



3-10

The number of stress tests typically included in an ORSA

Stress testing



1-5

The number of scenario tests typically included in an ORSA

Scenario analysis



0-3

The number of reverse stress tests typically included in an ORSA

Reverse stress testing



Stress and Scenario Testing

Stress, scenario and reverse testing are methods widely used to assess and quantify uncertainty in an insurer's future profits, own funds, capital and solvency coverage. This leaflet summarises the stress, scenario and reverse stress tests typically included in non-life insurers' ORSA projections.

POPULAR STRESSES	DESCRIPTION
Business volume	• 10% to 50% change from base
Counterparty default	<ul style="list-style-type: none"> • Failure of largest reinsurer(s) • Failure of largest financial non-reinsurance counterparty • Increased cost of replacing counterparties following a counterparty failure such as a reinsurer • A credit rating downgrade of counterparties (typically a 1 notch downgrade)
Lapses	• 4% to 40% change
Large losses	• 10% to 20% change in the severity and frequency as a result of a single large loss scenario
Loss ratio	• 10% to 50% change

OTHER STRESSES
<ul style="list-style-type: none"> • Business mix • Correlation between risk categories • Change in risk measure • Distribution channel mix • Exchange rates • Expenses • Inflation rates (expenses or claims) • Interest rates • Investment returns • Operational risk losses

POPULAR SCENARIOS	DESCRIPTION
Economic downturn	A combination of: <ul style="list-style-type: none"> • A fall in asset values; • 4% to 20% increase in claims and expense inflation; • 15% to 45% movement in exchange rates; and/or • a 1-,2-,3-notch downgrade in credit ratings
Catastrophes	<ul style="list-style-type: none"> • A 1-in-200 year event or • Multiple 1-in-10 year events Where either scenario will have a knock-on effect on counterparty default and increased cost of replacing counterparties

OTHER SCENARIOS	DESCRIPTION
Cyber risk scenario	A scenario where theft, ransom and/or corruption of sensitive information results in a combination of: reputational damages, operational changes, increased regulatory and compliance cost in subsequent years and/or reduced business volumes etc.
Political landscape scenario	A scenario where political instability results in a combination of: civil unrest, job redundancies, increased claim costs including fraudulent claims, a decline in operational profits and/or an increase in the provision for bad debts
Regulation landscape scenario	A scenario where a change in regulation results in increased regulatory and compliance cost, expense strains, impact on new business growth and/or impact on loss ratios etc.
Commercial landscape changes	A scenario which affects the competitive position of the insurer, impacting the insurer's new business growth, loss ratios, expenses, customer expectations and/or distribution channels etc.

POPULAR REVERSE STRESSES	DESCRIPTION
Business volume	The continued rapid growth or rapid decline of business leading to the erosion of capital over time.
Catastrophe scenarios	<ul style="list-style-type: none"> • A single catastrophe event such as a 1-in-1000+ event which results in business failure; or • Multiple but yet plausible events such as 4 successive 1-in-200 year events that result in business failure
Default	<ul style="list-style-type: none"> • Reinsurer and asset defaults that result in insolvency. • Typically reinsurer default is also accompanied by catastrophe claim stresses.
Loss ratios	<ul style="list-style-type: none"> • An immediate deterioration of loss ratio which results in immediate insolvency; or • A sustained multi-year deterioration of loss ratios that results in insolvency over a certain period such as 4 years.

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Context

This leaflet summarises the stress, scenario and reverse stress tests typically included in non-life insurers' ORSA projections.

Stress and scenario testing (SST) is a well-established practice in the insurance industry used to assess and quantify uncertainty in an insurer's future profits, own funds, capital and solvency coverage. Along with reverse stress testing, these three techniques are valuable risk management tools which have become further embedded in non-life insurers' business operations through the SAM Pillar 2 ORSA regulatory requirements.

STRESS TESTING:

Stress testing involves analysing the impact of a single adverse risk factor or event on the financial soundness of an insurer. In reality, one-way stresses and similar changes do not occur in isolation, but rather in a complex environment of interacting factors. Despite its simplicity, stress testing is a powerful tool for identifying single factor stresses that can result in a material impact on the firm's solvency position. Our industry analysis results show that insurers typically include 3 to 10 stress tests in their ORSAs.

SCENARIO TESTING:

Scenario testing is a more sophisticated technique that assesses the resilience of an insurer's financial soundness under a specific scenario that impacts multiple business components. It involves analysing the impact of a combination of adverse movements (stresses) in risk factors occurring simultaneously (e.g. allowing for all possible stresses expected to occur due to a sovereign downgrade). Our industry analysis results show that insurers typically include 1 to 5 scenario tests in their ORSAs. In our experience scenario testing has the greatest potential to drive constructive and engaged

debate at an Executive Board level, increasing the value and entrenchment of the ORSA in the decision making framework. Specifically, Executive Committees often derive more insight and value from deliberating on plausible scenarios, than from one-way stresses.

REVERSE STRESS TESTING:

Reverse stress testing predefines a business failure outcome and then subsequently analyses the different scenarios under which such failure may occur. When considering reverse stress testing, the return period over which the failure event should ideally be specified. Additionally, the chosen scenario that results in insolvency should be plausible. For example, while a 1-in-5000 year event may result in insolvency, this may not be plausible in reality. On the other hand, multiple 1-in-100 year events over a sustained period resulting in insolvency) might be considered more realistic for a particular insurer. Similarly, a gradual deterioration of the loss ratios over time that results in insolvency might seem more plausible compared to a large shock experienced in one year that yield the same outcome.

The key relevance of a reverse stress test is that it answers the question of which scenario represents a real risk to the existence of the company.

Based on our findings, not all insurers include reverse stress testing in their ORSAs, and no more than three reverse stress tests are typically included.

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