Building Risk and Capital Efficient Alternative Investment Strategies for Insurance Companies

J.P.Morgan Asset Management

What do you need to know?

1. The only free lunch is illiquidity
2. Expand your investment universe to maximize diversification and the opportunity set
3. Scarcity of capital: how to build risk and capital efficient strategies

1. The only free lunch is illiquidity

Insurance trends across Europe

UK	■ Matching adjustment drives buy and maintain portfolio construction ■ Life insurers heavily dependent on volatility adjustment and transitional measure
France	■ Existence of policies with significant lapse risk ■ Prolonged low interest rate environment impacts profitability
Italy	■ Dividend distribution a determinant of appetite for investment risk ■ Strong trend in diversification
Germany	■ Focus on SCR management within the fixed income portfolio ■ Book yields are falling faster than guarantees are winding down and a large duration gap exists between assets and policies lifetime
Switzerland	■ Need for diversification due to low local government bond yields ■ ESG has become important for large and mid sized insurers
Netherlands	■ Highly competitive market means high guaranteed rates, sold in conjunction with mortgages increasing duration ■ Competition from local banks to challenge move into direct SME lending

Country	Average Guarantees	10 yr Sovereign
UK	Circa 0%	1.23%
France	Circa 1%	0.65%
Italy	Between 2-3%	1.79%
Germany	Between 3-3.5% (1.25% new policies)	0.17%
Switzerland	Between 2-3%	-0.22%
Spain	Between 3.5-4%	1.32%
Netherlands	Between 3.5-4%	0.31%
Norway	Between 3-3.5%	1.63%

Illiquidity premium is attractive across fixed income and equities. Solvency II treats illiquidity favourably

Asset Class	Expected Return / Default Adjusted Yield (Public)	Expected Return / Default Adjusted Yield (Private)	SCR Public	SCR Private
Investment Grade	1.4% (corporates A+ 1-10)	3.5% (CMLs)	7.0%	7.5%
High yield	2.3%	4.5% (bank loans) 6.7% (direct lending)	18 – 25%	18 – 25%
Equities	7.1%	6.1% (infrastructure) 7.0% (convertibles) 9.5% (private equity) 11.7% (emerging market)	39%	30 - 36% 18% 49% 49%

2. Expand your investment universe to maximize diversification and the opportunity set

Capital adjusted return rankings across a EUR portfolio

Index	Capital Adjusted Yield/Return
EM Equity	5.2%
Private Equity	3.6%
Direct Lending	3.5%
EUR Property	3.0%
EUR Equity	2.9%
Infra. Equity	2.6%
EUR Gov BBB 10+ Yr	2.4%
USD CML	1.7%
USD Agency 10+ Yr	1.6%
Convertibles	1.6%
EUR Gov BBB 5-10 Yr	1.4%
USD Corp A+ 10+ Yr	1.4%
EUR Gov A+ 10+ Yr	1.2%
USD Agency RMBS	1.0%
Lev. Loans	0.8%
EUR Gov Related BBB	0.7%
USD EM 1-10 Yr Sov	0.7%
USD Corp BBB 10+ Yr	0.6%
USD EM 1-10 Yr Corp	0.4%
EUR Corp A+ 10+ Yr	0.4%
EUR Gov A+ 5-10 Yr	0.3%
EUR Gov BBB 1-5 Yr	0.2%
EUR Gov-Related 1-10 Yr A+	0.1%
USD Corp A+ 1-10 Yr	0.0%
EUR Corp A+ 1-10 Yr	-0.2%
EUR Corp BBB 10+ Yr	-0.2%
USD Corp BBB 1-10 Yr	-0.2%
USD Agency 1-10 Yr	-0.2%
EUR Covered	-0.3%
USD High Yield 1-5 Yr	-0.3%
EUR Gov A+ 1-5 Yr	-0.5%
EUR Corp BBB 1-10 Yr	-0.5%
EUR High Yield	-0.7%
Hedge Funds	-2.6%

- Illiquid investments such as EM Equity, Private Equity, Infrastructure Equity and Direct Lending have the highest overall capital adjusted return
- Within securitized investments US Agency RMBS are attractive as a core asset, since these are classified as corporate or government debt
- Equity downside protection of Convertibles make the asset class capital efficient
- Non-core spread assets can offer an attractive illiquidity premium which supports a higher capital adjusted return – e.g. emerging market debt, leveraged loans and CMLs

Capital adjusted return = Expected return – SCR x WACC[1]
- Expected Defaults – FX Cost

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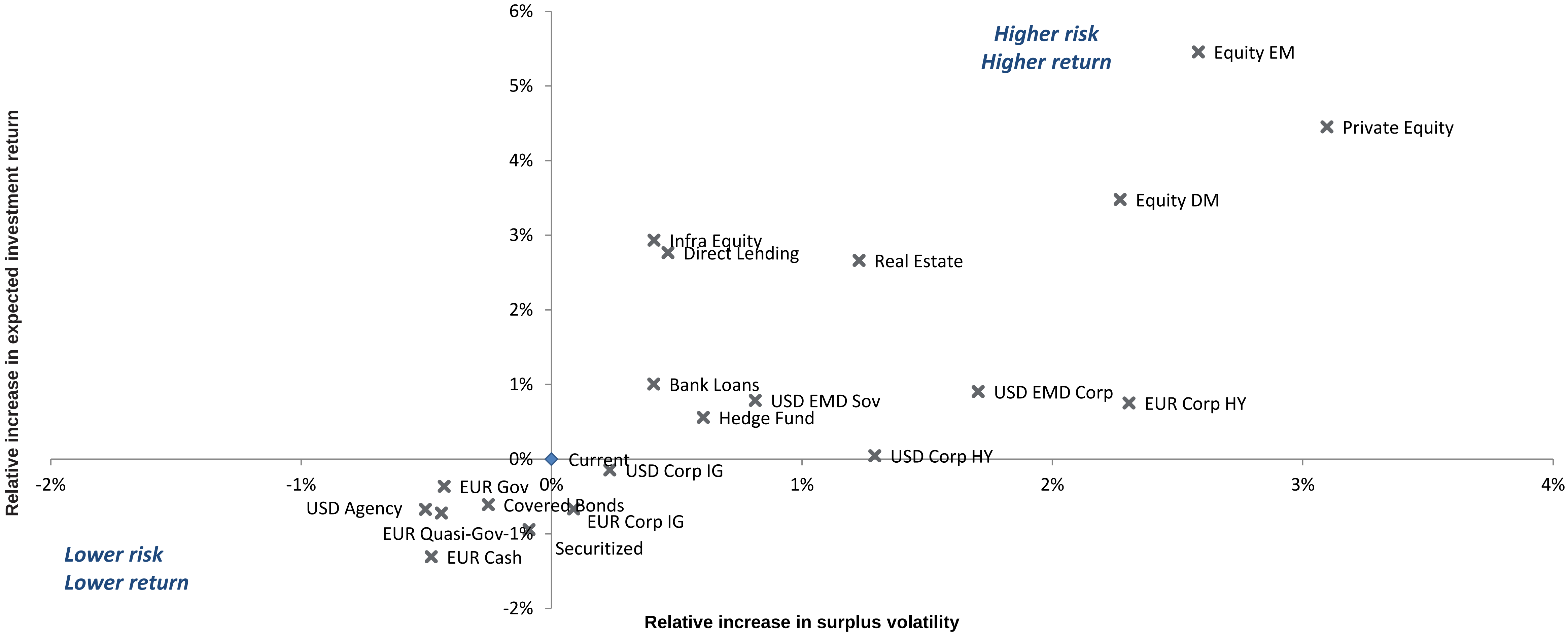
Risk-return trade-off (representative European life insurance portfolio)

Economic risk perspective: 1% reallocation of assets into single asset class



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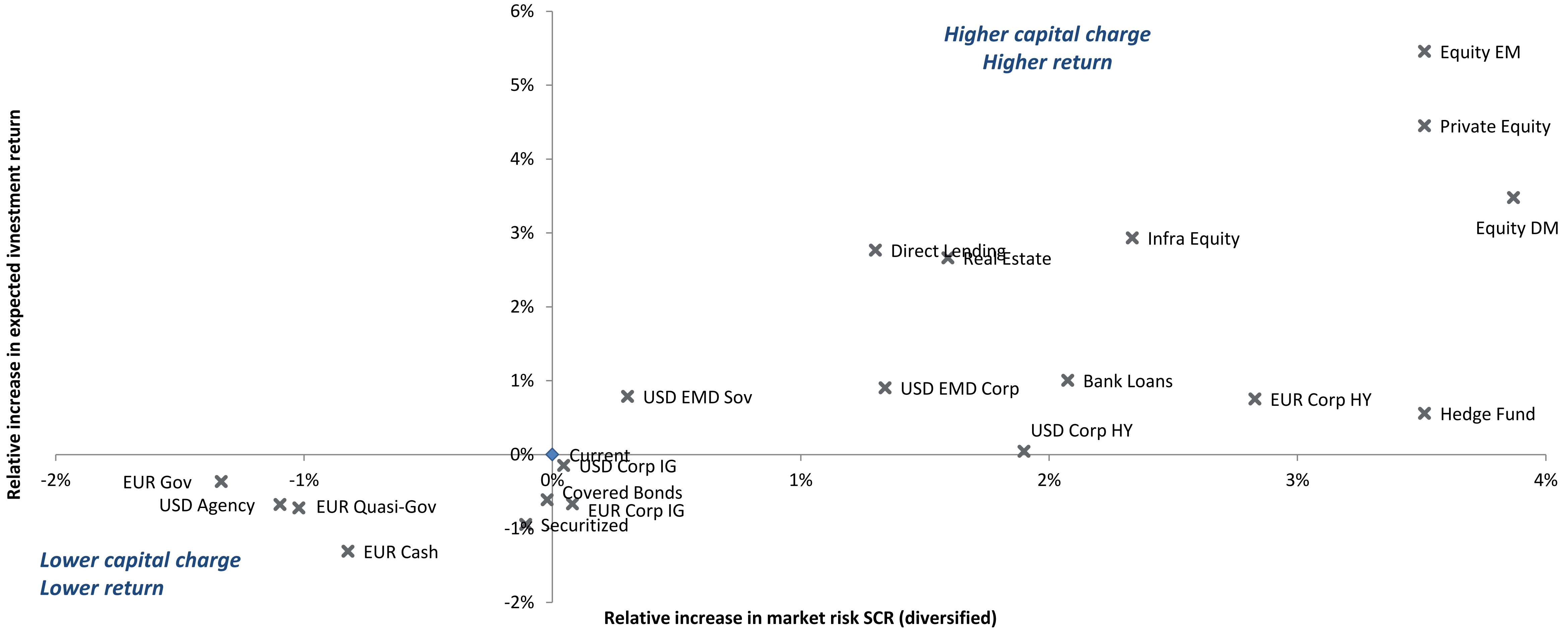

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3. Scarcity of capital: how to build top-down risk and capital efficient strategies

Efficient asset allocation

Executive summary

	Key results	Key constraints

Duration matching	▪ Exact asset-liability duration matching allows re-deploying economic and regulatory capital to seek higher investment returns	▪ Weighted duration of assets equals that of liabilities
		▪ Key rate durations (KRDs) of the asset-liability portfolio are constrained:
		  ▪ within ±0.5 year for KRDs of up to 10 years
		  ▪ within ±1 year for KRDs of 20 and 30 years

Risk and capital	▪ Portfolio risk is measured by surplus volatility (i.e. volatility of portfolio comprised of investment assets and insurance liabilities) ▪ Regulatory capital requirement is measured by Solvency II standard formula market risk	▪ Each allocation minimises risk for a target level of return subject to regulatory capital budget and other constraints ▪ No additional capital is allocated to Solvency II market risk ▪ Efficient allocations should have same or lower Solvency II capital requirement as the initial asset allocation

Diversification	▪ Return-seeking segment of efficient asset allocations is diversified across:
	  ○ Equities: Developed and Emerging Markets
	  ○ Real assets: Infra Equities and Real Estate
	  ○ Illiquid credit: Bank Loans and Direct Lending
		▪ GBP-denominated liabilities are backed by GBP-denominated assets;
		▪ Surplus can be invested in fully currency-hedged foreign-currency assets
		▪ Concentration limits by credit rating, currency and asset type

Efficient asset allocation

Initial balance sheet: investment assets and insurance liabilities

	Weight	Expected Return	Duration	SCR ex IR	Volatility	Sharpe Ratio	
						Standard	Adjusted
Insurance Liabilities	-83%	0.0%	7.9y	0.0%	4.4%	8.7%	8.7%
EUR Cash	3%	-0.4%	0.1y	0.0%	1.6%	0.0%	0.0%
EUR Gov	50%	0.4%	9.5y	0.0%	6.6%	12.2%	12.2%
EUR Quasi-Gov	4%	0.0%	4.3y	0.0%	3.1%	12.9%	12.9%
EUR Corp IG	25%	0.3%	4.3y	4.9%	3.3%	21.5%	6.7%
EUR Corp HY	0%	1.8%	5.0y	23.2%	13.9%	15.9%	-0.8%
Bank Loans	2%	3.1%	0.3y	24.6%	6.3%	56.2%	16.8%
Equity DM	5%	6.6%	0.0y	37.6%	13.5%	51.4%	23.6%
Real Estate	2%	5.5%	0.0y	25.0%	10.5%	56.2%	32.4%
Private Equity	0%	8.5%	0.0y	47.6%	19.5%	45.7%	21.3%
Mortgages	8%	1.6%	6.3y	0.0%	2.7%	70.9%	70.9%

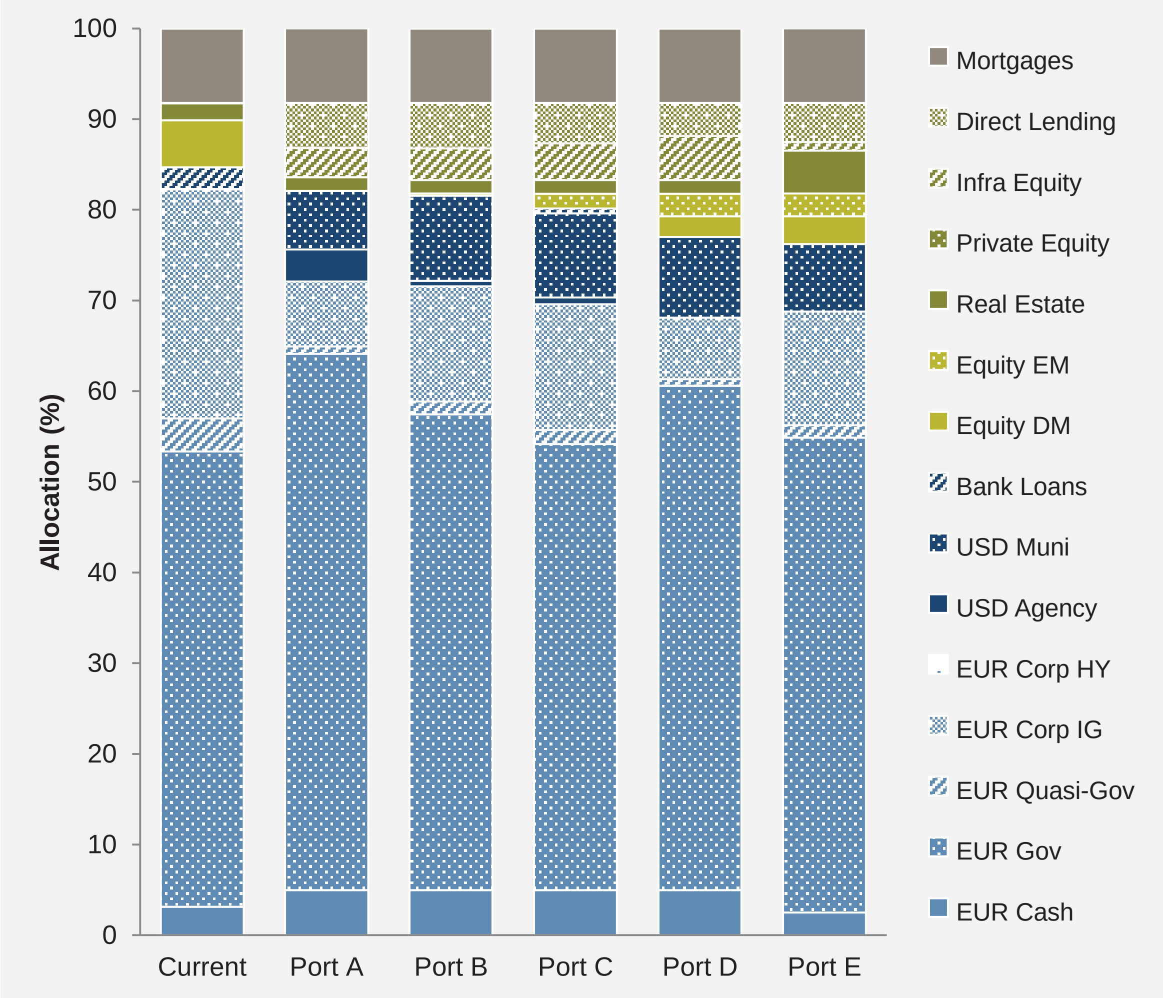
Efficient asset allocation

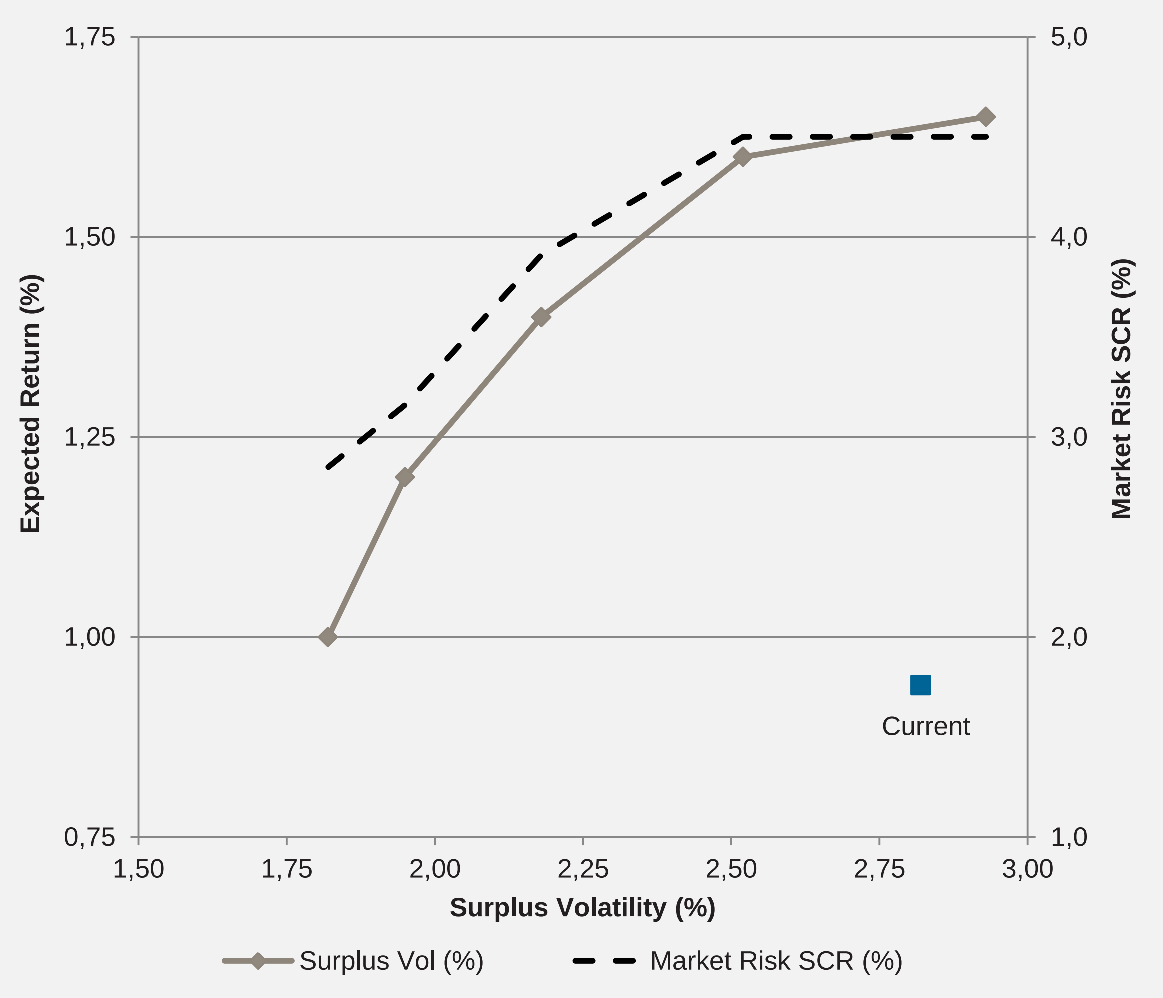
Investment universe overview

Low-risk assets	Medium-risk assets	High-risk assets
Cash and cash equivalents	Property & infrastructure assets	Listed Equities
Gov't bonds and gov't-guaranteed corporate bonds	High-yield corporate bonds (in GBP, EUR and USD)	Private Equity
Investment-grade corporate bonds (in GBP, EUR and USD)	Hard-currency emerging market debt (IG and HY)	Hedge Funds
	Illiquid credit (Bank Loans and Direct Lending)	

Efficient asset allocation

Portfolio performance and composition summary





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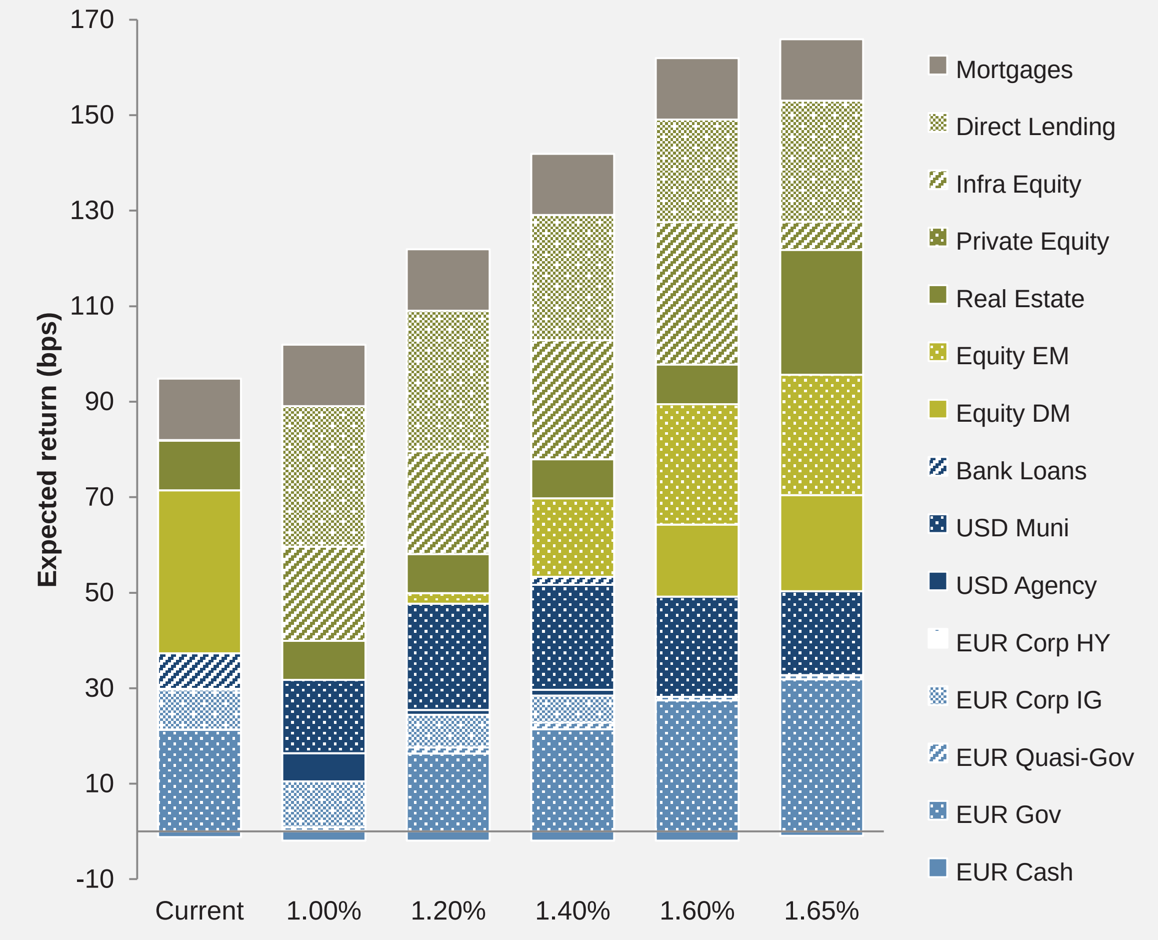
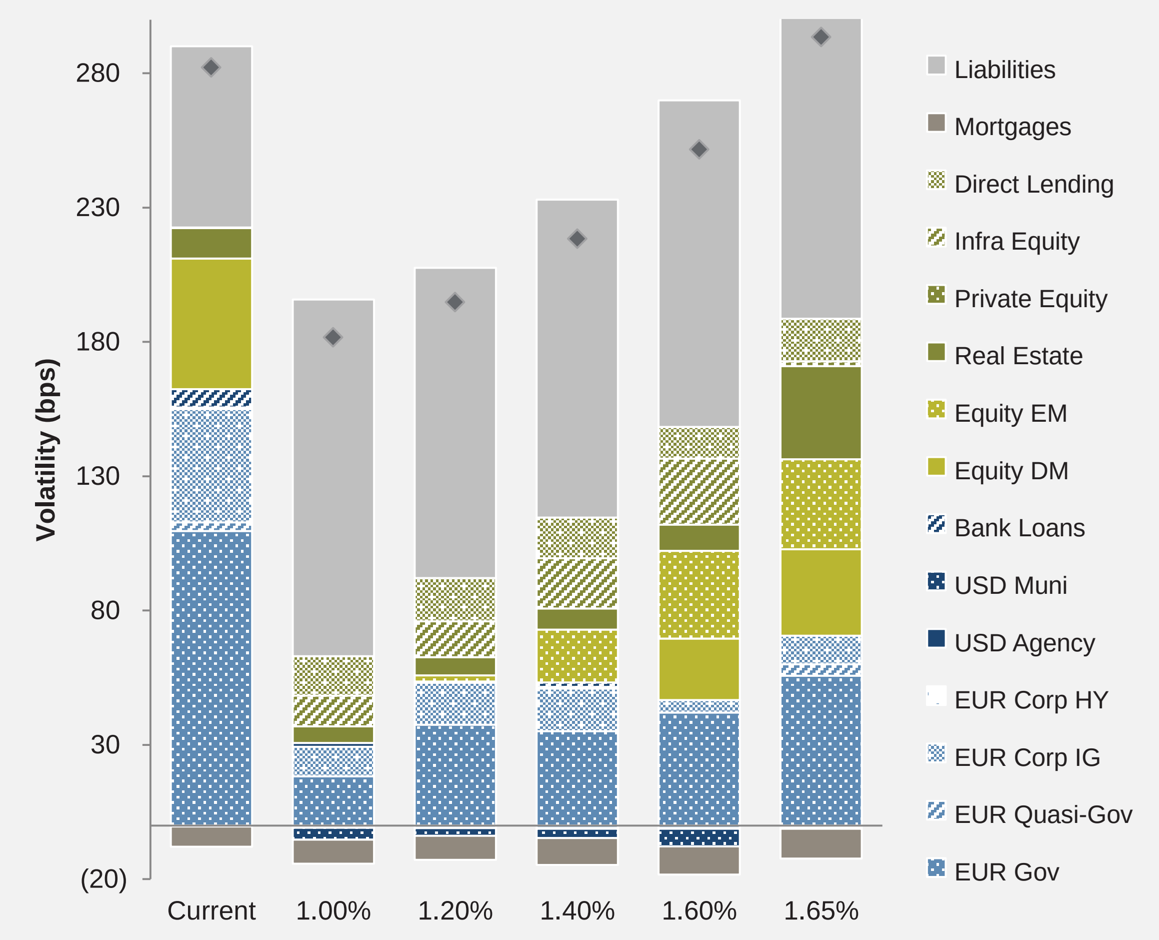
Efficient asset allocation

Expected portfolio return and surplus volatility decomposition

Expected return, bps



Surplus volatility, bps



Efficient asset allocation

Assessing flexibility around the efficient frontier

Performance	Optimal	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
Expected Return (%)	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Asset Vol (%)	3.66	3.84	3.88	3.81	3.68	3.76	3.82
Surplus Vol (%)	2.52	2.73	2.75	2.77	2.56	2.63	2.71
Sharpe Ratio	0.64	0.59	0.58	0.58	0.63	0.61	0.59
FI Duration	8.45	8.60	8.45	8.42	8.41	8.46	8.40
SCR Mkt (%)	4.50	4.50	4.50	4.50	4.50	4.50	4.50

Asset weights	Optimal	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6
EUR Cash	5.0	4.2	5.0	5.0	5.0	5.0	5.0
EUR Gov	55.6	63.3	48.8	46.8	52.4	53.2	49.6
EUR Quasi-Gov	0.8	0.0	1.4	1.6	1.1	1.0	1.4
EUR Corp IG	6.8	0.0	12.4	14.4	9.9	8.9	12.1
USD Agency	0.0	0.0	1.1	3.3	0.0	0.2	0.6
USD Muni	8.9	8.6	8.9	6.7	8.9	8.9	8.9
Equity DM	2.3	3.2	1.7	1.5	2.0	2.2	1.7
Equity EM	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Real Estate	1.5	4.2	4.8	3.9	1.5	3.1	3.7
Infra Equity	4.9	2.7	2.1	2.8	4.7	3.4	2.7
Direct Lending	3.6	3.0	3.1	3.3	3.9	3.5	3.6
Mortgages	8.2	8.2	8.2	8.2	8.2	8.2	8.2

Key Takeaways

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