

# Operational challenges of IFRS4 Phase 2 as of November 2014

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## INTRODUCTION

The International Accounting Standards Board (IASB) put significant weight in its 2013 Exposure Draft (ED) regarding the practical implication of the new changes and applying the standard in general. Subsequent discussions by the IASB of feedback on the 2013 ED have not altered many of the identified complications. This document examines the most significant potential issues that insurers may face in adopting and applying this new accounting standard. We identify significant challenges in the storage of historical data, the complexity and granularity of calculations and the presentation of results in the income statement. These challenges are in addition to implementing and maintaining a well performing chain of calculation and reporting engines, which might only be possible by industrializing current calculation processes. We plan to discuss the industrialization of the chain in a future paper.

## MAIN CHALLENGES

### Valuation of options and guarantees with economic scenarios (B40)

In the ED is a requirement to value the economic and time value of options and guarantees embedded in the insurance contracts. Most companies are familiar with the concept of options and guarantees because it is an important part of the current European embedded value (EEV) or market-consistent embedded value (MCEV) calculations and Solvency II. For the valuation of the options and guarantees according to International Financial Reporting Standards (IFRS), the ED suggests the use of replicating portfolios or another market-consistent approach, which typically involves stochastic modeling.

Paragraph 60 of the 2013 ED requires the interest expense to be presented in the statement of comprehensive income using the discount rate that was specified at the time the contract was issued. This means that for each cohort information about the discount rate should be stored. To meet this requirement, companies will need to determine the level of granularity of a cohort.

The ED requires that economic assumptions should be updated each reporting period, so that liabilities will be valued at their current value. For portfolios without options and guarantees and hence needing only a deterministic approach, this means that for each cohort companies will have to store the yield curve which was applicable at policy inception.

However, for the lines of business, which require stochastic valuation, this means that there will be a need to store the scenarios used at inception in order to calculate liabilities using current assumptions and the 'locked-in' yield curve. Companies have the following options:

- Maintain economic scenarios for each cohort and rerun liabilities using the appropriate scenario package. Note, this approach will create a considerable slowdown in runtimes and will increase the amount of information which needs to be stored for each cohort.
- Store only the deterministic yield curve, applicable at cohort inception:
  - At each runtime shift current market-consistent scenarios towards specified interest rate curves from the past, with or without consideration for the different interest rate volatility levels.
  - Regenerate scenarios as needed using a built-in economic scenario generator (if it is available in the projection system).

In any case, these options create an additional complication in reconciling the time value of financial options and guarantees (TVFOG) from the previous reporting period to the current. When the second approach is chosen (storing only the deterministic yield curve) some of the variations will be caused by the change in volatility between the locked-in package and the current (if the approach will be allowed to maintain the current volatility structure). If new scenarios are regenerated, an explanation/reconciliation of other factors introduced by the new set of scenarios may be needed.

The IASB is considering simplifications such as the level yield method. With that method the entire yield curve at inception is replaced by a single level interest rate. The level interest rate is determined on a contract level at inception.

### Projection of the IFRS4 liabilities for business decisions: Nested stochastic or other proxies?

For various reasons (including business decisions, profitability measurement, financial planning and budgeting) companies will have to project their IFRS4 reserves into the future. The time horizon can range from a few years up to the full run-off of the portfolio.

A key issue is that the ED requires that companies use a market-consistent approach to value options and guarantees. As introduced in the "Valuation of options and guarantees with economic scenarios" section, one of the possible solutions to value options and guarantees at a future valuation date may be by using nested stochastic projections. However, this method can be quite challenging for companies for the following reasons:

- Lack of capabilities of running nested stochastic projections
- Need for a scenario set or a built-in scenario generator
- Need to account for a different 'locked-in' yield curve for each cohort

Other alternatives can include various proxy techniques such as least squares monte carlo (LSMC).

### Separation of investment component (B88)

When presenting insurance contract revenue, companies will have to segregate expected cash flows into those related to both the insurance and investment components. The investment component in this context means the part of the premium that always will be returned to the policyholder.

For the purpose of Solvency II (S2) or MCEV companies usually project aggregated cash flows without splitting the investment component. In the future, companies will need to allow for additional reporting at each cash-flow level, which will capture separately the return of premium and any excess cash flow, and will be regarded as insurance payment.

Similar requirements can already be found within other regulations. For instance, under US GAAP, for policies with explicit account value (in the standard formerly known as FAS97) companies also need to remove cash flows related to investment components in the presentation of the results. Similar techniques can be adopted for IFRS as well:

- For each contract it will be required to project the notional account value and roll it forward.
- This notional account value will be the basis for the investment component portion of each cash flow—any excess payment will be treated as insurance cash flows and be included in insurance contract revenue.

For unit-linked contracts or contracts with benefits depending on some sort of fund, this process should not be a major issue, since an explicit account value already exists. However, for traditional products there will be a need to project separately the above-mentioned notional account. The best candidates for such notional accounts can be surrender value net of surrender charges, net premium reserves, asset shares, etc.

### Participating contracts

For participating contracts the mirroring approach suggested by the 2013 ED no longer seems to be considered by the IASB. The IASB is in the process of developing another method to measure the participating contracts. The suggested mirroring approach represented a significant challenge in terms of its practical application, in particular with regard to:

- Separation of cash flows depending on the level of link to underlying assets can be more complex for contracts with regular premiums (as there will be a need to separate liability cash flows which are generated by future premiums only).
- Changes in the liabilities should be recognized consistently with the way underlying items are accounted for—there is a need to allocate a mix of underlying assets to participating contracts portfolio.

The expectation is that a new measurement model for participating products will not have the aforementioned disadvantages. The measurement model for participating contracts is not finalized yet and is under discussion by the IASB. Currently, it is not clear what possible challenges this model may bring.

### Reconciliation to other reporting (S2 and MCEV, local GAAP)

The majority of companies already have established processes of reporting under local GAAP or MCEV. Some companies already have processes in place to perform frequent Solvency-II-consistent calculations. Therefore, for consistency purposes, there will be a need to reconcile the various reporting and regulatory regimes with each other as well as to gain more understanding into a company's performance. Also, companies will have to add another layer of reconciliations/bridging to compare IFRS to the other reporting regimes.

### Granularity of calculations (B36)

The ED defines the lowest level of granularity for the calculation of the insurance liabilities as the portfolio level. However, at the same time the entity also needs to calculate the interest expense using the discount rate fixed at the inception of the policy. This means that within each portfolio it is necessary to identify cohorts of policies which have the same discount rate 'locked' when policies were issued. The IASB has mentioned that the measurement as described is to be applied on an individual contract level. However, the practical level of granularity should be chosen to make the measurement operational. IASB has also confirmed that loss making (onerous) contracts cannot be aggregated with profitable contracts.

This requirement adds another layer of information needed to be stored at each valuation, thus increasing granularity. The ED actually goes so far as to suggest that calculations be performed on a seriatim—policy-by-policy—level. For most companies this will not be an option.

For some insurers who perform the current MCEV and S2 calculations stochastically, this may mean that data grouping and compression will have to be altered in order to reflect the new level of granularity. Further, some methods of compression might not be adequate since the achieved number of model cells may exceed the practical limits of the financial modelling systems.

**FIGURE 1: EXAMPLE FOR DRIVERS OF NUMBER OF COHORTS**

Years business was written	15		
Possible dimensions	A	B	C
Line of business (insurance risk)	3	6	9
Definition of insurance risk	High-level	Medium	Detailed
Issue period	15	30	60
Frequency of updating discount rates	Annual	Semi-annual	Quarterly
Onerous/profitable	2	2	2
<b>Number of cohorts</b>	<b>90</b>	<b>360</b>	<b>1,080</b>

### Transition requirements (ED Appendix C)

One of the big changes in the 2013 ED is to require companies to apply the new standard retrospectively. This means that companies will have to estimate not only fulfillment cash flows for their in-force business, but also the contractual service margin (CSM) for the contracts in force at the date of transition. This requirement should increase the comparability of contracts in force at the date of transition with those written in the future.

Companies will have to recognize separately the cumulative effect of expected cash flows calculated using the current discount rate and the discount rate applicable at contract inception.

Main challenges:

- Determine discount rates applied at the inception of each portfolio of insurance contracts. The discount rates should be determined in accordance with the ED for at least three years prior to first application of the standard. For older periods companies can use estimators by referring to some observable rate and average spread (the difference between an observable yield curve and a yield curve estimated according to ED).

As companies can have contracts written 30–50 years ago still in force the number of yield curves which need to be estimated can be quite significant. As has been already mentioned, the balance should be struck between practicability and accuracy as the frequency of the update of retrospectively applied yield curves can dramatically increase the number of cohorts which need to be created from the in-force portfolio.

- Implement stochastic scenarios for the retrospective calculations as well as stochastic projections, using specific sets of scenarios (as described in the “Valuation of options and guarantees with economic scenarios” section on page 1).
- If a company wants to retrospectively calculate the current liability for its contracts it will need to project the cash flows and CSM since the initial recognition of each of its contracts:
  - Set appropriate assumptions applicable at contract inception
  - Allow for all the changes in assumptions which affect fulfillment cash flows and CSM
  - Run retrospective projections
- C5 and C6 of the Appendix to the ED suggest taking into account actual cash flows that have occurred between the initial recognition of the contracts and the first application date. Such an accounting requires analysis of the historical information from the inception of each contract and aggregating it at the portfolio level. This can be rather complicated if different policy administrative systems are used or have been used since inception of all the contracts.

It should be mentioned that since the measurement model for participating contracts has not been finalized yet, IASB cannot continue with the transition requirements.

### Risk adjustment: Confidence level equivalent

Another major difference between the 2010 and 2013 ED is the introduction of the disclosure requirement to report the confidence level equivalent of the risk adjustment, regardless of the methodology applied by the entity. One of the options companies can use to fulfill this requirement is sensitivity/stress testing for the estimation of risk adjustment (the so called bottom-up approach targeting at each individual assumption), which works in this way:

1. Estimate the target adjustment to the best estimate assumptions to achieve the target level of confidence (e.g. lapses, mortality).
2. Estimate sensitivity of the fulfillment cash flows to those assumptions.
3. Use the results of the sensitivity test as an estimator of the risk adjustment.

However, this method has an important shortcoming—it is easier to estimate the confidence level for each individual assumption and much harder to estimate potential diversification effects on a portfolio level.

Other alternative approaches can include stochastic modeling. However, the stochastic model requires probability distributions for all assumptions. Furthermore, the models need to be ready to calculate with all stochastic scenarios and hence, may be overly complex to implement.

Storing information at the cohort level about the incurred losses due to unfavorable changes in future cash flow assumptions is a difficult and cumbersome task. IASB has tentatively decided that before being able to reestablish CSM for a cohort, first all incurred losses from unfavorable changes in future cash flows should be reversed.

In this paper we highlighted the most important implications of the most recent ED. There are still elements that need to be decided on by the IASB. Hopefully, in 2015 most of the issues will be solved and the IFRS4 phase 2 can be presented.

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