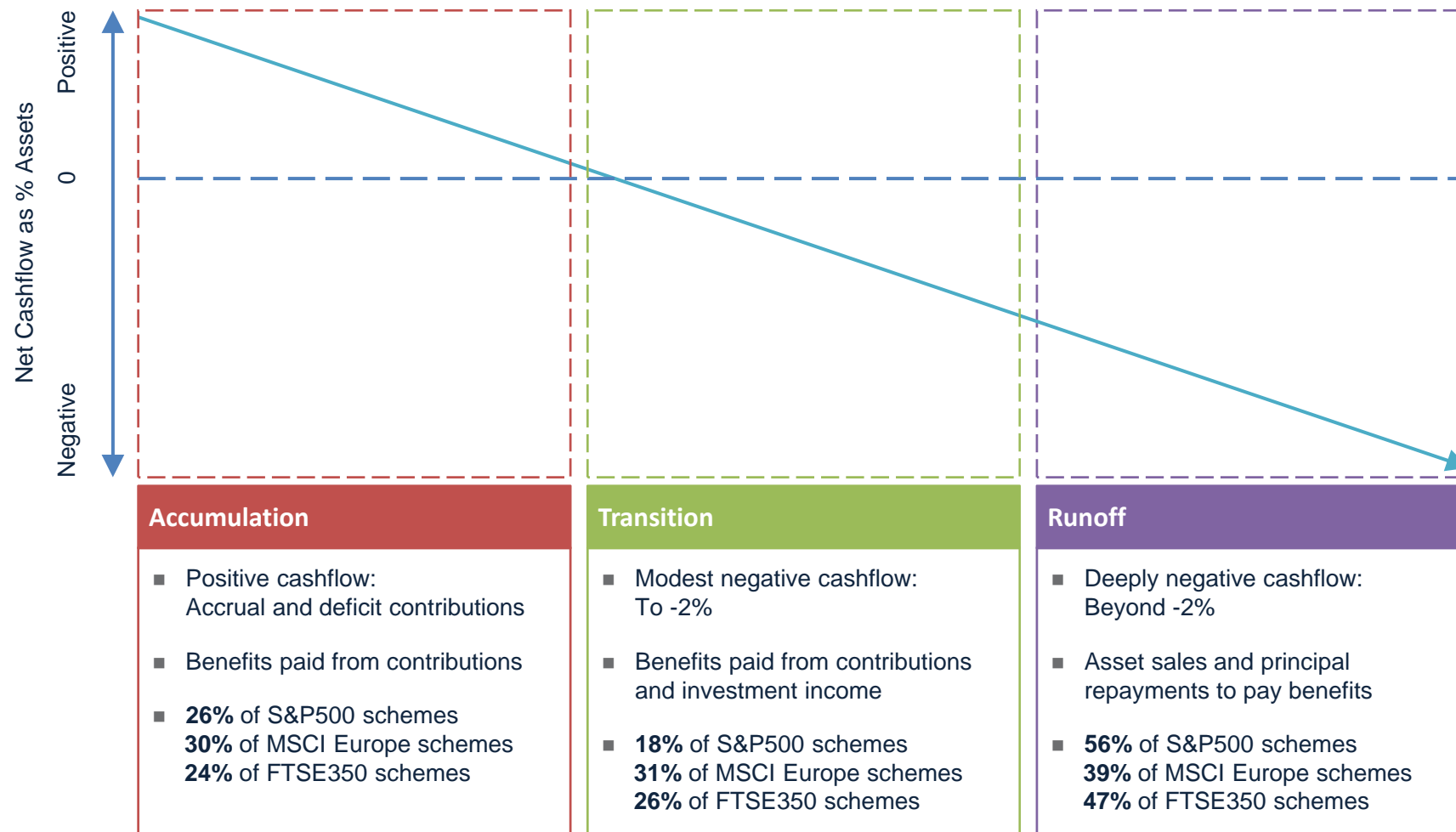
Rule of thumb:

Beyond ~2% negative cashflow, interest, regular investment income exhausted for most schemes

For example, a plan with a negative cashflow of 5% can expect to have sell ~ 3% of assets per annum

Source: J.P. Morgan Asset Management. For illustrative purposes only. Cashflow defined as cash income (not including investment income) less benefit outgo and expenses, expressed as a percentage of the plan's assets.

# Many schemes are, or will soon become, cashflow negative



Source: Source HOLT® (based on accounting disclosures for S&P 500, FTSE350 and MSCI Europe), J.P Morgan Asset Management, data as of June 30, 2017. For illustrative purposes only. Cashflow defined as cash income (not including investment income) less benefit outgo and expenses, expressed as a percentage of the plan's assets.

# Key factors are maturity and contribution levels

## Funding Position of Irish Pensions Schemes based on Annual Actuarial Data Returns

	All schemes		Largest schemes	
	# Schemes	Funding Level	# Schemes	Funding Level
Schemes meeting the funding standard	465	116%	28	n/a
Schemes not meeting the funding standard	163	87%	22	n/a
All schemes	1628	105%	50	102%

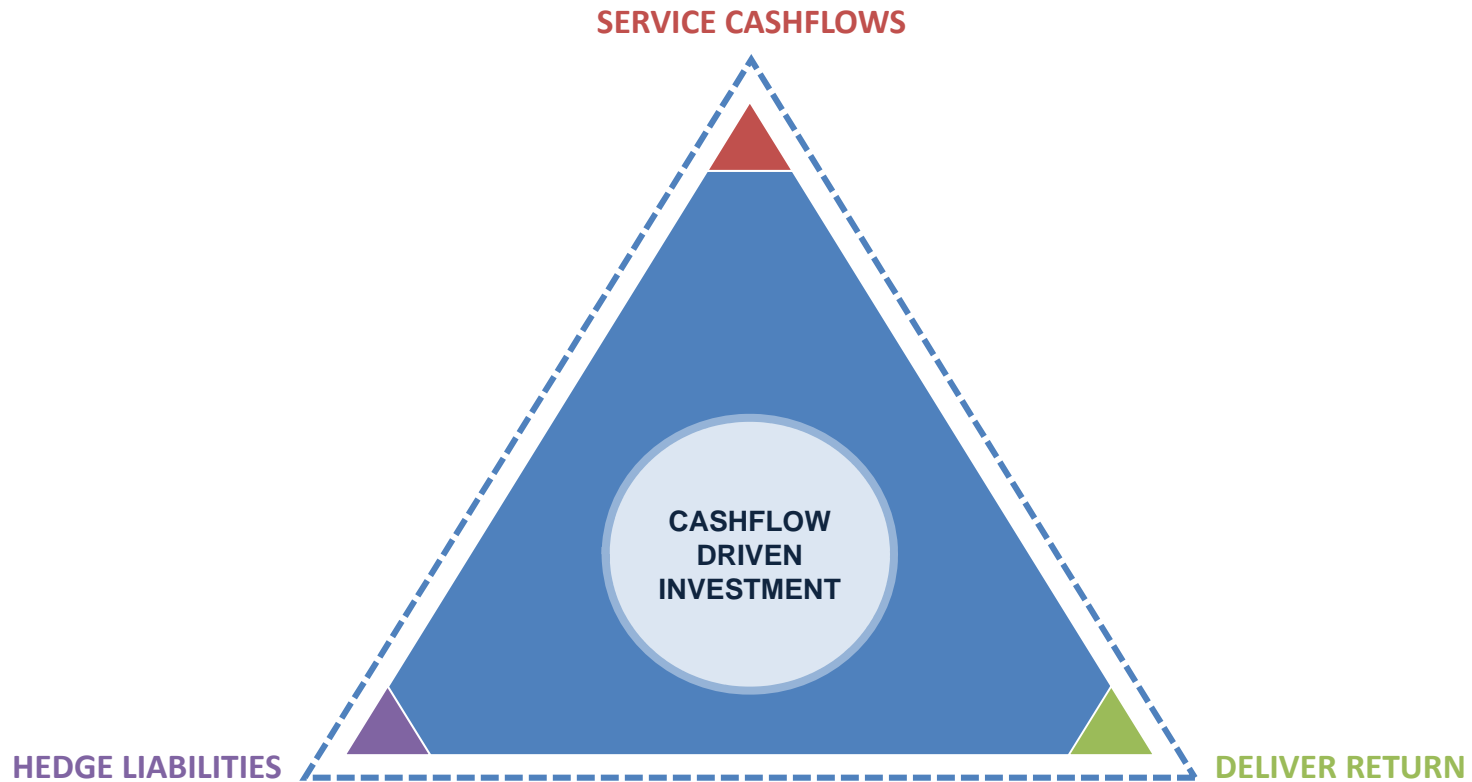
## Demographic Profile of Irish and UK Schemes by # Members

	Actives	Deferreds	Pensioners
Irish Schemes	18%	66%	16%
UK Schemes	12%	47%	40%

Source: The Pensions Authority *Review of 2016 Statistics*, Pension Protection Fund *Purple Book 2017*, J.P. Morgan Asset Management, as of 6 April 2018

# Cashflow Driven Investing

Building your strategy to explicitly take account of cashflow needs



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

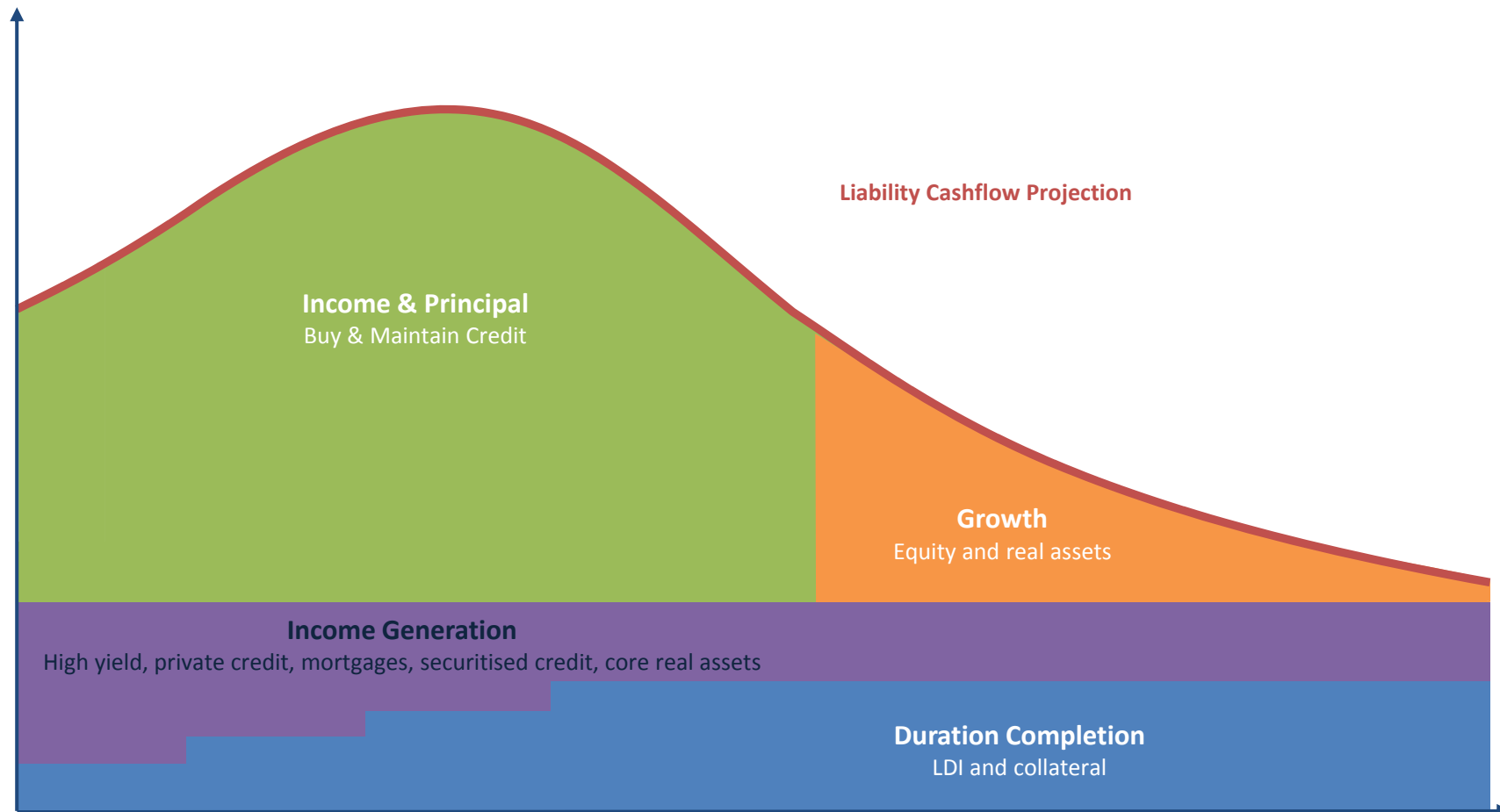
# Cashflow Driven Investing – not just for the endgame

	Growth + Matching	Cashflow-driven	Cashflow matching
Objective	<ul style="list-style-type: none"> <li>Immunize the pension plan against interest rates and inflation</li> <li>Generate long-term return</li> </ul>	<ul style="list-style-type: none"> <li>Ensure liquidity through cash flows and income</li> <li>Immunize against interest rates and inflation</li> <li>Generate long-term return</li> </ul>	<ul style="list-style-type: none"> <li>Closely match cash flows</li> <li>Immunize the pension plan against interest rates and inflation</li> <li>No return required above matching portfolio</li> </ul>
Pension Plan Status	<ul style="list-style-type: none"> <li>Low funding status</li> <li>Need significant return to repair deficit</li> <li>Cashflow positive</li> </ul>	<ul style="list-style-type: none"> <li>Moderate funding status</li> <li>Need modest return to fund remaining cashflows</li> <li>Cashflow negative / run off mode</li> </ul>	<ul style="list-style-type: none"> <li>Full funding status</li> <li>Plan in run-off mode</li> </ul>
Investment Strategy	<ul style="list-style-type: none"> <li>Tends to a barbell</li> <li>Government bonds &amp; related derivative instruments, highly leveraged</li> <li>Equity dominated growth portfolios</li> </ul>	<ul style="list-style-type: none"> <li>Cashflow-driven core of fixed income assets</li> <li>Cashflow-matched at short end, duration matched at long end</li> <li>Growth assets added with an income generation angle</li> </ul>	<ul style="list-style-type: none"> <li>Matching cash flows with government and high quality corporate bonds</li> <li>Similar to insurance matching adjustment approach</li> </ul>

Source: J.P. Morgan Asset Management. For illustrative purposes only. LDI = Liability Driven Investment.



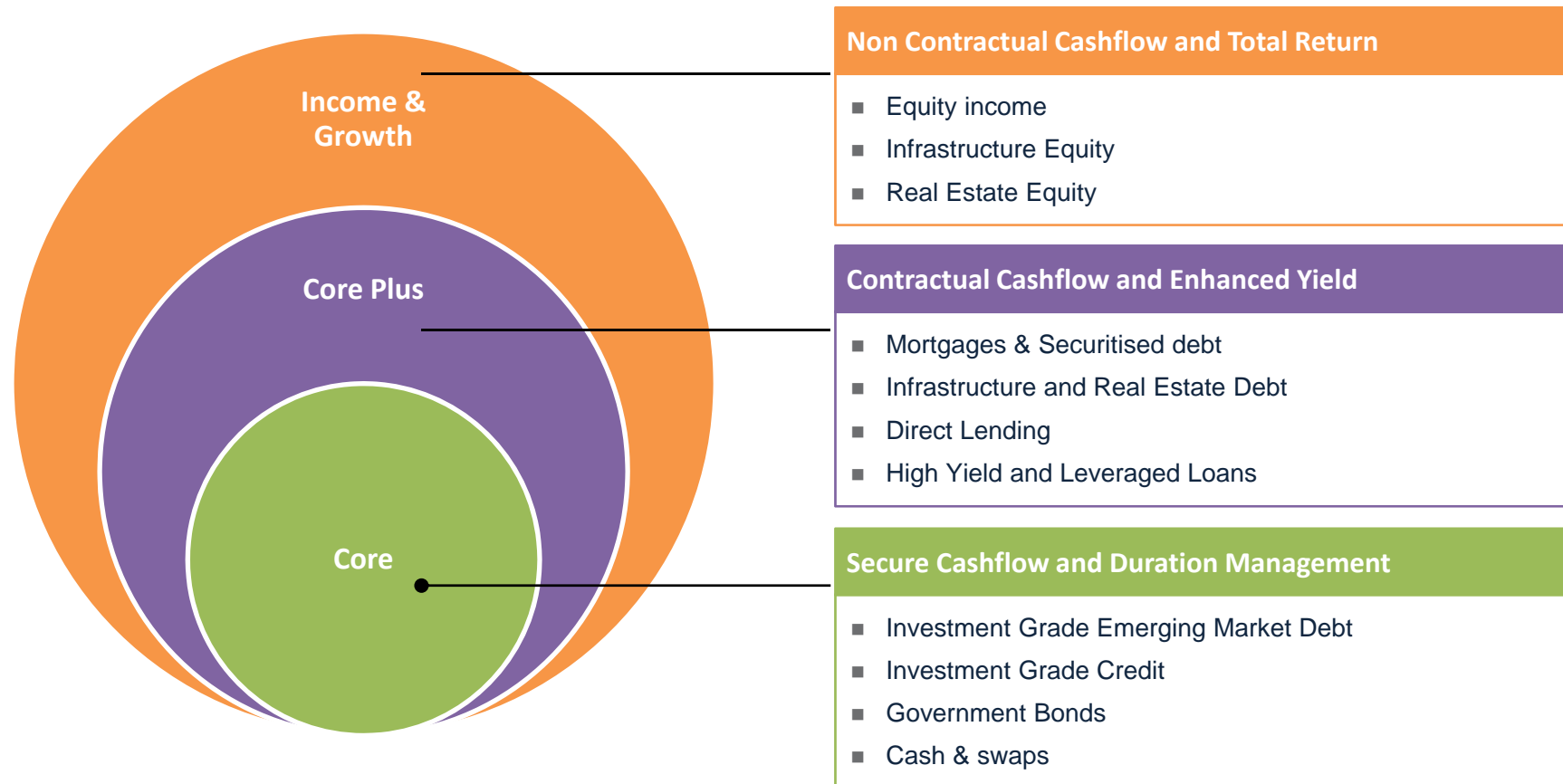
# An illustrative Cashflow Driven Investment strategy



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

# Portfolio building blocks

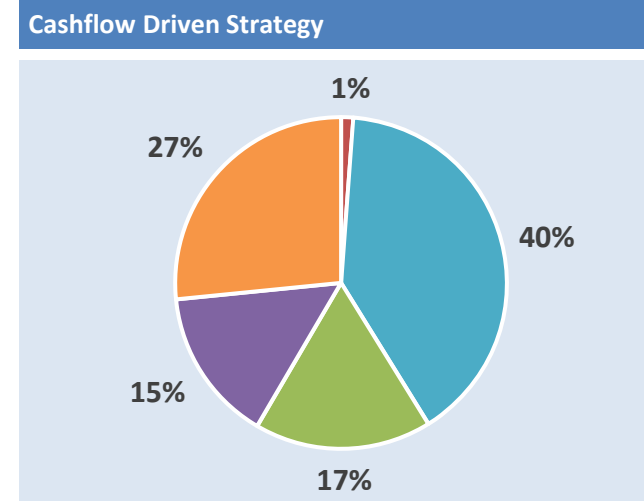
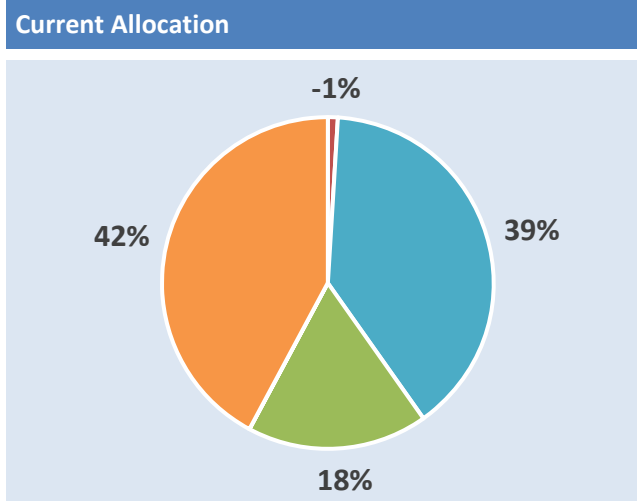
Securing the cashflows at a reasonable price



Source: J.P. Morgan Asset Management. For illustrative purposes only. Mortgages includes Mortgage Backed Securities, Residential Mortgaged Backed Securities, Covered Mortgage Bonds and Real Estate Debt. High Yield Debt includes Emerging Market High Yield Debt

# Developing a Cashflow Driven Investment Strategy

- Cash
- LDI Assets
- Core Assets
- Core Plus Assets
- Income & Growth



<b>Expected Return</b>	3.50%	3.50%
<b>Surplus Volatility</b>	7.04%	4.30%
<b>Surplus VaR 95</b>	9.47%	4.97%
<b>Hedge Ratio</b>	50%	55%
<b>Yield (FI Assets)</b>	1.85%	2.99%

Source: J.P. Morgan Asset Management, as at 31 March 2017. VaR 95% is the 95% surplus Value at Risk estimated assuming returns are normally distributed. Current allocation based on UK Defined Benefit scheme average asset allocation as reported in the *Pension Protection Fund's Purple Book 2018*. Liabilities based on Pension Protections Fund's liability cashflow projections. For illustrative purposes only. \*Estimated by ratio of cashflows over next year to the average cashflow over the following 9 years.

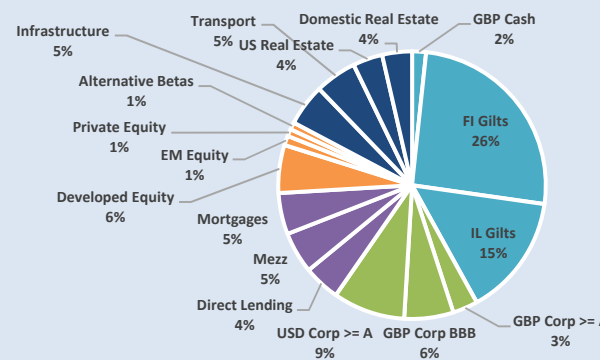
Past performance and forecast are not reliable indicators of current and future results.

# Cashflow Driven Investing - Portfolio Dashboard

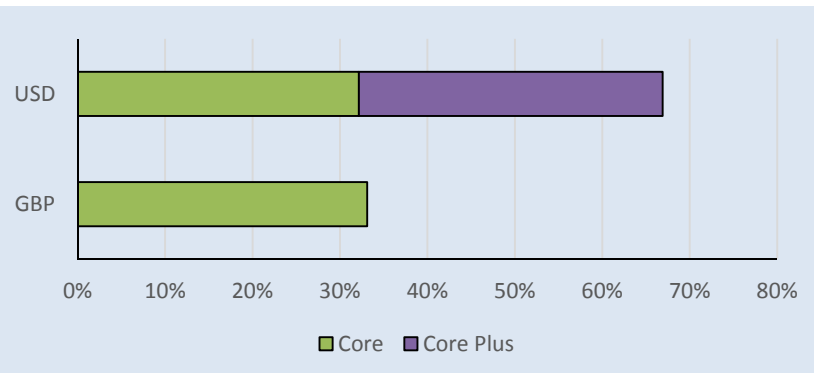
## Portfolio Statistics

Expected Return	3.50%
Expected Return over Liabilities	2.10%
Duration (yrs)	12.1 yr
• From credit	9.1 yr
• From LDI	3.0 yr
Hedge Ratio:	55%
Surplus Volatility	4.30%
Surplus VaR95	4.96%

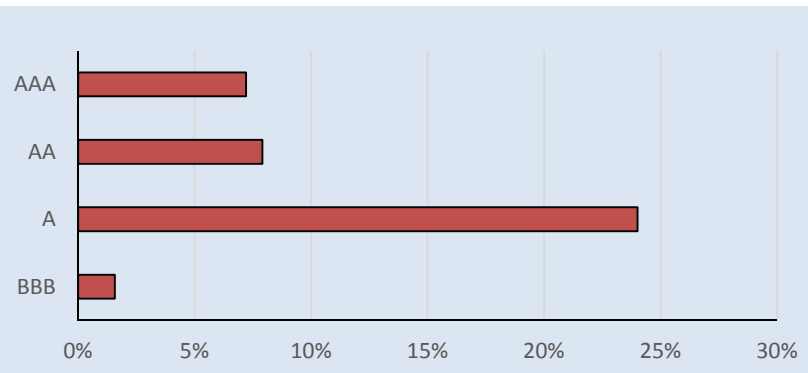
## Asset Allocation



## Fixed Income (ex LDI) Currency Exposure



## Fixed Income (ex LDI) Quality

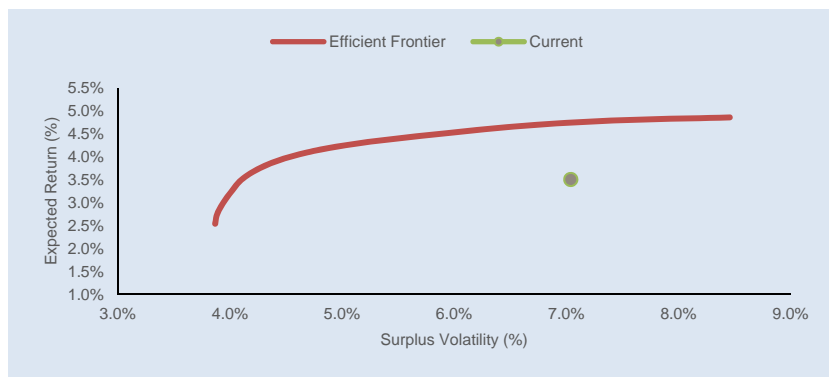


Source: J.P. Morgan Asset Management, 2018 Long Term Capital Market Assumptions. For illustrative purposes only. Emerging Markets Debt (EMD) Sov IG USD = Investment Grade Sovereign Emerging Market Debt issued in USD, HF = Hedge Funds Surplus VaR95 is the 95% assuming portfolio returns are normally distributed. Opinions, estimates, forecasts, projections and statements of financial market trends are based on market conditions at the date of the publication, constitute our judgement and are subject to change without notice. There can be no guarantee they will be met.

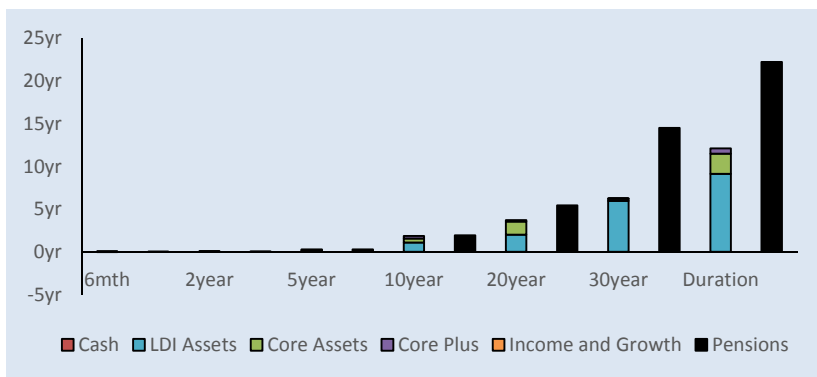
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# Cashflow Driven Investing - Portfolio Dashboard

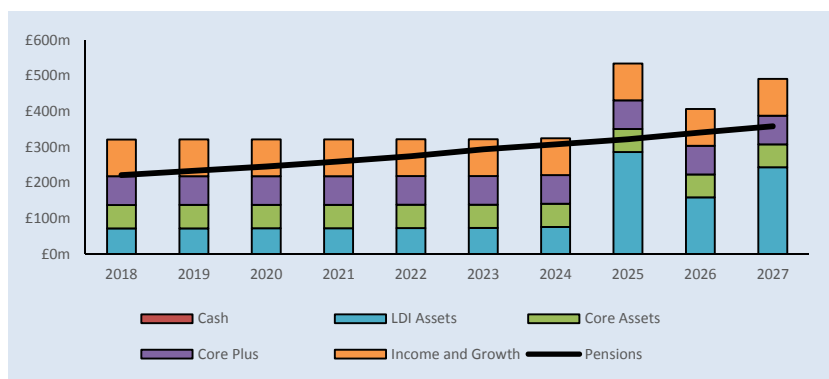
## Risk/Return Comparison



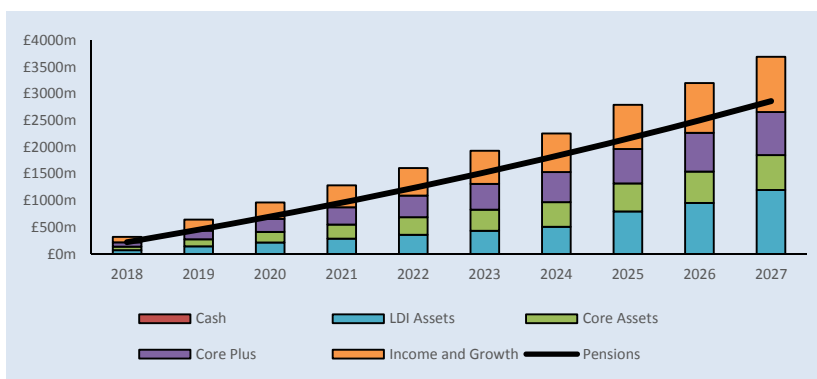
## Key Rate Duration Profile



## Cashflow Generation & Liquidity



## Cumulative Cashflow Generation & Liquidity

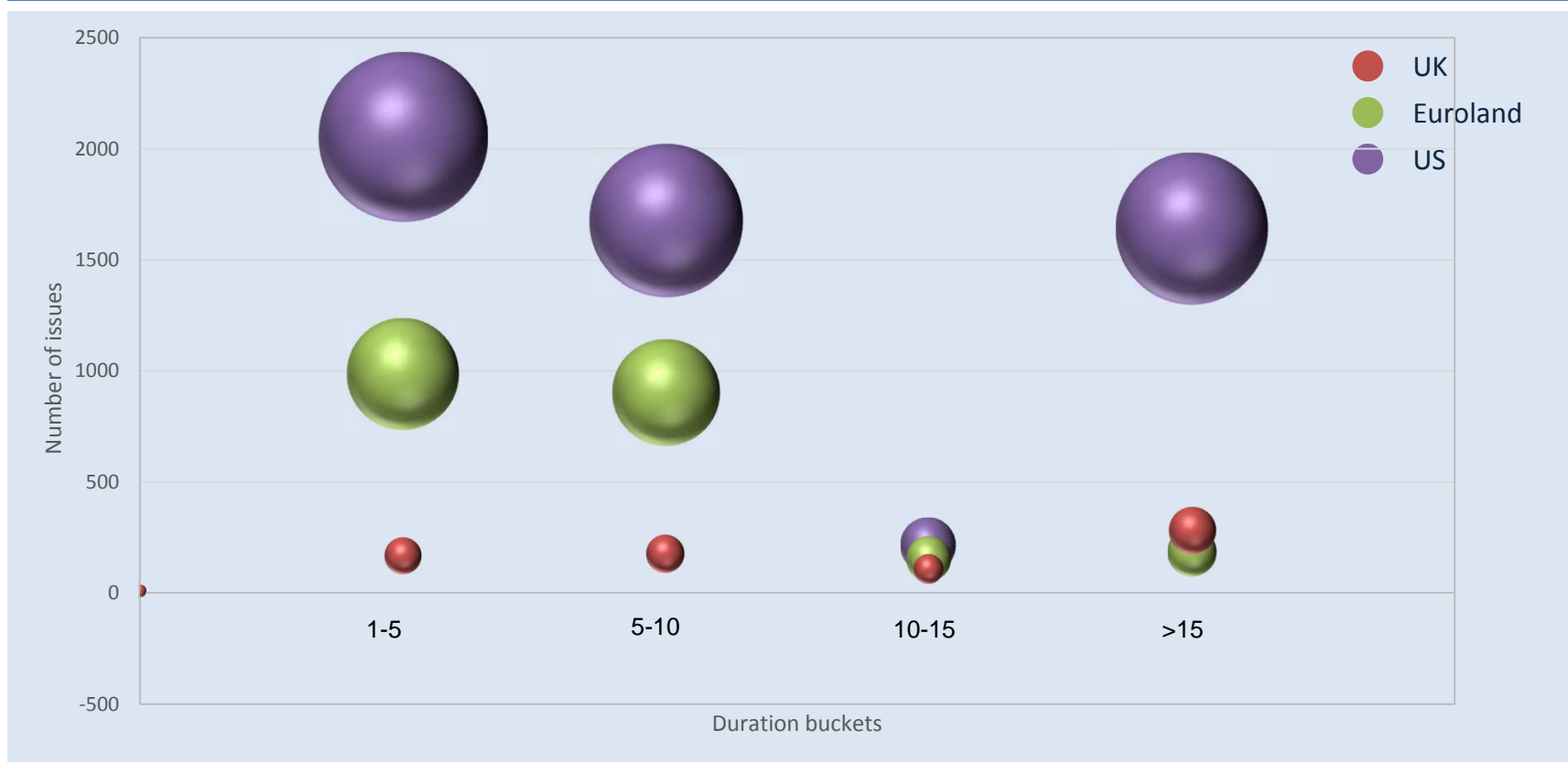


Source: J.P. Morgan Asset Management, 2018 Long Term Capital Market Assumptions. For illustrative purposes only. Opinions, estimates, forecasts, projections and statements of financial market trends are based on market conditions at the date of the publication, constitute our judgement and are subject to change without notice. There can be no guarantee they will be met.

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# Restricting to sterling markets limits opportunities

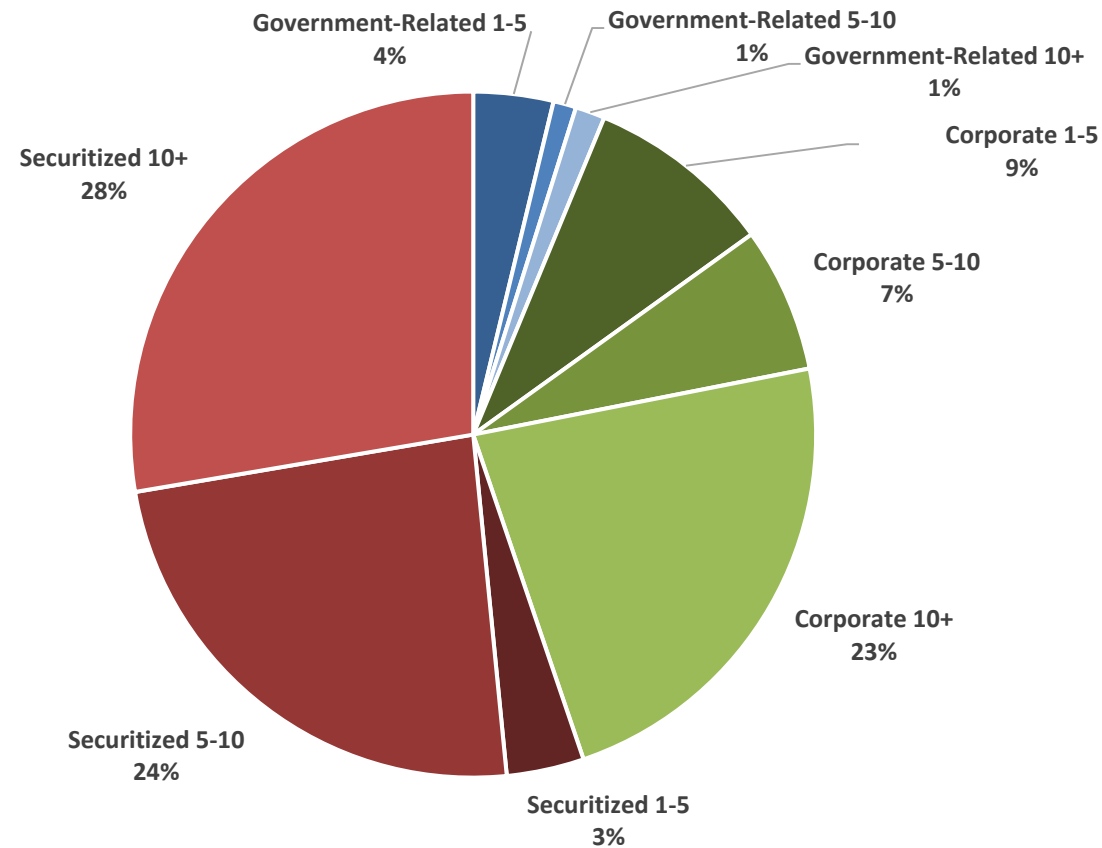
Global Investment Grade Corporate Credit Universe Size Statistics



Source: J.P. Morgan Asset Management, Bloomberg Barclays Point, as of 31 December 2017.

# Securitized credit further expands opportunities

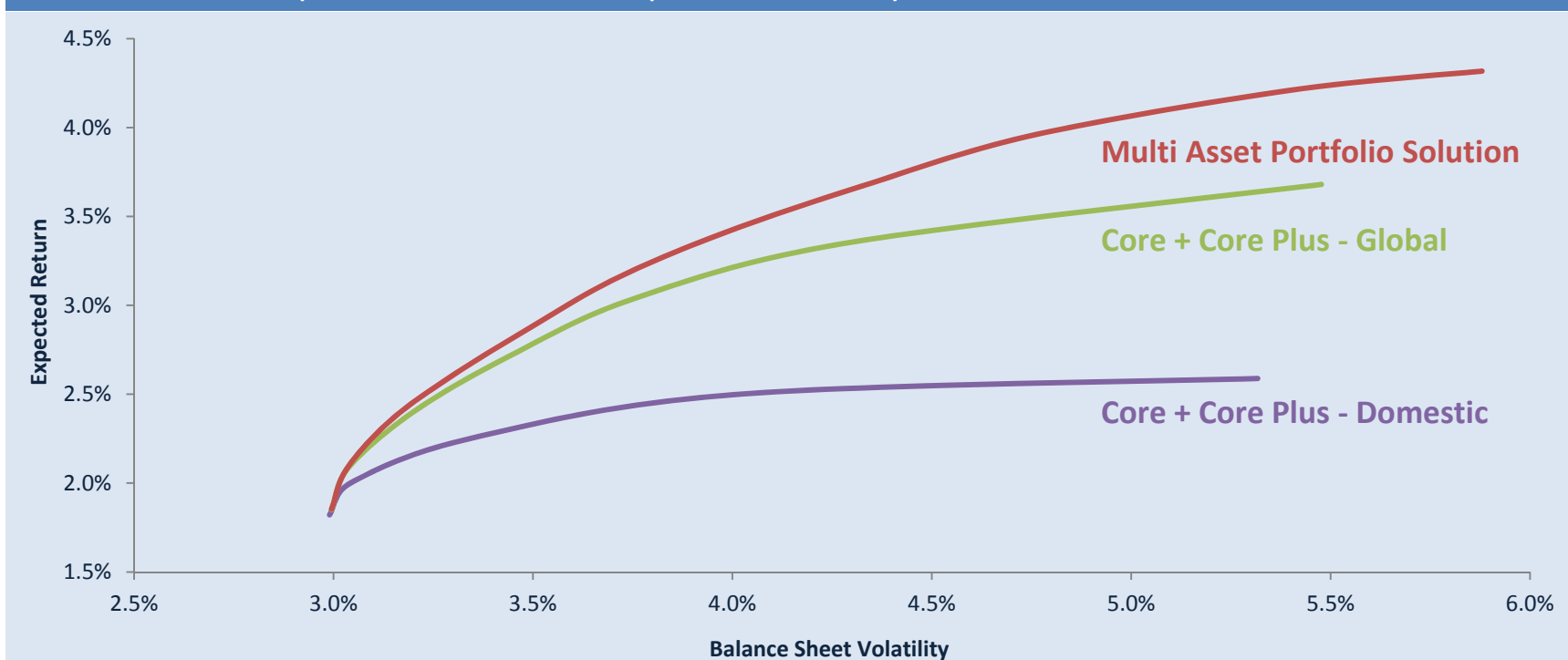
US Investment Grade Market Distribution



Source: J.P. Morgan Asset Management based on data obtained from Barclay's Point on 26/03/2017 as at 28/02/2017.

# A Multi-Asset solution can provide the returns required to repair funding deficits

Domestic solutions do not provide the returns needed to repair deficits or build capital buffers



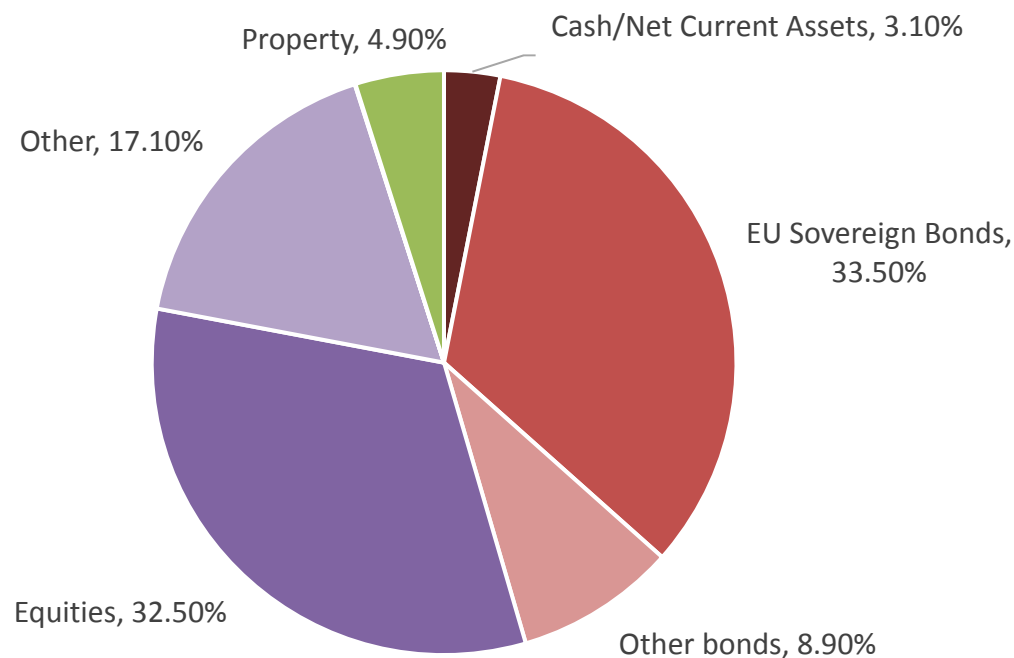
Source: J.P. Morgan Asset Management. For illustrative purposes only. The three solutions provide 15 years of cashflow matching and immunize the Plan's balance sheet from changes interest rates along the curve. Analysis as at March 31, 2017. Core assets include UK Government Index Linked, UK/EUR/US Government bonds, UK/EUR/USD Government Related bonds, GBP/USD/EUR IG Corporate and USD-Issued IG Emerging Market Debt. Core Plus assets include GBP High Yield excluding financials, EUR High Yield, USD High Yield, US Commercial Mortgage Backed Securities, US Asset Backed Securities, US Collateralized Loan Obligations, US Real Estate Mezzanine Debt, Bank Loans and Direct Lending. Multi Asset instruments include Global hedge Funds, Emerging Market Equity, AC World Equities (MSCI World), Private Equity, Infrastructure Equity and UK Real Estate. Fixed Income expected returns based on currency and default-adjustments made to yield-to-worst values obtained from Barclay's Point. Expected returns for non-Fixed Income assets are based on the *2017 Long Term Capital Market Assumptions*. Covariance estimates are based on historical monthly or quarterly returns from Q3 2006 to Q2 2016 depending on the reporting frequency for the underlying asset class.

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# Current allocations closest to 'Growth + Matching'

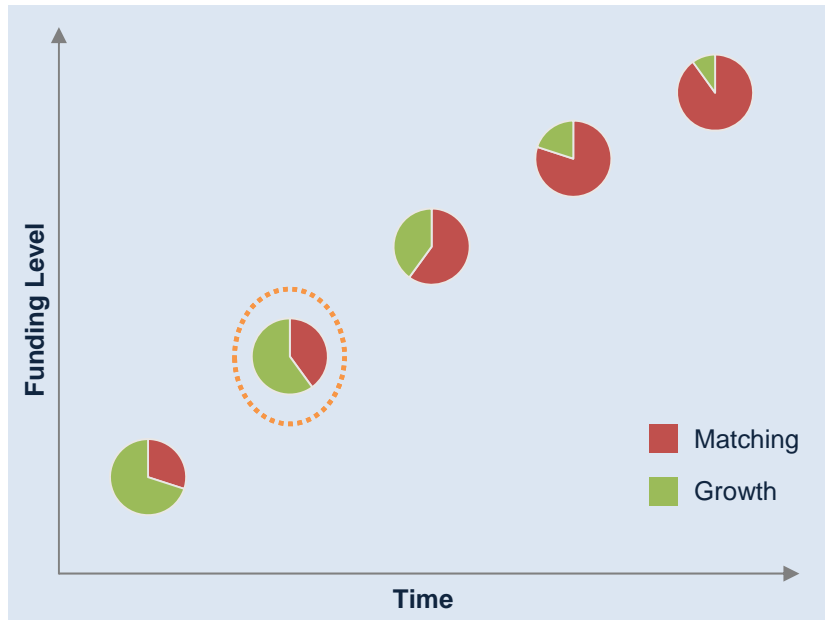
Asset Allocation of Irish Defined Benefit Pension Funds



Source: The Pensions Authority *Review of 2016 Statistics*, J.P. Morgan Asset Management, as of 6 April 2018.

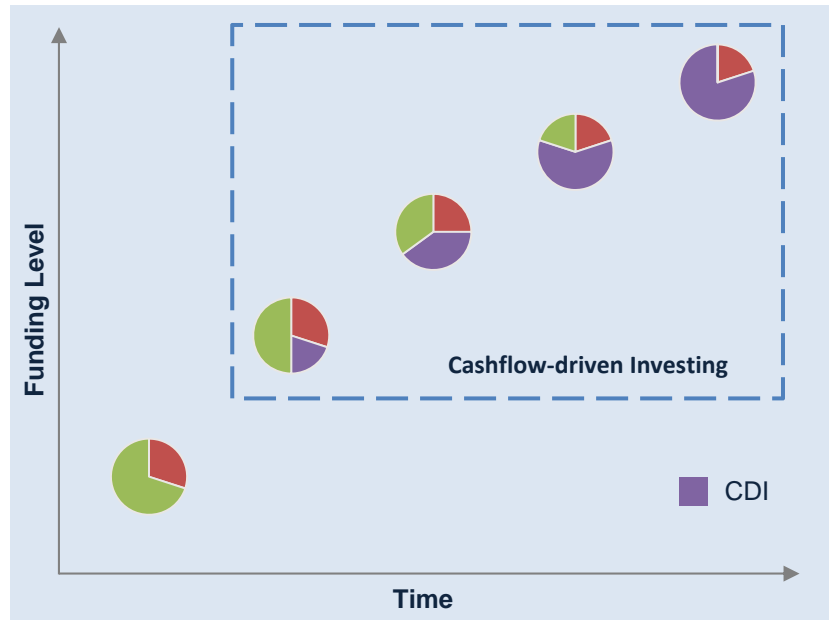
# Refining the derisking journey

## From an 'Matching + Growth' Journey ....



- Implicitly assumes that matching assets are optimal means of securing cashflows, regardless of price
- May have substantial use of leverage in the middle phase
- Tends to 'barbell' strategies

## ... to a Cashflow-driven Journey



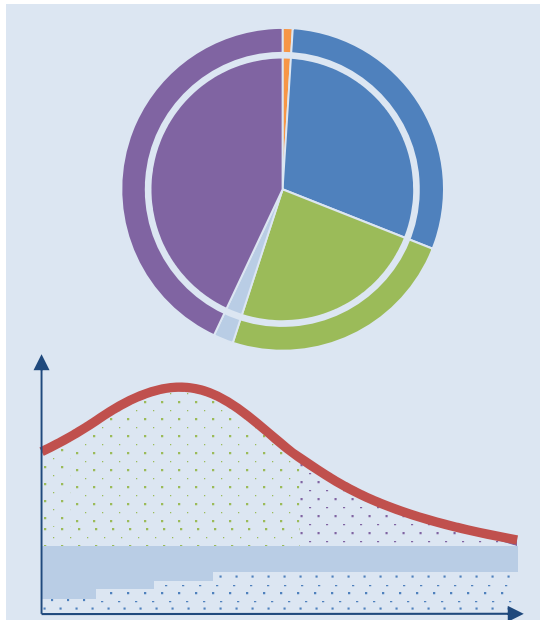
- Focuses on securing cashflows at a reasonable price using a broad range of assets
- Reduces reliance on leverage in the middle phase
- Allows more holistic, balanced strategies to evolve

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

# Taking the first steps

Different options to start on the journey

## Build Income

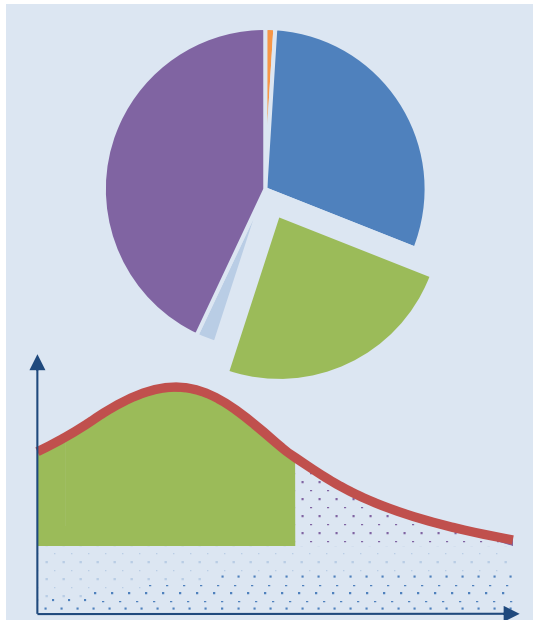


Add yield oriented assets

### Objective

Diversify across assets with an income generation focus

## Build Buy & Maintain

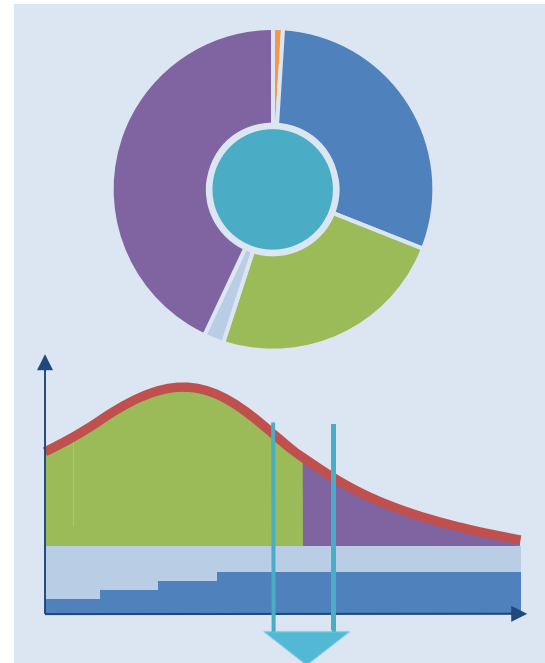


Adapt and expand credit portfolio

### Objective

Improve risk management without sacrificing yield

## Build multi-asset hub



Create cashflow driven hub

### Objective

Create risk and cashflow management foundation, maintain specialist mandates

Source: J.P Morgan Asset Management.

The portfolio risk management process includes an effort to monitor and manage risk, but does not imply low risk.

# Summary

- Schemes are firmly on the road towards negative cashflow
- Dealing with negative cash flow is a strategic investment challenge
- Building a cashflow driven investment strategy will take time
- Start by looking at your scheme with a cashflow focus

# Important information

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