

Insurers' hidden risk from reinsurance recaptures: the perspective of UK annuity writers

Mudi Ugono and Brad Ashton discuss the findings from a working party on how a reinsurer default could affect insurer balance sheets – and how the management of this risk could be improved

A jurisdiction's regulatory regime can make some insurance products capital intensive to write. This can increase incentives for insurers to enter into risk transfer arrangements, such as reinsurance, to support their business plan and growth objectives.

This can introduce new risks to insurers' balance sheets that are neither obvious (a "hidden risk") nor straightforward to measure and manage. One such risk is the adverse effect that a reinsurance counterparty default (or other recapture event) could have on ceding entities' balance sheets and the implications for broader financial stability.

This is referred to as "reinsurance recapture risk" throughout the article. Reinsurance recapture risk describes the point in time when previously reinsured risk is returned to the ceding entity's regulatory balance sheet for recognition purposes. This could occur if:

- A recapture provision agreed between the ceding entity and the reinsurer is triggered.
- The ceding entity's reinsurance arrangement was deemed, e.g. by the regulator, to no longer meet qualifying criteria to be recognised for regulatory capital relief. This could take the form of a synthetic reinsurance recapture event irrespective of whether an actual reinsurance recapture clause had been triggered or not.

In the UK, annuity writers' reinsurance activities to support their pension risk



Mudi Ugono

transfer propositions has increased the materiality of, and interest in, this risk from a range of stakeholders including regulators.

The UK Institute and Faculty of Actuaries' (IFoA) Insurers' hidden risk from reinsurance recapture working party was set-up in January 2021 to explore and understand the risk management approaches used by insurers to manage the adverse effect that a reinsurance counterparty default (or other recapture event) could have on their regulatory balance sheet.

The observations and analysis discussed in this article has been informed by the responses to the IFoA survey of UK annuity writers received in H2 2021 as well as insights from the members of the working party. It has been written by market practitioners for



Brad Ashton

professionals interested in understanding the risk management approaches used by insurers to deal with a risk typically characterised as low probability but whose financial impact, were it to materialise, is high. The full report will be published later this year.

ABOUT THE SURVEY PARTICIPANTS

The survey participants, in summarised form, are set out below:¹

- Total number of survey respondents: six (five of the eight currently active UK pension risk transfer writers (buy-outs and buy-ins) were represented)
- Total value of transactions (buy-outs & buy-ins) conducted by survey respondents between 2009 and H1 2020:

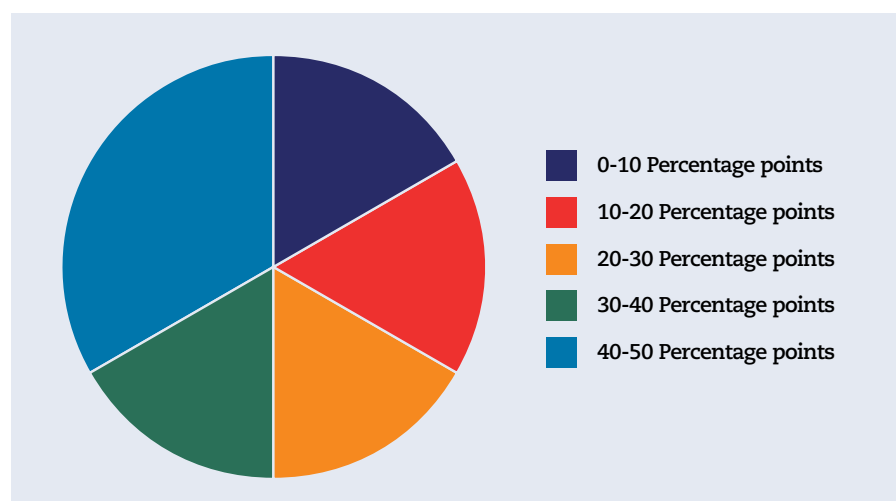
£110bn (\$137bn) or c.75% of the UK market

- Total number of transactions (buy-outs & buy-ins) completed by survey respondents between 2009 and H1 2020: 1,670 or c.95% of the UK market
- Market share of active annuity writers (buy-outs & buy-ins) between H2 2019 and H1 2020: £22bn or c.55% of the UK market
- Likelihood of respondents providing a quote for buy-in or buy-outs: Full range represented, from transactions of less than £50m to more than £2bn, including deferred lives.

THE MATERIALITY OF REINSURANCE RECAPTURE RISK ON UK ANNUITY WRITERS' BALANCE SHEETS

The reinsurance counterparty risk regulatory capital requirement (known in the UK as the Solvency II solvency capital requirement (SCR)) is calculated by multiplying the probability of a reinsurance counterparty default (PD) by the loss given

Figure 1: Loss of solvency coverage that would be incurred if all business to survey respondents' most material reinsurance counterparty was recaptured before management actions



a default occurs.

Reinsurance counterparties are typically well established, financially strong and operate in a highly regulated sector. The

associated PD parameter is usually small as a result. This materially reduces the resulting reinsurance counterparty risk SCR. The reinsurance counterparty risk SCR of

Table 1: Materiality of reinsurance arrangement

RESPONDENT	LOSS OF SOLVENCY COVERAGE FOLLOWING RECAPTURE BEFORE MANAGEMENT ACTIONS	MATERIALITY OF REINSURANCE ARRANGEMENT		
		Significant exposure	Somewhat significant exposure	No exposure
A	10-20pp	Longevity swaps, longevity reinsurance, quota share reinsurance (longevity + market risk)		
B	30-40pp	Longevity reinsurance	Quota share reinsurance (longevity + market risk)	Longevity swaps; excess of loss (longevity risk only); index based longevity reinsurance
C	0-10pp		Longevity swaps	Longevity reinsurance; quota share reinsurance (longevity + market risk); excess of loss (longevity risk only); index based longevity reinsurance
D	40-50pp	Longevity swaps	Quota share reinsurance (longevity + market risk)	Excess of loss (longevity risk only); index based longevity reinsurance
E	40-50pp	Quota share reinsurance (longevity + market risk)		
F	20-30pp	Longevity reinsurance	Longevity swaps; quota share reinsurance (longevity + market risk)	Excess of loss (longevity risk only); index based longevity reinsurance

Figure 2: Key committees responsible for reinsurance counterparty exposure

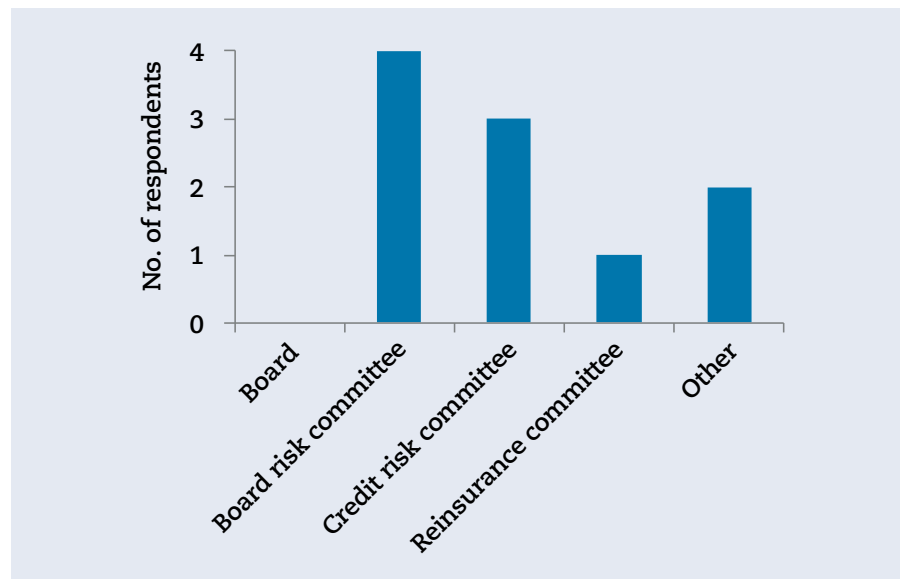
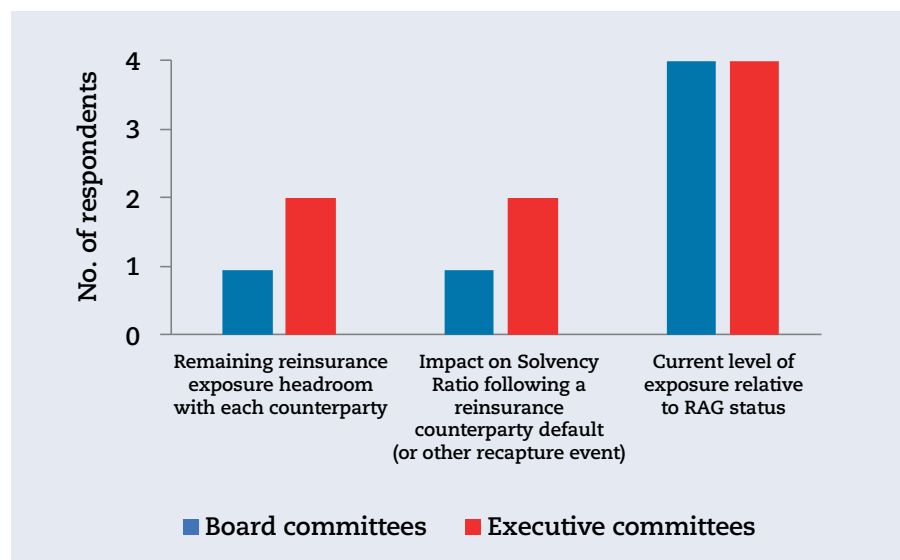


Figure 3: Information provided to Board & Executive Committees



survey participants was calculated by the working party to be circa. 1% of reported YE2020 SCRs on average.

Figure 1 shows that the adverse impact on solvency coverage following the recapture of all business ceded to a single reinsurance counterparty before management actions could be up to 50 times the amount of counterparty risk capital held to cover all reinsurance counterparty exposures.

Table 1 provides a more detailed breakdown showing the relationship between the loss of solvency coverage and the relative materiality of different reinsurance arrangements respondents have entered into. Three exposure buckets are used for this purpose: significant exposure, somewhat significant exposure and no exposure. Longevity swaps, longevity reinsurance and quota share

reinsurance are the reinsurance covers of choice amongst respondents.²

A number of annuity writers have increased their credit capabilities and exposure to illiquid assets in recent years, and is considered a source of competitive advantage. Longevity swaps and longevity reinsurance do not transfer away rewarded credit risk and can be seen as a complimentary de-risking proposition for annuity writers.

The significant or somewhat significant use of quota share reinsurance for five of the six respondents could signal a lower risk appetite towards retaining market and longevity risk (often UK annuity writers' biggest risks on a contribution to SCR basis) for particular types of schemes. It could also reflect use of quota share reinsurance as a strategic asset used to better match annuity writers' long duration books where credit assets of sufficient duration and volume can be more difficult to source.

There are signs that appetite for quota share reinsurance is increasing: possibly to meet annuity writers' changing demands, or from overseas reinsurers increased willingness to write quota share reinsurance and accept asset risk.

UNDERSTANDING REINSURANCE RECAPTURE RISK

An insurer's Board has overall responsibility for the management and oversight of the insurer and its activities. Boards may establish committees to assist in fulfilling their oversight responsibilities.

Figure 2 shows that all respondents' Boards delegate responsibility for reinsurance counterparty exposures to one or more committees. Delegating technical topics leaves more time for the Board to focus on, and provide leadership over, the insurer's strategic direction, culture and setting the general tone from the top.

The Board Risk Committee was the most frequently cited oversight forum followed by a Credit Risk Committee. The 'Other' category included an Insurance Risk Committee and Capital Management Committee.

What information is communicated to the Board and Executive Committees?

Respondents were also asked to indicate

the information communicated to their Board and Executive Committees.

Figure 3 shows that four of the six respondents provide the current level of exposure relative to a red, amber and green (RAG) status to their Board and Executive Committees. This metric is likely to be chosen for its visual nature, simplicity, ability to be used as a signal to focus management's attention or as an indicator to take actions.

The “remaining headroom” and “impact on solvency ratio” metrics are quantitative in nature and require a deeper understanding of the technical detail including assumptions and management actions that sit behind the metrics.

This is more challenging to acquire for individuals who are one or more steps removed from the process, and could explain why the majority of respondents do not provide this information to their Board or Executive Committees.

Twice as many respondents provide information to Executive Committees relative to Board Committees. The Executive is closer to their firms' reinsurance counterparty exposure and is thus more likely to be able to contribute meaningfully and engage on the topic than their Board Committee counterparts.

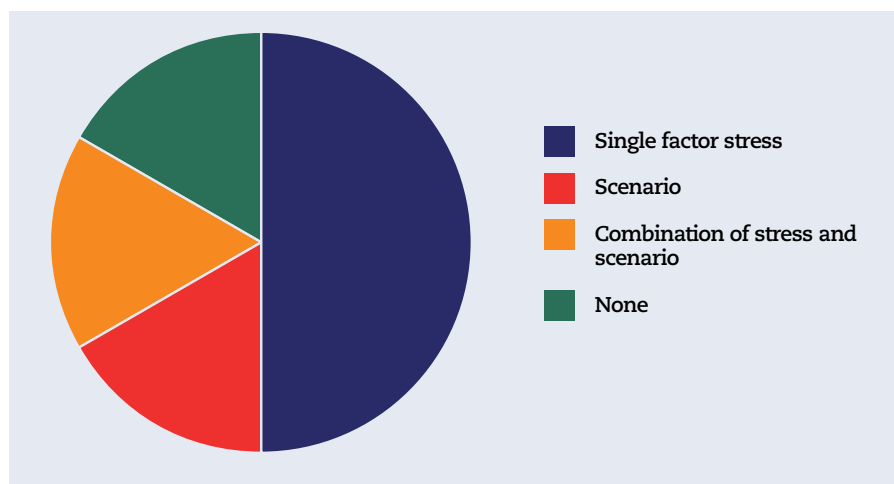
What approach do insurers take to modelling reinsurance counterparty default (or other recapture event) when analysing “what if” impacts across a range of stresses and scenarios?

Figure 4 shows that respondents take a wide variety of approaches to model the impact of reinsurance counterparty default (or other recapture event) on their business. This is likely driven by the reinsurance exposures and reinsurance strategies adopted by the different insurers.

There are several possible explanations for why the relatively simple single-factor stress approach is the most common response:

- It can be hard to model how a reinsurance counterparty default (or other recapture event) would interact with other stresses. There could also be the assumption that a reinsurance counterparty default (or other recapture event) alongside other events, e.g. a longevity stress, is too remote a

Figure 4: Stress and scenario approach for modelling reinsurance counterparty risk (or other recapture event)



possibility to be considered a severe but plausible scenario.

- Insurers may make the assumption that the most likely driver of reinsurance counterparty default (or other recapture event) would be idiosyncratic in nature, e.g. a major operational risk event or fraud that only impacts a single reinsurer, and not the result of an industry wide or more systemic stress.
- Incorporating other stress factors may make the story less clear and divert attention away from the impacts of a reinsurance counterparty default (or other recapture event).

On the other hand, a single-factor stress approach could oversimplify the real-world dynamics and dependencies with other risk factors, which could lead to the modelled financial impacts understating the true risk exposure. This could frustrate the attempts of decision makers to ask the right questions and leave the insurer less well positioned to deal with a reinsurance counterparty default (or other recapture event) were it to occur.

NON-CAPITAL PROTECTIONS TO MANAGE REINSURANCE RECAPTURE RISK

Three non-capital protections used by insurers to manage their exposure to a reinsurance counterparty default (or other recapture event) were it to occur are discussed below.

(i) Risk appetite and risk limit setting

Each insurer has its own set of key performance indicators that are used by management to assess the financial performance of the business. These heavily influence the metrics used by insurers to measure and calibrate their reinsurance counterparty risk appetite and limits.

What financial metrics are important to insurers when setting their reinsurance counterparty risk appetite and risk limits?

Figure 5 summarises the metrics used by respondents to calibrate their reinsurance recapture risk limits. Table 2 shows that five of the six respondents calibrate their risk limits with respect to a loss of SCR or loss of Solvency II surplus metric. The remaining respondent uses other Solvency II metrics, e.g. based on a 1-in-X year longevity stress or proportion of regulatory reserves. Only one respondent considers the loss of earnings when calibrating their risk limit.

How do insurers reflect their preferences between reinsurance counterparties when setting risk appetite and risk limits?

When assessing how much risk to take on, insurers not only need to worry about the quantum of the risk, but also who the counterparty is. Insurers consider a financially weaker counterparty to be more likely to default and therefore set risk limits

Figure 5: Metrics used for risk limit calibration

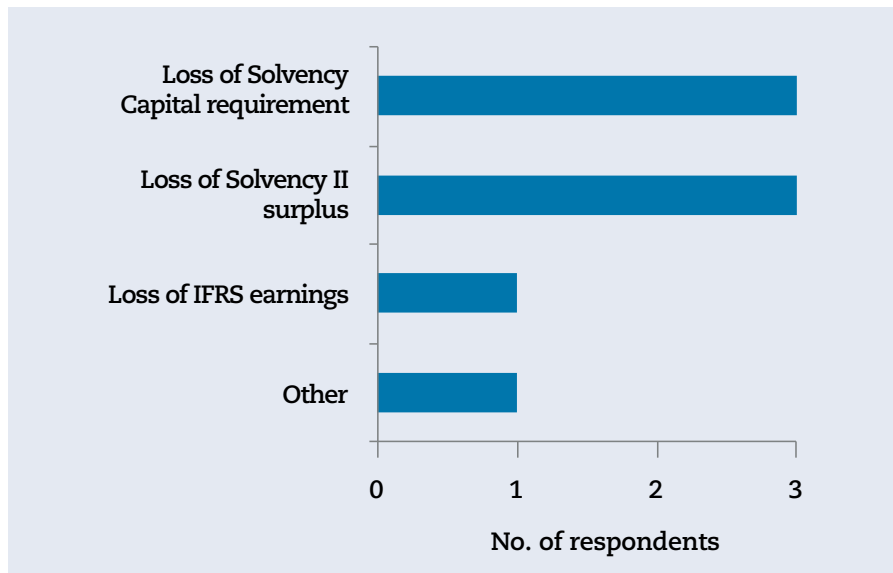


Table 2: Figure 5 breakdown by respondent

RESPONDENT	METRICS USED FOR RISK LIMIT CALIBRATION
A	Other (includes SII measures)
B	Loss of SCR
C	Loss of SCR
D	Loss of SCR; Loss of SII surplus
E	Loss of SII surplus
F	Loss of SII surplus; Loss of IFRS earnings

that depend, in part, on the counterparty's financial soundness. All respondents use the reinsurer's credit rating as an approximation of its financial strength with a few also considering wider financial performance, risk profile, type of counterparty and geography.

How quickly do insurers assume a reinsurance counterparty defaults and are any post-stress management actions taken into account when setting risk limits?

All respondents assumed that their reinsurance counterparties default instantaneously when setting risk limits, which does not leave any time to take pre-emptive rectification actions. This measure is possibly chosen for its simplicity as a modelling approach.

However, three of the six respondents

took post-stress management actions into account when setting their risk limits. All three respondents assumed, for example, that they would be able to obtain replacement reinsurance six to 12 months following a reinsurance counterparty default (or other recapture event).

The confidence in, and ability to take, management actions to protect the balance sheet may explain why insurers are prepared to accept a significant drop in solvency ratio when setting their risk limits.

(ii) Use of collateral

The future payments made by a reinsurer under an annuity-related reinsurance treaty change over time as longevity experience emerges and updates are made to future longevity assumptions, covering both base mortality and longevity improvement rates. Collateral posted reduces exposure to

counterparty risk for either the reinsurer or insurer. The collateral received by the insurer provides partial protection from the balance sheet effects of a reinsurance counterparty default (or other recapture event).

All respondents have at least one collateralised annuity related reinsurance treaty and allow for collateral in their exposure calculations. How this is incorporated into the exposure calculation including the approach to haircutting assets and the frequency that collateral balances are settled may differ across the market.

The importance of each of these is increased when considering quota share reinsurance where the pre-collateral counterparty exposure generally covers the full regulatory reserves and not only the net exposure (the difference, in present value terms, between the "floating" and "fixed" legs). Any growth in the market for quota share reinsurance to meet annuity writers' demand is likely to see an increased focus on collateral.

What protections do insurers employ to manage their exposure to a deterioration in a reinsurer's financial standing?

Five of the six respondents include protections within their reinsurance treaties that trigger upon a breach of early-warning signals or indicators that the reinsurance counterparty may be in difficulty. Four respondents introduce or increase collateral requirements; and two respondents include stricter asset eligibility requirements to restrict the type of assets that can be posted as collateral by the reinsurer. One respondent includes a protection to restrict the level of new business that can be written within existing reinsurance flow treaties.

What risks do insurers take on upon recapturing the collateral following a reinsurance counterparty default (or other recapture event)?

The collateral received upon recapture is unlikely to fully match the insurance contract's underlying features. Rebalancing costs, e.g. converting the collateral into suitable assets to support the recaptured liabilities, could therefore be significant. All respondents identify currency-related basis

risk between the assets in the collateral pool that would be received following recapture and the underlying insurance liabilities. Other sources of basis risk identified by respondents arose from:

- the indexation of the collateral assets (five respondents)
- the duration of collateral assets (five respondents)
- the collateral assets' expected cash flows (five respondents).

(iii) Treaty provision protections

Reinsurance contracts are complex legal documents that are binding for both counterparties. Figure 6 summarises the main recapture provisions included by respondents within their reinsurance treaties.

The recapture provision following a breach of a reinsurer's regulatory solvency position is noteworthy given its potential to cause a disorderly market disruption. The inability for insurers to recognise the full benefit of reinsurance within their SII SCR and balance sheet following a breach of a reinsurer's regulatory solvency position could lead to a "run on the reinsurer".

This could have macroeconomic consequences if a single reinsurer was a counterparty to a number of insurers. It is unclear whether, and if so when, the reinsurance market would have the appetite and capacity to absorb all previously reinsured risk across the affected insurers in this scenario.

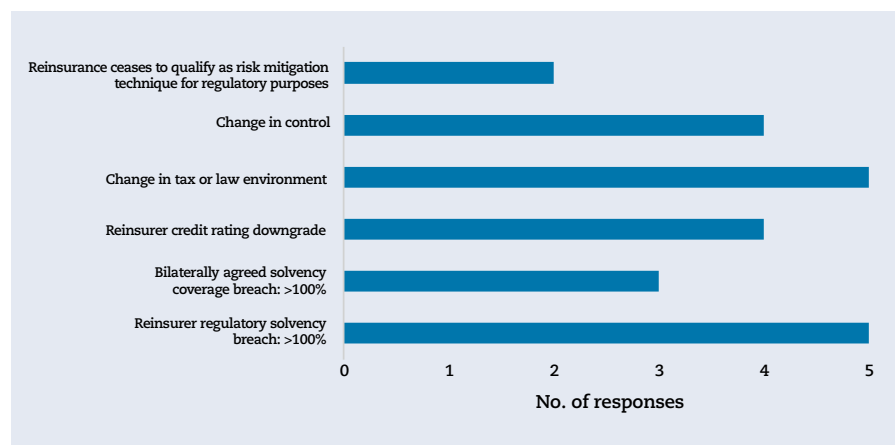
SUMMARY OF KEY CONCLUSIONS

The effect of a reinsurance counterparty default (or other recapture event) on a UK annuity writer's balance sheet can be material. The nature of the risk and the levers available to manage and control it will therefore be important for all levels of an organisation – including the Board – to understand.

The Boards of all insurers surveyed delegated this responsibility to one or more committees with many insurers providing reinsurance recapture exposure levels relative to a RAG status. This metric is likely chosen for simplicity, amongst other reasons.

Other areas of convergence between the insurers surveyed included the approach

Figure 6: Main recapture provisions contained within two or more longevity and quota share reinsurance treaties



to setting risk limits. All assume that their reinsurance counterparties default instantaneously when setting risk limits, with almost all choosing to calibrate their risk limits using a loss of SCR or loss of SII surplus metric.

Collateral is a key tool used by all insurers surveyed to manage their reinsurance counterparty exposures. This is not without risk, and the basis and other risk that the insurer's surveyed would take on following a reinsurance counterparty default (or other recapture event) may be an area to further consider, for example during collateral negotiations.

The working party identified the approach to considering reinsurance counterparty default (or other recapture event) when analysing "what if" impacts across a range of stresses and scenarios as an area that could benefit from refinement.

A single-factor stress approach is used by half of the insurers surveyed to model the impact of a reinsurance counterparty default (or other recapture event). However, this could oversimplify the real-world dynamics and dependencies with other risk factors, and could frustrate the attempts of decision makers to ask the right questions. This could leave an insurer less well prepared to deal with the financial and solvency implications of a reinsurance counterparty default (or other recapture event) were it to occur.

The treaty recapture provisions was also identified as an area that could benefit

from further refinement. The majority of insurers surveyed did not include recapture provisions that would give them the right to recapture a reinsurance arrangement that no longer qualified as risk mitigation for regulatory purposes. This could leave a ceding entity liable to pay for a cover that they were not able to recognise as capital relief for the purpose of calculating the SCR.

The broader implication to the macroeconomy were a material reinsurer to default is difficult to know or quantify. It is however likely to be amplified by the use of retrocessions and other risk transfer activity that reinsurers can enter into to manage its risk. A disorderly reinsurance recapture event could pose a threat to macroeconomic stability and will undoubtedly be an area of interest for policymakers and regulators around the world. ■

Footnotes

1. Source: Hyman Robertson's Risk Transfer Report 2021 and the working party's own calculations.
2. Neither longevity swaps nor longevity reinsurance include asset risk transfers and can be considered interchangeably for the purpose of the ensuing discussion

Mudi Ugono is the chair and Brad Ashton is a member of the Institute and Faculty of Actuaries' working party on Insurers' hidden risk from reinsurance recapture. Ugono is a Senior Actuary at the Bank of England and Ashton is a senior reinsurance structuring actuary at Aon.