Impact of IFRS 17 on insurance product pricing and design

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1. Executive summary

This Milliman white paper considers the potential impact of International Financial Reporting Standard (IFRS) 17 on insurance product design and pricing in European markets and contrasts the expected impact on a range of life insurance products.

IFRS 17 represents a fundamental change in accounting rules, and insurers may be unsure of how, or even whether, their product pricing and design may change as a result. Furthermore, it is likely that companies will want to start thinking already about how the products that they are selling or launching now will look under the new accounting regime.

Commentators to date have expressed varying opinions on this, but without offering any real concrete analysis. This paper aims to provide such analysis and should therefore be of interest to senior management and others within insurance companies who may be involved with strategic decision-making and product development.

The scope of this analysis focuses principally on European countries that have adopted Solvency II, as our approach involves the consideration of distributable profits under Solvency II and how they would be impacted by the introduction of IFRS 17. However, the concepts under consideration are likely to be applicable to other markets outside Europe.

Specifically, our approach starts with our methodology for considering projected distributable profits under a real-world projection, discounted at a shareholders' required rate of return, as described in our previous paper: "Measuring new business profitability under Solvency II (S2NBV)."

We consider this to be a robust methodology for assessing product pricing, as well as being more closely aligned to how insurers actually manage their business.

We then consider whether constraining dividends to be limited to IFRS 17 profits would effectively decelerate the emergence of profits, in particular:

- Would a dividend constraint based on IFRS 17 profits slow down distributable profits compared to an unconstrained dividend distribution based solely on surplus capital under Solvency II?
- Would any such constraint be greater or less than the equivalent constraint which might exist under current accounting standards?

Our consideration includes both qualitative and illustrative quantitative analysis.

Generally our findings indicate that the distributable profit stream for new business with either low profitability—assuming that the contracts are not (or do not become) onerous under IFRS 17—and/or high capital requirements is unlikely to change due to the introduction of IFRS 17.

IFRS 17 could, however, act as a constraint on the timing of profit distribution in the case of products which have high profitability and/or low capital requirements.

However, where real-world uplifts to investment returns are an important contributor to profitability, in some cases this may make IFRS 17 more inclined to slow down distributable profits than would otherwise be the case.

Lastly, we think that any constraint due to IFRS 17 may often tend to be less than under current accounting standards in countries where they are based on a prudent approach.

2. Introduction

With the implementation of IFRS 17 now underway, it is important for insurance companies to understand the impact that IFRS 17 may have on an insurer's view of new business profitability, and specifically on product design and pricing.

This paper analyses the possible impact of IFRS 17 on product design and pricing. Given that IFRS 17 represents such a fundamental change to current accounting standards in many jurisdictions, the initial assumption may be that the impact would be significant.

In particular, the introduction of the Contractual Service Margin (CSM) is a key change, which will prevent a gain being recognised at outset for a group of contracts for countries where margins between the accounting and premium bases can be recognised at the outset of a contract.

However, in reality IFRS 17 may have less impact on product design and pricing than at first may be thought, for reasons that we set out in this paper.

We note that there are varying views on the potential impact of IFRS17 on product design:

EFRAG (September 2018): *"… IFRS 17 is not expected to have a noticeable impact on pricing and product mix in most insurance product areas. However, a majority of insurance undertakings … expected a negative impact in the Life and Credit Suretyship product areas."*

"Some respondents … stated that they would avoid pricing methodologies leading to recognition of onerous contracts at inception."

"Most of the respondents either did not expect that IFRS 17 will change their current pricing methodology or did not know."

"A majority of industry participants … indicated that the new external reporting requirements might have an impact on some features of the products offered."

KPMG (December 2017): *"… for some, the prohibition on recognizing 'day one' gains and the need to recognize losses on groups of onerous contracts will likely trigger important changes in product design and marketing… already, some insurers are exploring how they might pivot their focus away from day one profits."*

PwC (2017): *"The new standard is expected to bring about pervasive changes for insurers, especially in the areas of: … product strategy."*

Deloitte (November 2017): *"The upcoming adoption of IFRS17 will affect… product design."*

Stephen Makin – Hymans Robertson (December 2017): *"The new standard is likely to result in more questions … particularly for model points that result in onerous or potentially onerous contracts. The change in the profit signature could also result in a greater preference among insurers to write shorter-term business that does not defer profits over such a long period of time."*

Dominic Varney – PwC (December 2017): *"We expect there may be some who look at the changes in reported profitability and seek to tweak products, but we aren't aware of anyone looking at fundamental changes to date. Really, the standard will change the timing of recognition of profits – not the underlying profits themselves."*

3. Methodology for product design and pricing

There are various perspectives on measuring the value of insurance business (valuation methodologies), such as traditional embedded value, market-consistent embedded value, Solvency II etc., and companies will generally adopt one or more of them in managing their business, including in both valuing existing business as well as developing new product propositions.

In our experience we see that management decisions taken by companies will often be driven by a desire to maximise the probability-weighted discounted value of real-world distributable profits. For the purpose of this paper our analysis of product design and pricing will therefore be based on a valuation methodology that aligns directly with this approach.

Specifically, in this paper we will assume that:

- Companies perform product design and pricing by considering the value of new business generated by candidate product designs (with assumptions as to likely policyholder profiles and expected future experience)
- This new business value will be calculated as the probability-weighted discounted value of real-world distributable profits

This in turn requires us to consider what companies may take as "distributable profit." This can be derived from a comparison of available and required capital under local solvency rules, but there may then be constraints on how much of any such excess is actually distributable.

For example, dividend payments may be restricted under local legislation, with such restrictions often framed in terms of accounting rules. Even where there may be no legally mandated restrictions, supervisors can have views influencing dividend distribution practices. Companies themselves may prefer to avoid dividend amounts that exceed accounting profits, for example because they fear that such dividends will be perceived externally as unsustainable.

The analysis of this paper therefore centres on considering how changing accounting rules over to IFRS 17 may impact distributable profit (and hence the new business value that will drive product design and pricing choices).

In particular, we ask:

- If IFRS 17 profits are going to be a constraint on distribution, will this be a meaningful constraint?
- If it is a constraint, is it going to be more or less of a constraint than current accounting standards?
- In either case, which types of products are affected?

We note that the analysis in this paper does not set out to cover all possible cases and concentrates instead on the main conclusions that are important to understand, and can be drawn from a high-level consideration of the principles and rules. In particular we do not consider more detailed aspects that may only affect the conclusions for certain special cases (e.g., tax, reinsurance, onerous contracts, impact of different expense allocations between IFRS 17 and other measures).

3.1 BASIC VALUATION METHODOLOGY FOR PRODUCT DESIGN AND PRICING

To be able to address these questions with appropriate quantitative analysis we define a basic valuation methodology for use in this paper as follows:

- New business value (NBV) = probability-weighted discounted value of real-world distributable profits

where:

Distributable profit in period = change in distributable NAV over period (adjusted for any capital movements)

and where:

- Distributable NAV = excess of available capital over required capital (in line with local solvency rules and target solvency ratio)
- Discount rate = shareholders' required rate of return
- Probability-weighted = best-estimate assumptions on future experience

By "real-world" distributable profits we mean that the projection of distributable profits will use real-world (as opposed to risk-neutral) investment returns. This is a key point as, given that the shareholders' required return is used as the discount rate, the difference between projected investment returns and discount rate will mean that the NBV is sensitive to the timing of the emergence of profit.

This in turn is important as the total profit to emerge will be the same under all measurement approaches, with each approach only varying the timing of when distributable profit emerges.

We note that this can be one reason why a market-consistent new business value (MCNBV) is sometimes not seen as being aligned with management's view of the business and the insight they require for decision-making: this type of new business value is essentially insensitive to changes in the timing of how distributable profits emerge (due to projected returns and discount rate being the same). However, we note that some companies are still using market-consistent embedded value (MCEV) as a key valuation metric.

This is an important point for participating savings business in particular, whose viability often depends on real-world investment profits, given that in a calculation of MCNBV these real-world "uplifts", and the associated cost of capital for market risks, are effectively ignored. Hence in this case it is not just the timing of the projected future profit stream that is different but also the assumed size of the stream (although as the uplifts emerge over time the actual profits will eventually align with those projected under a real-world approach).

Therefore our approach will be based on the premise that new business profitability is being judged based on its impact on real-world distributable profits, and the focus of our analysis will be on showing how the introduction of IFRS 17 may impact this measure.

3.2 SUMMARY OF OUR APPROACH

The analysis of this paper is therefore based on the following two premises:

a. In performing product design and pricing, companies will often use a methodology involving a new business value that is sensitive to the pattern of emergence of distributable profit.

b. Local legislation and accounting rules can impose constraints that influence the pattern of profit distribution. Even without legal constraints there can be various other factors that exert similar restrictions on distribution (e.g., investor views, expectations of shareholders or the board on profitability), or simply management sensitivity to the timing of profits (e.g., due to managers' bonus targets).

The main question addressed in this paper is therefore whether IFRS 17 will alter the expected pattern of profit distribution (b.) and hence impact product design and pricing (a.). We also investigate the form and extent of any such impact.

We note that for companies where a. is not the case, and/or situations where b. does not hold, then the introduction of IFRS 17 may be expected to have no major impact on product design and pricing. Of course, it may still be the case that there is concern about the timing of profits even when it does not impact dividend capacity directly.

However, our analysis will demonstrate that, even in the common case where a. and b. are both satisfied, then, for specific types of product, the impact on product design and pricing of IFRS 17 may be rather less than might be assumed.

To see why this may broadly be the case, we recall from section 3.1 above that

- Distributable NAV = excess of available capital over required capital (in line with local solvency rules)
- Distributable profit in period = change in distributable NAV over period (adjusted for any capital movements)

The emergence of distributable profit is therefore driven by the run-off of required capital (relative to available capital).

In the case of IFRS 17, it is the CSM that is the principal driver of how accounting profit emerges (assuming contracts are not onerous and the Premium Allocation Approach (PAA) is not applied). Both required capital and the CSM therefore act to hold back the release of profit over time, and the CSM may or may not do this relatively more so than required capital.

To analyse this effect the question therefore becomes:

> If premise b. holds, to what extent will the CSM act to decelerate the emergence of distributable profit that underlies the NBV of premise a.? (We note that the IFRS 17 risk adjustment (RA) can also act to slow the emergence of profits. However, for the purpose of this analysis we have made the simplifying assumption that the IFRS 17 RA is the same as the Solvency II risk margin, and will therefore impact both measures equally.)

3.3 OUR APPROACH IN THE CONTEXT OF SOLVENCY II

Most insurers in the European Union are subject to the rules of Solvency II—in this context the basic methodology of section 3.1 for NBV will be S2NBV and will use distributable profit defined as follows:

- **Available capital** = Own Funds from Solvency II balance sheet
- **Required capital** = (target solvency ratio) x (SCR under Solvency II)
- **Distributable NAV** = excess of Available capital over Required capital
- **Distributable profit in period** = change in Distributable NAV over period (adjusted for any capital movements)

Note: the projection of distributable profits will use real-world (as opposed to risk-neutral) investment returns. However, we would point out that nested along this projection there will be embedded calculations of the expected future Solvency II positions (balance sheet, SCR), and these calculations are based on market-consistent (risk-neutral) valuations as mandated by Solvency II rules.

With a number of simplifying assumptions[1], we can say that, along a projection, the CSM will act to decelerate the emergence of distributable profit whenever we have:

- CSM > Required capital

This is because, with the simplifying assumptions made, Solvency II (before Required capital) and IFRS 17 (before CSM) are assumed to recognise the same level of future margins at the outset of the contract.

We note that this ignores the impact of onerous contracts, and also savings products measured under the Variable Fee Approach (VFA), where the variable fee can act to re-spread real-world investment "uplifts" as they are earned (see below).

If we make the further simplifying assumption that the CSM and the Required capital run off at the same rate, then this is equivalent to saying:

- Initial CSM > initial Solvency II Required capital

Given that both Solvency II and the IFRS 17 CSM align with market-consistent valuation methodology, then our simplifying assumptions can allow us to take:

- Initial CSM = initial Solvency II Available Capital = MCNBV[2]

So our condition above for IFRS 17 to act to delay the emergence of distributable profit becomes:

- Initial Solvency II Available Capital > initial Solvency II Required Capital

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[1] These are essentially the differences between Solvency II and IFRS 17 which might arise in respect of various specific items, including discount rates, risk adjustment, contract boundaries and expenses. We are also ignoring tax.

[2] Because tax is ignored, there is no frictional cost of capital under MCNBV. We also ignore the impact of the cost of residual non-hedgeable risks (CRNHR) under MCNBV (or, equivalently, assume that the impact is equal to that of the IFRS 17 risk adjustment or the Solvency II risk margin).

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In other words:

- if a contract generates surplus (based on a required level of capital) on a Solvency II basis at outset then the introduction of IFRS 17 may broadly be expected to constrain distributable profits

This then leads to the following high-level conclusions:

- **For products with low profitability (MCNBV) and/or high capital consumption (Solvency II):**
  - IFRS 17 would not add any constraint beyond limits on distribution due to Solvency II
- **For products with high profitability (MCNBV) and/or low capital consumption (Solvency II):**
  - IFRS 17 could lead to a material constraint on the emergence of profits compared to the distribution pattern implied by Solvency II

Some care is needed in interpreting these conclusions, however. For example, there may be a product which has a good level of profitability on an MCNBV basis (e.g., satisfying typical internal criteria) but if this product involves (for example) significant market risk it would be likely not to be self-financing on a Solvency II basis (i.e., would have initial available capital less than initial required capital) and hence IFRS 17 would not normally constrain profit distribution.

More widely, there might be products which do not suffer constraints on profit distribution from IFRS 17, but in fact are more profitable (on an MCNBV basis) than some products that do suffer such constraints, due to high capital requirements. A product with only modest profitability might see profit emergence slowed down by IFRS 17 if it has very low capital requirements.

We also note that profitability and capital requirements are not necessarily completely independent. For example, for lapse risk (usually the most important risk outside market risk), if the product is profitable then the change in NAV under a lapse-up or mass-lapse stress may be higher, and hence the SCR would also be higher.

3.4 IFRS 17 AND STATUTORY PROFITS

Under many current local statutory accounting bases, margins can generally (though not always, particularly in times of low interest rates) be prudential and create initial strains at the policy outset, with profits generated as margins are released. This compares with IFRS 17, where the initial strain is generally zero (except for onerous contracts).

We might therefore generally expect profits to emerge more slowly under current accounting than under IFRS 17, i.e., to the extent that dividends may be constrained by profits, this will be less so under IFRS17 than is currently the case.

4. Product examples

In this section we take simple examples of some typical products to illustrate the approach and methodology set out in section 3 above.

4.1 EXAMPLE: UNIT-LINKED PRODUCT

4.1.1 Overview

For a single-premium unit-linked product without investment guarantees, if there is a good level of profitability on a market-consistent basis then this implies a high initial CSM.

The SCR will depend on, in particular, the asset mix (e.g., level of equities) and the lapse risk (loss of VIF [Value of In-Force business], mitigated by surrender penalties), but where required capital is comparatively low and profitability high, IFRS 17 may constrain distributable profits compared with Solvency II, given that the high CSM will act to hold back the emergence of profit to a greater extent than the required capital will.

While the extent to which IFRS 17 may constrain dividends is likely to be less than on current accounting bases[3], our product illustration below does not analyse this aspect and concentrates on comparing the profit streams of S2NBV and IFRS 17.

4.1.2 Product illustration

We model a single-premium unit-linked product, with a simple base design and pricing that implies both a fairly low level of profitability and low required capital. We note that the design is deliberately kept simple for the purpose of illustration—for example, to be subject to IFRS 17 a unit-linked product must involve some insurance risk. We have ignored this component here as it helps to keep the example simple and does not change the analysis or the conclusions.

We then modify the base design of the product to improve profitability by adjusting individual aspects of the pricing separately, each time looking to arrive at approximately the same level of (improved) profitability but noting that each type of adjustment will imply differing levels of required capital.

We then observe how the introduction of IFRS 17 means that this interplay during the product design process (between profitability and required capital) will also now have implications for the extent to which IFRS 17 may constrain projected distributable profits.

The base design for the simple unit-linked product is as follows:

- Single premium
- Initial (allocation) charge: 5% x premium
- Annual management charge: 0.5% x unit fund
- Surrender penalty: 2% x unit fund
- Commission (initial): 2.5% x premium
- Commission (renewal): 0.25% x unit fund per annum

The projection assumptions are as follows:

- Expenses (initial): 2.5% x premium
- Expenses (renewal): 0.25% x unit fund per annum
- Lapses: 5% per annum
- Required capital: 150% x Solvency II SCR
- Risk-free rate: 0% per annum

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[3] assuming positive profitability (because this would give zero strain at outset under IFRS 17, compared with a likely initial strain under current accounting)

All other aspects are zero-ised or ignored for the purpose of the illustration. In particular, we ignore any real-world uplifts.

The policy profile that is tested is:

- Premium amount: 40,000
- Term: 10 years
- Unit fund asset allocation: 100% cash (i.e., risk-free)

The base design implies a low level of profitability:

- Initial MCNBV = 297 (i.e., less than 1% of premium)

And a fairly low level of required capital (RC):

- Initial RC = 150% x SCR = 150% x 235 = 353

We take the initial IFRS 17 CSM to be equal to the initial MCNBV:[4]

- Initial CSM = 297

With initial RC rather higher than the initial CSM we can expect that IFRS 17 may not constrain distributable profits to any material extent. To illustrate this we therefore make projections of:

- Distributable profits (S2NBV methodology of section 3.3 above)
- IFRS 17 profits
- Distributable profits (S2NBV methodology of section 3.3), but limited to IFRS 17 profits

Discounting the above projected profits at a shareholder risk discount rate of 6% per annum, we have:

- NPV [Distributable profits (S2NBV methodology)] = 212
- NPV [IFRS 17 profits] = 224
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 212

We can see that IFRS 17 therefore has no impact on NBV.

We note that the effects of the Solvency II risk margin and the IFRS 17 risk adjustment are ignored for the purpose of the illustration, and in most cases are unlikely to change the conclusions.

4.1.2.1 Product design adjustment: Initial charge

Increasing the initial charge from 5% to 15%[5] of the premium (while keeping all other aspects unchanged) clearly increases the profitability significantly:

- Initial MCNBV = Initial CSM = 4,266 (i.e., around 11% x premium)

However, the required capital is relatively unaffected by this type of change, and remains low:

- Initial RC = 316

With RC at similar levels to the base case this does not therefore act to hold back distributable profits under Solvency II. However, we now have a high CSM and this will act to hold back IFRS 17 profits. This means we can expect that IFRS 17 may constrain distributable profits materially.

Projecting profits and discounting them as before, we have:

- NPV [Distributable profits (S2NBV methodology)] = 3,963
- NPV [IFRS 17 profits] = 3,217
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 3,217

We can see that IFRS 17 therefore does have a material effect on NBV (3,217/3,963 = 81%).

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[4] We note that for simplicity the IFRS 17 risk adjustment is ignored here, as noted in section 3.2 above.

[5] This change is unrealistic in practice but is chosen both to expose the effect clearly and also to give approximately the same level of CSM as the two product design adjustments that then follow.

4.1.2.2 Product design adjustment: Annual management charge

Increasing the annual management charge from 0.5% to 1.9% (while keeping all other aspects unchanged) increases the profitability to a similar level to what was produced by the previous adjustment, i.e., 11% x premium:

- Initial MCNBV = Initial CSM = 4,258

But, in this case, adjusting the annual management charge instead of the initial charge means that the required capital also increases significantly because (unlike an upfront charge) an annual management charge is affected by lapse and market shocks:

- Initial RC = 2,394

With the same high CSM as before, we can expect IFRS 17 profits to be held back over the projection. However, with RC now higher, it will also act to hold back distributable profits on the Solvency II basis, and hence while we can expect IFRS 17 to constrain distributable profits compared with Solvency II, this will be to a lesser extent than observed for the adjustment to the initial charge.

Projecting profits and discounting them as before, we have:

- NPV [Distributable profits (S2NBV methodology)] = 3,682
- NPV [IFRS 17 profits] = 3,210
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 3,210

We can see that IFRS 17 therefore does have an effect on NBV (3,210/3,682 = 87%), but this is not as pronounced as what was given by the adjustment to the initial charge.

4.1.2.3 Product design adjustment: Surrender penalty

Increasing the surrender penalty from 2% to 29% (while keeping all other aspects unchanged) is a particularly unrealistic change but, for the purposes of illustration, increases the profitability to a similar level to what has been produced by the adjustments above, i.e., 11% x premium:

- Initial MCNBV = Initial CSM = 4,252

However, the required capital increases even more than the previous example:

- Initial RC = 3,749

In the previous example, the biting lapse stress is mass-lapse (loss of high future management charges from 40% mass lapse in the first year), whereas, in this example, it is lapse-down (loss of very high surrender penalties arising from lower lapses throughout), which overall produces a higher required capital.

With RC now approaching similar magnitude to the CSM, we can expect profits to be held back to a similar extent over the projection under Solvency II compared with IFRS 17.

Projecting profits and discounting them as before, we have:

- NPV [Distributable profits (S2NBV methodology)] = 3,348
- NPV [IFRS 17 profits] = 3,206
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 3,206

We can see that IFRS 17 therefore does have an effect on NBV (3,206/3,348 = 96%), but this is not nearly as pronounced as what was given by the other forms of adjustment to the product pricing.

4.2 EXAMPLE: TERM ASSURANCE

4.2.1 Overview

If we assume that this product has a "long" contract boundary under Solvency II (e.g., not reviewable premiums), we have:

- High level of profitability, hence high initial CSM
- SCR dependent on how much of the premium is actually providing risk (mortality or other) cover, expenses, and profit margin

We note that, if commissions (which generate no capital requirement) are a very high component of premiums, it would imply a lower level of mortality risk (for a given level of profitability), and hence a lower SCR.

As noted in section 3.3, if initial required capital is less than the CSM, then IFRS 17 may be likely to constrain dividends compared with Solvency II.

The potential constraint of IFRS 17 is likely to be less than under current accounting, assuming a level of initial accounting strain.

4.2.2 Product illustration

We model a regular-premium term assurance product with a simple design, and test various combinations of pricing (profitability) and required capital.

As before, we observe how the introduction of IFRS 17 means that the interplay between profitability and required capital will also now have implications for the extent to which IFRS 17 may constrain projected distributable profits.

The assumed design for the term assurance product is simple:

- Annual premium (level)
- Commission (initial): 50% x first annual premium
- Commission (renewal): 20% x subsequent annual premiums
- Sum assured: level amount paid on death
- Riders: none

The policy profile that is tested is:

- Premium amount: 500 per annum
- Sum assured: 45,000
- Term: 20 years

The main projection assumptions are as follows:

- Expenses (initial): 50 per policy
- Expenses (renewal): 10 per policy per annum
- Lapses: 5% per annum
- Required capital: 150% x Solvency II SCR
- Risk-free rate: 0% per annum

All other aspects are zero-ised or ignored for the purpose of the illustration.

The above design implies a high level of profitability:

- Initial MCNBV = 1,279

And a high level of initial required capital (RC):

- Initial RC = 150% x SCR = 150% x 716 = 1,075

We take the initial IFRS 17 CSM to be equal to the initial MCNBV:

- Initial CSM = 1,279

With both initial RC and initial CSM being relatively high we can expect that IFRS 17 may not constrain distributable profits to any material extent. To illustrate this we therefore make projections of:

- Distributable profits (S2NBV methodology of section 3.3 above)
- IFRS 17 profits
- Distributable profits (S2NBV methodology of section 3.3), but limited to IFRS 17 profits

Discounting the above projections at a shareholder risk discount rate of 6% per annum, we have:

- NPV [Distributable profits (S2NBV methodology)] = 862
- NPV [IFRS 17 profits] = 813
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 803

We can see that IFRS 17 therefore has only a limited effect on NBV (803/862 = 93%).

Once again the effects of the Solvency II risk margin and IFRS 17 risk adjustment are ignored for the purpose of the illustration, but are unlikely to change the conclusions.

4.2.2.1 Adjustments to required capital

Adjusting the target solvency ratio (while keeping all other aspects, including premium amount, unchanged) allows us to test how the constraint imposed by IFRS 17 may vary with distinct levels of required capital.

With RC = 125% x SCR, we have initial RC = 896.

RC will therefore act to hold back distributable profits to a lesser extent than before, while the CSM is maintained at a relatively high level and hence will act to hold back IFRS 17 profits. This means that we can expect IFRS 17 to constrain distributable profits to a greater extent.

Projecting profits and discounting them as before, we have:

- NPV [Distributable profits (S2NBV methodology)] = 919
- NPV [IFRS 17 profits] = 813 (unchanged from before)
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 811

We can see that IFRS 17 now has an increased constraining effect on NBV (811/919 = 88%).

Similarly, if we reduce RC even further (to 100% x SCR), then we can expect a greater degree of constraint arising from IFRS 17 profits:

- NPV [Distributable profits (S2NBV methodology)] = 977
- NPV [IFRS 17 profits] = 813 (unchanged from before)
- NPV [Distributable profits (S2NBV methodology), limited to IFRS 17 profits] = 813

We can see that in this case IFRS 17 therefore constrains NBV yet further (813/977 = 83%).

4.3 EXAMPLE: TRADITIONAL SAVINGS PRODUCTS WITH PROFIT SHARING

4.3.1 Overview

Interest guarantees imply low margins on a market-consistent basis in current financial conditions (i.e., low initial CSM), but in some cases may generate a significant capital requirement (i.e., high SCR). In this case, limiting dividends to IFRS 17 profits would not normally be expected to create a constraint compared with a Solvency II basis.

However, a key component of value under our S2NBV methodology can come from investing in "risky" assets, as shareholders' share of real-world "uplifts" translates into increased Own Funds each year (as assets increase by more than technical provisions, particularly if guarantees are in-the-money to policyholders when risk-free returns are assumed, so that the uplifts are attributable to shareholders. This would differ from the case where guarantees are out-of-the-money so that a large proportion of real-world uplifts may be paid out as increased profit sharing to policyholders). However, this effect will be partly offset by the cost of additional capital requirements.

The timing of the recognition of these real-world uplifts can differ significantly, however, depending on the NBV methodology that is employed:

- Under S2NBV, all real-world uplifts are recognised upfront because they are based on projected real-world distributable profits which are then discounted.
- Under market-consistent methodology, real-world uplifts are only recognised as they are received in the future (but are recognised fully at that point).
- Under the IFRS 17 Variable Fee Approach (VFA), which may or may not apply depending on the exact nature of the product, real-world uplifts are only "recognised" as they are earned, but even then they may not be recognised fully as they may be spread over the current and future service periods.

Under IFRS 17, assuming the VFA applies, and to the extent that real-world uplifts relate to future service, these uplifts will increase the CSM (via the change in variable fee), but the impact may be spread over the current and future time periods. This has the effect of "back-loading" the impact of spreads because, with each year, the amount of spread amortised from previous years would increase, leading to a rather unfavourable profit pattern (very low in earlier years, and higher in later years). Thus the impact of real-world uplifts may be deferred compared with the impact under Solvency II – see Figure 1 below.

FIGURE 1: PROFIT PATTERN WITH REAL-WORLD UPLIFTS
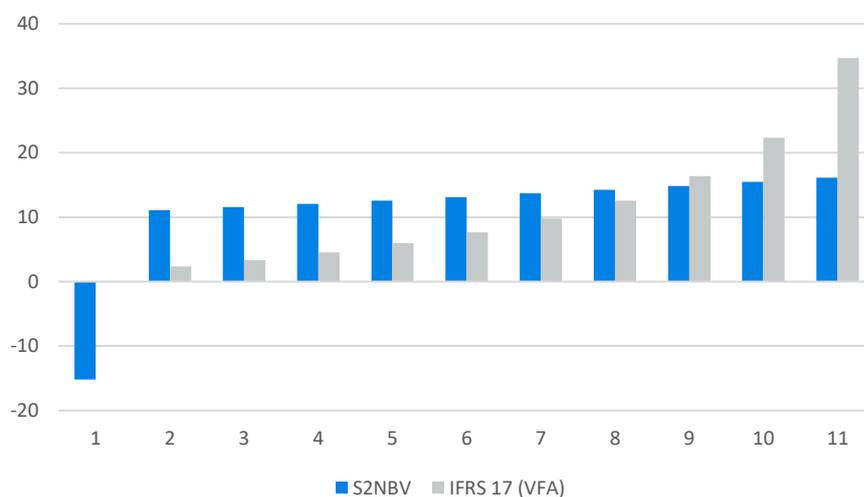
On the other hand, if the required capital is much higher than the CSM (which itself could be due to investment in risky assets), IFRS 17 may not necessarily defer profits overall compared with Solvency II.

However, the picture may be complicated, as distributable profits may initially emerge more slowly under Solvency II (e.g., because the SCR for market risk is higher than the IFRS 17 CSM) but then gain pace over time. At the same time, however, IFRS 17 VFA profits will start to be held back by the gathering "log jam" formed by unamortised real-world uplifts whose recognition is spread over future service.

Considering current accounting rules (rather than IFRS 17), the speed of emergence of profits compared with Solvency II will be a function of the level of prudence in the reserving basis, and in particular the "technical interest rate" as compared to the risk-free rate (which actually may not be that "prudent" in the current exceptionally low interest rate environment in many countries, depending on specific local rules).

However, the impact of the shareholders' share of real-world uplifts should impact statutory profits in the year in which they occur (as they do under Solvency II), rather than being spread over the future (as they are via the VFA of IFRS 17).

4.3.2 Product illustration

We model a single-premium traditional savings product with profit sharing.

In this case we look at how the introduction of real-world uplifts can affect the form and extent to which IFRS 17 may constrain projected distributable profits.

The base design for the traditional savings product is simple:

- Single premium = 1,000
- Term: 10 years
- Annual profit sharing equal to:
  - [Investment return on backing assets, less Financial margin] subject to Minimum interest guarantee

  where
  - Financial margin: 1% p.a.
  - Minimum interest guarantee: 0.35% p.a.
- Maturity payment: single premium plus accumulated profit sharing
- Technical interest rate: 0% p.a.

The projection assumptions are as follows:

- Risk-free rate: 0.5% per annum
- Real-world investment return on backing assets: 2.5% per annum
- Pre-maturity exits: none

All other aspects are zero-ised or ignored for the purpose of the illustration.

We first work with MCNBV methodology, with no allowance for real-world uplifts, and for comparison project IFRS 17 profits without any future recognition of real-world uplifts:

WITHOUT REAL-WORLD UPLIFTS	0	1	2	3	4	5	6	7	8	9	10
"Profits" underlying MCNBV	-15.2	2.9	3.0	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2
IFRS 17 profits	0.0	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.7
Required capital	30.0	27.1	24.2	21.3	18.4	15.4	12.4	9.3	6.2	3.1	0.0
CSM	14.8	13.4	12.0	10.6	9.1	7.7	6.2	4.7	3.2	1.6	0.0

Discounting the above profit projections at a shareholder risk discount rate of 8.5% per annum, we have:

- NPV [MCNBV profits] = 4.9
- NPV [IFRS 17 profits] = 10.1

We then repeat the projections but now use S2NBV (i.e., allowing upfront for real-world investment returns), plus now project IFRS 17 profits that allow for real-world uplifts as they are earned:

WITH REAL-WORLD UPLIFTS	0	1	2	3	4	5	6	7	8	9	10
Distributable profits (S2NBV)	-15.2	11.1	11.5	12.1	12.6	13.1	13.7	14.3	14.9	15.5	16.1
IFRS profits	0.0	2.4	3.4	4.5	6.0	7.7	9.8	12.5	16.4	22.3	34.7
Required capital	30.0	27.7	25.2	22.6	19.9	17.0	13.9	10.7	7.3	3.7	0.0
CSM	14.8	21.2	26.9	31.8	35.7	38.3	39.1	37.6	32.7	22.3	0.0

Here we can see how the VFA of IFRS 17 acts to hold back profits generated by the real-world uplifts in each year, given that they are expected to be amortised over the current and future service periods.

Discounting the above projections at a shareholder risk discount rate of 8.5% per annum, we have:

- NPV [Distributable profits (S2NBV)] = 70.8
- NPV [IFRS 17 profits] = 65.6

We can see that IFRS 17 therefore now constrains NBV.

This example can help to illustrate how real-world uplifts can influence the view of a product when comparing MCNBV and S2NBV. However, we also see how the S2NBV view of a savings product that depends heavily on real-world uplifts may be affected significantly under the VFA of IFRS 17 (and in contrast to products where dependence on real-world uplifts is more limited). For the former, a different asset allocation could potentially be optimal.

A final point to note is that market-consistent methodology effectively assumes that both real-world expected returns and the cost of capital for market risk can be ignored (i.e., implicitly offset). S2NBV rejects this assumption and allows explicitly for both components, and can therefore give rise to cases where MCNBV may be negative (e.g., because of guarantees being in-the-money on a basis of risk-free rates), but S2NBV is positive. From the point of view of IFRS 17, these cases may be especially interesting given that they imply a product that is economically profitable but may be classed as onerous under IFRS 17.

5. Products and issues around European markets

In this section we consider a number of European life markets (France, Germany, Ireland, UK, Poland, Italy and Belgium).

The most important new business products are unit-linked, traditional participating and hybrid savings products and various types of protection.

There is some variation as to whether unit-linked is classified under IFRS 17 or not. Generally, participating savings business will be accounted for using the VFA, with some exceptions, and has varying importance as new business depending on the country. Risk business will generally be considered as having long contract boundaries except for some group and renewable business.

Key decisions around IFRS 17 and related specifically to new business vary by country.

Thus we might expect the extent to which IFRS 17 might impact life new business design and pricing to vary by market.

5.1 THE MOST IMPORTANT NEW BUSINESS LIFE PRODUCTS IN DIFFERENT MARKETS

The most important products vary a lot between markets, but include:

- **Unit-linked products. Important in several markets (life and/or pensions):**
    - **Ireland:** Some will be IFRS 17, but classification of "significant insurance" may be different from IFRS 4.
    - **UK:** Not IFRS 17 because mainly pure unit-linked defined contribution pensions (although there is also some unit-linked with insurance risk).
    - **France:** Will be IFRS 17, because these products are "multi-funds" with a possibility to switch to euro funds.
    - **Poland:** Will be IFRS 17 because many companies include a significant protection component; however there is also a trend away from unit-linked due to market and regulatory developments. Also, from mid-2019 there is the introduction of a new Pillar 3 savings scheme (PPK), which is pure unit-linked; however (with the exception of one company), this is written as mutual funds outside the insurance industry, so will not fall under IFRS 17.
    - **Italy:** Unit-linked funds sold through hybrid products (products allowing investment in both guaranteed participating and unit-linked components) now have larger volumes than pure unit-linked. They are treated as single contracts, to be accounted for under IFRS 17.
    - **Belgium:** Hybrid "Branch 44" products with participating and unit-linked components—whether a unit-linked part falls under IFRS 17 depends on whether there is unbundling.
    - **Germany:** Hybrid and pure unit-linked products, which generally fall under IFRS 17.
- **Traditional participating and hybrid products. Important in several markets (life and/or pensions):**
    - **France:** "Multi-funds" (hybrid unit-linked plus euro funds).
    - **Germany:** "Annuities" (hybrid, traditional participating and unit-linked products), and traditional savings without annuity option. Participating business dominates in-force, and also represents a high (but decreasing) proportion of new business.
    - **Italy:** Single-premium participating, hybrid products (see above), and smaller amounts of regular-premium participating business.
    - **Poland:** Small but with growth potential—regarded as protection (with-profit endowments with riders).
    - **Belgium:** Pension participating savings, and hybrid products (see above).
- **Other savings:**
    - **Germany:** State-subsidised annuities and occupational pensions, typically with guarantees.

- **Protection products. Various in different countries:**
  - Term assurance or mortality insurance: Ireland, Germany, Belgium, Italy, Poland (developing).
  - Creditor or payment protection insurance: France, Ireland, Italy, Poland.
  - Disability, term life: Germany.
  - Wide selection of riders in Poland, primarily accident and health protection riders. Employer-sponsored group life insurance is an important market.

- **Annuities**
  - **Ireland:** Generally used to provide income in retirement in exchange for a lump sum (longevity insurance).
  - **Germany:** All types of savings products often include subsequent annuities or annuitisation options.

5.2 CURRENT VIEWS ABOUT WHETHER AND HOW IFRS 17 WILL IMPACT LIFE PRODUCT PRICING AND DESIGN IN DIFFERENT MARKETS

- **Onerous contracts:**
  - **Ireland:** May price to try to avoid onerous contracts; may avoid cross-subsidies between contracts and instead assess on a standalone basis, so that each individual contract is non-onerous.
  - **France:** May consider new metrics, e.g., present value of future profits (PVFP) minus risk adjustment to ensure pricing won't lead to onerous contracts.
  - **Poland:** It is likely that some companies may try to avoid situations where the need for unbundling of the main contract and riders would lead to recognition of loss on the main contract; this process might impact existing expense allocations

- **Unit-linked:**
  - **Ireland:** May redesign so that the insurance component is not significant, in order to be out of the scope of IFRS 17.

- **Contract boundaries:**
  - **Ireland:** May try to design products with longer contract boundaries to reduce the risk of contracts being classified as onerous and avoid the additional issues associated with onerous contract groups.
  - **France:** Under Solvency II future premiums on savings business will be outside contract boundaries, but will be inside the boundary of IFRS 17.
  - **Germany:** May adjust contracts to change contract boundaries.
  - **Poland:** Must be viewed within wider industry discussions with the regulator on the contract boundaries for long-term business.
  - **Belgium:** Consensus view in the industry is that future premiums on universal life products are within IFRS 17 contract boundaries, whilst they are not for Solvency II.

- **Reinsurance:**
  - **Germany:** Different accounting approaches (General Model (GM) vs. VFA) may lead to accounting mismatches on reinsurance products, which may impact product pricing and design
  - **Belgium:** Majority of ceded reinsurance appears to be annually renewable, therefore PAA is applicable.

- **VFA**
  - **Germany:** Most will be treated as VFA with economic value creation and profits smoothed through the CSM; expect IFRS 17 to have only a minor impact on product design.
  - **Belgium:** Consensus view seems to be that the discretionary (non-enforceable) participation features in universal life are not direct participations, and therefore VFA is not applicable. For unit-linked products, there are varying levels of additional mortality cover, which impacts whether IFRS 17 or IFRS 9 applies; in the latter case some insurers are opting for IFRS 17 anyway.

- **Other:**
    - **Poland:** Listed companies (PZU Group only) will be impacted directly, and might drive product change for the whole market. For non-listed companies the impact might be indirect through changing benchmark measures so that required profit margin is based on IFRS 17 rather than local GAAP. For subsidiaries of multinationals, IFRS reporting is limited to group reporting, so materiality of the subsidiary may drive the extent of any impact.
    - **Italy:** Currently there is quite a lot of discussion around "capital light" products, which perhaps indicates that Solvency II continues to be the main driver for product strategy.

5.3 PARTICIPATING BUSINESS: WHETHER VFA/GM AND SIGNIFICANCE OF NEW BUSINESS

COUNTRY	VFA / GM	SIGNIFICANCE OF NEW BUSINESS
Ireland	Probably VFA	Not significant, just some unitised with profit
UK	Probably VFA	Limited
France	VFA	Material
Germany	Typically VFA	High, but decreasing proportion of new business
Italy	VFA	Significant
Poland	VFA	Fairly small proportion; potential growth due to trend away from unit-linked regular-premium products (but limited by current low interest rates)
Belgium – debate on how to treat	Market leader and subsidiaries of non-Belgian multinationals: VFA Several strictly Belgian insurers: GM/modified GM (using IFRS 17.B132)	Still significant due to fiscal advantage for pension savings

5.4 WHETHER RISK BUSINESS IS USUALLY WITH A "SHORT" OR A "LONG" CONTRACT BOUNDARY

COUNTRY	LONG	SHORT
Ireland	Life risk	Some group life
UK	Direct retail: Term (usually mortgage), whole life, disability, critical illness, income protection etc.	Group life: Income protection, term, critical illness (less common). Typically renewable every few years or less.
France	Creditor (large proportion of risk new business)—typical duration six years. Other temporary death (15 years duration typically). Other (whole life): Long-term care (not very material), funeral.	Group risk—usually 1-year Temporary death—some 1-year (repriceable without limit)
Germany	Life risk	
Italy	Usually long	
Poland	Usually long	Renewable business: Group life, riders.
Belgium	Life risk: Mortality, disability, long-term care.	

5.5 KEY DECISIONS AROUND TREATMENT OF IFRS 17 AS THEY RELATE SPECIFICALLY TO LIFE NEW BUSINESS.

- Contract boundaries
    - **Ireland**
    - **UK:** Impact of profitability for riders and renewals.
    - **Poland:** Probably set by group, so limited range of local decisions (except for PZU Group).
    - **Belgium:** Consensus is to have long contract boundaries (even where short under Solvency II).

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- The risk adjustment

  [We note that, in our analysis in sections 3 and 4 above, we ignored the impact of the IFRS 17 risk adjustment and the Solvency II risk margin. To the extent that they differ significantly it could change some of our conclusions above. However, this would only cause IFRS 17 to constrain profits for this point to the extent that IFRS 17 risk adjustment exceeds the Solvency II risk margin, which is perhaps unlikely.]

  – **Ireland and Germany:** Level of risk adjustment.
  – **UK:** Choice of method and percentile.
  – **Poland:** Method and confidence level probably set by group, so limited scope for local decisions (except PZU Group).
  – **Italy**
  – **Belgium:** Many insurers still considering the method, but current trend is to base on Solvency II risk margin.
- Aggregation/granularity
  – **Ireland**
  – **Italy**
- Expense allocation
  – **Ireland**
  – **France:** Percentage "attributable" (less important than other issues)
- Mutualisation
  – **France:** It is expected that there will be a full mutualisation of new business and in-force (to fully share risks). Regulatory profit sharing is calculated at entity level (based on the underwriting result and financial income of all participating business). The CSM will be calculated at the financial portfolio level and then allocated by cohort by selecting appropriate allocation factors. This should make results much more stable and will mean that new business can only be onerous if the CSM is negative at the overall portfolio level. This is a significant difference from considering individual cohorts based on issue year and is likely to simplify reporting and make results much smoother. It is expected that some other countries will adopt a similar approach.
  – **Germany:** Most business is VFA with strong mutualisation effects due to profit sharing on investment surplus, risk surplus and other surplus. Overall profit participation is first derived at a higher level (e.g., portfolio) and then allocated to individual policyholders. Also, new business triggers changes in the profit participation of existing policyholders. A key decision is how to reflect these mutualisation effects in the measurement of the individual groups of contracts, which also impacts the measurement of new business.
- Coverage units
  – **Germany**
- Discount rates
  – **Germany**
  – **Italy**
  – **Poland**
  – **Belgium:** No clear decisions taken at this point.

If IFRS 17 discount rates are higher than under Solvency II (which is possible because there is more discretion over methodology) it may impact the pattern of the emergence of distributable profit.

6. Conclusion

This paper covers some initial analysis on the possible impact of IFRS 17 on product design and pricing and shows that the impact within European markets may not be as pronounced as might be imagined, and in fact in many cases there may be no impact on distributable profits and hence none on S2NBV.

The key analytical step in reaching these conclusions has been to focus on the comparable impact of the CSM and the Solvency II required capital in slowing the emergence of distributable surplus.

Some products will see IFRS 17 constrain distributable profits under S2NBV, however, and they will tend to be those products that, while profitable, do not imply a high SCR.

Our investigation suggests that, where profit emergence is significantly "delayed" under MCNBV methodology compared to S2NBV methodology (for example, where a significant proportion of the profit emerges via very delayed real-world uplifts), then these products may become less attractive and ways might be sought to bring profits more upfront.

We note that there may also be merit in packaging products together, and this in turn may depend on the aggregation requirements of IFRS 17 and the unbundling requirements of Solvency II.

This is, of course, a complex topic and the position may evolve based on, among other things, how companies implement IFRS 17 and whether any changes are agreed based on the feedback of the European Financial Reporting Advisory Group (EFRAG) and others.

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