IFRS 17 Insurance Contracts: Impacts for Reserving

Breakfast Briefing Series ‘Deep Dive’ event
2 August 2017
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Recap Measurement – General Model
Measurement Requirements
The general model a.k.a the building blocks approach ("BBA")

**Principles**
- Measurement uses current estimate assumptions
- Contracts are grouped by portfolio, year of sale and one of the three possible profitability levels
- Profit measured and reported based on the delivery of the "insurance coverage service"
- Deferred profit absorbs assumption changes for future coverage ("Unlocking")
- Discount rates based on market interest rates (currency, duration, liquidity)
- Expected profit from participating contracts revalued based on assets

**Total IFRS Insurance Liability**

- **Block 1:** Expected Future Cash Flows (unbiased probability weighted mean)
- **Block 2:** Time Value of Money
- **Block 3:** Risk Adjustment
- **Block 4:** Contractual Service Margin ("CSM")

Fulfilment cash flows

Measured at inception as the expected contract profit to be earned as services are fulfilled. It is adjusted for changes in non-financial variables affecting future coverage cash flows. It accretes interest based on day 1 discount rate (locked-in rate)

An entity-specific assessment of the uncertainty about the amount and timing of future cash flows

An adjustment that converts future cash flows into current amounts

Expected (probability-weighted) cash flows from premiums, claims, benefits, expenses and acquisition costs
Contract Boundaries
**Contract Boundary**

**Definition of IFRS 17 contract boundaries**

*Cash flows are within the boundary of an insurance contract if they arise from substantive rights and obligations that exist during the period in which the entity can compel the policyholder to pay the premiums or in which the entity has a substantive obligation to provide the policyholder with coverage or other services.*

**Interpretation**

**Beginning of a contract boundary**

The earlier of:

- The beginning of coverage; or
- The date on which the first premium is due; or
- When the facts and circumstances indicate that the contract will belong to an onerous group of contracts.
Contract Boundary
Definition of IFRS 17 contract boundaries

A substantive obligation to provide coverage or other services ends when:

a. The entity has the practical ability to reassess the risk of the particular policyholder or of the portfolio of insurance contracts that contains the contract and, as a result, can set a price or level of benefits that fully reflects those risks; and

b. The pricing of the premiums for coverage up to the date when the risks are reassessed does not take into account the risks that relate to future periods.

An entity should reassess the boundary in each reporting period in the coverage period of the contract, to include the effect of changes in circumstances on its substantive rights and obligations.
Contract Boundary

Definition of IFRS 17 contract boundaries

An entity shall **consider all of the substantive rights and obligations that are held by the entity**, whether they arise from a contract, law or regulation. However, an entity shall **ignore terms that have no commercial substance** (i.e. no discernible effect on the economics of the contract).

**Interpretation**

**Take into account:**

- All substantive rights (from contract or law) held by the policyholder
- All restrictions that have commercial substance. Commercial substance implies that future cash flows of the contracts change due to the restriction.
Contract Boundary
Example – extension of term (with premiums) at maturity

Product features

Contract is for a period only.
Contracts are annually renewable

Annually renewable term insurance

Policyholder

• Pay premiums for the full contract term (1 year)
• Decide to extend the term of the policy (no obligation)

Insurer

• No right to refuse renewal
• No restrictions on power to set the premium for the new term

No clauses which constrain the price or underwriting that can be performed at maturity.
**Contract Boundary**

**Example – extension of term (with premiums) at maturity**

**Rationale**

- Only the premiums up until the maturity date should be taken into account.
- There are no terms and conditions contained in the contract that constrain the price of any extension by the policyholder at maturity.
**Summary**

**Within the boundary**
An entity can compel the policyholder to pay the premium

**Substantive obligation**
An entity needs to provide coverage or other services to policyholders

- **a**
  - Entity has the practical ability to **reassess the risks of the particular policyholder** and **set a price or level of benefits** to fully reflect the risks, or;

- **bi**
  - Entity has the practical ability to reassess the risks of the **portfolio of insurance contracts** that contains the contract and **can set a price or level of benefits** to fully reflect the risks of that portfolio, and;

- **bii**
  - **Pricing** for coverage up to the date when the risks are reassessed **does not take into account the risks that relate to periods after** the reassessment date
Best Estimate Liability
Best Estimate Liability

Introduction

• IFRS 17 requires that insurance contracts are accounted for as one carrying amount with explicitly reported components.

• Central to the new accounting is the amount defined as the “fulfilment cash flows”.

• This is a single net amount that gives the accounting representation of all rights and obligations from an insurance contract. It is always present even when there is no CSM.

• It is made of future outflows and inflows. Deloitte and our clients have analysed it as the combination of three building blocks:
  1. Undiscounted probability-weighted cash flows
  2. Discount rate curve
  3. Risk adjustment liability

• We refer to the combination of blocks 1 and 2 as the “Best Estimate Liability” (BEL)
Best Estimate Liability
Definition of IFRS 17 BEL

Para 33: An entity shall include in the measurement of a group of insurance contracts all the future cash flows within the boundary of each contract in the group. Those estimates shall:

a. Incorporate, in an unbiased way, all reasonable and supportable information available without undue cost or effort about the amount, timing and uncertainty of those future cash flows. To do this, an entity shall estimate the expected value (i.e. the probability-weighted mean) of the full range of possible outcomes;

b. Reflect the perspective of the entity, provided that the estimates of any relevant market variables are consistent with observable market prices for those variables.

c. Be current - the estimates shall reflect conditions existing at the measurement date, including assumptions at that date about the future.

d. Be explicit - the entity shall estimate the adjustment for non-financial risk separately from the other estimates. The entity also shall estimate the cash flows separately from the adjustment for the time value of money and financial risk, unless the most appropriate measurement technique combines these estimates.
<table>
<thead>
<tr>
<th>Cash flow</th>
<th>To be included</th>
<th>To be excluded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>• Premiums and cash flows within contract boundary</td>
<td>• Premiums and cash flows from future insurance contracts or unbundled components.</td>
</tr>
<tr>
<td>Claims</td>
<td>• Claims and benefits within contract boundary</td>
<td>• Claims and benefits of future insurance contracts or unbundled components</td>
</tr>
<tr>
<td>Expenses</td>
<td>• <strong>Overhead-type costs (eg. costs of accounting and human resources)</strong></td>
<td>• Payments to and from reinsurers</td>
</tr>
<tr>
<td></td>
<td>• Policy administration and maintenance costs</td>
<td>• <strong>Non-directly attributable acquisition costs</strong></td>
</tr>
<tr>
<td></td>
<td>• Costs of selling, underwriting and initiating</td>
<td>• Cash flows from abnormal amount of wasted labour</td>
</tr>
<tr>
<td></td>
<td>• Claims handling costs</td>
<td>• <strong>General overhead (eg. Product development costs and training costs)</strong></td>
</tr>
<tr>
<td></td>
<td>• Options and guarantees cash flows</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• <strong>Directly attributable insurance acquisition cash flows</strong></td>
<td></td>
</tr>
<tr>
<td>Tax</td>
<td>• Premium taxes and levies</td>
<td>• Income tax payments</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>• Investment returns</td>
</tr>
</tbody>
</table>
Best Estimate Liability
Calculation of expected profit (if total liability = BEL)

• Small initial best estimate reserve leads to the recognition of all profits at inception

• BEL results in initial one-off profit, followed by expected profits of zero

• Risk Adjustment (RA) and Contractual Service Margin (CSM) are necessary so that initial one-off profit can be reduced to zero and the profit is recognised in line with the fulfilment of the contractual obligations over the coverage period and the uncertainty of the BEL over the coverage and claims handling periods.
Insurance cash flows
The basics

• A cash flow is the amount of money being transferred in and/or out of a business because of contracts that business has issued to other parties and that affects both the liquidity and profitability of a company.

• IFRS 17 requires us to consider all the cash flows arising from a group of insurance contracts.
Insurance cash flows

One policy

• Cash flows for ONE policy are in many cases on/off
  – A policyholder will either live or die
  – A policyholder will surrender
  – A policyholder will either be around until maturity or not
  – A policyholder will either have a claim or not

• Are these scenarios concurrent or independent of one another?

• What happens to other cash flows when the above events happen (present and future)?
  – To premium
  – To investment income (impact on discount rate or asset dependent cash flows)
  – To death, surrender and maturity benefits
  – To claim payments
  – To commission
  – To expenses
# Insurance cash flows

## Types of cash flow models

### Heavy Models:

<table>
<thead>
<tr>
<th>Description</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
</table>
| **Spreadsheet** | • Almost any calculations  
• But not many of them in a non-industrial context | • Small companies  
• Minor calcs / adjustments  
• (but only with good controls!) | • Anything requiring robust controls, that won’t crash, or that involves a lot of data or calculations |
| **VBA** | • Like a spreadsheet but in code  
• Can be industrialised, but just calculations | • Doing spreadsheet calculations but with better controls & quicker run-time  
• Stand-alone calculations | • Linking back to other systems (e.g. dynamic calculations) |
| **Admin system** | • Store data  
• Do simple calculations with that data  
• Report on data | • Storing & keeping track of data  
• Simple calculations e.g. net premium reserves | • Full projections  
• Anything that needs to be optimized for run-time or memory usage |
| **Proprietary actuarial system** | • Cash flow modelling  
• Some storage & link to other systems | • Detailed cash flow modelling  
• ALM  
• Stochastic calculations  
• Anything that needs to be optimised for run-time or memory usage | • Simple calculations  
• Usage by anyone who is not trained in the system. |
## Insurance cash flows

### Types of cash flow models

#### Lite Models:

<table>
<thead>
<tr>
<th>Description</th>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
</table>
| **Close form solutions**                         | • Using carefully calibrated Black & Scholes-like techniques                | • Requires care and substantial financial economics knowledge
|                                                  | • Can avoid the need for Monte Carlo stochastic calculations or potentially asset modelling |
|                                                  | • Well-known                                                              | • Often does not work well                                                   |
| **Short form formulae (risk geographies)**       | • BEL=aX^2+bY^2+cZ^2 + dX + eY + fZ + g + hXY + iXZ+ jYZ                   | • Still need to calibrate using full models, but hopefully fewer runs overall |
|                                                  | • Where the independent variables X, Y, Z represent the stress level of the risk drivers, e.g. (X = risk free rates, Y = equity volatility, Z = lapse rates) |                                                                               |
|                                                  | • Very neat, “easy” for senior management to visualize                    |                                                                               |
|                                                  | • Can be set up before year end, then used quickly at year-end.           |                                                                               |
| **Replicating Portfolio**                        | • If a replicating portfolio exists and can be measured directly, there is no need to use BBA for the part of the liability that is replicated by that portfolio. The measures of the replicating portfolio and the replicated cash flows arising from the liability are identical | • Similar disadvantages to short-form formulae |
|                                                  | • Similar advantages to short-form formulae                               |                                                                               |
Insurance cash flows
Key assumptions

Cash inflows

• How much **premium** will I receive?
  - Sales Volume
  - Premium rates
• How much **investment income** will I earn?
  - Setting an appropriate discount rate
  - Establishing asset dependency with the cash flows

Cash outflows

• When will policyholders **die**?
• When will policyholders **give up the policy**?
• How many policyholders will be around to collect their **maturity benefit**?
• How do I **pay my agents** / sales director?
• How much does it **cost to set up an insurance operation**?
• How much do I **pay my controllers / actuaries / underwriters / CEO**? And how to bring this cost to an individual policy level?
Insurance cash flows

Key assumptions

A large number of assumptions are needed in order to arrive at the Best Estimate Liability (BEL). Below we only consider 4 key assumptions that are part of the cash flow model due to their relative importance.
Insurance cash flows

Summary

• The BEL is the discounted value of all best estimate of cash flows of an insurance contract within the contract boundary. It can be summarised as the following formula:

\[
\text{Best Estimate Liability (BEL)} = \sum PV (\text{Expected cash outflows}) - \sum PV (\text{Expected cash inflows})
\]

• BEL should normally be negative at inception (provided the contracts written are profitable). From an accounting perspective, “a negative BEL” means that there is an asset.

• If the liability is the best estimate, all profits are recognised at inception.

• CSM and Risk Adjustment (RA) are liability elements that defer profit at inception for release in subsequent periods.

• Certain cash flows that cannot be directly attributable to a portfolio of contracts (e.g. product development costs) should not be taken into account in the fulfilment cash flows, and will be recognised in the P&L as incurred.
Risk Adjustment
Risk adjustment
What is a risk adjustment liability?

• Risk adjustment for non-financial risk (RA) measures the compensation that the entity requires for it to be indifferent/neutral between fulfilling a liability that:
  1. Has a range of possible outcomes arising from non-financial risk; and
  2. Will generate fixed cash flows with the same expected present value as the insurance contracts.

• Risk adjustment is the compensation that the entity requires for bearing uncertainty about the amount and timing of cash flows that arise from non-financial risk.

• Risk adjustment reflects:
  a) diversification of risks the insurer considers, and
  b) both favourable and unfavourable outcomes reflecting the entity’s degree of risk aversion.

• Risk adjustment reflects all non-financial risks associated with the insurance contracts. It shall not reflect financial risks or risks that do not arise from the insurance contracts.

• The risk adjustment is an entity specific measurement.
Criteria for suitable risk adjustments
Key accounting requirements

Despite no restrictions on the technique that is allowed to use for determining the risk adjustment, the risk adjustment shall have the following characteristics:

- risks with **low frequency** and **high severity** will result in higher risk adjustments than risks with high frequency and low severity;
- for similar risks, contracts with a **longer duration** will result in higher risk adjustments than contracts with a shorter duration;
- risks with a **wide probability distribution** will result in higher risk adjustments than risks with a narrower distribution;
- the **less known about the current estimate** and its trend, the higher the risk adjustment; and
- to the extent that **emerging experience reduces uncertainty** about the amount and timing of cash flows, risk adjustments will decrease and vice versa.

The entity shall also consider whether the technique provides **concise and informative** disclosure so that users of financial statements can benchmark the entity’s performance against the performance of other entities.
Risk adjustment techniques & approaches
How do we calculate risk adjustment?

IFRS 17 does not specify the technique to determine the risk adjustment.

Three main methods commonly discussed in market today:

A
Cost of capital

B
Quantile (e.g. Value at Risk or Conditional Tail Expectation)

C
Explicit assumption (e.g. factor-based or judgment based on experience studies)

• Disclosure of **confidence level** required irrespective of the technique used to measure the risk adjustment.

• Risk adjustment is **explicit** - balances for unexpired coverage liability and for claims liability must be disclosed separately.
Discount rates
Discount rates

**IFRS 17 requirements for discount rates**

*Characteristics of IFRS 17 discount rates*

**Defining IFRS 17 discount rates**

Discount rates must reflect the time value of money, the characteristics of the cash flows and the liquidity characteristics of the insurance contract;

Be **consistent with observable current market prices** for the financial instruments with cash flows whose characteristics are consistent with those of the insurance contract, in terms of, for example:

- **Timing**
- **Currency**;
- **Liquidity**

And **exclude** the effect of any **factors that influence such observable market prices but do not affect the future cash flows** of the insurance contract.
Discount rates

**IFRS 17 requirements for discount rates**

*Characteristics of IFRS 17 discount rates*

**Additional considerations for variable fee approach**

IFRS 17 requires **cash flows** that **depend** on the **return on underlying items** to be discounted using rates that **reflect that dependence**.

E.g. discount rates and bonus cash flows for traditional participating business should be consistent with each other.

That dependence is a relevant factor **regardless** of whether the **dependence arises as a result of contractual terms** or because the **entity exercises discretion**, and regardless of whether the entity holds the underlying items.
Discount rates

IFRS 17 requirements for discount rates

Characteristics of IFRS 17 discount rates

Additional considerations when discount rates are not directly observable in the market

How shall discount rates be determined?

• **Discount rates** shall include only **relevant factors**, i.e. factors that arise from the **time value of money**, the characteristics of the **cash flows** and the **liquidity** characteristics of an insurance contract. Such discount rates **may not be directly observable in the market**.

• An entity shall **maximize the use of current, applicable, observable inputs and minimize the use of unobservable inputs**, i.e. reflect all available evidence, both external and internal, concerning non-market variables as well as observable market data.

• **Exercise judgement** to assess the degree of similarity between the features of the insurance contract being discounted and the features of the instrument for which observable market prices are available and to adjust those prices to reflect the difference between them.
Discount Rates
How will discount rates be determined?

**Top-Down Approach**

- Yield curve based upon actual or reference asset portfolio
- Unexpected loss adj.
- Expected loss adj.

Remove factors that are not relevant to the insurance contracts (such as market risk premiums for assets included in the reference portfolio) and adjust for differences between timing of cash flows between the assets and the cash flows of insurance contracts.

**Discount Rate IFRS 17**

Dependent on:
1. Duration
2. Liquidity
3. Currency

**Bottom-Up Approach**

- Liquidity adj.
- Risk-free rate

A “risk-free rate” plus a liquidity adjustment based on the characteristics of liability cash flows.
Discount rates

Determining discount rates when observable data is absent

Guidance

Estimation techniques taking into account observable inputs should be adopted to determine the appropriate discount rate when observable interest rates are not available.

Example

The entity may need to determine the discount rates applied to cash flows beyond the period for which observable market data is available using the current, observable market yield curve for shorter durations or market data for a different currency to that in which the cash flows are denominated.

Conclusion

Significant judgement would be required in this instance.
Discount rates

**Determining discount rates when observable data is absent**

Even though asset prices are quoted, if the market is not active (liquid), then observable prices may **not** represent fair value, and adjustments to quoted prices may be necessary.

Therefore...

- Risk-free reference rates may be available for long durations but **may not represent a fair value**.
- An assessment should be made as to **depth, liquidity and transparency** of the market.
- Determine whether the observable inputs cannot be directly referenced without adjustment.
- The **point at which observable inputs cannot be directly referenced** is often called the “**last liquid point**” (LLP).
Discount rates

Determining discount rates when observable data is absent

How to determine the Last Liquid Point ("LLP")

<table>
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<th>Current market practice</th>
<th>• View of market participants</th>
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<td>Quantitative measures</td>
<td>• Analysis of bid-offer spread</td>
</tr>
<tr>
<td></td>
<td>• Transaction volumes</td>
</tr>
<tr>
<td></td>
<td>• Contributor count</td>
</tr>
<tr>
<td></td>
<td>• Quote dispersion by contributor</td>
</tr>
<tr>
<td>Impact of market stresses</td>
<td>• Excess volatility in forward curve</td>
</tr>
<tr>
<td></td>
<td>• Forward rates becoming downward sloping</td>
</tr>
<tr>
<td></td>
<td>• Forward rates dropping significantly below <em>Ultimate forward rates</em> (&quot;UFR&quot;)</td>
</tr>
<tr>
<td></td>
<td>• Swap rates dropping significantly below the longest maturity government bonds of high credit ratings</td>
</tr>
</tbody>
</table>

What to do beyond the LLP

• For intervals where there are no (reliable) observed yields, interpolation and extrapolation methods are needed to complete the yield curves.

• E.g. Straight line interpolation, Smith Wilson, QIS 4 Piecewise constant forward rates, ECB model, Nelson-Siegel etc.
Discount rates

Other reporting bases

Risk-free rates are the starting point for setting discount rates under many reporting bases, notably Solvency II and market-consistent embedded value (MCEV). These rates are then adjusted to determine the required discount rates. The illustration below compares discount rates under various market consistent reporting bases.

The comparison between IFRS and Solvency II rates can produce different results to the illustration below.
### Discount rates

#### Summary

<table>
<thead>
<tr>
<th>Description</th>
<th>Impact</th>
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<tbody>
<tr>
<td>• Entities are required to discount future cash flows to the valuation date</td>
<td>• Companies are familiar with discounting but complying with the IFRS 17 methodology could have significant impact on modelling, systems and data.</td>
</tr>
<tr>
<td>• Discount rate curves may be determined “top-down” or “bottom-up”.</td>
<td>• Companies must consider whether economic capital and/or risk-based capital methodologies are appropriate for IFRS reporting or a new methodology is needed.</td>
</tr>
<tr>
<td>• Resulting discount rates reflect the timing, currency and liquidity of the liability</td>
<td>• There is added complexity in calculating discount rates for cash flows dependent on the returns of underlying items.</td>
</tr>
<tr>
<td>• If cash flows depend wholly or partly on the returns of underlying items, the discount rate shall reflect the extent of that dependence.</td>
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</tbody>
</table>

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Contractual Service Margin
Unit of account
Aggregation of contracts

IFRS 17 Insurance Contracts

Groups of Portfolio A

- Issue year 1
  - Onerous
  - No significant possibility of becoming onerous
  - Other
- Issue year 2
  - Onerous
  - No significant possibility of becoming onerous
  - Other
- Issue year N
  - Onerous
  - No significant possibility of becoming onerous
  - Other

Portfolio A

Similar risk, managed together at initial recognition

Mutualisation exemption
Regulatory exemption
Contractual Service Margin

What is CSM?

The CSM is...

An accounting mechanism for recognising profit over the coverage period of the contract:

- It represents the expected profit for the insurer as it sells an insurance contract
- Absorbs changes in future cash flow expectations for release over time
- CSM at inception is calculated as:
  - CSM \( (t_0) = \max (0, -(BEL(t_0) + \text{Risk Adjustment}(t_0))) \)
- The accounting result is that it defers immediate recognition of profit from the initial recognition of an insurance contract to future periods based on an accounting mechanic that releases the CSM balance over the coverage period stipulated by the contract.

CSM through the lens of an investor

CSM is likely to be viewed similarly to “Value In Force” by investors.
**Contractual Service Margin**

**CSM at initial measurement**

- CSM at initial recognition of an insurance contract should be **an amount that results in no income or expenses**:

- This can be more simply paraphrased as the CSM at the point of sale of the contract is equal to the opposite of the BEL plus the risk adjustment.

\[
\text{CSM (t0)} = \max(0, -(\text{BEL(t0)} + \text{Risk Adjustment(t0)}))
\]

**Liability Elements**

- BEL = PV of Benefits and Expenses less PV of Premiums

**Asset Elements**

- RA based on selected approach but always positive/liability*

* For direct business – reinsurance can be negative
Contractual Service Margin

Subsequent measurement – illustrative example of progression of CSM from inception

- CSM is subject to a floor of zero.
- Given the loss component is zero, subsequent reductions in FCF (i.e. improvements in profitability) should be allocated to the loss component until the CSM is reduced to zero. Only the excess is allocated to CSM.
Contractual Service Margin

Why CF’s change?

More or less contracts than expected at the end of the period

More

Expected amount of liability release must be reduced through P&L to align with higher number of contracts at the end of the period.

Less

Expected amount of liability release must be increased through P&L to align with lower number of contracts at the end of the period.

Different non-financial assumptions

Different financial assumptions

Coverage expired?

No

Book against CSM

Yes

Assumptions for claims incurred, so book to P&L

Normal derecognition rules under IFRS 17 will handle this experience variance.
IFRS 17 Liabilities vs IGAAP / IFRS 4 Liabilities

Impact of Flooring and IGAAP Liabilities

PVFCFs  Impact of Flooring  IGAAP Liabilities

Illustrative Example
IFRS 17 Liabilities vs IGAAP / IFRS 4 Liabilities

IFRS 17 PVFCFs and CSM

Illustrative Example
IFRS 17 Liabilities vs IGAAP / IFRS 4 Liabilities

IFRS 17 liability vs IGAAP/IFRS 4 Liability

Illustrative Example
Impact of fixed expense assumptions on IFRS 17 liabilities

**Assumptions**
- Three policies with similar risk characteristics.
- One year contracts.
- Total expenses to manage these policies are €600.
- Claims are 50% of the annual premium.
- Risk adjustment is assumed to be zero.

**Scenario 1**
- Allocate expenses equally to each policy.

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Policy 1</th>
<th>Policy 2</th>
<th>Policy 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual premium</strong></td>
<td>€1,000</td>
<td>€500</td>
<td>€100</td>
<td>€1,600</td>
</tr>
<tr>
<td><strong>Per policy expenses</strong></td>
<td>€200</td>
<td>€200</td>
<td>€200</td>
<td>€600</td>
</tr>
<tr>
<td><strong>Claims</strong></td>
<td>€500</td>
<td>€250</td>
<td>€50</td>
<td>€800</td>
</tr>
<tr>
<td><strong>PVFCFs</strong></td>
<td>€(300)</td>
<td>€(50)</td>
<td>€150</td>
<td>€(200)</td>
</tr>
<tr>
<td><strong>CSM</strong></td>
<td>300</td>
<td>50</td>
<td>0</td>
<td>350</td>
</tr>
<tr>
<td><strong>Total IFRS 17 liability</strong></td>
<td>0</td>
<td>0</td>
<td>150</td>
<td>150</td>
</tr>
</tbody>
</table>

**Group classification**
- Not Onerous
- Onerous
Impact of fixed expense assumptions on IFRS 17 liabilities

Assumptions
- Three policies with similar risk characteristics.
- One year contracts.
- Total expenses to manage these policies are €600.
- Claims are 50% of the annual premium.
- Risk adjustment is assumed to be zero.

Scenario 2
- Divide expenses in proportion to premium size.

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Policy 1</th>
<th>Policy 2</th>
<th>Policy 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual premium</td>
<td>€1,000</td>
<td>€500</td>
<td>€100</td>
<td>€1,600</td>
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<tr>
<td>Per policy expenses</td>
<td>€375</td>
<td>€187.5</td>
<td>€37.5</td>
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<tr>
<td>Claims</td>
<td>€500</td>
<td>€250</td>
<td>€50</td>
<td>€800</td>
</tr>
<tr>
<td>PVFCFs</td>
<td>€(125)</td>
<td>€(62.5)</td>
<td>€(12.5)</td>
<td>€(200)</td>
</tr>
<tr>
<td>CSM</td>
<td>125</td>
<td>62.5</td>
<td>12.5</td>
<td>200</td>
</tr>
<tr>
<td>Total IFRS 17 liability</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Group classification</td>
<td>Not Onerous</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Allocation of Risk Adjustment to groups of contracts for calculating CSM

Company
Risk Adjustment calculated at Company level

Line of Business A
Risk Adjustment allocated to line of business
- Portfolio I
  - Profitable Contracts
    - Risk Adjustment allocated to groups
  - Onerous Contracts
    - Risk Adjustment allocated to groups
  - Other contracts
    - Risk Adjustment allocated to groups
- Portfolio II
  - Profitable Contracts
    - Risk Adjustment allocated to groups
  - Onerous Contracts
    - Risk Adjustment allocated to groups
  - Other contracts
    - Risk Adjustment allocated to groups

Line of Business B
Risk Adjustment allocated to line of business
- Portfolio III
  - Profitable Contracts
    - Risk Adjustment allocated to groups
  - Onerous Contracts
    - Risk Adjustment allocated to groups
  - Other contracts
    - Risk Adjustment allocated to groups
- Portfolio IV
  - Profitable Contracts
    - Risk Adjustment allocated to groups
  - Onerous Contracts
    - Risk Adjustment allocated to groups
  - Other contracts
    - Risk Adjustment allocated to groups

Calculation of the Risk Adjustment for Company
Allocate the diversification benefit to groups
Significant differences in emergence of profits in year 1, and over the policy term.
Smother emergence in profits vs old standard.
Choice of drivers to run CSM off can have a significant impact.
Note that the straight line profit projections are adjusted for decrements.
Key considerations for measuring CSM

- **Allocation of risk Adjustment**
  - Split between New Business and existing business.
  - Diversification impacts

- **Aggregation of contracts**
  - Open groups.
  - Mutualisation requirements.
  - Regulatory exemptions.

- **Granularity of groups**
  - Implications of more granular groups

- **Discount Rates**
  - Impact on discount rates for open groups.

- **Amortisation of CSM**
  - Impact on timing and volatility of profits.

- **Cashflows not directly attributable to insurance contracts**
  - Acquisition cashflows.
  - Other cashflows.

- **Split between New Business and existing business.**
- **Diversification impacts**
- **Open groups.**
- **Mutualisation requirements.**
- **Regulatory exemptions.**
- **Implications of more granular groups**
- **Impact on discount rates for open groups.**
- **Impact on timing and volatility of profits.**
- **Acquisition cashflows.**
- **Other cashflows.**
Reinsurance
<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What is reinsurance</strong></td>
<td>“An insurance contract issued by one entity (the reinsurer) to compensate another entity (the cedant) for claims arising from one or more insurance contracts issued by the other entity (the cedant).”</td>
</tr>
<tr>
<td><strong>What does it do</strong></td>
<td>An entity that holds a reinsurance contract pays a premium and receives reimbursement if it pays valid claims arising from underlying contracts, instead of receiving premiums and paying valid claims to the policyholder.</td>
</tr>
<tr>
<td><strong>Inward reinsurance</strong></td>
<td>Reinsurance from the reinsurer’s perspective, i.e. from the view of the company receiving the premiums to assume the risk.</td>
</tr>
<tr>
<td></td>
<td>In IFRS 17, inward reinsurance is handled like direct insurance business.</td>
</tr>
<tr>
<td><strong>Outward reinsurance</strong></td>
<td>Reinsurance from the cedant’s perspective, i.e. for the view of the company paying the premiums and ceding the risk.</td>
</tr>
<tr>
<td></td>
<td>Several key differences from direct business, and thus the focus of most of this section.</td>
</tr>
</tbody>
</table>
## Reinsurance
### Specific considerations

<table>
<thead>
<tr>
<th><strong>Underlying assumptions</strong></th>
<th>The reinsurance and insurance contract should have consistent underlying assumptions.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk Adjustment</strong></td>
<td>The risk adjustment for outward reinsurance is an asset that should reflect risk transferred from underlying insurance contracts, and not the variability of reinsurance cashflows.</td>
</tr>
<tr>
<td><strong>Level of aggregation</strong></td>
<td>Level of aggregation similar to direct business, except there is no onerous contracts for reinsurance.</td>
</tr>
<tr>
<td><strong>Credit risk</strong></td>
<td>Unlike direct contracts that explicitly prohibit own credit adjustments under the principle of fulfilment basis, cashflows for outward reinsurance must reflect the credit risk of the relied upon reinsurer.</td>
</tr>
</tbody>
</table>
Reinsurance
Specific considerations

**Initial measurement**

- Reinsurance CSM can be positive or negative at initial recognition, but is still equal and opposite to the value of the BEL + RA.
- In case of a retrospective element to the reinsurance contract, the cost relating to retrospective component is recognised immediately as a loss immediately at initial recognition.

**Subsequent measurement**

- The requirements for subsequent measurement of the CSM are generally the same as for direct business, e.g. interest is accreted using the rate when contract was initially recognised.
- After inception, entity should **recognise in P&L** any changes in estimates of fulfilment cashflows for **reinsurance contract** that an entity holds when those changes arise as a result of changes in estimates for fulfilment cashflows for an **underlying direct insurance contract that are directly recognised in P&L**.
Reinsurance

Reinsurance example

Assumptions

• Simple non-linked protection product.
• Contract term is 5 years.
• Premiums of €100 paid annually.
• Claims of €200 expected to be paid annually.
• Risk Adjustment is 5% of BEL.
• Contract 100% reinsured.
Deloitte Financial Impact Assessment Tool (FIAT)
Structure of the Tool
Input – Calculations - Output

**Input**
- Option, whether external cash flows (e.g. generated with Prophet) or an internal parametrisation is used
- Possibility to define 2 points in time for changes in cash flows

**Calculation**
- Input external asset and liability cash flows
- Calculation of the fulfilment cash flows, risk adjustments and the CSM

**Output**
- Building of an income statement and balance sheet
- Additional report for tax, capital and shareholder return
- Graphs and charts
- Output consistency checks
Structure of the Tool

Inputs

Assumptions

Description: This worksheet contains the liability and economic assumptions (Input).

Liability Assumptions

- Direct acquisition expenses - present value of all years' expenses: 50%
- Administration expenses - present value of all years' expenses: 10%
- Dividend expenses - present value of all years' expenses: 50%
- CSM in the U.S. and 10 years remaining: 50%
- CSM in the U.S. and 20 years remaining: 25%

Liability Assumptions for VFA

- Policy surrender value at end of 5th year/development: 10%

Risk Margin assumption for Risk Adjustment

- Risk Margin of PPA cash flows for Risk Adjustment: 10.00%

Economic Assumptions

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
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</tr>
</tbody>
</table>

Investment returns (for VFA approach only)

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
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<th>4</th>
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</thead>
<tbody>
<tr>
<td>Return</td>
<td>1.00%</td>
<td>1.00%</td>
<td>1.00%</td>
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<td>1.00%</td>
<td></td>
</tr>
</tbody>
</table>

Important:
(1) Columns C to U can NOT be amended - Copy client data/cash flows in columns Y onwards and perform a mapping to connect with columns C to U
(2) Signs MUST be kept - model has been set up following this sign convention

Input - Projection on inception

Description: This worksheet is the expected output from input data.

Developer: [Name]

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## Structure of the Tool

### Calculations

#### Description:

### BBA Calculations

#### Continuity Calculations for each Building Block

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
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<td>30,149,924</td>
<td>29,060,328</td>
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<td>26,259,825</td>
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<td>19,729,973</td>
<td>18,800,184</td>
<td>17,873,520</td>
<td>16,950,076</td>
</tr>
<tr>
<td>Interest</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Premium</td>
<td>-</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
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<tr>
<td>Premia</td>
<td>35,120,000</td>
<td>32,583,340</td>
<td>30,040,940</td>
<td>27,498,530</td>
<td>24,956,120</td>
<td>22,413,710</td>
<td>19,871,300</td>
<td>17,328,890</td>
<td>14,786,480</td>
<td>12,244,070</td>
<td>9,701,660</td>
<td>7,159,250</td>
<td>4,616,840</td>
<td>2,074,430</td>
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<td>Premiums</td>
<td>35,120,000</td>
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<td>24,956,120</td>
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</tr>
<tr>
<td>Total</td>
<td>35,120,000</td>
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#### Risk Adjustment

<table>
<thead>
<tr>
<th>Year</th>
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<th>4</th>
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<td>16,950,076</td>
</tr>
</tbody>
</table>

#### Contractual Service Margin

<table>
<thead>
<tr>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</table>

#### PPA Cash Flows Actual

<table>
<thead>
<tr>
<th>Year</th>
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<th>2</th>
<th>3</th>
<th>4</th>
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</tr>
</tbody>
</table>
Structure of the Tool

Outputs are presented in a graphical way which increases the understanding.

The model has the functionality of producing charts comparing assumptions changes scenarios.
Application of the IFRS reference model

**IFRS knowledge build up**
Educational tool to help both actuaries and accountants pick up the basic and understand the cross-function interaction and coordination needed.

**Modelling architecture design**
Effective allocation of calculation components between systems and establish the interactions between.

**Methodology decision / design**
Visualise the key discussion areas (e.g. use of underlying items output for VFA) and facilitate the decision making process.

**In-depth understandings of the key changes**
For actuaries, it is about leveraging the work done from SII to build and amortise the CSM.

For accountants, it is about establishing a step by step walk through from old reporting layout to new and create the storyboard for stakeholders.

**Validation**
Quick and easy tool to perform high level validation and result sense check.
Closing remarks
Deloitte Next Steps

Final breakfast briefing in the series:

SEPTEMBER 5

Understanding the impact across the entire business: from IT to actuarial and finance

- Launch of new series of “on demand webcasts” and eminence papers on topical issues that will follow the insurers’ IFRS 17 journey to implementation
- Deloitte interpretative guidance on IFRS 17 will be released continuously on our online accounting research tool IASPlus.com
Welcome and Introduction

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