MILLIMAN WHITE PAPER

2018 IFRS 17 Preparedness Survey

UK and EU highlights

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Milliman

Introduction

At the end of 2018, Milliman conducted a global survey to measure the preparedness of insurers and reinsurers for the new accounting standard, 'International Financial Reporting Standard 17' ("IFRS 17"). The survey aimed to gauge the progress that firms have made in translating the standard into business as usual ("BAU") processes and to compare the progress made in different markets.

THE CONTRIBUTORS

The survey was sent to companies around the world that are impacted by the introduction of IFRS 17, and we received responses from actuaries and other insurance professionals from more than 115 companies across the globe.

86 out of the 118 companies that responded to our survey ("the respondents") write Life insurance with a further 21 composite or General insurance firms also responding. The survey ran for two months from 17 September 2018 to 20 November 2018, therefore we note that responses do not reflect reactions to the announcement of the one-year delay to the implementation date or other updates to the standards since that period. However, as the majority of the questions that we asked relate to current levels of readiness instead of expected readiness at the implementation date we do not expect that the delay would have materially changed the results. We would like to thank all those who contributed to our survey.

The following report focuses on the UK and European markets, and summarises the responses received from 36 companies across the EU (of which 7 were UK-based), drawing comparison to the preparedness of firms globally where notable.

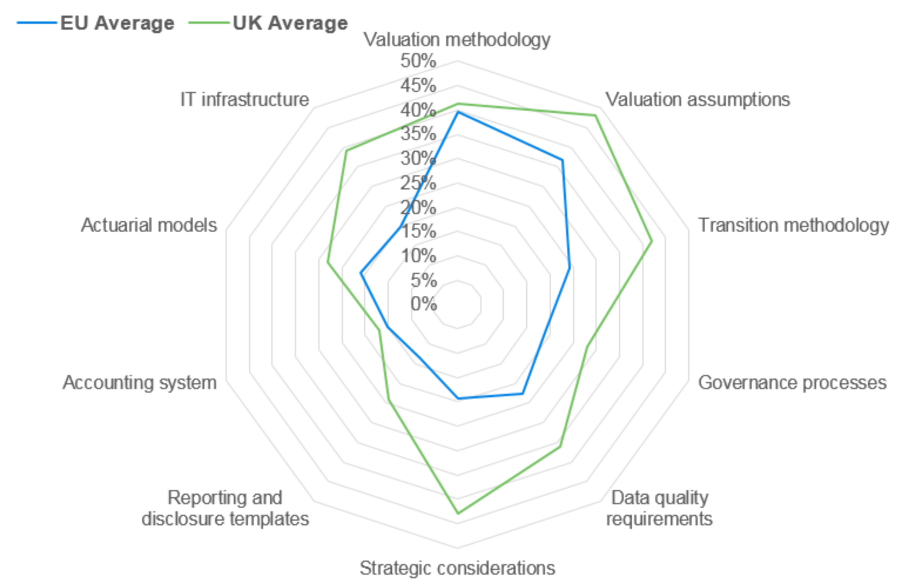
Where references are made to EU results, these include UK results unless otherwise stated. Non-EU results are from respondents across the rest of the world, including firms in China, Hong Kong, India, Israel, Japan, Namibia, South Africa, South East Asia, South Korea, Switzerland and Turkey.

Preparedness

UK ahead of European neighbours

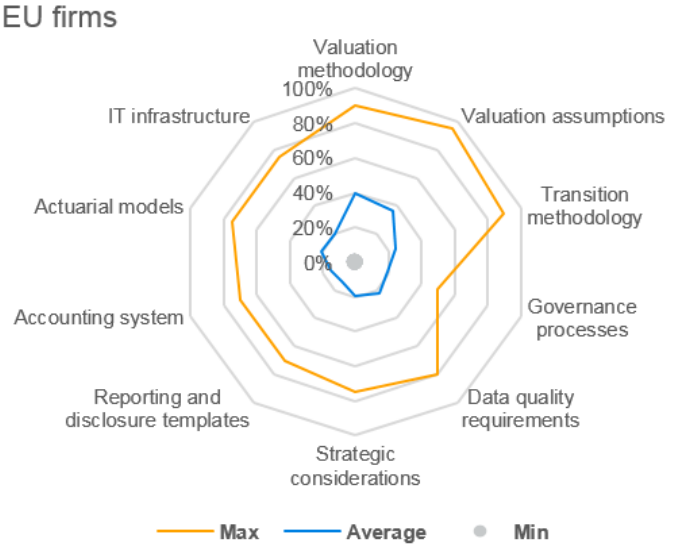
We asked firms to consider the different elements of IFRS 17 preparedness and how much progress had been made in each of these areas.

WHAT PERCENTAGE OF THE FOLLOWING ELEMENTS HAS YOUR COMPANY COMPLETED TO DATE?



On average, in relation to every aspect of IFRS 17 implementation, the seven UK respondents believed their firms to be much further down the path towards full implementation than the average EU firm, suggesting that the UK is currently better prepared than the average EU company.[1] Despite this reassurance however, even in the UK the average progress was less than 50% for all ten of the implementation aspects surveyed, suggesting that the one-year delay is likely to have come as welcome relief to many firms.

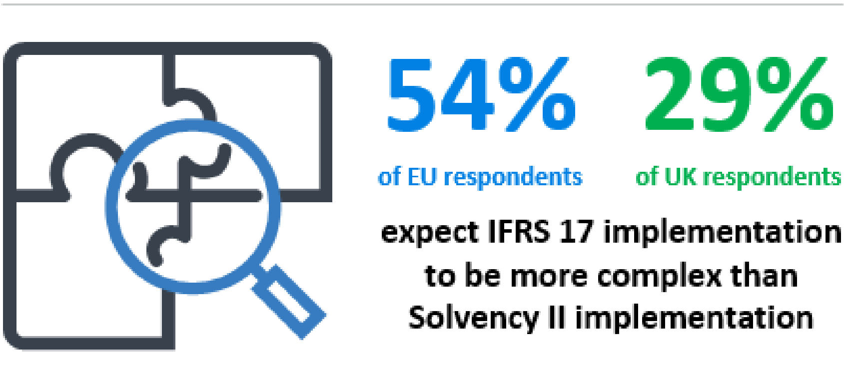
It seems that the majority of firms, particularly in the UK, are taking the approach of carefully 'designing' their IFRS 17 solution before moving ahead with the practical aspects of implementation. This can be seen in the graph above, with more progress being made on assumptions, methodology and strategic considerations than on actuarial models and accounting systems. UK firms seemed optimistic about their progress in relation to IT infrastructure implementation, and the results indicate that, at the time the survey was conducted, UK firms had put more thought into the strategic aspects of IFRS 17 than their EU counterparts.



The graph on the left, which shows EU results in relation to the same question, demonstrates the variation in the level of preparedness across the EU by showing the minimum, average and maximum completion percentages for each aspect. In terms of the minimum, 3 of the 36 EU respondents stated that they had not yet begun any aspect of preparations. Even the more prepared companies, however, still felt that they had a long way to go, with the most confident response for each of the implementation aspects generally indicating that the firm had completed between 70% and 90% of work relating to the aspect in question. Governance processes were an exception to this, with the most confident response indicating only 50% progress in this area. Taken alongside an average progress of only 19%, this suggests firms are waiting until they have finalised their IFRS 17 solutions before setting the governance framework around it. We would note, however, that developing a governance process after the fact is likely to make it harder (and more costly) to build a robust and resilient process that is integrated into BAU, therefore we would encourage firms to consider governance as an integral part of IFRS 17 preparation instead of viewing it as an additional layer to be added on at a later date.

The majority of EU companies that are more than 3 years old will have had experience implementing a new reporting system as a result of the introduction of Solvency II, which came into effect on 1 January 2016. The results show that 54% of EU respondents

[1] Where EU respondents includes the seven UK respondents as previously stated.



to our survey expect the implementation of IFRS 17 to be more complex than that of Solvency II, although UK based companies appear more optimistic, with the majority of the respondents believing the implementation will be comparable in complexity to Solvency II, likely reflecting the additional progress that UK firms appear to have made relative to their EU counterparts. This is in line with a survey conducted by SAS[2] in early 2018, which found that 97% of senior insurance professionals surveyed expected IFRS 17 to increase the complexity and cost of operating in the insurance industry, and that 90% were expecting IFRS 17 implementation to be more costly than Solvency II implementation.

The biggest challenges

The complexity expected by firms was highlighted in responses to the further question, “What do you consider to be the main challenges of implementing IFRS 17?”, There was a large variation in responses and each firm looking to prepare for IFRS 17 will face challenges that are unique to the products managed and organisation of the business, but the four main challenges highlighted by our respondents were:

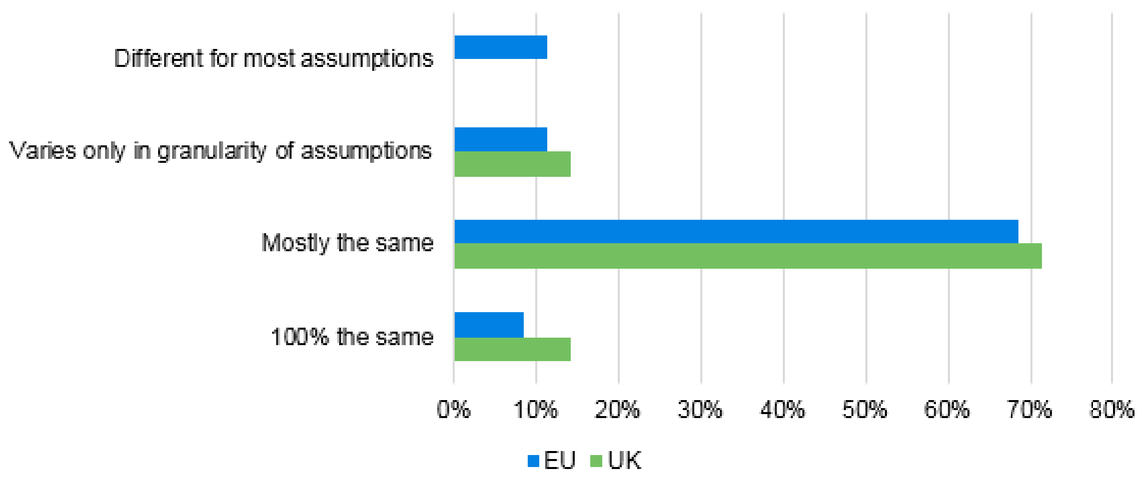
- Level of data required under IFRS 17;
- Implementation of the new method;
- Building of new systems; and
- Interpretation of the new standard.

In relation to the first point, firms noted that the challenge was not just sourcing and processing the data required for disclosure purposes, although it was suggested that this will be a challenge in itself, but also linking the actuarial and accounting data together and the granularity of data required.

Adaptation of existing bases for use in IFRS 17

We asked firms to discuss the extent to which they believed they could adapt existing Solvency II assumptions and processes to for the purposes of IFRS 17.

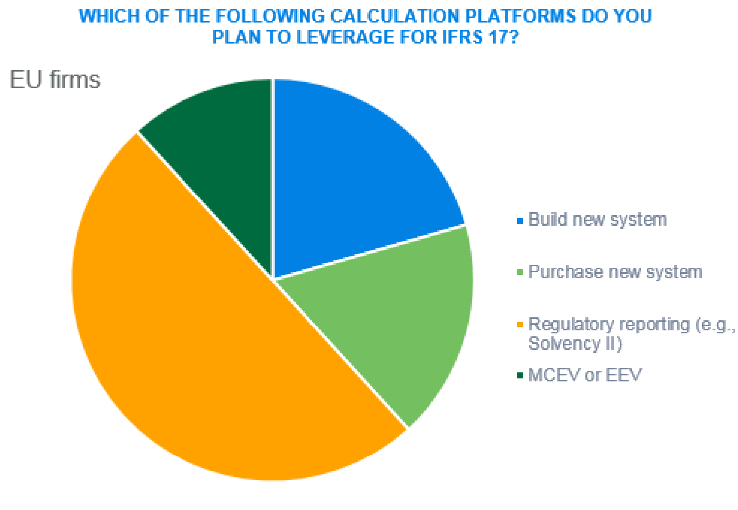
IF YOU REPORT UNDER SOLVENCY II, DO YOU EXPECT THE IFRS 17 ASSUMPTIONS TO BE THE SAME AS UNDER SOLVENCY II?



[2] IFRS 17 to be more costly than Solvency II, The Actuary, May 2018
https://www.theactuary.com/news/2018/05/ifrs-17-to-be-more-costly-than-solvency-ii/

A high proportion (77% in the EU and 86% in the UK) of respondents stated that they expected assumptions used for reporting under IFRS 17 to be mostly the same or identical to those used for Solvency II reporting. UK firms in particular are anticipating leveraging Solvency II assumptions, with all UK respondents indicating that assumptions under the two bases would have similarities.

The same question was asked in relation to firms' intentions of leveraging the assumptions used for Embedded Value reporting, and firms gave very similar results. Of those who reported under both Solvency II and Embedded Value, 67% described both having assumptions mostly similar or identical to the assumptions they intended to use for IFRS 17. Of the remaining respondents, the majority thought that neither reporting basis would provide appropriate assumptions for IFRS 17, with 24% responding in such a way.



We also asked firms whether they expected to be able to adapt existing regulatory reporting or Embedded Value calculation platforms for IFRS 17 purposes. Of the 34 EU firms that responded, 50% intended to adapt their regulatory reporting (i.e. Solvency II) platforms for IFRS 17 purposes and 12% intended to adapt their existing Embedded Value platforms.

Insurers typically tend to be cautious about implementing new software solutions, largely due to concerns about high costs and difficult transition periods, therefore the lead time from first gathering information on a new software or calculation system to the point of signing the contract can take over a year. This is reflected in the chart on the left, which shows that only 38% of respondents were intending to either build or purchase a new system, likely taking the view that the most straightforward way to integrate IFRS 17 into BAU is to adapt an existing system.

However, we have seen our clients face a range of issues as a result of the use of legacy systems, particularly in relation to the challenging data and calculation requirements of IFRS 17. In addition, despite best intentions, 'piecemeal' models which are adapted from their original purpose and subject to multiple changes over time often become difficult to navigate and understand, posing a significant model risk. Now that the implementation date has been extended to 2022, with an extra year to prepare for the new standard, if the expected cost and resource efficiencies of adapting existing models are not materialising in practice it may be that firms become more disposed towards the idea of implementing a new, clean system which is likely to have a better chance of optimising their IFRS 17 processes.

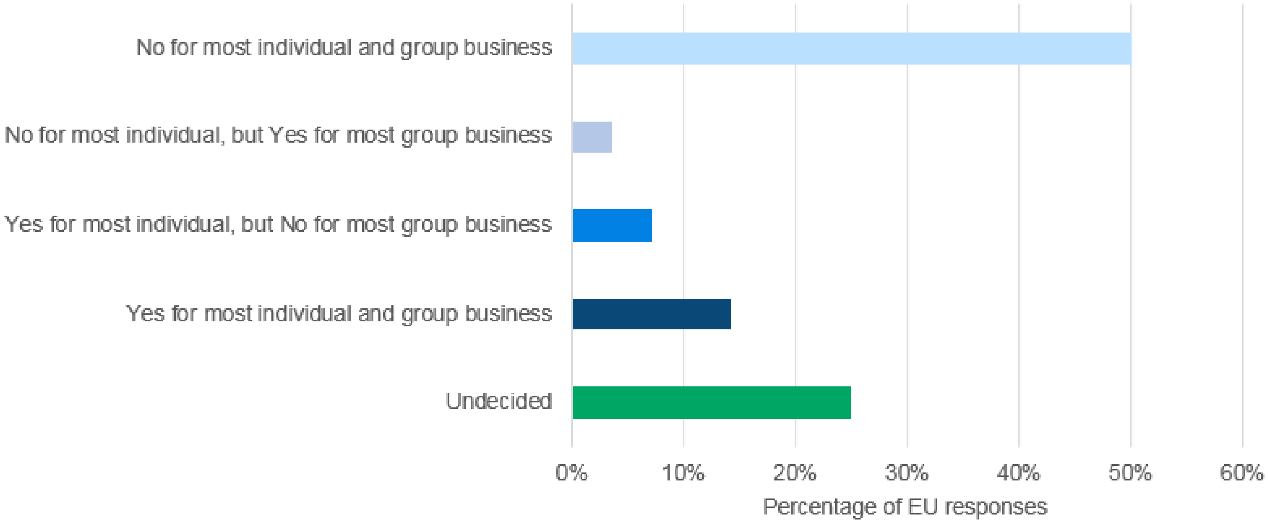
Contract boundaries

Firms opt for internal view

The concept of a contract boundary will be a familiar one for any insurer that has reported under the Solvency II framework, however the definition under IFRS 17 is subtly different. We asked firms "when determining contract boundaries, do you expect to apply existing definitions you currently use for IFRS or regulatory reporting?" More than half of EU respondents (56%) stated that they intend to apply the same contract boundary definitions as they do under IFRS 4 or Solvency II reporting, however almost as many plan to use different contract boundaries for IFRS 17 reporting. This suggests that there is little consensus in the industry as to whether the definition of contract boundaries under IFRS 17 is consistent with previous standards. The ongoing discussion in the industry and by the International Accounting Standards Board ("IASB") at the time of conducting the survey makes it perhaps surprising that 92% of respondents had already determined the definitions they plan to use.

In addition, 85% of respondents stated that the intended treatment of renewals would not be significantly different to the treatment applied on a shareholder value basis suggesting that, in the absence of an industry consensus, firms are applying an internal view of contract boundaries instead of waiting for clarification.

DO YOU PLAN TO INCLUDE CASH FLOWS AFTER A FUTURE RENEWAL DATE WITHIN A BOUNDARY FOR YOUR RENEWABLE PRODUCTS?



There appears to be some correlation between firms' plans to include cash flows after a future renewal date within a boundary for individual business and firms' plans to do so for group business. This may indicate that firms' approaches in this regard tend to result from their interpretation of the standard rather than underlying differences in the nature of the products.

Discount Rates

(Don't) take it from the top

Discount rates will need to be derived for IFRS 17 that reflect the characteristics of the liabilities in question. A requirement for the best estimate discount rates under IFRS 17 to be applied to future cashflows is that they reflect the following:

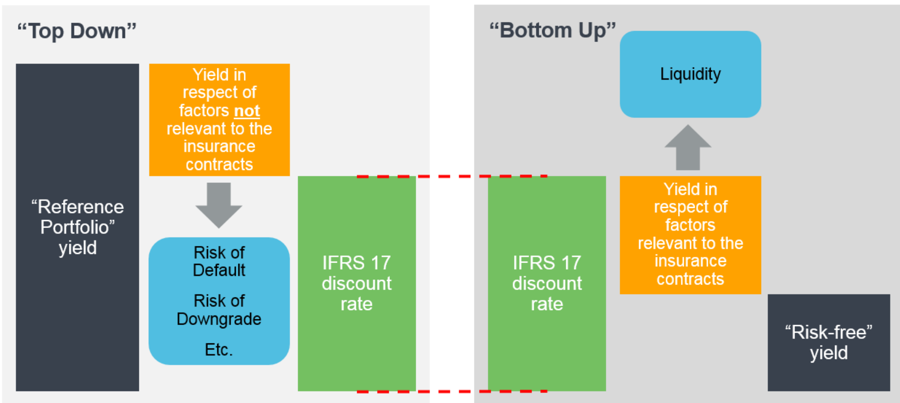
- the time value of money;
- the characteristic of the cashflow; and
- the liquidity characteristics of the contract.

With this in mind, there are two methods by which undertakings can derive these rates – 'top down' or 'bottom up' - both of which are valid and have their own advantages:

Top down – Start with the reference portfolio yield and remove 'yield' in respect of factors not relevant to the contract such as credit risk.

Bottom up – Start with the risk "free" rate and add an illiquidity premium which, for example, is dependent on the mortality risk and other factors like surrender values.

We asked firms whether they intended to use a top down or bottom up process to determine their IFRS 17 discount rates.



A significant proportion of respondents (25% of EU respondents and 40% of respondents from outside of the EU) were still undecided on this issue, which is perhaps unsurprising given that amongst the EU firms which had made a decision, there appears to be a fairly even split with 12 respondents opting for a top-down approach and 15 opting for a bottom-up approach. Globally, firms appear to be indicating a preference for the bottom-up approach, with only 15% of respondents having decided to apply the top-down approach. Interestingly, the UK stands out here as out of the 7 UK respondents, all had made a decision in this regard and 4 firms were opting to use the top-down approach with the bottom-up approach trailing slightly with 3 firms. We do note here however that we are aware of a number of UK clients (that did not complete the survey) that are still undecided on this matter.

Of the respondents globally that did have a view on what the high level approach would be (i.e. top-down or bottom-up), 55% of these stated that they had not yet determined the process they will use, suggesting that they had yet to decide on the specifics of the calculation.

There does appear to be some concern in the industry that the different approaches could result in discount rates applied by different firms not being comparable, although in theory both approaches should give similar results. In 2018, the Institute and Faculty of Actuaries ("IFoA") in the UK launched a working group on the 'future of discounting' under IFRS 17, which (amongst other aspects) is looking to produce a research paper comparing and contrasting the benefits and theoretical soundness of various approaches to producing discount rates for IFRS 17, which may help to inform firms' decisions in this regard.

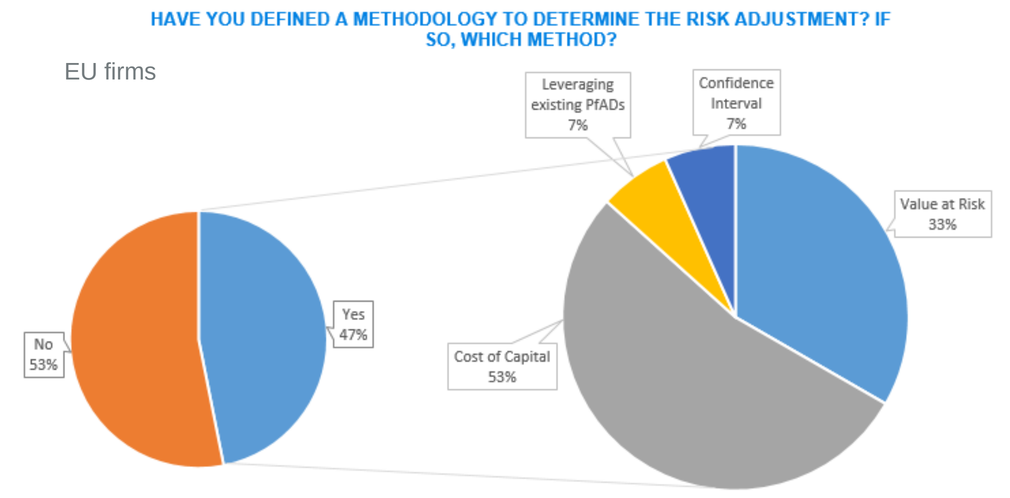
Risk Adjustment

Decisions still to be made

The Risk Adjustment within the IFRS 17 framework can be thought of analogously to the Risk Margin within Solvency II, i.e. an amount of compensation that is added to the present value of expected future cashflows that is intended to capture uncertainty in the amount or timing of the cashflows. As with the Risk Margin, the Risk Adjustment only reflects non-financial risks such as changes to mortality, claims inflation or lapse rates.

Unlike Solvency II however, IFRS 17 does not prescribe a method that firms must use to calculate this figure; each firm has the freedom to decide the method that they use. We asked firms which methodology they expected to use to determine the risk adjustments.

Globally (excluding the EU), only 40% of respondents had settled on a methodology to determine the IFRS 17 Risk Adjustment at the time of completing the survey, suggesting it is one of the key areas where companies are hoping for additional guidance from the industry. EU respondents, however, seemed slightly more comfortable in this area, with 47% of firms having made a decision (71% in the UK).



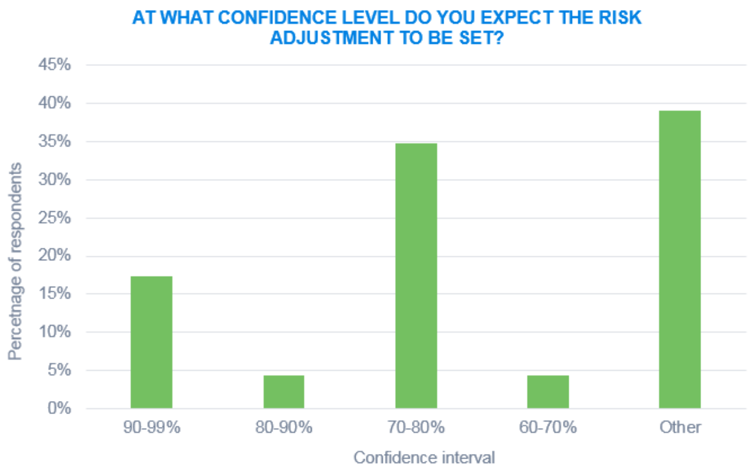
Over half of the EU firms that had made a decision intended to take a Cost of Capital approach; this is perhaps due to EU firms' familiarity with the Solvency II Risk Margin. As firms are looking to be able to leverage existing Solvency II systems and methodologies (as we discussed earlier in this report), this approach may be relatively straightforward to implement, with the added benefit that it is already well understood within the EU. Respondents also indicated that a Value at Risk approach may also become common. Conversely, only 7% of respondents indicated that they planned to leverage the provisions/margins for adverse deviations ("PFADs") currently used within IFRS 4 reporting, suggesting a widespread view that these are either not appropriate or not practicable under the new standards.

53%

of EU respondents who had defined their methodology for the Risk Adjustment intend to use a

Cost of Capital approach

We asked firms at what confidence interval they were calibrating the Risk Adjustment. Of the 23 EU firms who responded to this question, 35% (8 firms) intended to use a confidence level between 70% and 80%, materially lower than the level used to determine the Risk Margin under Solvency II, suggesting that many firms are intending to focus more on their internal view in this regard instead of aligning assumptions with Solvency II.



The confidence level at which the Risk Adjustment is set can have implications on the the determination of onerous contracts at recognition and the timing of profit recognition, making it a key technical decision for firms. IFRS 4 was considered to have limited visibility of the margins allowed for within the reported liabilities; under IFRS 17, firms are able to choose the confidence level at which they calculate the Risk Adjustment but disclosures are increased, with firms required to disclose the selected methodology and confidence level, as well as provide a reconciliation of the Risk Adjustment between reporting periods.

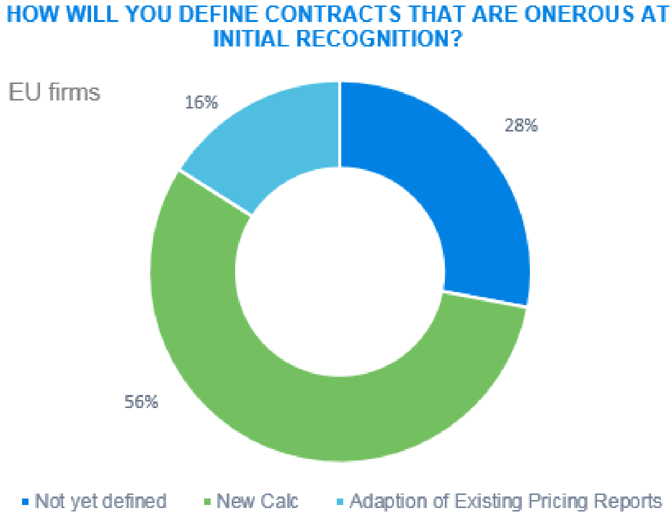
Contractual Service Margin ("CSM")

Could become onerous

The Contractual Service Margin is a measure of the profit expected to be received in relation to the contract being measured. It is not recognized immediately, and instead is released over time as the entity satisfies the obligation of the contract. The CSM can be thought of as the remaining value of the contract once the best estimate of the contract liabilities and the Risk Adjustment have been accounted for, and the release of any CSM will have a significant impact on the profit profile of contracts under IFRS 17.

The CSM is measured at the initial recognition of a group of insurance contracts. If the contract is expected to be onerous at initial recognition then the CSM is required to be zero and the loss is recognised immediately.

We asked firms how they intended to define (i.e. identify) contracts that are onerous at initial recognition.

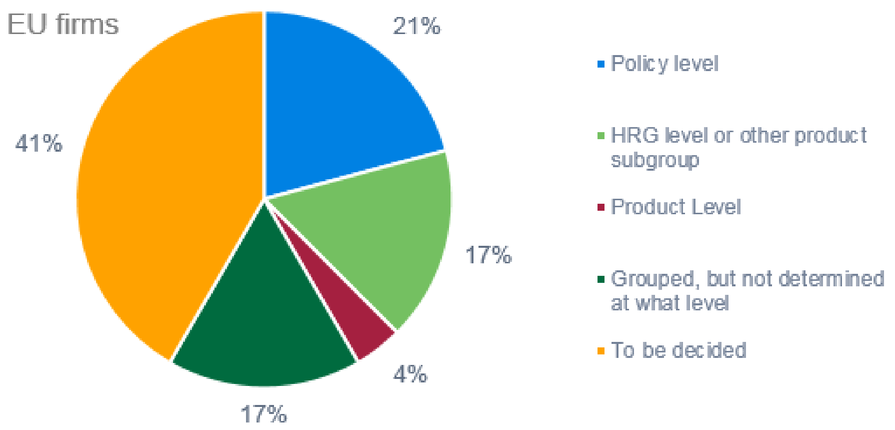


Over half of the respondents said they were planning to use new calculations to define onerous contracts, while only 16% said they were planning to define these using pricing reports (or adapted versions of existing pricing reports), suggesting that many firms do not see a strong link between profitability under IFRS 17 and under the previous standards.

As with many other aspects of IFRS 17, this survey has highlighted that a large proportion of firms are still undecided on the approach they will take. Given the importance of the CSM within IFRS 17, it is perhaps an area of concern that 28% of firms are yet to make this high level decision; indicating that they have not yet begun thinking about the practicalities relating to this calculation.

As shown in the graph on the right, there is still a great deal of uncertainty over the level of aggregation to be used to determine onerous contracts at initial recognition, and this is one of the key areas of current debate within the industry. There was however a strong preference for some form of contract grouping, with 64% of EU respondents who had determined an approach in this regard favouring grouping at either product level, homogeneous risk group ("HRG") level or some other level yet to be determined. This is likely to be for practical concerns in relation to the availability of granular data and the desire to manage insurance contracts as large groups of similar risks.

AT WHAT LEVEL OF AGGREGATION WILL YOU DETERMINE ONEROUS CONTRACTS AT INITIAL RECOGNITION?

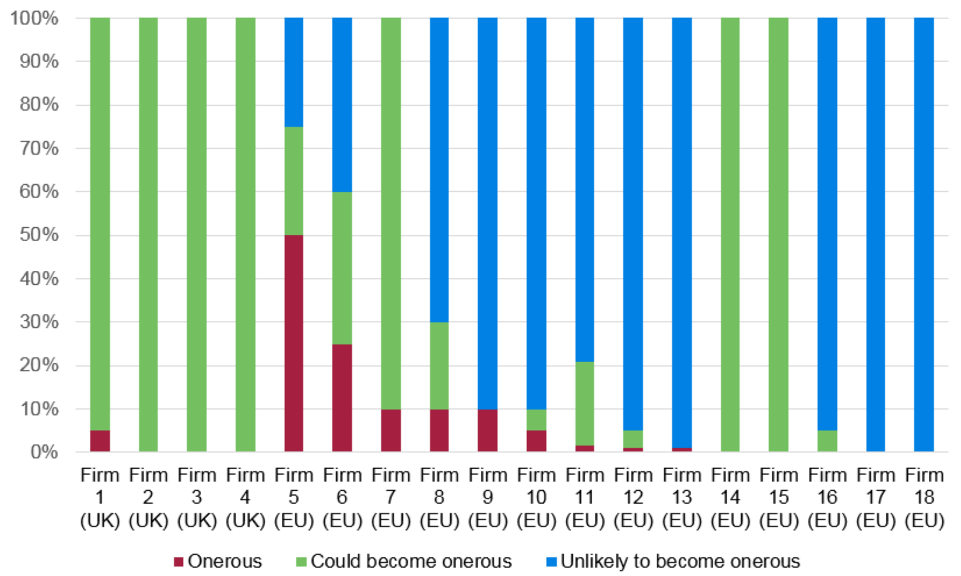


IFRS 17 requires firms to measure the CSM at least at an annual cohort level. Obtaining sufficient data to meet the requirements of IFRS 17 is one of the most significant concerns in the industry at the moment, and our experience is that insurers, particularly those with large amounts of legacy business, are struggling to obtain data at a sufficiently granular level. It is therefore perhaps unsurprising that over 60% of EU respondents expect to use annual cohorts (the least granular level currently allowed) as opposed to semi-annual or quarterly cohorts, when determining onerous contracts.

We also asked firms to estimate the percentage of new business sold in the first year after adopting IFRS 17 that they expect to be onerous, potentially onerous or unlikely to become onerous. Only 18 firms within the EU responded to this question, suggesting that a large number of companies are not yet at the stage where they are able to determine this. Of those that did respond, whilst there was a lot of variation in their responses, some trends did seem to appear.

Firms 1 to 4 shown in the graph above were all UK based companies or groups, and all said they expected the majority of new business to fall into the 'could become onerous' category. This is in contrast to responses from firms within continental EU countries (firms 5 to 18 in the graph above), of which 9 firms (64%) said that the majority of new business would fall into the 'unlikely to become onerous' category.

WHAT PERCENTAGE OF NEW BUSINESS IN THE FIRST YEAR AFTER ADOPTING IFRS 17 DO YOU EXPECT TO FALL IN THE FOLLOWING CATEGORIES?



Method used

Choices limited by product type

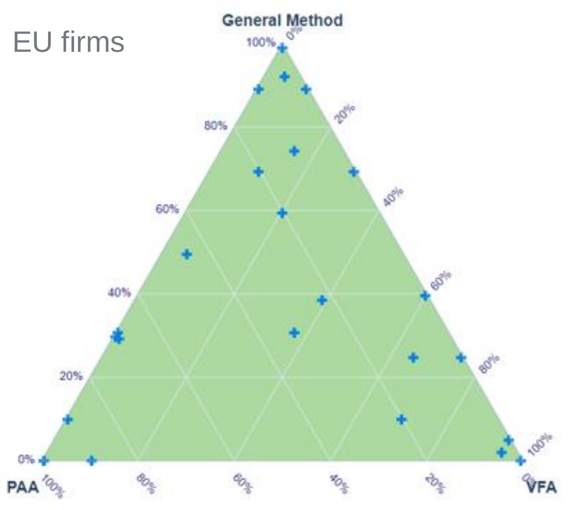
We asked firms to estimate to what portion of their business they expect to apply each of the three methods: General Model, Premium Allocation Approach ("PAA") and Variable Fee Approach ("VFA"). The spread of responses was quite broad which is perhaps as expected given that the choice of methodology is largely dependent on the type of business sold – as a general rule:

- contracts with direct participation features (such as with-profits or unit-linked business) are measured using the VFA;
- short-term contracts (such as general insurance contracts) are measured using the PAA; and
- all other contracts are measured using the General Model.

8

insurers plan to use the PAA for contracts with a duration greater than 1 year.

44% of the respondents intended to use a single method for 90% or more of their business. Of the remaining fourteen respondents, twelve intended to use a split of the General Model and either the VFA or the PAA. This is shown on the graph below which shows very few data points near the centre while many are clustered around the corners or the two top edges. This is likely to be because the alternatives to the General Model are generally specific to certain business lines, therefore the results shown in the graph below are likely to be a reflection of the products offered by firms surveyed rather than of any preference for a given method.



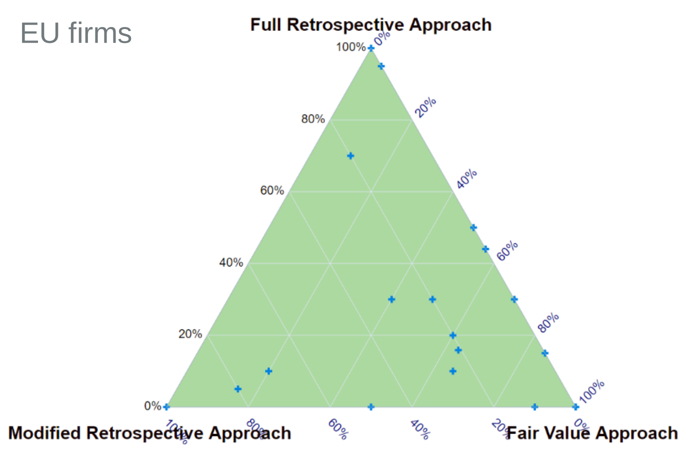
Only two respondents claimed not to hold underlying assets for some or all business modelled under the VFA approach, despite one in four non-EU respondents opting not to do so for some of their business.

Additionally, we found that some insurers planned to use the PAA for contracts with more than 1-year duration. This included a high proportion of life insurers despite the PAA approach typically being viewed as relevant only to general insurers and very short-term life products. This is because the approach is only permitted for groups of contracts with a coverage period of one year or less, or where the firm reasonably expects it to give a materially similar liability measurement for the remaining coverage period to that under the General Model, which firms may find hard to demonstrate without implementing the General Method.

Transition method

We asked firms to tell us to what proportion of their business they expected to apply the following transition methods (based on number of contracts): the full retrospective approach ("FRA"), the modified retrospective approach ("MRA") and the fair value approach ("FVA"). On average, EU firms expected to apply the FRA to only 29% of their business, the MRA to 22% of their business and the FVA to 49% of their business, reflecting industry concerns with the feasibility of the FRA and MRA.

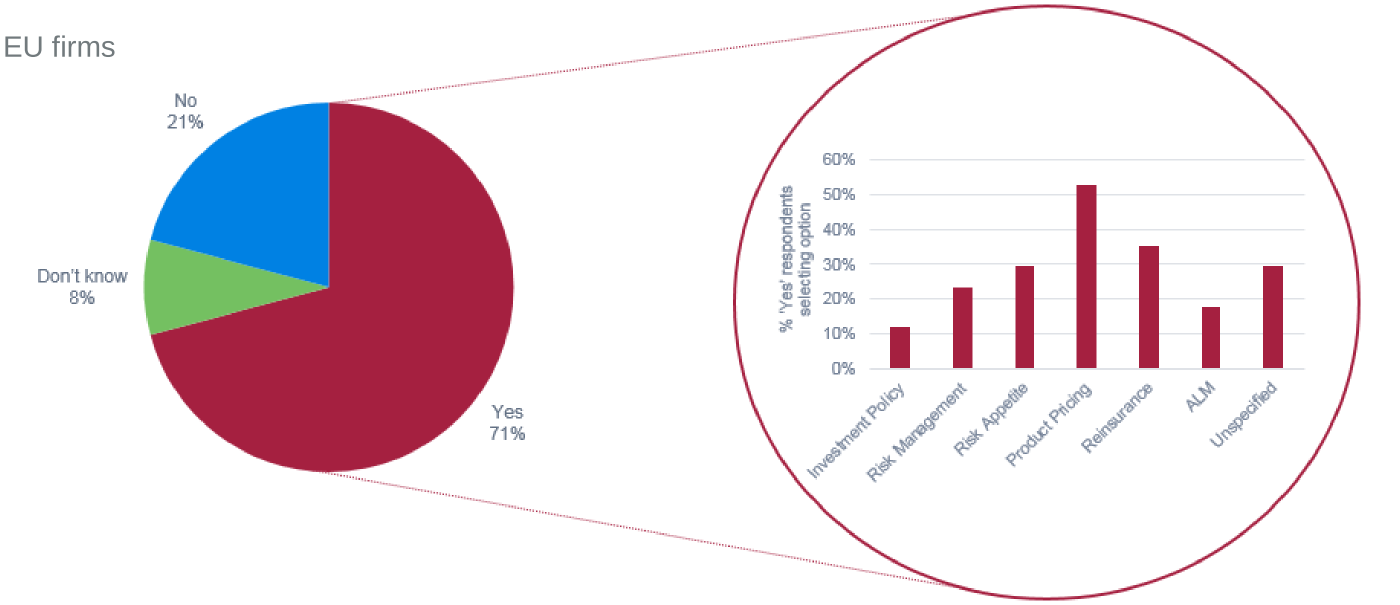
The main difficulty firms face in relation to the full retrospective approach is the extensive data requirements. The feasibility of applying this approach is therefore likely to vary between firms depending on aspects such as the extent of legacy business covered and the administration systems used. When asked for how many years of existing business they believed they would be able to do a full retrospective approach, firms' answers ranged from 0 to 14 years, with an average of 4.7 years, highlighting these challenges. The results show that despite the FVA being intended for use as a 'last resort' option, firms are readily turning to the FVA as the more practicable approach.



Wider impact of IFRS 17

Impacts expected to go beyond the balance sheet

DO YOU EXPECT IFRS 17 TO AFFECT ANY OF THE FOLLOWING (E.G., INVESTMENT POLICY, RISK MANAGEMENT, RISK APPETITE, PRODUCT PRICING, REINSURANCE, ALM)?



The extent to which IFRS 17 has an impact on the wider business (for example on risk management or on business decisions such as dividend pay-outs) will depend on the metrics used in each part of the business, as firms that use Solvency II instead of IFRS or GAAP accounting as the key driver for decision-making are likely to experience less of an impact. Our experience is that shareholder-owned insurers tend to make business decisions with an eye on IFRS profits stability, and so are likely to have to amend processes to suit IFRS 17. Firms owned by, for example, private equity firms on the other hand are likely to focus more on Solvency II capital optimisation and so may experience a narrower range of impacts.

We asked firms to consider the wider impacts (if any) that IFRS 17 might have on their business, and over two thirds of EU respondents did anticipate some form of change outside of the direct impact on the IFRS balance sheet. Firms were able to select more than one option and the options selected varied between firms, including several respondents who had not yet determined where those impacts might be, suggesting that there is still a great deal of uncertainty about the effect of IFRS 17 from a business perspective. As shown by the graphs above however, there was a general consensus that product pricing would be affected, with over 50% of firms selecting this option. The relatively high number of respondents selecting reinsurance as an area of change reflects the industry concerns regarding the inconsistent treatment under IFRS 17 (at the time of the survey) of liabilities and related reinsurance assets.

In addition, in separate questions, 59% of EU respondents stated that they expect at least one product line to become less attractive under IFRS 17, and 50% of EU respondents anticipated that they would continue to present financial results in the current format as additional information once IFRS 17 is adopted.

Some firms also anticipated an impact on the ongoing level of IFRS earnings within their balance sheet, ranging from increased volatility to a reduction in the level of IFRS earnings. One respondent anticipated a 25% increase in their IFRS earnings as a result of the implementation of IFRS 17, highlighting that there are opportunities for balance sheet optimisation as part of the IFRS 17 implementation process, and that firms do have technical, product and financial management levers that can help with ongoing management of the IFRS 17 balance sheet.

59%

of EU respondents expected at least one product line to become less attractive under IFRS 17

Conclusion

The results of the survey largely confirm expectations based on what we've seen in the market: firms are still a material distance away from being IFRS 17-ready, and that the extension of the implementation date to 1 January 2022 is likely to have come as a welcome relief to the vast majority of firms – even those in the UK where we have seen from the survey results that firms tend to have made more progress than the average EU firm. Despite the extra year being much needed, there are already signs that some firms might be decelerating implementation projects as a result of the extension, which has the potential to be a risky move given the amount of work most firms have left to do. We would encourage firms to maintain the momentum of existing progress and instead use the extra time to optimise their final IFRS solution, looking at areas (such as IT systems) where perhaps shortcuts were initially taken but are no longer necessary.

It is also worthwhile at this point to encourage firms to think about the lessons they learnt from the implementation of Solvency II and to consider whether they are applying these lessons or heading towards the same mistakes. Given the budget and resourcing challenges inevitably faced by firms at this stage in the implementation process, it is particularly important to have learnt and actioned lessons from previous implementations, allowing firms to focus on the new, additional challenges that IFRS 17 introduces. For example, one of the key issues we are seeing our clients face is the requirement for a streamlined end-to-end process which covers a wide range of departments and requires strong and continuous communication between actuaries, accountants, underwriters, management and many others. Whilst breaking the implementation requirements down into silos might make the task seem more approachable, if there is no one taking the high level view to ensure all the pieces are consistent and fit together, firms are likely to experience further challenges in the latter stages of implementation.

Finally, we would like to thank the 118 firms who responded to our survey, noting that in this paper we have only outlined a portion of the 75 questions covered in our survey, therefore we do encourage readers to get in touch if they are interested in benchmarking a particular aspect not covered in this paper.

How Milliman can help

Milliman has a wide range of experience in global insurance markets and, in particular, in Solvency II and IFRS 17. Milliman's experts have, and continue to, closely follow the development and implementation of both regimes.

Milliman can provide a range of services to assist with all aspects of IFRS 17, including:

- Methodology development and implementation;
- Independent review;
- Training;
- Gap analysis and impact assessment;
- Financial modelling; and
- Implementation of an IFRS 17 systems solution through our award-winning Integrate platform which can be implemented with cashflow output from any actuarial system. For more information please see IFRS 17: The Integrate Solution.

If you would like to discuss any of the above, or anything else, with us, or if you have any questions or comments on this paper then please contact one of the named consultants below or your usual Milliman consultant.

Visit **http://www.milliman.com/IFRS** for more information.

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Notes on recent IASB amendments
April 2019:
http://uk.milliman.com/insight/2019/Amendments-to-IFRS-17-from-April-2019-IASB-Meeting/

March 2019:
http://www.milliman.com/insight/2019/Amendments-to-IFRS-17-from-March-2019-IASB-Meeting/

February 2019:
http://www.milliman.com/insight/2019/Amendments-to-IFRS-17-from-February-2019-IASB-Meeting/

January 2019:
http://www.milliman.com/insight/2019/Amendments-to-IFRS-17-from-January-2019-IASB-Meeting/

Premium Allocation Approach
http://www.milliman.com/insight/2018/IFRS-17-How-simple-is-the-simplified-approach/

Discount Rates
http://www.milliman.com/insight/2018/IFRS-17-Discount-Rates/

Risk Adjustment
http://www.milliman.com/insight/2017/IFRS-17-Risk-Adjustment/

CSM Amortisation
http://www.milliman.com/insight/2018/IFRS17-coverage-units-for-CSM-amortization/