

Recalculation of the Solvency II transitional measures on technical provisions

J. Cooke*, A. Scott, D. Smith, A. Rogan, R. Cooper, S. Morgan, A. Plotnek, N. Kenyon and S. Bhalla

[Presented to the Institute & Faculty of Actuaries, 28 November 2017, Edinburgh]

Abstract

Solvency II came into force on 1 January 2016 and included a transitional measure on technical provisions (“TMTP”) designed to help smooth in the capital impact of Solvency II over a 16-year period. The working party’s view is that the main intention of the TMTP is to mitigate the impact of the introduction of the risk margin, which significantly increases the technical provisions of firms, relative to their Solvency I Pillar 2 liabilities.

The majority of firms who hold a TMTP have now had at least one recalculation approved by the Prudential Regulation Authority (PRA); or are in the process of applying for a recalculation. Despite this large number of approved recalculations, there remains significant uncertainty in the industry around the approach and triggers for recalculation.

This paper considers aspects of TMTP recalculation for regulated UK life firms, for example practicalities of the calculation, asset and liability considerations, and communications/announcements.

In this paper, we outline the need for pragmatism when considering the approach to recalculation of a measure originally intended to serve as the bridge between two regimes. We call for an allowance for doing what is sensible in a principles-based regime balancing what might be more theoretically correct with what is practical and possible to support effective management of the business.

Keywords

Transitional measure on technical provisions (TMTP); Financial resource requirement (FRR)

1. Introduction

Solvency II came into force on 1 January 2016 and included a transitional measure on technical provisions (“TMTP”) designed to help smooth in the capital impact over a 16-year period. The working party’s view is that the main intention of the TMTP is to mitigate the impact of the introduction of the risk margin, which significantly increases the technical provisions of firms, relative to their Solvency I Pillar 2 liabilities.

*Correspondence to: Jamie Cooke, Aviva UK and Ireland Life, Wellington Row Floor 4, Wellington Row, York YO90 1WR, UK. E-mail: Jamie.Cooke@aviva.com

In the lead up to Solvency II many were thinking of the TMTP as a fixed amount set at 1 January 2016 which would very simply run-off over 16 years. Although the rules included provision for recalculation,¹ it seems fair to say that less thought had been given to the potential need to recalculate than to the amount of the TMTP on day 1. The need to recalculate so quickly after switching to the new regime was perhaps unexpected. However, market conditions in 2016 changed this view, so much so that TMTP recalculation has become a significant challenge for many UK firms in 2016. Severe interest rate falls meant sizable increases in firms' risk margins. Without a recalculation of the TMTP, and assuming the absence of risk margin hedging, this creates a severe weakening of solvency positions.

A significant proportion of UK firms who hold a TMTP have now had at least one recalculation approved by the PRA.² Despite this large number of approved recalculations, there remains significant uncertainty in the industry around the approach and triggers for recalculation.

During 2016, the Institute and Faculty of Actuaries (IFoA) Life Board established a working party to provide timely input on the topical issue of TMTP recalculation. The focus of this working party is to understand, the following impacts for regulated UK life firms:

- The challenges associated with the recalculation of the TMTP,
- What options are available to firms and the regulator to address these challenges, and
- What good practice looks like.

The main output of the working party is this paper.

1.1. Structure of This Paper

This paper contains material of a technical nature concerning the TMTP and is therefore necessarily detailed. The working party envisages that some readers may wish to reference specific sections of this paper and have included the following signposting to key sections of the paper below.

- Section 2 provides **background** information in relation to the TMTP, including an overview of the TMTP and the regulations in relation to TMTP in place.
- Section 3 describes **why** firms might need to recalculate a TMTP: it describes the main differences between the Solvency I and Solvency II technical provisions – which give rise to TMTP in the first place – and discusses what might cause the balance sheets to move in different ways.
- Section 4 discusses **when** firms might need to recalculate the TMTP. This includes deciding on whether an event constitutes a material change in risk profile; the need to put in place a recalculation policy; and the application process for demonstrating to the regulator that a material change in risk profile has occurred.
- Section 5 discusses **how** firms may carry out the recalculation. The working party has devised some high-level principles that it may be useful to bear in mind when performing the recalculation. The section then discusses areas to consider when recalculating the TMTP and how the Financial Resource Requirement (FRR) comparison test should be applied.

¹ Solvency II Level I directive, Article 308d (3) states “...the transitional deduction referred to in paragraph 2 (a) and (b) may be recalculated every 24 months, or more frequently where the risk profile of the undertaking has materially changed.”

² Of the 33 legal entities with written notices for approval to apply a TMTP, 16 have approval to recalculate the TMTP as at 30 June 2016. See ‘Appendix B – Solvency II TMTP Approvals’ for further details.

- Section 6 considers the **implications of a TMTP recalculation looking forward** and on the management of the business. This includes the Asset Liability Management implications, a potential timeline for the recalculating of TMTP and ways in which firms may communicate the TMTP externally.
- Section 7 summarises the overall **conclusions** of this paper.

Towards the end of the paper, the following sections are included:

- Section 8 includes **references** made in this paper.
- Appendix A outlines in detail the **regulation** in relation to the TMTP and a TMTP recalculation.
- Appendix B includes analysis of **legal entities with written notices for approval to apply a TMTP**, including how many of these legal entities have had a TMTP recalculation.

2. Background

The working party's view is that the main intention of the TMTP is to mitigate the impact of the introduction of the risk margin, which significantly increases the technical provisions of firms, relative to their Solvency I Pillar II liabilities.

The risk margin was not a feature of Solvency I and firms had not generally priced in the cost of capital associated with a risk margin for all business written under Solvency I. This was particularly onerous for the UK life insurance industry given the significant bulk purchase annuity market and, until recently, compulsory purchase annuities for individuals.

As a result of this, the balance sheets of many UK insurance companies include significant volumes of business, which have a high value of risk margin relative to the value of best estimate liabilities (BEL). The working party's understanding is that for immediate annuity business the risk margin is typically c10% of BEL, rising to around c25% of BEL for deferred annuity business, although these figures vary across firms and depend on prevailing interest rates at the time of calculation.

The TMTP provides firms with a "soft landing" into Solvency II regime over the transitional period of 16 years. By deferring this impact, it ensures the risk margin required on the back book of business does not have a material short term impact, for example, on the ability to continue marketing new policies to consumers, and avoiding investment decisions that would have a detrimental impact on policyholders or on the dividend paying capacity of proprietary firms.

The TMTP also mitigates other differences between the Solvency I Pillar 2 and Solvency II technical provisions and includes a financial resource requirement comparison test. The FRR is generally applied as the sum of technical provisions, non-technical liabilities and capital requirements under the respective measures. These concepts are outlined in further detail in the section below and throughout this paper.

2.1. Regulations

Details of the regulations relevant to the TMTP are outlined in "Appendix A: TMTP Regulation".

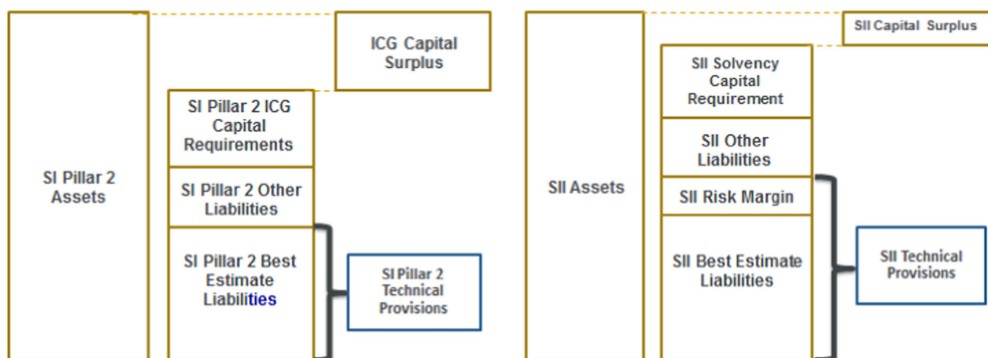


Figure 1. Example comparison of Solvency I Pillar 2 and Solvency II balance sheets

2.2. Overview of Calculation

The working party believes the primary intention of the TMTP is to mitigate the impact of the introduction of the risk margin, which is not a feature of the Solvency I Pillar II regulatory regime. This can be illustrated by comparing the balance sheet and capital requirements under Solvency I Pillar 2 to those under the Solvency II regime prior to the inclusion of the TMTP as shown in Figure 1 below.

The value of the TMTP is determined by three steps:

1. The determination of the **Unrestricted Transitional**, i.e. the TMTP prior to the FRR comparison test.
2. A **Restriction of Transitional** is applied if the Solvency II FRR after allowance for the TMTP are below those of Solvency I. Solvency I is taken as the more onerous of Solvency I Pillar 1 and Pillar 2.
3. The **Restricted Transitional** is determined as the Unrestricted Transitional less any Restriction of Transitional (if applicable).

These steps are covered in more detail below.

1. The **Unrestricted Transitional** is the excess of the Solvency II technical provisions, after deduction of the amounts recoverable from reinsurance, over the Solvency I Pillar 2 technical provisions, after deduction of the amounts recoverable from reinsurance and after any ICG³ on technical provisions and is illustrated in Figure 2 below.

It is noted that the Unrestricted Transitional only applies to business written prior to the introduction of Solvency II.

2. A **Restriction of Transitional** is applied if the Solvency II FRR, after allowance for the Unrestricted Transitional, is below those of the more onerous of Solvency I Pillar 1 and Pillar 2, as illustrated in Figure 3 below.

³ Under the previous Solvency I Pillar 2 regime, firms used their own models to determine their capital requirements; these capital requirements were known as the ICA. The PRA then had the ability to require firms to hold additional capital over and above the ICA: with ICG capital add-on issued and the total capital being termed “individual capital guidance” or ICG.

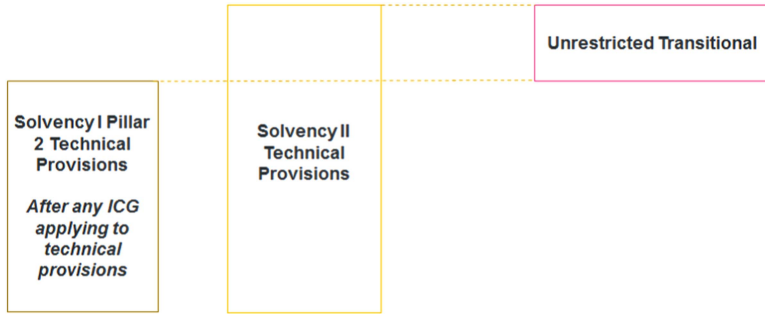


Figure 2. Unrestricted transitional

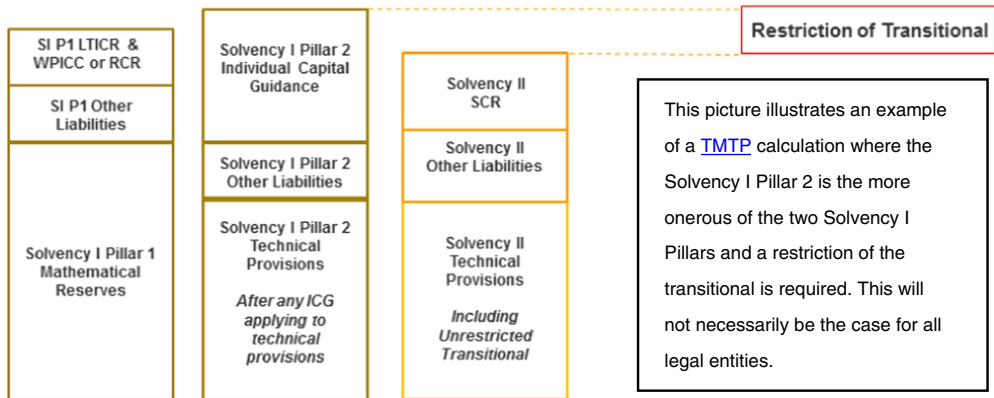


Figure 3. Restriction of transitional

The FRR comparison test is generally expected to apply to all the business in the legal entity, and not just business written prior to the introduction of Solvency II. However firms are able to apply the FRR comparison test to only business written prior to the introduction of Solvency II, if they can demonstrate that the outcome would not be materially different to a full calculation.

For some legal entities the Solvency I Pillar 1 will be the more onerous and if this was the case then the Solvency I Pillar I FRR “bar” would be higher than the Solvency I Pillar 2 FRR “bar.”

The working party also notes that the relative levels of the FRR Pillars, i.e. Solvency I Pillar 1, Solvency I Pillar 2 and Solvency II FRR, change over time, reflecting the following:

- **Transactional changes**, for example Part VII transfers and revised reinsurance arrangements applying to business written prior to 1 January 2016.
- As well as **more subtle change** over time, for example reflecting the different sensitivities of each FRR Pillar to changes in operating conditions such as interest rates or equity levels.

Practical issues concerning the application of the FRR comparison test are outlined further in section 5.4.

3. The **Restricted Transitional** is determined as the Unrestricted Transitional less any Restriction of Transitional (if applicable), as illustrated in Figure 4 below.



Figure 4. Restricted transitional

2.3. Recalculation of TMTP

A significant number of firms who hold a TMTP benefit have now had at least one recalculation approved by PRA.⁴ Despite this large number of approved recalculations, there remains significant uncertainty in the industry around the approach and triggers for recalculation.

Here we find that thinking about the TMTP recalculation under the areas of why, who, when and how helps to create good insights and discussion on the challenges firms are facing.

Why?

The TMTP was introduced to facilitate a smooth transition from Solvency I to Solvency II. However, the elements of the Solvency II balance sheet, and in particular the risk margin which the TMTP is designed to mitigate, are not static in value. Instead, they change dynamically over time reflecting changes in operating conditions (e.g. interest rates) as well as the impact of more substantive business changes such as a Part VII transfer.

This is particularly topical as during the first half of 2016 interest rates significantly reduced, which in turn increased the value of the risk margin across the industry reflecting its sensitivity to interest rates. It became clear that a number of firms would apply for a TMTP recalculation and indeed the PRA invited firms to seek approval for a recalculation as at 30/06/2016, subject to meeting their materiality criteria.

These issues are explored in more detail in section 3.

Who?

Following the reasons for why recalculation of the TMTP may be necessary, it is required to decide who will be responsible for monitoring the changes, and what governance needs to be followed.

From industry feedback that the working party has seen, it appears that the TMTP is owned by the firms' Audit Committee, the Chair of which must write to the supervisor annually to attest that the use of TMTP remains appropriate.

However, while the responsibility for submitting the attestation rests with the Audit Committee, it can be seen that the Actuarial Function is usually tasked with the actual calculations of TMTP and the maintenance of the recalculation policy. The governance followed will vary from firm to firm and will need to be set out in the firm's TMTP recalculation policy.

These issues concerning who is responsible for TMTP recalculation are not discussed further in this paper.

⁴ Of the 33 legal entities with written notices for approval to apply a TMTP, 16 have approval to recalculate the TMTP as at 30 June 2016. See 'Appendix B – Solvency II TMTP Approvals' for further details.

When?

Given the materiality of the risk margin and other elements of the Solvency II balance sheet the TMTP is designed to mitigate, firms need to be clear on when a recalculation of the TMTP is required. Recalculation will be required to:

- Reflect a material risk profile change, and,
- Reflect the biennial recalculation applied at 1 January 2018, 1 January 2020, etc.

In considering what constitutes a material change in risk profile there is an important distinction between recalculation as a consequence of operating changes and recalculations following management actions or corporate restructures – which need to dovetail with implementation planning.

These issues are explored in more detail in section 4.

How?

Firms need to develop solutions which allow them to recalculate the TMTP at future dates. The working party has identified the following main themes in relation to these recalculation solutions and these are outlined below.

Segregation of business	<p>The recalculation of the TMTP requires the segregation of the balance sheet and the capital requirements to only allow for business written prior to 1 January 2016.</p> <p>The working party is of the view that it would be particularly onerous for firms to maintain full systems to segregate all items in the FRR comparison and that therefore some simplification will generally be required in this respect.</p>
Maintaining the prior Solvency regime	<p>The recalculation of the TMTP requires firms to maintain aspects of models and methodology from the previous Solvency regime.</p> <p>The working party has developed pragmatic potential solutions firms may wish to consider in their future recalculations.</p>
Proportionate	<p>Recalculation methodology and practices should capture the material features of the TMTP, whilst not being onerous to implement and maintain.</p> <p>The working party has considered what this means in practice in more detail.</p>
Firm specific	<p>The working party is of the view that recalculation methodology and practices will vary from firm to firm.</p>
Evolve over time	<p>The working party is of the view that recalculation methodology and practices are likely to evolve over time. This reflects a combination of materiality, changes in calculation complexity and any technological advances.</p> <p>Longer term the working party expects recalculation processes to simplify, including the potential use of margins applied in TMTP recalculations to allow for any approximations.</p>

These issues are explored in more detail in section 5.

2.4. Forward Challenges and Management of the Business

The existence of a TMTP, and the recalculation of the TMTP, has significant implications on the way that insurers manage their business. The working party has considered the following areas in more detail:

Asset Liability Management	The TMTP is effectively an asset on the Solvency II balance sheet which preserves aspects of the Solvency I regime. This has implications on the ALM strategy firms might employ and on tactics to adopt where movements in operating conditions do not trigger a TMTP recalculation.
Timelines for a reset	The working party is of the view that certainty around the timeliness and likelihood of the timeline for a TMTP reset would greatly benefit the industry.
External Communications	Market announcements and supplementary information for investors in respect of the TMTP is likely to evolve over time. In particular it is expected that firms will include more information on the size of the TMTP and the run-off of TMTP. The working party explores the key themes it believes firms should consider when choosing how to communicate this externally.

These issues are explored in more detail in section 6.

2.5. Other Calculation Considerations

The remainder of this section outlines other calculation considerations associated with the TMTP. These areas are not covered further in this paper – they are though still areas to keep in mind when recalculating the TMTP.

Homogeneous risk groups

Article 308d of the Solvency II level 1 text outlines that the deduction of the TMTP may be applied at the level of homogeneous risk group (HRG).

Firms will need to consider which HRGs to apply the TMTP to, if not all, and be able to robustly derive the TMTP components for these HRGs when recalculating in line with the requirements of TMTP regulation, most notably the PRA supervisory statement on TMTP SS17/15.

Allocation of TMTP to ring-fenced funds

A firm will need to consider how to allocate the TMTP, which is derived at legal entity level down to ring-fenced funds, which are typically (but not always) with-profits funds, and the remaining part of the legal entity.

The approach firms take to achieve this will be outlined in their initial TMTP application or any subsequent addendums.

Allocation of TMTP to risk margin and BEL

Firms need to allocate the TMTP between the risk margin and BEL, taking into account the relevant EIOPA Level 3 guidance. The relevant EIOPA Level 3 guidance covers the interaction between the TMTP and the Solvency II technical provisions, excluding the risk margin, where these Solvency II

technical provisions are used as volume measures for other Solvency II calculations such as the Standard Formula operational risk capital requirements and the linear component of the Solvency II Minimum Capital Requirement (MCR). “Appendix A – TMTP Regulation” includes a reference to this EIOPA Level 3 guidance.

However, it is noted that when recalculating the TMTP after 1 January 2016 new business written after 1 January 2016 will generate a risk margin, but may be outside the scope of the TMTP. Therefore firms will need to form a view as to whether to:

- Allocate the TMTP to the total risk margin including both pre- and post-1 January 2016 business, or,
- Only allocate TMTP up to a maximum of the risk margin arising on pre-1 January 2016 business.

Furthermore, firms will need to consider the interaction and ordering of the allocation of the TMTP to ring-fenced funds and the allocation between risk margin and BEL.

Allocate to HRGs

For HRGs which are in scope of the TMTP calculation, firms will need to allocate the TMTP appropriately in Pillar 3 QRT disclosure forms and narrative reporting.

This is required in a number of places including the Solvency II balance sheet and for other, more granular disclosures, of the Solvency II technical provisions such as the life and health similar to life technical provisions QRT form (S.12.01.02).

PS11/17 Scope of the FRR comparison test

The PRA policy statement PS11/17 clarifies that the FRR comparison test should apply to all the business written in within a legal entity, and not just business written prior to the introduction of Solvency II.⁵ The working party has been active in seeking a clarification on this important detail, and overall we view this as a positive step.

The working party notes that this change could lead to an unintended consequence where writing new business following the introduction of Solvency II could act to increase the value of the overall TMTP under certain circumstances. These circumstances include:

- The legal entity which the business is being written has a TMTP based on a restriction of the transitional, and,
- The Solvency II technical provisions are higher in value than the Solvency I Pillar 2 technical provisions. This is generally expected given the existent of a risk margin under Solvency II, which is not a feature of Solvency I Pillar 2.

Tax affecting the TMTP

The TMTP is considered to be a temporary or timing difference between IFRS and Solvency II technical provisions which in line with the accounting standard should be reflected in the Solvency II deferred tax liabilities. For proprietary firms, this increases deferred tax liability on the Solvency II balance sheet compared to those had there been no TMTP.

⁵ However firms are able to apply the FRR comparison test to only business written prior to the introduction of Solvency II, if they can demonstrate that the outcome would not be materially different to a full calculation.

Increased deferred tax liabilities increase the potential loss absorbing capacity of deferred taxes (LACDT) and so can (if reflected in the capital calculation) lead to a reduction in the solvency capital requirement (SCR), compared to calculating the SCR without increasing the deferred tax liability arising from the TMTP.

If the increase in deferred tax liability exceeds the increase in LACDT this increases the overall FRR, compared to not allowing for increased deferred tax, potentially reducing the amount of restriction. However, if firms do not allow for the deferred tax impact in this manner and try to allow for it as an end piece adjustment then some circularity and complexity is introduced. Figure 5 below outlines a possible process to help manage this.

It is noted that chart below is intended to provide a relatively high-level view of the interaction between deferred tax and the TMTP, and is not intended to be a substitute for expert tax advice. It is noted that it ignores complications associated with the recognition of a “net” deferred tax asset on the Solvency II balance sheet.

Under Solvency II a “net” deferred tax asset, i.e. the deferred tax asset in excess of the deferred tax liability, is not generally recognised on the balance sheet results and is reduced to zero. This may occur for a Solvency II balance sheets prior to the TMTP, where the introduction of a TMTP would first offset any “latent” deferred tax asset, before resulting in a “net” deferred tax liability.

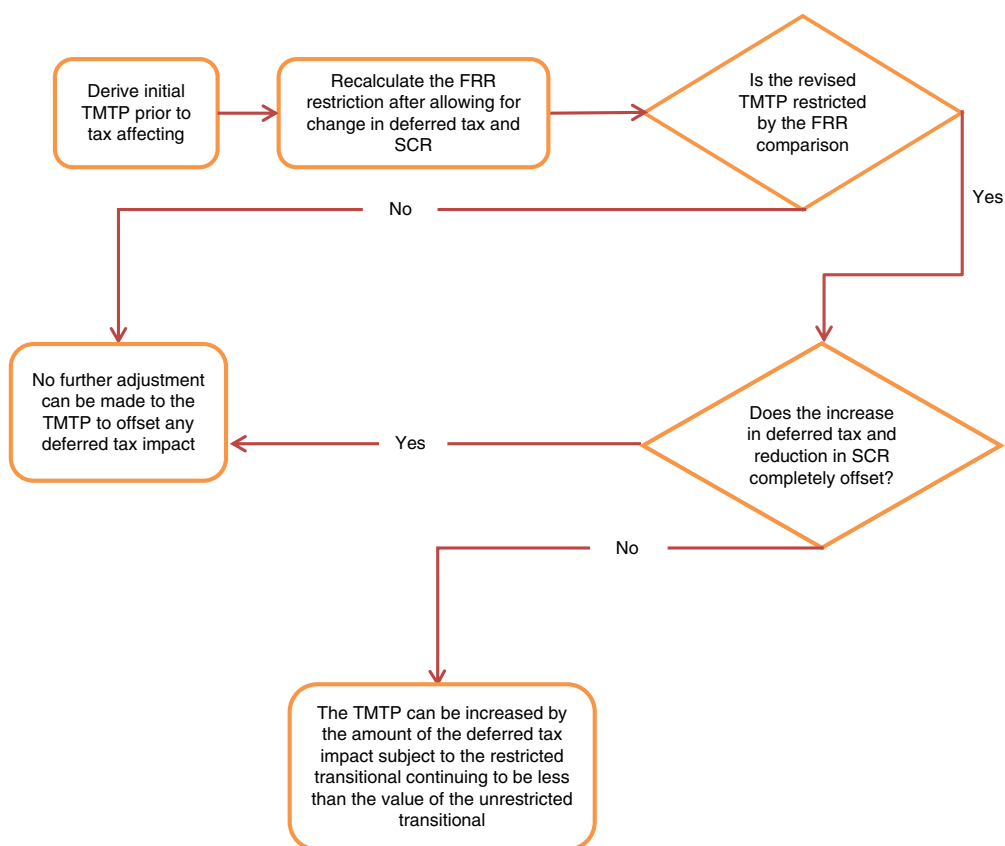


Figure 5. Tax affecting the TMTP

3. Why Would Firms Want to Recalculate the TMTP?

The main reason for recalculating the TMTP is to ensure that the TMTP is still appropriately aligned to the differences in Solvency I and Solvency II technical provisions it is designed to mitigate. In particular, it is noted that these differences, and in particular the risk margin, are not static in value and dynamically change over time reflecting changes in operating conditions and/or more substantive change like a Part VII transfer.

To consider why firms would want to recalculate the TMTP, the working party has considered the main differences between the Solvency I and Solvency II technical provisions that give rise to the TMTP. Any change in these factors could alert to the need to recalculate the TMTP and firms will need to consider the impact from each of these factors when they perform TMTP recalculations. The main differences are:

- (i) Risk margin;
- (ii) Basic risk-free rate;
- (iii) Solvency II matching adjustment (MA) and the Solvency I Pillar 2 illiquidity premium;
- (iv) Solvency II volatility adjustment;
- (v) Contract boundaries;
- (vi) Treatment of ancillary expense companies;
- (vii) With-profits future shareholder transfers;
- (viii) With-profits planned enhancements.

Each of these is discussed in turn below.

It is noted that this list reflects the main differences in Solvency I and Solvency II technical provisions and is not intended to be exhaustive.

In addition, this section also covers related areas of note including changes which could impact any of the above items (3.9) and stress and scenario testing (3.10).

3.1. Risk Margin

The risk margin is a new requirement introduced by Solvency II. In theory, the risk margin is the additional amount above the BEL required to transfer the business to a third party. The risk margin represents the cost to the reference undertaking of providing capital to cover its SCR for non-hedgeable risks over the expected lifetime of the business. It is calculated by projecting the costs of holding capital in respect of non-hedgeable risks over the lifetime of the business, based on a fixed cost of capital, and then discounting by the Solvency II curve to find the present value of the costs.

As the risk margin is the discounted present value of capital costs, it can be extremely sensitive to interest rates. This can be significant for firms whose capital requirements run-off slower than its BEL. This can manifest itself as a double impact for risks where the capital requirement is a function of interest rates, e.g. longevity risk. In this situation, a fall in interest rates would both increase longevity capital requirements and also increase the present value of future costs.

Although it is noted that this may be partially mitigated through a faster run-off of future longevity stresses.

The risk margin may also change as a result of a change in the projection of the capital requirements in respect of non-hedgeable risks. This could be because the company in question changes how it calculates its capital requirements: for example because the company switches from standard formula to internal model; because the company changes its internal model calibrations; or because the standard formula calibrations change.

The company may also change its risk margin methodology calculation. For example, some companies use a “risk carrier” approach to project the capital requirements for non-hedgeable risks. This assumes that a particular component of the capital requirements runs off in line with some other item that has already been projected – for example, the expense risk SCR component might be projected to run-off in line with the number of policies. If the company changes its choice of risk carrier, the risk margin may change.

The risk margin will also change as the business runs off. It is driven not just by the speed of the run-off – which affects all of the items in the list above – but also by the way in which the balance of risks changes. For example, if a portfolio of protection business runs-off faster than a portfolio of annuity business, then the allowance for diversification between the two lines of business will change, impacting the risk margin.

Finally, the size of the risk margin will be affected by the company’s use of appropriate reinsurance, with a credit worthy counterparty. If the company reduces its exposure to longevity risk, mortality risk, lapse risk or any other “non-hedgeable” risks through its use of reinsurance then the risk margin will decrease.

3.2. Basic Risk-Free Rate

For most currencies, including GBP, the Solvency II basic risk-free rate is based on swap yields. Solvency I Pillar 2 was less prescriptive with some firms basing their risk-free rate on swap yields and other firms basing their risk-free rate on gilt yields. The gilt-swap spread may therefore lead to differences in technical provisions, which affect TMTP. It follows that changes in the gilt-swap spread may lead to a firm needing to recalculate its TMTP.

In addition to this, there are other differences in the basic risk-free rate structure under Solvency II which are likely to differ to Solvency I. These include:

- The use of swap yields under Solvency II for GBP denominated liabilities. As noted above, this was not prescribed under Solvency I Pillar 2.
- The inclusion of the Solvency II Credit Risk Adjustment. This is a deduction to the Solvency II risk-free curve to allow for the additional credit risk which is perceived to be implicit within the swap curves.
- The inclusion of the Solvency II Ultimate Forward Rate, which has a more material impact on Euro denominated liabilities, than Sterling denominated liabilities, but may impact UK legal entities with non-domestic branches.

- The Solvency II Matching Adjustment and Volatility Adjustment (VA), which are outlined in more detail below.

Any material changes in the differential between the basic risk-free rates applied under Solvency I Pillar 2 and applied in Solvency II could lead to a recalculation of the TMTP.

3.3. Solvency II MA and the Solvency I Pillar 2 Illiquidity Premium

Both the Solvency I and Solvency II risk-free rates could be adjusted by either the illiquidity premium or the MA. These items are conceptually similar but there are some important differences between the two.

The overall purpose of the Solvency I Pillar 2 illiquidity premium and Solvency II MA is to allow firms to benefit from the excess spread over the risk-free rate on assets backing liabilities, where assets are “bought to hold” to maturity. In order to benefit from this excess spread over the risk-free rate firms must ensure that assets and liabilities are suitably well matched and in particular the liabilities are predictable in nature and unlikely to result in a future liquidity demand which would require a forced sale of assets to meet.

The method of calculation is more prescribed under Solvency II, while under the Solvency I Pillar 2 regime firms had more discretion to develop their own approaches. For example, the working party understands that some firms did not make an allowance for the costs of downgrades in their Solvency I Pillar 2 technical provisions: only the costs of defaults. In addition, firms may have calibrated their Solvency I Pillar 2 default allowances using different data to that used to calibrate the Solvency II allowance, or may have used a different approach – such as linking expectations of future defaults to the size of the spread.

There may also be minor differences in the way that the spread on the assets is determined under Solvency II compared to how it was determined under Solvency I Pillar 2. For example, companies were only able to include some of the cash-flows arising from callable bonds into account when calculating the MA. The MA and illiquidity premium may therefore change by different amounts in response to movements in the price of callable bonds.

A further example relates to the treatment of illiquid assets such as Equity Release Mortgages, Commercial Mortgages or Infrastructure assets. Under Solvency I Pillar 2 firms would have developed internal ways of measuring the required deduction for “defaults,” including more bespoke risks associated with these assets, and include a best estimate view of this deduction in the calculation of BEL. Under Solvency II, firms are required to map these assets to Fundamental Spread “buckets,” which have been calibrated using corporate bond data. This can result in differing levels of expected “defaults” in the Solvency I Pillar 2 and Solvency II technical provisions.

A further way in which the difference between the MA and illiquidity premium could change over time would be if there is a change to the assets used to back the liabilities. This may happen as a result of trading activity or simply as a result of the assets and liabilities running off over time.

Finally, if a firm does not use a MA, but seeks to apply for a MA to benefit from lower Solvency II technical provisions, a recalculation of the TMTP would be expected to largely offset any benefits arising on business

written prior to 1 January 2016. It is noted that change in use of MA is included as an example of a material risk profile change in the PRA's supervisory statement on TMTP Recalculation (SS6/16).

3.4. Solvency II Volatility Adjustment

Where a MA is not applied, a further application can be made to adjust the Solvency II discount rate to include a VA. This is an addition to the basic risk-free rate linked to the level of spreads observed in the market. It is determined by EIOPA based on the spreads on a representative portfolio of assets – not necessarily the assets held by the firm. The VA is most commonly used for with-profits business and annuity liabilities that are not eligible for the MA.

There was no equivalent of the VA under Solvency I Pillar 2 and any changes to the VA will therefore impact on the TMTP. These changes could arise either from market movements in EIOPA's notional portfolio, changes in sensitivity due to changes in economic conditions or from EIOPA changing the way that it calculates the VA.

It is noted that firms may have chosen to apply for a VA where an illiquidity premium was applied in their Solvency I Pillar 2 technical provisions. The MA application may have been deemed too onerous to apply for, or an MA application may have been submitted but not approved. It is noted that for UK business use of the VA requires a formal application and regulatory approval, although this process is considerably less onerous than the equivalent MA application and approval process.

As per MA, a firm seeking to change their usage of the VA would need to consider the impacts from a recalculation of the TMTP. It is noted that change in use of VA is included as an example of a material risk profile change in the PRA's supervisory statement on TMTP recalculation (SS6/16).

3.5. Contract Boundaries

Solvency II introduced limits on the extent to which future premiums could be allowed for in the valuation of insurance policies. This means that the Solvency II valuation generally assumes that policyholders will continue to pay premiums for a shorter period than was assumed in the Solvency I Pillar 2 valuation. The impact of this is generally most significant for unit-linked and group-life business.

As time moves on and premiums outside the Solvency II “contract boundary” are received the contract boundary difference between Solvency I Pillar 2 and Solvency II technical provisions would reduce. The deduction recalculation at a date after 1 January 2016 would therefore include a reduction from contract boundary impacts.

As a result of the different contract boundaries, the Solvency II and Solvency I Pillar 2 technical provisions will generally change by different amounts as interest rates move. This is simply a result of the movement in the yield curve affecting a different set of cash-flows. This will have a knock-on effect on the TMTP. It is generally to be expected that any change in interest rates would have a lower impact on contract boundary differences than it would on the size of the risk margin.

Any subsequent changes from using a short to long contract boundary will of course also affect the TMTP: since this will impact Solvency II technical provisions but not Solvency I Pillar 2 technical provisions.

3.6. Treatment of Ancillary Expense Companies

Where a firm uses an ancillary expense company, which charges fees to the legal entities for expense services, and this ancillary expense company is not a subsidiary of the legal entity, this can result in differences in the Solvency I Pillar 2 and Solvency II technical provisions. This difference results from the use of expense assumptions in Solvency I Pillar 2 technical provisions which “look through” to the underlying expenses incurred and contrasts with Solvency II technical provisions which are valued based on the fees charged by the ancillary expense company.

3.7. Future Shareholder Transfers in Respect of With-Profits Business

Shareholder transfers dependent on with-profit business participation are not liabilities in Solvency II technical provisions as they generally were in Solvency I Pillar 2 technical provisions. Again the working party has observed, a variety of approaches taken in the Solvency I Pillar 2 technical provisions.

The different treatment may have made a negative contribution to the initial deduction. As time moves on and the transfers are paid the contribution to the difference in Solvency I Pillar 2 and Solvency II technical provisions will reduce and so on recalculation the TMTP would, other things being equal, increase.

The issues concerning with-profits future shareholder transfers are outlined in more detail in section 5.4.3.

3.8. With-Profits Planned Enhancements

There are various ways in which distributions may be made to with-profits policyholders. Under Solvency II, only some types of future distribution are allowed for when calculating technical provisions for with-profits business; other types of distribution are only recognised when they are deemed permanent and fully recognised in the asset share. This differs from the Solvency I Pillar 2 regime, where firms typically allowed for all types of future distribution in their technical provisions, although the working party understands that no single Solvency I Pillar 2 approach existed.

Recognition of with-profits planned enhancements as liabilities in Solvency I potentially reduces the TMTP given they are not recognised in Solvency II technical provisions.

3.9. Changes That Could Impact on Any of the Items Above

In addition to the specific factors highlighted in each of subsections 3.1–3.8 above, there are of course factors that could affect any of the items.

Anything that affects the number of policies on the books will have an impact on each of the areas of difference between the Solvency II and Solvency I Pillar 2 technical provisions. A change in the amount of business in force could result from the acquisition or disposal of a block of business or from decrements such as deaths, surrenders, or lapses being different to expected.

3.10. Stress and Scenario Testing

As part of a firm's effective risk management process, stress and scenario testing will be undertaken. The TMTP will need to be recalculated under a range of different outcomes. However, firms should consider the results on both a "static" basis and a recalculated basis as PRA approval to recalculate would still be required under stressed conditions. The results of the stress and scenario testing would likely feature in the firm's ORSA (Own Risk and Solvency Assessment).

The PRA's consultation paper CP47/16 highlights the need, where the TMTP is a material component of own funds, for firms to "analyse the material components and drivers" and also to consider "how those components may change over time and under a range of operating conditions". The PRA expect this analysis to be included as part of the ORSA and to be available to the PRA on request.

The ORSA should include projections of own funds and required capital over the business planning period. It would be expected that, where a TMTP is in use, the business planning process would already be considering how the TMTP may change over the business planning period.

4. When to Recalculate the TMTP

4.1. Introduction

A recalculation of the TMTP can occur in the following circumstances:

- Every 2 years after 1 January 2016 (section 4.2.1); or
- More frequently to reflect a **material risk profile change** (section 4.2.2)⁶

In considering what constitutes a material change in risk profile, there is an important distinction between recalculation as a consequence of operating changes and recalculations following management actions or corporate restructures – which need to dovetail with implementation planning.

The working party believes the primary evidence demonstrating that there has been a material change in risk profile is the impact on solvency coverage of a pro-forma position allowing for a recalculation of the TMTP, relative to the solvency coverage based on the TMTP derived at the last recalculation date and run-off appropriately. If this change in solvency coverage is greater than 5% then it should be considered that there has been a material change in risk profile in line with the criteria outlined in the PRA's supervisor statement SS6/16.

In terms of communicating a material change in risk profile, both to the Board and the regulator there may be benefit from turning the solvency coverage ratio triggers into a range of equivalent single factor stresses so that it is possible to understand and foresee the sort of change in, for example, interest rates that might lead to a 5% solvency coverage trigger being breached. In particular, this expression may help those who are not close to the calculation understand it in business terms.

Other external factors are also important to consider where the TMTP is of material importance to solvency coverage or a firm's risk appetite, for example: alignment of a recalculation with reporting

⁶ Solvency II Level I directive, Article 308d.

dates; and dividend strategy. Communication strategy within external disclosures is also very important, particularly in the early years of Solvency II when the TMTP will be new to end-users, such as market analysts, and is likely to be a material component of a firm's Solvency II balance sheet. Firms should therefore give careful consideration to the level of information disclosed and ensure that is appropriate for its intended audience.

This creates a bit of a chicken-and-egg conundrum and demonstrates the real need for a quick and well-understood process for application for a TMTP recalculation. The financial statements should reflect a true and fair position...so is reporting with or without a TMTP recalculation true and fair?

It was entirely conceivable that firms who accepted the PRA's invitation to recalculate at mid-year may wish to again apply for a recalculation at year-end.⁷ On the other hand, those who have not yet recalculated during 2016 and are currently in the process of applying to do so have been asked to recalculate at the 2016 mid-year position to create a consistent comparison against those firms who did recalculate.

Supervisory approval is required to recalculate in the event of a material change in risk profile and will require re-calculation triggers to be defined in a firm's recalculation policy, which is covered in section 4.3. The application process for gaining approval is considered in section 4.4.

4.2. Circumstances for Recalculation

4.2.1. Recalculation every 2 years

SS6/16 indicates that the PRA expects firms to carry out a recalculation every 2 years from the date of implementation of Solvency II (1 January 2016) over the TMTP's 16-year lifetime, irrespective of any recalculations resulting from a material change in risk profile (which are discussed in section 4.2.2 below).

Is resetting of TMTP on recalculation every 2 years compulsory even if the change is not material?

The purpose of the biennial recalculations is said to be to keep alignment between the relief afforded by the TMTP and those elements of technical provisions for which the TMTP was designed. No mention is made to materiality for biennial calculations which is in contrast to recalculations for changes in risk profile for which the SS indicates that only if the solvency cover ratio changes by 5% or more would the PRA expect firms to apply for a recalculation. This could be taken to imply that the TMTP would be reset on two yearly recalculations even for small changes. Firms could though presumably discuss this point with the PRA.

Is supervisory approval required to recalculate every 2 years?

For the biennial recalculation, it is currently unclear as to whether a firm will have to follow the same process as for an application to recalculate following a material change in risk profile or whether a

⁷ As it transpires a number of firms with a material TMTP included a recalculated TMTP in their publically announced solvency II positions. These recalculations primarily reflected the general rise in interest rates relative to mid-year 2016.

firm can recalculate without requiring PRA approval. The regulator's requirements for such a recalculation should be discussed with a firm's supervisor and could be reflected in its policy. The policy could also include the conditions under which a firm would not recalculate its TMTP at a biennial review date (e.g. immateriality triggers).

4.2.2. Material change in risk profile

Outside of the regular biennial recalculation cycle, the TMTP can be recalculated if a firm can demonstrate that a material change in its risk profile has occurred. A firm's definition of a material change in risk profile needs to be defined in its recalculation which is discussed in section 4.3 below.

What sort of circumstance may result in a material change in risk profile?

SS6/16 states "In the PRA's view a variety of circumstances may give rise to a material change in risk profile. Risk profile changes that may trigger a recalculation include but are not limited to the following examples:

- acquisition or disposal of business priced and written before 1 January 2016;
- material changes to the reinsurance programme for business priced and written before 1 January 2016;
- unexpected changes to the run-off pattern of the insurance obligations in scope of the transitional measure;
- a change in the firm's use of either the matching adjustment or the volatility adjustment; or
- changes in operating conditions, including in interest rates or market prices of other financial assets leading to revised market risk exposures, or crystallisation of an insurance risk exposure, e.g. a change in projected mortality experience."

The list above can be classified under two main headings, changes related to: a change in operating conditions (third and fifth bullets) that are generally outside a firm's own control; and more structural changes that are likely to be initiated internally (first, second and fourth bullets).

What level of evidence would be required to support a change in risk profile needing recalculation?

A compelling argument that the recalculation would have a material impact on the entity's balance sheet is required. The SS indicates that the PRA's assessment of a material change in risk profile will take into account the:

- (i) change in risk-free rate (expect 50 bps or more in the 10-year rate);
- (ii) impact on solvency coverage ratio, and
- (iii) impact on recalculation of solvency coverage ratio (expect 5 percentage points or more) at a legal entity level.

The changes in the risk-free rate are expected to be sustained. A sustained change is defined as one that has persisted over a significant period of time or driven by factors that are likely to persist over a significant period of time. The PRA also note that changes in credit spreads could be relevant in this assessment but this depends on a firm's asset holdings.

The PRA expects firms to provide evidence when applying a recalculation taking into account the PRA's own three assessment criteria described above. For example, to explain materiality of the change in solvency ratio by comparison to expected frequency and likelihood of occurring. The PRA states that it is their view that the expected frequency and likelihood of changes occurring in the solvency ratios and own funds are key indicators in determining what constitutes a material change in risk profile.

It may be appropriate for a firm to have different thresholds to those outlined in the SS, as discussed, and if this is the case these should be discussed with the firm's regulatory supervisor. Evidence of a breach of the thresholds set out in the firm's recalculation policy will need to be agreed internally and then provided to the PRA as part of the recalculation application.

At what level in a firm's business hierarchy should the TMTP recalculation impact on solvency coverage ratio be assessed?

The PRA SS on the recalculation of the TMTP outlines that the PRA would not generally expect a firm to apply for a TMTP recalculation where the increase or decrease in solvency coverage ratio at a legal entity level is less than 5 percentage points.

The working party has identified a situation where assessing the impact of a pro-forma TMTP recalculation on solvency coverage ratio at a legal entity level may not be fully appropriate in certain instances. Specifically for firms with ring-fenced funds (RFF), a legal entity solvency coverage ratio does not necessarily demonstrate a change in risk profile as a recalculation of the TMTP does not impact the surplus assets available due to RFF restrictions. Furthermore, RFF business dilutes the impact on the coverage ratio of a recalculation of the TMTP. The simplistic example below demonstrates this:

Before a recalculation of the TMTP, the firm's position is as follows:

- (i) TMTP in respect of non-RFF business = £1,000 m, with own funds of £3,000 m and SCR of £1,500 m so non-RFF coverage ratio = 200%.
- (ii) TMTP in respect of RFF business = £500 m, with own funds of £1,000 m and SCR of £400 m so RFF coverage ratio 250%.
- (iii) Prior to recalculation of the TMTP, the legal entity solvency coverage ratio = own funds of £3,400 m, with SCR of £1,900 m = 179% (i.e. lower than the non-RFF ratio in isolation because there are no surplus assets from the RFF taken into account when determining the ratio).

Risk profile changes have occurred which could impact the TMTP for RFF business differently to that of non-RFF business such that:

- (i) TMTP in respect of non-RFF business = £950 m, with own funds of £2,950 m and SCR of £1,525 m so non-RFF ratio = 193% (i.e. reduction of 7 percentage points in comparison to pre-recalculation)
- (ii) Say there are three scenarios for RFF business, one where the TMTP reduces (i.e. (a) below), one where the TMTP increases (i.e. (b) below) and one where the TMTP is unchanged (i.e. (c) below)
 - a. TMTP in respect of RFF business = £480 m, with own funds of £980 m and SCR of £400 m so RFF ratio = 245% (i.e. reduction of 5 percentage points)

b. TMTP in respect of RFF business = £520 m, with own funds of £1,020 and SCR of £400 m so RFF ratio = 255% (i.e. increase of 5 percentage points)

c. TMTP in respect of RFF business is unchanged so RFF ratio = 250%

(iii) After recalculation of the TMTP, the legal entity solvency coverage ratio = own funds of £3,350 m, with SCR of £1,925 m = 174% (i.e. reduction of 5 percentage points) regardless of whether scenario a, b or c has occurred because the level of the RFF SCR is unchanged and there are no surplus assets.

It is therefore possible to have a change in risk profile in respect of RFF business in isolation, non-RFF business in isolation or both together that may result in a change in legal entity coverage ratio that is below the PRA's indicative view that a material change in risk profile would result in a movement of 5 percentage points or more, even though when considering the business separately, as most firms do for the purpose of risk management, the change in coverage ratio exceeds 5 percentage points. The working party view is that the legal entity solvency coverage ratio for the purpose of calculating the impact of a TMTP recalculation may require adjustment where RFF restrictions exist. Such an adjustment would likely need to be discussed and agreed with the PRA.

Can firms have triggers in their policies different to the 50 bps and 5% cover ratio in SS6/16?

The PRA expects firms to develop their own policy setting out "how the design and calibration of the triggers are related to the firm's risk profile." The SS also requires firms when they are making an application for approval to recalculate to consider the PRA's indicative view of a material change in risk profile (i.e. a sustained change of 50 bps and 5% movement in coverage ratio). However, the SS also states, in the context of the cover ratio, that "the degree of change that is considered material will depend on individual firms' risk profiles." As a result, the SS leaves it open to firms to justify a higher or lower threshold based on their own firms' sensitivities. This includes demonstrating that the chosen threshold would not prevent a reduction in the TMTP when circumstances imply reduced need for the TMTP, i.e. that triggers are symmetrical.

If PRA invite a recalculation should it be compulsory?

SS6/16 refers to the PRA inviting firms to recalculate the TMTP where external market-wide events lead to a change in market conditions that would be likely to cause a material change in firms' risk profiles. However, firms are required to justify that the market-wide event had a material impact on their own risk profiles in order to carry out recalculation. It is recognised that events could affect firms differently, having material impacts on some firms and little impact for others. It follows that recalculation should not be compulsory and would instead depend on how a particular event affected different firms. Firms could though be expected to justify why recalculation was not appropriate, for example, because it was not in line with the policy or because, based on recent sensitivities, a particular event would not have a material impact. The working party would hope the overhead of demonstrating why recalculation is not appropriate would be less onerous than seeking approval for a recalculation. Notwithstanding this point, the recalculation estimate produced to support a recalculation or non-recalculation should be equivalently robust.

Firms are expected to have symmetric triggers for recalculation. They would, therefore, be expected to show non-recalculation was in line with a symmetric policy and not, for example, influenced by the likely direction of change on recalculation.

4.3. Firm's Recalculation Policy

Overview

Firms are required to develop an internal policy on the recalculation of the TMTP and agree this policy with their PRA supervisor. This policy should also be approved via an appropriate level of internal governance, for example, be approved by the Audit Committee or Board. A clear and well prepared policy that has been agreed by the PRA will be of benefit to a firm, as this is likely to increase the likelihood and improve the timeliness of approval, whenever recalculation applications are made. It also means that the policy can be confidently reflected in a firm's strategy/dividend planning and ALM approach.

A TMTP policy could benefit from a clear upfront articulation of the purpose and objectives of recalculation to provide greater understanding of the firm's rationale for the chosen recalculation approach and triggers and what these are designed to achieve. Use of some examples of circumstances that would and would not lead to a recalculation may help to give greater clarity on how the TMTP would be managed in volatile markets.

Content

The working party's suggested content of a firm's TMTP recalculation policy covers the following eleven areas:

- Coverage
- Circumstances for recalculation
- Recalculation triggers and monitoring
- Recalculation method
- Timelines and governance
- Run-off method
- Regular review of the policy
- Internal consistency
- Disclosures
- Voluntary reductions
- Compliance with regulations and Supervisory Statements

These are outlined in more detail below.

a. Coverage

The policy should clearly state which legal entities within the wider Group the policy relates to, and what the relationship(s) between companies covered by the policy are. Where principles, methods or triggers differ between entities covered by the same policy, these differences should be clearly delineated.

Where a firm has ring-fenced fund(s) and allocates a TMTP to one or more of these ring-fenced funds, the policy should state which ring-fenced funds the policy relates to and the relationship(s) between the ring-fenced funds and the remaining part of the fund, or between different ring-fenced funds.

b. Circumstances for recalculation

The policy should clearly state the circumstances likely to result in a recalculation. The list should aim to be exhaustive although in practice this may be difficult to achieve and firms should ensure that their policy is sufficiently flexible, while still remaining appropriate and fit for purpose, should such an event occur. Whether the crystallisation of one or more these events would result in a recalculation of the TMTP will depend on its materiality.

Circumstances for a recalculation will cover both changes in operating conditions and other, more structural, changes in the composition of pre-1 January 2016 business.

c. Recalculation triggers and monitoring

The policy should clearly define the materiality triggers that, if met, would result in an application to recalculate the TMTP. The triggers may vary from firm to firm and will depend on each firm's own risk profile and, to a certain degree, risk appetite. They will, of course, have to consider those described in the PRA's Supervisory Statement SS6/16. Triggers could be based on the movement in solvency coverage only in relation to components of the TMTP (e.g. exclude dividend payments) with potentially more sophisticated rules around timing of recalculation being developed.

At a practical level, a firm needs to be able to monitor its position against the triggers and this consideration should be factored into the policy. Monitoring can be either input (e.g. frequency of event) or output (e.g. post-recalculation change in pro-forma solvency ratio) driven or a combination of the two. However, the monitoring needs to be sufficiently robust so that applications can be made when they are actually required (i.e. when the criteria outlined in the PRA's Supervisory Statement SS6/16 are met).

The policy should also state whether triggers are in relation to standalone events only or whether they could also relate to the accumulation of a number of smaller events. If the latter is deemed to be a reasonable approach for the firm, then the policy should consider how it would treat the accumulation of changes in operating conditions (e.g. interest rate changes) and structural events (e.g. a Part VII transfer or a sale/purchase of business). The former may well not pass the other PRA's materiality tests outlined in 4.2.2. And so if the market change is not a sustained change then it is possible that a firm applying to recalculate its TMTP in such a scenario (in conjunction with (a) structural change(s)) may find that its materiality triggers are no longer being met by the time approval to recalculate is received, if market levels revert in the prevailing period. While approval to recalculate is likely to be at a valuation date in the past, careful consideration will have to be given as to whether to implement the recalculation in such a situation.

A firm's policy should also consider how the TMTP should be adjusted over and above linear run-off between recalculations within internal and external solvency reporting. Here a firm may wish to periodically estimate (e.g. quarterly) the true underlying value of the TMTP and possibly allow for the underlying value of the TMTP within its Management Information and solvency disclosures, where possible. Although, for solvency disclosures it is worth noting that the TMTP cannot be increased above the level last approved by the Audit Committee, in theory it is possible to decrease the TMTP in solvency disclosures. This asymmetry is not necessarily required for internal reporting purposes, but it may be helpful to align to the external reporting approach to avoid confusion. Whatever approach is taken here, it must be clearly communicated to the end users of the information.

How the TMTP will be monitored against the recalculation triggers for a material change in operating conditions should be described in the policy. An efficient approach would be to re-use or extend existing solvency monitoring processes. The policy should also consider for how long a trigger must be breached before an application to recalculate the TMTP is made to the regulator; in particular, the SS refers to changes in interest rates being sustained. The policy will therefore need to state what constitutes the firm's view of a sustained change in interest rates. It could be inferred that the PRA's view of a sustained change is a trend over 6 months. It is likely that sustainability is a particular focus of the PRA to ensure that:

- (i) a recalculation is not being requested as a result of normal market volatility and
- (ii) the frequency of recalculation requests is reduced to allow for practical considerations from a PRA perspective.

The frequency and outcome on the change in solvency ratio and own funds will vary from firm to firm and will reflect a combination of the following:

- The magnitude of the TMTP relative to the solvency position of the legal entity.
- The sensitivity of business to changes in the trigger, for example the sensitivity of the risk margin to interest rate movements is expected to be greater for a legal entity with mono-line annuity business compared to a legal entity with shorter duration business.
- The general prevailing economic conditions and in particular changes in the level of interest rates.

d. Recalculation method

A detailed description of how the recalculation will be performed, including justifications of areas where discretion or proportional approaches have been used, should be included in the policy. Where areas of regulations and supervisory statements are not prescriptive the policy should clearly outline the firm's interpretation and justify why this interpretation is appropriate.

It should be noted that the recalculation methodology does not necessarily need to be fully contained within the policy; it could be referenced as a separate document. Separation may be helpful from a practical perspective, for example, to reflect different governance paths or frequency of update/review.

The recalculation methodology should also cover how the recalculated TMTP should be allocated across Homogenous Risk Groups.

e. Timelines and governance

A firm's policy should consider the broad timeline from the point of recalculation trigger being met right through to the point of reflection of the recalculated TMTP in a firm's solvency reporting templates. This timeline should include the internal governance steps that are required before an application to recalculate is made to the PRA and the turnaround time for the PRA review. It is also important that firms understand the content and time required by the regulator to approve an application, to support efficient balance sheet management. It is therefore beneficial for a firm to have an open and frequent dialogue on TMTP recalculations with their regulator, especially while their recalculation policy is being developed.

It is a requirement for the Board to be content for a recalculation application to be made and that the Audit Committee must sign off the recalculated TMTP following an approval from the PRA to recalculate. These governance points should be reflected in policy and process.

For a recalculation of the TMTP resulting from a change in operating conditions, the policy should state whether the recalculation date will be related to the date that the application is made or as at another date such as the date it will be reflected in a firm's solvency reporting templates. This point will be guided by dialogue with a firm's supervisor.

Where a recalculation of the TMTP results from a change in risk profile, not connected to operating conditions (i.e. structural), then the policy should ensure that the recalculated TMTP is only introduced at the same time that the material change in risk profile is made. In practice, this will require regular and timely discussions with the regulator and the TMTP recalculation process will have to be factored into internal governance and implementation timelines. In particular, an application to recalculate should be made with sufficient time for the regulator to provide contingent approval so that the recalculated TMTP can be implemented at the same time as the structural change is made.

f. Run-off method

The approach to run-off should complement the recalculation method, so that the TMTP runs off to zero over its lifetime in a sensible manner. The policy should consider when and how the TMTP is run-off in a firm's solvency estimates and regulatory disclosures. For example does the TMTP run-off annually and if so should it be run-off on 31 December in line with reporting dates or 1 January in line with regulation. EIOPA released a guidance statement in December 2016 that stated either were permissible for regulatory reporting purposes. However, the guidance stated that if a 1 January date is selected then the firm should ensure that the monetary impact of the run-off on 1 January is disclosed in its annual Solvency II Pillar 3 disclosures, in order to demonstrate a true and fair view of the firm's disclosures. The EIOPA guidance also stated that it was permissible for a firm to run-off the TMTP more frequently, for example quarterly.

As described in section 5.3.1, there are a number of methods to avoid the "Double Run-off" issue and the policy, if not already reflected in the recalculation methodology, should reflect the firm's chosen approach.

g. Regular review of the policy

The policy should be regularly reviewed for appropriateness and the policy should state the frequency of these reviews. For example, as the TMTP run-offs to a significantly lower level in the later years of its lifetime, it may be appropriate to adopt a more proportionate approach to recalculation than had previously been taken. The policy may also indicate the circumstances under which the policy may be reviewed outside of its regular review cycle.

h. Internal consistency

The policy should be compatible and consistent with, and complement, its other internal policies and processes, examples of which include: Internal Model change policy; ALM policy; ORSA; Solvency Monitoring; dividend policy, and audit policy.

i. Disclosures

The policy should state when the recalculated TMTP should be reflected in a firm's private quarterly and public annual regulatory solvency disclosures along with how any associated commentary should be approached. Firms will also disclose solvency results in non-regulatory external disclosures and a firm's policy may also cover the approach for these disclosures too.

j. Voluntary reductions

While it is relatively clear that increasing the value of TMTP under the current TMTP approvals process would require an application to the PRA, it is less clear whether firms could voluntarily reduce the value of TMTP without an approval process. If this was possible, we would envisage the upper bound of the TMTP allowed without PRA approval to be the value lower than the last approved TMTP, less appropriate allowance for run-off.

The working party believes allowing firms and their Audit Committees this discretion would be a beneficial development as it would reduce the potentially awkward disclosure of accounts which are not a fair and true representation of the firm's financial position in this situation where the proforma TMTP is materially lower than the approved TMTP at the reporting date. This difference could arise because the prevailing conditions for TMTP recalculation have not been met, i.e. the change in operating conditions is not yet deemed to be sustained or the subsequent change in proforma solvency ratio is less than the 5% change outlined in SS6/16, but the Audit Committee or firm's senior management are uncomfortable with the associated over statement of the TMTP value in the accounts.

The working party believes if the changes in operating conditions are temporary and are not sustained then the firm can increase its TMTP back up to value which is limited to the approved upper bound. If changes in operating conditions are then deemed to be sustained the TMTP application process can then be commenced. The working party believes if this approach is considered by firms it should be outlined in the firm's recalculation policy and discussed with its regulatory supervisor in advance.

k. Compliance with regulations and Supervisory Statements

The policy should clearly explain how it complies with the relevant TMTP regulations and Supervisory Statement. It may be helpful to include an appendix that cross refers the policy to the regulations and Supervisory Statement to achieve this.

4.4. Application Process

Does having a policy in place and agreed with the PRA mean approval of recalculations can be light touch?

SS6/16 does not talk about the approval process but does indicate that the PRA would consider recalculations on case by case basis, i.e. separately for each firm.

While it is clearly appropriate that the PRA can give whatever degree of consideration is appropriate to the circumstances, both the PRA and firms would benefit from a structured and orderly approval process. It would presumably be for firms to discuss such process with the PRA and for firms' policies to include agreed process. Further, if triggers were agreed with the PRA in advance then a mechanical process could follow, with the PRA being forewarned on the breach of a recalculation trigger and the result used in reporting pending any review the PRA thought necessary. That said, it is important to note that the recalculation of the TMTP is not dynamic and an application will be required.

It is possible that some circumstances not envisaged in the policy could occur which would nevertheless justify recalculation. Such cases would be less routine than recalculations from agreed triggers and so could need closer review. Firms would though want to discuss such cases with the PRA at an early stage.

What is the content of an application?

As noted above SS6/16 does not detail the application process and so the requirements would need to be discussed with the firm's supervisor. However, the PRA do state on their website that the application should contain:

- (i) A Solvency II approval application form, which is available on the PRA's website;
- (ii) An internal document setting out thresholds and triggers for any material change in risk profile – this should reflect a firm's own risk profile and not solely look at external factors;
- (iii) An explanation as to why the firm believes there has been a material change in its risk profile, or will be a material change in the risk profile in the event of a future transaction that is reasonably likely to happen;
- (iv) A copy of the firm's policy for the recalculation of the TMTP; and
- (v) An agreement from the Board that it is content for the application to proceed.

The firm may also want to include the following in the application:

- (i) The proposed date of recalculation;
- (ii) The firm's recalculation methodology, or confirmation that there have been no changes to the methodology previously submitted. The methodology must also demonstrate how the FRR comparison test continues to be met at the recalculation date;
- (iii) Evidence of how the change in risk profile has been reflected in other related processes such as ORSA and Model Change (where applicable);
- (iv) An updated Phasing-in Plan or confirmation that the previous Plan remains viable (where applicable); and
- (v) Any other relevant information that may help support a successful application.

5. How to Recalculate the TMTP?

There does not seem to be consensus around a "one-size fits all" approach to recalculation. Instead, firms are developing different approaches to tackle the technical and practical challenges of recalculation, with the methods used involving varying degrees of complexity.

In this respect, it is worth reminding ourselves of the purpose of the transitional measures. The transitional measures in Solvency II are intended to ensure a smooth transition towards the full requirements of the new regime. The measures aim to avoid market disruption potentially associated with the move to a new regulatory regime and to limit interference with the existing availability of insurance products.

With that being the purpose of the TMTP, theoretical correctness does not necessarily outweigh doing what is practical to achieve a smooth transition in line with the Solvency II rules.

5.1. Introduction

Firms have to decide how they will recalculate the TMTP. Recalculation will be required at least every 2 years, on a material change of risk profile, and at other times would help demonstrate whether a recalculation trigger has or has not been reached.

Ultimately, there is a balance to strike between alignment with others in the market, responsiveness, and practicality. When considering how to recalculate the TMTP the working party has considered five overarching themes. The themes were presented in the table below from section 2.3.

Segregation of business	Recalculation of the TMTP requires the segregation of technical provisions and capital requirements to only allow for business written prior to 1 January 2016.
Maintaining the prior Solvency regime	Recalculation of the TMTP requires firms to maintain aspects of models and methodology from the previous solvency regime.
Proportionate	Recalculation methodology and practices should capture the material features of the TMTP, while not being too onerous to implement and maintain.
Firm specific	Recalculation methodology and practices will vary from firm to firm, reflecting the type of business written, whether the firm is open or closed to new business, the legacy reporting processes and the relative materiality of the firm's TMTP.
Evolve over time	Recalculation methodology and practices are likely to evolve over time.

The next few sections provide a number of suggestions which firms may wish to utilise in their TMTP recalculation. These suggestions have been split into:

- the above key themes (section 5.2),
- issues which impact the calculation of the unrestricted TMTP (section 5.3), and
- additional issues that impact the derivation of the FRR comparison test (section 5.4).

It should be noted that the suggestions may not be appropriate for all firms. Ultimately a firm's recalculation approach will need to consider its own particular circumstances, be agreed internally within the firm and discussed with the PRA.

5.2. How to Recalculate TMTP – Key Themes

5.2.1. Segregation of business

Recalculation of the TMTP requires firms to segregate Solvency I and Solvency II technical provisions into the parts in respect of pre- and post-1 January 2016 business. This is because the TMTP only applies to business written before Solvency II came into force. Further, and depending on

interpretation of the FRR limitation, capital requirements and non-technical provisions may need to be split between the two business classes. Such segregation is likely to need reporting systems to be updated to be able to identify the classes and to report them separately. Where underlying assets affect the calculations, for example for with-profits business and annuities with a Matching Adjustment applied, an additional level of asset hypothecation may be indicated.

This provides both a calculation granularity challenge, as well as the challenge of being able to reconcile and explain reported results for pre- and post-1 January 2016 business.

Issues relating to this segregation are outlined in more detail in section 5.3.2 for the unrestricted TMTP and section 5.4.5 for the restriction of the TMTP.

5.2.2. Maintaining the prior regime

Recalculation of the TMTP requires firms to maintain aspects of models and methodology from the previous solvency regime. The working party expects the full maintenance of Solvency I models, methodology and associated governance, in combination with the enhancement of granularity for pre-1 January 2016 business, would be excessively onerous for most firms to implement.

The working party therefore expects a TMTP recalculation will need simplified, and proportionate, methodologies. Proportionality is expanded upon further below.

5.2.3. Proportionality

The PRA supervisory statement on a TMTP recalculation (SS 6/16) implies that proportionate approaches may be acceptable, indicating that firms should discuss proposed methodology with their supervisors. This is helpful and leaves it open for firms to agree with the PRA what would be proportionate for their own circumstances. What would be proportionate is difficult to define and will vary from firm to firm and legal entity to legal entity. A view on proportionality is ultimately an area of judgement which needs to be agreed internally within a firm and, as outlined in SS6/16, discussed with the PRA.

One potential way to consider proportionality is as follows.

Recalculate or not?	Define areas of recalculation which will be theoretically maintained going forward, and those which on grounds of principle will not be maintained
Materiality Framework	Agree a materiality framework to apply to those areas which will be maintained
“Exact” calculation	Define what an “exact” calculation is
Understanding onerous	Understand the onerous areas of the maintaining an “exact” recalculation
Propose initial simplification(s)	Propose an initial simplification or simplifications relative to this “exact” calculation
Understand limitations	Understand the limitations of the simplification, i.e. in what circumstances the simplification would fall outside of the firm’s TMTP materiality framework
Amend proposal if required	If the limitations are deemed to be too material, then the proposal(s) should be amended and assessed again

Each of these is expanded upon below.

Recalculate or not?

A firm should define areas of recalculation which will be theoretically maintained going forward, and define those areas of recalculation which it believes on grounds of principle should not be maintained.

An example of an area of recalculation which might not be maintained, on the grounds of principle, is the maintenance of separate asset hypothecations for Solvency I and Solvency II technical provisions.

Maintaining a separate (theoretical) asset hypothecation based on what investment strategies might have been had Solvency I continued seems a step too far, and likely to be difficult to achieve in practice. However, using the asset allocation adopted under Solvency II to determine Solvency I technical provisions for recalculation is likely to lead to an erosion of the TMTP value because firms will not be purchasing assets to optimise their Solvency I technical provisions.

Where such erosion was significant, firms could presumably propose simplified methods to allow for Solvency I asset allocations in recalculation. For example, a firm may assume the asset allocation in force at 31 December 2015 applies to TMTP recalculations going forward.

Materiality framework

A firm should agree a materiality framework to apply to those areas of recalculation, which will be maintained going forward. Firms could define the recalculation materiality relative to its general materiality and risk appetite frameworks.

“Exact” calculation

A firm should define what it believes an “exact” calculation is. We use the terminology “exact” here to note that modelling in general is a simplified representation of the real world.

The working party expects a typical definition of “exact” as being the maintenance of the methodology and processes which applied at 1 January 2016. Notwithstanding this point, it is possible some firms may develop processes and methodologies after 1 January 2016, which provide a more precise value of the TMTP than those which applied at 1 January 2016.

Understanding onerous

As part of defining an “exact” calculation, firms should understand which parts of recalculation would be onerous to carry out exactly. If the “exact” calculation is not onerous then additional simplifications will not be required.

Propose initial simplification(s)

Firms will propose an initial simplification or simplifications on onerous parts of recalculation, justifying them relative to the “exact” calculation.

Understand limitations

Understand the limitations of the simplification, i.e. in what circumstances the simplification would fall outside of the firm's TMTP materiality framework.

Part of understanding limitations of simplifications may include the use of qualitative and quantitative methods. For example, a firm may use qualitative methods to outline theoretical analysis to outline when a recalculation may fall outside of the materiality limit, and use sensitivity analysis to provide an expectation of this occurring.

Amend proposal if required

If the limitations are deemed to be too material, then the proposal(s) should be amended and assessed again.

5.2.4. Firm specific

Recalculation methodology will depend on the following factors:

Materiality of the TMTP

A TMTP which is material relative to the capital surplus (i.e. the surplus of capital resources over capital requirements) is likely to require a more complicated, more robust and more frequent recalculation than a TMTP which is less material relatively to the capital surplus.

The type and complexity of the underlying business

The recalculation methodology is likely to depend on the type and complexity of the underlying business written in the legal entity, or ring-fenced fund. For example a mono-line writer of business, e.g. annuity business, may be able to employ more accurate recalculation methods than a multi-line insurer.

Furthermore certain types of business may be easier to derive a TMTP in certain aspects than others. For example, it may be easier to split annuity policy data than unit-linked policy data.

Whether the legal entity, or ring-fenced fund, is open or closed to new business post-1 January 2016

A TMTP recalculation for a legal entity, or ring-fenced fund, which was closed to new business prior to 1 January 2016 is significantly simpler than for a legal entity, or ring-fenced fund, which is still open to new business. The requirement to segregate business written pre- and post-1 January 2016 is trivially met by there being no post-1 January 2016 business.

Similarly, where a legal entity or ring-fenced fund writes only immaterial volumes of new business post-1 January 2016 it may be reasonable to simplify the recalculation of its TMTP by ignoring the impact of post-1 January 2016 business.

Whether a TMTP is restricted by or close to the FRR comparison

Where a legal entity, or ring-fenced fund, has a TMTP that is based on, or close to, the FRR comparison test, the calculation will require a more robust derivation of the FRR comparison test components than for a firm whose FRR comparison test is less likely to “bite.”

Notwithstanding this, all firms seeking a recalculation are expected to provide details of the FRR comparison in their applications for recalculation or justify why the test would not restrict the TMTP.

Which of the two Solvency I Pillars is relevant for the FRR comparison test

The recalculation of the TMTP will depend on which of the Solvency I Pillars is the more onerous for a legal entity, or ring-fenced fund. Where one of the Solvency I Pillars dominates and this can be expected to continue going forwards it may be justifiable to exclude the other Solvency I Pillar from the calculation. This simplification is explored in more detail in section 5.4.6 and would clearly need to be discussed with the PRA.

Reporting systems and process constraints

The complexity, change agility, and structure of the reporting systems and processes used to derive the TMTP will vary from firm to firm. Some firms may have sufficient granularity in their processes, or be able to change the granularity, to derive the segregation of pre- and post-1 January 2016 as part of their regulatory quarterly reporting process. For other firms, this level of granularity may not be available without significant investment.

5.2.5. Evolve over time

The working party expects that the processes and methodology applied in recalculating the TMTP will evolve over time. Over the short to medium term, we envisage the complexity of recalculation will tend to increase. This reflects a combination of the following factors:

- Increasing materiality of post-1 January 2016 business for a legal entity, or ring-fenced fund, open to new business.
- Material levels of TMTP on balance sheets.
- Infancy issues from developing and embedding suitable TMTP calculation methodologies, processes, and associated governance. For example, issues relating to the reconciliation of the components of the FRR comparison test back to the reported values in the QRT forms. Here we note that the FRR comparison test may only apply to business written prior to 1 January 2016, while the reported values in the QRT forms will include all business.
- Technology changes potentially offering different approaches and improvements or refinements.

However, over a longer time horizon we expect that the calculations used to derive the TMTP will become simpler reflecting the reduction in the value of the TMTP as pre-1 January 2016 business and the TMTP run-off. This may involve the simplification of processes or the use of margins applied in TMTP recalculations to allow for any approximations.

Ultimately firms may decide to stop using the TMTP before the 16-year transitional period is up if the benefit becomes less material.

5.3. Areas for Consideration – Calculation of Unrestricted TMTP

This section covers various approaches that the working party has identified to overcome the issues that may need addressing when recalculating the unrestricted TMTP. The section is set out so that a brief overview of the issue is given followed by potential solutions.

The working party has determined four broad themes that affect the calculation of the unrestricted transitional:

- Double run-off
- Splitting technical provisions into pre- and post-1 January 2016 segments
- Changes to the discount rate used under Solvency I versus Solvency II
- Other factors that impact on the potential level of TMTP

The working party acknowledges that each issue will have different impacts for individual firms and therefore no definitive solutions are offered. However, the working party has tried to identify the relative benefits of each approach to the others where appropriate.

5.3.1. Double run-off

Condition 1 of regulation 54 of the UK Solvency 2 Regulations 2015 introduces the issue of double run-off. Specifically, it includes an equation stating how the calculation of the TMTP is performed. The equation for the TMTP, T_N is as follows:

$$0 \leq T_N \leq (X_N - Y_N) \left(1 - \frac{N}{16}\right) \text{ (Where } N = 0, 1, 2 \dots 16)$$

Where X_N and Y_N are the Solvency I and Solvency II technical provisions, calculated at time N , and N is the number of years from 1 January 2016.

Double run-off occurs because at each recalculation, the TMTP is potentially reduced by both the actual run-off of business since 1 January 2016 and the 1/16th run-off factor that is applied to the TMTP each year so that they are zero by the end of the transitional period.

Therefore, at the point of recalculation, the equation implies that only the business still in force can be included in the calculation and not the entire business that was in force as at the original point of recalculation. The need to apply the run-off factor, to ensure TMTP are zero by the end of the transitional period leads to a further reduction in TMTP.

Figure 6 below shows an illustration of the issue. The top line represents the 1/16th pa straight line run-off. The bottom line shows the impact of double run-off on the recalculated TMTP, with the capital strain illustrated by the bars.

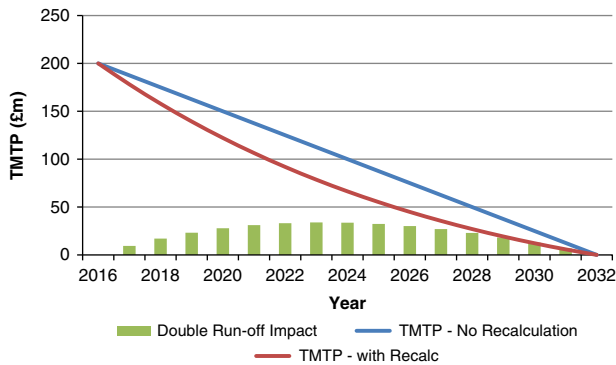


Figure 6. Double run-off example

The working party understands that the PRA has acknowledged that this was not intentional and stated that firms could propose their own methodology if they wish to avoid this issue.

Potential solutions

The first “solution” proposed is clearly the simplest – firms could accept the double run-off issue and not try to avoid it. This could be a viable option for firms with long-dated liabilities that have a slow run-off rate.

The working party is of the opinion that while this may be a suitable option for some firms, it will not be suitable for all. A key consideration that firms may have is, if accepting the issue results in the capital position of the firm being constrained, the impact this could have on policyholder outcomes.

Three potential approaches to avoiding the double run-off issue are below:

1. Run-off TMTP evenly over the remaining part of the 16-year period

The first approach avoids the double run-off issue by negating the amortisation factor part of the calculation. This would be done by calculating the difference between technical provisions at the relevant re-calculation date but instead of using the $1/16^{\text{th}}$ pa amortisation factor it would amortise from 100% to zero over the remaining transitional period (i.e. if a recalculation were performed after 2 years the factors applied in the future would be 14/14, 13/14 etc..).

To ensure compliance with the regulation 54 of the UK Solvency 2 Regulations 2015 and ensure the presentation of run-off in the TMTP QRT is aligned to EIOPA’s log file, firms may wish to scale up the reported TMTP, as at 1 January 2016, by applying a scalar of $16/(16-N)$, where N is the point of calculation.

This approach run-offs the TMTP in line with the underlying business and would seem to be very appropriate to use if the business runs-off at broadly the same pace as the TMTP (i.e. $1/16^{\text{th}}$ p.a.)

It also seems to be appropriate if the business ran-off quicker than $1/16^{\text{th}}$ p.a. This is because the TMTP would run-off more quickly than the original planned $1/16^{\text{th}}$ rate. However, for business that runs off slowly this could lead to capital strains, as the TMTP is required to reduce at a faster rate to ensure they are zero by the end of the transition period. Figure 7 below shows this based on biennial recalculations of the TMTP.

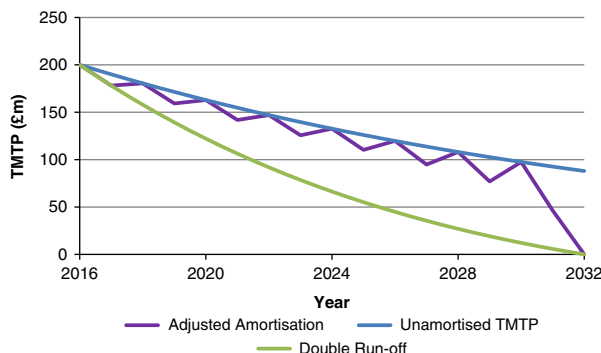


Figure 7. Progression of TMTP with adjusted amortisation factor, slow run-off of business

For example, towards the end of the transitional period, the value of TMTP is required to reduce by half over the year.

An advantage of this approach, as opposed to the others proposed, is that it does not require firms to retain any further data over time. This is shown in an example below.

Example: Presentation of results using method 1

The TMTP was originally calculated at £200m as at 1 January 2016. After two years, the TMTP was reset on the current business in-force at £180m. This will now run-off at $1/14^{\text{th}}$ p.a. over the remaining transitional period.

In the QRT templates, the value of TMTP at 1 January 2016 is required, along with the relevant $1/16^{\text{th}}$ factor being applied.

This can be addressed by scaling the TMTP by $16/(16-N)$ so that the new value at 1 January 2016 is $£180m \times (16/14) = £205.7m$

After the TMTP is reduced in the QRT template by the required 2 year run-off the full TMTP is unchanged at £180m.

2. Scale the business in-force at the recalculation date

An alternative approach could be to adjust the TMTP to avoid the actual run-off of the business. This could be achieved by scaling the calculated TMTP at the recalculation date. The scalar would be set so that it reflects the actual business run-off since 1 January 2016 so that the level of TMTP is consistent with the business in force at 1 January 2016.

The choice of scalar used in this method needs careful consideration to ensure that it meets the objective of resolving the double run-off issue. For example, firms could consider that the change in

risk margin since the last calculation of the TMTP is a proxy to the TMTP. However, firms calculate the risk margin on the current business in-force and therefore a scalar based on risk margin would not address the double run-off issue.

Further using a scalar based on operating conditions at the point of recalculation could be problematic. This is due to operating conditions causing the item to fluctuate in a way that does not actually match the run-off of business over time.

This leads us to suggesting simple measures such as sum assured or policy count of the business benefitting from the TMTP could therefore be appropriate. The box below provides a worked example.

Example: Scale the business in force at the calculation date:

Consider the following book of business at the Solvency II effective date (1 January 2016):

Solvency I TP (A)	£500m
Solvency II TP (B)	£300m
TMTP (A)-(B)	£200m
Policies in Force	1000K

The book of business is expected to run-off at 10% per year.

In the absence of recalculation the TMTP would decrease linearly from £200m to zero over the course of the transitional period.

However, if a recalculation was performed at the 2 year point, as required expected by the [PRA](#), and all things being equal the business profile would be as follows:

Solvency I TP (A)	£405m
Solvency II TP (B)	£243m
TMTP (A)-(B)* 14/16	£142m
Pols in Force	810K

This would result in a double impact run-off of £33m as if no recalculation had been performed the TMTP would have been £175m (i.e. £200m reduced by 2/16ths) at the two year point.

To remove this unintended impact this we could scale up the TMTP to remove the impact of the run-off of business since the start of the transitional period.

Using policy count as a proxy measure for the business in force this would scale the above value by:

Number of Pols at 1 January 2016 / Number of Pols at 1 January /2018.

This would provide a TMTP value of (£142m x (1000K/810K) =) £175m and therefore avoid the double run-off impact.

However, simple measures, such as policy count, do not directly compare to the value of the TMTP on a one-to-one basis. Therefore, care will be required to ensure that the TMTP allocated to groups of homogeneous policies to ensure that the policy count proxy is suitable. This could lead to a large number of additional calculations for firms with diverse types of business.

3. Recalculate liabilities at 1 January 2016

An alternative approach could be to avoid any double run-off by using the actual business in force at end 2015 to calculate the TMTP. The historic models, or more probably just the policy data from end 2015, could be retained over the transitional period.

The data, and if relevant models, would need to be adjusted, at the point of recalculation, to the operating conditions at that time. The factor $(1 - n/16)$ would then apply to the TMTP calculated on the end-2015 policy data.

The requirement to update the model point files could be difficult for some firms, particularly if some of the assumptions used are duration based instead of calendar year specific. Firms would, therefore, need to ensure that their processes could deal with these types of changes.

5.3.2. Splitting business into pre- and post-1 January 2016 segments

The TMTP only applies to business that was written prior to Solvency II being implemented. Therefore, each firm will need to decide on a definition of how to classify what is pre-1 January 2016 business and what is not in the unrestricted TMTP calculation.

Potential solutions

The decision, on whether a split of business is required, and how to perform it, will depend on the level of new business written in each firm.

For books that closed to new business prior to 1 January 2016, this could be potentially simple. If no business has been written post-1 January 2016 then all business can be treated in scope of the TMTP and no split would be required. This could still be valid, on materiality grounds, for funds that are only writing a limited amount of new business, e.g. top-ups to existing contracts or annuities written due to a guarantee being exercised.

For open books, especially those that are writing a material amount of new business, it will be necessary to split the technical provisions of this business into pre- and post-1 January 2016 segments.

Each firm will need to consider both the business being written and the historic business the firm holds when determining how to split the business. Any split will bring computational and process challenges that will need to be overcome.

Potential methods to split the business could be:

- Split the business by date of entry and ensure that the administration and valuation systems can separately identify this business;
- Maintain the model point files at 1 January 2016, and update for market and assumption changes, as appropriate and use these for a TMTP recalculation;
- Allocate the business to pre- and post-1 January 2016 by using suitable proxies, such as estimates of the business written since 1 January 2016.

It follows that the method to split the business should also be appropriate to the run-off method that being used.

A key element of the calculation of the unrestricted transitional is the risk margin and this is covered below.

5.3.2.1. Risk margin

The design of the risk margin leads to a material interaction between interest rates and the value of the capital requirements for “non-hedgeable” risks. This is because both the underlying risks, and the discounted value of them depend on interest rates.

Therefore, splitting the risk margin into pre- and post-1 January 2016 segments requires consideration of:

- How to allocate the non-hedgeable capital requirements to pre- and post-1 January 2016 business; and
- How to allocate the diversification benefit between pre- and post-1 January 2016 segments

Potential solutions

In developing an approach to splitting the risk margin, it is important to consider the business modelled so that the approach used is appropriate. The working party has considered the following approaches:

- Full recalculation where no segregation of pre/post 1 January 2016 business is required
- Notionally split the risk margin using suitable proxy
- Develop full recalculation to include segregation of pre/post 1 January 2016 business
- Recalculate using 1 January 2016 models and allow for interest rate changes

Each of these approaches is outlined in more detail below.

Full recalculation where no segregation of pre/post 1 January 2016 business is required

For completely closed books, the reported risk margin is entirely in respect of the pre-1 January 2016 business already. This means that no further split will be required. This approach is also likely to be appropriate for legal entities or ring-fenced funds with immaterial volumes of new business.

However, this approach is unlikely to be appropriate for books open to material volumes of new business.

Notionally split the risk margin using suitable proxy

A pragmatic approach could be to perform a split approximately using a suitable proxy, e.g. by allocating the risk margin in line with the BEL for both pre and post business. However, care must be taken when considering whether this approach is appropriate. In particular, the following is noted:

- Whichever proxy is used should be suitable for the entire business. For example, BEL may not be a suitable proxy for a growing protection business as this may have a negative BEL at earlier durations becoming positive at later durations.
- The proxy will need to reflect the relative riskiness of the pre- and post-1 January 2016 business. For example, BEL may not be suitable for unit linked pensions business where a significant proportion of BEL reflects unit-linked liabilities and the risk is likely to be related to the non-linked liabilities, which are likely to be negative.
- However, where it is clear that a certain line of business has more non-hedgeable risk than others it should be possible to devise a pragmatic approach that allows this business to be allocated more risk margin than the other lines of business that have less non-hedgeable risk.

Develop full recalculation to include segregation of pre/post 1 January 2016 business

This approach would require firms to fully segregate non-hedgeable risks between pre- and post-1 January 2016. This could be achieved by developing the existing splits into lines of business methodology required under Solvency II.

The working party considers the benefits of the approach include:

- Full solution likely to be perceived as most robust
- Solution is integrated into BAU risk margin reporting process

However, the following constraints are noted:

- Solvency II already requires granular line of business splits and doubling these up could put a strain on existing processes
- Potentially expensive and onerous to develop
- Approximations would still be needed to split certain stresses, i.e. those impacted by Solvency II contract boundaries
- In addition, this would not address the issue of allocating the diversification benefits between pre- and post-1 January 2016 business.

Recalculate using 1 January 2016 models and allow for interest rate changes

This approach would maintain the risk margin as at 31 December 2015, but update the calculation to allow for changes in interest rate, and other modelling changes.

The working party considers the benefits of the approach include:

- Could be less expensive and onerous to implement than full development
- Relative easy to bridge to 31 December 2015 risk margin

However, the following constraints are noted:

- It may still be relatively onerous to maintain over time and demonstrate consistency with reported risk margin.
- There is still a need to address diversification between pre- and post-1 January 2016 business
- It will be challenging to allow for actual run-off of business, relative to both value at 31 December 2015 run-off at 1/16th pa and the expected run-off implied by best estimate demographic assumptions and the risk neutral economic assumptions allowed for in the risk margin calculation.
- Challenging to allow for economics impacts which impact the value of non-hedgeable risk, e.g. equities for unit-linked business.
- Potentially problematic to allow for future calibration or model changes. This is considered in more detail below.

5.3.3. Changes to the discount rates used under Solvency I versus Solvency II

The Solvency II regime prescribes the basic risk-free curve that the liabilities of a firm should be valued on, e.g. for business written in the UK it is based on the UK swap curve. This basic curve can then be adjusted, following a successful application to the PRA, through either the MA, or the volatility adjustment.

Under Solvency I, firms had more flexibility to set discount rates based on the underlying business, and in some cases could include an illiquidity premium based on the assets it held. Therefore, in

moving to the Solvency II basis, some firms could have experienced large changes in technical provisions purely from a change in discount curve used. This could be particularly significant for funds that have long-dated liabilities or guarantees in them.

Recalculation of a TMTP requires firms to maintain at least an underlying basis for calculating Solvency I Pillar 2 technical provisions. Therefore, firms are required to determine how to construct an equivalent Solvency I risk-free curve at the point of recalculation, given that its underlying business, and the assets backing it could have significantly changed since the point of first calculation of the TMTP.

This section splits out the key themes that the working party has identified as the key differences of the risk-free rate between the regimes and suggests potential solutions that could be used to overcome the issues.

5.3.3.1. Change in market conditions

Depending on the original methodology used to set the Solvency I discount rate that a firm employed, market conditions could affect the value of the TMTP at the point of recalculation.

For example, if a firm set its Solvency I discount rate based on gilts, and continued to use that basis going forward, then a widening or narrowing of the gap between gilts and swap curves between the original calculation and recalculation of the TMTP could have large impacts on the resultant value. If, at a future recalculation of the TMTP, it was required to fully reflect market conditions for both Solvency I and Solvency II, and the gap between the Solvency I and Solvency II basis had reduced, potentially to zero, then the value of the TMTP could be significantly reduced. This would effectively be an unhedged increase in the Solvency II liabilities.

Potential solution

A practical approach to avoiding this impact could be, for the purpose of recalculation of the TMTP, to set the Solvency I discount rate to be equal to the Solvency II curve plus a fixed addition, as set at 1 January 2016. This could either be a fixed shift (set so that the SI TPs did not change as at 1 January 2016), or, a term-dependent shift, set at 1 January 2016 dependent on the Solvency I and Solvency II discount rates at that date.

It is likely that firms would need to monitor the fixed shift over time to ensure it remains appropriate. Firms would also need to ensure that any changes in MA, illiquidity premium and VA were addressed as appropriate.

5.3.3.2. Matching adjustment (MA) versus illiquidity premium

The Solvency I Pillar 2 illiquidity premium and Solvency II MA are conceptually the same. That is they both act to increase to risk-free curve in order to recognise the return on assets in excess of the risk-free rate allowing for a suitable reduction for expected downgrades and cost of defaults.

Although these items are conceptually similar, the working party has identified the following issues that firms need to address:

- 1) How should the MA be calculated if pre- and post-1 January 2016 technical provisions need to be calculated separately?

2) How should firms allow for differences in the liquidity premium versus MA, given that these could have been set on different asset hypothecations?

3) How should firms account for differences in expected downgrades and the cost of defaults between the Solvency I Pillar 2 illiquidity premium and Solvency II MA?

Before addressing these issues, it is important to note the different reasons how the Solvency I Pillar 2 illiquidity premium and Solvency II MA can differ. The reasons include:

- The MA uses EIOPA Fundamental Spreads whilst Solvency I Pillar 2 illiquidity premium uses an internal view of downgrade and cost of default risk. Therefore, it is possible some firms will have only allowed for cost of default risk in the illiquidity premium.
- There could be differences in the cash-flow matching tests that could impact the assets allocated to the Solvency I Pillar 2 illiquidity premium portfolio versus the Solvency II MA portfolio.
- Allowances for matching could differ between the calculation of the Solvency I Pillar 2 illiquidity premium and the Solvency II MA.
- The MA methodology is onerous which could lead to constraints in the calculation. For example, the need to allocate whole assets to a portfolio, rather than being able to allocate only a proportion of individual assets.
- There may be certain assets not eligible under Solvency II; where cash-flows have been restricted or may require transformation before they can be included, e.g. Equity Release Mortgages.
- There could further be differences in assets allocated to the Solvency II MA portfolio and Solvency I Pillar 2 illiquidity premium portfolio arising due to any of the above.

These factors will result in a different value of BEL under Solvency I Pillar 2 and Solvency II.

Potential solutions

The working party believes solutions to the issues above come in four basic variants. These are:

- Maintain the bps differences between Solvency I Pillar 2 illiquidity premium and Solvency II at 31 December 2015 MA;
- Maintain the bps differences between Solvency I Pillar 2 illiquidity premium and Solvency II at 31 December 2015 MA with suitable adjustments;
- Maintain four illiquidity premium portfolios (one dimension reflecting whether business was written prior to or after 1 January 2016 and the other dimension reflecting the difference regimes, i.e. Solvency I Pillar 2 and Solvency II);
- Maintain two illiquidity premium portfolios reflecting the different regimes, i.e. Solvency I Pillar 2 and Solvency II, and apply the same illiquidity premium/MA to business written before and after the introduction of Solvency II.

The working party has considered these in terms of the varying degrees of complexity involved in each. The potential solutions are outlined in more detail below.

5.3.3.3. Maintain the bps differences between Solvency I Pillar II illiquidity premium and Solvency II at 31 December 2015 MA

Under this proposal, firms would take the basis points (bps) difference between the Solvency I Pillar 2 illiquidity premium plus the Solvency I Pillar 2 risk-free curve and the Solvency II MA plus the Solvency II risk-free curve.

This difference could be applied in future TMTP recalculations through adjusting the Solvency II MA plus Solvency II risk-free curve. This could be done by either:

- applying the updated discount curve to business written pre-1 January 2016 at recalculation date, or
- applying the updated discount curve using 1 January 2016 data and models and run-off appropriately to the recalculation date.

The working party views the benefits of this approach as being:

- Simple to implement.
- Allows ALM to focus on Solvency II position and ignore the TMTP notwithstanding ORSA considerations for firms to develop an internal view of risk.

However, the working party is mindful of the following limitations of this approach:

- It does not capture some of the technical aspects of the differences in the Solvency II MA and the Solvency I Pillar 2 illiquidity premium. Therefore, challenges could arise in justifying the approach as appropriate, especially if an overly technical bar is set.
- The approach removes the potential to adjust asset allocation to optimise the TMTP value, as optimisation within the MA portfolio would not be offset by a TMTP reduction. Conversely, it could be viewed that this is actually a benefit of this approach.

For firms with a relatively simple portfolio of assets or a relatively immaterial MA portfolio, this approach could be seen as proportional and appropriate. For other firms, further adjustments to this approach may be required and these adjustments are considered below.

5.3.3.4. Maintain the bps differences between Solvency I Pillar 2 illiquidity premium and Solvency II MA at 31 December 2015 with suitable adjustments

A number of adjustments could be made to the difference between Solvency I Pillar 2 and Solvency II at 31 December 2015 to ensure it more appropriately captures divergences between the internal view and the Solvency II MA view. In particular, the working party notes:

- a. Adjustments to capture the changes in the Solvency II risk-free rate relative to the Solvency I Pillar 2 risk-free rate

The Solvency II MA is applied as a non-term dependent addition to the Solvency II basic risk-free curve, excluding volatility adjustment. If firms also applied the Solvency I Pillar 2 illiquidity premium as a non-term dependent addition to the Solvency I Pillar 2 risk-free curve then it therefore follows that the illiquidity premium differential is term-dependent and can be defined as:

$$\begin{aligned} & \textit{Illiquiditypremiumdifferential} \\ &= [\textit{SolvencyIPillar2riskfreecurve}] - [\textit{SolvencyIIbasicriskfreecurve}] \\ &+ [\textit{SolvencyIPillar2illiquiditypremium}] - [\textit{SolvencyIImatchingadjustment}] \end{aligned}$$

Therefore any divergence in the Solvency I Pillar 2 and Solvency II risk-free curves need to be captured in the illiquidity premium differential. Examples of potential differences include the Solvency II credit risk adjustment and differences in the gilt-swap spreads if the Solvency I Pillar 2 risk-free rate was set on the gilt curve as opposed to the swap curve.

b. Weighted average spreads

A firm could decompose the assets held to back liabilities into a notional Solvency I Pillar 2 asset portfolio and derive the spread over the Solvency I Pillar 2 risk-free curve based on the spreads at 31 December 2015, noting that a full asset hypothecation was applied at 31 December 2015.

It could then summarise the key attributes of the portfolio at 31 December 2015 which demonstrates the contribution of each asset class to the Solvency I Pillar 2 illiquidity premium. These may include the:

- Market value of the asset;
- The modified duration of the asset;
- The “gross spread,” i.e. the spread over the risk-free rate ignoring the best estimate deductions for downgrades and defaults;
- The Solvency I Pillar 2 view of best estimate deductions for downgrades and defaults;
- And the “net spread” over the risk-free curve, i.e. the “gross spread” less the Solvency I Pillar 2 view of best estimate deductions.

An example is shown in Figure 8 below, with two possible simplified methodologies of deriving the Solvency I Pillar 2 illiquidity premium. Method 1 below derives the Solvency I Pillar 2 illiquidity premium by weighting the net spread by market value of the asset. Method 2 modifies this approach by weighting the net spread by both market value and the modified duration of the assets. Method 1 in the example below understates the contribution of the higher spread, higher duration infrastructure assets.

£m	Market Value £m	Modified Duration	Spread over risk-free, Gross of best estimate deductions	Solvency I Pillar 2 best estimate deductions	Spread over risk-free, net of best estimate deductions
Corporate Bonds	3,000	9.5	1.80%	0.50%	1.30%
Gilts	1,000	7.5	1.30%	0.10%	1.20%
Private Placements	500	6.5	2.00%	0.75%	1.25%
Infrastructure	400	14	4.00%	0.80%	3.20%
Cash	100	0	-0.50%	0.00%	-0.50%
Total	5,000				
Method (1) Solvency I Pillar 2 Illiquidity premium weighted by Market Value					1.39%
Method (2) Solvency I Pillar 2 Illiquidity premium weighted by Market Value and Duration					1.52%

Figure 8. Simplified methodologies to derive Solvency I Pillar 2 illiquidity premium

The firm could similarly assess the Solvency II MA at 31 December 2015 using a similar method, but noting that:

- The assets allocated to back liability cash-flows in the MA portfolio will likely differ to those in the Solvency I Pillar 2 illiquidity premium portfolio

- The Solvency I Pillar 2 best estimate deductions will be replaced by the Solvency II Fundamental Spread

At future recalculation dates, the table and calculation above can be reproduced, but with inputs adjusted in a proportionate way to reflect the situation at the recalculation date. The adjustments made will depend on:

- Whether the assets are notionally split between those backing pre- and post-1 January 2016 business or whether the same discount rate should apply to both pre- and post-1 January 2016.
- Whether changes in the assets held in the portfolio are allowed for at the point of recalculation. Alternatively, the Firm may keep the portfolio static as at 31 December 2015. See below for more details on this.

By changing the gross spread to be set on individual asset classes, firms can use the Solvency I Pillar 2 best estimate view of deductions and Solvency II Fundamental Spreads to approximate the Solvency I Pillar 2 and Solvency II illiquidity premium differential. The working party notes that this requires firms to maintain Solvency I Pillar 2 methodology going forward, although this could be required as part of sound risk management reflecting an internal view of asset risk in any case.

In the case that a simplified approach is taken firms will need to ensure that this approach has been agreed internally and discussed with the PRA.

Firms may also wish to consider when the approach used would no longer be acceptable, e.g. the disposal or acquisition of a book of business or the transferring in of business via Part VII transfer etc.

c. Captures changes in asset portfolio

Firms may take a view that they should manage their business according to the regulatory regime currently in force, rather than the previous regime. Therefore, an argument could be that the level of a TMTP should not be affected by making ALM decisions that optimise Solvency II, to the detriment of the Solvency I Pillar 2 basis. This approach could lead to ignoring the new assets purchased since 31 December 2015 in the determination of the Solvency I Pillar 2 and Solvency II illiquidity premium differential.

However, there could be material changes in either the Solvency I Pillar 2 or Solvency II asset portfolio which should be reflected in a materially different TMTP. For example if a firm applies for a MA portfolio or securitises Equity Release Mortgages after 31 December 2015 then these events would likely result in a material reduction in the TMTP and so it is the working party's view that each asset change should be taken on merit. However, the working party considers that it is doubtful that it would have been intended that increased Solvency I risks, resulting from actions to hedge the Solvency II balance sheet, should be brought into the resultant TMTP calculation.

A further option that firms may be able to utilise is the use of the allocation of assets within the IFRS portfolio gross redemption yield. This process is likely to provide insight into the actual assets held at the valuation date, although firms will need to consider whether IFRS fair value margins (effectively prudence margins) applied to both the cost of asset defaults and downgrades, as well the liability demographic assumptions, would result in a different allocation of assets, compared to the asset allocation which arises on a Solvency I Pillar 2 best estimate basis. All else being equal, the removal of prudent IFRS fair value margins is expected to increase the cash flows assets provide and reduce the liability cash flows being matched. This

presents firms with an opportunity to “kick out” lower yielding assets and optimise their Solvency I Pillar 2 illiquidity premium.

5.3.3.5. Maintain four illiquidity premium portfolios

The third approach identified by the working party is the most onerous but has the benefit of potentially being the most technically correct approach. This approach involves the maintenance of four separate illiquidity portfolios. In particular, some firms may choose to:

- Maintain two separate MA portfolios for pre- and post-1 January 2016 business; and
- Maintain two separate Solvency I Pillar 2 illiquidity premium portfolios. Again one each for business written prior to and after 1 January 2016.

The benefits of this approach include the following:

- Full solution likely to be perceived as most robust and technically sound
- Potential to adjust asset allocation to maximise the TMTP value

However, the working party believes that most firms will view this approach as being excessively onerous. This arises due to the Solvency II rules, relating to the MA, requiring a detailed assessment of the matching of asset and liability cash-flows.

This cash flow matching is performed at the portfolio level and therefore unpicking it into pre- and post-1 January 2016 business may be challenging. For example, for an asset that provides a stream of future cash-flows then some early cash-flows may be used for pre-1 January 2016 business but those in future years may be predominantly backing post-1 January 2016 business. The question is then “what proportion of the asset should then be assigned to the notional pre-2016 portfolio?”

This is complicated further by it being unlikely that proportions of assets and asset cash-flows can be assigned across different Solvency II MA portfolios. This could increase costs to firms, if they wanted to maintain their asset backing strategy, by having to pay increased custody fees from holding a larger number of assets. A further issue may arise in that firms may have followed investment strategies or entered into reinsurance arrangements based on combined portfolios.

Further, a ring-fenced MA portfolio requires:

- separate investment portfolios;
- segregations of accounts (including the balance sheets, the profit and loss account, income statements and accounting reconciliations);
- segregation of liability valuation data (model point files, post-modelling extraction spreadsheets); and
- separation of analysis of change in balance sheet and capital requirement processes.

It should be noted that post-1 January 2016 business will be difficult to match initially in order to meet the matching tests (due to size). This could, in extreme cases, effectively lead to a period where no or minimal MA is available for this business as you may have to predominantly invest in risk-free assets in order to pass. This will have consequences for actual investment strategy.

For firms performing these requirements for more portfolios than is strictly necessary is likely to require significant initial investment and will lead to further additional ongoing costs to maintain and monitor.

As well as these practical challenges, there are more subtle points to consider. For example, if the hypothecation of assets to pre- and post-1 January 2016 business is used only to determine the TMTP then there may be a risk that some firms will look to manipulate the hypothecation. That is they could assign assets to the pre-2016 portfolio so that the TMTP is maximised. This is compounded by that if firms are managing ALM on a Solvency II basis and not actively managing on a Pillar 2 basis then this will lead to an erosion of the TMTP value, which could exacerbate the issue. The working party covers ALM issues in more detail in section 6.1.

Overall firms will need to weigh up if the benefits and the associated costs from an accurate calculation outweigh the cost/benefits from the more simplistic approaches presented earlier.

5.3.3.6. Maintain two illiquidity premium portfolios

The fourth approach identified by the working party is largely similar to previous approach, but includes a key simplification of not hypothecating assets to pre- and post-1 January 2016 business.

This has the benefit of maintaining the technically correct aspects of the previous potential solution, but without the need to create additional segregate pools of assets and liabilities, as well as the potential need to demonstrate adequate cashflow matching separately for pre- and post-1 January 2016 business.

The potential downsides of this approach is that firms will need to continue to be able to calculate a Solvency I Pillar 2 illiquidity premium and that this potentially complicates ALM strategies with firms needing to consider whether to manage ALM to optimise the Solvency I Pillar 2 illiquidity premium (and hence MTP value) or manage ALM to optimise the Solvency II MA.

As outlined above firms will need to weigh up the benefits and associated costs of this approach relative to the other recalculation options.

5.3.3.7. Volatility adjustment (VA)

In circumstances where a MA is not applied, firms could make an application to adjust the Solvency II discount rate by including a VA. This is an addition to the basic risk-free rate linked to the level of spreads observed in the market. EIOPA sets the adjustment based on the spreads on a representative portfolio of assets – not necessarily the assets held by the firm. The most common uses of the VA is for with-profits business and annuity liabilities that are not eligible for the MA although it can be used for a wide range of business types.

Therefore, firms could apply the VA where it applied an illiquidity premium under the Solvency I Pillar 2 regime, if the MA was considered too onerous to employ under Solvency II.

The use of a VA could cause issues, both along the lines described above for the difference between MA and the illiquidity premium described in 5.3.5.2, and that a fluctuating VA could change the value of the TMTP if an illiquidity premium were not used under Solvency I. However, as the VA is not dependent on the firms individual assets the proposed solutions should be simpler.

Potential solution

For firms that applied an illiquidity premium in their Solvency I Pillar 2 valuation, the issues outlined in section 5.3.3.2 also apply here.

For firms that did not apply an illiquidity premium under Solvency I the adjustment made for market conditions, described in 5.5.5.1, could be extended so that the fixed adjustment made for differences

between the Solvency I and Solvency II curve is added to the Solvency II curve allowing for the volatility adjustment. In doing this, the gap between the two valuation curves would be maintained, ensuring the TMTP are not changed due to movements in the adjustment.

5.3.4. Other factors that impact on the potential value of TMTP

This section covers the items not addressed previously that need to be considered when recalculating the TMTP.

5.3.4.1. Model changes

The working party expects that model changes under Solvency II would primarily affect the unrestricted transitional through the risk margin. Examples of model changes, that could affect the risk margin, are:

- The approval and subsequent use of an Internal Model, where Standard Formula was previously used;
- The revoking of an Internal Model, with Standard Formula being adopted;
- The identification of new non-hedgeable risks as part of an internal model risk identification process;
- Change in the definition of a risk as being hedgeable or non-hedgeable;
- Changes to the correlations between non-hedgeable risks;
- Changes to risk calibrations for non-hedgeable risks; or
- Changes in risk margin aggregation methodology.

Potential solutions

The working party believes that firms could be reasonably expected to maintain the ability to amend their risk margin calculation to reflect material aspects of model change. Clearly if model changes are immaterial then these changes could potentially be ignored. However, if changes are material we would expect that firms may seek to determine the impact on the revised risk margin to determine if a recalculation of the TMTP may be necessary.

5.3.4.2. Contract boundaries

As outlined in section 3.5, Solvency II introduced limits on the extent to which future premiums can be allowed for in the valuation of insurance policies. This contrasts with Solvency I Pillar 2 where it is likely that insurance liabilities allowed for decrements based on best estimate paid-up rates and scheme renewal assumptions.

The recalculation of the contract boundary which applied at 31 December 2015 could potentially be onerous as it may require changes to the way that data is split. In particular, splits may be required on a very detailed basis, given any increments post-1 January 2016 would be deemed to be new business, even if the original policy commenced prior to 1 January 2016. This could be expensive to change and potentially onerous given the interaction with models and other variables such as policy counts for administration expense modelling.

Other data issues relate to the interpretation that unit-linked funds with a guaranteed maximum level of charges are considered outside the scope of the Solvency II contract boundary, i.e. future premiums are modelled in line with best estimate assumptions. If a policy can switch between funds

with a maximum charge guarantee and funds without a maximum charge guarantee then keeping track of this change will be onerous.

Potential solutions

The potential solutions depend on the methodology being used to recalculate the TMTP. For firms that are recalculating based on the models in force at 1 January 2016, one solution could be to derive the value of the contract boundary at this date and run-off in future recalculations based on the expected run-off. In assessing whether this is appropriate, firms may wish to produce sensitivities to market movements and demographic assumptions to which they are sensitive. This may result in triggers for amending the initial value of contract boundary TMTP or rate of run-off.

For firms that are recalculating based on the business in force at the recalculation date, an alternative method would be to consider the new contract boundary to be the point of recalculation. While this will result in a narrowing of the gap between Solvency I and Solvency II technical provisions due to the contract boundary, this could be acceptable, as the relevant premiums will have, by that time, been received by the firm and will be included in the Solvency II technical provisions.

5.3.4.3. With-profits shareholder transfers

Shareholder transfers on with-profits business are not liabilities in Solvency II technical provisions as they generally were in Solvency I Pillar 2 technical provisions. Dependent on the treatment of the transfers by individual firms, the different treatment will have a negative contribution to the initial calculation of the TMTP and will affect subsequent calculations.

Over time as the transfers are made to the shareholders, the contribution to the difference in Solvency I and II technical provisions will reduce and so on recalculation the TMTP would, other things being equal, increase.

Firms may also be required to allow for future shareholder transfer liabilities arising from the future distributions of the with-profits fund's estate or planned enhancements to with-profits policy payouts. These are not allowable under Solvency II, but may have formed part of the insurance liabilities under the Solvency I Pillar 2.

Potential solution

The working party's view is that the treatment of these transfers will be firm dependent. An obvious solution would be to maintain whatever approach was used in the original calculation of the TMTP, as any change from the original approach would need to be justified to the PRA.

The working party expects that firms that do wish to change the treatment of shareholder transfers would liaise with the PRA prior to any change being made. Shareholder transfers are also considered in section 5.4.3 with regard to the FRR test.

5.3.4.4. With-profits planned enhancements

Distributions to with-profits policyholders can be made in several ways. However, under Solvency II, only some types of future distribution are allowed for when calculating technical provisions for with-profits business; other types of distribution are only recognised when they are deemed permanent and fully recognised in the asset share. This differs from the Solvency I Pillar 2 regime, where firms typically allowed for a greater variety of future distribution in their technical provisions.

Potential solution

The working party's view is that the treatment of planned enhancements will be firm dependent. Again, the most obvious solution would be to maintain whatever approach was made in the original calculation of the TMTP, as any change from the original approach would need to be justified to the PRA. The working party expects that firms that do wish to change the treatment of planned enhancements would liaise with the PRA prior to any change being made.

The working party expects firms will continue to be able to quantify the value of planned enhancements and the estate of the with-profits fund for the purposes of economically managing the with-profits fund.

5.3.4.5. Transferred in liabilities

As with assets, there are practical issues if the risks associated with new liabilities are not adequately captured by the Solvency I Pillar 2 model. For example, if pre-2016 business had been transferred from another company, it may be necessary to incorporate parts of the Solvency I Pillar 2 model of the firm from which the business was acquired. This could be onerous if the transferee of the liabilities did not apply for a TMTP and therefore did not maintain the Solvency I Pillar 2 basis.

Potential solutions

For the purposes of deriving the unrestricted transitional, the firm transferring in the liabilities may wish to recalculate only a subset of the technical provisions differences using its own methodology.

For example, it may wish to recalculate the risk margin based on the transferring in firm's methodology and processes. It may deem other aspects of the calculation to remain as per those applied at 31 December 2015.

Alternatively, the receiving firm could wish to value the incoming business on its own view of assumptions and risks. In this case, the firm could calculate both Solvency II and Solvency I on its own views used by the rest of the business covered. This could then be reflected in any consideration paid for the incoming liabilities.

5.3.4.6. Changes in ICG on technical provisions

Overview of issue

Under the previous regime, the PRA had the ability to require firms to hold additional capital if the PRA perceived the firms approach to technical provisions to be weak. This was applied through the use of an ICG capital add-on, in a similar way to other ICG capital add-ons.

Following CP47/16, it is unclear to the extent that ICG on technical provisions will be updated, as CP 47/16 requires best estimate assumptions to be the same between the two solvency bases in the majority of cases. Therefore, firms will need to make an assumption about how the ICG on technical provisions changes over time as the business runs off.

Potential solutions

A very conservative approach could be to assume that the ICG does not change: but this would seem to overstate the Solvency I technical provisions, since the risks associated with the business should reduce as the business runs off.

An alternative approach would be to assume that the ICG is removed as the best estimate assumptions are aligned with the Solvency II assumptions. In any case, it would seem appropriate for firms to discuss the issue with the regulator.

The working party is aware that a number of firms believe that the alignment of assumptions and methodology used in the Solvency I Pillar 2 and Solvency II technical provisions should result in a removal of any ICG add-ons given these are deemed to be sufficiently strong for the purposes of Solvency II. It is not known by the working party whether the PRA shares this view.

What is known is that the PRA has indicated in CP47/16 that both the Solvency I Pillar 2 and Solvency II assumptions and methodologies should be reviewed on a regular basis and changed, when appropriate, to reflect changes in operating experience and the firm's risk profile. The PRA has also indicated in CP47/16 that upon request from firms, or if they believe the ICA basis is not maintained appropriately, they will consider conducting a proportionate ICG review.

Overall the working party believes any decision regarding the removal of ICG on technical provisions is beneficial from the perspective of simplifying TMTP recalculation, but the working party recognises the need for care to ensure policyholder protection is not inappropriately compromised. The decision to remove any ICG on technical provisions will need to weigh up the original rationale for the add-on compared to its relevance going forward, the materiality of the add-on, the overall strength of the Solvency I Pillar 2 basis and the benefits to both the firm and the PRA from the reduction in the associated administrative overheads.

5.4. Areas for consideration – application of the restriction of the transitional

5.4.1. Overview

As outlined in sub-section 2.2, a restriction of the TMTP applies if the financial resource requirement (FRR) of Solvency II, after the inclusion of the unrestricted TMTP, is lower than the more onerous of the two Solvency I Pillars, i.e. Pillar 1 and Pillar 2.

The FRR comparison test introduces the need to be able to construct the entire Solvency I balance sheet, available capital, and capital requirements. This includes:

- Solvency I Pillar 2 technical provisions;
- Other liabilities on the Solvency I Pillar 2 balance sheet (accounting liabilities including deferred tax liabilities);
- The Solvency I Pillar 2 capital requirements: both the Individual Capital Assessment (ICA) and any additional Individual Capital Guidance (ICG) add-ons imposed by the PRA;
- Value placed on assets by the Solvency I Pillar 2 regime. There is some debate about whether differences in the valuation of assets can feed directly in to the FRR comparison test, and this is discussed in sub-section 5.4.3. Asset values may also be relevant to the extent that they need to be stressed to derive the capital requirements and differences in asset values in Solvency I Pillar 2 and Solvency II may generate a deferred tax liability difference;
- Solvency I Pillar 1 technical provisions, i.e. mathematical reserves;
- Other liabilities on the Solvency I Pillar 1 balance sheet (accounting liabilities including deferred tax liabilities);
- The Solvency I Pillar 1 capital requirements: the Long Term Insurance Capital Requirement (LTICR), for realistic with-profits insurance legal entities the With-Profits Insurance Capital Component (WPICC) and for firms which aren't realistic with-profits insurance legal entities the Resilience Capital Requirement (RCR);

- Value of Solvency I Pillar 1 assets, noting again that it is not entirely clear whether asset valuation differences may have a direct impact on the FRR test, but noting further that differences in asset values in Solvency I Pillar 1 and Solvency II may generate a deferred tax liability difference.

Overall the working party believes there are two main considerations here:

- The Solvency I regime's models, processes and appropriate levels of governance that need to be maintained going forward;
- The valuation under the Solvency I regime including a split by pre- and post-1 January 2016 business. This potentially introduces an additional requirement beyond that required under Solvency I, although the PRA has clarified in PS11/17 that they expect the FRR test should be applied to all business, regardless of when it was written, at the recalculation date.

The remaining part of this section outlines the following:

- Sub-section 5.4.2 explores whether the interpretation of the FRR comparison test and in particular whether it applies to only business prior to 1 January 2016, to all business at the recalculation date, or whether it should only apply for the initial TMTP calculation and not to recalculations.
- Sub-section 5.4.3 outlines differences in the Solvency I and Solvency II FRR that could lead to distortions in the relative levels of policyholder protection, which firms may wish to consider in their TMTP methodology.
- Sub-section 5.4.4 describes an ambiguous area relating to whether the FRR comparison test should be applied before or after the 1/16th run-off. The issues outlined in this section are similar to the "double-run-off" issue outlined in section 5.3.1.
- Sub-section 5.4.5 outlines issues concerning the segregation of pre- and post-1 January 2016 business.

The remaining sub-sections outline specific issues and potential solutions that firms may employ in relation to the recalculation of the FRR comparison test.

5.4.2. Does the FRR test take into account all of a company's business or only the pre-2016 business?

The FRR test ensures that the financial resources under Solvency II are not lower than the financial resources that would have been held if Solvency I were still in force.

As outlined in section 5.4.1 above, the PRA has clarified in the policy statement PS11/17 that they expect the FRR test should be applied to all business, regardless of when it was written, at the recalculation date, i.e. option 2 below. However, firms are able to apply the FRR comparison test to only business written prior to the introduction of Solvency II if they can demonstrate that the outcome would not be materially different to a full calculation.

This gives firms a choice over how they implement and interpret the FRR comparison test calculation, namely:

- 1) The cap applies to just pre-1 January 2016 business at the recalculation date.
- 2) The cap applies to all business, regardless of when it was written, at the recalculation date.
- 3) The cap only applies at 1 January 2016.

1) *The cap applies to just pre-1 January 2016 business at the recalculation date*

This interpretation is that the test only applies to the business still in force at the recalculation date that was also in force prior to the introduction of Solvency II. This is equivalent to an interpretation that the business written after the introduction of Solvency II does not fall within the capped amount, in line with the TMTP calculation as at 31 December 2015.

The practical challenges associated with this interpretation should not be underestimated. In particular, this requirement in full requires the segregation of technical provisions, asset investment portfolios and accounting liability trial balances by pre- and post-1 January 2016. Therefore the working party views the PRA's clarification on this matter as a positive step.

Practical challenges relating to this definition are outlined in more detail in section 5.4.5.

2) *The cap applies to all business, regardless of when it was written, at the recalculation date*

An alternative interpretation is that the FRR comparison test would imply that all business, including that written after 1 January 2016, needs to be valued on a Solvency I basis and a Solvency II basis to determine whether the FRR comparison test "bites."

On balance the working party did not view this interpretation as being in line with the original intention of the TMTP, but rather viewed the link between business written prior and after 1 January 2016 as an argument to support a greater degree of approximation in TMTP recalculations. Subsequent to forming this view, the PRA has clarified in PS11/17 that this is how UK firms should apply the FRR comparison test.

The working party has retained this section of the paper, so that the reader can understand the thought process the working party followed in coming to this view.

On the assumption that Solvency II requirements for new business are more onerous than Solvency I requirements, for a firm open to new business, the restriction arising from the FRR test would become less likely to "bite" if applied to all business in an undertaking, as compared to a FRR test applying to business written prior to 1 January 2016. Over time this would likely result in a TMTP which transitions towards unrestricted technical provision differences. This is viewed as beneficial from both a practical and explanatory perspective as it reduces reliance on approximations and detailed knowledge of the Solvency I regime. However, the impact of new business depends on a firm's recalculation methodology and how the relationship between Solvency I and Solvency II has been determined, in particular with regard to any approximations used.

It is also noted that the Solvency II regime's capital resources and requirements are derived at an undertaking level, or within a ring-fenced fund of an undertaking. There is not a concept of separate capital resources and requirements for business written prior to or after 1 January 2016 within an undertaking. This means the Solvency II regime recognises offsets (e.g. directionally opposite exposures, MA test requirements, etc) and diversification benefits within an undertaking across business regardless of the prior to and after 1 January 2016 segregation.

This means that the financial resources of business written prior to 1 January 2016 are inextricably linked to the financial resources of business written after 1 January 2016. The segregation of the financial

resources across these lines would potentially introduce treating customer fairly consideration around the fairness of treatment of policies written prior to and after 1 January 2016. These considerations could be difficult to reconcile where a TMTP arises on differences in valuation methodology, i.e. contract boundaries treatment, rather than genuine differences in a contract's commencement date.

3) *The cap only applies at 1 January 2016*

A further interpretation could be that the cap is required to be calculated at 1 January 2016 but not for subsequent recalculations. The PRA has made clear in SS6/16 that this requirement remains.

5.4.3. Differences between Solvency I and Solvency II to consider in the FRR test

The Statutory Instrument requires that the TMTP be limited so that the “financial resources” required by Solvency II (after allowing for the impact of TMTP) be at least as great as the financial resources required by the Solvency I regime. The Statutory Instrument requires that the financial resources are no less than those which would be required to be maintained in accordance with GENPRU 1.2.26 R. The Excel template the PRA requires firms to complete when making a TMTP application defines the FRR to be the sum of:

- Mathematical reserves/insurance liabilities/technical provisions
- Liabilities other than insurance liabilities
- Capital requirements

There are, however, a number of differences between the Solvency I and Solvency II regimes that are not captured by this definition of FRR. By not capturing the following differences firms' FRR may not be comparable across regimes and this could result in inappropriate outcomes from recalculating the value of the TMTP.

The working party believes that firms should identify whether the issues outlined below apply in the recalculation of the FRR. If they do, then firms may wish to consider modifications in their TMTP methodology to remove these distortions. These modifications will need to be agreed internally and discussed with the PRA.

Differences in regimes, particularly in respect of with-profits funds

Under the Solvency I Pillar 2 regime the contribution of with-profits funds to a proprietary company's consolidated position typically allows for the present value of future shareholder transfers. These future shareholder transfers vary in nature including the following types:

- Those future shareholder transfers related to distributions, which have been fully allocated to asset share,
- Those future shareholder transfers related to distributions that are planned but not fully allocated to asset share (planned enhancements), and
- The shareholder's share of further distributions of the with-profits fund's estate which are neither planned nor allocated to asset share.

This adverse impact is in part a consequence of the Solvency I Pillar 2 regime having no single presentation of the contribution of with-profits funds to a proprietary company's consolidated

position and the working party understands that a number of approaches have been taken across different companies. Examples of the different approaches taken in Solvency I Pillar 2 include:

- 1) Including a present value of shareholder transfers asset in a shareholder fund. This may include some or all of the different types of shareholder transfers.
- 2) Excluding the with-profits fund's capital resources and requirements, and only allowing for the shareholder's value in the with-profits fund not captured in the shareholder transfer asset, e.g. the shareholders' share of the with-profits fund's estate.
- 3) Notionally increasing the value of liabilities of a with-profits fund such that the value of assets in excess of liabilities targets the shareholders' value in the with-profits fund not captured in the shareholder transfer asset, e.g. the shareholders' share of the with-profits fund's estate.
- 4) Notionally write down the value of available capital of a with-profits fund such that its value targets the required capital of the with-profits fund *plus* the shareholders' value in the with-profits fund not captured in the shareholder transfer asset, e.g. the shareholders' share of the with-profits fund's estate.

Under Solvency II, the initial FRR of the firm includes contribution from ring-fenced funds including with-profits funds. This could lead to an adverse impact on the shareholder of a proprietary firm, even where the ring-fenced funds have surplus capital resources over capital requirements. Examples of this include:

- Differences in the treatment of planned enhancements under Solvency I Pillar 2 and Solvency II, to the extent they impact the overall legal entity FRR.
- Differences in the presentation of capital requirements. Solvency II capital requirements include the notional Solvency Capital Requirement of ring-fenced fund, whilst some firms presented their ICA and ICG capital requirements including only the shareholder's interest in the with-profit fund.
- Differences in the shareholder value in the with-profits fund. Solvency I Pillar 2 tends to take a broader view than Solvency II. For example, Solvency I Pillar 2 may include the shareholder's interest in the estate, while Solvency II shareholder value is limited to the share of bonuses recognised in the technical provisions.

Any differences on the asset side of the balance sheet

Examples of this include:

- Valuation differences, for example due to accounting rules;
- Presentation of accounting assets and liabilities, which have the same value on assets net of liabilities;
- Differences in asset inadmissibility;
- Differences in the value of participation assets. Noting Solvency I Pillar 2 would generally be based on an economic look-through valuation and Solvency II will reflect accounting rules.

Differences in treatment of ancillary expense companies

Where a firm uses an ancillary expense company, which charges fees to the legal entities for expense services, and this ancillary expense company is not a subsidiary of the legal entity, this can result in

differences in the Solvency I Pillar 2 and Solvency II FRR. This difference results from the use of expense assumptions in Solvency I Pillar 2 technical provisions which “look through” to the underlying expenses incurred and contrasts with Solvency II technical provisions which are valued based on the fees charged.

Differences in capital resources derivation

Examples of this include:

- The treatment of subordinated debt, including the Solvency II transitional arrangements in relation to subordinated debt issued prior to 1 January 2016;
- Differences in presentation of with-profits fund (covered above).

5.4.4. Is the FRR test applied before or after the 1/16th run-off reductions?

The statutory instrument is unclear on how the FRR comparison test applies at a point other than the original point of calculation.

One interpretation of the rules is that the FRR comparison test is static and is applied post the 1/16th reductions that are performed each year. This would mean a level TMTP for each year until the TMTP value reduces below the FRR comparison test set at outset, before reducing linearly once the amortised value of TMTP falls under the cap value.

An alternative interpretation however is that the FRR comparison test should also reduce over time, meaning that if the cap bites at outset that it is the capped value that the 1/16th deductions get applied to.

SS17/15 provides a little more detail and states that: “The PRA’s default assumption is that once any limit on the amount of the TMTP has been determined at outset, the limitation will not need to be assessed again unless the TMTP is recalculated at either the firm’s or the PRA’s initiative. Assuming the TMTP is not recalculated, it is expected to run-off linearly each year from its starting amount until it reaches zero.”

The first part of this statement implies that at the point of recalculation the FRR comparison test is reset as part of the calculation routine. It is not clear however whether the FRR comparison test should be applied pre or post the amortisation factor, or indeed if actions that may have been taken to address the “double run-off” issue outlined in section 5.3.1 for the unrestricted TMTP can also be applied to the FRR comparison test.

It is the view of the working party that the run-off applies after the application of the FRR comparison test. The working party suggests that approach taken should be agreed with the PRA and should form part of the firm’s recalculation policy. This may also be an area that should be brought to the attention of the firm’s Audit Committee if there is uncertainty as to how the rules should be interpreted.

It is also important that firms consider how the TMTP runs off in their capital planning. Whilst the value of TMTP in, say, 2017 may depend upon how the rules are interpreted, the value will ultimately run-off to zero in 2032: so a slower run-off in the early results will result in a faster run-off in later years.

5.4.5. Segregation for pre- and post-1 January 2016 business

As outlined in section 5.4.1 above, the PRA has clarified in the policy statement PS11/17 that they expect the FRR test should be applied to all business, regardless of when it was written. In addition to this, the PRA has also clarified in PS11/17 that:

*Nevertheless, a firm may be able to use just the business written before the introduction of Solvency II as part of a proxy calculation (for the business written after), as long as it can demonstrate why using this methodology is appropriate and does not result in a materially different outcome to a full calculation.*⁸

This clarification is helpful because it allows a firm to determine the FRR comparison test based on either all the business in a legal entity, or, subject to appropriately demonstration, only to business written prior to 1 January 2016.

For firms that wish to apply the FRR comparison test to business written prior to 1 January 2016, the recalculation of the TMTP requires firms to segregate the Solvency II and Solvency I balance sheet and capital requirements into the part only applying to business in force as at 1 January 2016 (“pre 1 January 2016 business”).

This requirement, if applied as accurately as theoretically possible, is very onerous for firms because it requires further development to reporting systems and processes. In addition to this, new methodology may be required to consider how the segregate the balance sheet and capital requirements, in addition to the technical provisions outlined in sub-section 5.3, challenges include:

- Where a split of pre/post 1 January 2016 business is required, how are the assets split? This includes both unit-linked assets (and associated stresses) and non-linked assets (and associated stresses).
- How do you allocate surplus assets and assets backing capital requirements to pre- and post-1 January 2016 business segments?
- How do you split accounting liabilities such as reinsurance payables, accruals for commission payments, provisions for reconciliation mismatch, unearned investment income and gains between pre- and post-1 January 2016 business?
- How do you split deferred tax liabilities between pre- and post-1 January 2016 business?
- How do you allocate diversification benefits between pre- and post-1 January 2016 business? This includes diversification within pre-1 January 2016 business and diversification benefits between pre- and post-1 January 2016 business.

It is noted that it is only the relative differences in the FRRs, which generate differences in the value of TMTP. In other words if a liability has the same value in Solvency 1 Pillar 1, Solvency 1 Pillar 2 and Solvency II, it will not result in a difference in the TMTP.

Potential solutions

The problems outlined above are difficult to solve and the working party view is that any resources employed solving these problems could be better employed elsewhere. Therefore, the working party believes that firms should be able to pragmatically allow for these issues without a full recalculation,

⁸ Section 2.9 of PRA policy statement PS11/17

including additional pre- and post-1 January 2016 business split. We believe there are two basic solutions which can be employed here:

- Recalculate the FRRs as at 1 January 2016 using models, data and processes in force at that date and appropriately allow for the run-off of the business.
- Recalculate the FRRs as at the recalculation date, and then attempt to split into pre- and post-1 January 2016 business. The splitting of the technical provisions was discussed in sub-section 5.3.2. Suitable proxies may be needed to derive an approximate split of the capital requirements or, alternatively, firms may propose not to split the capital requirements/liabilities other than insurance liabilities and instead split only the technical provisions.

5.4.6. Maintaining Solvency I models

Overview of issue

Maintaining models for the Solvency I regimes could create additional complexity for firms. Carrying out runs of the Solvency I Pillar 2 capital model, and maintaining Solvency I Pillar 1 processes, alongside the firm's Solvency II model has the potential to create significant extra work for reporting teams.

It is unclear the extent to which firms are expected to keep their Solvency I Pillar 2 models up to date. For example, a firm's Solvency II internal model may be calibrated using the latest available data and therefore only be updated when additional data is received. For example, when the latest year's mortality experience becomes available. The model may also be updated to take account of new research and the development of new modelling techniques.

As well as maintaining Solvency I Pillar 2 capital models, firms may need to maintain records of how prudential margins are incorporated into Solvency I Pillar 1 technical provisions. Firms may have used different calculation models to determine their Solvency I Pillar 1 technical provisions and different processes to extract and aggregate the results.

This requirement is slightly mitigated from the requirements of IFRS 4 for insurance business which may use aspects of the firm's historic Solvency I Pillar 1 PRA valuation reflecting the evolution of IFRS 4 from a modified statutory solvency basis. However, with the future implementation of IFRS 17, firms may not be able to rely on IFRS valuations for determining the Solvency I Pillar 1 technical provisions in the future.

Potential solutions

In this section, we outline potential solutions to reduce the onerousness of maintaining Solvency I models.

Ignoring FRR comparison test

If the FRR restriction does not bite at 1 January 2016 and is unlikely to bite in the future, it could be assumed that the cap would never bite and not recalculated. In particular firms could apply to amend the FRR definition in TMTP calculation to make this more likely as outlined in section 5.4.3.

This has the clear benefit of being simple to maintain going forward. However, this proposal may not be appropriate for firms which have an FRR restricted TMTP or have a TMTP which is close to the FRR restriction.

Overall it is unlikely this approach would be permitted by the PRA, reflecting the requirement to quantify the FRR comparison test in recalculation applications.

Recalculate Pillar 1 or Pillar 2

For legal entities where one Solvency I Pillar is materially higher than the other then it would seem reasonable for firms to only assess the impact of the most onerous Solvency I Pillars in future recalculations.

Firms may wish to include qualitative and quantitative arguments, including sensitivities and the rolling forward of Solvency II day 1 calculations, to support the limitations and reasonableness of this approach. The approach may also include triggers where the approach should be reassessed, for example material acquisitions of pre-1 January 2016 business, change in reinsurance or disposals of pre-1 January 2016 business.

Deriving Solvency I Pillar 2 ICG capital requirements

If a firm's Solvency I Pillar 2 and Solvency II capital requirement processes are sufficiently aligned then a firm may wish to develop simplistic way of adjusting the Solvency II SCR to derive an approximate ICG capital requirement. In the case that a simplified approach is taken firms will need to ensure that this approach has been agreed internally and discussed with the PRA

This approach would need to consider the following factors:

- Alignment of aggregation methodology between Solvency I Pillar 2 and Solvency II SCR. If this is possible, this means the firm can use the Solvency II processes for both ICA and Solvency II capital requirements in its recalculations.
- Remove binary differences in regimes, e.g. Solvency I Pillar 2 cost of closure. These are the differences in capital requirements that are clearly outside the scope of the other regime.
- Firms may wish to preserve the value of Solvency I Pillar 2 binary items, not included in Solvency II SCR, like cost of closure to reflect the value as at 31 December 2015 to avoid having to maintain Solvency I Pillar 2 specific methodology going forward.
- Derive conversion factors or recalculate capital requirements for material risks, to estimate the ICA based on the Solvency II SCR.
- Create process for reviewing the appropriate factors. The two yearly expected recalculation would appear to be the natural review point.
- Maintain 1 January 2016 ICG level of capital requirement (see next section for further details on this point).
- Use the Solvency II SCR process, with adjustments outlined above to recalculate the ICG in future TMTP recalculations.

Deriving Solvency I Pillar 1 mathematical reserves and capital requirements

If a firm needs to recalculate the Solvency I Pillar 1 FRR in its TMTP recalculation, then adjustments to the Solvency II SCR are less likely to be appropriate than they were for ICG. This is because there are fewer similarities between Solvency I Pillar 1 and Solvency II, than there are between Solvency I Pillar 2 and Solvency II. Therefore firms are required to develop a simplistic way of recalculating the Solvency I mathematical reserves and capital requirements. The Solvency I capital requirements are the Long Term Insurance Capital Requirement (LTICR), for realistic with-profit insurance legal entities the With-Profits Insurance Capital Component (WPICC) and for legal entities which are not realistic with-profits insurance legal entities the Resilience Capital Requirement (RCR).

There are a number of potential simplifications, which firms may consider to reduce the onerousness of recalculating the Solvency I FRR. These include the following:

- Derive sensitivities at YE15 and use these sensitivities and movements in observed market indices to estimate the Solvency I Pillar 1 FRR in future TMTP recalculations.
- Consider whether to recalculate all aspects of the Pillar 1 capital requirements. In particular aspects relating to With-Profits funds such as the WPICC might be de-scoped for future recalculations where the TMTP primarily relates to shareholder owned sub-funds.
- For Internal Model firms the margins for adverse deviation (MADs) and provisions for adverse deviations (PADs) could be converted into appropriate levels of risk, i.e. persistency margins are equivalent to a 1-in-20 “up” level lapse rate event, i.e. the lapse rates have increased to a level associated with a 1-in-20 year event, where this level of probability is deemed to be equivalent to the Solvency I Pillar 1 prudent assumptions.
- Firms may wish to derive the portfolio gross redemption yield (PGRY) based on a simplistic mechanical calculation rather than maintain a Solvency I asset allocation. This could be based on the IFRS calculation.
- Firms could simplify the derivation of the Solvency I “Paid up” test where the sterling reserve for unit linked contracts is valued as the most onerous of the premium paying and paid up reserves. They could assume all contracts are paid up or all contracts are premium paying.

In the case that a simplified approach is taken firms will need to ensure that this approach has been agreed internally and discussed with the PRA.

5.4.7. Reviewing Individual Capital Guidance

Overview of issue

Under the previous Solvency I Pillar 2 regime, firms used their own models to determine their capital requirements; these capital requirements were known as the ICA. The PRA then had the ability to require firms to hold additional capital over and above the ICA: with ICG capital add-on issued and the total capital being termed “individual capital guidance” or ICG.

In CP47/16, the PRA has indicated that upon request from firms, or if it believes the ICA basis is not maintained appropriately, it will consider conducting a proportionate ICG review. However, the working party expects these ICG reviews to be less frequent than they were under the Solvency I

regime, and these reviews would predominantly apply following a large transactional change, e.g. a Part VII transfer of business.

When carrying out the FRR test, firms must make an assumption about how the ICG changes over time as the business runs off. There are a number of issues that arise upon recalculation:

- What assumptions are used for the ICA calculation? e.g. those used as at 1 January 2016, or should they be updated?
- If the calculation methodology has changed in Internal Model, should this be reflected in the ICA?
- How does a strengthening or a weakening of ICA get reflected in the overall ICG?

The approach taken to deriving ICG add-ons will need to be discussed with the PRA. It seems unavoidable that firms will need to make changes to their ICA models, to ensure that they remain appropriate for the entirety of the period that they are being used as part of TMTP recalculations.

Potential solutions

A very conservative approach could be to assume that the ICG does not change: but this would seem to overstate the capital requirements, since the risks associated with the business should reduce as the business runs off; noting the considerations in section 5.4.4 re whether or not the linear run-off is applied before or after the FRR test.

An alternative approach might be to assume that the ICG add-ons are a fixed percentage of the ICA: so it changes in response to changes in the ICA. Indeed, the working party understands that the PRA communicated some firms' ICGs to them in terms of a percentage of ICA. However, this approach does not reflect any change in the mixture of risks. For example, an ICG might have been imposed owing to shortcomings in how a firm modelled longevity risk. If the firm then used reinsurance to remove its longevity risk then is it still necessary for it to allow for this ICG? Similarly, if a component of the ICA is strengthened that had previously attracted ICG it would seem reasonable to write down the capital add-on (subject to PRA approval).

The working party is aware that a number of firms believe that the alignment of assumptions and methodology used in the Solvency I Pillar 2 and Solvency II capital requirement should result in a removal of any ICG add-ons given these are deemed to be sufficiently strong for the purposes of Solvency II. It is not known by the working party whether the PRA shares this view.

What is known is that the PRA has indicated in CP47/16 that firms should maintain consistency between the Solvency I Pillar 2 and Solvency II assumptions and methodologies and these assumptions and methodologies should be reviewed on a regular basis and changed, when appropriate, to reflect changes in operating experience and the firm's risk profile.

The PRA has also indicated in CP47/16 that upon request from firms, or if they believe the ICA basis is not maintained appropriately, they will consider conducting a proportionate ICG review. In CP47/16, the PRA further indicates that the principle of consistency of assumptions and methodologies does not require the equalisation of all assumption and that the aggregate strength of the valuation basis will be considered in the PRA review of a firm's ICA and the PRA determination of the ICG.

In the scenario where an internal model firm has aligned its Solvency I Pillar 2 ICA and Solvency II SCR assumptions and methodologies, to the extent permitted under the relevant regulations, and the firm's internal model has been approved, it is not clear what rationale remains for including any ICG add-ons going forward. In particular, the PRA will have had to consider the aggregate strength of the Solvency II SCR assumptions and methodologies as part of its internal model approvals process, with any individual areas of the model calibrated below the PRA's benchmark indicators offset against other areas of conservatism within the model.

Overall the working party believes any decision regarding the removal of ICG add-ons is beneficial from the perspective of simplifying TMTP recalculation, but the working party recognises the need for care to ensure policyholder protection is not inappropriately compromised. The decision to remove any ICG add-ons provisions will need to weigh up the original rationale for the add-on compared to its relevance going forward, the materiality of the add-on, the overall strength of the Solvency I Pillar 2 basis and the benefits to both the firm and the PRA from the reduction in the associated administrative overheads.

6. Forward Challenges and Management of the Business

The management of the TMTP under Solvency II is an area which the working party believes will evolve over time as both the PRA's expectations become clearer and also as firms learn from doing and look to develop processes and internal monitoring capabilities. Broadly speaking, the material size and sensitivity to changing market conditions of the TMTP, means that it has become an important component of the overall balance sheet for many UK firms.

In considering how firms will use the TMTP (and recalculation of it) as part of the overall balance sheet management toolkit we have considered the following key management themes, namely:

- In section 6.1, we consider the challenges faced for asset liability management (ALM) functions given the existence of the TMTP.
- In section 6.2, we consider the ALM challenges relating to the MA. Under Solvency II, MA requirements have created significant additional ALM requirements. In addition, the reliance on the TMTP means that there are multiple reporting metrics that need to be factored in when managing the overall Solvency II balance sheet. This creates complex interactions and a difficult challenge when determining the best ALM approach.
- In section 6.3, we propose a dynamically recalculated TMTP process reflecting changes in operating conditions. The overall aim of this proposal is to minimise the overheads on the PRA and on firms from an excessive number of TMTP resets, notwithstanding the need to create a process sufficiently robust such that reliance can be placed on this process.
- In section 6.4, focus is given to how firms communicate the impact of the TMTP to stakeholders including the analysts and investor community.

The significance of the TMTP and other long-term guarantee measures on the solvency of UK insurers (as highlighted by Figure 9 below, extracted from EIOPA's 2016 report on long-term guarantees measures and measures on equity risk) means that careful thought is required as to what is included within year-end disclosures. In addition phasing-in plans, as the benefit of the TMTP runs off over time, will become an increasing challenge for firms.

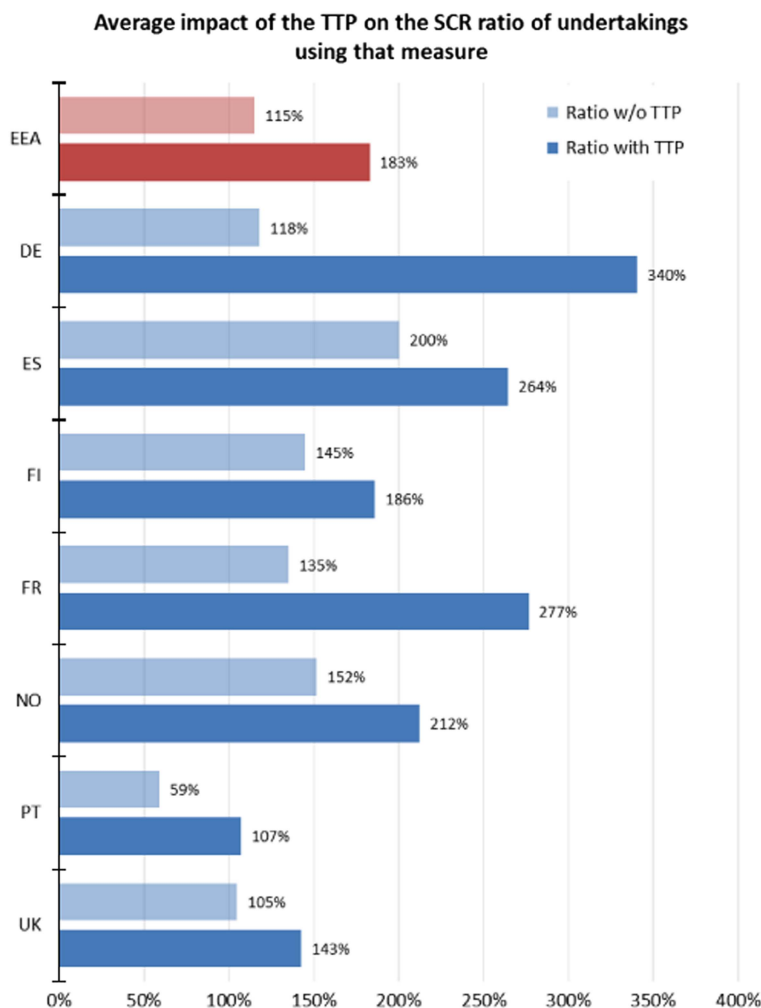


Figure 9. Average impact of TMTP on coverage ratio

Source: https://eiopa.europa.eu/Publications/Responses/EIOPA-BoS-16-279_LTG_REPORT_2016.pdf, page 73

6.1. Asset Liability Management

6.1.1. Overview

Immediately after the inception of Solvency II, hedging and in particular interest rate hedging came under review. Insurers were confronted with the catch 22 situation as to whether to manage their Solvency II balance sheets prior to or after allowance for the TMTP. Further Solvency II introduces a complex conundrum of what metric is best to hedge. For example, protecting your Solvency II coverage ratio is likely to lead to implications on IFRS profits and volatility which needs careful consideration especially when also looking forward to the further added complications of IFRS 17 changes.

Recalculation of the TMTP can be viewed as a tool for hedging the interest rates exposure arising from the Solvency II risk margin. However, there are issues regarding the efficiency of this “free hedging” approach given PRA approval process and triggers for reset. In particular where there is a delay between applying to recalculate the TMTP and receipt of approval, it is not clear how any instability will be dealt with in the interim. While firms might develop internal monitoring mechanisms to more dynamically offset increases in the risk margin with increases in the TMTP, publically reported numbers would not be able to reflect a recalculation without approval. It is therefore unclear what firms may choose to disclose in this regard.

The presence of TMTP, and firms’ ability to recalculate it, should be embedded within firms’ general ALM frameworks. The working party has identified the following areas, which impact the ALM framework of firms and its interaction with TMTP recalculation.

Which metrics to optimise?

Firms need to be clear which metrics they are optimising to and how any hedging action taken interacts with these metrics. These metrics include, but are not limited to, the following:

- Solvency I Pillar 2 technical provisions,
- Solvency II technical provisions,
- Economic balance sheet,
- Regulatory balance sheet,
- IFRS balance sheet,
- Maximising economic surplus capital (surplus of economic balance sheet over economic capital requirements),
- Maximising regulatory surplus capital (surplus of regulatory balance sheet over regulatory capital requirements).

Whether to hedge the risk margin?

Firms need to consider whether to actively hedge the risk margin, or rely on the TMTP recalculation to provide a free hedge of the risk margin arising on business written prior to the introduction of Solvency II. In particular, firms need to consider whether they want to hedge the additional exposure from movements in interest not deemed to be a material change in risk profile, timing issues arising from the TMTP recalculation process and the risk margin arising on business written after the introduction of Solvency II.

Longer term firms will need to consider how to match the exposure from the risk margin arising from new business written after the introduction of Solvency II, which the TMTP does not cover.

MA and illiquidity premium

Firms need to consider what implications the TMTP has on their MA governance, ALM activity and processes. A firm will need to determine whether to pool asset allocations across liabilities between those written prior to and those written after Solvency II, or to allocate assets separately. These issues are considered in more detail in section 6.2.6 below.

A firm may also wish to use the TMTP to “buy time” to apply for a Solvency II MA or take MA optimisation action, such as the securitisation of Equity Release Mortgage assets or to avoid the forced sale of ineligible or sub-optimal assets.

It is clear that this is a valid approach for assets held pre-Solvency II given the associated illiquidity premium would have already been captured through the previous regime on the same assets. However, for investment into new asset classes, and when considering further investment in existing MA ineligible asset classes, should it be deemed appropriate that the same transitional benefit could apply for those that do not have sufficient regulatory approvals in place?

Equity Release securitisations

The Standard Formula (SF) treatment of securitisations is extremely penal (essentially a 100% capital charge for long-dated assets⁹) and as such for a SF insurer under the Solvency II regime it is very difficult to continue accessing asset pools that require securitisation to be made MA eligible.

In the case of Equity Release, many of the niche annuity providers who have historically been leading players, and therefore have a large proportion of their annuity liabilities backed by the asset class, do not yet have approved internal models.

Without allowing the TMTP to act as a temporary mechanism to allow the continuing investment in the unstructured form of the asset, such firms are unable to continue to write the same volumes of new equity release assets going forwards whilst maintaining solvency coverage.

FRR comparison test implications

The FRR comparison test has a significant impact on management actions that a firm wishes to implement including hedging approaches. The firm will need to consider what impact the TMTP recalculation will have on the overall expected benefit of the action.

While a management action might be the most sensible course of action if considering the Solvency II regime in isolation, factoring in any loss of TMTP may in the short term reduce the desire of firms to carry out such actions and could in some cases potentially counter-intuitively worsen the overall Solvency II balance sheet net of TMTP.

6.1.2. Which metric to optimise?

Firms will need to decide on the appropriate hedging strategy for their balance sheet. The strategy may consider Solvency I and/or Solvency II key metrics. It may be undesirable to continue to hedge to Solvency I Pillar 1, for example due to the existence of the LTICR and the WPICC. Further, there may be unintended consequences of hedging to Solvency I Pillar 1 which firms should carefully think through. A clear hedging policy can facilitate this decision making.

⁹ Securitised Equity Release assets are treated as securitised provisions in the SF spread risk module. If a firm is using an internal special purchase vehicle (SPV) to securitise the underlying residential property cashflows, into ‘bond-like’ cashflows that are MA eligible, it is likely this internal SPV will not be externally rating and hence receive a 100% capital requirement as an unrated securitised position as outlined in Solvency II delegated acts article 178.

As the TMTP runs off over time, the Solvency II technical provisions, after allowance for the TMTP, become more weighted towards Solvency II technical provisions, prior to allowance for the TMTP. As a result, optimisation strategies that reference a more favourable Solvency I treatment should allow for the run-off of that benefit.

If the aim of the optimisation is to minimise the Solvency II technical provisions after allowance for the TMTP, then on inception of Solvency II firms are still incentivised to optimise the Solvency I Pillar 2 position given Solvency II technical provisions, after allowance for the TMTP, are effectively the Solvency I Pillar 2 technical provisions.

Hedging policies therefore should be very clear on which metric or metrics are being optimised. In general the working party notes that a focused policy is more likely to achieve its objectives than one which attempts to target multiple objectives.

The remainder of this section outlines the metrics which firms may wish to optimise to. In all cases, the relative risks, costs, and benefits of implementation need to be assessed.

6.1.2.1. Solvency I Pillar 2 technical provisions

The objective here is to minimise Solvency I Pillar 2 technical provisions, within the firm's given level of risk appetite whilst complying with all regulatory requirements.

Examples of how firms may do this are outlined below.

- Firms with annuity business may seek to invest in higher yielding illiquid assets, which increase the average spread of the portfolio and allows a higher rate of MA discounting to apply to the liabilities.
- Firms with with-profits business will be required to assess the relative riskiness of different asset classes, in particular where there are implications on the cost of guarantees of the options embedded within with-profits business.
- Firms may assess the relative advantage of entering into reinsurance contracts. Provided reinsurance rates are sufficiently "soft" then this may lead to a lowering of Solvency I Pillar 2 technical provisions, net of reinsurance recoverable, compared to not entering the reinsurance arrangement. Within the TMTP consideration is required as to the impact of such a contract on Solvency I technical provisions.

6.1.2.2. Solvency II technical provisions

The objectives here are similar to the Solvency I Pillar 2 considerations, except for the following notable exceptions:

- Solvency II technical provisions include the risk margin, while Solvency I Pillar II technical provisions do not. Considerations relating to hedging the risk margin are outlined in more detail in a separate sub-section below.
- For annuity business written in a MA Portfolio, the relative Solvency II allowance for default and downgrade risk, i.e. the "Fundamental Spread" may differ to a firm's own economic view of default and downgrade risk. This may make certain asset classes relatively more attractive under Solvency I Pillar 2 than Solvency II or vice versa.

- For With-Profits business certain aspects of the Solvency II regime are perceived to be “un-economic.” Examples include the treatment of future shareholder transfers and the treatment of planned enhancements. These are covered in more detail in section 3.

6.1.2.3. Economic balance sheet

The aim here is to optimise the excess of assets over liabilities as measured on an economic basis. Here firms may seek to minimise exposure arising from a mismatch between assets and liabilities, and will do so within the firm’s own level of risk appetite while complying with all regulatory requirements.

Examples which firms may employ to meet this include:

- Investing in assets whose cash-flows are well matched to liabilities in terms of timing, certainty, and currency.
- The use of interest rate swap derivatives to lengthen or shorten the duration of assets to match the duration of liabilities.
- The use of equity put options to provide offsetting exposure to equity volatility arising on With-Profits business and the cost of guarantees associated with its embedded options.

6.1.2.4. Regulatory balance sheet

It is noted that for the purposes of this paper, the regulatory basis is Solvency II.

The overall objectives of the hedging to a regulatory balance sheet are similar to the economic balance sheet considerations. However, there may be certain types of asset or liabilities which are valued or recognised differently in the regulatory balance sheet compared to the economic balance sheet and therefore the degree of mismatch between assets and liabilities will differ.

Firms will need to recognise that attempting to match the economic balance sheet, may result in mismatches arising in the regulatory balance sheet (and vice versa).

6.1.2.5. IFRS balance sheet

The overall objectives of the hedging to an IFRS balance sheet are similar to the economic and regulatory balance sheet considerations. Again there may be certain types of asset or liabilities which are valued or recognised differently in the IFRS balance sheet compared to the economic balance sheet and therefore the degree of mismatch between assets and liabilities will differ.

Firms will need to be recognised that attempting to match the economic (or regulatory) balance sheet, may result in mismatches arising in the IFRS balance sheet.

6.1.2.6. Maximising economic surplus capital

For the purposes of this section, we define the economic surplus capital as the excess of the economic balance sheet over the economic capital requirements.

The overall objectives of hedging to maximise economic surplus capital include more emphasis on the relative riskiness of implementing and maintaining hedging, as well assessing the change in mismatches arising from the capital requirements. For example, the capital requirements typically increase exposure to interest rates falls for firms with annuity business because longevity and credit stresses are more onerous in a low interest rate environment, due to the discounting effect. Another

source of potential interest rate volatility occurs where a firm has mismatches in the duration of their assets and liabilities.

A key consideration for firms is their risk appetite and in particular how much down-side risk they are willing to be exposed to, in exchange for potentially higher asset returns.

6.1.2.7. Maximising regulatory surplus capital

It is noted that for the purposes of this paper, the regulatory basis is Solvency II. For the purposes of this section, we define the regulatory surplus capital as the excess of the regulatory capital resources over regulatory capital requirements. For Solvency II, this is defined as the excess of eligible own funds over SCR.

The general considerations are similar to those outlined for maximising the economic surplus capital section above. However, it is noted that any differences in the regulatory and economic view of capital resources or capital requirements will lead to a difference in the outworking of the hedging employed.

6.1.2.8. Whether to hedge the risk margin?

Given the nature of the calculation of the risk margin, insurers writing large volumes of annuities have large and fairly volatile capital requirements. As stated in Sam Woods' speech, it is estimated that a 0.5% increase in risk-free rates would increase Solvency II coverage by c 20%.

The risk margin is a significant source of volatility within the Solvency II balance sheet and it is reasonable for an insurer to consider how to hedge this. What and how to hedge will depend on a number of factors:

- Current and desired level of surplus and SCR coverage
- TMTP recalculation triggers
- Implications for other metrics, e.g. IFRS
- Interest rate sensitivity elsewhere on the balance sheet, and the direction of this
- Implications for share and bondholders, e.g. dividend strategy, regulatory capital triggers within subordinated debt instruments
- Appetite for interest rate risk within regulatory or other balance
- Availability and cost of hedging instruments

While in theory the risk margin can be well hedged using a combination of interest rate derivatives, the optimum hedging strategy is sensitive to market and operational considerations, and has implications for accounting and other metrics.

The hedging strategy for the risk margin is complicated by a number of factors, namely:

- TMTP recalculation provides a hedge for the risk margin arising on business written prior to the introduction of Solvency II. The risk margin arising on business written after the introduction of Solvency II will not be offset by the TMTP. However, it should be noted that new business can effectively receive TMTP relief by the inclusion of all business in the FRR test, up to the level of the unrestricted transitional for business written prior to the introduction of Solvency II, where the valuation of new business on a Solvency II basis is more onerous than the valuation on a Solvency I basis.
- TMTP recalculation frequency, i.e. every 2 years or in response to a major risk profile change. This means the run-off of the TMTP will not be completely aligned to the run-off of the risk margin.

- TMTP recalculation timeliness, i.e. how quickly a recalculation application is approved internally within the firm and by the PRA.
- The need to balance a number of key metrics, e.g. stability from the hedge on the Solvency II balance sheet versus the volatility of the hedge in the IFRS balance sheet.

6.1.2.9. Whether to allow for hedging strategies when considering recalculation

If interest rates fall the risk margin will increase in value, but as rates move by a significant amount, e.g. 50 bps movement in the 10-year swap curve, the TMTP could be recalculated to offset this. Furthermore, the TMTP will be recalculated at the biennial recalculation point, which first applies at 1 January 2018.

The working party believes firms cannot consider what hedges are in place when deciding to recalculate the TMTP. Here, if hedges on the risk margin are put in place, then the benefit (or loss) of these hedges will be taken alongside the benefit (or loss) of the TMTP recalculation, thus leading to a double benefit or double loss.

The working party has outlined a number of potential strategies which a firm could employ to mitigate the interest risk emerging from the risk margin. As the TMTP runs off the balance sheet, and the exposure to interest rate sensitivity of the risk margin, it is expected the use of these strategies will increase as firms look to manage this risk.

6.1.2.10. Increase duration of assets

Under this strategy firms will seek to increase the duration of assets in excess of that of their Solvency II BEL in order to better match the sensitivity of the risk margin. This can be achieved in a number of ways:

- Trading for longer duration assets, e.g. buying longer duration government or corporate bonds
- Using interest rate swaps to lengthen asset duration. The working party is aware of a number of practical issues associated with this approach, for example:
- Mismatching the duration of assets and BEL will lead to an increase in the interest rate risk SCR
- Using credit-sensitive assets introduces a further mismatch, increasing spread risk SCR
- Linear instruments such as those identified above can fall in value when rates rise. These losses would be transferred to the IFRS balance sheet
- For swaps, falling mark-to-market values will require the posting of collateral (which may need to be cash for firms falling under the scope of EMIR)
- For firms who adopt the principle to determine recalculation without allowing for hedging strategies, rebalancing will be required as interest rates move to avoid “over-hedging”

Another practical issue here concerns the availability of long-dated assets and derivatives which replicate the “double-discounting” impact of interest rates on the risk margin. Notwithstanding the interaction with the TMTP recalculation, it is likely that the firms most exposed to movements in risk margin, i.e. firms with large books of immediate and/or deferred annuity business, might experience market liquidity issues in lengthening asset duration and/or specifically derivative trades in significant size.

6.1.2.11. Use of swaptions

Swaptions could be used to mitigate interest rate risk from the risk margin without transferring downside volatility from the Solvency II to the IFRS balance sheet, or to target residual risk arising from movements in the TMTP prior to reset but which do not result in the “over-hedging” outlined in above for firms not allowing for hedging when recalculating the TMTP.

Receiver swaptions, or combinations of payer and receiver swaptions are typically considered within one or a combination of the following strategies:

- **A receiver swaption:** A firm pays a premium for a receiver swaption which pays off as interest rates fall, to offset the increase in the risk margin. Setting the swaption strike out-of-the money will reduce the premium. An out-of-the money receiver pays off only when rates fall below the strike rate at expiry, providing a tail-risk hedge that is less impactful on the IFRS balance sheet for “day-to-day” rates moves.
- **A swaption collar:** Simultaneously purchasing a receiver swaption and sell a payer swaption. The sale of the payer swaption can be set to cover the cost of the premium for the receiver swaption purchased. Sellers of options may find that the mark-to-market moves out-of-the-money to them, resulting in them having to post collateral to the counterparty. Buyers of options can only lose their initial premium.
- **A swaption spread:** Simultaneously purchase a receiver swaption, and sell a receiver swaption at a lower strike than the strike on the receiver swaption purchased. By giving away some of the upside from the receiver swaption this can cover part of all of the premium on the option purchased. Swaptions are sensitive to implied interest rate volatility. A spread mitigates some of this effect as the two instruments will move behave similarly, isolating more of the interest rate sensitivity.

On swaption transactions, only the seller of the swaption posts collateral, so on a spread or collar, there may be collateral requirements. Typically these trades are rebalanced over time to maintain hedge effectiveness, with most trades not reaching expiry.

Currently, the use of swaptions to hedge the risk margin is not commonplace. There are a number of key reasons for this, namely:

- TMTP recalculation provides a natural hedge for the risk margin arising on business written prior to the introduction of Solvency II. This is realised through both the biennial recalculation and through recalculations arising from material changes in interest rates, e.g. movements in the 10-year swap rate greater than 50 bps. This does however result in residual risks to hedge arising from both recalculation timing issues and on the risk margin arising on business written after the introduction of Solvency II.
- The use of swaptions involves firms paying option premiums and this cost may be deemed to be too high relative to the potential benefits of using swaptions to hedge the risk margin.
- Entering into swaptions might not immediately reduce capital requirements. A premium is paid out to reduce the future volatility which will impact the IFRS balance sheet. Many firms have yet to establish an effective framework that values this reduction in volatility (typically allowed for by capital “buffers” in excess of 100% SCR coverage).
- Swaptions introduce a convex exposure to rates movements, introducing additional exposure to (implied) interest rate volatility.
- Market liquidity constraints might exist if demand is largely one-sided (e.g. all buying receivers). This can be somewhat alleviated by slight variations in strike and time-to-expiry.

6.2. Matching Adjustment (MA) and Illiquidity Premium

6.2.1. Background

For liabilities with sufficiently predictable cash-flows, for example annuity business, both the Solvency I and Solvency II risk-free rates could be adjusted by either the illiquidity premium or the MA. These items are conceptually similar, capturing the excess spread over the risk-free rate expected to be earned on assets “bought to hold” to maturity, but there are some important differences between the two. The working party outlines these key differences in section 3.3, with the potential recalculation options discussed at length in section 5.3.3.

From an ALM perspective, the working party has identified the following considerations for firms with a MA portfolio.

6.2.2. Buying time to apply for the MA

A number of firms did not have approval for the use of a MA at 1 January 2016 when Solvency II came into force. For firms in this situation, it is clear that the use of the TMTP essentially buys time to conclude the MA application process.

It is noted a change in the usage of MA is deemed to be a material change in risk profile which is likely to result in a TMTP recalculation.

6.2.3. Non-use of MA

Firms may have chosen not to apply for the use of MA, where it previously applied an illiquidity premium under Solvency I Pillar 2. In this situation, the firm is likely to minimise technical provisions through managing on a Solvency I Pillar 2 basis and seek to recalculate the TMTP if the optimisation is sufficiently material to trigger a risk profile change.

6.2.4. Differences in Solvency II and Solvency I Pillar 2 hypothecation

Hypothecation is likely to be different under the Solvency II and Solvency I Pillar 2 regimes reflecting the following issues:

- The MA uses EIOPA Fundamental Spreads while Solvency I Pillar 2 illiquidity premium uses an internal view of downgrade and cost of default risk. Therefore, it is possible some firms will have only allowed for cost of default risk in the illiquidity premium.
- There could be differences in the cash-flow matching tests used to assess the appropriateness of the hypothecation that impacts on the assets allocated to the Solvency I Pillar 2 illiquidity premium portfolio versus the Solvency II MA portfolio.
- The MA methodology is more restrictive which could lead to constraints in the calculation. For example, for some assets there is a requirement to allocate these in whole assets to a portfolio, rather than being able to allocate only a proportion of the asset.
- Differences in asset eligibility. This is outlined below.

6.2.5. Differences in eligibility

Under Solvency II certain assets may not be eligible, or may require transformation before they can be included, e.g. Equity Release Mortgages, where they were eligible under Solvency I Pillar 2.

Some firms may have decided not to restructure ineligible assets and continue to hold them under Solvency II, taking the difference through the TMTP, rather than the MA. However, the working party notes this is likely to lead to more penal capital treatments.

Overall the working party is of the view that the more penal capital treatment is likely to outweigh the use of TMTP, increasingly so as the TMTP benefit runs off over 16 years. Therefore firms are likely to be using the TMTP benefit to “buy time” to dispose of these assets or enact the necessary management action, e.g. an equity release mortgage restructure.

As above, a change in the usage of MA is deemed to be a material change in risk profile which is likely to result in a TMTP recalculation.

6.2.6. Pooled asset allocation

A number of firms have been granted approval for new business written after 1 January 2016 to be included in existing MA portfolios). For firms set up in this way, the additional requirement to cash-flow match pre- and post-1 January 2016 business separately for the purpose of the TMTP is onerous.

One option is to assume the MA and Solvency I Pillar 2 illiquidity premium is the same for business written prior to and after the introduction of Solvency II. This assumes that the MA/illiquidity premium benefit is pooled across these two buckets of business. This pooled matching MA/illiquidity premium benefit is then only applied to policies written prior to the introduction of Solvency II in the TMTP recalculation

The alternative option is for firms to allocate assets separately for business written prior to and after the introduction of Solvency II. This may be consistent with the design of the firms MA and separate MA portfolios have been created for business written prior to and after the introduction of Solvency II, or equivalently a firm may have immaterial volumes of new business following Solvency II. However where firms are not doing this already for the purposes of their MA calculation it is not clear whether sub-allocation within a MA portfolio is required and to what extent the MA cash-flow tests at a sub-MA portfolio level would apply.

6.2.7. PRA cash-flow tests

In order for the PRA to assess that asset and liability cash-flows across all MA portfolios in the industry are sufficiently well matched, it has developed three standardised tests. These tests are designed to monitor consistency across the industry and are not replacements for a firm’s own view of matching.

These PRA cash-flow tests outlined on the PRA website under the following link.

<http://www.bankofengland.co.uk/pr/ Documents/authorisations/siiapprovals/macashflow.pdf>

Implications of cash-flow tests on TMTP

For firms with MA portfolios which include business written following the introduction of Solvency II if TMTP recalculation requires the separation of assets to pre- and post-1 January 2016 buckets and the consideration of cash-flow matching at this sub-MA portfolio level, there are likely to be implications beyond the practical challenges of maintaining the sub-portfolios.

Annuity business written after 1 January 2016 is likely to be younger than business written prior to 1 January 2016 and may also experience greater levels of future improvements in longevity than the business written prior to 1 January 2016. There may also be differences in business mix, which include but are not limited to, the following differences:

- The mix of individual annuities and deferred annuities;
- The mix of annuities enhanced following underwriting and “standard” annuities;
- The mix of annuities which pay level income (or income which increases at a defined percentage) and those which pay out income linked to inflation, e.g. RPI linked or LPI linked annuities.
- The mix of individual annuities and bulk purchase annuities.
- Mix differences arising from the different types and associated magnitude of bulk purchase annuity scheme written, e.g. whether the scheme arises from a company associated with “blue-collar” workers or “white-collar” workers.

This means that the liability cash-flows of these two blocks of business are unlikely to have the same profiles including amounts, durations, and convexity. This has the following implications in the context of TMTP recalculation:

- The sum of the MA benefit derived from the sub-portfolios is unlikely to equal the MA benefit from the portfolio as a whole. Here MA benefit denotes the monetary value of the reduction in BEL arising from the use of a MA.
- It is possible that no combination of allocating existing assets across the two sub-portfolios, to meet the PRA cash-flow tests for each sub-portfolio, exists. Given this scenario new assets would be required to “fill the gaps.” Trading assets to “fill the gaps” could also lead to a reduction in MA benefit and/or solvency I Pillar 2 illiquidity premium.

The working party is of the view that the costs of monitoring and the theoretical requirement to change asset mix introduced by this interaction of TMTP recalculation and MA requirements would not be beneficial to the industry as a whole.

6.2.8. Re-hypothecate to maximise the TMTP benefit

If a firm has chosen to assign assets separately to the sub-portfolios backing business written before and after Solvency II, the overall aim will be to minimise the post-TMTP value of the Solvency II technical provisions, in addition to hedging other metrics, for example optimising regulatory surplus capital. The working party stresses that any actions taken to “minimise” and/or “optimise” technical provisions should be consistent with a firm’s given level of risk appetite and in addition should comply with all regulatory requirements.

The working party expects that firms are likely to first consider minimising Solvency II technical provisions prior to TMTP, and then maximise the value of the TMTP, given those Solvency II

technical provisions. However, the working party also notes the potential opportunity for firms to allocate differently across Solvency I Pillar 2 and Solvency II in order to maximise the TMTP benefit.

Where the asset allocation choice is compatible with sound risk management, the working party is of the view that it is perfectly reasonable for firms to do this. However, the working party believes firms should avoid any asset allocation choice that has been overtly determined to maximise the TMTP, to the detriment of sound risk management.

6.2.9. New assets or new liabilities post Solvency II implementation

Firms need to consider whether new assets can be allocated to business written prior to the introduction of Solvency II, or included in pooled asset allocation across business written prior to and after the introduction of Solvency II.

There will be practical challenges associated with calculating the Solvency I Pillar 2 technical provisions if the company invests in a new asset class. Firms' basic business acumen and risk management implies that they should have a thorough understanding of the likely return and the risks associated with a new asset class prior to investment. However it may be the case that the existing Solvency I Pillar 2 models do not adequately capture the risks associated with a new asset class. In this case, the firm may need to make a judgement as to what its approach would have been had it owned the asset when the Solvency I Pillar 2 regime was in force.

A suitable Solvency I Pillar 2 methodology for the asset's spread and an appropriate allowance for defaults and downgrades should be no more onerous than other considerations required for allowing for a new asset class, including Solvency II methodology considerations, operational challenges, modelling challenges, risk challenges, and any required amendments to the firm's MA application.

However, the firm is likely to be required to demonstrate the suitability of an approach. Therefore, the working party's view is that any material changes in asset classes, or investment in new asset classes, and their impact, is likely to be required information in the TMTP recalculation application to the Regulator.

Furthermore, one possible ALM strategy might be to select assets not eligible for MA, whose capital requirements are similar to eligible assets but whose spreads are wider, then take MA benefit through the "back door" by means of an increased TMTP. However, this strategy will only work in the short term as the TMTP runs off over time. In addition, there will likely be a resulting capital impact of holding assets ineligible for the MA on the balance sheet.

A firm may acquire new liabilities that have different risk profiles to the business already on the books. Examples of this include a Part VII transfer of business or accepting reinsurance from another life company. This once again raises the question of whether a firm should base its decision on whether to enter this transaction based on the Solvency I treatment of the product, with its implications for the FRR comparison test and TMTP, or the risks as assessed by the Solvency II regime.

As with assets, there are practical issues if the risks associated with new liabilities are not adequately captured by the Solvency I Pillar 2 models. In the case of pre-2016 business that has been transferred

from another company, it may be necessary to incorporate parts of the Solvency I Pillar 2 model of the firm from which the business was acquired.

6.2.10. FRR comparison test implications

The FRR comparison test introduces a number of potential implications. Overall the extent to which this test impacts on a firm's hedging will depend on:

- Whether the TMTP is based on the unrestricted technical provision differences or on the FRR comparison test,
- The difference between the unrestricted technical provision differences and the FRR comparison test and hence the likelihood of the FRR comparison test “biting” in future recalculation,
- Which is the biting Solvency I Pillar (Pillar I or Pillar 2) and the likelihood of the dominant Solvency I Pillar remaining dominant.

The FRR comparison test has a significant impact on which hedging choice or broader management actions that a firm wishes to implement. The firm will need to consider what impact TMTP recalculation will have on the overall expected benefit of the action.

6.3. Dynamic Reset

6.3.1. Introduction

During 2016, interest rates fell and the value of the risk margin increased reflecting its sensitivity to changes in interest rates. Initially, there was uncertainty as to how changes in interest rates and the required TMTP recalculation would work in practice, and a significant amount of this uncertainty was addressed through the PRA supervisory statement SS6/16.

Following invitation from the PRA, a number of firms recalculated their TMTP through a recalculation application, which includes details of whether the proposed TMTP recalculation is the result of a material risk profile change and how the application is compliant with Solvency II regulations.

As indicated in a number of sections in this paper, an application-based recalculation has a number of issues which the working party believes can be addressed through a more dynamic recalculation. These issues primarily relate to the timing of when the balance sheet TMTP aligns to the latent proforma TMTP that would apply following a recalculation.

These timing issues primarily impact:

- Capital planning and dividend payment plans. Both of which should be mindful of the differences in the balance sheet and the latent TMTP;
- Asset Liability Management. Where strategies are designed to mitigate residual exposures that are not covered by a TMTP recalculation, e.g. movement in risk margins on business written after the introduction of Solvency II, these strategies appear inefficient given the TMTP has not changed in value;
- Market announcements. Where firms wish to present the impact of the TMTP recalculation in their public disclosure. The working party has observed the practice of including footnotes in these

announcements, which state that the TMTP has been recalculated relative to the value in their regulatory balance sheet. It would be potentially helpful to align these two presentations.

1 January 2018 is the first biennial TMTP recalculation date, and it is not clear whether firms will be (i) required to apply for this, (ii) simply recalculate and notify the PRA following the event, or (iii) follow a new process altogether. In the event of a more simplified process for biennial TMTP recalculations, it follows that firms may be more inclined to defer a more onerous TMTP recalculation application process and wait until the simplified 1 January 2018 biennial TMTP recalculation.

The working party believes that a more dynamic reset would help address some of the issues outlined above. The remainder of this section outlines how this might work in practice.

6.3.2. Aims of reset

Where a reset of the TMTP is an important consideration in relation to the solvency position of a firm, it is important that the process for recalculating the TMTP is transparent, reliable, and not onerous.

In the event of changes in TMTP methodology or a recalculation resulting from a structural change, e.g. a TMTP recalculation as a result of a Part VII transfer, the working party believes a full TMTP application would be required. This reflects the nature of the changes being implemented, which may require a more detailed explanation to the PRA.

However where a TMTP recalculation is a result of changes in operating conditions (including economic conditions), the working party believes that TMTP recalculation should be a dynamic process, based on principles and tolerances agreed upfront between firms and the PRA. The overall aim of this proposal is to minimise the overheads on the PRA and on firms from an excessive number of reset applications, notwithstanding the need to create a process sufficiently robust such that reliance can be placed on this process in lieu of recurring TMTP applications.

In the case of a structural recalculation, e.g. a recalculation as a result of a Part VII transfer, firms should submit applications for recalculation in advance of the structural change occurring. The experience of the working party thus far is that any approvals granted by the regulator are contingent on regulatory approval for the structural change taking place within a certain timeframe. This flexibility from the regulator is helpful for firm planning, although firms should be prepared to submit any application to the regulator well in advance of the structural change taking place. The approval for these applications is up to 6 months, in line with prior TMTP approvals.

6.3.3. Principles of a dynamically recalculated TMTP

Under the working party's proposal for a more dynamic TMTP, key principles of the dynamic recalculation should be set in advance and agreed both within a firm and with the PRA. The working party envisages that these details should be included in a TMTP recalculation application and should leverage off a firm's existing recalculation policy. Many of the principles which would be outlined in this application process would be similar to those outlined in the firm's recalculation and this is explored further in section 4.3 of this paper.

The table below summarises the key principles the working party believes a firm should outline in advance. These principles are also expanded upon further below in this section.

Which material risk profile changes?	Firms should outline which types of material risk profile changes are in scope of their dynamic TMTP recalculation and which material risk profile changes are not in scope of their dynamic TMTP recalculation.
When to recalculate the dynamically resetting TMTP?	Firms should outline their model for TMTP recalculation, i.e. TMTP which is fully dynamic, a TMTP that is recalculated every year-end or a TMTP which is recalculated as a result of a specific tolerance being breached.
How to recalculate a dynamically resetting TMTP?	A firm should outline how it would recalculate the TMTP. In practice firms should be able to calculate the TMTP on a continuous basis, and should outline how a dynamically resetting TMTP would operate.
Governance for TMTP recalculation	A firm should outline the governance process steps it will follow including how it will notify the PRA.
Review of effectiveness of dynamic TMTP calculation	A firm should regularly review the effectiveness of its dynamically recalculated TMTP, to ensure it remains fit for purpose and to consider whether it wishes to make amendments in light of experience. These amendments are likely to result in a new TMTP application to the PRA.

6.3.4. Which material risk profile changes?

Firms should outline which types of material risk profile changes are in scope of their dynamic TMTP recalculation and which material risk profile changes are not in scope of their dynamic TMTP recalculation.

As outlined above, the working party would view recalculation as a result of operating changes, including changes in economic conditions, to be in scope of a dynamic TMTP recalculation and view more structural changes as out of scope of a dynamic TMTP recalculation.

6.3.5. When to recalculate the TMTP?

Firms should outline their model for a dynamically recalculated TMTP, i.e. TMTP which is fully dynamic, a TMTP that is recalculated every year-end or a TMTP which is recalculated as a result of a specific tolerance being breached.

The working party believes that too frequent recalculation of the TMTP would be onerous for firms and make it harder to track what the value of the TMTP is at any given point in time. Indeed the necessary data required for a robust TMTP recalculation may not be available on a daily, monthly or quarterly basis.

Although not fully dynamic, the working party believes a process where the TMTP is recalculated quarterly in arrears, subject to a specific tolerance being met, could be the most beneficial model balancing the practical considerations and avoiding the need for a parallel version of the TMTP for solvency monitoring and dividend planning.

The working party also notes the specific recalculation tolerance should ideally be similar in materiality to the 5% change in pro-forma solvency coverage outlined in the PRA supervisory statement on TMTP recalculation.

6.3.6. How to recalculate a dynamically recalculated TMTP

The calculation of the TMTP is very complex and involves the calculation of the Solvency I and Solvency II technical provisions and FRR for business written prior to the introduction of Solvency II. Therefore the working party believes a TMTP recalculation which is available within quarterly reporting timelines would be onerous to achieve for many firms, in addition to the effort required to complete other aspects of quarterly reporting.

The working party believes a model of recalculating the TMTP in arrears of a private disclosure, or only at certain times of the year to support public disclosures would help mitigate this. The approach taken should be outlined in the application and a firm's TMTP recalculation policy.

6.3.7. Governance for TMTP recalculation

A firm should outline the governance process it follows to ensure that the dynamically recalculated TMTP is robustly derived. This process should outline:

- Who is responsible for the calculation of the TMTP;
- How the TMTP calculation is checked and reviewed;
- What documentation of the calculation will be produced, both in terms of the recalculated value and how the firm complies with the principles outlined in advance;
- Whether the calculation will be audited externally;
- Who will ultimately sign-off the updated TMTP;
- The role of the firm's audit committee, and;
- Agreement with the PRA on what and when changes in TMTP will be communicated by the firm.

6.3.8. Review of effectiveness of dynamic TMTP calculation

A firm should regularly review the effectiveness of its dynamically recalculated TMTP, to ensure it remains fit for purpose and to consider whether it wishes to make amendments in light of experience. These amendments are likely to result in a new TMTP application to the PRA.

6.4. External Communications

6.4.1. Overview

As we finalise this paper, we are now in the midst of the 2016 year-end, which marks an important milestone to insurers and how they communicate the impact of the TMTP to stakeholders including the analysts and investor community.

For year-end 2015, the majority of firms disclosed the value of their Solvency II surplus and coverage ratio including the impact of TMTP, but did not disclose the quantum of the TMTP in these

announcements. Furthermore, firms' Solvency II surplus sensitivities, and in particular those sensitivities to interest rate movements, included the assumption that the TMTP would be recalculated to mitigate the change in risk margin.

For year-end 2016, the impact of TMTP on the Solvency II technical provisions, own funds and the SCR will be disclosed publicly as part of the QRTs and the Solvency and Financial Condition Report (SFCR). It is expected that firms will seek to pre-empt these public disclosures and may wish to mitigate the risk of misinformation to the investor community by including information on the impact of the TMTP in their year-end 2016 external market announcements.

As Sam Woods described in his speech in July 2015: It is important that analysts and investors understand that Solvency II adjustments and transitional measures are a legitimate part of the regime. Transitional measures do not distort the solvency reality: they are designed to ensure a smooth transition to the new regime, avoiding disruptions in the market and allowing a certain period for companies to fully recognise the impact on old books of contracts that have been underwritten in a different regulatory framework.

In the remainder of this section, we outline the key issues which the TMTP working party believes firms should emphasise and the investor community should consider.

6.4.2. Impact of recalculation

The recalculation of the TMTP is important in ensuring firms ensure their accounts represent a "true and fair" position. It is important to not overstate or understate the benefit of the TMTP. As businesses and operating conditions evolve, so does the theoretical TMTP, and maintaining a static TMTP will no longer be appropriate.

A key example would be that firms which recalculated the TMTP in the summer of 2016, to account for the low interest rate environment, will likely have a larger TMTP than at the point of Solvency II inception. As interest rates increase, this TMTP is no longer representative of the genuine move from Solvency I to Solvency II. Without recalculation, this could lead to an overstatement of the Solvency position and a lack of connection with the amount of dividend which could theoretically be paid out. In the example above, as interest rates rise, the risk margin would fall, but without the recalculation, the TMTP would be larger than the risk margin and not run-off in the same way.

6.4.3. Recalculation strategy and policy

A firm should ensure that its TMTP strategy and/or policy, including recalculations, is adequately reflected in its external disclosures, which include those made under Pillar 3 requirements, Report and Accounts and less formal investor presentations. Clear TMTP communications are particularly important as the PRA has stated that the TMTP can be treated, in effect, as Tier 1 equity (as stated in Sam Woods speech) on a firm's Solvency II balance sheet and thus it supports not only the solvency position of a firm, but also the payment of dividends to investors.

6.4.4. Transparent and consistent disclosures

Consistent, transparent, and clear TMTP disclosures will support investor confidence across the industry and would, therefore, be of benefit to all firms holding a TMTP on their Solvency II balance sheet. Given the importance of these external communications, it seems appropriate, although not compulsory, for a firm to reflect its communication strategy in its recalculation policy. It is also advisable that firms should also review industry-wide disclosures so that they can develop their own best practice, where appropriate. We would expect this approach would lead to a convergence of practice to develop over reasonably short space of time.

It is uncertain how analysts will react to TMTP and in particular the quantum of TMTP on insurers' balance sheets. Managing risk of misinformation will be the key. We expect to see more disclosures from firms around the TMTP in YE16 as firms look to pre-empt publically available SFCR and QRTs. There are advantages and disadvantages to being first to move in public disclosures.

Disclosures may vary between parents and subsidiaries, but ultimately they should be of a sufficient quality to provide investors with information they require. In particular, it is important that firms provide the appropriate level of information in group disclosures.

The regulator has provided a number of recent communications on expectations for recalculation of the TMTP, namely SS6/16 and CP47/16. These communications suggest that a dynamic TMTP is not a feature of recalculation. In the latter communication, the PRA has suggested that the Audit Committee should form an independent view on whether or not the firm meets conditions 1–3 and 5 set out in regulation 54. This correctly places reliance on the firm and their Audit Committees to ensure the calculations are reasonable. Accounts are expected to be a true and fair representation of the position of the firm. An Audit Committee may view the “correct” value of the TMTP at the reporting date to be materially different from the value derived at the last recalculation date, less any run-off. The view of the “correct” value will depend on the risk appetite of the firm.

In this situation, the working party believes that it is reasonable for firms to have the discretion to “write down” the value of the TMTP where they believe it to be overstated relative to the value derived at the last recalculation date, less any run-off. It is not clear which methods will be permissible to communicate the TMTP difference between the “correct” value and the approved value. Possible options include a direct write down of the TMTP, possibly through an increase to the rate of run-off of the TMTP, or an explicit accounting or technical provision. In the event that a firm believes the “correct” value is an increase to the last approved recalculation, it is important for firms to not overstate the TMTP. It is considered unlikely the results could be adjusted upwards, but more appropriately managed through the messaging of the results in the notes to the accounts for public disclosures.

Firms could consider the appropriateness of clearly stating within their external disclosures:

1. Key aspects of the firm's TMTP recalculation policy. For example, the firm may wish to disclose its view on whether TMTP should be fully dynamic;
2. Whether a TMTP has been allowed for, and the level, on its Solvency II balance sheet;
3. When the TMTP was last recalculated and when the next regular review is expected;

4. The expected future run-off period of the TMTP and its expected annual run-off and whether this run-off is applied (or disclosed) in the year-end balance sheet. Firms may wish to compare the expected future run-off of the TMTP with the expected future run-off of the risk margin;
5. The level of TMTP recalculation allowed for in any sensitivity results disclosed and whether the recalculations are in line with approach outlined in their internal policy;
6. How their dividend plans interact with, and how reliant they are on, the TMTP;
7. Whether they consider the TMTP run-off will have any significant impact on future dividend streams;
8. Other impacts on the balance sheet from TMTP (e.g. deferred tax);
9. Whether solvency coverage requirements are met without the TMTP and if not the need for a phasing in plan;
10. Any voluntary write down of the TMTP due to a material change in conditions since last approval to recalculate; and
11. Notes to the accounts explaining the Audit Committee's true view of the TMTP, in the event this is different to that published.

6.5. External Audit Requirements

In the lead up to year-end 2016, we are still not 100 percent clear on the full extent of the role of the external auditor in particular in relation to the consideration of the Solvency I balance sheet for the purpose of recalculation of TMTPs.

According to SS11/16 (Solvency II: external audit of the public disclosure requirement), for the purposes of TMTP, Pillar 1 and 2 assets, liabilities and capital calculated in accordance with the previous regime, should be treated as part of the framework against which the audit opinion is being given.

We would interpret this requirement to mean that a firm must be able to demonstrate that the TMTP recalculation is in line with its recalculation policy and demonstrate that the TMTP has been recalculated appropriately. If the TMTP recalculation method includes simplifications, it should be demonstrated that these simplifications have been followed appropriately.

In addition, we interpret that the auditor can rely on the Solvency I Pillar 1 and Pillar 2 calculations. The Financial Reporting Council has issued for consultation an exposure draft of the updated Practice Note 20,¹⁰ "The audit of insurers in the United Kingdom." Paragraphs 47–50 of this practice note consider the TMTP and the extreme limitations imposed on the auditor's work by the exclusions specified by the PRA, to the point where the FRC does not believe that the auditor can give an opinion on TMTP. One possible interpretation of this paper is that the TMTP is out of scope of audit. At the time of writing this paper, the practice note was still in the consultation stage.

In considering both of these public statements, we believe that *at most*, the auditor will audit whether the recalculation is in line with the initial TMTP application and subsequent recalculation policy.

¹⁰ Financial Reporting Council: Exposure Draft: Practice Note 20.

7. Conclusions

In the current challenging political and economic environment, firms need to be able to closely manage the business and have a better understanding of the potential sensitivity of their balance sheets to changes.

The recalculation process is not as flexible as it could be given Solvency II is a principles-based regime. Consequently, recalculation of the TMTP benefit is causing significant “unintended” consequences for firms. This is not helped by the current economic environment which increases the risk margin and SCR of some firms to levels which many believe are excessive and potentially damaging to the future competitiveness of the UK insurance industry.

Firms will continue to look to find ways to deal with these unintended consequences. This takes up valuable management time which could be spent elsewhere. In the interim, firms are having to develop more robust management information to allow them to be able to better monitor and manage the business. While this itself does not necessarily sound like a backwards step, the difficulty is the number of conflicting and interdependent balance sheet drivers. Operationally there is a real challenge to keeping historic processes alive purely for the purpose of TMTP recalculation, especially where there is a need to prospectively determine how the historic basis might be updated as if it is still in effect.

Without the development of pragmatic simplifications for the transitional recalculation (in particular the FRR comparison test restriction), Solvency II is creating an intellectual game of “whack-a-mole.” Any action taken to reduce volatility on one basis is causing a reaction elsewhere which in many cases may have an opposing effect on transitional recalculation, diluting the benefits of the initial action. This is making effective decision making almost impossible for those firms where the nature of the FRR restriction is not clear cut.

Through the process of writing this paper, and considering in detail issues concerning the recalculation of the TMTP, the working party has increasingly come to the view that recalculation options are firm specific reflecting the type of business written, whether the firm is open or closed to new business, the legacy reporting processes and the relative materiality of the firm’s TMTP. The working party has decided against promoting or suggesting a closed list of recalculation best practice and focused our attention on key recalculation principles. In addition to this, the working party has outlined a number of practical TMTP recalculation suggestions which firms may wish to consider.

Firms’ TMTP recalculation requires an application to be submitted to the PRA. The working party believes that this is an inefficient method of allowing for recalculation and that moving towards a fully dynamic TMTP with appropriate disclosure would benefit firms and the industry. The working party believes that allowing the flexibility for a fully dynamic TMTP would help address issues concerning whether financial statements are “true and fair,” add certainty around dividend decisions and allow firms to develop ALM and hedging strategies which work in conjunction with a dynamic TMTP.

The introduction of IFRS 17, as well as the reducing relevance of the year-end 2015 Solvency I bases, will do little to clear the already muddying waters. This highlights the real need for greater pragmatism when considering the approach to recalculation of a measure originally intended to serve as the bridge between two regimes. We call for an allowance for doing what is sensible in a principles-based regime balancing what might be more theoretically correct with what is practical and possible to support effective management of the business.

Acknowledgements

The authors and members of the TMTP working group wish to acknowledge the patience of family and friends whilst they balanced the usual demands of their day job with additional demands arising from the authoring of this paper.

Disclaimer

The views expressed in this publication are those of invited contributors and not necessarily those of the Institute and Faculty of Actuaries. The Institute and Faculty of Actuaries do not endorse any of the views stated, nor any claims or representations made in this publication and accept no responsibility or liability to any person for loss or damage suffered as a consequence of their placing reliance upon any view, claim or representation made in this publication. The information and expressions of opinion contained in this publication are not intended to be a comprehensive study, nor to provide actuarial advice or advice of any nature and should not be treated as a substitute for specific advice concerning individual situations. On no account may any part of this publication be reproduced without the written permission of the Institute and Faculty of Actuaries.

References

- Bulley, A. & Moulder, C., to Solvency II Directors (2015). Available at <http://www.bankofengland.co.uk/pr/Documents/solvency2/directorsletter16sep2015.pdf> (accessed 31 July 2017).
- EIOPA (2015). Final Report on public consultation No. 14/049 on Guidelines on the implementation of the long-term guarantee measures, available at https://eiopa.europa.eu/Publications/Reports/EIOPA-BoS-15111_Final%20report_GL_Long_Term_Guarantee.pdf (accessed 31 July 2017).
- EIOPA (2016). Opinion of the European Insurance and Occupational Pensions Authority (EIOPA) on disclosure of information related to the use of transitional measures in the calculation of technical provisions – EIOPA-BoS-16/243, available at https://eiopa.europa.eu/Publications/Opinions/EIOPA-BoS-16-243_Opinion_on_Disclosure_of_Transitional_measures_on_TP.pdf (accessed 31 July 2017).
- Financial Reporting Council (2016). Exposure Draft: Practice Note 20 (Revised): The Audit of Insurers in the United Kingdom, available at <https://www.frc.org.uk/Our-Work/Publications/Audit-and-Assurance-Team/Consultation-Paper-and-Impact-Assessment-Proposal/Exposure-Draft-Practice-Note-20-Revised.aspx> (accessed 31 July 2017).
- Financial Conduct Authority (2017). Financial Services Register, available at <https://register.fca.org.uk/> (accessed 31 July 2017).
- HM Treasury (2015). Statutory Instrument 2015 No.575 Financial Services and Markets: The Solvency II Regulations 2015, available at http://www.legislation.gov.uk/ukSI/2015/575/pdfs/uksi_20150575_en.pdf (accessed 31 July 2017).
- Official Journal of the European Union (2014). Directive 2014/51/EU of the European Parliament and of the Council, available at http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.153.01.0001.01.ENG (accessed 31 July 2017).
- Official Journal of the European Union (2014). Commission Delegated Regulation (EU) 2015/35, available at <http://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1479657894703&uri=CELEX:32015R0035> (accessed 31 July 2017).
- PRA (2015). Policy Statement I PS2/15 – Solvency II: a new regime for insurers, available at <http://www.bankofengland.co.uk/pr/Pages/publications/ps/2015/ps215.aspx> (accessed 31 July 2017).
- PRA (2017). Supervisory Statement SS6/16 – Maintenance of the “transitional measure on technical provisions” under Solvency II, available at <http://www.bankofengland.co.uk/pr/Documents/publications/ss/2017/ss616update.pdf> (accessed 31 July 2017).

- PRA (2017). Policy Statement | PS11/17 – Maintenance of the “transitional measure on technical provisions” under Solvency II, available at <http://www.bankofengland.co.uk/pr/Documents/publications/ps/2017/ps1117.pdf> (accessed 31 July 2017).
- PRA (2016). Supervisory Statement | SS11/16 – Solvency II: external audit of the public disclosure requirement, available at <http://www.bankofengland.co.uk/pr/Documents/publications/ss/2016/ss1116.pdf> (accessed 31 July 2017).
- PRA (2015). Supervisory Statement | SS30/15 – Solvency II: treatment of sovereign debt in internal models, available at <http://www.bankofengland.co.uk/pr/Documents/publications/ss/2015/ss3015.pdf> (accessed 31 July 2017).
- PRA (2016). Consultation Paper | CP47/16- Maintenance of the “transitional measure on technical provisions” under Solvency II, available at <http://www.bankofengland.co.uk/pr/Documents/publications/cp/2016/cp4716.pdf> (accessed 31 July 2017).
- Woods, S. (2015). Solvency II: approaching the try line, Association of British Insurers, London, 03 November 2015, available at <http://www.bankofengland.co.uk/publications/Pages/speeches/2015/861.aspx> (accessed 31 July 2017).
- Woods, S. (2016). Adapting to Solvency II, Association of British Insurers, London, 09 July 2016, available at <http://www.bankofengland.co.uk/publications/Pages/speeches/2015/829.aspx> (accessed 31 July 2017).

Appendix A: TMTP Regulation

The following regulations are relevant to the transitional measure on technical provisions:

- (i) Level 1 Text, the Omnibus II Directive adopted by the European Parliament on 11 March 2014, amending the original Solvency II Directive of 25 November 2009, in particular Article 308d, which is also referenced in Articles 37, 45, 77 f, 308a to 380c and 308e;
- (ii) Level 2 Delegated Acts issued on 10 October 2014, in particular Articles 278, 284, 285 and 296;
- (iii) EIOPA Level 3 Guidelines (BoS-15/111) on the implementation of long-term guarantee measures, in particular, guidelines 2, 3, 7, 8 and 9;
- (iv) Statutory Instrument 2015 No.575 laid before Parliament on 9 March 2015 (Part 4 Chapter 2 Section 54);
- (v) Policy Statement PS2/15: A new regime for insurers issued by the PRA in March 2015, which covers:
 - a) Supervisory Statement SS17/15 – “Transitional Measures on Risk-free Interest Rates and Technical Provisions” issued by the PRA in March 2015, and
 - b) Chapters 11 and 12 of the Transitional Measures section of the PRA’s handbook for Solvency II firms.
- (vi) PRA’s Solvency II Directors’ update dated 16 September 2015; and
- (vii) Supervisory Statement SS6/16 – “Recalculation of the ‘transitional measure on technical provisions’ under Solvency II” issued by the PRA in May 2016.

It should be noted that there is also supplementary information requirements for the technical provisions transitional measure published on the PRA’s Solvency II Approvals website.

The regulations above are discussed in more detail in points (i)–(vii) below.

(i) Level 1 Directive

Article 308d sets out that firms can “apply a transitional deduction to technical provisions”, subject to prior approval by the supervisor. The details of the calculation are provided in point (iv) below.

Article 37 highlights that supervisors can set a capital add-on if they believe that the risk profile of the undertaking deviates significantly from the assumptions underlying the TMTP.

Article 45 on the ORSA notes that the compliance on a continuous basis with capital requirements and technical provisions should be assessed with and without the TMTP.

Article 77 f sets out the information that supervisors are required to provide to EIOPA on an annual basis with regard to the TMTP and the subsequent reporting of EIOPA to the European Commission and then onto the European Parliament.

Articles 308a, 308b, 308c, and 308e also reference the TMTP. These Articles relate to supervisory authority, other transitional measures and the requirements for a phasing-in plan. Of particular interest in these Articles:

- (a) It is not possible to have both a TMTP and a transitional measure in relation to risk-free rates,
- (b) The TMTP “shall apply *mutatis mutandis* at the level of the group”, and
- (c) A phasing-in plan must be provided to the supervisor “within 2 months from observation of non-compliance with the SCR without application of these transitional measures”. The phasing-in plan sets out the planned measures to ensure coverage of the SCR by the end of the transitional period. The plan must be refreshed annually and submitted to the supervisor.

(ii) Level 2 Delegated Acts

Articles 278, 284, and 285 expand on the Level 1 Article 37 with regard to capital add-on.

Article 296 sets out the disclosures required in the SFCR with regard to the TMTP, noting that the financial position without the use of the TMTP must be disclosed.

(iii) Level 3 Guidelines

The relevant Level 3 Guidelines set out that:

- (a) The risk margin should be calculated without reference to the TMTP.
- (b) Where approval has been received to use a matching adjustment (MA), the MA should be allowed for when calculating the Solvency II best estimate liabilities.

The Guidelines also provide instructions with regard to the interaction of the TMTP with the Standard Formula SCR and the MCR.

(iv) Statutory Instrument

- (a) The unadjusted transitional deduction is the difference between the Solvency II technical provisions amount and the pre-Solvency II technical provisions amount, such that, Unadjusted transitional deduction = Solvency II BEL plus Risk Margin less Solvency I Pillar II Market-consistent Liabilities
- (b) In accordance with Statutory Instrument 2015 No.575, the unadjusted transitional amount must be limited by the pre-Solvency II overall adequacy rule. Condition 3 of Section 54 of the Statutory Instrument requires that the transitional deduction does not result in the financial resources required to be maintained under Solvency II to be less than the financial resources which would be required to be maintained under GENPRU 1.2.26 R (i.e. the more onerous of Solvency I Pillar I (which is the more onerous of Peak 1 or Peak 2) and Solvency I Pillar II), referred to as the FRR test. The FRR test is to be applied at a legal entity level.
- (c) The Solvency II technical provisions amount, for the purpose of calculating the transitional amount, equates to Best Estimate Liabilities (BEL) calculated in accordance with Article 76 of the Level 1 Directive, less the amount recoverable from reinsurance plus the risk margin. This definition is consistent with Condition 1 of Table 3 in Part 4 Chapter 2 Section 54 of Statutory Instrument 2015 No. 575.
- (d) In line with Statutory Instrument 2015 No. 575, the pre-Solvency II technical provisions amount equates to the Solvency I Pillar II market-consistent liabilities calculated in accordance with INSPRU7 and including any ICG.
- (e) Paragraph 1(b) of Section 54 of the Statutory Instrument advises that firms need to apply to the PRA for permission to recalculate the technical provisions at periods of 24 months or less. Although Paragraph 1(b) of the Statutory Instrument appears to suggest that firms could recalculate at periods of more than 24 months without PRA approval, condition 1 of the same Instrument suggests that is not the case. SS6/16 states that the PRA expects firms to calculate at periods of 24 months.
- (v) PRA Policy Statement PS2/15

SS17/15, which is contained within PS2/15, sets out information with regard to:

- (a) The calculation of Solvency I Pillar II insurance liabilities,
- (b) The level of granularity such that the TMTP can be applied for at the Homogeneous Risk Group level (HRG), including “demonstrating that the calculations made at HRG level can be reconciled with the technical provisions calculation for the entity as a whole,”
- (c) ICG,
- (d) The approval process, and
- (e) The interaction with other Solvency II approvals and contingency planning.

The supervisory statement also has some information on the recalculation of the TMTP, which is covered in more detail in SS6/16 (refer to point (vii) below).

Chapters 11 and 12 of the Transitional Measures section of the PRA’s handbook for Solvency II firms cross-references to Articles 308d and 308e of the Level 1 Directive.

- (vi) PRA Solvency II Directors’ update

The Directors' update confirms that "the PRA would allow full use of transitional measures by those firms that qualify to use them, and that the transitional asset created by the TMTP would qualify as Tier 1 capital." The Annex to the update "provides further details of the PRA's expectations of firms with regard to their management of TMTP, including clarification of the scope of liabilities eligible for TMTP relief and the circumstances under which firms might seek PRA approval to recalculate the TMTP relief." It also noted that the use of TMTP should not preclude dividend payments, for example, but that firms need to demonstrate affordability by way of a phasing in plan.

The PRA note that the TMTP is limited to business that is in force prior to 31 December 2015 but not that there may be some circumstances where business is transferred after 1 January 2016 that would be eligible.

There is an expectation that the TMTP will be continuously monitored by way of the ORSA. If this highlights the risk that the TMTP may become disproportionately large, the PRA expect firms to set out how this risk will be managed.

(vii) PRA Supervisory Statement SS6/16 – Maintenance of the "transitional measure on technical provisions" under Solvency II – April 2017

(a) The PRA expect firms to recalculate the TMTP every 24 months, or more frequently where the risk profile of a firm has materially changed.

(b) The PRA expects firms to develop a policy for recalculation, which sets out the triggers. In addition the PRA expects firms to:

- consider what other actions would be triggered by a material change in risk profile (e.g. update of ORSA or internal model), and
- notwithstanding the use of recalculation, ensure ALM policies are appropriate to manage solvency coverage within stated risk appetite.

(c) Recalculation will be symmetrical (i.e. in the event of an increase or a decrease in TMTP).

(d) The PRA will review market-wide events every 6 months to determine if this is likely to have caused a material change in risk profile. This could result in firms being invited to recalculate. The supervisory statement includes a clarification that this does not preclude firms from making an application at any time

(e) The PRA's assessment of a material change in risk profile will take into account the:

- (i) change in risk-free rate (expect 50 bps or more in the 10-year rate);
- (ii) impact on solvency coverage ratio, and
- (iii) impact on recalculation of solvency coverage ratio (expect 5 percentage points or more).

The changes in the risk-free rate are expected to be sustained. A sustained change is defined as one that has persisted over a significant period of time or driven by factors that are likely to persist over a significant period of time. The PRA also notes that changes in credit spreads could be relevant in assessment but this depends on a firm's asset holdings.

(f) The PRA expects firms to provide evidence when applying a recalculation taking into account the PRA's views in point (e) above. For example, to explain materiality of the change in

solvency ratio by comparison to expected frequency and likelihood of occurring. The PRA states that it is their view that the expected frequency and likelihood of changes occurring in the solvency ratios and own funds are key indicators in determining what constitutes a material change in risk profile.

- (g) A proportionate approach to recalculation will be taken and methodology should be discussed with supervisors.
 - (h) The PRA clarifies that the FRR test should apply to all business of the entity and not just business written prior to the introduction of Solvency II. Furthermore, the PRA outlined that a firm may only derive the FRR based on business written prior to 1 January 2016 if it can demonstrate why using this methodology is appropriate and does not result in a materially different outcome to a full calculation.
- (viii) Supervisory Statement SS11/16 – “Solvency II: external audit of the public disclosure requirement” issued by the PRA in September 2016
- (a) Section 1, reminds the governing body of its responsibilities in respect of the ongoing appropriateness of the information disclosed, and that it must approve the Solvency and Financial Condition Report (SFCR).
 - (b) Section 1, also sets out the level of assurance expected with respect to the external audit requirement on the SFCR and the audit guidance that the PRA expects auditors to follow in auditing a firms’ SFCR.
 - (c) Section 3 outlines the expected level of assurance and scope. It outlines that “For the purposes of transitional measures on technical provisions, Pillar 1 and 2 assets, liabilities and capital calculated in accordance with the previous regime, should be treated as part of the framework against which the audit opinion is being given.”

Appendix B: Solvency II TMTP Approvals

Based on the Solvency II approvals list as at 1 July 2017, which is available on the PRA’s website, 33 legal entities have written notices for approval to apply a TMTP, noting that three of these entities now appear to have been de-authorised (according to the FCA website).

Since approval was granted, there have been 28 approvals to recalculate the TMTP, of which 16 were for a recalculation as at 30 June 2016 when the PRA invited firms to recalculate due to the movement in risk-free rate since 1 January 2016. Of the recalculations at dates other than 30 June 2016, these have been primarily due to non-operating material changes in risk profiles such as changes to matching adjustment portfolios, Part VII transfers or reinsurance transactions. There have also been some recalculations to change or apply a limit. It should be noted that some entities have had more than one recalculation since approval was first obtained and there are 11 entities who do not appear to have recalculated the TMTP since approval was first obtained.

As at 1 July 2017	Number of legal entities
Approval to use TMTP	33
No longer authorised on FCA website	4
Approval to recalculate at 30 June 2016	16
Approval to recalculate prior to 30 June 2016	2
Approval to recalculate after 30 June 2016 but before year-end 2016	2
Approval to recalculate at 31 December 2016 or later	4
Approval to amend a previous written notice ¹¹	4
No form of recalculation	10

¹¹ From a review of the written notices on the FCA website, it does not appear as though the recalculation date was changed.