Institute and Faculty of Actuaries

Evolving Investment Strategies to Optimise Risk-Based Capital

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Agenda

- Insurance investment trends
- Assessment of new investment strategies
- Case studies
  - Private market "illiquidity premium"
  - Investment manager "alpha"

Source: Standard Life Investments

Insurance trends: Asia

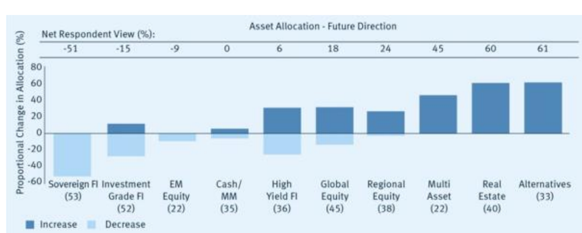
- Declining yields becoming an increasing challenge
- Insurers are reducing asset-liability mismatches
- Strong demand for alternative investments
- Growing demand for international investments, but currency hedging a major execution challenge
- Regulatory modernisation will continue to drive greater collaboration between investment and actuarial teams
- Asset managers who have built trust and expertise can support insurers through this period of major change

Source: Standard Life Investments

Insurance trends: European Insurance Survey

- Survey to understand and assess the longer-term impact of the low-return environment on European insurers
- 56 interviews were carried out with senior insurance investment executives
- €2.4trn (around 30%) of pan-European insurance assets under management

Many European insurers are undertaking significant strategic and tactical asset allocation changes, expanding their traditional investment horizons as they seek to maximise returns



Source: Standard Life Investments European Insurance survey 2015

Global insurance investment trends

- Private Markets
  - Infrastructure
  - Commercial Real Estate
  - Corporate Lending
- Diversification
  - Geographical Diversification
  - New Sources of Return
- Restructuring Asset Exposures
  - Matching Adjustment SPVs
  - Equities with downside protection

Source: Standard Life Investments

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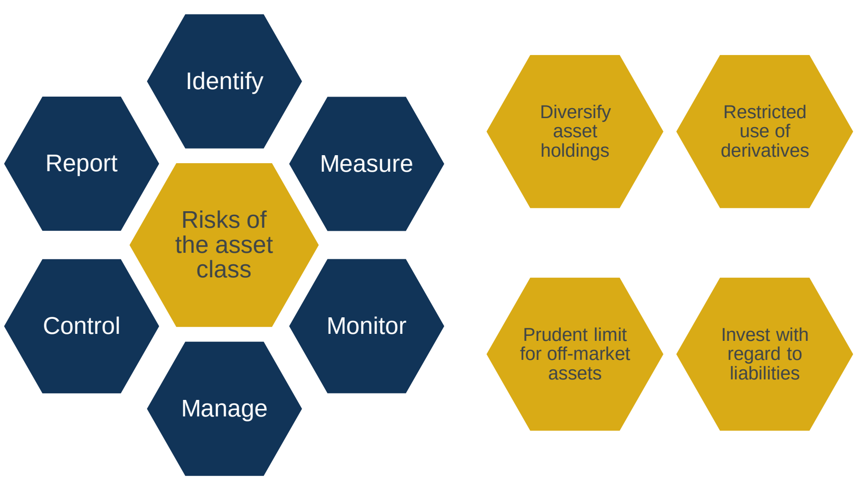
Prudent Person Principle (PPP)



Source: Standard Life Investments

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Delivering capital-efficient return

- Assess against insurer’s preferred metric, for example:
  - Expected return…
  - …per unit of SCR
- Expected return:
  - Based on performance objective, not risk premium or market spread
  - Net of investment management fees, etc…
- Capital assessed on a marginal basis (rather than on a stand-alone basis)
- Reflect disclosed targets for capital coverage and own funds volatility

Source: Standard Life Investments

Multiple client objectives

- Management Style
  - Active management against standard benchmark
  - Management against liability cashflows (or maturity buckets)
  - Minimum cash requirements
- Credit Parameters
  - Target credit rating
  - Limits by credit rating, sector, issuer
  - Investment universe - private credit, securitisations, …
- Measures of Success
  - Active outperformance
  - Increasing expected yield to maturity
  - Maintaining book yield
  - Minimising downgrades and defaults

Source: Standard Life Investments

Case study: Private credit

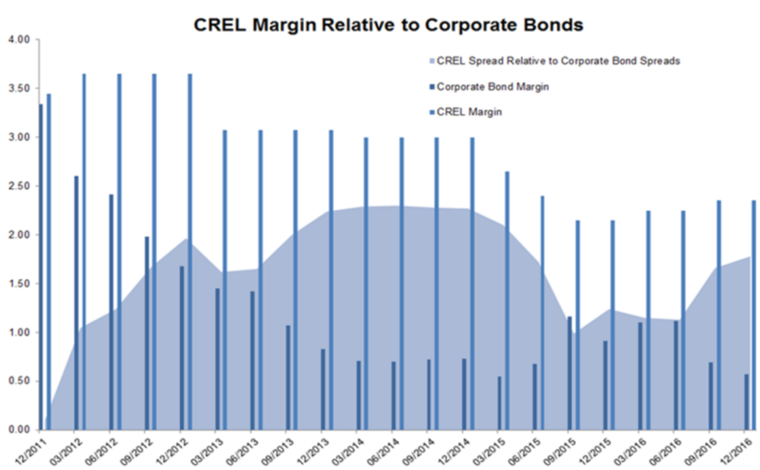
- Private credit investment is a key focus for insurance companies
  - Accessing illiquidity premium
  - Secured, leading to higher expected recoveries
  - Economic diversification

- To deliver these benefits, insurers are increasingly partnering with asset managers:
  - Origination capability
  - Credit expertise (internal ratings)
  - Valuation
  - Management of stressed and defaulted loans

- Insurers will require significant on-going support from these asset managers

Source: Standard Life Investments

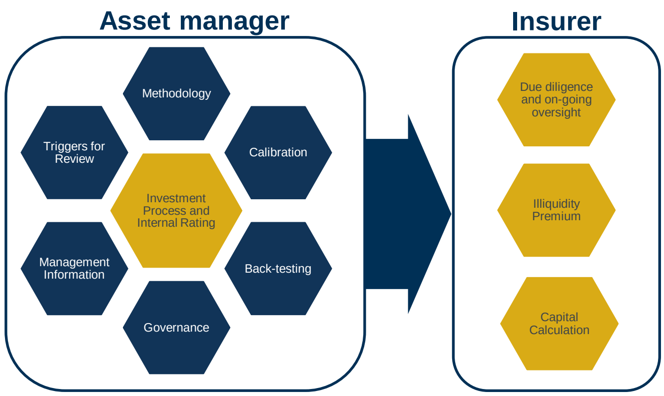
CRE lending: Attractive illiquidity premium



*Merrill Lynch A rated 3-5 year Corporate Bond Index Option Adjusted Spread over LIBOR
Spread over 3 month LIBOR
Source: Standard Life Investments, January 2017

Internal credit ratings

- Private credit assets will often not be rated by an external credit rating agency
- Insurer, possibly with assistance of their asset manager, may use internal credit rating processes in their liability valuation methodology and capital calculations



Source: Standard Life Investments

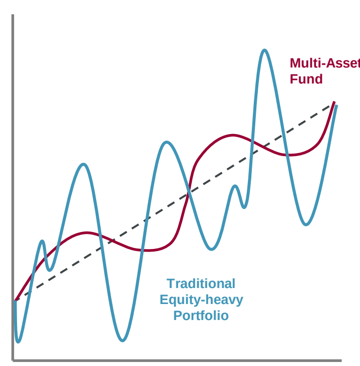
Case study: Multi-Asset Fund

Investment objective:

- Deliver return equivalent to global equity over market cycle, but with a fraction of equity risk
  - Cash +5% per year (gross) performance target over rolling 3 year periods
  - Expected volatility range of between 4% - 8%

Portfolio design

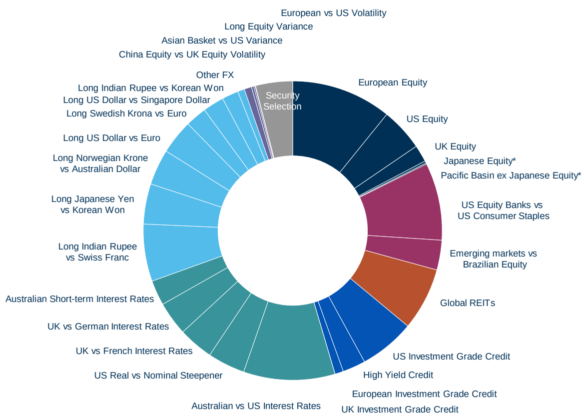
- Diverse array of investment opportunities across asset classes and markets
- Efficient deployment of risk through advanced risk analytics
- Lower SCR than standard equity investments under Solvency II



Source: Standard Life Investments

Diverse range of strategy groups

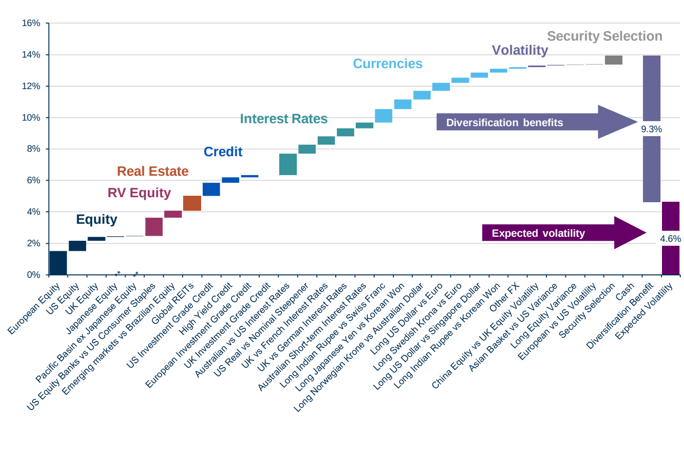
Strategy risk exposure



- Exposure managed by risk not physical allocation
- Aggregate strategy group risk limit – 40% of total standalone risk
- Expected volatility 4 – 8%

* These strategies only appear as we do not have a perfect hedge. Source: Standard Life Investments GARS SICAV portfolio, 31 December 2016

Strategies and risk allocation



- The portfolio is exposed to multiple and diverse market risks
- Total stand-alone investment risk that is deployed to seek returns is 13.9%
- Equivalent equity volatility is 12.2%*
- Independent risk analysis shows the benefits of investment diversification

* MSCI World (€) ** These strategies only appear as we do not have a perfect hedge. Source: Standard Life Investments GARS SICAV portfolio, 31 December 2016

Scenario analysis

- Scenario analysis is used to explore tail risks
  - Conventional risk systems are calibrated using recent history only
  - Value-at-risk is a poor representation of tail behaviour
  - Scenarios are used to focus on potential portfolio weaknesses, not spurious numerical accuracy

- We look at different types of scenarios
  - Historical scenarios
    - Risk Metrics
  - Forward-looking scenarios
    - Internally modelled
    - Guided by qualitative expert judgement
  - Non-traditional stress scenarios
    - Derivative positions

Source: Standard Life Investments

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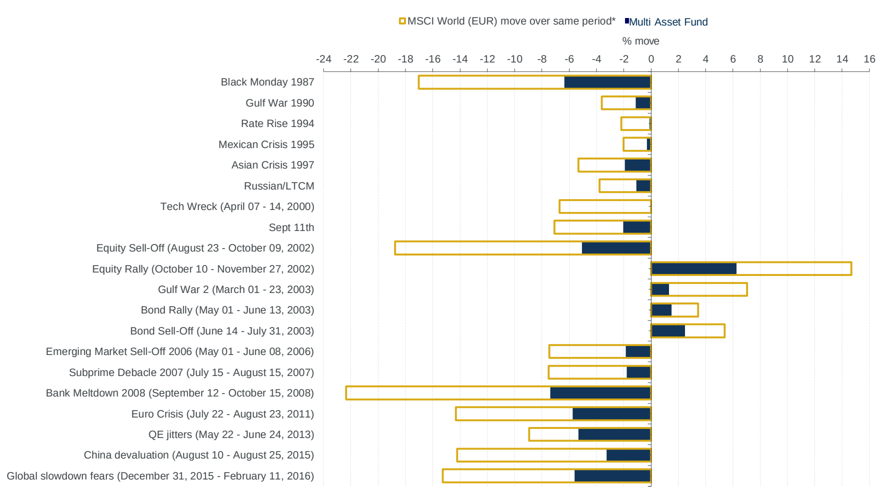
Historic scenarios



* MSCI World Returns prior to 2000 denoted in European currency units, except for 1987 which is denoted in German Marks
Source: GARS SICAV, RiskMetrics, 31 December 2016

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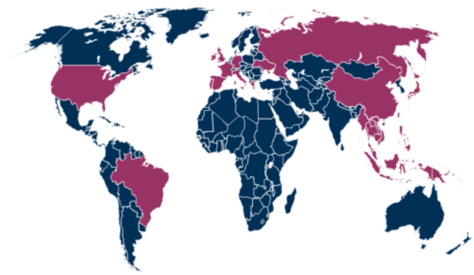
Future scenario analysis

- Scenarios need to be extreme, but economically plausible over a 1 year time horizon
- Defining features of scenarios need not be directly financial market related
- Our subject matter experts translate scenarios into financial market impacts and quantitative techniques are used to estimate portfolio returns
- Formal review on a quarterly basis
- **Some scenarios currently of interest:**
  - **China crisis**
  - **Currency war**
  - **EM - debted**
  - **Referendum contagion**
  - **Unicycle**
  - **Draghi tantrum**
  - **Stagflation**



Modelling techniques can help identify potential concentrations of investment risk

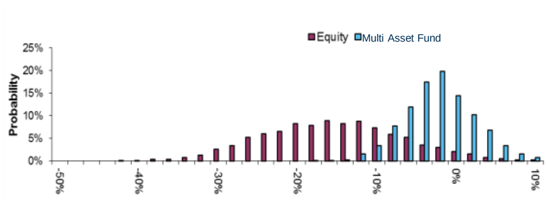
Shaded regions represent the origin of one or more scenarios. Source: Standard Life Investments, June 2016

Practical example: Stagflation

Description
Populist parties and agendas reduce global trade and increase borrowing
Economic growth stutters while core inflation surges above target levels
Financial markets start to fear prolonged period of stagflation

Key Factor examples	
USDEUR	+7%
US Real Yields	-50bp
US Nominal Yields	+50bp

Scenario Impact Estimate	
Global Equities	-16.1%
GARS	-2.8%



Combining quantitative expertise with subjective judgement

Source: Standard Life Investments, UK GARS portfolio, 31 December 2016

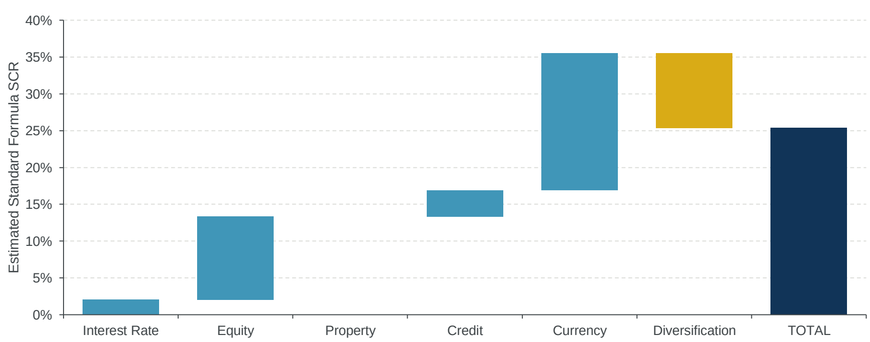
Asset Data Reporting (ADR) requirements

- Asset data required for:
  - Pillar 1 – calculation of Solvency Capital Requirements (SCR)
  - Pillar 2 – on-going evidence of PPP compliance
  - Pillar 3 – regular reporting to the regulator (including QRTs)

- Key requirements of insurers:
  - Defined format (such as the industry-standard “Tripartite Template”)
  - Defined frequency
  - Data lineage
  - Accurate
  - Timely

Source: Standard Life Investments

Solvency II: Estimated SCR (December 2016)



- Correlation assumptions for FX exposures generate large currency contribution
- Correlation assumption for equity exposures arguably understates net long / short equity risk

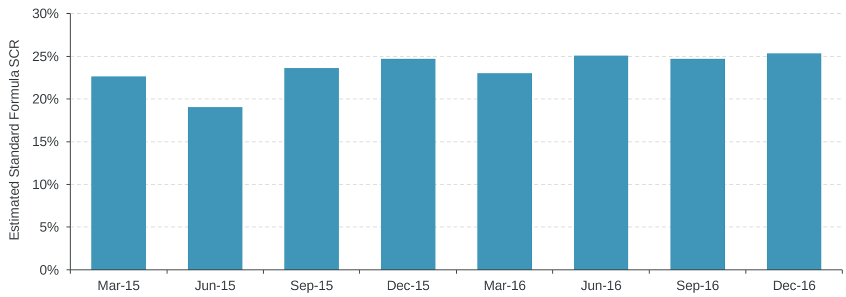
Source: Standard Life Investments, December 2016

Solvency II: Estimated SCR

March 2015 – December 2016

The key drivers of the changes below are:

- Changes in the total risk position of the fund
- Changes in the allocation to different risk strategies



Source: Standard Life Investments, December 2016

Summary

- The low interest rate environment presents a profound challenge to insurance groups
- Risk-sensitive principle-based capital regulation opens up a wider array of asset classes and market risk management strategies
- Together these factors are driving significant asset strategy innovation
- Generating capital-efficient investment from new asset classes will often require significant engagement with the regulator
- And, where outsourced, requires close collaboration with an asset manager that understands insurers’ needs for knowledge transfer, transparency, asset data and capital analytics

Source: Standard Life Investments

Questions **Comments**

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