

SOLVENCY II

TECHNICAL PROVISIONS DATA SUGGESTIONS FOR ALLOCATION METHODOLOGIES

MAY 2011



INTRODUCTION

The Technical Provisions Data Return (TPD) is a new Lloyd's return which will eventually replace the Solvency Reserving Data (SRD) return. The first mandatory submission of the TPD return will be on Wednesday 30 November 2011.

When completing the return it is expected that allocations will be needed in places to convert results from the level they are calculated at (expected to be homogeneous risk group) to the level they are reported at (split by riskcode and currency). In February 2011, Lloyd's issued a specification and set of instructions for completion of the TPD return (available in the Solvency II section of Lloyds.com), which included discussion of allocation methodologies that may be required. This document sets out guidelines and suggested approaches that may be followed to perform this allocation.

Note that the approaches detailed in this document **are not mandatory** but are suggestions that may be used. They may also guide agents to the level of methodological detail that is seen as appropriate.

Requirements for allocation

As with the SRD return, the TPD return is required to be completed at a granular level. The TPD return contains a mixture of data items, some of which are factual and some of which are estimates. Where figures are estimated, the actual estimation is often not at the level of granularity required for completion of this return.

In these circumstances, Lloyd's expects managing agents to use an appropriate allocation methodology to apportion such figures down to the appropriate level of granularity. For example, this could be from syndicate class of business to risk code and/or from converted GBP to pure GBP, CAD and OTHER.

Allocation levels

The TPD will require best estimate elements to be allocated to a level of pure year of account (including the pure year after the valuation date in the case of unincorporated business), risk code and currency. Further details on the requirements are available in the instructions for completion of the TPD, mentioned above.

Reporting under Solvency II in general (not just for the TPD) will also require these elements to be allocated (or aggregated) to the Solvency II minimum line of business level. This is also the case for the risk margin within the TPD.

In addition, calculation of the geographical diversification element (where used) of the standard formula non-life SCR will require best estimates to be assigned to one of eighteen regions.

Homogeneous risk groups

A key principle of Solvency II Technical Provisions is that the best estimate is calculated at a homogeneous risk group level. This is expected to correspond to syndicate's own classes of business. This is no different from current expected practice.

As outlined in Lloyd's detailed guidance on Technical Provisions, it is expected that the results from projections at homogeneous risk group level will need to be allocated to a "lower" level to fulfil the granularity requirements of Solvency II. For the TPD, the additional granularity is expected when splitting data by risk code and currency.

Lloyd's requires that the allocations are appropriate as it places significant reliance on the results of this process.

Lloyd's also recognises that complex allocation methods do not necessarily improve appropriateness and may, in fact, introduce spurious accuracy.

High level principles

Lloyd's is not mandating a particular allocation methodology and it is the responsibility of each agent to ensure that the methodology used is appropriate. There are, however, some high level principles that agents should consider when determining the methodologies to use. These, summarised below, are discussed in more detail in the sections below.

- Wherever possible, data should be assigned to the elements of the TPD return on a factual basis (such as outstanding claims information available for a specific policy and risk code). Agents should aim to only use allocation for estimates that have been calculated at a less granular level than required for the TPD (such as IBNR calculated at a homogeneous risk group level and not specifically assigned to a particular policy).
- Aim to ensure that there is consistency between projection and allocation methods. For example, where IBNR is projected based on premium then allocations should be based on premiums.
- There should be consistency between gross and net allocations, where appropriate. Outwards reinsurance covers should be allocated in proportion to the gross losses they cover.
- Proportional allocations (for example, allocating IBNR between riskcodes based on incurred claims) are reasonable in most situations.
- Very large claims, such as catastrophes, should be allocated individually especially where any exposure analyses underlie the projections.
- Allocations are estimates and, as such, there should be reasonable materiality thresholds set. Lloyd's applies materiality thresholds when checking returns for reasonableness, as with the current SRD.
- Agents must be able to support, justify and document the methodologies used for allocation.
- Considerations of proportionality and spurious accuracy are key. Where there is a risk of spurious accuracy, a simple (but reasonable) approach is recommended.

Lloyd's expects that the same principles would currently apply to allocation for the purposes of SRD submission as for the proposed TPD.

Documentation of approaches

Lloyd's would expect agents to document their proposed allocation approaches which will be reviewed in advance of the TPD submission in November.

As stressed above, the approaches set out in this document are suggestions only and Lloyd's requires agents to use allocation methods considered most reasonable for them. Where these methods differ significantly from those suggested here, Lloyd's may need to discuss them in more detail with the agents involved.

Contact for queries and support

Any generic or syndicate specific issues should be raised via Solvency2@lloyds.com or through Solvency II account managers. In addition, Lloyd's will set up FAQs for allocation methodologies which will be updated with answers of use to other agents.

ALLOCATION METHODOLOGY SUGGESTIONS

Given that policies at Lloyd's are written to a particular risk code, premium, paid and outstanding claims data should be available to agents by risk code for use in allocation methodologies. The main elements of the TPD that might require allocation are within the best estimate form TPD 599.

This form includes, for each of claims and premium provisions:

- Future premiums (currently for premium provisions only but expected to be extended to claims provisions)
- Future acquisition costs (premium provisions only but potentially extended to claims provisions)
- Future claims cost
- Reinsurers' share of the elements above
- Future ULAE expenses
- Future non-ULAE expenses
- Discounting on each of the elements above

The following section sets out some possible allocation methodologies. Note that the methodologies will not be appropriate for use in all situations and specific circumstances should be considered by an agent before selecting a method.

Notified outstanding claims

IBNR and IBNER will be calculated by agents using their homogenous risk groups (often an agent's own classes of business). Data on notified outstanding claims may then be used to proportionally allocate to each of the underlying risk codes and currencies making up the homogeneous risk group.

Together with data on notified outstanding claims, this would form the claims provision future claims cost element of the TPD. Discounted amounts may also be split in this way, subject to considerations of differences in the discounting of the constituent risk codes. Assuming the homogeneous risk group has been created in a reasonable way to reflect similar characteristics and payment patterns of claims, these considerations may not be material.

Methodologies based on this data may also be appropriate for allocation of some of the expense items, such as future ULAE (and non-ULAE, depending on their drivers) expenses.

Proportional allocations based on notified outstanding claims may be more appropriate for older years of account (over 10 years old, say) as the case reserves can be used as a proxy for remaining exposures.

Incurred (or paid) claims

Similarly to the above, data on incurred claims may also be used to proportionally allocate IBNR and IBNER between underlying risk codes and currencies. Calculations based on this information may also be used to allocate elements of the premium provision.

Incurred claims projections are a common base to calculate IBNR/IBNER and would ensure consistency if used.

If paid claims underlie projections rather than incurred then paid claims can be used to allocate reserves from which notified outstanding claims can be deducted to obtain IBNR/IBNER.

Premium

Use of premium data may be the most appropriate measure for allocation of some homogeneous risk group best estimates where there is little other data (such as reported outstanding or incurred claims in recent years of account) to base a split on. This will ensure consistency where common projection methods such as Bornhuetter-Ferguson are employed. This is likely to be particularly relevant for elements of the premiums provision where claim events are yet to occur.

Allocation of future premiums may also require use of premium data for the most appropriate split. Note however, that agents should consider what is driving the expected future premiums, as a claims measure may be more appropriate for some types of future premiums.

Policy by policy analysis

Agents may calculate some of the required best estimate figures directly on a policy by policy or exposure basis, for example large claims or events. If so, these amounts can be removed from the homogeneous risk group, the remainder allocated using another of the methods, and then the directly calculated best estimates added to the risk code required.

This is expected for very large claims such as catastrophes that could otherwise distort results materially.

Combination of approaches

Lloyd's would expect that, in line with the principles set out above, the most appropriate methodologies should be used. These would be expected to differ by year of account and class of business and will include a combination of approaches.

For example, it would not be appropriate to perform an allocation of IBNR to risk code using outstanding claims across all years of account. Instead, it would be more appropriate to use a combination of approaches, such as:

- Allocating the older years of account (pre 1999, say) using reported outstanding claims data
- Allocating the middle years of account (1999 to 2007, say) using incurred claims data
- Allocating the recent years of account (2008 and post) using premium data.

The syndicate actuarial function is expected to either own or have significant input into the decision over what methods to use, and for which years of account.

Lloyd's will expect the person responsible for the approaches chosen to be clearly identified and may ask for justification and evidence especially after submission of the results.

Ownership of the return, i.e. that the return is completed accurately, may rest with someone else but they also need to be clearly identified.

Geographical location

Calculation of the non-life SCR for premium and reserve risk can take into account the diversification due to geographical location of risks. Under the standard formula tested in QIS5, premiums and net best estimates were required to be allocated into one of eighteen geographic zones to be able to

allow for the impact of this diversification. The standard formula tested for QIS5 did not require splitting of this data beyond the geographical location level (e.g. down to an original currency level) and this is likely to also be the case going forwards.

Therefore, there is likely to be a need for splitting the results of calculations by homogeneous risk group into these geographic zones. Various data sources may be available to perform this split, including specific location data, data on insured's head office or an allocation based on historic location information. The allocation of outwards reinsurance cover would in general be consistent with that of the underlying inwards gross business allocation.

As for QIS5, agents need to be able to confirm the estimated geographical splits are reasonable, especially for worldwide covers where allocations will be needed.

Transaction type

For reporting under Solvency II in general (and not just for the TPD return), agents will need to allocate (or aggregate) their best estimates and risk margins to the level of the Solvency II minimum lines of business and especially between direct, proportional and non-proportional covers.

Lloyd's has previously provided a risk code mapping to assist agents in the allocation process. This mapping does not give sufficient information to split out all data to the required level for Solvency II. Further separation of data may be required such as between direct and proportional business, often modelled together, or to separate facultative non-proportional reinsurance, sometimes modelled with direct business. Some data sources contain a "transaction type" flag (or data that can be used to derive it) which could be used to allocate and report to the required level. These transaction types are required for the Gross Quarterly Data (GQD).

For example, "FIL" and "DTI" codes from Xchanging data can be used to derive the transaction type as follows:

- Direct (DI): 4th digit FIL code = 1
- Facultative Reinsurance (FR): 4th digit FIL code = 2 (excluding DTI code 9 and 0)
- Non Proportional Treaty (NT): 4th digit FIL code = 3 (excluding DTI code 9 and 0)
- Proportional Treaty (PT): 4th digit FIL code = 4 (excluding DTI code 9 and 0)
- Inter Syndicate Facultative Reinsurance (IF): 4th digit FIL code = 2 and DTI code = 9 or 0
- Inter Syndicate Non Proportional Treaty (IN): 4th digit FIL code = 3 and DTI code = 9 or 0
- Inter Syndicate Proportional Treaty (IP): 4th digit FIL code = 4 and DTI code = 9 or 0

Agents should note that, in most cases, facultative reinsurance would be classed as non-proportional business.

Currency

Data under the TPD must be allocated between the "six plus one" currencies of GBP, EUR, USD, CAD, JPY, AUD and OTHER. In some cases, currencies that are immaterial for an agent may be reported within another currency bucket rather than being split out separately into each of these. The TPD return instruction document contains further details on this option, and in what circumstances it can be used.

Some Technical Provision best estimates may be calculated at currency-level where these form part of a homogeneous risk group (for example, a pure USD class of business modelled separately from other currencies), however most will not be. Agents may need to allocate other best estimate technical provision elements between currencies where these are not calculated at currency-level.

Similar principles apply as for the allocation to risk code as outlined above and consistency is encouraged.

ALLOCATION OF PARTICULAR ELEMENTS

There are other elements of the best estimate that may be more challenging, or require additional assumptions in order to allocate to the required levels. Some of these are discussed below.

Expenses

The TPD requires the provision for future expenses to be split into the following elements:

- Provisions for future acquisition costs
- Provision for future unallocated loss adjustment expenses (ULAE)
- Provision for future non-ULAE expenses

Amounts for each must be split by pure year of account, risk code and currency.

There may be many possible approaches for allocating expenses in a reasonable way. These should consider the drivers of the expense item and also proportionality.

For example, premium measures may be the most appropriate way to split the provision for future acquisition expenses between risk codes. The claims elements of claims and premium provisions (i.e. not including the negative impact of future premiums) may be a more appropriate measure to split the claims administration expenses.

It is important to consider the currency features of the expenses that are being split. For example, it may not be appropriate to split out expenses into all currencies if they are actually to be incurred in Sterling.

Reinsurance

Reinsurers' share of the best estimates must also be split by risk code and currency. In many cases, the approach taken should follow that for allocation of the gross best estimates. However, there may be cases where more detailed analysis can be carried out to work out more explicitly which risk codes reinsurance recoveries should be allocated to.

A key consideration is consistency between the allocations of gross amounts and reinsurers' shares to ensure outwards recoveries correspond to the inwards claims. For example, if all the IBNR for a particular class of business is allocated to one riskcode or currency then, in most cases, all the outwards reinsurance IBNR would also be expected to be allocated to the same riskcode/currency.

Reinstatement premiums

Agents will need to consider how to allocate reinstatement premiums across the risk codes of a homogeneous risk group. A reasonable approach would be to assume that these reinstatement premiums are allocated in the same way as the claims that they are linked to.

However, where such reinstatement premiums are considered immaterial, it may be reasonable under a principle of proportionality (and more simple) to allocate these based on the underlying premiums.

Currency of reinsurers' share

Where reinsurance recoveries are defined in a currency that does not match that of the underlying gross claims, these should be reported as such. If these are immaterial, the allocation methodology could be allocated in line with the underlying gross claims.

Reinsurance covering multiple lines of business

Where reinsurance covers multiple lines of business, agents must consider the most appropriate way in which the best estimates of reinsurer share should be allocated to risk code and currency. This should be based on the expected contribution of the underlying gross business to the expected recoveries.

It is recognised that this element can be problematic (as it may depend on timings of losses etc), but the key principle remains reasonableness with justification. For example, in most cases whole account stop loss reinsurance IBNR may be allocated in proportion to the gross inwards IBNRs. That is, it may be reasonable to allocate expected recoveries from whole account covers in proportion to the (already) allocated inwards reserves.

Lloyd's **does not** expect whole account (or multiline) covers to be allocated to single riskcode/currency splits where the underlying business covered is clearly not.

Risk Margin

Form 699 of the TPD collects a breakdown of the risk margin by Solvency II line of business only (not split by risk code or currency).

Solvency II will require the risk margin to be calculated at a whole account level. This must then be allocated to the Solvency II lines of business below, adequately reflecting the contribution of each of these lines of business to the overall SCR as used in calculation of the risk margin. This allocation must therefore use output of each agent's internal model. A simplification may be appropriate for this allocation, but this is unlikely to be exactly the same as the suggested approaches discussed earlier in this document.

Materiality and anomalies

As noted above, materiality is a key consideration. Apart from exposure analyses where explicit calculations will exist, in many cases the use of complex allocation techniques may add spurious accuracy. In those instances simplified approaches may be more appropriate. Lloyd's encourages an appropriate level of complexity and would not discourage "complex" methods if they are considered suitable by the agent.

Lloyd's does check returns for reasonableness and applies tolerances and thresholds when doing so. The limits will vary by syndicate and will generally be based on size. Examples of the checks undertaken are given in the SRD instructions.

Given the size of the returns, immaterial anomalies are expected to occur in many cases and will not be queried by Lloyd's. In particular, there may be anomalies between successive TPD returns where a combination of allocation approaches is used. An example would be a particular year of account moving between returns from using a premium allocation basis to an incurred claims allocation basis.

As with the SRD, a relatively small number of material anomalies will be queried. Such a query does not mean the return is seen as incorrect and where suitable responses are given the returns are not deemed "late or inaccurate".

Also, given the small number of SRD returns currently requiring resubmission following queries raised on anomalies (and the swift responses usually received from Agents), Lloyd's central

processes can continue unaffected and, generally, no further action is required. This is expected to continue under the TPD.

Further details on the review of TPD submissions carried out by Lloyd's can be found in Section 3.12 of the TPD return instruction document.

SIMPLE WORKED EXAMPLE

Introduction

Consider the following reporting situation for a hypothetical syndicate:

- A homogenous risk group of the syndicate, Class A, is made up of business that would be reported under Lloyd's risk codes YY and ZZ. The business has been written since 1993
- Data on premium, paid claims and outstanding reported claims is available for each policy (which are each written to a particular risk code) in Class A.
- The whole of Class A, as a homogeneous risk group, is managed and modelled together for the purposes of setting Technical Provisions. There are no material differences in the impact of discounting between the riskcodes within the class.
- Technical provisions have been calculated at a homogeneous risk group level for the 2010 year end. Some elements of these need to be allocated to risk code for reporting purposes
- Consider three example years of account, 1995, 2003 and 2009, where the 2009 year of account includes 5,000 of IBNR explicitly calculated in respect of a large loss to a policy written to risk code YY.

Data at a risk code level is as set out in the table below:

YOA / Riskcode	Premium		Paid claims		Notified Outstanding	
	YY	ZZ	YY	ZZ	YY	ZZ
1995	3,000	2,000	2,149	1,643	2	1
2003	11,000	6,000	7,248	5,267	588	427
2009	17,000	9,000	847	651	6,129	868

Claims and premium provisions

Technical provisions in this example have been calculated at a homogeneous risk group level, as shown in the table below:

YOA / Class	Claims provision IBNR	Premium Provision IBNR
	Class A	Class A
1995	6	-
2003	1,292	-
2009	21,475	1,997

As set out in the high-level principles above, a combination of methods has been used to allocate the provisions from homogeneous risk group to Lloyd's risk code for reporting.

- The older years, such as 1995, have had IBNR allocated using data on notified outstanding claims for each risk code. This gives, for example, 4 of IBNR (i.e. $6 * 2 / 3$) for risk code YY.
- The middle years, such as 2003, have had IBNR allocated using incurred claims for each risk code. This gives, for example, 544 of IBNR (i.e. $1292 * [5267+427] / [5267+7248+427+588]$) for risk code ZZ.
- The recent years, such as 2009, have had IBNR allocated using premiums. In this case, the provision for the large loss of 5,000 is stripped out before allocation as it is known to relate to risk code YY. This leaves 16,475 of IBNR to allocate, giving $10,772$ (i.e. $16,475 * 17,000 / 26,000$), for risk code YY. Together with the large loss provision, total claims provisions for risk code YY were then calculated as 15,772.

Provisions, once split using the methods described above, are set out in the table below:

YOA / Riskcode	Claims Provision IBNR		Premium Provision IBNR	
	YY	ZZ	YY	ZZ
1995	4	2	-	-
2003	748	544	-	-
2009	15,772	5,703	1,306	691

Expenses

As noted above, expenses of different types should be allocated according to their drivers. So, for example, unallocated overheads relating to administration of claims (or equally, investment management expenses) may be allocated using the size of provisions as already split (above) into the constituent risk codes.

Where the effect of future premium income (which reduce the best estimate provisions) is material, it may be more appropriate to allocate administrative expenses purely on the claims elements of the provisions.

Extensions

Currency

If the provisions above were made up of obligations of different currencies (rather than calculated directly for different currencies), these would need to be allocated between currencies required for reporting under the TPD. As homogeneous risk groups should reflect groupings of risks that are similar, provisions for liabilities written in different currencies could be allocated using the same methods as described above.

Future premiums

The simple worked example included no expected future premium within the premium provisions. If these were to be incorporated then an agent would need to consider the extent to which these would be driven by a particular risk code or whether these are likely to be split in proportion with the premiums received to date. If the latter, a similar split as for the premium provisions themselves could be used. If significant differences exist, then the claims element of premium provisions may need to be allocated separately from the future premium element of premium provisions, using a different approach.

Discounting

If the impact of discounting does not vary materially between the riskcodes to which a homogeneous risk group is being allocated, the same allocation methods may be used. If there are differences (which, given the requirements of Solvency II for homogeneous risk group calculation, should be small), then adjustments to the allocation methodology may need to be taken to allow for this. The undiscounted provision and effect of discounting may need to be allocated separately using different approaches.

Reinsurance

If the impact of reinsurance on the gross best estimates is not expected to differ significantly for the different risk codes within a homogeneous risk group, then the same allocation methods may be applied as for the gross provisions (using net data).

Where there are differences in the effects of reinsurance on the different risk codes, adjustments to the methodologies may be needed. For instance, if there is a large loss where significant (and not representative of the remainder of the obligations) reinsurance recoveries are expected, this should be stripped out and dealt with separately, as per the gross allocation methodologies.