Presentation to Association of Consulting Actuaries
Alex Waite – 6 September 2012

IORP II: Solvency II for pensions

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Introduction

- Alex Waite – International Committee of the ACA, LCP Partner
- Colin Haines – Aon Hewitt Principal Consultant, seconded to tPR

- Agenda
  - Background: “where are we?”
  - Technical aspects of the “QIS”
  - The ACA’s response to the QIS consultation
  - Comments and general discussion

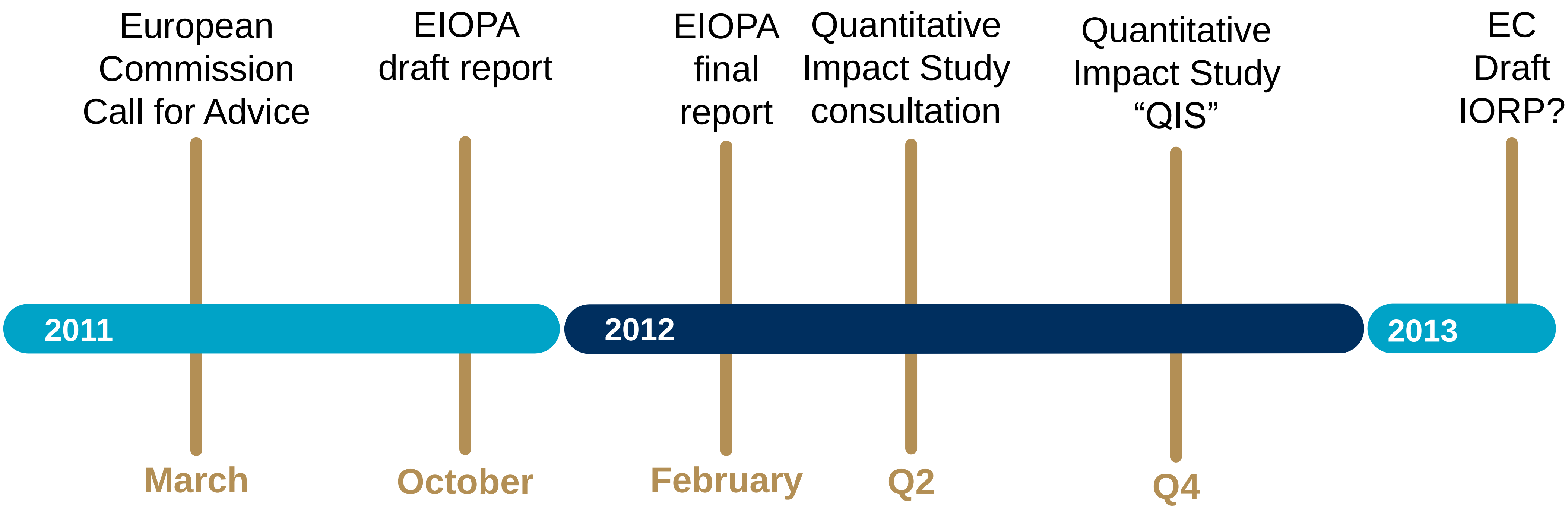
Europe and pension regulation

This won't be the first time

- IORP Directive 2003
  - Led to Pensions Act 2004 in the UK
  - "Prudent funding"
  - Pensions Regulator
  - Pension Protection Fund

Where are we?

The unrelenting path of European financial reform

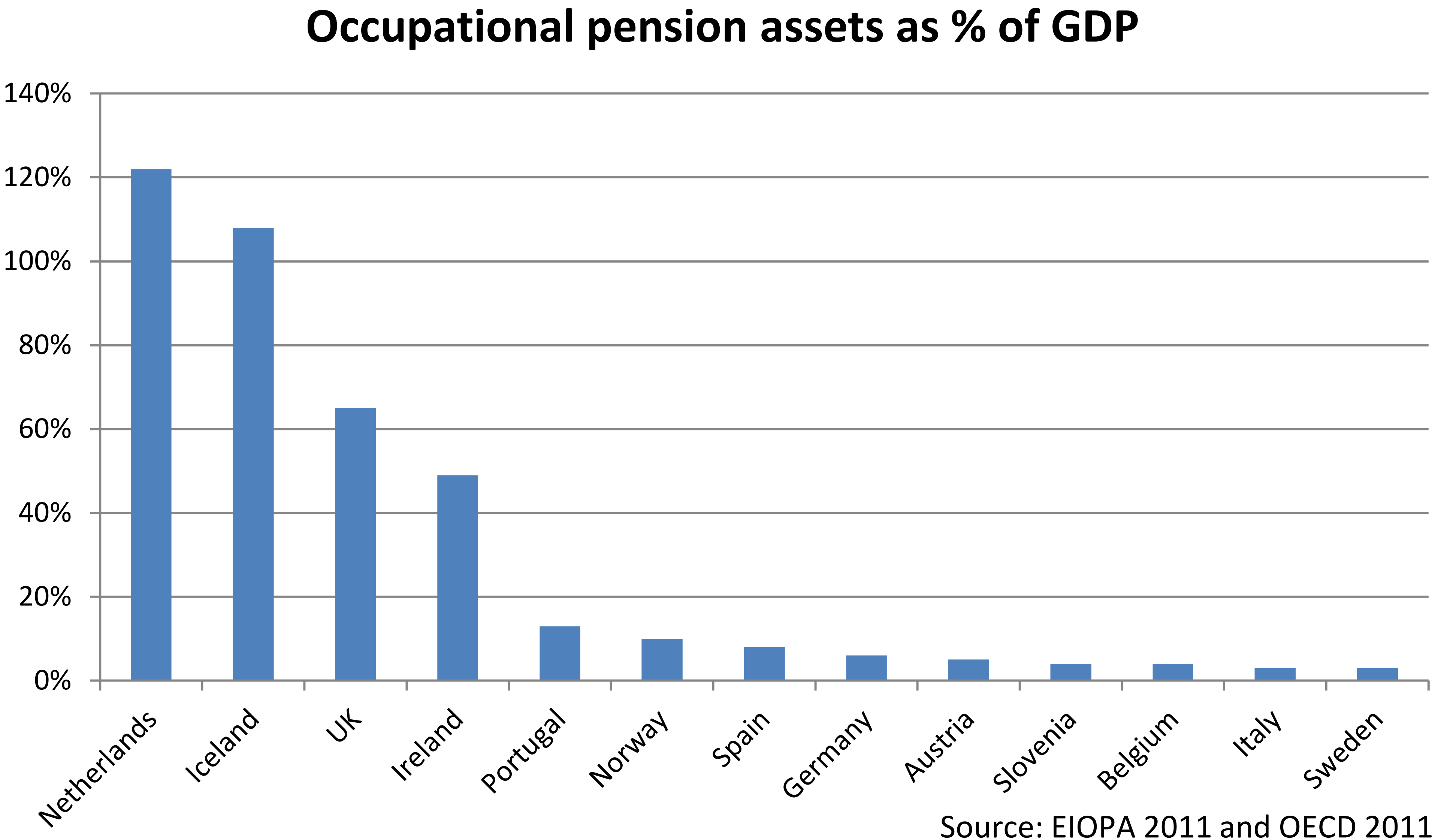


"The Commission will present a legislative proposal to review the IORP Directive. The aim of the review is to **maintain** a level playing field with Solvency II"

EC March 2011

Impact on different countries

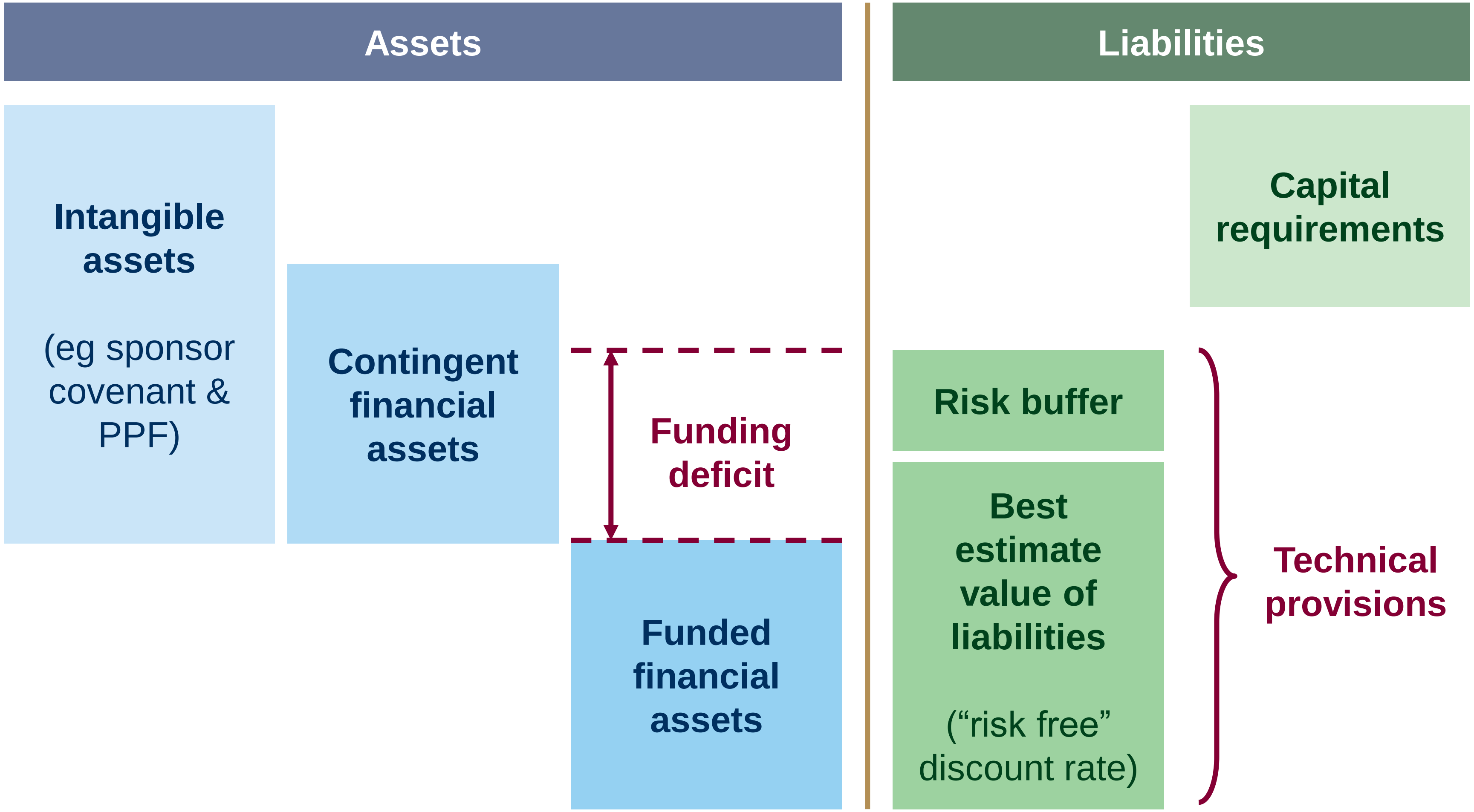
Material to the UK, and important in other jurisdictions



Source: EIOPA 2011 and OECD 2011

EIOPA advice

Main proposal is "holistic balance sheet"



Source: Based on information published by EIOPA in their document "Response for call for advice on the review of Directive 2003/41/EC second consultation"

Quantitative Impact Study ("QIS")

Another step forward on the slow and winding path

- Draft "technical specification", including some very complex formulae:

Using the following result:

$$\int_a^b x\,\varphi_{\mu,\sigma}(x)\,dx = \mu\left[\phi\left(\frac{b-\mu}{\sigma}\right) - \phi\left(\frac{a-\mu}{\sigma}\right)\right] - \sigma\left[\varphi\left(\frac{b-\mu}{\sigma}\right) - \varphi\left(\frac{a-\mu}{\sigma}\right)\right]$$

we show that:

$$\int_{-\infty}^{0} x\,\varphi_{\mu,\sigma}(x)\,dx = \mu\phi\left(-\frac{\mu}{\sigma}\right) - \sigma\varphi\left(-\frac{\mu}{\sigma}\right)$$

and

$$\int_{M_{SS}}^{+\infty} x\,\varphi_{\mu,\sigma}(x)\,dx = \mu\left(1-\phi\left(\frac{M_{SS}-\mu}{\sigma}\right)\right) + \sigma\varphi\left(\frac{M_{SS}-\mu}{\sigma}\right)$$

- Consultation closed on 31 July – ACA responded
- EIOPA expected to shortly publish final technical specification
- tPR will run UK QIS

QIS IORP II: Summary of draft technical specifications

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Use of these slides

- These slides provide a short technical summary of some of the key items in EIOPA's consultation 162 page paper published 15 June 2012

- For full details, please see EIOPA's consultation paper

  CP 003/2012 – Draft Technical Specifications for the QIS of EIOPA's Advice on the Review of the IORP Directive

  https://eiopa.europa.eu/consultations/consultation-papers/index.html

- In the event of any inconsistency between these slides and EIOPA's consultation paper, the EIOPA consultation paper should prevail

- Warning: The final specifications could be different from those in the draft technical specifications

The Quantitative Impact Study (QIS)

- The QIS covers the numerical calculations relating to the holistic balance sheet
  - Measurement date: 30 December 2011
  - Results will feed into Commission's own impact assessment work

- Several EEA member states taking part in QIS
  - EEA states able to decide process for performing QIS in own country
  - Countries able to employ different simplifications depending on national circumstances

- For UK, TPR to do calculations using scheme data
  - No requirement for pension schemes to do calculations
  - Results to be presented in aggregate form to EIOPA
  - TPR will engage with schemes/advisers that
    - wish to carry out actual QIS calculations using full membership/asset data; and
    - are willing to share methodologies and results.

- Expected timeframe for QIS: Early October to mid-December 2012
  - Final technical specifications for QIS to be agreed
  - Draft specifications recently issued for public consultation
  - Timing and specifications could change

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Items not included in QIS

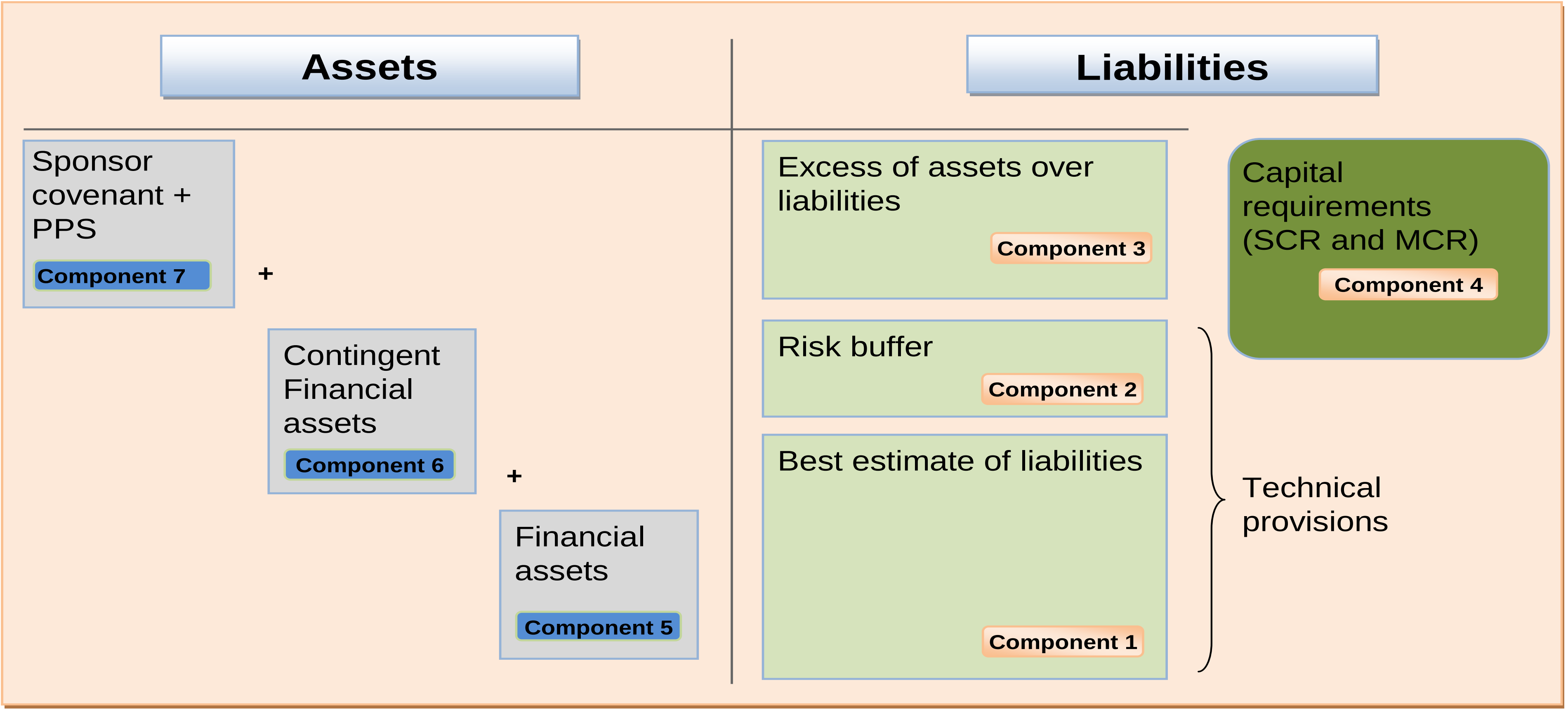
- Adoption of holistic balance sheet in practice
- Feasibility of harmonised confidence levels
- Recovery plans
- Tiering of assets and own funds
- Supervisory actions

EIOPA intends to include specific sections in its final report to:

- start the discussion on these items; and
- properly inform the policy making process in these areas

but without drawing any definite conclusions

Holistic Balance Sheet - Liabilities



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Technical provisions - overview

- Valuation date: end December 2011
- Two estimates for liabilities (Level A and Level B)
  - Different discount rates for both
- Other key financial assumptions
  - Expected Inflation: 2% pa
  - Expected salary increases (where required): 3% pa
- Other assumptions (eg demographics) to be best estimates

- Benefits to be included
  - Discretionary and conditional benefits *(option to exclude discretionary benefits)*
  - Contractual options and financial guarantees
  - Future service benefits (if they cannot be stopped or adjusted)
  - Take account of ability to reduce benefits in event of sponsor default or as a “measure of last resort” *(option to exclude such reductions)*
  - Scheme expenses

Technical provisions – discount rate (Level A)

- Level A
  - Risk-free interest rate curve supplied by EIOPA
  - Swap bid rates less 10bp (credit risk adjustment)
  - Ultimate forward rate of 4.2% at 40 years after last liquid point (EUR: 20 years, GBP: 50 years, SEK: 10 years)
  - Extrapolation using Smith-Wilson method
- *Alternative options to be included in QIS*
  - *Use insurer QIS 5 interpolation parameters (convergence at maturity of 90 years; last liquid point of 30 years for EUR)*
  - *Increase rates by 50bp to allow for market illiquidity (“counter cyclical premium”)*
  - *EIOPA also considering possibility to allow for “matching premium”*
    - *Allows liabilities backed by bond-related ringfenced assets to be valued with reference to value of underlying assets (allowing for default risk)*

Technical provisions – discount rate (Level B)

- Level B
  - Derived from strategic asset mix
  - Weighted average of expected return on fixed-income and non-fixed income assets
- Fixed-income assets
  - Expected asset return based on end 2011 yields on government, corporate and bank bonds
- Non fixed-income assets
  - Expected asset return of 3% above AAA government bonds
    - 5.98% for Euro-zone as at end 2011

Risk margin

- Equivalent to amount needed (on top of “best estimate” liabilities) for IORP to take over and meet pension obligations

- EIOPA simplification: Set to 8% of Level A technical provisions
  - IORPS can use different % if more appropriate

- *EIOPA have also proposed option of no risk margin*

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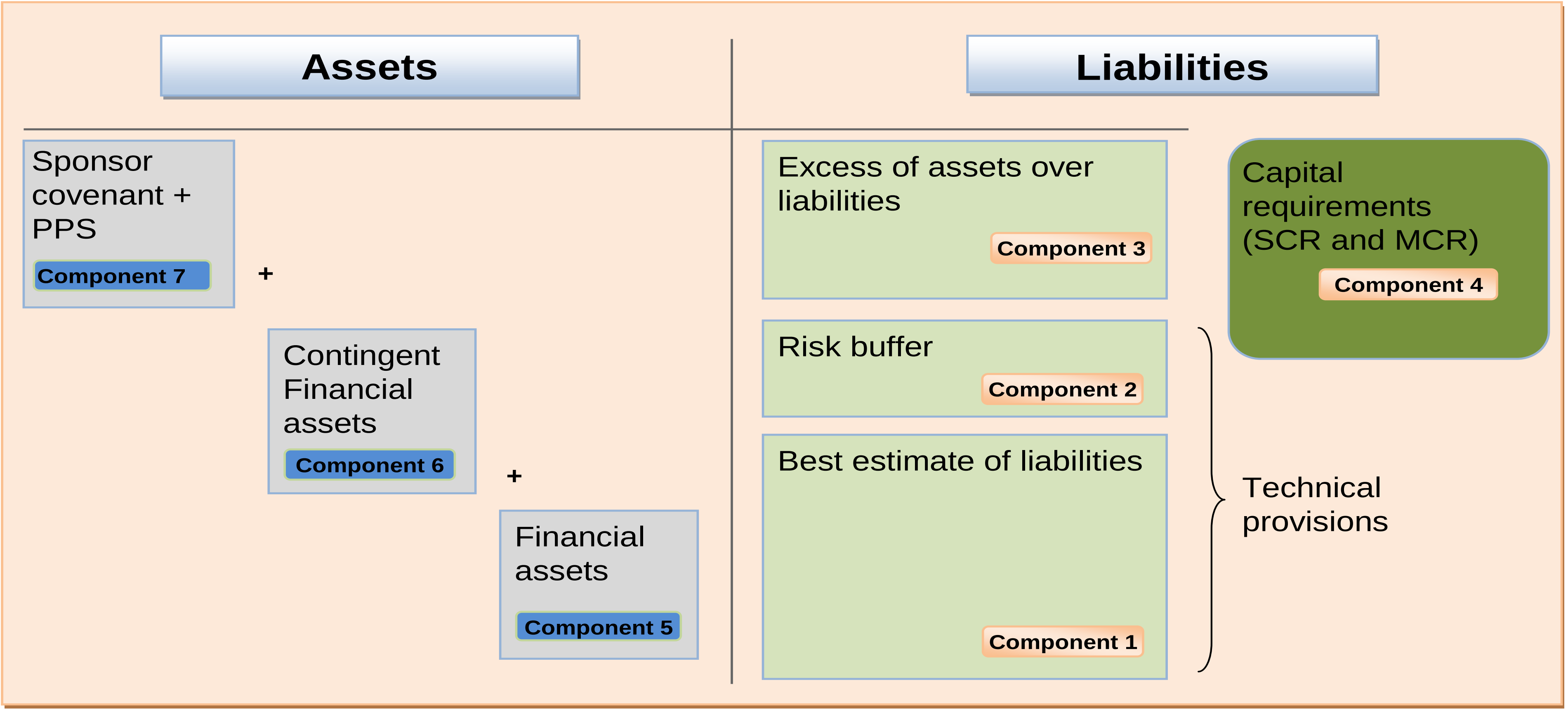
Holistic Balance Sheet – Assets



Assets

- Market consistent valuation
- Include contingent assets of sponsor
  - Assets in possession of sponsor
  - "Locked in a legally binding way" for the purpose of funding the IORP in specified circumstances
- Include recoverables from (re)insurance contracts and special purchase vehicles

Sponsor support - principles

- Calculate maximum value of sponsor support available to the IORP
  - Derived from overall sponsor wealth
  - Judgement required
- The maximum figure is not the figure to be used for the Holistic Balance Sheet
  - Actual sponsor support is that required to fund Level A technical provisions over duration of liabilities; plus
  - Allowance for any recoveries from sponsor upon default
- EIOPA have proposed simplified approaches for these calculations
  - If this leads to a significant misestimate of sponsor support (eg due to a particular characteristic of the sponsor support arrangement or the sponsor itself), an IORP-specific valuation should be carried out

Sponsor support – maximum value

- Maximum value – simplified EIOPA approach
  - 50% of shareholder funds available for IORP; plus
  - 50% of expected future net profits over liability duration
    - *If lower, use 25% expected future EBTDA (based on last 3 years accounts); and*
    - *Earnings/EBTDA adjusted for inflation;* plus
  - Current recovery plan contributions (for the period up to average duration of IORP cashflows)

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Sponsor support – actual value for Holistic Balance Sheet

- Calculate present value of cash flows required to fund Level A TPs over duration of liabilities
  - Adjust downwards if PV exceeds maximum sponsor support
  - Allow for probability of default
    - Default risk based on sponsor's credit rating .
    - Unrated employers assumed to be regarded as B / CCC rated *(Option to use different probability if supported by evidence)*
- Calculate expected amounts payable upon default
    - 50% of deficit (with interest) less accumulated contributions
- Total value of sponsor support equals sum of above two items

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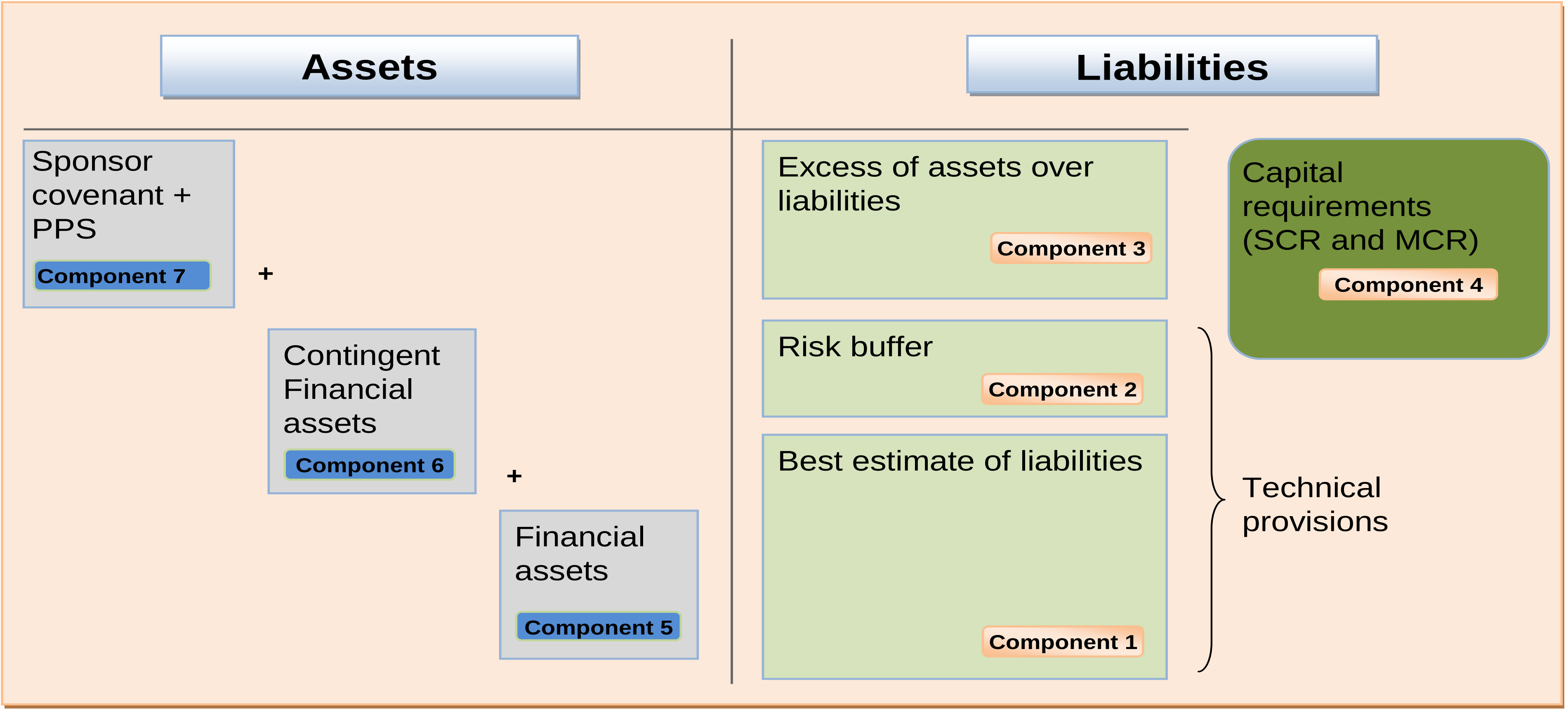
Pension Protection Schemes

- Value of PPS as an asset equals
  - Value of future benefits guaranteed by the PPS; less
  - The level of funding and funding available at that time. (Max zero)
- Method
  - Calculate expected benefits payable by PPS upon default in each year
    - Allowance made for expected amounts recoverable from sponsor @ 50%
  - Calculate overall present value based on probability of default each year

- *EIOPA options:*
  - *Take account of PPS by reducing credit risk of the sponsor in the sponsor support calculation*
  - *Exclude PPS from the holistic balance sheet*

Holistic Balance Sheet – Capital requiremenrts



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Solvency Capital Requirement (SCR)

- General principles
  - Calculate change in “net asset value” (ie assets less TPs) under range of different shock scenarios
  - 99.5%, 97.5% and 95% confidence limits to be modelled in QIS
- IORPs may make simplifications to calculations if proportionate to the nature, scale and complexity of the risks

SCR

- Overall SCR equals
  - Basic SCR; plus
  - SCR for operational risk; plus
  - Adjustments for loss absorbing effect of technical provisions, security mechanisms and deferred taxes
- Basic SCR equals aggregated capital requirements (calculated using correlation matrix) for :
  - Market risk
  - Pension liability risk
  - Counterparty default risk
  - Health risk
  - Intangible assets risk

SCR – events for 99.5% confidence limits

- Market risk
  - Interest rates down at least 1%
  - Equity / Other asset falls 30-40% *(EIOPA also looking at other options)*
  - Property down 25%
  - Currency movements 25%
  - Credit downgrades
  - Large exposures to individual assets

- Liability risk
  - Longevity improvements (reduction in mortality rate) of 20%
  - Mortality rates for death benefits up 10%
  - Disability rates up 25%
  - Take-up rates for benefit options of 50%
  - Expenses up 10% / Expense inflation up 1% pa
  - Risk of pensions changing as a result of legislation (3% loading)
  - Catastrophe risk

- Counterparty default risk
  - Reflects expected losses due to unexpected default or deterioration in credit standing of counterparties (including scheme sponsor)
- Operational risk
  - Greater of 0.45% of technical provisions & 4% of annual premiums
- Health & intangible asset risks– not expected to be material for UK schemes

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SCR – loss absorbing capacity

- SCR can be reduced to allow for “loss absorbing” mechanisms
- For each shock in SCR, a revised “net capital charge” can be calculated to allow for
  - Lower levels of discretionary and conditional benefits
  - Increased sponsor support (eg if maximum sponsor support exceeds calculated value of sponsor support)
- In some cases (eg strong sponsor), SCR could be significantly reduced (eg close to zero)

Minimum Capital Requirement (MCR)

- MCR based on linear formula
  - Floor of 25% of SCR
  - Cap of 45% of SCR

Component of TPs (excluding risk margin)	Contribution to MCR
Guaranteed benefits	+5%
Discretionary benefits	-8.8%
DC benefits	+0.5%
All other benefits (except health risks)	+2.9%
Capital at risk for each contract	+0.1%
Benefits linked to health risks	4.7% to 13.1%
Premiums for health risks	4.7% to 8.5%

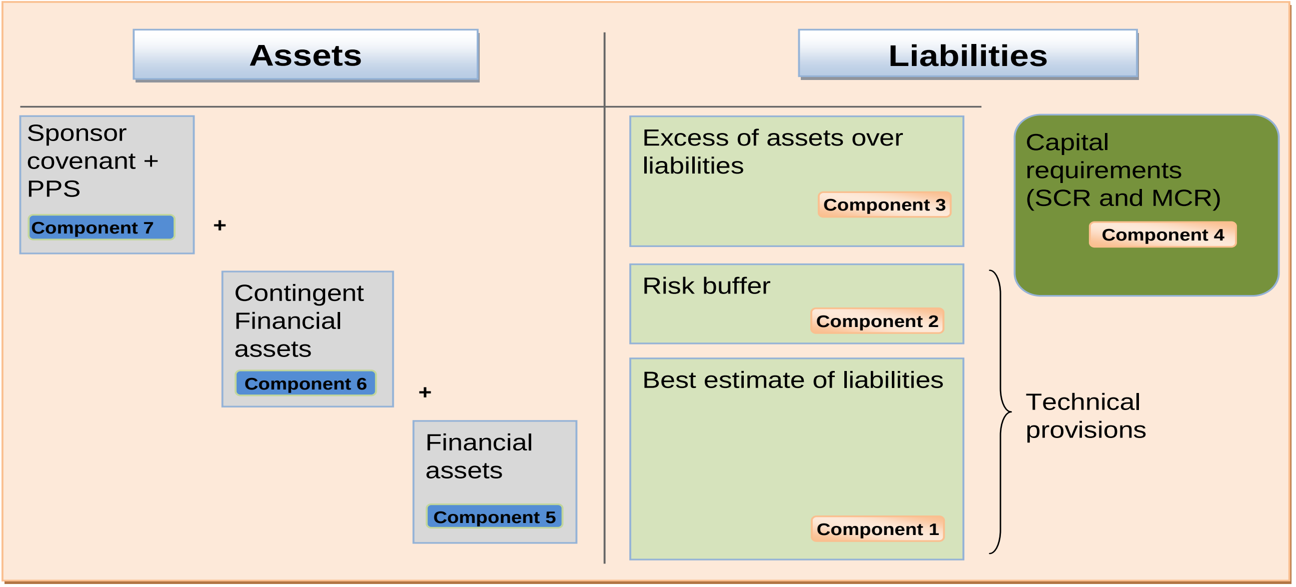
EIOPA also looking at not having an MCR

Proportionality

- IORPs can apply simplified calculations or approximations
- Risks can be omitted from SCR if below materiality threshold
- Approaches need to be proportionate to nature, scale and complexity of underlying risks
- When addressing materiality, regard needed to purpose of the work and intended users
  - For example, EIOPA have stated “a QIS exercise usually requires a lower degree of accuracy than financial and supervisory reporting”

QIS - Summary

- QIS only covers assessment of items on proposed Holistic Balance Sheet



- QIS will not cover
  - Adoption of holistic balance sheet in practice
  - Feasibility of harmonised confidence levels
  - Recovery plans
  - Tiering of assets and own funds
  - Supervisory actions

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ACA response to consultation and conclusion

Lane Clark & Peacock LLP Trustee Consulting Investment Consulting Corporate Consulting Insurance Consulting Business Analytics www.lcp.uk.com

ACA response to QIS consultation

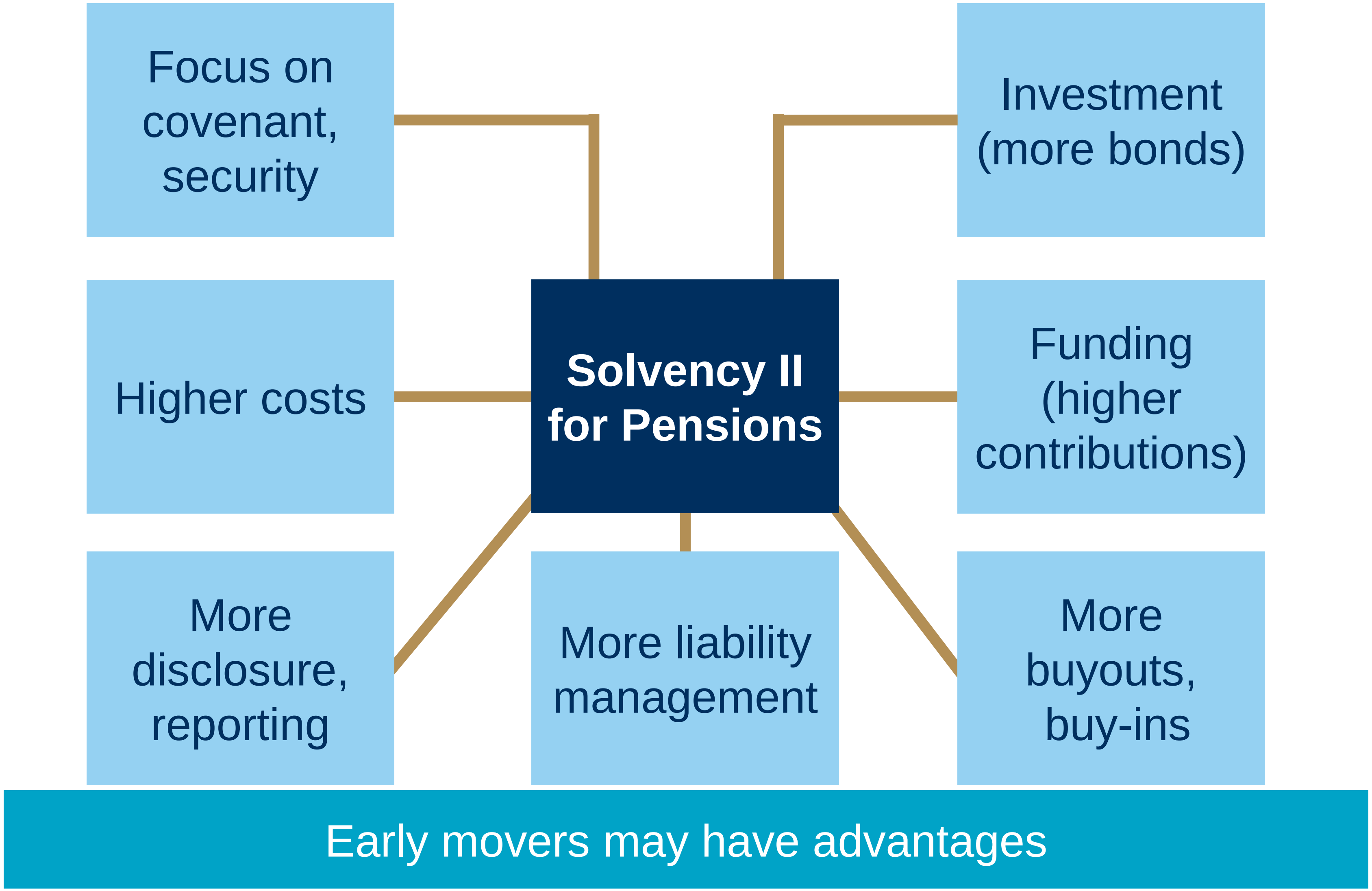
- Consultation was flawed
- Did not recognise important differences between employer-sponsored IORPS and commercial insurance companies
- Scope of QIS not broad enough to include ramifications of the proposals
- No recognition of actuary’s role or expert judgement
- Both overly simplistic in places, and overly complex in others
- SCR calculations disproportionate for many IORPS

UK Political landscape

- Coalition Government – strong statement in June from Steve Webb
- Opposition front bench (Rachel Reeves / Chuka Umunna) – open letter to Government at end of August

Implications

Likely significant change in direction of travel for UK pensions



Conclusions

- QIS indicates that EU is serious about imposing the principles of Solvency II on UK pension schemes
- Pension schemes can produce an illustrative HBS
- QIS will be a very significant piece of work for the Pensions Regulator
- But overall impact is not possible to assess until we have further details of the EC's funding proposals (which they are considering separately)

- **We encourage the exchange of ideas through the ACA International Committee**

Questions and discussion points

Will schemes do their own calculations?

Technical Provisions (Levels A and B)

Discount rate (liquidity premium?)

Timeline / Transitional periods

Feedback please!

Past-service carve out?

Treatment of "sponsor support"?

Components of the SCR?

UK opt-out or leave EU?

Scope

- This generic presentation should not be relied upon for detailed advice or taken as an authoritative statement of the law.
- If you would like any assistance or further information, please contact the partner who normally advises you.
- While this document does not represent our advice, nevertheless it should not be passed to any third party without our formal written agreement.