The Actuarial Profession
making financial sense of the future

Momentum Conference 2012

Pamela Bentley, Mark Cooper

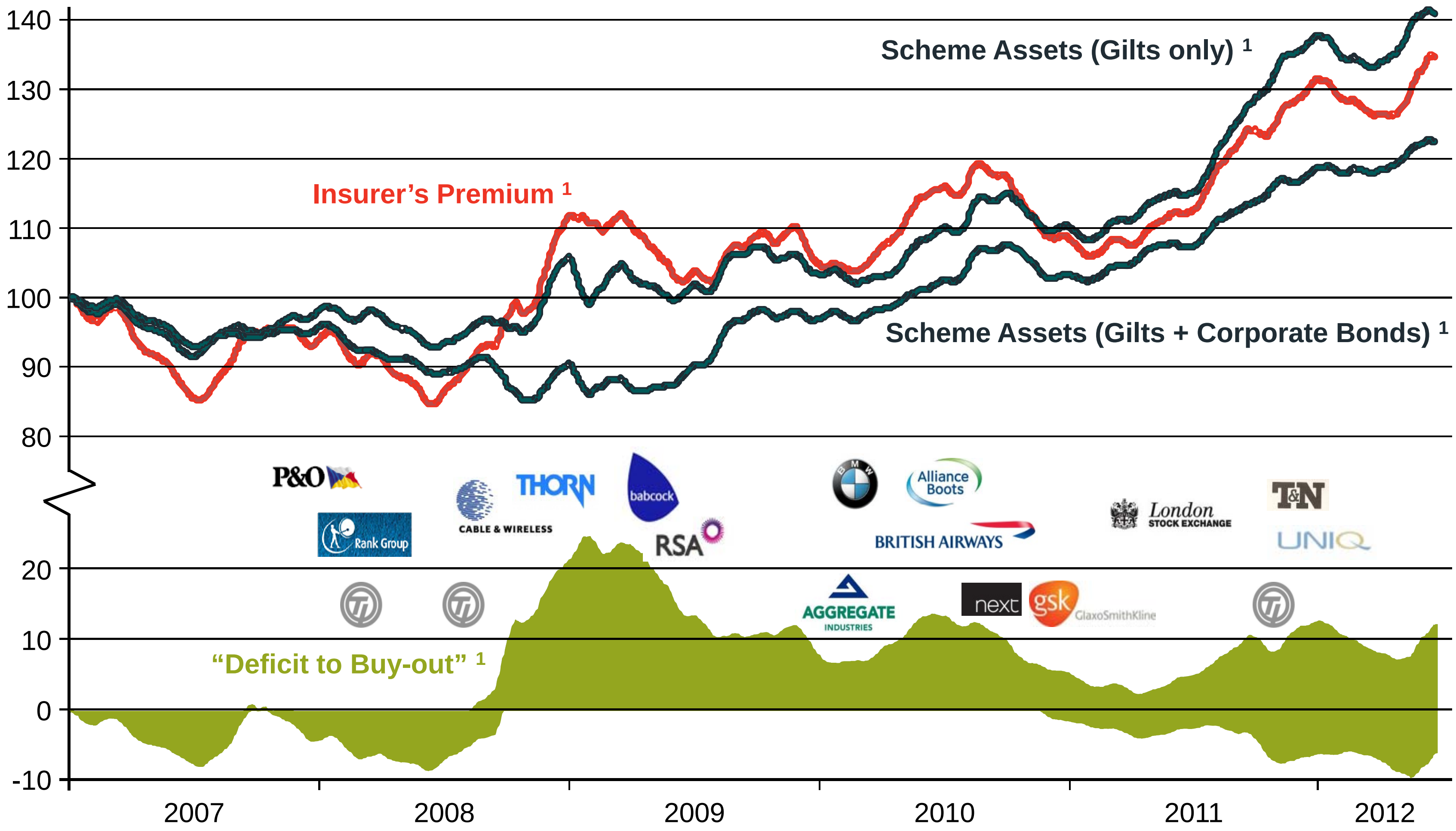
Buy-ins and buy-outs
Doing deals in extreme market conditions

Agenda

Doing a deal in extreme market conditions

- Historical Transaction Timing
- Timeline
  - Feasibility
  - Pricing drivers
  - Structuring
  - Execution
  - Post trade
- Maximising Value

Historical Transaction Timing



[1] Source: Rothesay Life

Source of Transaction Information: Public Announcements, Past performance is not a reliable indicator of future results

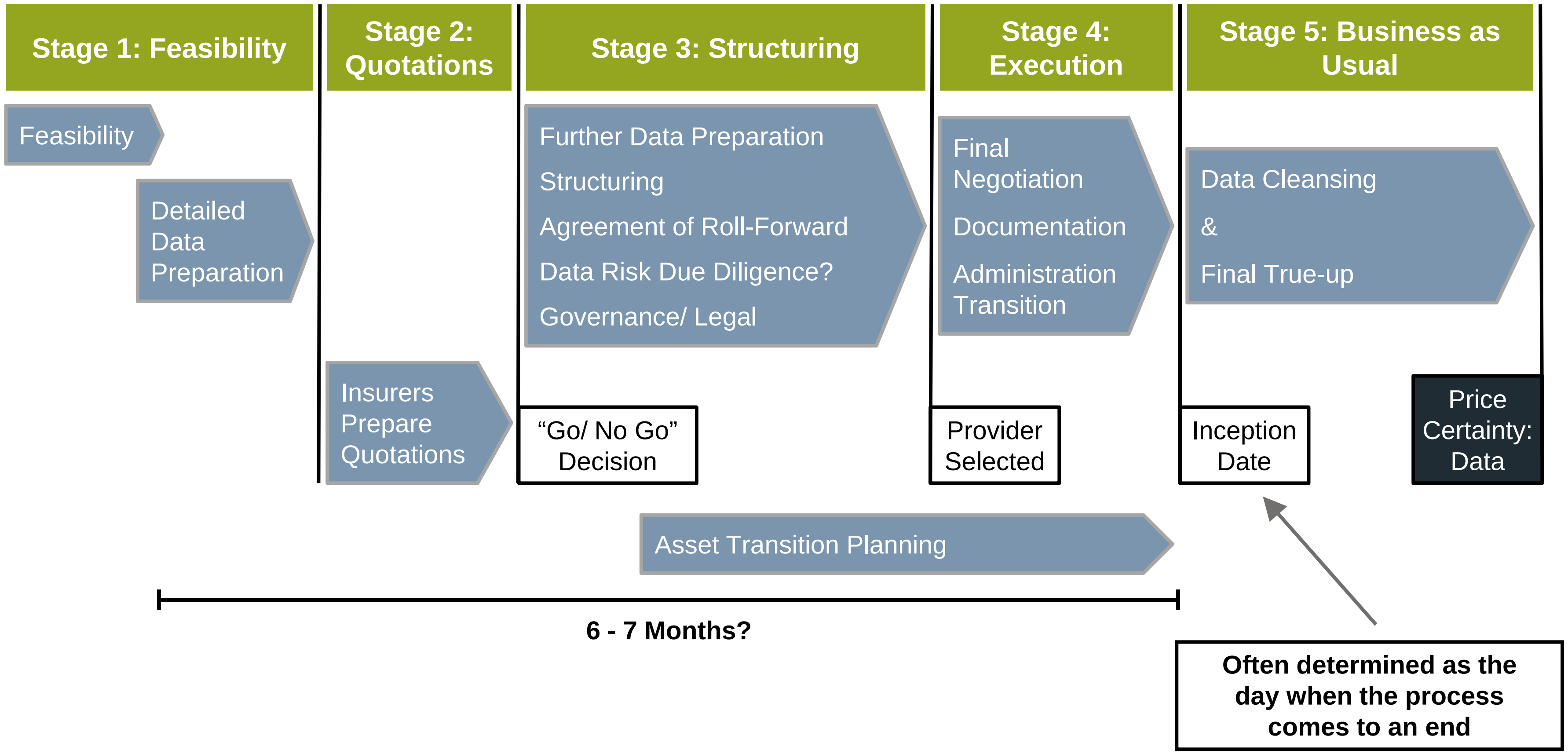
Barriers to Successful Execution

- History indicates transactions only complete when market conditions are favourable to that pension scheme
- Many transactions have successfully executed when well structured despite apparent “Extreme Market Conditions”
  - e.g. taking advantage of Gilts vs LIBOR
- Many have not
  - Pension schemes were not ready
  - Market conditions usually blamed
- No clear view on price target

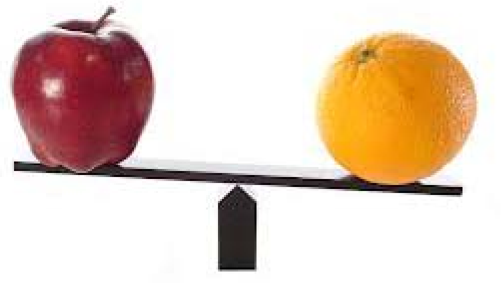
- Therefore clear requirement to understand drivers of pricing

Typical Timeline

A typical bulk annuity process has a number of key stages; the period from initial interest through to execution can therefore be material…

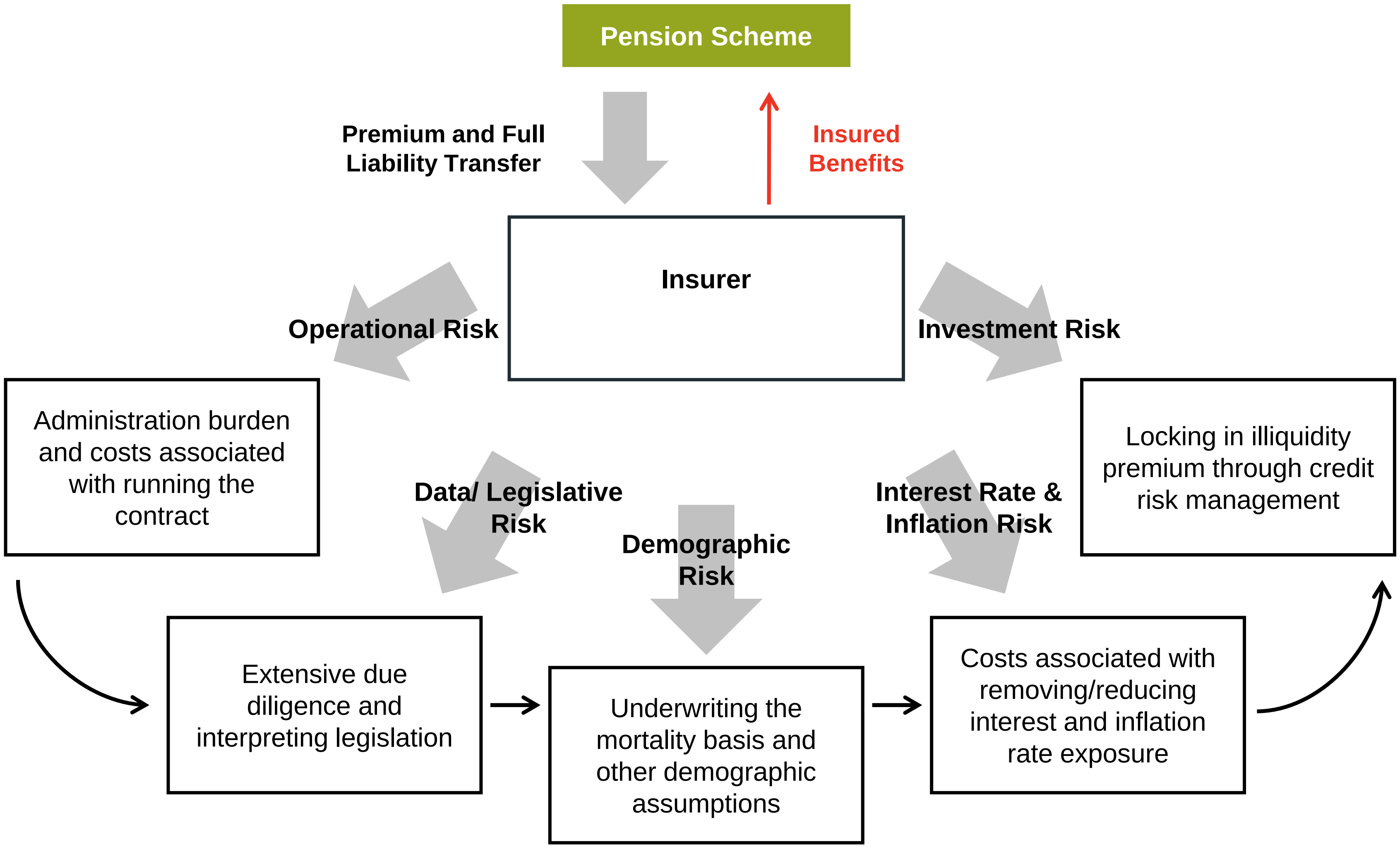


Stage 1: Feasibility

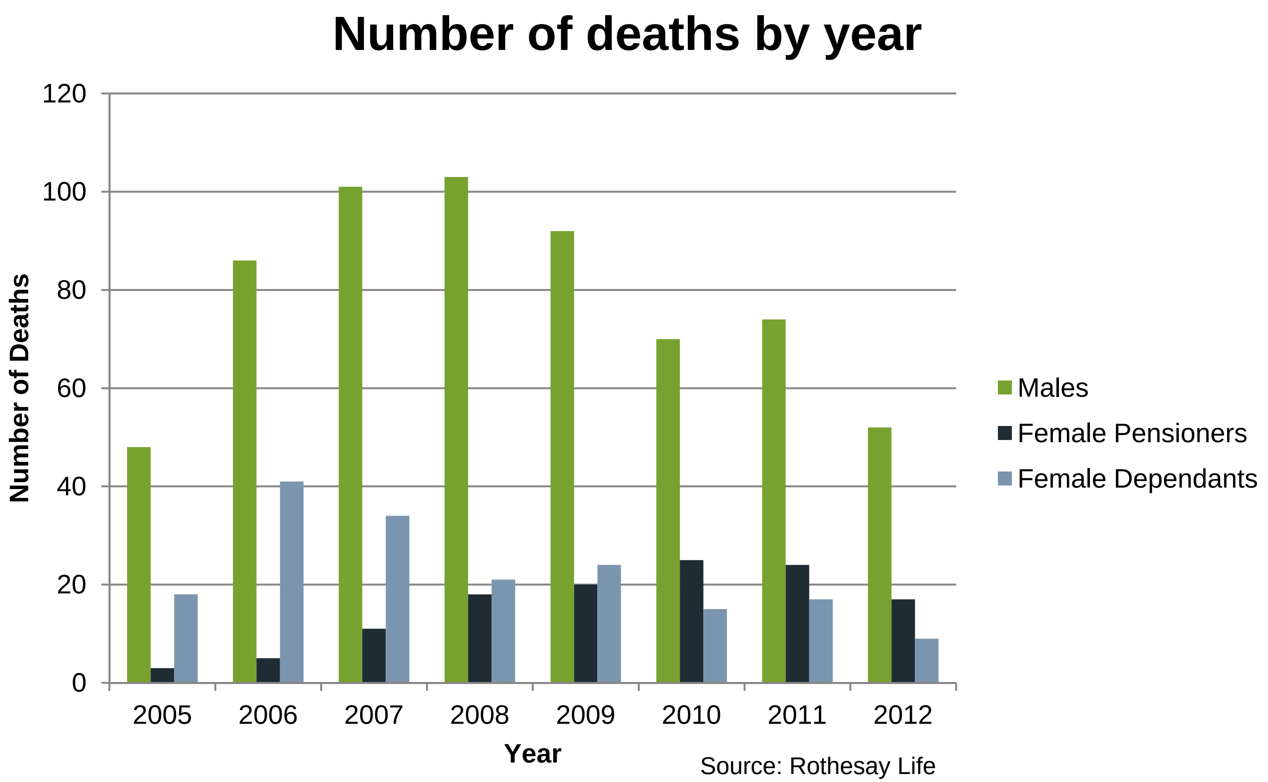


- Stakeholder buy in
  - Who are the key decision makers?
- Data quality
  - Is raw admin extract good enough?
  - Pre-empt data queries / clarify inconsistencies
- Benefit specification
  - Leave nothing to the imagination
  - Legal review?
- Important that quotes between providers are comparable

Stage 2: Quotations – Pricing Inputs



Stage 2: Quotations – Mortality Experience

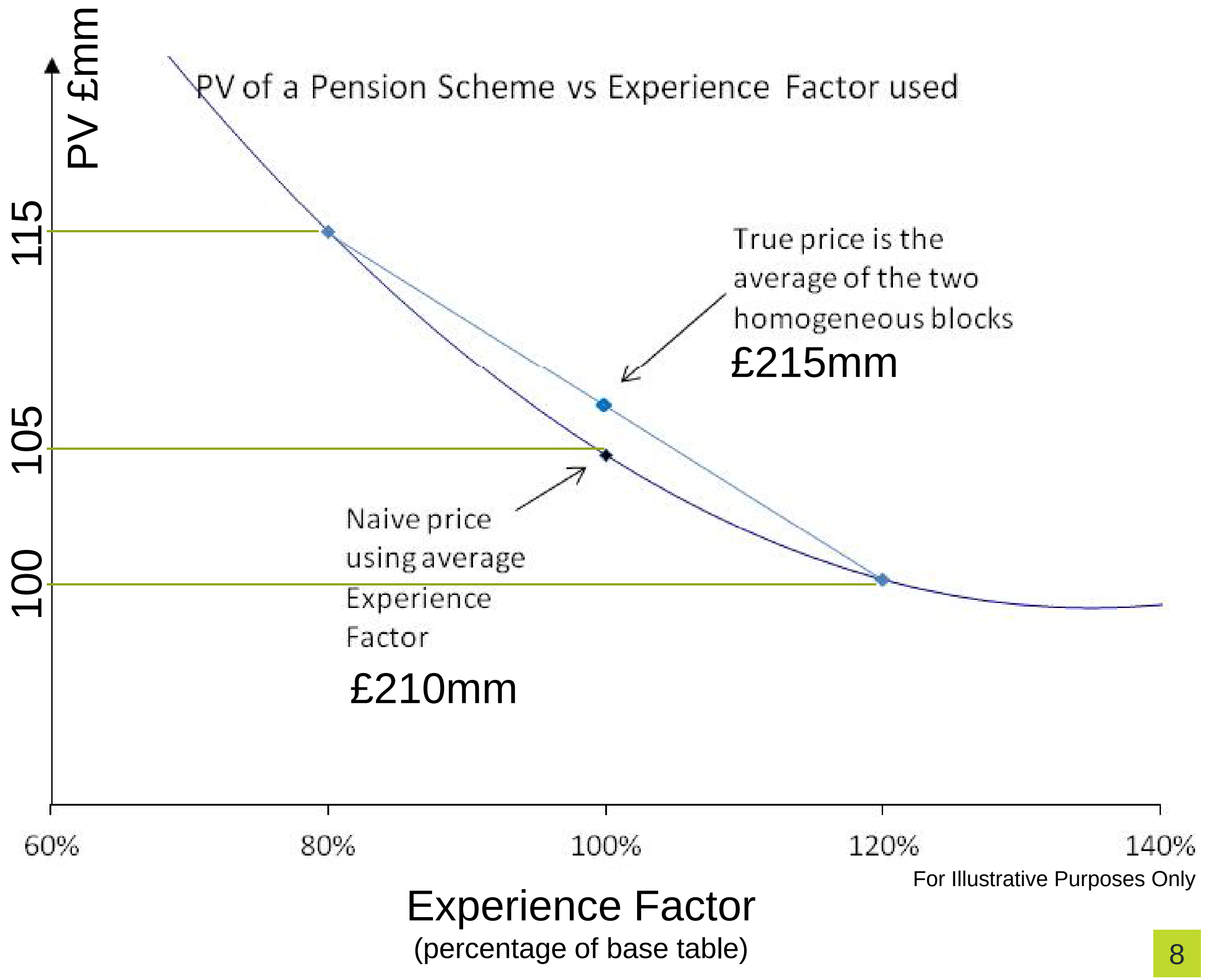


Source: Rothesay Life

- Relatively immature scheme – anything wrong?
- Good credible data ensures lowest possible longevity risk premium

Stage 2: Quotations – Mortality Experience

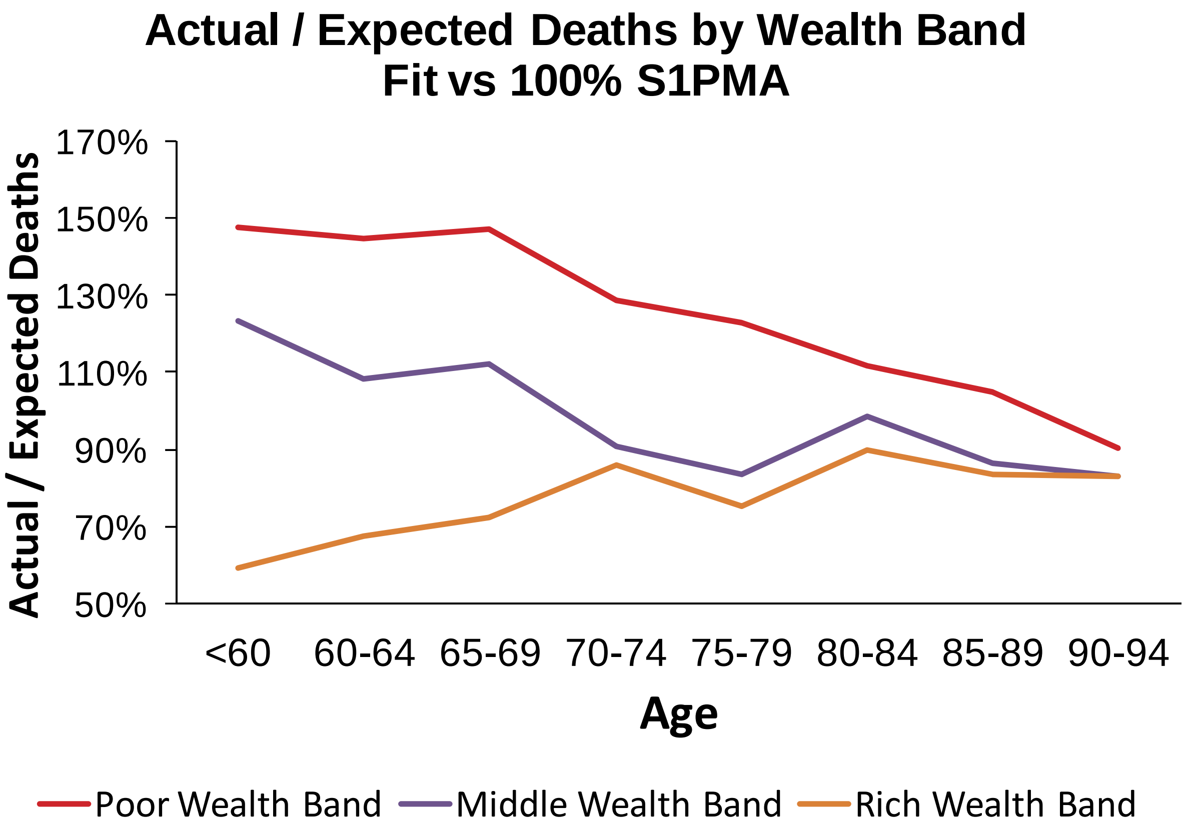
- Allowing for convexity effects can increase PV
- Consistency between lives and deaths data important



For Illustrative Purposes Only

Stage 2: Quotations – Mortality Experience

- Check table shape is appropriate for population to be insured
- Potential for miss-pricing where fit is not appropriate

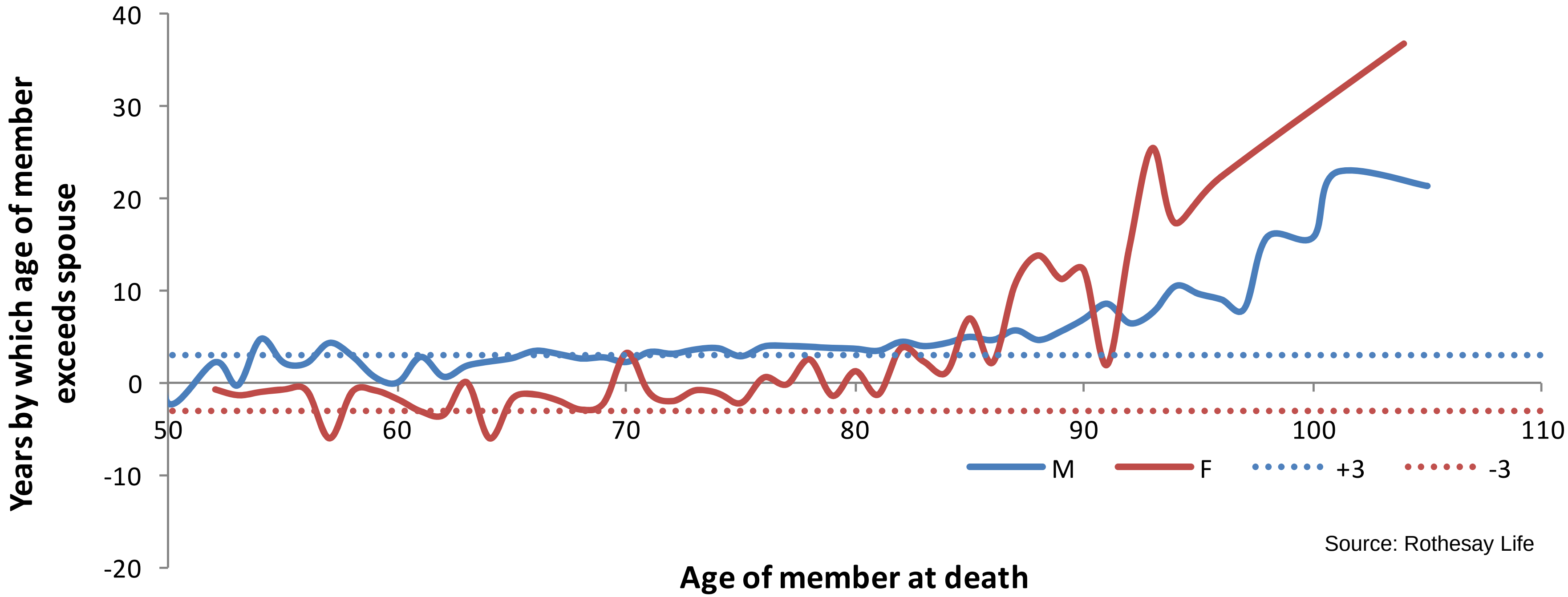


Source: Rothesay Life

Stage 2: Quotations – Other Demographic Risk

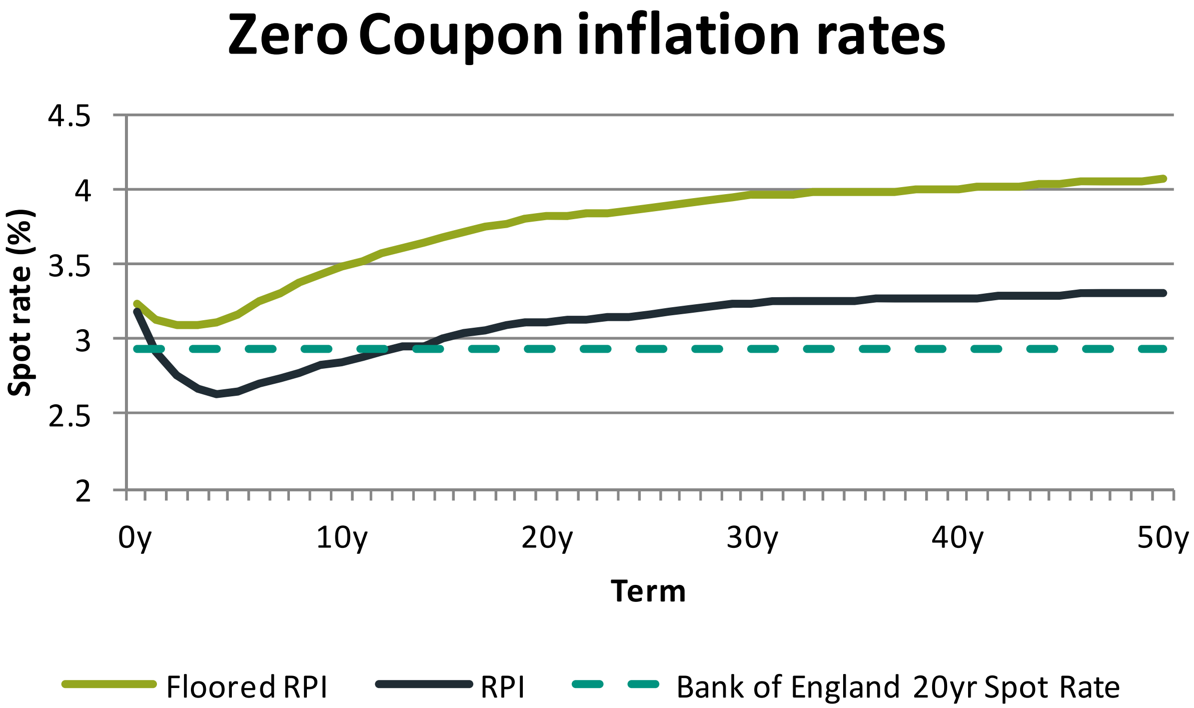
- Is a “standard” assumption appropriate?

Stage 2: Quotations – Other Demographic Risk



- Is +/- 3 years an appropriate assumption?
- Average age difference drifts up as population ages
- Impact on pricing of young spouse reductions

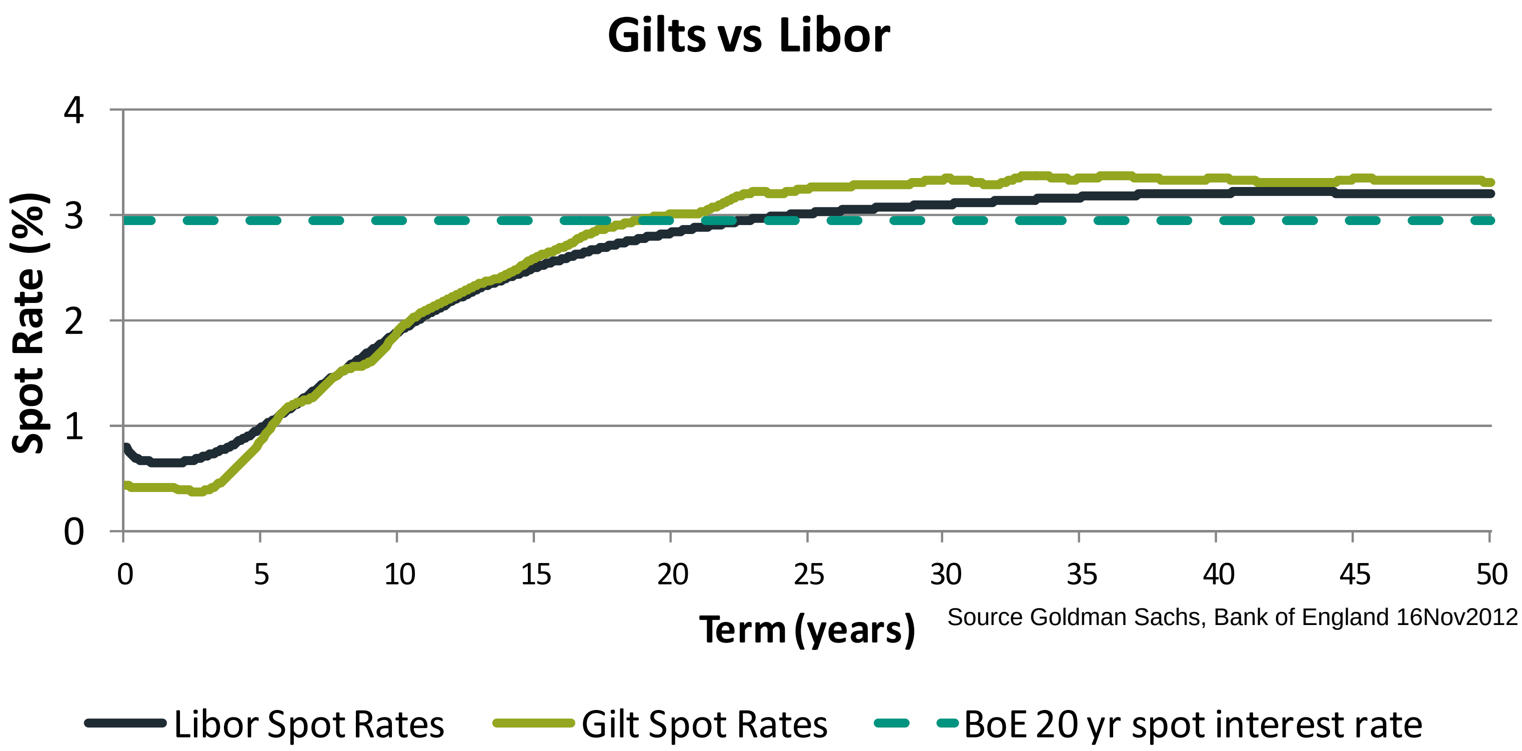
Stage 2: Quotations – Inflation



Source Goldman Sachs, Bank of England 15Nov2012

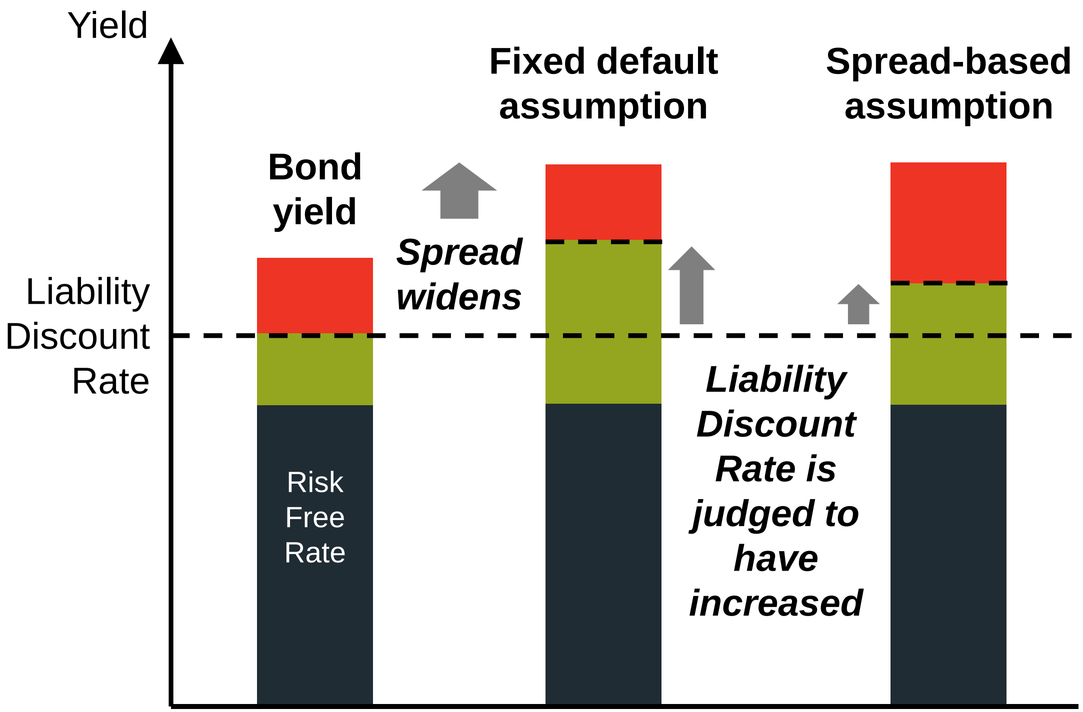
- Flat rates vs curves
- Inflation vol is expensive to hedge
- Be prepared for differences between “Black Scholes” models and insurer costs

Stage 2: Quotations – Interest Rate



- Flat rate vs curves
- Typically Technical Provisions discount rates gilt based (and some flat rates)
- Most insurers swap based

Stage 2: Quotations – Investment Risk Determining the Liability Discount Rate



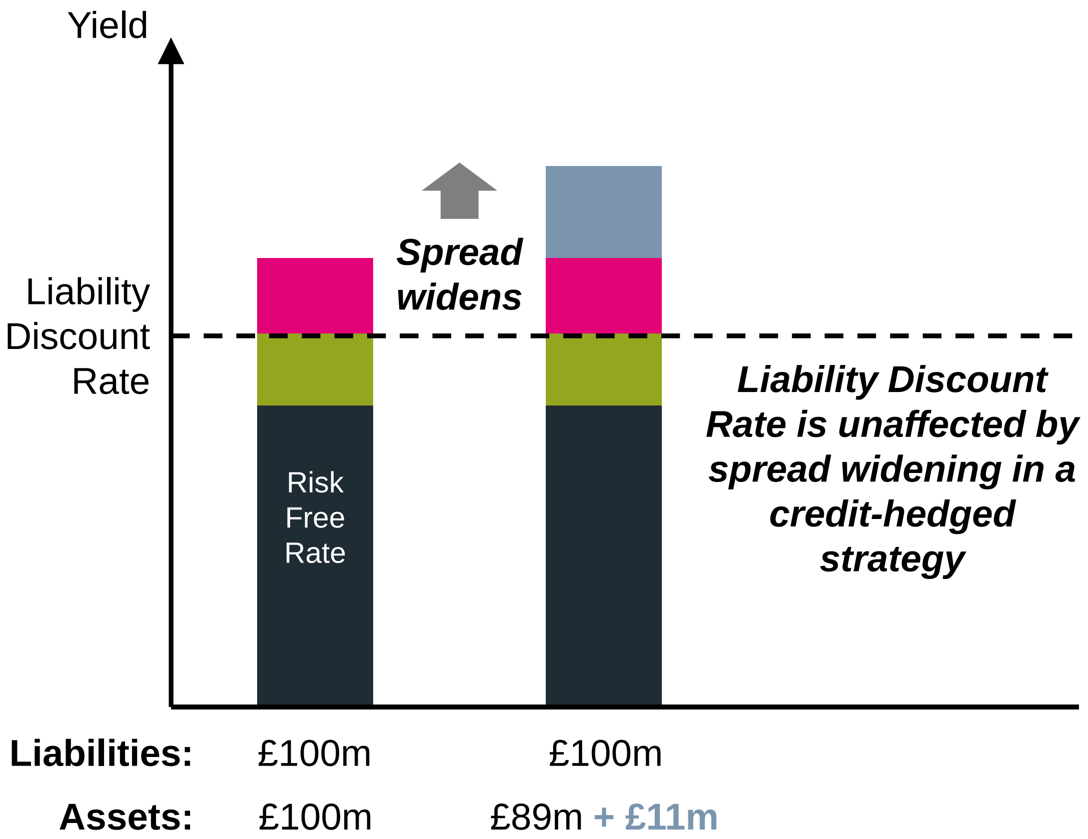
Liabilities:	£100m	£89m	£94m
Assets:	£100m	£89m	£89m

Illiquidity Premium   Default risk

£5m additional reserves required

- Liability discount rate is chosen through the insurer taking a view on how much of the “bond spread” relates to illiquidity
- As spreads widen, annuity providers must decide whether their view on default risk has changed:

Stage 2: Quotations – Investment Risk An Approach to Improving Stability



- Under a credit-hedged strategy, the illiquidity premium is fixed at inception through the purchase of credit risk protection
- If spreads widen, the annuity provider receives collateral to reflect increased risk of default

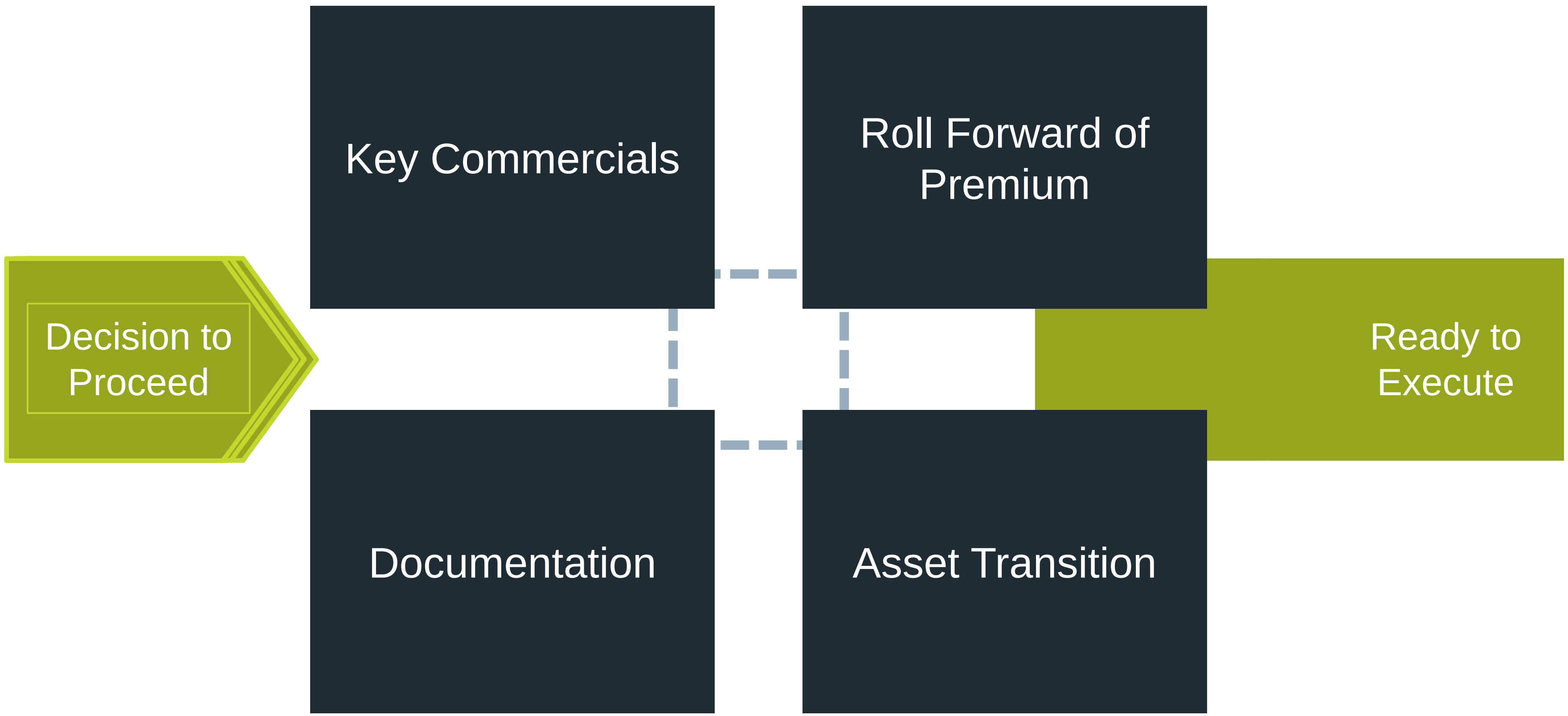
No requirement to reserve for credit default

Illiquidity Premium | Cost of purchasing credit default protection | Protection through credit hedging

Stage 2: Quotations – Data/Legislative Risk

- Mortality due diligence
- Accuracy of Data provided
  - Onsite review of files
  - Check against payroll
- Benefit due diligence
  - Review Trust Deed and Rules
  - Member Announcements
  - Valuation Reports
  - Scheme Accounts
  - Identify any equalisation issues
- Serious problems with data and administration of Trust Deed and Rules not uncommon

Stage 3: Structuring



Stage 4: Execution

- Focus on capturing optimal yield
- Trigger Based Execution based on
  - a specific portfolio of assets
  - a technical provisions funding level
  - a fixed shortfall amount
  - an accounting shortfall
- Execute when contracts agreed
  - Take risk on market conditions prior to execution
  - May be able to mitigate by using a transparent roll-forward but assets held unlikely to move exactly in line
  - Risk that trade doesn’t happen

Stage 5: Business As Usual

Focus Area	Involvement with Insurer
True-up/Premium Adjustment	• Timing of calculations • Items to be covered – Amount changes, pre trade deaths, benefit changes… • Basis to be used
Factors & Individual Calculations	• Frequency of Calculations • Basis to be used and frequency of update for market conditions
Longevity Reviews	• Agreeing the methodology – Base Table & Improvements • How to allow for changes in methodology over time

Achieving Best Value

- Data Preparation
- Benefit Specification Preparation
- Realistic Feasibility
  - Add in a buffer to cover unexpected issues
- Understand the risks taken early on
- Execution is important
  - Identify target early on
  - Monitor changes over time
  - Move fast, markets change rapidly

Questions or comments?

Expressions of individual views by members of The Actuarial Profession and its staff are encouraged.

The views expressed in this presentation are those of the presenter.