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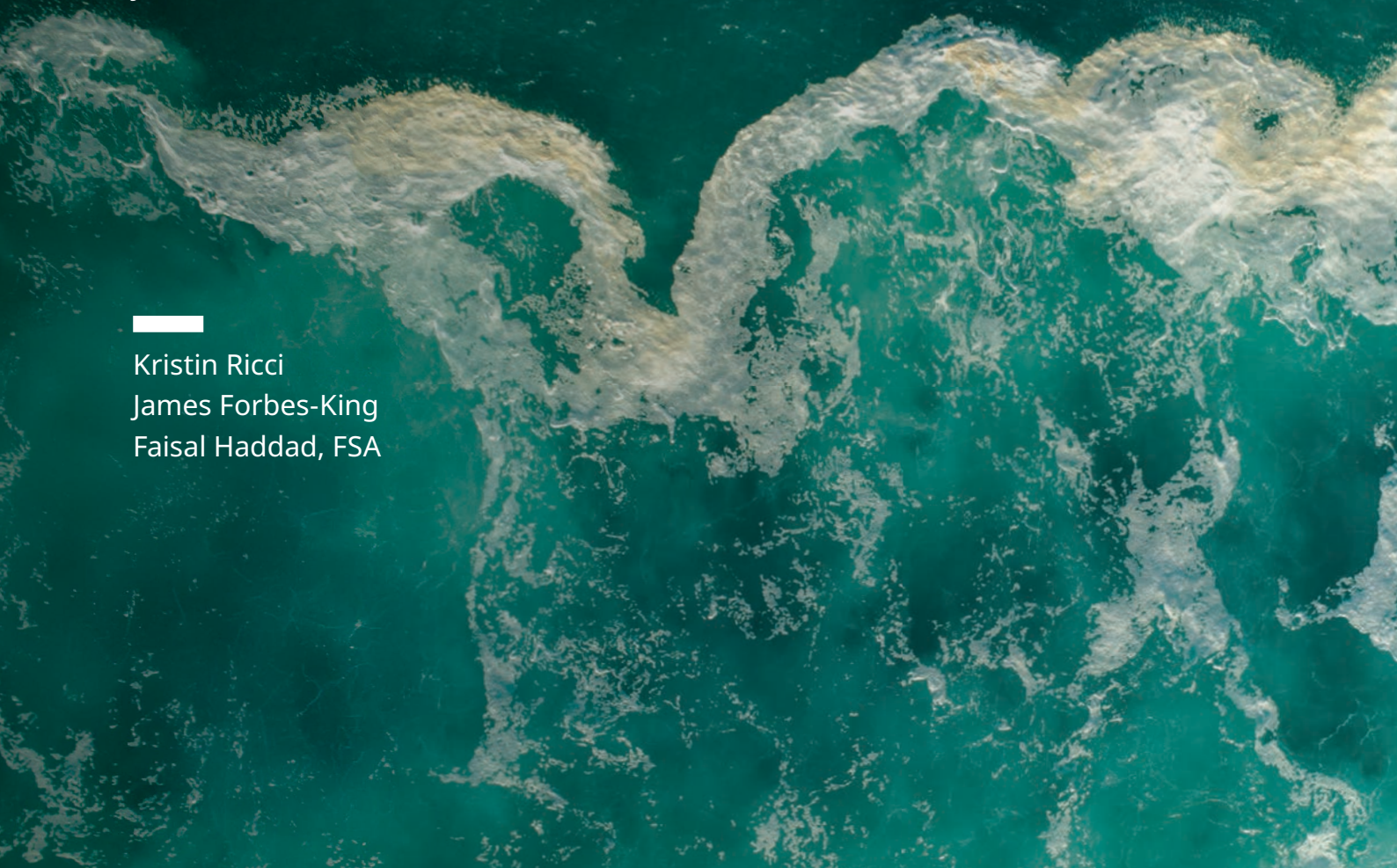
ANALYSIS OF SYSTEMIC RISK IN THE BERMUDA LONG-TERM INSURANCE SECTOR

June 2nd, 2025



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SECTION 1

EXECUTIVE SUMMARY

Insurers play an important role in promoting policyholder protection, financial security, macroeconomic resilience, and serving both individuals and institutions. They act as a provider of long-term capital, contribute to economic stability, and support access to protection and funding for households and businesses. Due to this role and the long-term horizon of many insurance contracts, insurers have large investment portfolios, in order to make payments to policyholders in the future. They are therefore significant players — alongside other financial institutions — in providing long-term funding to the real economy, financial intermediation, and capital accumulation.

The availability and affordability of insurance products is crucial to addressing an estimated global retirement savings gap of ~$70 trillion.[1] Reinsurance (insurance provided to insurers) provides an important mechanism to access additional capacity to write more new business, with Bermuda a preferred jurisdiction in part due to its status as a global insurance hub and globally recognised regulatory regime. Bermuda reinsurers now support more than $1 trillion in life insurance reserves.

While the expansion of the Bermuda reinsurance sector, including asset-intensive reinsurance, has provided an important source of capital and capacity to global life insurance markets, it has also drawn attention from global regulators and observers who have noted two important global trends in the life sector:

- Increased allocations to private credit assets on life insurer balance sheets
- Increased use of asset-intensive reinsurance (AIR), particularly in cross-border transactions to jurisdictions such as Bermuda

1 According to Mercer and World Economic Forum report *We'll Live to 100 — How Can We Afford It?* May 2017.

These trends have raised questions as to whether the concentration of risk held by Bermuda reinsurers presents a potential "systemic risk."

Oliver Wyman has been at the forefront of efforts to identify, assess, and analyse the potential for systemic risk in the insurance and broader financial services sectors.[2] We think it is critical that this topic remains on the global risk management agenda; it is right that questions are asked as new trends emerge and critical that fact-based and informed analysis are used to answer these questions.

The concept of "systemic risk" gained broad traction following the 2008 Global Financial Crisis (GFC) to capture the idea that certain risks could threaten the functioning of the overall financial system, rather than being isolated to individual institutions. Since then, as regulators and other stakeholders have sought to better understand potential sources of systemic risk, there has been convergence around a common set of transmission channels, through which systemic risk could propagate through the financial system, that provide an important tool to understand and assess the potential for systemic risk.

Four such transmission channels are commonly recognised in the context of the financial services sector: i) "asset liquidation" — that institutions (including insurance companies) might be forced to rapidly sell assets en masse, ii) "interconnectedness" or "exposure" — that there are important direct and indirect linkages across and between financial institutions (e.g., banks, reinsurers, investment funds), where failure of one can impact another, iii) "critical function" or "substitutability" — that a certain role is essential to the financial system or real economy, and could not be replaced in the event they stop playing that role en masse, and iv) "contagion" — that a system-wide loss of trust could trigger panic and customer withdrawal, threatening the system as a whole.

2 Including our partnership with the Geneva Association and its Systemic Risk Working Group over a number of years to produce a seminal series of reports grounded in facts and robust analytics to analyse the relationship between systemic risk, financial stability and insurance, including i) *Systemic Risk in Insurance: An analysis of insurance and financial stability (Mar 2010)*, ii) *Considerations for Identifying Systemically Important Financial Institutions in Insurance (Apr 2011)*, iii) *Insurance and Resolution in Light of the Systemic Risk Debate* (Feb 2012), iv) *Surrenders in the Life Insurance Industry and their Impact on Liquidity (Aug 2012)*, and v) *Insurance Sector Investments and Their Impact on Financial Stability (Jun 2016).*

SYSTEMIC RISK ASSESSMENT

To evaluate the potential for systemic risk arising from the Bermuda long-term insurance sector, we evaluate how the transmission channels could apply to the sector, and undertake a fact-based and analytical assessment of how it might contribute to systemic risk. In particular, three hypothetical scenarios are constructed that test the four transmission channels cited by relevant regulators as areas that they are monitoring in regard to the global life insurance industry:

Scenario	Transmission channel tested
1. Credit crisis triggering mass reinsurance recapture	"Interconnectedness"
2. Confidence shock to the Bermudian insurance market, triggering mass lapse and sale of assets	"Asset liquidation" and "confidence shock"
3. Withdrawal of insurer private credit demand	"Critical function" or "substitutability"

SCENARIO 1
CREDIT CRISIS TRIGGERING MASS REINSURANCE RECAPTURE

The first scenario assesses the **potential impact of a mass recapture following a severe downturn in credit markets**. This scenario would entail a deterioration of Bermuda-based reinsurers' solvency positions (due to their credit exposure), which then impairs the solvency positions of cedents (the insurer from which assets and liabilities were transferred to the reinsurer), who have exposure to these reinsurers.

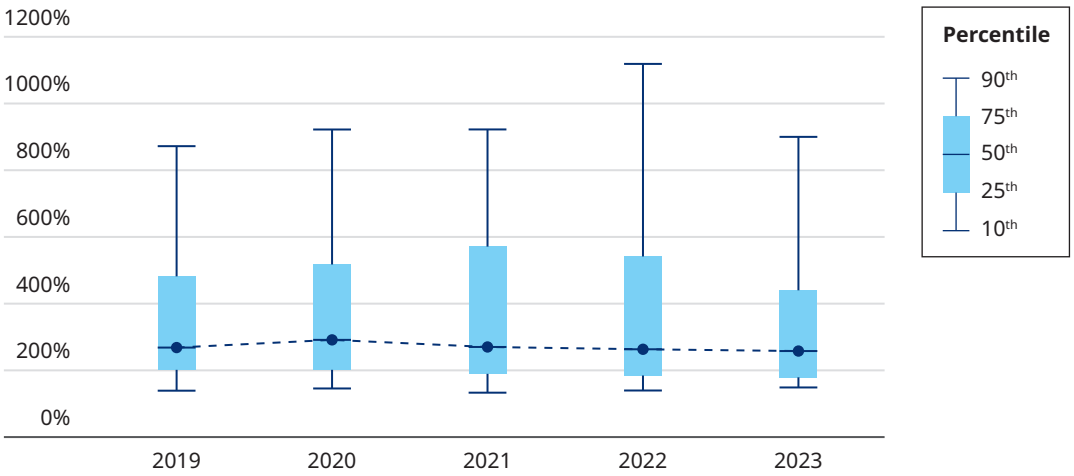
Based on the analysis performed, we conclude that, **if a market-wide and intense credit crisis leads to mass recapture of Bermuda AIR, we do not think such an event would threaten the solvency of a material portion of global insurance markets**.

Several important factors drive this conclusion (with analysis described throughout Section 5.1.1), including that:

1. Bermuda reinsurers have broadly similar asset allocations — in particular, with similar or lower allocation to assets sometimes thought of as "alternatives" — to life insurers in other jurisdictions, most closely resembling those in the United States (i.e., there is no reason to suspect Bermuda would be more acutely affected by a credit crisis than other jurisdictions).
2. Bermuda has a well-established supervisory regime that is recognised and deemed "equivalent" by various global regulators, and includes a risk-based capital framework (the "BSCR framework") that is used to assess the capital adequacy of supervised insurers. This framework requires firms to hold enough capital to withstand events at least as severe as a 1-in-200 year adverse event; with the majority of insurers operating at capital levels of at least 2x the minimum regulatory requirement.

3. Standard terms for AIR transactions include significant structural protections to mitigate this risk (e.g., right to recapture, collateralisation, investment guidelines, asset ownership). These protections i) reduce the likelihood the reinsurer will be unable to pay the liabilities, and/or ii) reduce the impact on the cedent in case it needs to recapture liabilities onto its own balance sheet.
4. Firms (and regulators) globally have established numerous tools, processes, and expectations to oversee counterparty risk management, including (more recently) specifically in relation to AIR and specifically to ensure balance sheet resilience in the unlikely event of a recapture.
5. The capitalisation of Bermuda reinsurers has remained relatively stable over the past ~5 years, even with the significant market volatility in that period, demonstrating the broader resilience of the Bermuda long-term sector as a whole.

Exhibit 1: Distribution of BSCR ratios across Bermuda long-term insurers
BSCR ratio %; Class C, D, and E Bermuda insurers



Source: BMA *Bermuda Long-term Insurance Market Analysis and Stress Testing Report* 2024

Despite this, any recapture has the potential to materially affect a cedent's balance sheet. Even if the insurer recaptures assets equal to the underlying liabilities, it will need to also fund the capital required to support those liabilities.

As such, we perform quantitative analysis to assess the potential impact of recapture on cedents in the US and UK. We find that, even if a market-wide event could lead to a "mass recapture" event where cedents reassume responsibility for the cedent liabilities, the impact of such an event on cedents would not threaten the solvency of the industry.

SCENARIO 2

CONFIDENCE SHOCK TO THE BERMUDIAN INSURANCE MARKET, TRIGGERING MASS LAPSE AND FIRE SALE OF ASSETS

The second scenario considers the **potential for insurers to experience heightened liquidity demands ultimately leading to asset liquidation at Bermudian reinsurers**, and assesses whether such an event could impair the relevant asset markets.

Some regulators have raised concerns that in periods of market stress, reinsurers could be forced to sell illiquid assets driven by heightened lapses on underlying insurance contracts, with knock-on impacts to credit markets as well as their own solvency. This concern echoes a "run-on-the-bank", although historically insurance companies have not experienced large-scale runs akin to those seen in the banking sector, reflecting fundamental differences in the nature of insurance and banking liabilities.

In the context of the Bermuda long-term insurance sector, such a scenario would need to be driven by actions of the policyholders for the underlying contracts in the reinsurance arrangements, as cedents in these transactions do not have the ability to force a liquidation event.

We conclude that **Bermudian long-term insurers hold sufficient liquid assets to meet unexpected liquidity demands even in a severe liquidity stress, and even if material sales were required to address liquidity needs, these would likely be limited to liquid assets**.

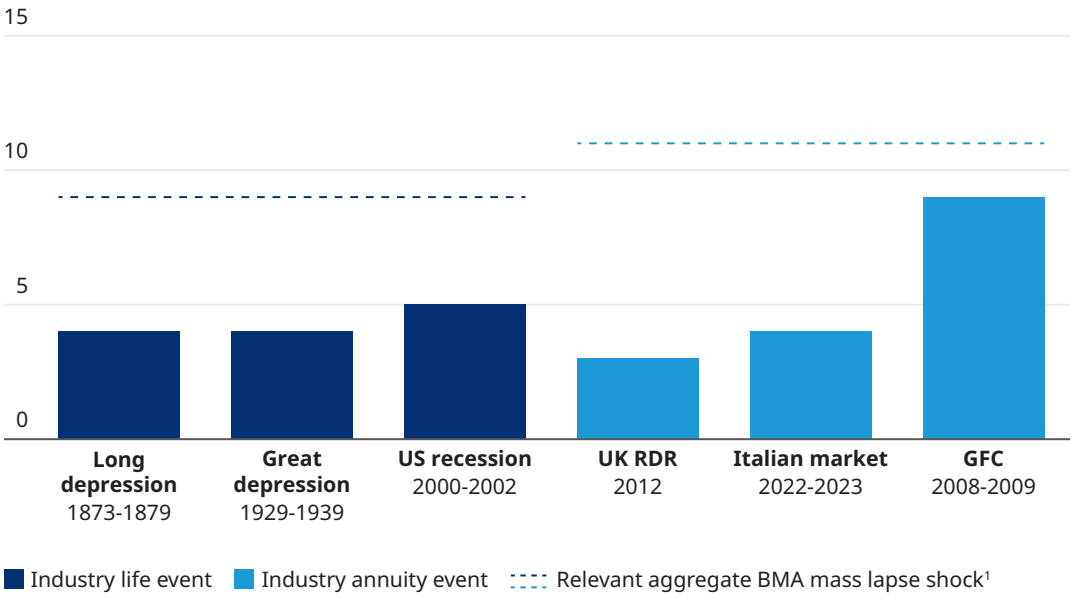
Several important factors drive this conclusion (with analysis described throughout Section 5.1.2), including that:

1. In the context of the Bermuda long-term insurance sector, a large-scale "run-on-the-bank"-like scenario would need to be driven by actions by the policyholders for the underlying contracts in the reinsurance arrangements, as cedents in these transactions do not have the ability to force a liquidation event.
2. Many insurance contracts do not provide any liquidity to policyholders. Within the Bermuda market, such products comprise ~30% of insurance reserves.
3. The remaining ~70% of reserves include deferred annuities and life products that provide policyholders with liquidity options, but may include structural features that discourage policyholders from surrendering their contracts, even in periods of stress, or extend the timing over which liquidity demands can be met.
4. Reinsurers are less exposed to policyholder liquidity risk than primary insurers (that originally sold the policies), as the primary insurer first makes the payment to a policyholder, and then the reinsurer periodically settles in arrears with the primary insurer.

5. In considering industry-wide events — that is, those economic, regulatory, or other events that impact a wide segment of the insurance sector in a given market event — excess lapses (lapses above expected levels) have been below 5% for life insurance products and 10% for annuity products. These levels are also well-below the level of excess lapse that the Bermuda Monetary Authority (BMA) requires for insurers to apply in their own liquidity stress testing.

Exhibit 2: Excess lapse of historic mass lapse industry events

% above base lapse



1. Weighted average of BMA mass lapse shocks by surrender value for retail products

Source: Oliver Wyman analysis

6. The BMA has demonstrated that, at a baseline market level (i.e., ignoring both the stressed market values for assets, but also offsetting effects of market-value adjustments on liabilities), the total surrender value of all liabilities is less than the value of liquid assets held by Bermuda reinsurers. This implies that, if all liabilities with the ability to surrender did so, the liquidity demands could be met with available liquid assets and would not necessitate the sale of less liquid (i.e., private or alternative) assets into a distress market.
7. The BMA also requires all insurers under its purview to calculate a liquidity coverage ratio (LCR) that compares liquidity sources to potential uses in a stressed scenario, subject to regulatory minimums, with a median 1 in 200 post-stress LCR of 360%.[3] The factors applied to liabilities in evaluating this ratio are more conservative than historical experience with regards to industry-wide lapse events as well as many, but not all, instances of distress at a specific insurer.

3 All commercial long-term reinsurers. BMA *Liquidity Risk in the Bermuda Long-term Insurance Market* August 2024

SCENARIO 3
WITHDRAWAL OF INSURER PRIVATE CREDIT DEMAND

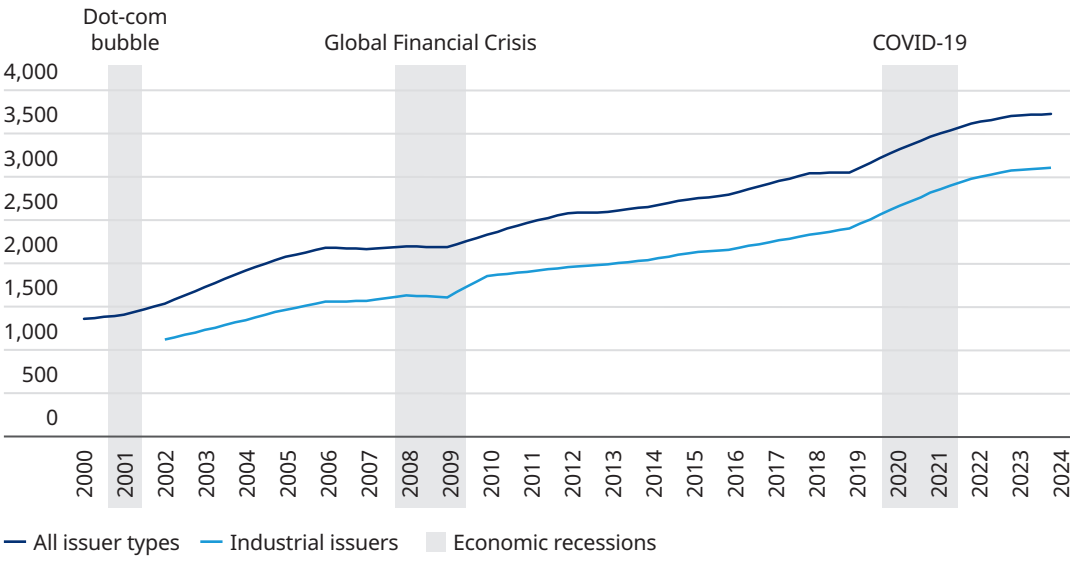
In **the third scenario**, we examine the role of insurers in funding the real economy through the private credit markets. In particular, we consider the chain of events that would lead to insurers pulling back from private credit markets and whether such a scenario could cause a significant source of disruption to the financial system and real economy.

We conclude that insurers **provide a source of stability for credit markets given the stability of their funding base through periods of economic stress**. However, we also observe that, if an event caused the Bermuda long-term insurance sector to pull back from funding the private credit market, the sector constitutes a small share of global credit markets, and a pullback in the role that insurers play, as a provider of funding, is unlikely to disrupt the broader financial system.

Three important factors drive this conclusion (with analysis described throughout Section 5.1.3), including that:

1. Historically, insurers have provided a source of stability to credit markets during periods of market stress. One contribution to the observed stability of insurer investments is the resilience of new premiums and deposits to market stress. This outcome reflects in part both that life insurance premiums are often paid on a recurring basis and sales of annuities, which provide a protected investment return, generally benefit from periods of market stress.

Exhibit 3: Insurer lending: Total bonds and loans to industrial issuers
$ billion, quarterly, US only



Source: Federal Reserve Economic Data, Insurer statutory filings pulled from S&P Capital IQ

2. While insurers have a material presence in the private credit market, the Bermuda long-term sector represents a very small share of the global credit market as a whole (<1%, refer to Section 3 for details). Furthermore, across all asset classes, Bermuda constitutes a minor portion of the total global market.
3. Critical roles in the private credit market value chain, such as sourcing, underwriting, warehousing, structural, and administration for private assets, are fulfilled by other parties, including banks, private asset managers, and servicing companies. Consequently, if insurers were to pull back from credit markets, the result would be a decline in the funding available from insurers, without further impacting other components of the value chain. The role of insurers (funding) does not require unique capabilities, and could be fulfilled by other investors such as pension funds, sovereign wealth funds, endowments, family offices, and hedge funds. In particular, if any pullback were material enough to impact the availability of credit, it should also result in a more attractive spread that would encourage other investors to shift their asset allocations and act as substitutes for the funding capacity provided by insurers.

Exhibit 4: Private credit value chain

Note: Illustrative.
Source: Oliver Wyman analysis

CONCLUSION

In summary, **we conclude that the Bermuda long-term sector does not meaningfully contribute to global systemic risk**. While concerns raised by regulators and other participants are understandable, a more in-depth examination of the transmission mechanisms finds that safeguards in place (from regulatory requirements and market practice) and the inherent long-term nature of insurance liabilities effectively limit the potential consequences of any stress on the broader financial system.

However, we have identified several recommendations to enhance the ability of regulatory and other stakeholders to analyse and evaluate the potential risks:

- **More public transparency on AIR structures, transactions, counterparties, and volumes** as part of regular reporting would improve levels of understanding, in particular, in relation to potential concentrations of risk in the system. *This is supported by the BMA's Proposed Enhancements to Public Disclosure Regime: Public Disclosure of Assets and Liabilities for Commercial Long-term Insurers.*
- **Ongoing regulatory oversight and safeguards rather than restriction** — We are strong advocates for regulatory oversight (e.g., enhanced monitoring) and safeguards (e.g. recapture planning, system-wide stress testing) where there are concerns rather than explicit (or de-facto) restriction of AIR as has been observed in some jurisdictions, recognising the importance of a well-functioning reinsurance market.
- **Risk-based understanding and monitoring of asset and liability portfolios** — It is critical to monitor the potential risks of complex assets both at a firm and system-wide level, but we urge market participants to interrogate this in a risk-based manner, carefully assessing the specific asset and liability profile rather than making broad-brush assertions. In this context, we are wary of regulatory intervention based on broad definitions of "alternative assets".

In addition, many of the themes raised in this report in exploring the potential for the Bermuda long-term insurance sector to contribute systemic risk also highlight and raise topics that are important from the perspective of prudent risk management. In particular, our analysis highlighted the importance of several risk management processes that occur at the firm-level:

- **Well-defined counterparty risk framework informed by recapture impacts** — Sound counterparty risk management is fundamental to participation in AIR markets. While market practice varies across jurisdictions and firms, we believe good practice counterparty risk management should include firm-defined counterparty limits (or incorporation of counterparty risk into existing risk metrics) informed by quantitative analysis of the impact of recapture on cedent balance sheets.
- **Enhanced counterparty default or recapture planning** — Firms should be prepared operationally to understand how they could respond and the actions available in the event of distress, or failure of, a reinsurance counterparty (i.e., firms should have policies and governance in place to support such analysis).

SECTION 2

INTRODUCTION

2.1. PURPOSE AND STRUCTURE OF THIS REPORT

The purpose of this report is to produce a fact-based assessment of the systemic risk posed by the Bermuda long-term insurance sector in relation to global trends (e.g., increased allocation to private credit and greater use of AIR). The production of the report was funded by Bermuda International Long-Term Insurers and Reinsurers (BILTIR), but Oliver Wyman has maintained full editorial rights and responsibility for the analysis and conclusions of the report.

The report is structured to first provide background information on the role of insurers, the broader market landscape, and key regulatory concerns that have been expressed in relation to the long-term insurance sector. It then explores the potential impact of these concerns by considering three hypothetical scenarios designed to test the ways in which the Bermuda long-term sector might contribute to systemic risk. The design of the scenarios is informed by questions and concerns raised by global regulators, as well as Oliver Wyman's own views on potential transmission channels.

2.2. ECONOMIC AND SOCIAL ROLE OF (RE)INSURERS

Insurers play an important role in promoting policyholder protection, financial security macroeconomic resilience, and serving both individuals and institutions. They act as a provider of long-term capital, contribute to economic stability, and support access to protection and funding for households and businesses.

Insurers serve many functions to the benefit of individuals, institutions, and the broader economy by accepting and pooling risks from policyholders, and managing them actively (e.g., by seeking sources of diversification, including through reinsurance). Due to this role and the long-term horizon of many insurance contracts, insurers have large amounts of investments under their management, held in order to make payments to policyholders in the future. They are therefore significant players — alongside other financial institutions — in financial intermediation and capital accumulation.

Insurance activities are broadly divided into "life" (sometimes used synonymously with "life and annuity") and "non-life" (sometimes used synonymously with "Property and Casualty") insurance.[4] Life insurance protects against the loss of income due to disability or death, or against the risk of outliving one's financial resources. Non-life insurance protects against damage, loss, or injury, as well as legal liability for damage, loss, or injury to others or their property. Reinsurers provide protection to insurers themselves.

With public systems facing increasing demographic and fiscal pressures, government-provided pensions are increasingly inadequate to meet the retirement needs of aging populations. According to the World Economic Forum, the global pension gap — the difference between current retirement savings and projected income needs — was approximately $70 trillion in 2017 and is expected to widen to $400 trillion by 2050.[5] This expanding gap underscores the urgent need for a private sector response, where insurers are uniquely positioned to offer long-term income security through a diverse range of protection and retirement solutions.

Insurers play a vital role in enhancing financial resilience by offering retirement income solutions. Products like annuities provide protection to individuals against the risk of outliving their financial resources and the security of a stable income to support their retirement. According to recent data from LIMRA and ABI, individual and bulk annuity volumes totalled $490 billion in the US and £54 billion in the UK in 2024, marking a roughly 19% annual growth rate for both countries since 2021.[6] This growth in annuity sales has been driven by increasing demand for competitive retirement products. In addition to annuities, life, disability, and long-term care insurance products offer important protection to households during periods of income disruption, or to guard against unexpected expenses.

4 Health insurance is often considered a component of life insurance; however, it can sometimes be classified as non-life.

5 Mercer & World Economic Forum report *We'll Live to 100 — How Can We Afford It?* May 2017.

6 ABI Quarterly new business: Pensions 2021 and 2024, LIMRA *US group annuity risk transfer study* Q4 2024, LIMRA *US individual annuity sales survey* Q4 2024, LIMRA/SRI *US individual annuity sales survey* Q4 2024.

What distinguishes "long-term insurers" from other insurers?

Insurance products broadly fall into one of two buckets: short-term and long-term. Short-term products are generally synonymous with the Property and Casualty (also known as General Insurance), and include products where policies span one-year or less in length, such as car, home, and travel insurance. Long-term products are generally synonymous with the Life, Health, and Annuity markets, and typically offer coverage over extended periods of time that can span up to several decades in duration (e.g., Whole of Life policies and Pension Risk Transfer). This distinction is important because the long-term nature of Life, Health, and Annuity liabilities necessitates special considerations for managing (re)insurance companies that underwrite this business — in particular relating to pricing and ongoing asset-liability management. The scope of this report is limited to the Bermuda reinsurers classified as commercial "Long-Term Insurers" by the Bermuda Monetary Authority, also known as Class C, D or E.

Common long-term insurance products include:

Life products: Provide beneficiaries with a death benefit upon the policyholder's passing.

Annuity products: Provide holders with an income stream during retirement, purchased via lump sum or regular payments.

Beyond the provision of protection, insurers are major institutional investors and play an important role in financing the real economy. By investing the premiums they collect over long periods of time using a buy and hold approach, insurers act as a stabilising force in financial markets and promote consistent capital flows even in times of economic distress. This long-term orientation enables them to act as a countercyclical force, supporting market function, and positions them to finance long-term needs, such as infrastructure and housing. Furthermore, insurers facilitate credit intermediation by granting policyholders access to asset classes not typically accessible through other financial channels.

The insurance model and the nature of the liabilities fundamentally differs from banking. Unlike banks, insurers' business models generally revolve less around maturity transformation. Bank liabilities are typically shorter term, with liquidity risk arising from immediately callable bank deposits, which banks use to make loans that often cannot be called immediately.

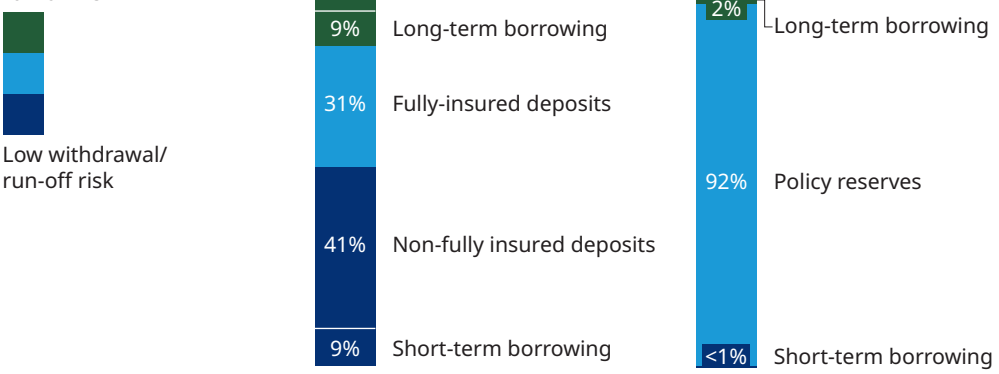
In contrast, life insurers generally have long-term illiquid liabilities, which can be matched to long-term (and sometimes illiquid) assets. This enables insurers to invest strategically in long duration assets (5-10+ years) and manage asset-liability management risk by broadly pairing expected asset and liability cashflows through time. In part, this explains the broader trend of insurers investing in a wider range of asset classes than they have historically, including private credit assets (a trend discussed in more detail further on).

Insurers also view investments differently from asset managers, particularly because asset managers invest on behalf of clients, and do not have material liabilities in the same way as insurance companies. A typical asset manager is focused on maximising the performance of investments relative to a prescribed benchmark. In insurance, the investment function must not only achieve adequate returns, but it must also manage the potential mismatch in assets and liabilities that may arise as a result of changes in capital market conditions.

Reinsurance, particularly AIR, provides an important mechanism to access additional capacity to write more new business and support capital flexibility. It is also is an important risk management tool for insurers, and can act to stabilise the market in times of stress.

Exhibit 5: Comparison of bank and insurer liability composition

	Banks	**Insurers**
Primary liability	Deposits	Policy reserves
Purpose	Access to funds on demand	Life and income protection Long-term, tax-advantaged savings
Liability composition	**Ten largest US banks** 2023 average	**Ten largest US insurers** 2023 average



Source: Financial statements pulled from S&P Capital IQ, Oliver Wyman analysis

What is reinsurance? Why does it exist?

Reinsurance is insurance for insurance companies. It is an agreement between one insurer (the "cedent", and often the "primary" or "direct' insurer that originally sold an insurance policy to the customer) and another insurer (the "reinsurer") to transfer some or all the risks associated with (a portfolio of) policies held by the cedent. Reinsurance serves many purposes to the benefit of the cedent, reinsurer, the market as a whole, and customers.

The fundamental value of reinsurance to insurers is that it allows them to: a) divide up the risk between them, limiting the amount of risk — or any one risk type — that insurers need to hold in the provision of insurance to the market; and ii) diversify their risk profile. Given reinsurance entails the sharing of risks with another insurer, it often results in the need for the cedent to hold less capital, allowing insurers to deploy any capital released into other activities. This is sometimes referred to as "capital flexibility". Capital in this context is the financial cushion available to an insurer to absorb unexpected losses.

Reinsurance facilitates diversification by allowing insurers to transfer risks that they hold "too much of" (i.e., which do not diversify well with their overall portfolio) and to take on risks that would be diversifying to their overall portfolio (e.g., longevity risk to a life insurer focusing on protection).

Customers ultimately benefit from a healthy reinsurance market when individual insurers can effectively optimise their risk-return trade-offs through: i) enhanced pricing; and ii) broader product offerings. For a given capital base, the availability of reinsurance allows insurers to write more business to customers than would otherwise be the case.

What types of reinsurance exist for life business?

Broadly, there are three types of reinsurance for life business: "traditional", "financial", and "asset-intensive".

- **Traditional** reinsurance is generally characterised by the transfer of one or more insurance risks (e.g., longevity risk, mortality risk, morbidity risk). While the reinsurer may take on some investment risk, the risk primarily stems for the underlying liabilities, rather than the assets held to pay these liabilities.
- **Asset-intensive reinsurance (AIR)** is generally characterised by the transfer of risks relating to both the liabilities and the assets held to pay them.
- **Financial** reinsurance encompasses a broad range of agreements between insurers and reinsurers where neither asset nor liability risks are transferred directly, but the reinsurer agrees to provide some form of contingent financial support in exchange for a premium. These arrangements often include mechanisms that allow the insurer to improve certain metrics, such as capital, reserves, or solvency ratios.

2.3. MARKET LANDSCAPE AND TRENDS

Global life and annuity (re)insurance markets have grown significantly in recent years, now representing approximately $20 trillion in assets and liabilities. The United States holds the largest market share (roughly one quarter of the global total), with China, Japan, and the European Union (EU) the next largest markets, respectively. In recent years, two notable trends in several jurisdictions have emerged: an increase in allocation to private assets and growth in the use of cross-border AIR.

INCREASED ALLOCATION TO PRIVATE ASSETS

Though insurers have long been significant holders of private assets, over the past decade, long-term insurers have increased their allocation to higher yielding, more illiquid assets, in particular private credit, and other asset classes sometimes described as “alternatives”.

What are alternative assets?

For the purpose of this report, we use the IAIS’s definition of alternative assets, which is that alternative assets are assets which display a high degree of either valuation uncertainty, illiquidity or complexity, or a combination of these (according to the IAIS Draft Issues Paper on structural shifts in the life insurance sector). Alternative assets are generally viewed as investment categories that fall outside traditional asset classes like stocks, public bonds, and cash. Although no universally agreed-upon definition exists, alternative assets typically include generally illiquid asset classes such as private equity, infrastructure, and real estate. The IAIS applies a broad definition that includes both assets typically defined as alternatives as well as certain types of private credit.

The table below illustrates a mapping of alternative assets by the International Association of Insurance Supervisors (IAIS).

Equity related	PE funds, unlisted equities
Real estate	Unlisted residential real estate funds, direct investment in land/ real estate
Credit related/debt	Unlisted property trusts, direct lending (loans and mortgages), private credit funds, unlisted debt instruments
Other	Hedge funds, commodities, infrastructure
Structured securities	Structured assets, particularly private, non-syndicated or highly customised securitisations

Source: IAIS Issues paper on structural shifts in the life insurance sector March 2025

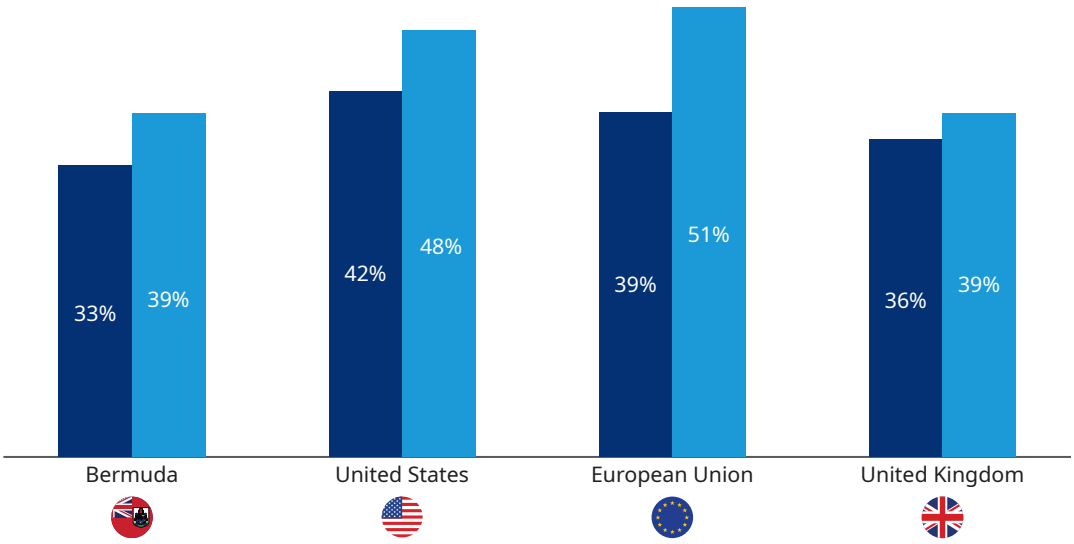
What is private credit?

For purposes of this report, private credit refers to both non-public fixed income assets such as direct lending, residential and commercial mortgage lending, asset-based finance as well as structured securities generally (including both publicly traded and private or non-syndicated securitisations).

This increase has been driven by several factors, both demand-related and supply-related, principally: i) the growth in the market for private credit itself, often offering a meaningful yield uplift compared to equivalently-rated public credit, known as the "illiquidity premium"; and ii) the relatively low yields on public credit since the 2008 financial crisis. Private credit can be available at longer durations than public credit, as the borrower and lender can negotiate directly on terms. This makes it particularly attractive for life insurers seeking to match long-dated liabilities with long-dated assets. For a detailed breakdown of asset allocation for reinsurers across jurisdictions, refer to Section 5.1.1.

Exhibit 6: Allocation to alternative assets for life insurers

$ billion, 2019-2023



Notes: For Bermuda, the 2023 figure shown includes the following asset classes: "RMBS", "CMBS", CLOs", "ABS", "Residential Mortgage Loans", "Commercial Mortgage Loans", "Private Placements", "Other Loans", "Private Equities", "Other Alt. Investments", "Real Estate". For 2019, estimates were made for private placements and private equity based on the 2023 allocations.

For the US, the figures shown include the following asset classes: "Private Corporate Bonds" (estimated based on CUSIP-level analysis of single-issuer industrial bonds), "Bank Loans", "Mortgages", "Real Estate", "Unaffiliated Preferred Stock", "Unaffiliated Common Stock", and Schedule BA Assets.

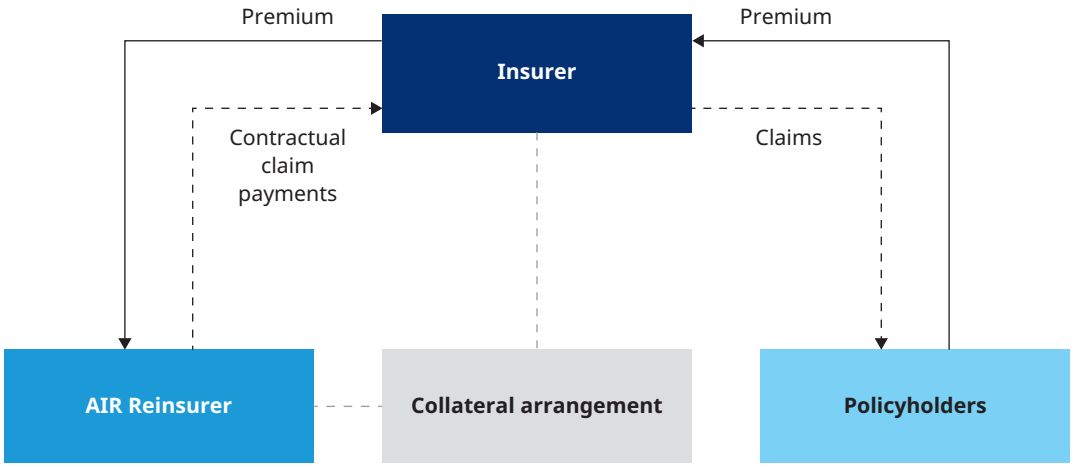
For the EU and UK, the figures shown include the following asset classes for life undertakings (excl. unit-linked and index-linked): "Equity", "Collective Investment Undertakings" excluding "money market funds" (i.e., "equity funds", "debt funds", "asset allocation funds", "real estate funds", "alternative funds", "private equity funds", "infrastructure funds", "other"), "structured notes", "collateralised securities", "mortgages and loans", "property", and "other investments". Some of these asset classes will include assets that do not meet the IAIS definition of alternative assets, e.g., listed equities, but cannot be broken out based on the data available.

Source: BILTIR (Bermuda), NAIC (US), Bank of England (UK), AM Best (EU)

GROWING USE OF CROSS-BORDER ASSET-INTENSIVE REINSURANCE (AIR)

Over the past decade, the use of cross-border AIR has grown significantly. One important driver has been insurers' continued pursuit of more effective capital management.[7] In recent years, AIR has grown to be an important tool available to insurers in pursuit of balance sheet optimisation, capital management, and enhanced risk-adjusted returns. Bermuda's position as a leading reinsurance market makes it an attractive jurisdiction in which to transact, with ~15% of US life reserves now ceded to Bermuda reinsurers[8] (see Exhibit 10).

Exhibit 7: AIR cash flow and risk transfer



Source: IAIS *Issues paper on structural shifts in the life insurance sector* March 2025

7 "Capital" in the context of insurance is used to describe a number of related concepts: "Available capital" (sometimes called "capital and surplus", or "own funds" typically describes the difference in value between assets and liabilities held by an insurer. "Required capital" describes a minimum amount of available capital that an insurer is required to hold by their regulator, to ensure it can meet its obligations to policyholders and remain solvent in the face of unexpected losses and risks. Approaches to determine required capital vary significantly across jurisdictions, and in practice some regulators expect insurers to maintain available capital well above the level of required capital defined by their prescribed approach.

8 The scope of this report is limited to the "Bermuda reinsurers" classified as commercial "Long-Term Insurers" by the Bermuda Monetary Authority, also known as Class C, D, or E

What is asset-intensive reinsurance?

Asset-intensive reinsurance (AIR) is an arrangement where an insurer transfers both insurance liabilities and (a substantial portion of) the assets backing those liabilities to a reinsurer. This type of reinsurance is typically used for products where investment spread is an important part of the value generated by holding the liabilities, i.e., long-term products.

An important feature of this type of reinsurance is that — upon transfer of the assets and liabilities — the cedent retains its responsibility to pay the liabilities in case the reinsurer has insufficient assets to do so in the future. Consequently, the risk profile of the cedent shifts from the market and insurance risks associated with the assets and liabilities to counterparty default risk with the reinsurer.

As a result, these arrangements typically include several features that provide significant protection for the cedent that both: i) reduce the likelihood of reinsurer inability to pay the liabilities; and ii) reduce the impact on the cedent in case it needs to "recapture" liabilities onto its own balance sheet in the future.

In recent years, many life insurers (particularly public ones) have strategically pivoted toward 'capital light' business models, as the market tends to penalise capital intensive insurance companies. AIR is an important tool in this context, as it generally increases the surplus of available capital, over and above required capital, held by an insurer, allowing the insurer more flexibility in deploying its capital (i.e., contributing to 'capital flexibility').

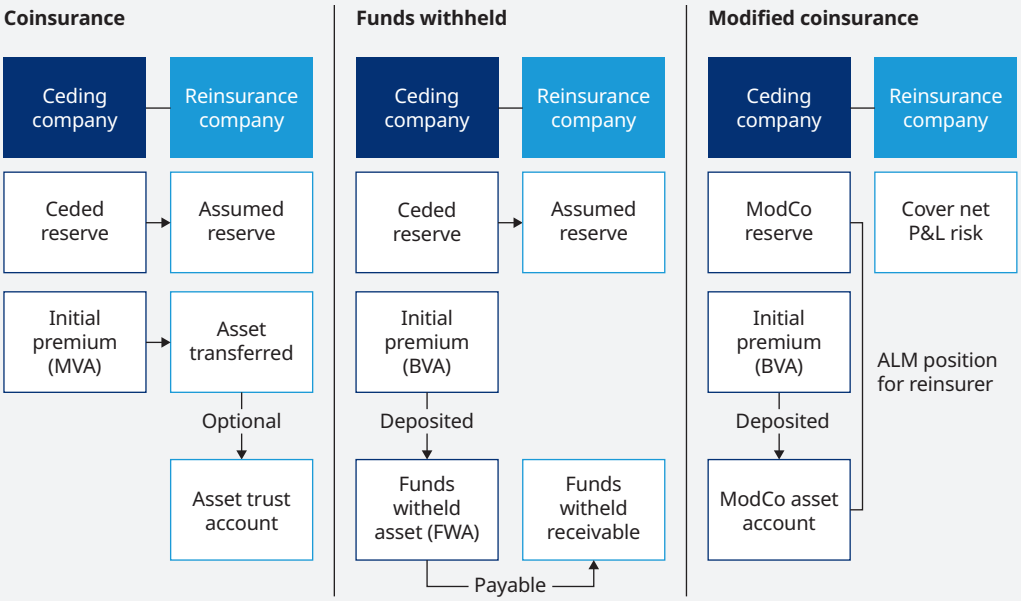
Types of asset-intensive reinsurance (AIR)

Broadly there are three types of asset-intensive reinsurance: 1) "Coinsurance"; 2) "Funds Withheld"; and 3) "Modified Coinsurance" ("ModCo").

1. In a **"Coinsurance"** arrangement:
   - Reserves are transferred from the cedent to the reinsurer
   - Assets that support the reserves are also transferred from the cedent to the reinsurer (subject to agreed upon investment guidelines)
2. In a **"Funds withheld"** arrangement:
   - Reserves are transferred from the cedent to the reinsurer
   - Assets remain on the cedent's balance sheet (in the ceding jurisdiction), but are economically owned and controlled by the reinsurer (subject to the agreed investment guidelines)

3. In a **"Modified coinsurance"** arrangement:
   - Reserves remain on the cedent's balance sheet, but the reinsurer additionally establishes reserves on its own balance sheet (under the relevant reserving framework) and has economic ownership of the liabilities
   - Assets remain on the cedent's balance sheet (in the ceding jurisdiction), but are economically owned and controlled by the reinsurer (subject to the agreed investment guidelines)

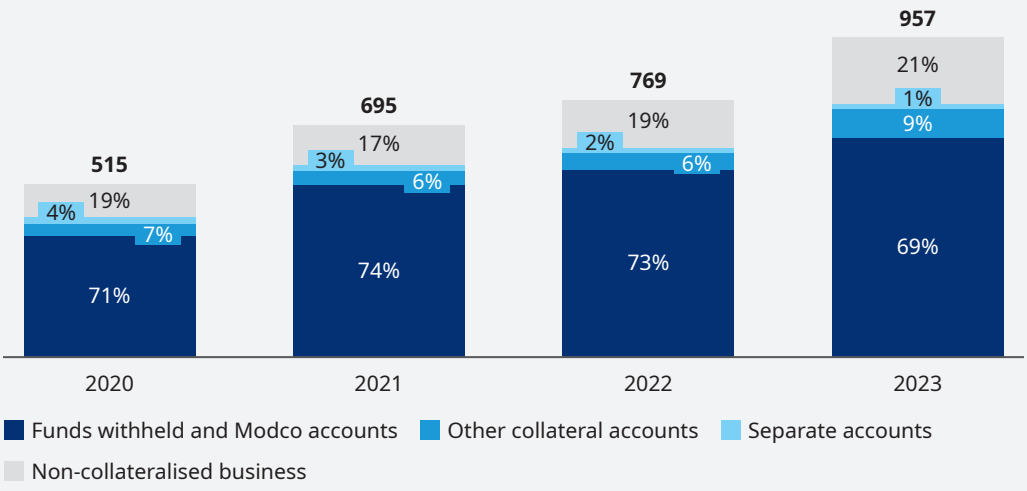
Exhibit 8: Types of AIR structure



Source: Oliver Wyman analysis

Exhibit 9: Bermuda long-term insurance market collateral structures

$ billion, 2020-2023

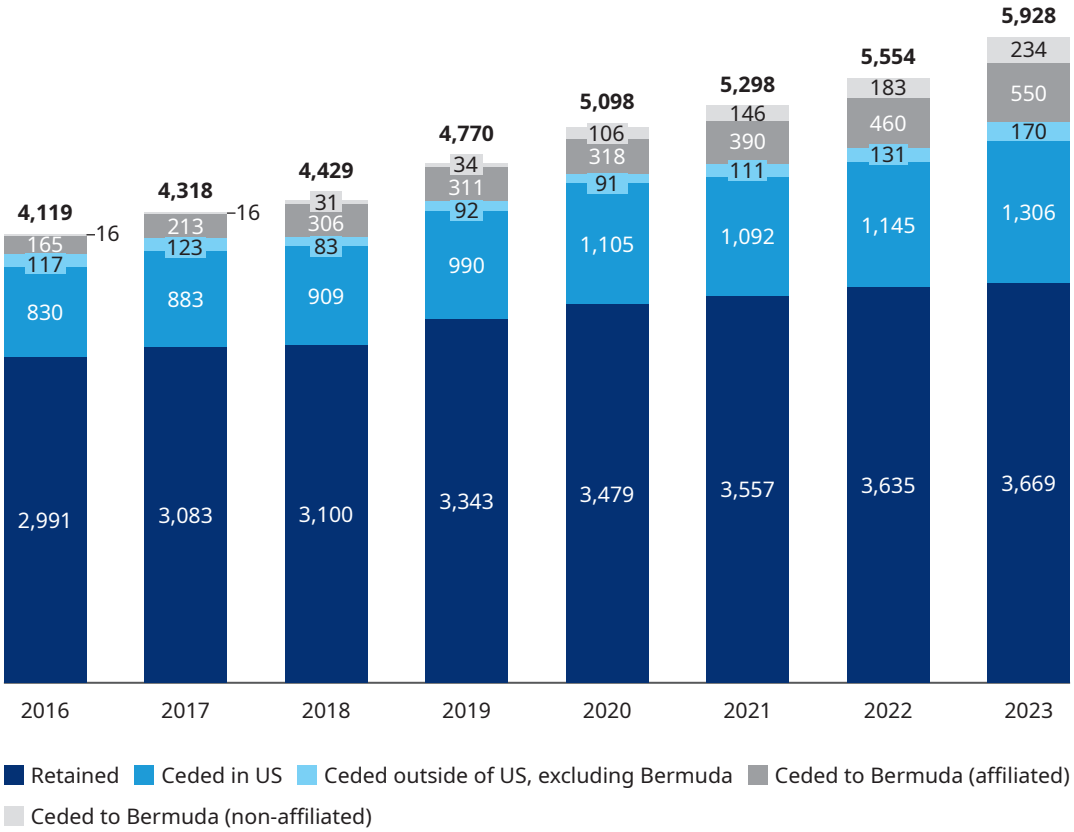


Source: Data provided by BILTIR

REGULATORY CONCERNS REGARDING AIR TRENDS

The significant growth in cross-border reinsurance — evidenced by the nearly $1 trillion in US life insurance reserves now ceded to other jurisdictions, coupled with an increase in insurers' allocations to private assets, has led global regulatory bodies to express concern with these trends. Such concerns include the perceived accumulation of balance sheet risks and lower-quality investments and an increase in the level of interconnectedness between the insurance sector and the broader financial system. These concerns are explored in more detail in section 4.3.

Exhibit 10: Breakdown of US life insurance reserves (retained vs. ceded)
$ billion, 2016-2023



Source: Insurer statutory filings pulled from S&P Capital IQ, Oliver Wyman analysis

Non-collateralised business represents ~20% of the Bermuda long-term insurance market, primarily comprising critical illness, mortality and longevity reinsurance transfers, as well as asset-intensive transactions conducted on a coinsurance basis. A large portion of this business are Japanese liabilities.

Why do life insurers use asset-intensive reinsurance?

Insurance companies engage in AIR for several strategic reasons, including:

- **Capital efficiency:** By transferring assets and liabilities to reinsurers, cedents can reduce the amount of capital they need to hold, allowing them to allocate capital more efficiently across their business; in some cases, this may improve key financial metrics, including regulatory solvency ratios (e.g., RBC ratio, solvency coverage ratio), or allow them to return capital to shareholders, or support business growth.
- **Market competitiveness:** In the case of AIR treaties that allow for risk transfer on an ongoing basis as new business is written by cedent ("flow" business), new business pricing may be improved by reducing the amount of capital that insurers need to hold for that new business (i.e., alleviating the "capital strain") or by allowing the cedent access to investment capabilities at the reinsurer.
- **Diversification:** Cedents can improve the overall diversification of their portfolio if AIR leads to a more balanced risk profile (particularly with respect to liability-side risks like mortality and longevity risks).

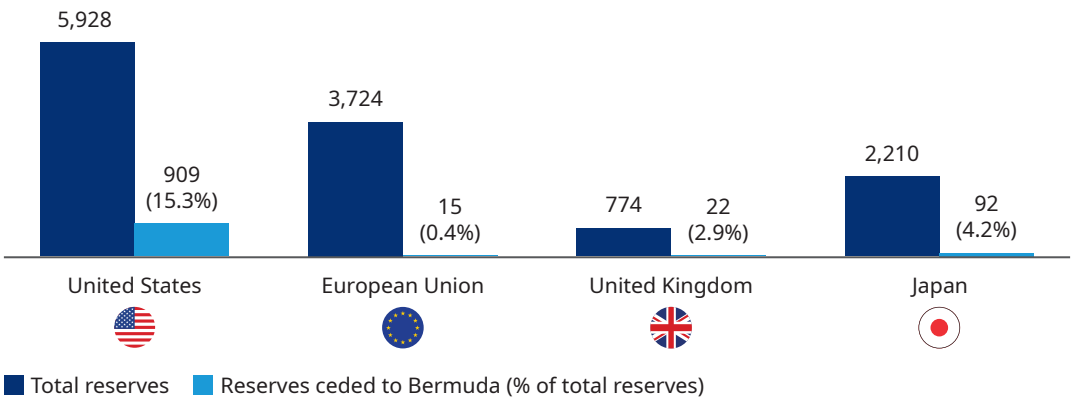
SECTION 3

ROLE OF BERMUDA IN THE GLOBAL LIFE INSURANCE MARKET

3.1. HISTORY AND STRATEGIC ROLE FOR (RE)INSURERS

Over the past 70 years, Bermuda has grown to have an influential role in the global (re)insurance market. Approximately 6% of global life liabilities is now managed through Bermuda, highlighting its important role in the global (re)insurance ecosystem. For US life providers, reserves ceded to Bermuda account for around 15% of total gross US reserves, as shown in Exhibit 11 below.

Exhibit 11: Global life liabilities, and portion ceded to Bermuda by geography
$ billion, gross of reinsurance, 2023



Note: Japanese liabilities are net of reinsurance.

Source: Bank of England *Insurance Aggregate Data Quarterly Report* Q4 2023, Data provided by BILTIR, Life Insurance Association of Japan, *Life insurance Fact Book* 2023, EIOPA *Insurance Statistics* Q4 2023, Insurer statutory filings pulled from S&P Capital IQ

Bermuda's role in the global insurance market began in 1947 with the establishment of the American International Company Ltd., facilitated by legislative changes made by the Bermuda Parliament to accommodate foreign business interests. In the following year, the subsequent establishment of International Reinsurance Co. laid the foundation for Bermuda's future prominence in reinsurance.[9]

In the 1960s and 1970s, Bermuda emerged as a key centre for captive P&C insurance companies, mainly reinsuring their own risks. These are specialised subsidiaries of larger insurance groups created to manage the risks of their parent organisations, and thrived in Bermuda by benefiting initially from its favourable regulatory environment and attractive tax incentives. Initially, single-parent captives dominated Bermuda's insurance landscape, where individual companies established entities to insure specific risks and later evolved to include other captive arrangements, such as multiple-parent captives and rent-a-captive arrangements.

The Insurance Act of 1978 laid the foundation for Bermuda's modern-day insurance regulatory framework, introducing standardisation that attracted global insurers to the island. Since its inception, the Act has been periodically amended, along with additional supplementary regulations and texts, have been introduced to adapt to evolving market dynamics and ensure comprehensive governance. The BMA is responsible for overseeing the sector, and its prudential framework for insurance, which is recognised by other major regulators as "equivalent" to their own prudential frameworks, notably by the US, EU, UK, and Japanese insurance regulators (see below for further information on "equivalence").

Regulatory "equivalence" and "reciprocity"

As regulatory frameworks have developed over time, regulatory bodies have established criteria to recognise other frameworks as equivalently robust as their own. Such recognition aims to ensure that cross-jurisdiction insurance activity (including reinsurance) does not take place to the detriment of robust risk management, (re)insurer capitalisation levels, and ultimately policyholder security.

As an example, the European Commission (with the assistance of EIOPA, the European Insurance and Occupational Pensions Authority) makes Solvency II equivalence determinations, and has three categories: "full equivalence", "temporary equivalence", and "provisional equivalence". The only two jurisdictions currently granted "full equivalence" are Bermuda and Switzerland (both granted in 2016).

9 Business Insurance *Charting Bermuda's history* 2000.

According to the European Commission, "A third country's legal regime is to be considered as fully equivalent… …if it complies with requirements which provide a comparable level of policyholder and beneficiary protection. Accordingly, as it fulfils all the criteria…, the regulatory and supervisory regime in force in Bermuda for insurance or reinsurance undertakings and groups should be considered to meet the criteria for full equivalence …, with the exception of rules on captives and special purpose insurers, which are subject to a different regulatory regime".

The United States (at either the national or state level) recognises international insurance jurisdictions as having prudential measures that achieve a level of protection substantially equivalent to States' for (re)insurance consumers. A jurisdiction achieving such recognition is referred to as a "Reciprocal Jurisdiction" (RJ). The UK and EU have bilateral agreements with the US to establish them as RJs, while (re)insurers domiciled in Bermuda, Japan, and Switzerland can apply for RJ status provided they meet certain criteria. The National Association of Investment Companies (NAIC) recognises Bermuda as a "Qualified and Reciprocal Jurisdiction", a status which is reviewed annually and was re-approved most recently at year-end 2024).

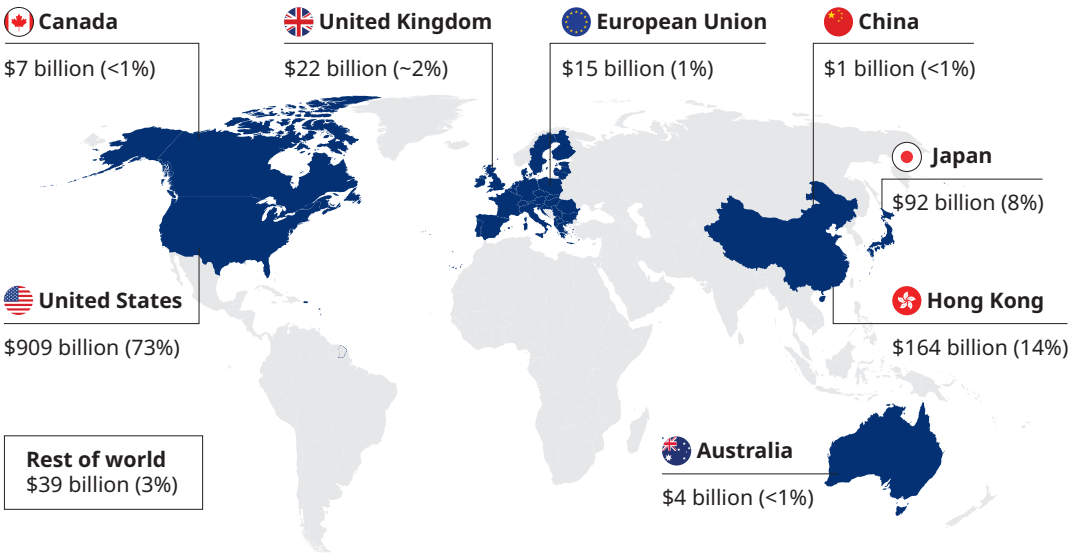
Exhibit 12: Recognition of "equivalence" or "reciprocity" between jurisdictions

Jurisdiction	United States recognises…	European Union recognises…	United Kingdom recognises…
Bermuda	✓	✓	✓
United States	-	✓[1]	✓[1]
European Union	✓	-	✓
United Kingdom	✓	✗	-
Japan	✓	✓[1]	✓[1]
Australia	✗	✓[1]	✓[1]
Brazil	✗	✓[1]	✓[1]
Canada	✗	✓[1]	✓[1]
Mexico	✗	✓[1]	✓[1]
Switzerland	✓	✓	✓

Notes: 1. Provisional equivalence; 2. The European Union and United Kingdom recognition of group capital equivalence — i.e., US, Japan, Australia, Brazil, Canada, and Mexico, and Japan — is provisional and runs for 10 years from 1 January 2016. Japan was granted temporary equivalence for reinsurance, which expired on 31 December 2020.

Source: Oliver Wyman analysis

Exhibit 13: Bermuda long-term insurer gross reserves ceded from different jurisdictions
$ billion, 2024 (% of total)



Source: Data provided by BILTIR

It was not until the mid-1980s that Bermuda began to significantly expand beyond the captive P&C market. In the 1990s, Bermuda experienced a notable increase in the formation of commercial P&C reinsurers. This growth was primarily driven by the US liability insurance crisis, which left insurers struggling to obtain excess liability coverage, prompting the emergence of new companies to address the rising demand for reinsurance solutions. Major events, such as Hurricane Andrew in 1992, revealed capacity gaps in the global reinsurance market, resulting in substantial capital inflows into Bermuda's reinsurance sector. Bermuda's handling of these crises solidified its status as a leading global hub for P&C reinsurance.[10]

Building on success in the P&C sector, insurers began to explore Bermuda as a destination for long-term reinsurance, initially concentrating on traditional mortality risk. As Bermuda's regulatory framework matured, and in connection with the BMA implementing the Economic Balance Sheet (EBS) framework in 2016, the jurisdiction began to support more complex life insurance structures, including affiliated and AIR arrangements. The introduction of the EBS framework was a pivotal trigger for Bermuda achieving regulatory equivalency with other jurisdictions, enhancing its attractiveness to global insurers. Over the past decade, Bermuda has become a leading centre for AIR, partly driven by insurers' desire for more effective capital management.

10 Bermuda Insurance *The Bermuda Insurance Market: An Economic Analysis* 2008.

When insurers evaluate jurisdictions for ceding reserves, Bermuda frequently stands out as an attractive option. Several factors contribute to its appeal, including economic, risk-based capital and reserving treatment, incentivisation of strong asset-liability management, and Bermuda's advanced regulatory and human capital infrastructure. The common rationale for operating in Bermuda are summarised in Exhibit 14 and Exhibit 15 below.

Exhibit 14: Common rationale for operating in Bermuda for life insurers

Feature	Description
Global recognition	Bermuda's Solvency II equivalence and US qualified jurisdiction status allows insurers to take full reserving credit for asset-intensive transactions, and more broadly supports confidence in the robustness of Bermuda's regulatory framework.
Robust regulatory framework	The BMA is continuously evolving and adapting its regulatory framework to remain fit for purpose in the context of macroeconomic developments and global standards. In 2024, the BMA introduced a series of meaningful enhancements to its framework to ensure a high level of policyholder protection and promote financial stability.
Ability to raise capital	Bermuda has proven an effective jurisdiction to raise capital, benefiting from a combination of its strong institutions, credible regulator and common-law system as well as favourable tax treatment for certain investors.
Capital and reserving bases	The BMA's regulatory framework includes capital and reserving rules on a market value basis.
Asset-liability management (ALM)	The BMA's EBS basis encourages close asset and liability matching and offers (subject to ALM and other requirements being met) long-term insurers the ability to recognise higher risk-adjusted asset yields within the liability valuation. The BMA's "Scenario-Based Approach" — where insurers can discount liabilities at a rate that depends on the risk-adjusted yield on assets backing those liabilities, so long as assets and liabilities are well-matched in timing and amount — is similar to the "Matching Adjustment" (MA) framework used extensively in the UK and in parts of the EU (notably Spain).
Tax consideration	Since 2025, Bermuda has adopted the 15% global minimum corporate tax rate. This compares favourably to the US (21% federal rate) and UK (25%) and most EU jurisdictions, but less favourably to Ireland (12.5%), the Cayman Islands, and Barbados (5%).
Political stability	Bermuda offers political stability as a result of its strong ties to the United Kingdom and United States, contributing to its appeal as a trusted hub for reinsurers. It also maintains an active and healthy relationship with various global regulatory bodies, making it a reliable jurisdiction for global insurers to do business.
Innovation	Bermuda has long been seen as an innovative place to conduct reinsurance business — its openness to innovative structures and responsiveness to evolving market needs give global insurers access to an array of risk transfer solutions.
Reinsurance expertise	Bermuda is a global reinsurance hub and therefore has a concentration of on-island expertise in life reinsurance, supported by a mature ecosystem of actuaries, asset managers, consultants, and legal advisors, supporting efficient structuring and execution of complex transactions.

Source: Oliver Wyman research

Exhibit 15: Comparison of key insurance and reinsurance jurisdictions

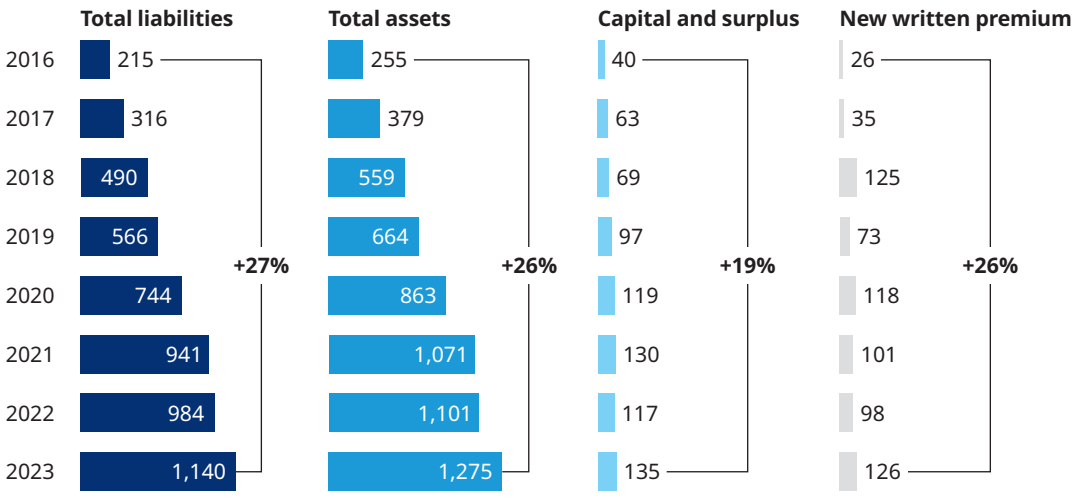
Jurisdiction	Reciprocal jurisdiction (US)	Solvency II/ UK Equivalence	Corporate tax rate	Reporting standards
Bermuda	✓	✓	15%	• IFRS, US GAAP, or other GAAP recognized by the BMA (e.g., Canada) • EBS
United States	-	✓	21%	• US GAAP • US Statutory
European Union	✓	-	• Varies: 9%-35% • Mean/Median: 21%	• IFRS • Solvency II
United Kingdom	✓	-	25%	• IFRS • UK GAAP
Japan	✓	✓	~30%	• JGAAP • ICS (starting 2026)
Cayman Islands	✗	✗	0%	• Flexible
Barbados	✗	✗	5%	• Flexible

Source: BILTIR *Quarterly Membership Update* June 2019, Japan External Trade Organization *Taxes in Japan*, Society of Actuaries, Tax Foundation Europe Corporate *Income Tax Rates in Europe* 2024

These conditions have contributed to significant growth in the Bermuda long-term insurance sector, seen in the below Exhibit 16. In particular, the assets held by Bermuda reinsurers have grown by an average annual growth rate of 26% between 2016 and 2023. This resulted in growth in asset leverage from around 6x in 2016 to around 9x in 2023 and is consistent with a shift from a traditional reinsurance, which includes more liability risk, to AIR.

Exhibit 16: Growth in the Bermuda long-term insurance sector

$ billion, 2016-2023, % is CAGR



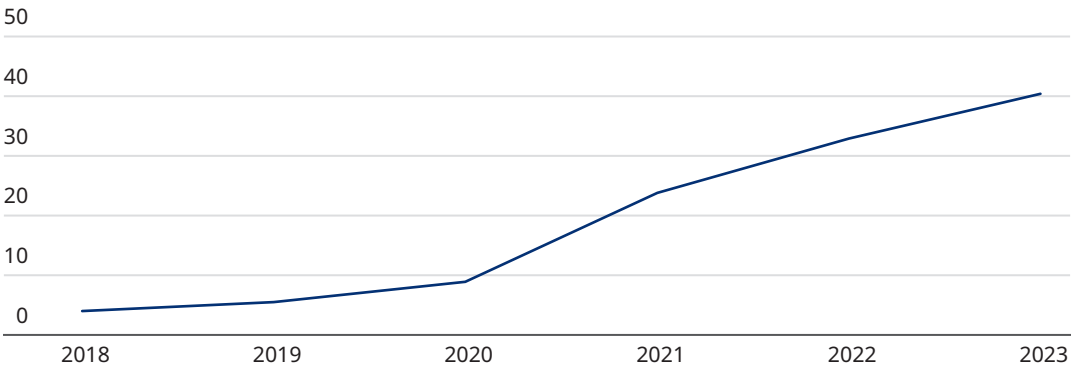
Note: Capital and surplus is calculated as the difference between total assets and total liabilities.

Source: Data provided by BILTIR

Bermuda's growth, and its ability to support the growth of global insurance markets, has been bolstered by a significant influx of capital with over $40 billion raised from 2018-2023.

Exhibit 17: Bermuda cumulative paid-in capital for long-term insurers

$ billion, 2018-2023



Source: Entity-level financial statements, Oliver Wyman analysis

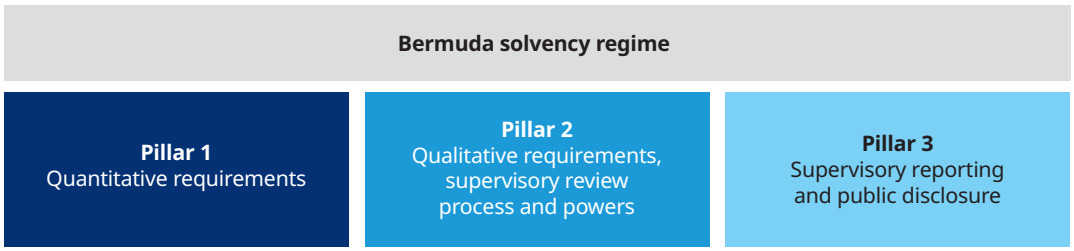
3.2. SUMMARY OF BERMUDA'S REGULATORY FRAMEWORK AND SAFEGUARDS

Bermuda's regulatory regime for (re)insurers has developed over many decades and now embeds the oversight mechanisms and safeguards that would be expected of a modern regulatory regime. It is aligned with the IAIS's Insurance Core Principles (ICPs), and — as discussed earlier — is globally recognised by other national and supranational regulatory bodies in the US, Europe, UK, Japan, and more broadly. The BMA's safeguards serve to effectively and proportionately regulate the risk-taking activities that Bermuda reinsurers might engage in. These safeguards are described in more detail below. The regime itself is grounded in Bermuda's 1978 Insurance Act.

Bermuda's EBS is a principles-based valuation framework broadly consistent with Solvency II and the IAIS's Insurance Capital Standard (ICS), with Bermuda insurers required to maintain an adequate level of capital and surplus based on an economic view of assets and liabilities.

The strength of Bermuda's regulatory framework is recognised in the determinations made by other jurisdictions that the framework is "equivalent" to their own (discussed earlier). Key elements of Bermuda's insurance policy framework follow similar pillars as Solvency II, covering quantitative requirements, governance and review processes, and risk disclosures, as shown in Exhibit 18. Underpinning each of these are several important safeguards to ensure that (re)insurers engage in prudent financial management and protect the interests of policyholders.

Exhibit 18: Overview of BMA's solvency regime



Source: BMA *Notice: Bermuda Monetary Authority (Authority or BMA) to Make Targeted Enhancements to Regulatory and Supervisory Regimes for Commercial Insurers* December 2022

Pillar 1 (quantitative requirements) includes Bermuda's risk-based capital requirements, and its economic approach to asset and liability valuation. Important components of this include:

- **Bermuda Solvency Capital Requirement (BSCR):** The BSCR framework is Bermuda's risk-based capital model and is used by insurers to assess capital adequacy in absence of an internal model approved by the BMA (note that internal models are not common for life insurers in Bermuda), requiring Bermuda insurers to calculate the capital required to withstand an approximately 1-in-200 year adverse event[11].
- **Enhanced Capital Requirement (ECR):** The ECR defines the level of capital and surplus insurers are required to hold (i.e., capital and surplus must exceed 100% of the ECR), and is calculated using either the BSCR model, or an internal model approved by the BMA.
- **Minimum solvency margin:** The BMA sets a floor on the level of capital and surplus insurers must hold at all times, irrespective of the results of risk-sensitive approaches to assess capital adequacy (BSCR and ECR).

Pillar 2 (qualitative requirements, supervisory review process and powers) sets out requirements for risk management, governance, and insurers Own Risk and Solvency Assessments (ORSAs). Important components of this include (non-exhaustive):

- **Risk management requirements**
  - **Enterprise Risk Management (ERM):** Insurers are required to implement robust ERM frameworks to ensure processes are in place to adequately identify, assess, and mitigate the risks associated with their operations.
  - **Lines of defence and independent oversight:** Bermuda companies are required to have three lines of defence embedded into the risk management framework, with the chief actuary and chief risk officer roles serving as second line and internal audit serving as the third line of defence. An approved actuary acts as another level of independent review
  - **The Commercial Insurer's Solvency Self-Assessment (CISSA)**, analogous to ORSA: Insurers are required to conduct CISSAs to evaluate their risk profile and solvency position under various scenarios.

11 The BSCR is calibrated to Tail Value-at-Risk (TVaR) at a 99% confidence level over the one-year time horizon for all quantifiable material risks, broadly equivalent to a 1-in-200-year severity level.

  - **Capital stress testing:** In addition to regular solvency monitoring, the BMA requires insurers to undergo an annual capital stress testing exercise, and report the results to the BMA in companies' Capital and Solvency Returns (CSR).
  - **Prudent Person Principle (PPP) requirements:** The Prudent Person Principle in Bermuda requires insurers to invest their assets in a manner that a "prudent person" would, considering the best interests of policyholders and the long-term sustainability of the insurer, a concept that similarly exists in other jurisdictions, such as the EU and UK.
- **Liquidity risk management**
  - **Policies and frameworks:** Insurers must develop and maintain a comprehensive liquidity risk management policy that outlines how they identify, assess, manage, and monitor liquidity risks, with the Board of Directors responsible for overseeing the liquidity risk management framework.
  - **Assessment:** Insurers are required to establish key liquidity metrics to regularly assess their liquidity position; in particular, insurers are required to prepare and regularly update cash flow projections to forecast expected cash inflows and outflows over a variety of time horizons.
  - **Liquidity stress testing:** Insurers are required to conduct regular liquidity stress tests to evaluate their ability to meet obligations under stressed conditions, specifically under adverse 1-in-20-year and 1-in-200-year events; the BMA expects such tests to incorporate a range of scenarios, such as sudden increases in policyholder withdrawals, market downturns, and operational disruptions. Additionally, the BMA requires that all insurers hold sufficient liquidity such that — following a severe liquidity stress — available liquid assets must exceed potential required liquidity by 5%, i.e., hold a liquidity ratio of 105%.
  - **Contingency funding plans:** Insurers are required to develop contingency funding plans that outline strategies for addressing liquidity shortfalls in times of stress, which should identify potential sources of liquidity, including lines of credit, asset sales, and other funding mechanisms.
  - **Reserving methodology:** Insurers that use the scenario-based approach (SBA) for reserving must perform additional lapse and liquidity stress tests in addition to meeting detailed liquidity reporting requirements, consisting of both qualitative and quantitative questionnaires.
  - **Impact on investment strategy:** Insurers must develop and implement investment strategies that are consistent with their risk profile, obligations, and the nature of their liabilities; as such, the BMA expects them to conduct thorough assessments of investment risks, including market, credit, and liquidity risks, before making investment decisions.
  - **Dividend restriction:** BMA approval is required for dividends exceeding certain thresholds of GAAP or IFRS statements, subject to Board approvals and demonstrating compliance with BMA rule and internal stress testing requirements.
- **Corporate governance**
  - **Board oversight:** Insurers must have a competent board of directors responsible for overseeing the company's operations and risk management strategies, including independent non-executive directors fit and proper requirements: Individuals in key roles must meet the BMA's fit and proper standards, ensuring they have the necessary qualifications and experience to execute their roles effectively.

- **Reserving methodology**
  - **Standard approach (SBA):** The default methodology for setting the best estimate liabilities under the EBS that uses prescribed BMA discount rates.
  - **Scenario-based approach:** Requires BMA approvals and allows Companies to admit certain assets as part of the portfolio supporting the liabilities, and to use the underlying discount rate, subject to matching criteria, prescribed interest rate scenarios and prescribed default and downgrades, to determine the best estimate liability.
  - **Asset approval process:** The BMA has a well-established process for insurers to seek approval for all assets that are not sovereign or investment grade publicly traded corporate/municipal bonds, designed to ensure that the assets are appropriate for the insurer's risk profile, and that the insurer has the necessary expertise and processes in place to understand, evaluate, manage, and report the asset risk.
  - **Asset eligibility:** In addition, the BMA has additional restriction related to below investment grade and equities to be included on a limited basis, subject to regulatory approvals.
- **Block transaction prior approval requirements:** Since 2023, the BMA has required relevant reinsurers to seek prior approval for all block transactions. This requirement aims to ensure such transactions receive adequate review and oversight from reinsurers, enables effective cross-border collaboration between regulators, and ensures that transactions are implemented in line with the BMA's requirements more broadly.

Pillar 3 (supervisory reporting and public disclosures) provides the BMA with information on insurers' financial statements (GAAP and statutory), Capital and Solvency Returns (which includes key business and actuarial information, and stress testing results), and makes available insurers' Financial Condition Reports, with key information on their business and risk profiles for public consumption

In addition, the BMA is well-integrated into the global system of insurance supervision. It currently acts as Group Supervisor to various international insurance groups, including four Internationally Active Insurance Groups (IAIGs) (Aegon, Athora, Arch Insurance Group, and Resolution Life Group). This compares to five IAIGs that are group-supervised in the UK, five in Japan, 12 in the US, and 17 in the EU. Group Supervision refers to the regulatory oversight of insurance companies that are part of a larger corporate group, recognising the need — in certain circumstances — to regulate insurance companies' activities and risk management practices across the entire group, rather than just in individual insurance entities.

Further, the BMA sits on Supervisory Colleges for international insurance groups (including IAIGs) with material operations in Bermuda. Supervisory Colleges are forums established by regulators (in practice, the relevant Group Supervisor) to enhance cooperation between relevant regulators of the IAIGs and ensure effective and holistic supervision.

SECTION 4

SYSTEMIC RISK AND INSURANCE

The concept of systemic risk was introduced in a broad manner coming out of the 2008 GFC to capture the idea that certain risks could threaten the functioning of the overall financial system. To understand the potential for systemic risk arising from the Bermuda long-term insurance sector, it is important to first understand how systemic risk is defined and how it can arise. In this section, we examine the approaches taken by the global regulatory community to define and evaluate the potential for systemic risk, both generally as well as regarding insurance specifically.

4.1. INTRODUCTION TO SYSTEMIC RISK

At its core, systemic risk is about knock-on effects and externalities. It emphasises the concern that the failure or distress of one entity — or a group of entities — can propagate through the financial system, undermining trust and the overall functioning of financial markets and the real economy.

While national and supranational regulators have generally adopted their own definitions of systemic risk, these definitions reflect a common view that for an institution or activity to present systemic risk it must have the ability to: i) cause a significant disruption or impairment to financial markets; and ii) result in consequences to the real economy.

What is systemic risk?

The Financial Stability Board (FSB) defines systemic risk as "the risk of disruption to financial services caused by an impairment of all or parts of the financial system that can have serious negative consequences for the real economy".[12]

Exhibit 19 below shows the various definitions adopted by regulators.

Exhibit 19: Definition of systemic risk by different regulators and how it may arise

Oversight		Systemic risk definition
Supranational	International Association of Insurance Supervisors	"Risk of disruption to financial services that is caused by an impairment of all or parts of the financial system and has the potential to have serious negative consequences for the real economy"
	Financial Stability Board	
	Basel Committee on Banking Supervision	
	European Systemic Risk Board (EU)	"A risk of disruption in the financial system with the potential to have serious negative consequences for the real economy of the Union or of one or more of its Member States and for the functioning of the internal market"
National	European Insurance and Occupational Pensions Authority (EU)	
	Financial Stability Oversight Council (US)	No specific definition identified
	Bank of England/Prudential Regulation Authority (UK)	No specific definition identified
	Financial Services Agency (Japan)	N/A; However, defined by Bank of Japan as "the possibility that the bankruptcy of a financial institution or disruptions in a particular market or payment and settlement system will pose risks to other financial institutions, other markets, or ultimately the entire financial system, through a chain of disruptions or dysfunctions"

Source: IAIS *Holistic Framework for Systemic Risk in the Insurance Sector* November 2019, FSB *Guidance to Assess the Systemic Importance of Financial Institutions* October 2009, BIS *Systemic risk: How to deal with it?* February 2010, ESRB *Enhancing the macroprudential dimension of Solvency II, Markets and Instruments: Initial Considerations* February 2020, FSOC *A framework to mitigate systemic risk* November 2011, Bank of Japan *Overview: The Bank's Initiatives for Financial Stability*

12 FSB *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations* 2009.

The failure of AIG during the 2008 crisis, primarily due to activities outside the regulated insurance entities (e.g., derivatives business), catalysed concerns from global regulators that insurance companies could be a source of systemic risk. This event prompted the development of entity-based frameworks, such as the designation of non-bank "systematically important financial institutions" (non-bank "SIFIs") within the US and Global Systemically Important Insurers (G-SIIs).

Over time, regulatory bodies such as the FSB and the IAIS have determined that an activities-based approach is more effective for managing systemic risk in the insurance sector. This method emphasises critical factors such as liquidity risk, leverage, and interconnectedness across the industry. By adopting this approach, the IAIS acknowledges "that systemic risk may arise not only from the distress or disorderly failure of individual insurers but also from the collective exposures of insurers at a sector-wide level".[13] Globally, this shift reflects a transition from focusing on identifying insurers deemed "Too Big to Fail" to examining which activities or channels might amplify systemic risk, whether through individual insurers or the insurance sector as a whole.

4.2. TRANSMISSION CHANNELS

As regulators and other stakeholders have sought to better understand potential sources of systemic risk, the concept of "transmission channels" arose. Transmission channels describe the manners in which systemic risk could propagate through the financial system and have become an important tool in regulatory oversight to identify and assess potential risks. These channels define the potential mechanisms through which stress in one insurer, or in a part of the insurance sector, could spread to other insurers, financial institutions, or the broader economy. They are a means to evaluate whether stresses within the insurance sector have the potential to propagate to the broader financial system and real economy.

While each supranational and national regulator has its own definition of the transmission channels, these definitions share many common elements and generally describe four potential channels:

- **Asset liquidation:** Refers to the rapid sale of assets — often during periods of market stress — that could lead to depressed prices, broader market dislocation, and amplification of financial instability
- **Interconnectedness/exposure:** Refers to the direct and indirect financial linkages between two or more entities (e.g., banks, reinsurers, funds), where failure of one can transmit losses to others

13 IAIS *Holistic Framework for Systemic Risk in the Insurance Sector* November 2019.

- **Critical function/substitutability:** Refers to when an entity provides services that are essential to the financial system or real economy — and cannot be easily replaced — and the disruption caused to core economic functions in the event that those essential services fail
- **Contagion/confidence effects:** Reflects when there is a system-wide loss of trust triggered by the distress or perceived fragility of an entity. Such a loss of confidence can lead to adverse behaviours that transpire more broadly within one industry and/or spread to other industries

By understanding these transmission channels, stakeholders can better assess the potential pathways through which systemic risk can materialise and take proactive measures to mitigate its impact on the financial system.

The interaction of these transmission channels underscores the complexity of evaluating systemic risk. The IAIS Holistic Framework notes that different channels can operate simultaneously and interact with one another. For instance, the IAIS raises the concern that an insurance company's liquidity risk might trigger the asset liquidation transmission channel and simultaneously create counterparty exposure if the insurer defaults on its obligations to counterparties. Understanding these interconnected risks is essential for regulators and stakeholders to develop effective strategies for mitigating systemic risk and ensuring the stability of the financial system.

Exhibit 20: Regulatory authorities' alignment on the systemic risk transmission channels for the insurance sector

		Transmission channels				
Oversight		**Asset liquidation**	**Interconnectedness/ Exposure**	**Critical function/ substitutability**	**Contagion/ confidence effects**	**Others**
Supranational	**IAIS**	●	●	●	●	
	FSB		●	●		
	Basel BCBS		●			● Pro-cyclicality
	ESRB (EU)	●	●	●	●	
National	**EIOPA (EU)**	●	●	●	●	● Bank-like activities
	FSOC (US)	●	●	●	●	
	BoE/PRA (UK)	●	●		●	

● Considered in overarching approach to systemic risk (not insurance specific)

Source: Oliver Wyman analysis of publicly available literature (reports, statements, discussion documents, etc.) from the bodies listed, including BIS *Systemic Risk: How to deal with it?* October 2010, ESRB *Macroprudential provisions, measures, and instruments for insurance* November 2018, FSB *Guidance to Assess the Systemic Importance of Financial Institutions, Markets and Instruments: Initial Considerations* October 2009, IAIS *Holistic Framework for Systemic Risk in the Insurance Sector* November 2019

4.3. REGULATORY LANDSCAPE AND KEY CONCERNS

To understand the range of concerns raised by the global regulatory community with regards to the potential for systemic risks arising from the Bermuda long-term insurance sector, we consider the:

- **Supranational bodies with systemic risk mandates:** At the global level, global standard setters play a crucial role in establishing guidelines and frameworks that govern systemic risk oversight. Organisations such as the IAIS develop international standards that promote effective supervision and foster cooperation among regulators. This is particularly significant for jurisdictions like Bermuda, which integrates into the global regulatory ecosystem through its IAIS membership and various bilateral agreements that enhance its regulatory alignment with international standards.
- **Jurisdictional bodies with systemic risk mandates:** In the United States, the Financial Stability Oversight Council (FSOC) is tasked with identifying and responding to systemic risks, while in the United Kingdom, the Financial Policy Committee (FPC) of the Bank of England (BoE) monitors risks to financial stability, including those originating from the insurance sector.
- **Other relevant regulators:** Although without systemic risk mandates, supervisory authorities such as the BMA, the NAIC in the US, the Prudential Regulation Authority (PRA), and Japan Financial Services Agency (JFSA) are responsible for enforcing regulations and conducting oversight of insurance companies. These authorities ensure that insurers adhere to sound risk management practices and comply with relevant laws and regulations.

Below is a list of the key players involved in systemic risk oversight and general oversight of the insurance industry.

Exhibit 21: Supranational and national bodies in systemic risk or insurance industry oversight (non-exhaustive)

	Supranational bodies	National bodies
Bodies with systemic risk mandates	• IAIS • FSB • BCBS • International Monetary Fund (IMF) • World Bank	• **United States:** FSOC • **United Kingdom:** BoE/PRA, FPC • **European Union:** EIOPA, ESRB
Other relevant stakeholders	• Bank for International Settlements (BIS) • Organisation for Economic Co-operation and Development (OECD)	• **United States:** NAIC, Federal Insurance Office (FIO), Federal Reserve Board (FRB) • **European Union:** National supervisors (e.g., The Federal Financial Supervisory Authority, DNB) • **Bermuda:** Bermuda Monetary Authority (BMA) • **Japan:** Japan FSA, Bank of Japan

Source: Oliver Wyman research

Systemic risk oversight in financial markets involves a complex network of supranational and jurisdictional bodies, rather than a singular defining authority. Each jurisdiction has its own regulatory authority for systemic risk, while supranational organisations set standards that countries may adopt. Additionally, each jurisdiction has insurance regulators, which may or may not overlap with the bodies responsible for systemic risk oversight. These entities collaborate to maintain oversight and ensure market stability. There is a growing shift towards activities-based supervision, emphasising the systemic importance of activities over individual entities.

As an example, EIOPA in the EU collaborates with the European Systemic Risk Board (ESRB) and national central banks to ensure a cohesive approach to systemic risk management. In the United States, the Federal Reserve, while not the primary regulator for most insurers, participates in the FSOC and employs tools such as stress testing to assess the resilience of insurers under its oversight. Similarly, Bermuda coordinates with the NAIC, UK, and EU through equivalence agreements and regulatory colleges, facilitating dialogue and cooperation among regulators to enhance systemic risk oversight.

KEY POTENTIAL SYSTEMIC EXPOSURES IN THE INSURANCE SECTOR

As the insurance industry and its role in financial markets continues to evolve, several regulatory bodies and stakeholders have raised concerns of the potential systemic exposures within the insurance sector affecting policyholders and global financial stability. In 2019, the IAIS adopted the Holistic Framework for Systemic Risk, which identifies key exposures that may lead to a systemic impact:

- **Liquidity risk** as defined by the IAIS, is "the risk that an insurer is unable to realise its investments and other assets in a timely manner in order to meet its financial obligations, including collateral needs, as they fall due".[14] The concern is that asset sales required to meet any liquidity needs, e.g., from policyholder withdrawals, particularly during periods of market stress, could lead to significant asset liquidation that has broader implications for insurers and the market as a whole.
- **Interconnectedness: Macroeconomic exposure** encompasses the sensitivity of insurers to broad economic conditions. The IAIS raises that "macroeconomic exposure can accumulate through some types of insurance liabilities or may be created through non-insurance activities".[14] Fluctuations in interest rates, inflation, credit cycles, and GDP growth can all impact insurers' financial health. For instance, fixed benefit guarantees can become increasingly costly for insurers during periods of low interest rates or declining economic growth, thereby straining their financial resources and affecting their ability to fulfil long-term obligations.

14 IAIS *Holistic Framework for Systemic Risk in the Insurance Sector* November 2019.

- **Interconnectedness: Counterparty exposure** refers to the "mutual exposure of an individual insurer to counterparties in the broader financial system and real economy resulting from asset-side interconnectedness and liability-side exposures, which leads to both parties being vulnerable to distress or failure of the other".[15] For example, concentration in specific asset holdings can heighten this risk. The failure of a single counterparty can lead to losses for insurers, particularly if they are heavily dependent on a few key partners.
- **Limited substitutability** arises when there is "difficulty for other components in the financial system to ensure the continuation of supply of insurance coverage after a failure or distress of an individual insurer".[15] For example, if a major provider of mortgage insurance were to fail, it could disrupt the housing market and broader economy, as alternative sources of coverage may not be readily available.

What is counterparty risk in the context of reinsurance?

In the context of reinsurance, counterparty risk is the risk that the reinsurer may not fulfil its obligations to the cedent. In such a case, the cedent is still required to meet its original obligations to policyholders per the terms of the underlying insurance contracts. Counterparty risk is present in all forms of reinsurance (i.e., traditional, financial, and asset-intensive).

The concern is that exposure to one or more vulnerability within the insurance sector could lead to broader impacts on financial markets and the real economy through various transmission channels.

15 IAIS *Holistic Framework for Systemic Risk in the Insurance Sector* November 2019.

SECTION 5

POTENTIAL FOR SYSTEMIC RISK IN BERMUDA LONG-TERM INSURANCE SECTOR

5.1. SCENARIO EXPLORATION

The scenarios modelled within this chapter are designed to explore, assess and test the potential for systemic risks to propagate through the Bermudian long-term insurance sector and impact the real economy. These scenarios are informed by questions and concerns from global regulators, alongside our insights into possible transmission channels. Importantly, these scenarios are hypothetical constructs, neither based on historical events nor intended to represent likely events, serving as an exercise to evaluate systemic risk propagation.

To evaluate the potential impact of the Bermuda long-term insurance sector on global systemic risk, we have modelled three exploratory scenarios. These scenarios are hypothetical constructs, designed to explore and test the ways in which the Bermuda long-term sector might contribute to systemic risk and to surface any key assumptions that underlie the relevant transmission mechanisms. By examining these scenarios, we can assess the potential impacts of stress events on the stability of the insurance sector and, by extension, the wider economy. Each scenario presents a distinct narrative, beginning with a relevant situation for the business, followed by an analysis of potential outcomes. Importantly, we do not assign a probability to these scenarios, which are intended to be highly unlikely, occurring; instead, we focus on their potential systemic implications.

The following sub-sections describe each scenario in detail, outlining the relevant transmission channels and the potential repercussions for the financial landscape.

The scenarios explored include:

Scenario 1 ("credit crisis triggering mass reinsurance recapture"): Explores the impacts of a mass reinsurance recapture, which is assumed to be triggered by a widespread economic downturn that impacts the global credit market. In the scenario, the impact is pronounced in private credit and among leveraged middle-market borrowers.
As losses mount for borrowers, credit held by insurers deteriorates, leading to increased defaults and downgrades. As a result, the solvency positions of Bermuda long-term insurers, and those of other insurers globally with exposure to such assets, worsen significantly, triggering mass recapture of assets and liabilities to cedents. In turn, cedents' own solvency positions are hit, and some need to re-balance asset portfolios to optimise for local solvency regimes, with the potential for asset sales. To test this, we evaluate the direct impact on the cedent's balance sheet due to the impacts from recapturing assets and liabilities from their Bermuda-based affiliated or non-affiliated business.

Scenario 2 ("confidence shock to the Bermudian insurance market, triggering mass lapse and fire sale of assets"): Explores the impact of a hypothetical confidence shock to the Bermudian insurance market, which for example, could be triggered by the failure of a single reinsurer, leading to significant negative media attention around retail annuity markets generally, and in particular, insurers with ties to the Bermuda reinsurance market. This negative public scrutiny of insurers' ties to Bermuda causes many policyholders to surrender their policies in spite of the monetary penalties for doing so. This mass lapse event compels insurers to liquidate assets to meet withdrawal demands, triggering assets sale with the concern that such sales could impact asset markets, further deteriorate insurers' financial positions, and amplify financial distress in the market. To test this, we evaluate whether reinsurers, if required to, could liquidate assets to such a degree that it could impair the relevant asset markets and have knock-on effects to the financial system.

Scenario 3 ("withdrawal of insurer private credit demand"): Considers the role of insurers in funding the private credit market and what types of hypothetical events could prompt a pullback of credit. It then explores the implications of an insurer withdrawal of private credit demand, regardless of the trigger, which causes borrowers to lose access to funding, and the degree to which such an event could disrupt the financial system. To test this, we consider the chain of events that would lead an insurer to pull back from funding private credit markets and whether such a scenario could cause a significant source of disruption.

Exhibit 22 below includes the transmission channels tied to each of these scenarios, as well as insights from regulatory authorities emphasising their concern regarding the relevance of these scenarios.

Exhibit 22: Transmission channels and regulatory interest across the three scenarios

Scenario	Scenario significance and relevant transmission channels	Interest from regulator[1]
1 Credit crisis triggering mass reinsurance recapture	**Scenario significance** • Potential for mass recapture event to meaningfully impact cedents and asset markets, in the context of growing use of AIR, and investments in "alternative" assets among insurers **Relevant transmission channels** • Interconnectedness/exposure (primary) • Asset liquidation (secondary)	• IAIS • EIOPA • FSOC • PRA • ESRB
2 Confidence shock to the Bermudian insurance market, triggering mass lapse and fire sale of assets	**Scenario significance** • Potential need for insurers to liquidate assets to meet policyholder withdrawals, with potential knock-on impacts to the financial system and real economy **Relevant transmission channels** • Asset liquidation (primary) • Contagion/confidence effects (secondary)	• IAIS • EIOPA • FSOC • PRA
3 Withdrawal of insurer private credit demand	**Scenario significance** • Potential for insurers to pull back from funding private credit, with knock-on impacts to certain borrowers' ability to access lending — and subsequent impact to the real economy **Relevant transmission channels** • Critical function/substitutability (primary)	• IAIS

Note: Illustrative.

1. Regulator has made specific mention of the scenario being contemplated.

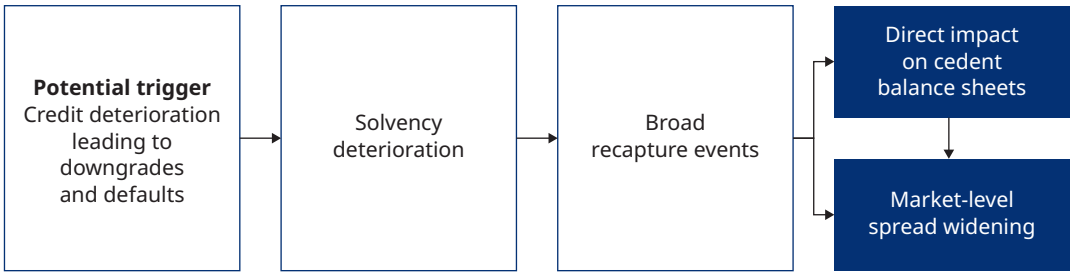
In the following sections each scenario is assessed to evaluate its potential impact on the Bermuda long-term insurance sector and the broader financial market.

5.1.1. SCENARIO 1: CREDIT CRISIS TRIGGERING MASS REINSURANCE RECAPTURE

Scenario overview and context

In this scenario, we consider a widespread economic downturn that impacts global credit markets, particularly pronounced among leveraged middle-market borrowers. The hypothetical downturn in credit markets results in a deterioration of Bermuda-based reinsurers solvency positions, that then impairs the solvency positions of cedents who have exposure to these reinsurers ("interconnectedness" transmission channel).

Exhibit 23: Scenario 1 overview — credit crisis triggering mass reinsurance recapture



Note: Illustrative.

(Re)insurers, across all jurisdictions, have meaningful exposure to alternative assets, including private credit assets. While private credit assets improve the yield earned on insurers' investment portfolios, supporting both policyholder benefits (through improved pricing and crediting rates) and investor returns (and therefore the entry of new capital), they have also been an area of focus for insurance regulators and other supervisory bodies who aim to ensure that the associated risks are understood, quantified, and well-managed. While this trend has occurred on a global basis, several Bermuda reinsurers have direct ties with private credit managers, leading to a higher degree of scrutiny. Some specific areas of concern expressed by regulatory bodies related to private credit include:
i) the perception of greater risk appetite of private-equity owners of reinsurers driving more exposure to private credit; ii) the potential concentrated impacts on reinsurers in the event of a private credit deterioration; iii) more highly correlated counterparty risks than cedents realise; and iv) the impact of large-scale recaptures.

What is recapture?

Recapture is the act of a cedent insurer reclaiming the assets and liabilities that were initially ceded to a reinsurer under a reinsurance contract. Upon recapture, the cedent regains full economic ownership and control of the assets and liabilities.

In evaluating the manner in which this counterparty exposures could manifest, it is helpful to understand the nature of these arrangements. In this context, counterparty risk is the risk that a Bermuda reinsurer is unable to satisfy the terms of the reinsurance arrangement, resulting in an impact to the cedent's solvency, liquidity, or other financial metrics. With respect to AIR agreements in place, they often include provisions for cedents to reclaim assets in the event that the solvency position of the reinsurer deteriorates. This event, known as a fault-based recapture, typically affords the cedent optionality with respect to triggering its recapture right, and the solvency threshold is normally set above the threshold for regulatory intervention.

As a result, the primary concern for evaluating the interconnectedness of Bermuda long-term insurance sector is that, at some level of elevated losses in credit markets, there would be wide-spread deterioration in solvency positions that would result in a "mass recapture" scenario with assets and liabilities, across the sector, returning to cedent balance sheets in their original jurisdictions. Such a mass recapture event would, in turn, further destabilise cedent balance sheets and lead to additional asset sales, exacerbating the challenges.

The manner in which such events would hypothetically transpire depends heavily on the ceding jurisdiction, type of reinsurance transaction, and in some cases, the types of assets supporting reserves.

Scenario impact evaluation

To understand the potential for such a scenario, we examine each step within the hypothesised chain of events and consider how it would unfold in the context of the Bermuda long-term insurance sector. In particular, we ask:

- What is the exposure of the Bermuda long-term insurance sector to alternative assets? How does this compare to other jurisdictions?
- What is the level of losses required for a deterioration in solvency position to have knock-on effects to reinsurers' counterparties?
- What is the magnitude of such effect? How does this vary by type of transaction and jurisdiction? Could this scenario lead to meaningful asset sales?
- How strongly correlated could the impacts be across Bermudian reinsurance counterparties?

The rest of this sub-section (on Scenario 1) tackles these questions in turn.

Exposure of Bermuda long-term insurance sector to alternative assets

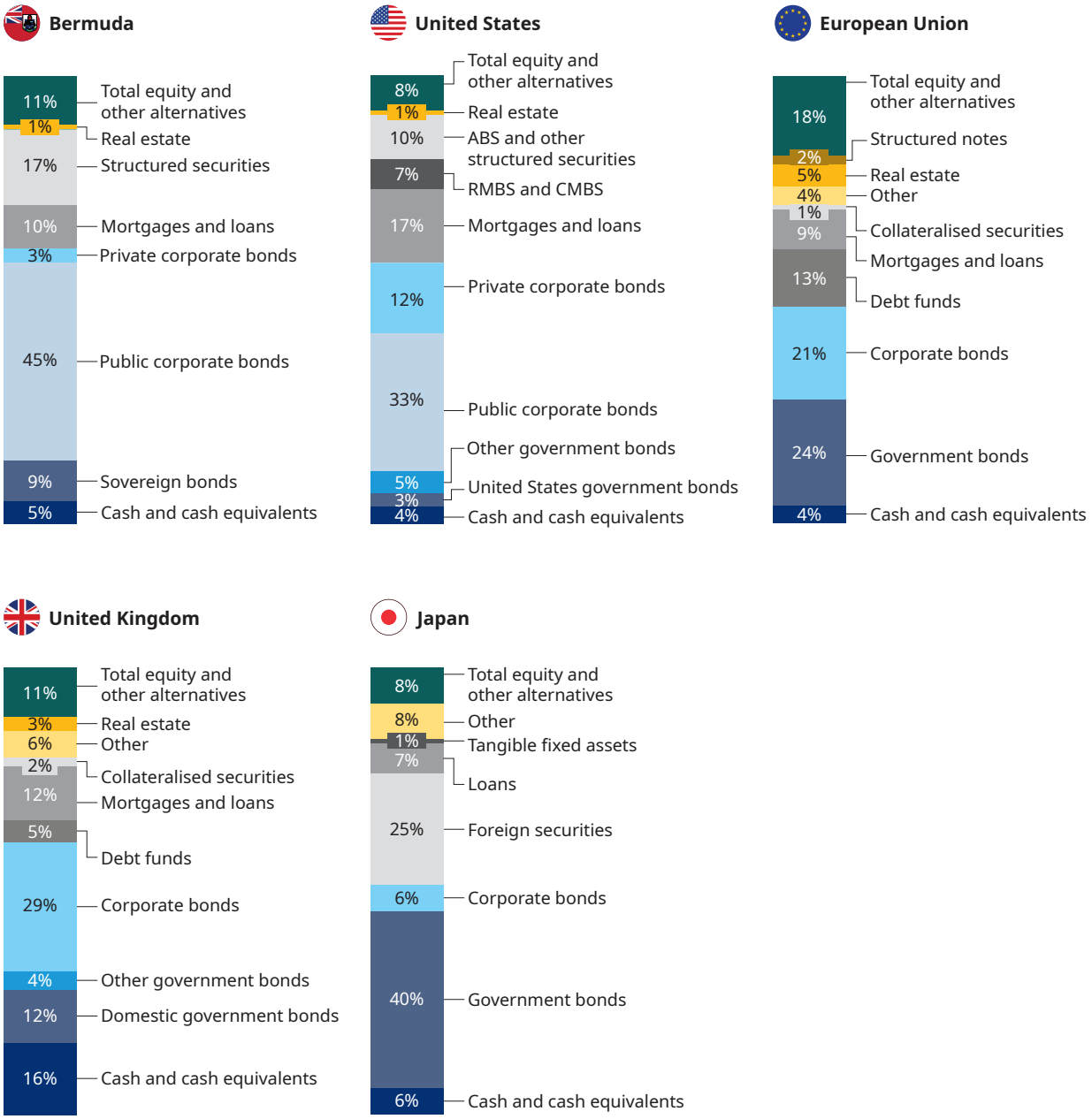
We first examine the exposure of the Bermuda long-term reinsurance sector to credit market stress relative to other jurisdictions by considering the type and quality of assets held to understand whether this market is disproportionality exposed to the performance of alternative assets.

As shown in Exhibit 6, the allocation to alternative assets, as defined by the IAIS, in Bermuda is similar to or lower than in other relevant jurisdictions.

When examining investment allocations at a more granular level, Bermuda-based reinsurers have similar asset allocations to US life insurers. The allocation differs more significantly from EU and UK, which have lower allocations to structured securities, but higher allocations to equity and other alternatives. Exhibit 24 below shows the allocation of insurer assets by jurisdiction.

Exhibit 24: 2023 life insurer asset allocations by asset type and geography

%, 2023

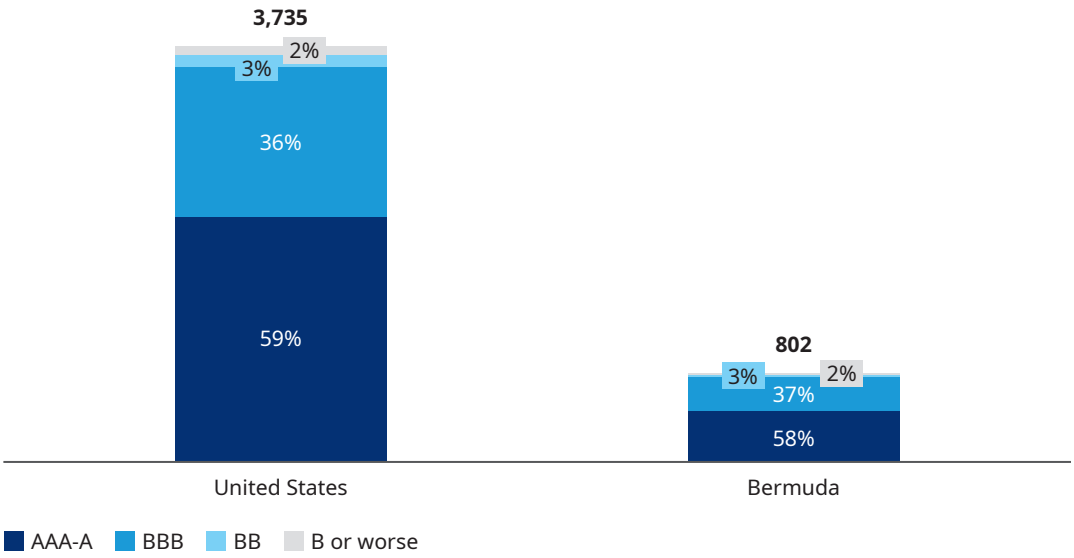


Notes: UK and EU data exclude unit-linked and index-linked portfolios. "Total equity and other alternatives" includes the following asset types for each jurisdiction: Bermuda — "listed equities", "private equities", "alternative investments"; US — "Unaffiliated preferred and common stock", and Schedule BA assets; EU and UK — "equity", "equity funds", "asset allocation funds", "alternative funds", "private equity funds", "infrastructure funds"; Japan — "stocks"; for US corporate bonds, private/public split estimated based on CUSIP-level analysis of single-issuer industrial bonds.

Source: BILTIR (Bermuda), NAIC (US), AM Best (EU), Bank of England (UK), Life Insurance Association of Japan (Japan)

When further comparing the asset allocations between US and Bermuda life insurers, we see credit quality of their portfolios is very similar. However, it should be noted that US insurers hold a significantly higher allocation to private corporates than their Bermudian counterparts.

Exhibit 25: Ratings breakdown of US and Bermuda life insurer credit holdings
$ billion, 2023



Source: Data provided by BILTIR, Insurer statutory filings pulled from S&P Capital IQ

Level of losses required to have knock-on impacts to counterparties

Bermuda has a well-established regulatory framework that is recognised and deemed equivalent by global regulators and is used to assess capital adequacy of supervised insurers.

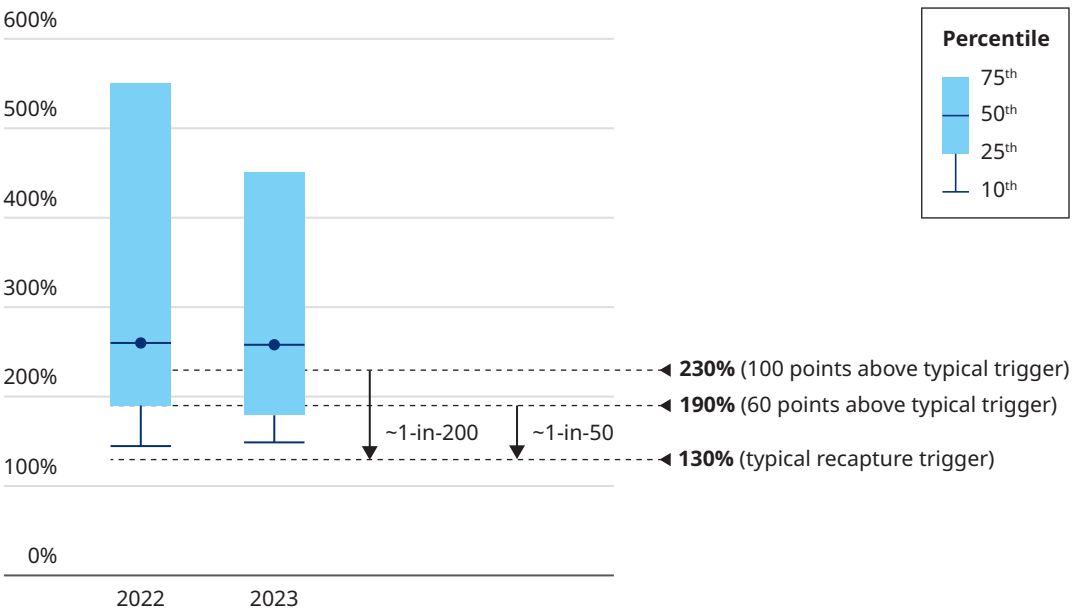
As described in Section 3.2, the ECR defines the level of capital and surplus insurers are required to hold (i.e., capital and surplus must exceed 100% of the ECR) and is calibrated so that an insurer operating at a 100% ratio would have sufficient capital to withstand an approximate 1-in-200 year event.[16] Additionally, given the need to operate in a prudent manner, the BMA expects insurers to hold available capital equivalent to at least 120% of the ECR — in practice, many insurers set their internal capital levels at a level much higher (typically above 170%). The median Bermuda long-term insurer operates close to a 260% BSCR (2.6 times the regulatory requirement).

16 ECR is calibrated so that an insurer operating at a 100% ratio will have sufficient capital to withstand a TVaR(99) event, which is the average of the worst 1% of outcomes. This can be approximated to about a 1-in-200 year event.

Holding capital above the regulatory requirements offers the insurer a variety of benefits such as: i) the ability to absorb shocks without regulatory intervention ii) increase the overall risk capacity of the firm, allowing them to sell more business without needing to raise more funds and iii) improving the overall credit rating of the insurer, gaining credibility throughout the industry, and making an attractive partner for reinsurance deals or seller to the general public. This practice of holding capital in excess of regulatory is also common practice in other markets, with the typical insurer in the US, UK, and EU operating at 435%, 190%, and 203% of the regulatory requirement, respectively.[17]

Exhibit 26 shows the range of industry capital ratios at year-end 2022 and 2023. The median insurer held capital well above 200% of the regulatory requirement, and even the 10th percentile held capital approximately 50% higher than the regulatory requirement. For a typical reinsurance contract, recapture occurs at ~130% of the regulatory requirement. Based on the calibration of 100% BSCR to an ~1-in-200-year event, it would take a 1-in-50-year event for an insurer at the 25th percentile of industry capitalisation and a 1-in-200-year event for an insurer at the median level of capitalisation to reach the recapture triggers.[18]

Exhibit 26: Level of BSCR impact to reach recapture limits
BSCR ratio %, Class C, D, and E Bermuda insurers, 2022-2023



Source: Oliver Wyman analysis, BMA *Bermuda Long-term Insurance Market Analysis and Stress Testing Report* 2024

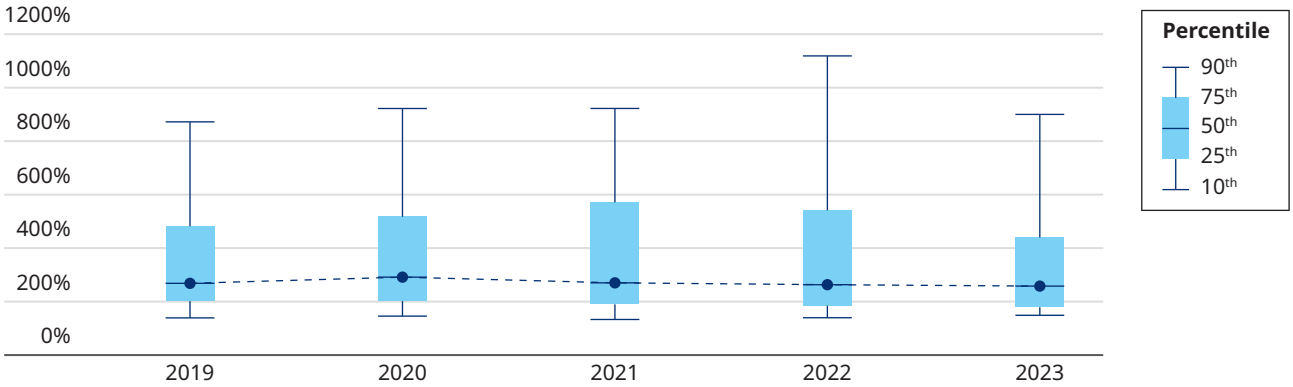
17 AM Best, NAIC 2023 *Life and Fraternal statistics*

18 Based on the approximation that a 100% decline in BSCR ratio is a 1-in-200-year event and assuming BSCR ratio changes follow a log-normal distribution to estimate the severity of a 60 p.p. drop. Assuming a normal distribution would equate the 60 p.p. drop to a 1-in-20-year event.

Capital levels under the BSCR have remained relatively stable through time, including the COVID-19 pandemic, demonstrating the resilience of the sector as a whole. Exhibit 27 shows the distribution of BSCR ratios across Bermuda reinsurers over time. Exhibit 28 shows the sensitivity of BSCR ratios across Bermuda reinsurers to certain market factors.

Exhibit 27: Distribution of BSCR ratios across Bermuda long-term insurers

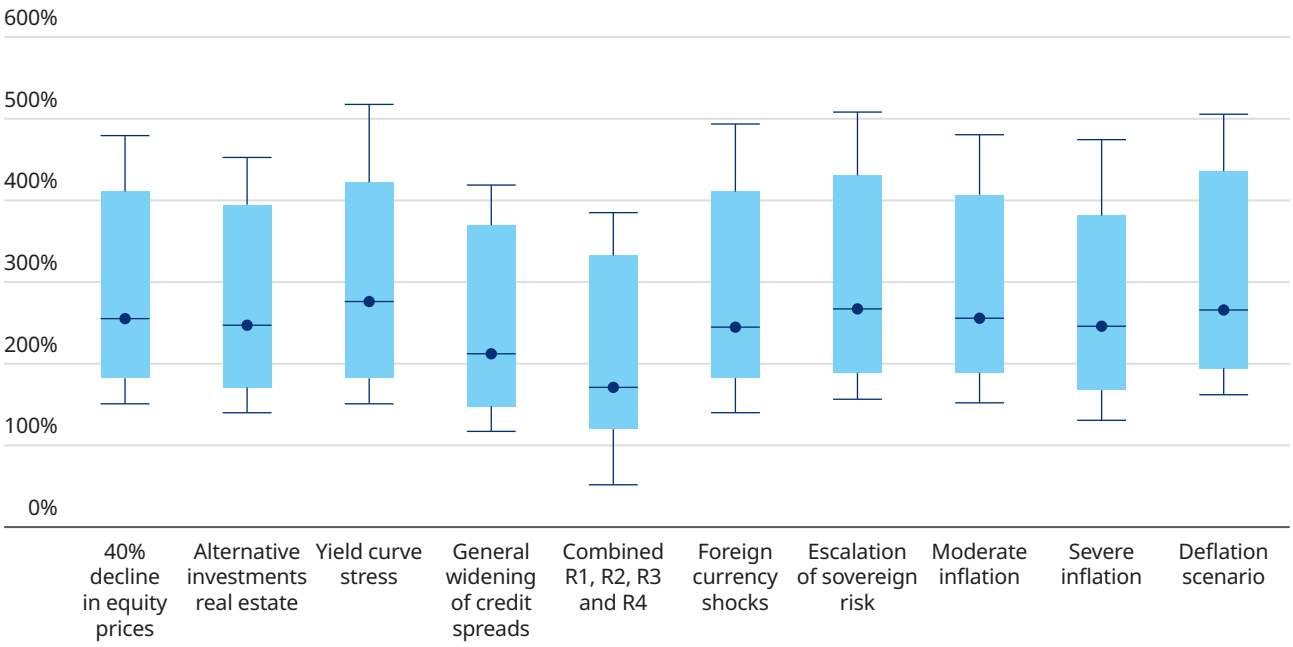
BSCR ratio %; Class C, D, and E Bermuda insurers



Source: BMA *Bermuda Long-term Insurance Market Analysis and Stress Testing Report* 2024

Exhibit 28: Distribution of BSCR ratios post-stress tests

BSCR ratio %; Class C, D, and E Bermuda insurers



Source: BMA *Bermuda Long-term Insurance Market Analysis and Stress Testing Report* 2024

Potential impact on cedents

AIR transactions involve the transfer of assets and liabilities (or the risks associated with them) to a reinsurer, while the cedent insurer retains the obligation to pay policyholders. This design creates a counterparty risk for the cedent, who must still meet its obligations to its policyholders regardless of whether the reinsurer meets its obligations.

Cedents are acutely aware of this exposure, and standard terms for AIR transactions include significant structural protections to mitigate this risk. These protections: i) reduce the likelihood the reinsurer will be unable to pay the liabilities; and/or ii) reduce the impact on the cedent in case it needs to recapture liabilities onto its own balance sheet.

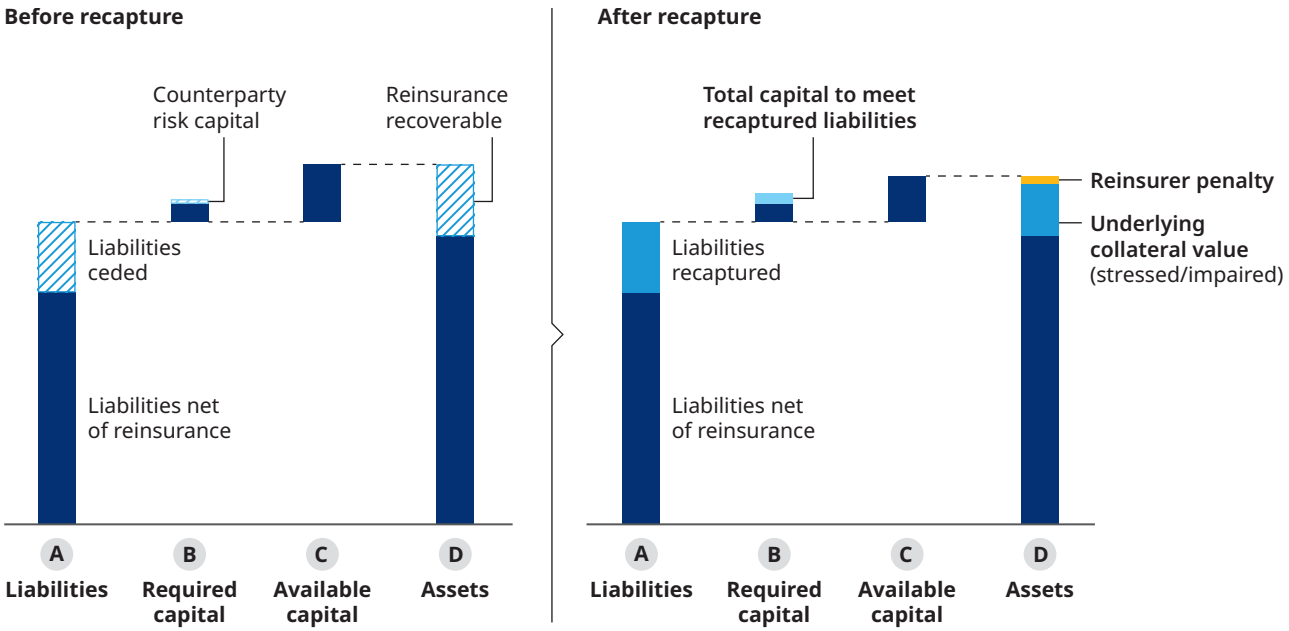
These structural protections include:

- **Right to recapture:** AIR arrangements include recapture triggers (e.g., if predetermined solvency ratios are breached) ensuring cedents have the right to terminate the reinsurance agreement and "recapture" assets and liabilities to their own balance sheet, re-gaining full economic ownership of the assets and liabilities.
- **Collateralisation:** Most reinsurance arrangements are "collateralised", meaning the reinsurer is required to hold an amount of assets that is tied in some way to the value ofthe relevant liabilities, and post this as collateral, often held in a trust account. The approach to determine the amount of collateral required is referred to as the collateralisation basis. The value of required collateral is determined periodically, typically monthly or quarterly (the *collateralisation frequency*).
- **Investment guidelines** define the set of assets that the reinsurer may hold to back the relevant ceded liabilities. These guidelines, which are agreed between the cedent and reinsurer, are not only contractual safeguards but also reflect regulatory expectations under Bermuda's PPP, which requires insurers to invest in assets that a prudent person would consider appropriate, taking into account the interests of policyholders and the nature and duration of liabilities. The PPP also necessitates that investment decisions are supported by a robust and independent governance and risk management framework. This structure plays a critical role in mitigating potential impacts from asset recapture events, because it provides assurance that the reinsurer will not take excessive investment risk and mitigates the impact of recapture to the cedent's balance sheet and any need to re-balance. Upon breach of any investment guidelines, the cedent typically has the right to force rebalancing and ultimately can exercise its right to recapture.
- **Asset ownership:** In Funds Withheld and Modified Coinsurance structures, assets remain owned by the cedent and are recorded on the cedent's balance sheet with an offsetting liability. As a result, the assets remain onshore with no change to the jurisdiction in which the assets are held, mitigating the risk that collateral will not be accessible upon recapture.
- **Regular reporting:** Regular reporting on the investment portfolio and collateral position is mandated to provide transparency on compliance with relevant treaty terms; this allows cedents to regularly monitor the reinsurer's activities.

- **Audit rights:** Cedents additionally have the authority to audit the reinsurer's activities in relation to the reinsurance agreement, providing further transparency and supporting accountability for adherence to the agreed terms.
- **Counterparty exposure limits:** Cedents typically impose single-name counterparty limits to manage their exposure to individual reinsurance counterparties (across traditional, financial, and AIR), and in some jurisdictions (e.g., UK) it is common to impose limits specifically in relation to AIR, and for these limits to be set to reflect all impacts of recapture.

Despite these protections, any recapture has the potential to materially affect a cedent's balance sheet. In particular, even if the insurer recaptures assets equal to the underlying liabilities, it will need to also fund the required capital to support those liabilities. (And, in fact, the ability to release capital — to deploy or return to shareholders — is a common motivation for originally entering many reinsurance arrangements. Exhibit 29 shows a high-level illustration of the balance sheet impacts upon recapture, although the exact manner in which recapture affects the balance sheet would depend on the ceding jurisdiction and type of reinsurance transaction.

Exhibit 29: High-level illustration of balance sheet impacts upon recapture



Note: Illustrative.

Source: Bank of England *SS5/24 Funded reinsurance* June 2024, Oliver Wyman analysis

Because failure of a reinsurance counterparty has the potential to materially impact the cedent's balance sheet, many regulators globally have established numerous tools, processes, and expectations to oversee counterparty risk management. Exhibit 30 is a summary of how insurers in certain jurisdictions manage counterparty risk.

Exhibit 30: Overview of key AIR counterparty risk management requirements by jurisdiction

Jurisdiction	Area	Description
United States	Capital requirements	The NAIC's Risk-Based Capital (RBC) framework includes capital requirements for reinsurance counterparty exposure
	Collateral requirements	Collateral is required for any transactions with "unauthorised" reinsurers or those with reinsurers that do not have "reciprocal jurisdiction" status; however, it is standard practice for AIR transactions generally
	Transaction approval	Local (state) regulators are required to approve AIR transactions for affiliate transactions
United Kingdom	Capital requirements	Insurers are required to hold counterparty risk capital in respect of derivative and reinsurance counterparty exposure (both in the case of standard formula and internal model firms)
	Counterparty risk limits	In line with PPP, market practice is to set counterparty risk limits on individual counterparty names (across both derivative and reinsurance counterparties) in a way that is consistent with Board-defined risk appetite
	AIR-specific requirements	The PRA's expectations for AIR counterparty risk management: Though standard market practice is still emerging, the PRA has specified its expectations in detail, including the need for insurers to: • Establish AIR-specific counterparty limits, including an "immediate recapture metric" (to measure the impact on a firm's solvency ratio of an immediate recapture of all business ceded to a counterparty), ignoring the likelihood and without reflecting any management actions • Specify a detailed collateral policy for illiquid assets in collateral pools, including (at a minimum): credit assessment approach, valuation methodology by asset class, MA eligibility monitoring, SCR modelling of the assets, investment management approach on recapture, collateral haircuts • Define a Board-approved recapture plan informed by the collateral policy to demonstrate that its business model can survive any single recapture event and multiple recaptures from correlated counterparties • In the case of firms using an Internal Model, robustly reflect the impact of AIR with the SCR calculation • Ensure a quantitative and qualitative risk assessment process for funded reinsurance arrangements: identify all forms of basis and collateral mismatch risk, determine whether the new arrangement falls within the firm's approved risk appetite, consider all potential options if result is outside of risk appetite
European Union	Capital requirements	Insurers are required to hold counterparty risk capital in respect of derivative and reinsurance counterparty exposure (both in the case of standard formula and internal model firms)
	Counterparty risk limits	In line with PPP, market practice to set counterparty risk limits on individual counterparty names (across both derivative and reinsurance counterparties) in a way that is consistent with Board-set counterparty risk appetite
Japan	Capital requirements	The JFSA's new Economic Value-based Solvency Ratio (ESR) framework includes capital requirement for reinsurance counterparty exposure by duration and rating

Source: Oliver Wyman analysis

Because there are significant differences in the regulatory frameworks across jurisdictions that affect how a recapture event would unfold, we evaluate the potential impacts to counterparties by jurisdiction. In the US, for example, assets would generally be recaptured at book value.[19] This creates a disincentive for cedents to rebalance any portfolio of recaptured assets during periods of market stress, as doing so would lead to the cedent needing to recognise the market value at sale of any assets sold. To illustrate the potential impact to cedents, the following sections attempt to roughly quantify the impact of a mass recapture event for US and UK cedents. We have focused this analysis on the US, given it comprises roughly three quarters of total reserves ceded to Bermuda, and on the UK, to reflect the nuanced balance sheet implications of any recapture event under Solvency UK. In the case of US cedents, we have distinguished between affiliate and non-affiliate business because of the different considerations for cedents in managing their exposure to recapture for each. In the case of UK cedents, we have not made this distinction because there are relatively few UK cedents reinsuring to Bermuda on an affiliate basis, and any affiliate transactions are subject to Group consolidation, significantly reducing the impact of recapture.

To assess the potential impact of mass recapture on cedents, we focus our analysis on US and UK cedents, considering in turn the impacts to:

- **US** life insurers with **non-affiliated** business ceded to Bermuda
- **US** life insurers with **affiliated** business ceded to Bermuda
- **UK** life insurers with business ceded to Bermuda

Counterparty impact on US cedents: non-affiliated business

For non-affiliated business within the US market, cedents would be exposed to the solvency position of their reinsurance counterparties. As previously discussed, AIR contracts contain "recapture" provisions such that, as a counterparty solvency position deteriorates, the cedent would recapture the business prior to the point of regulatory intervention or insolvency.

In such a scenario, the cedent would expect to:

- Recapture the assets in the reinsurance trust, typically equal to the greater of the statutory reserves (plus any positive interest maintenance reserve) and the best estimate liability (under Bermuda EBS)
- Receive a penalty from the reinsurer, e.g., 1% of reserves

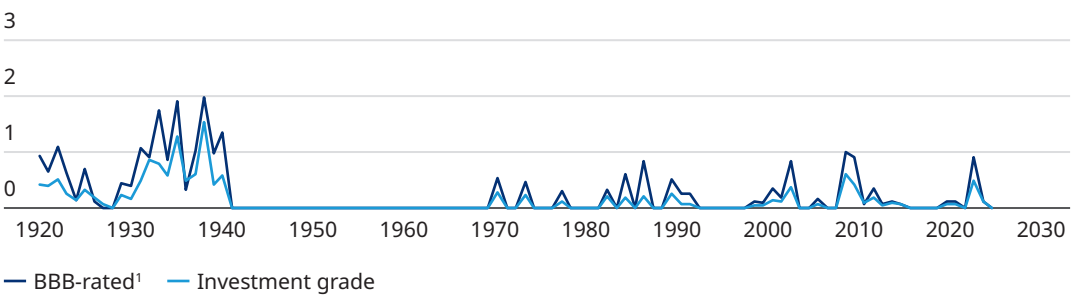
19 Under book value accounting, an asset is held at the original cost, adjusting for amortisation and impairment. The reported value is not affected by changes in market rates (e.g., interest rates or credit spreads). Assets in funds withheld and modified coinsurance arrangements would be recaptured at book value.

As a result, the cedent would incur a loss (or gain) based on the difference between the liabilities reassumed (the required reserves based on US regulation) and the value of: i) the assets recaptured from the reinsurance trust; and ii) the penalty. For the purpose of this analysis, we only consider the assets held in the trust less a margin to reflect that, at the time of impairment, the reinsurer may not have yet repopulated the trust (a process that typically happens either monthly or quarterly following losses to these assets from credit impairments or defaults). This approach is conservative as it provides no credit for claims that the cedent may have against the reinsurer but was chosen to acknowledge that in times of market stress there may be limitations or delays in the ability to access assets across jurisdictions. In addition, the cedent must now provide capital to support these liabilities, increasing its regulatory capital requirement.

For the purpose of this analysis, in which we look to quantify the potential impact of a recapture event, regulatory capital (100% CAL RBC) is assumed to equal approximately 3% of reserves based on industry aggregate company action level risk-based capital (CAL RBC) and reserves. In addition, we assume that the industry is already under a level of stress comparable to the GFC, reducing the starting capital ratios (CAL RBC) of all US life insurers by 30 points. We then evaluate the impacts under three levels of collateral shortfall (i.e., the amount by which recaptured reserves exceed the value of recaptured assets) scenarios: 0%, 2%, and 5%. These haircuts were chosen to be similar to, or more severe than, the historically observed losses as shown in Exhibit 31. Exhibit 31 focuses on investment grade credit, as 95% of bonds held by Bermuda reinsurers are investment grade.[20] Because, in most instances, the recaptured assets would be recaptured and then held at book value, there is limited exposure to changes in the market value of the collateral (i.e., due to a widening of credit spreads or ratings migrations). However, for asset-intensive reinsurance transactions[21] that would be subject to market-value exposure, an additional 15% haircut is applied to the collateral value.

Exhibit 31: Annual issuer-weighted corporate bond default rates

%; 1920-2024



1. BBB-rated defined as Moody's Baa rating.

Source: Moody's annual default study

20 Data provided by BILTIR.

21 Relevant transactions were identified based on a review of reinsurance relationships from Statutory filings, considering the size of the transaction, nature of liabilities ceded, and parties involved.

Even in a scenario with extreme deterioration in economic conditions that results in widespread credit losses, we would expect variation in the impacts on Bermuda reinsurers given differences in their starting capital levels, asset portfolios, and the availability and willingness to take management actions (e.g., raise capital) in response to any declines in their solvency position. As a result, it is not expected that in such a scenario all AIR would be recaptured.

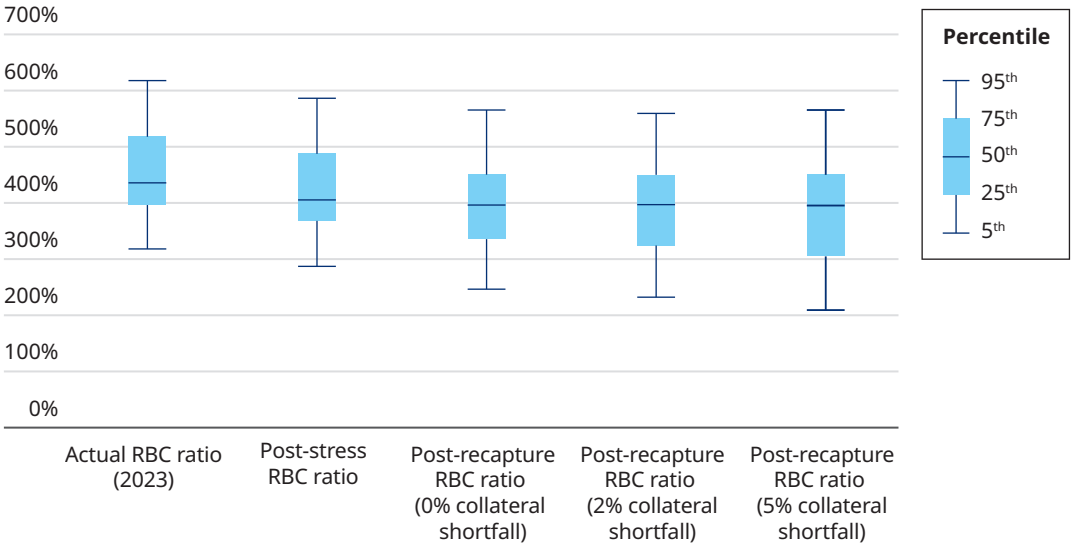
However, for the purpose of evaluating this hypothetical scenario, we assume that all non-affiliated business is recaptured at once — this approach essentially set a maximum impact at the market level and should overstate the impact of a more plausible 'mass recapture' event to the US market.

Exhibit 32 shows the estimated impact on RBC positions following recapture. We focus on the distribution of capital ratios across the industry following a mass-recapture event as, for the purpose of understanding whether a mass-recapture event could provide a transmission channel for systemic risk, we are concerned with potential impacts on the industry as a whole and not any individual cedent. For insurers with no (or limited) reinsurance to Bermuda, no (or limited) impact is expected.

In the most severe scenario, the average RBC ratio (among insurers with at least $10 billion in general account reserves) declines by ~40 points, with no insurer breaching regulatory intervention levels (100% CAL RBC). As a result, while such an extreme event would have a notable impact on the industry capitalisation, it is not expected to be sufficient to threaten the solvency of a material share of the industry.

Exhibit 32: US cedent RBC ratios post-recapture assuming all non-affiliated business is recaptured

RBC CAL (%), US cedents with GA reserves > $10 billion (63 insurers), 2023

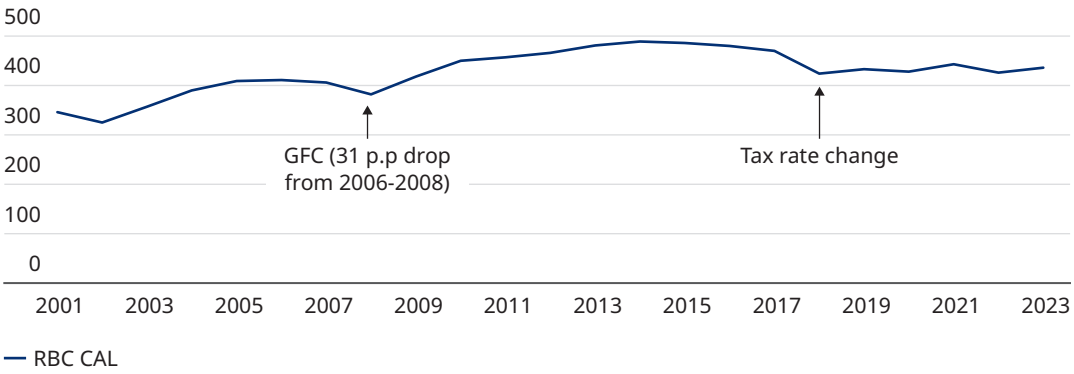


Source: Insurer statutory filings pulled from S&P Capital IQ, NAIC aggregated life RBC and annual statement data, Oliver Wyman analysis

Since 2001, the largest decline in capital ratios (peak to trough) occurred from 2006 to 2008, when the aggregate capital ratio fell by ~30 percentage points from a starting point of 411%,[22] as shown in Exhibit 33. Even if a similar level of stress was observed on cedents balance sheets, the additional impact from recapture of non-affliated AIR would not threaten the solvency of the industry.

Exhibit 33: US life insurer aggregate RBC ratio

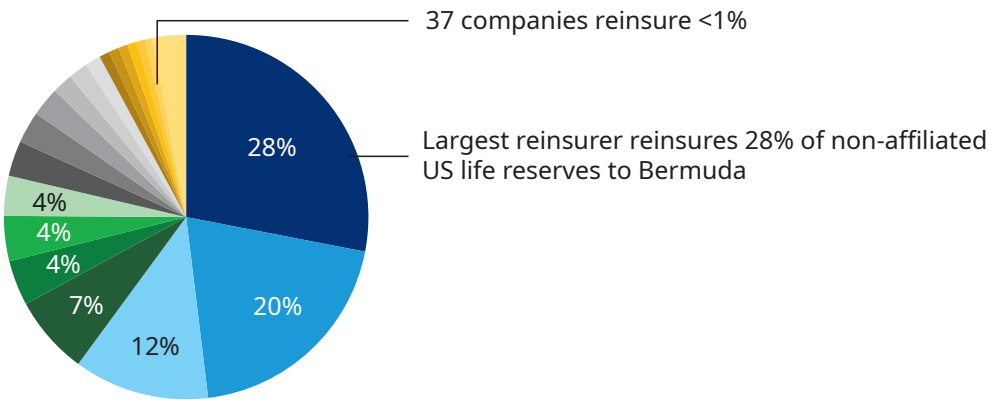
RBC CAL (%), 2007-2023



Source: ACLI *Life Insurers Fact Book* 2024

Lastly, the analysis assumes that recapture occurs simultaneously for all unaffiliated reinsurance transactions. This approach ignores the diversity in counterparties for these transactions. Exhibit 34 shows the distribution of ceded US reserves (including modified coinsurance) among Bermuda reinsurers.

Exhibit 34: Breakdown of non-affiliated ceded reserves by Bermuda reinsurer — US cedents only



Source: Insurer statutory filings, pulled from S&P Capital IQ

22 In addition, there was a notable decline in the industry-level RBC in 2017 that arose from a change in the corporate tax rate (and thus increased the post-tax required RBC).

Estimated impact from recapture on US cedents (affiliate business)

AIR conducted on an affiliated basis is fundamentally different to third-party (non-affiliated) reinsurance. Both the ceding entity and affiliate are part of the same insurance group, allowing greater transparent, aligned risk appetites, and an ability to manage the entities on a combined basis. For example, the group will be subject to group capital regulation that considers the aggregate capital resources and exposure across the group, inclusive of both the cedent entity and reinsurance entity, and is designed to ensure sufficient capital at the group-level.

Exhibit 35: Group regulator for IAIGs participating in Bermuda long-term sector (non-exhaustive)

As of October 30, 2024

Name of IAIG	Group-wide supervisor (GWS)
SCOR	ACPR
Allianz SE	BaFin
Zurich Insurance Group	FINMA
Legal & General Group Plc	PRA
Phoenix Group Holdings plc	PRA
Athene Holding Company	Iowa Insurance Division
Prudential Financial, Inc.	New Jersey Department of Banking and Insurance
MetLife, Inc.	New York State Department of Financial Services
Pacific Life Insurance Company	Nebraska Department of Insurance
Chubb Group of Companies	Pennsylvania Insurance Department
Aegon Ltd.	BMA
Arch Capital Group Ltd.	BMA
Athora Holding Ltd.	BMA
Resolution Life Group Holdings Ltd.	BMA
AIA[1] Group Limited	HK IA

1. Group view including business from Hong Kong.

Source: IAIS *Register of Internationally Active Insurance Groups based on information publicly disclosed by group-wide supervisors* October 2024

In addition, for affiliated business, the cedent (or its group) controls the management of the entity and as such has a broader range of tools available to support the reinsured business during periods of stress. As a result, the primary effect of using affiliated reinsurance is one of capital fungibility (as the capital supporting policyholder liabilities sits across multiple legal entities), not counterparty exposure. This dynamic is applicable whether the affiliated reinsurance is with a US-based captive or with a Bermuda-based affiliate.

Because, for affiliated business, there are more routes available for a cedent (or group containing both the cedent and affiliated reinsurer) to respond, we consider four potential paths for how the group (cedent) may respond:

- **Path 1:** Take no action — opt not to recapture, and do not recapitalise the Bermuda entity
- **Path 2:** Opt not to recapture, but recapitalise Bermuda reinsurer
- **Path 3:** Recapture the business, including the supporting capital, from Bermuda
- **Path 4:** Recapture the business, but without an ability to repatriate the capital

These paths are summarised in the Exhibit 36 below and have different impacts on the capital position of the cedent (either by a capital injection to Bermuda or by reassuming risks).

Exhibit 36: Potential paths for affiliated reinsurance in the event of a material capital shortfall

Description of path	Commentary	Regulatory assumptions	Impact to cedent
1 **Cedent takes no action — does not recapture or recapitalise the Bermuda reinsurer**	• This path may be possible in certain circumstances, but is not in focus for the analysis	• US regulator **does not** force recapture	Limited (could impact reserve credit or required capital)
2 **Cedent does not recapture, but does recapitalise the Bermuda reinsurer**	• For some entities, this route would be required due existence of CMAs or other provisions to ensure recapitalisation occurs prior to reaching recapture triggers • Capital could come from a variety sources (e.g., HoldCo resources, capital markets, etc.)	• US regulator **does not** force recapture	 Retain reserving and access to capital supporting business
3 **Cedent recaptures business and supporting capital from the Bermuda reinsurer**	• This path is most relevant for captive reinsurance (e.g., no third-party business or third-party capital)	• US regulator **forces** recapture • BMA **allows** capital to be extracted	 May recapitalise to maintain competitive RBC ratio
4 **Cedent recaptures the business, but does not repatriate the supporting capital**	• This path would result in the most severe outcome, but could be plausible if regulators act to maintain control of assets/liabilities	• US regulator **forces** recapture • BMA **does not allow** capital to be extracted	 Equivalent to unaffiliated scenario — largest impact

Source: Oliver Wyman analysis

As with the analysis of non-affiliated reinsurance, we assume that the ceding entities balance sheet faces a deterioration of its solvency position similar in magnitude to the GFC — that is, a decline in its CAL RBC ratio of ~30 points. Any impact from recapture is then layered onto this stressed balance sheet.

The potential impact of path 1 is not quantified as the cedent takes no action. In practice, there may be some impact to the cedent if the affiliate entity is downgraded and/or the cedent cannot recognise full reserve credit for the ceded business.

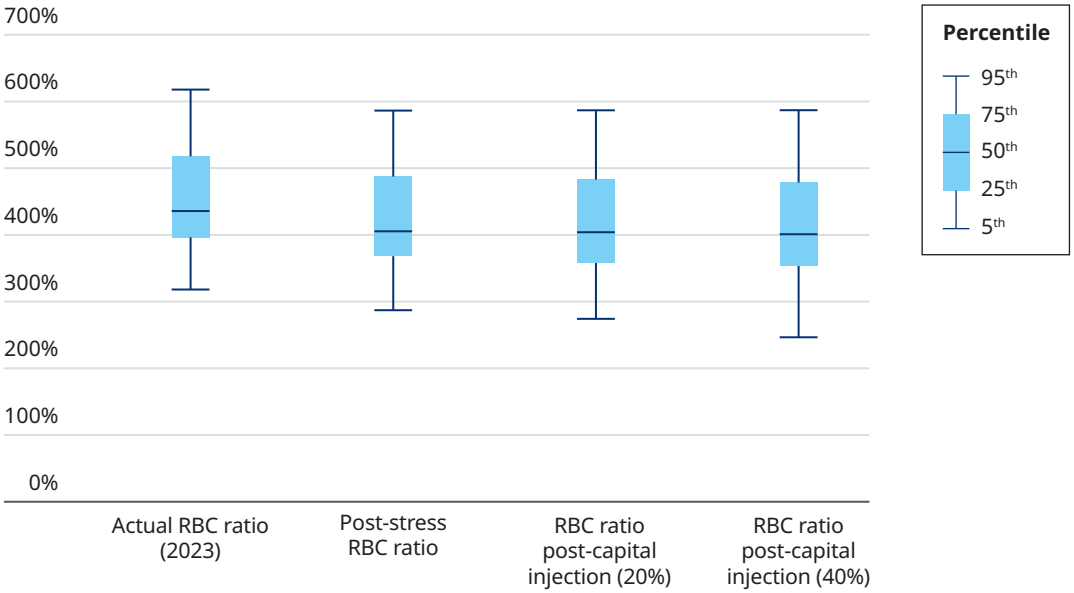
In path 2, a cedent opts not to recapture, but instead injects capital into its affiliated Bermuda reinsurer to maintain a minimum BSCR. The capital injection required to recapitalise all Bermuda affiliate entities, by 20% BSCR points is estimated to be $5.5 billion. This amount compares to over $600 billion in total capital and surplus of US life insurers (of which more than $200 billion sits in insurers with a Bermuda affiliate).

For the purpose of quantifying the potential impacts of this path to US-based cedents, we assume:

- The level of the capital injection required at a cedent level is based on i) the reserves cedent to Bermuda-based affiliates and ii) the ratio of incremental capital that would be required to recapitalise the Bermuda long-term sector relative to the overall reserves of the sector
- Capital injections come from cedent US insurance entities — i.e., there is no access to Holding Company resources or other sources of capital such as debt/equity raises
- Prior to recapture, ceding entities are subject to a stress comparable to the GFC

This scenario would be most likely for insurance groups with either the existence of an agreement/provision (e.g., a capital maintenance agreement) that would require re-capitalisation of its Bermuda entity before recapture trigger is breached, or with capital resources outside of regulated insurance entities. Exhibit 37 shows the estimated impact of this path on industry-wide solvency ratios.

Exhibit 37: Path 2 — RBC ratios post-capital injection to Bermuda affiliates
RBC CAL (%); US cedents with GA reserves > $10 billion (63 insurers); 2023



Source: NAIC aggregated life RBC and annual statement data, Insurer statutory filings pulled from S&P Capital IQ, Oliver Wyman analysis

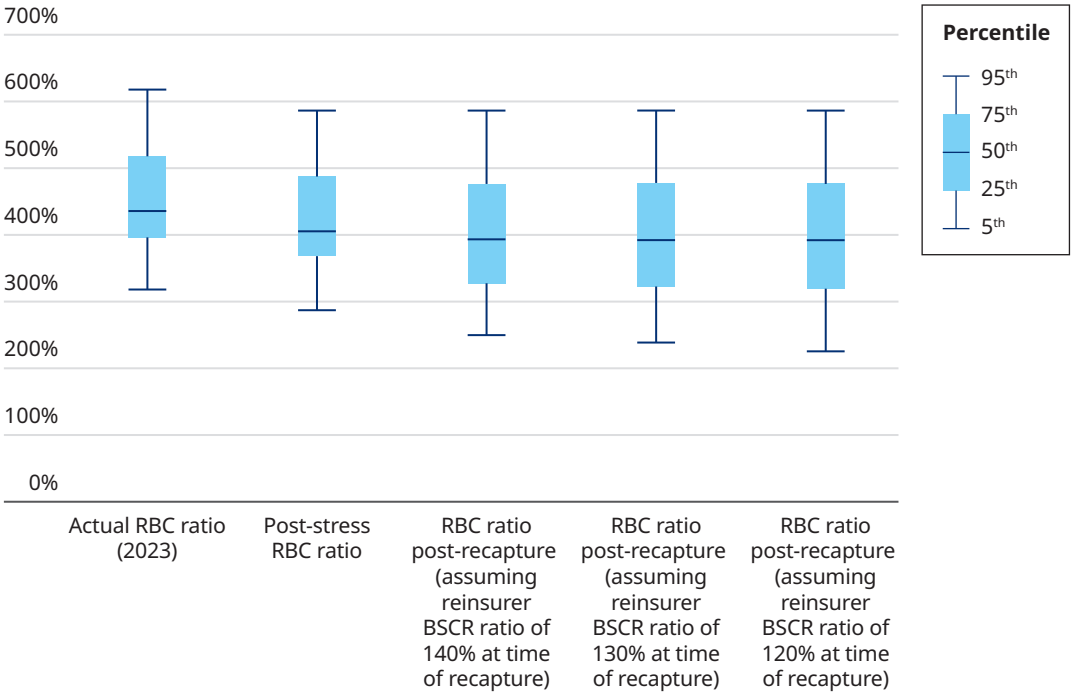
In path 3, the cedent recaptures its business from the affiliate, including any capital and surplus. This path requires that the BMA would allow the cedent to extract their capital, it would be most relevant for captive reinsurers, and less likely in scenarios where either the reinsurance entity also has third-party business or where it is funded by outside investors (who have a claim to the capital). The recaptured capital, while lower due to stress conditions, can still be used to fund the increased required capital upon recapture.

To quantify this scenario, we must convert the capital that is recaptured in Bermuda to a corresponding level under the US statutory framework. Because there are differences in not only the capital regimes between the US and Bermuda, but also the reserving framework, we cannot directly apply the available capital on a BSCR basis. Fortunately, there is an existing framework — the NAIC's Group Capital Calculation — that has defined a mechanism to convert between capital regimes.[23] The level of required capital under US RBC follows the same assumption as applied in the analysis of non-affiliated reinsurance. We then consider the level of capital that would be repatriated by using the NAIC GCC scalar to convert from BSCR (considering different scenarios at which the business is recaptured). The results of this approach are shown in Exhibit 38.

23 The NAIC's Group Capital Calculation applies an "Excess Relative Ratio" approach to define scalars to convert both available and required capital between differ regulatory regimes. This scalar method allows for different in reserving standards, instead treating regulator intervention points as equivalent.

Exhibit 38: Path 3 — RBC ratios post-recapture of all affiliated business and supporting capital

RBC CAL (%), US cedents with GA reserves > $10 billion (63 insurers), 2023

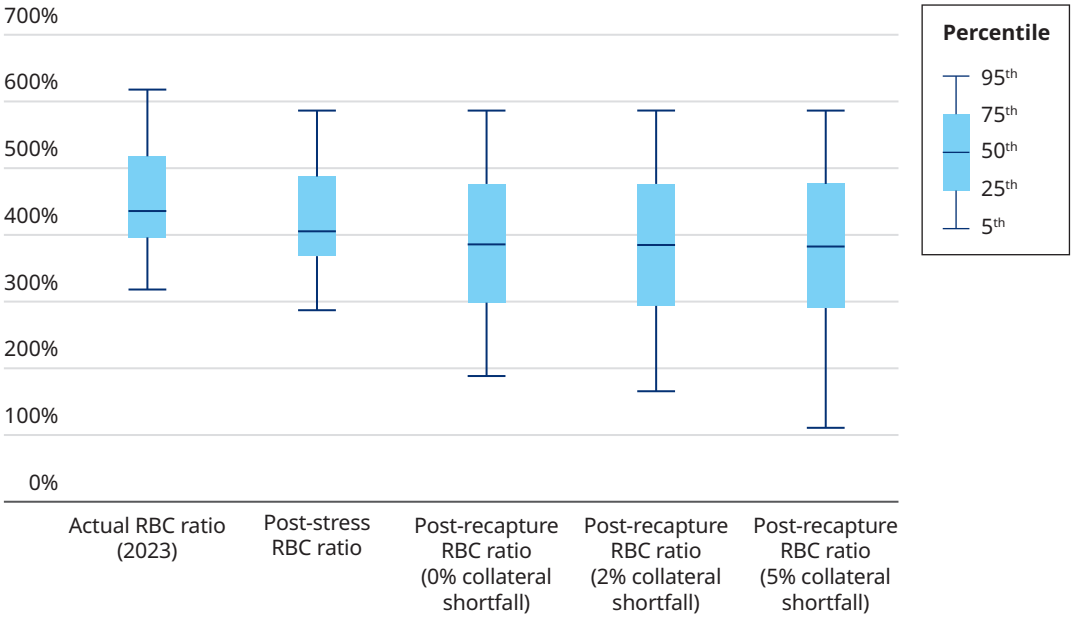


Source: Insurer statutory filings pulled from S&P Capital IQ, NAIC aggregated life RBC and annual statement data, Oliver Wyman analysis

Path 4 would represent the most severe outcome for cedents, and a scenario which companies would seek to avoid (i.e., would only occur due to a confluence of events by regulators across jurisdictions).

In this case, cedents are forced to recapture business held by the affiliate in Bermuda (e.g., by regulators for the ceding entity, who seek to increase their oversight of the business), but are not able to repatriate the associated capital (presumably due to restrictions placed on the ability to extract capital from the reinsurance entity). Because such a scenario is likely against the best interest of the policyholders (as the capital intended by the group to support their liabilities is no longer accessible to them), we expect that under most circumstances regulators would also seek to coordinate amongst the supervisory colleges to avoid such an outcome. While it is conceivable that such a scenario could occur for an individual institution, it is less likely to occur on a widespread basis. Under this path (and with a 5% haircut to the collateral value) regulatory capital ratios for ~5% of the industry reach the minimum capital levels (100% CAL RBC). Exhibit 39 provides a summary of the results.

Exhibit 39: RBC ratios post-recapture of the business, assuming no capital is recaptured
RBC CAL (%), US cedents with GA reserves > $10 billion (63 insurers), 2023



Source: Insurer statutory filings pulled from S&P Capital IQ, NAIC aggregated life RBC and annual statement data, Oliver Wyman analysis

Impact of recapture on UK cedents

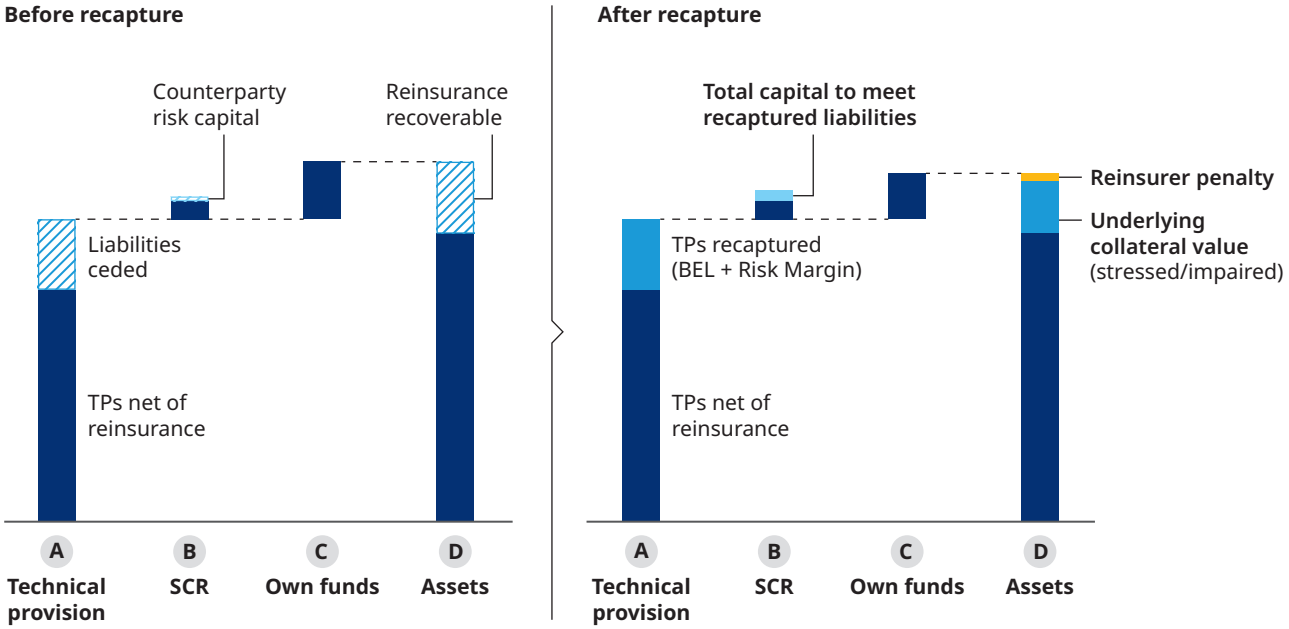
There are important differences between the US and UK regulatory frameworks to consider in understanding the likely impact of a mass recapture event on cedents. In particular, the UK employs a "market value" framework, meaning that assets are held on insurer balance sheets at their market value, and liabilities are valued on a "market consistent" basis. UK long-term insurers are permitted to discount liabilities at a yield above the "risk-free" rate that reflects the additional risk-adjusted spread earned on the assets backing those liabilities, so long as they can demonstrate that assets and liabilities are materially fixed in nature and well-matched in timing and amount. This risk-adjusted spread is known as the "Matching Adjustment" (MA) and is broadly equal to the average spread earned on the "Matching Adjustment portfolio" above risk-free, with a deduction made for credit (both default and downgrade) risk. It exists to capture the buy-and-hold nature of annuity portfolios in the UK which means they are not materially exposed to illiquidity risks in the asset portfolio.

The nature of assets that UK insurers can include in Matching Adjustment portfolios is prescribed by the PRA and limited to assets whose cash flows are fixed in timing and amount (aside from a small portion of assets with "highly predictable" cash flows, e.g., real assets with construction phases).

In the event of recapture to a UK cedent, any assets recaptured that are not eligible for inclusion in the cedent's Matching Adjustment (MA) portfolio (either because they do not meet the Matching Adjustment criteria, or because the cedent does not have approval for that particular asset type) — i.e., they are not "MA-eligible", would require portfolio rebalancing in order to ensure ongoing matching of assets and liabilities within the MA portfolio. This rebalancing may involve injecting assets with lower MA spreads (e.g. cash, Gilts) into the MA portfolio and possibly asset sales. This would exacerbate the impact on the cedent vs. recapturing a 100% MA-eligible portfolio.

More broadly, recapture would impact the UK cedent's balance sheet as shown in the below illustration.

Exhibit 40: Illustration of UK cedent's balance sheet pre- and post-recapture



Note: Illustrative.

Source: Oliver Wyman analysis

Exhibit 41: Drivers of UK balance sheet changes upon recapture

	Balance sheet component	Impact of recapture	Drivers
A	Liabilities (Technical Provisions; Best Estimate Liabilities + Risk Margin)	Net-of-reinsurance BEL and Risk Margin increase	• MA-eligibility of recaptured assets (allowing for recognition of matching adjustment for purpose of discounting liabilities) • Impact of recaptured liabilities on risk margin
B	Solvency Capital requirement (SCR)	Increase overall (capital required to support all asset and liability risks, rather than just counterparty risk)	• Shift in cedent risk profile from reinsurance counterparty risk to traditional risk profile for annuity business (market, credit, insurance, etc.) — exacerbated by any assets recaptured that are not MA-eligible (since the SCR reflects the counter-cyclical balance sheet impact of the MA in stressed conditions)
C	Own funds	Decreases	• Relative size of impacts to assets and liabilities
D	Assets	Reinsurance asset replaced by recaptured investment assets from collateral pool	• Nature and quantum of the assets recaptured (asset class breakdown, ratings, derivative novation, risk profile, etc.), in relation to cedant's risk limits — this should be materially mitigated by a robust collateral policy but some risks may remain • The potential need to rebalance the portfolio in order to ensure ongoing matching

Source: Oliver Wyman analysis

As with recapture to other jurisdictions, the solvency position of a cedent recapturing business from Bermuda is expected to worsen, driven principally by the need to recognise additional required capital, but also from the other impacts described above.

Upon recapture, UK cedents could take a number of actions to mitigate the impact, most importantly by rebalancing the recaptured asset portfolio to: i) ensure that liabilities are backed with MA-eligible assets (i.e., replacing any ineligible assets with eligible ones); and/or ii) optimise the portfolio for the Matching Adjustment framework more generally (i.e., to enhance the risk-adjusted spread earned on the portfolio or reduce the SCR charge associated with recaptured assets). We assume for the purposes of the analysis that re-ceding the reinsurance to another provider would not be possible, though in reality this may be available (at least to some extent).

On i) above, we would expect recapture of any ineligible assets to be significantly mitigated by the investment guidelines and collateral policy that typically govern AIR transactions between UK cedents and Bermuda reinsurers. UK cedents typically specify that all, or a very large majority, of the collateral assets held by the reinsurer need to meet MA-eligibility requirements. Additionally, the PRA is currently consulting on a proposal where firms could "self-assess" a limited quantity of assets as MA-eligible and include them in their matching

adjustment portfolio(s) without the need to obtain prior approval from the PRA.[24] On ii), the prescribed investment guidelines should also reduce the need to materially rebalance post-recapture, but would likely not eliminate this completely (especially in a severe stress).

Estimating the potential impact of mass recapture on a UK cedent

To understand the approximate potential impact of a mass recapture event to UK cedents from Bermuda reinsurers, we consider a fictitious UK life insurer with a balance sheet broadly representative of a UK Pension Risk Transfer insurer engaging in a meaningful amount of AIR to Bermuda (equivalent to ~10% of the UK total). We suppose that a credit-driven event leads to significant deterioration in the reinsurer's solvency position below the solvency recapture trigger, with the UK insurer opting to recapture the business. Correspondingly, we suppose also that the UK cedent's balance sheet deteriorates from the market stress, even before the recapture of liabilities from Bermuda.

We discuss our analysis in the pages that follow, with the results summarised in the below table. We make reasonable, but generally prudent, assumptions around the nature of the stress (both to the Bermuda reinsurer and the UK cedent) and liabilities recaptured, the structure of the reinsurance agreement, and the nature of the cedent's balance sheet, in particular:

- The cedent has all its exposure to a single asset-intensive reinsurance counterparty from which recapture occurs (this is equivalent to assuming simultaneous and perfectly correlated recaptures from multiple counterparties suffering simultaneous severe stresses)
- We implicitly assume that the liabilities recaptured have a level of longevity risk consistent with the UK industry aggregate — in practice, we expect these liabilities would have very little longevity risk due to other reinsurance already in place
- We do not account for any management actions that the cedent could take upon recapture to mitigate the impact of (e.g., reinsuring the liabilities to another reinsurer)

As the below table shows, we estimate the overall solvency ratio impact of such a scenario on an individual cedent could be severe (-52 points of solvency ratio), but based on our assumptions does not impact the viability of the insurer given the post-recapture solvency ratio is well above regulatory requirements (100%) and broadly in line with firms' internal risk appetite buffers (~140-150%). The balance sheet impact can be further decomposed into the impact of the credit-stress event (-34 points) and the impact of recapture (-18 points); in other words, it is the credit-stress event which has a significantly more severe impact on the cedent's balance sheet than the AIR recapture event. In the following pages we explore the details and assumptions underlying this (and extend the analysis to the market as a whole), but we ultimately form the conclusion that the role played by AIR to Bermuda is only incremental to the risks taken by UK cedents engaging in the PRT market

24 It is not yet clear how this "Matching Adjustment Investment Accelerator" could be applied in the case of recapture, and the PRA has proposed explicitly that it should not be applied when setting reinsurance counterparty limits.

Exhibit 42: Illustrative UK life insurer balance sheet
£ billions

Item		Base case	Post-stress	Post-recapture
A	Technical provisions (net of reinsurance)	30	30	32.1
	Technical provisions ceded to Bermuda reinsurers	2.0	2.0	-
B	Solvency capital requirement	2.6	2.6	2.8
C	Eligible own funds	5.1	4.3	4.1
D	Assets (excluding reinsurance recoverable)	35.1	34.3	36.2
	Assets ceded to Bermuda reinsurers	2.0	1.9	-
	Solvency ratio	200%	166%	148%

Source: Oliver Wyman analysis

We consider that the credit event leading to recapture would not just affect the Bermuda reinsurer, but would also adversely impact the UK insurer's own solvency position before recapture. In line with LIST 2025[25] we assume that 2.5% of the (non-government bond and non-cash) assets held by the UK insurer default with a 40% recovery rate.[26] Additionally, 20% of the remaining assets downgrade by one single letter. We assume that all downgraded assets are replaced to maintain the original credit quality of the portfolio, and the trading cost is consistent with 2025 LIST assumptions (~110 bps cost per year of duration, calculated as a weighted average using the aggregate credit quality of UK life insurers' bond portfolios). This is a simplifying and likely prudent assumption given that the UK insurer would have a choice between replacing some of these assets at cost under stressed conditions or to retain them and incur higher SCR charges and a reduced MA spread.

In aggregate, this leads to a 34-point reduction in solvency ratio; noting we assume the SCR is unchanged given the rebalancing, and that no management actions are taken to improve the solvency ratio.

We also assume that the credit event leading to recapture impacts the Bermudian reinsurer during the recapture process, applying the same default and downgrade assumptions above. In this case, the total collateral asset impairment upon recapture is ~4%, assuming that:

- The reinsurer does not top-up the collateral pool during the recapture process and does not pay any recapture penalties to the cedent (i.e. assets recaptured are ~4% less than Technical Provisions ceded)
- As above, the UK insurer replaces all of the downgraded assets with assets of the original credit quality at a cost of ~150 bps cost per year of duration (weighted average using the aggregate credit quality of Bermuda long-term insurers' portfolios)
- The duration of assets and liabilities recaptured is 10 years

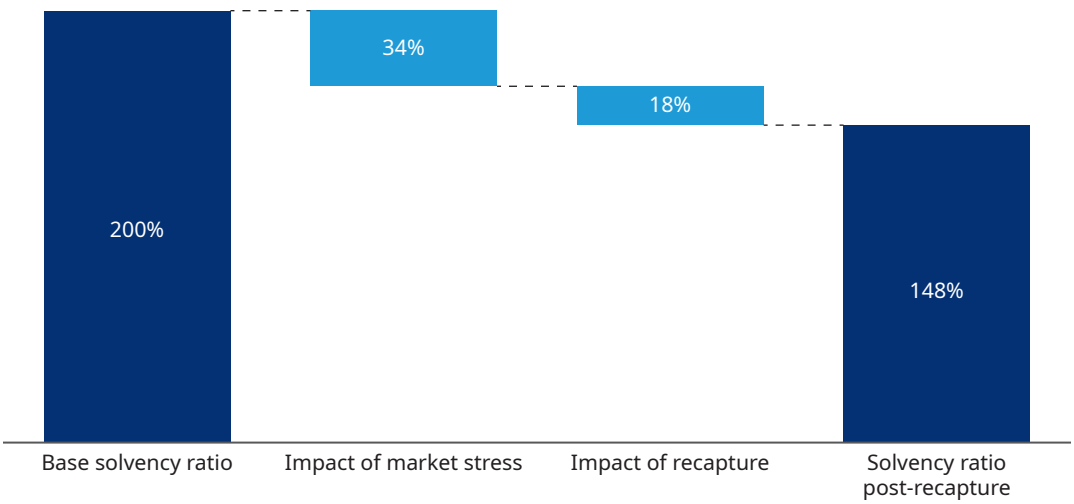
25 Bank of England *Life Insurance Stress Test (LIST) 2025*

26 2.5% default rate corresponds to LIST 2025 assumptions for BB-assets which is conservative though offset by not applying other stresses (e.g. property) to the asset and liability portfolios

We estimate that the subsequent recapture of the ~£2 billion in liabilities ceded to Bermuda would lead to a further reduction in the UK cedent's solvency position of 18 points, bringing it to ~148%.

Exhibit 43: Illustration of potential impact of credit-driven recapture event on UK cedent balance sheet

Solvency ratio (%)



Source: Oliver Wyman analysis

Key assumptions used to estimate this impact include:

i. Of the assets backing the liabilities recaptured, 20% are not immediately eligible for Matching Adjustment treatment — as discussed, firms are required to have robust collateral policies which should materially mitigate this risk in reality, but we include for prudence and to reflect residual risks

ii. The UK insurer holds SCR for recaptured business consistent with the ratio between industry aggregate Technical Provisions and SCR among UK life insurers at YE 2023 (9%)

iii. Additionally, for the 20% of assets recaptured that are not MA-eligible, the insurer loses:

   a. MA spread equivalent to 150 bps[27] (30bps across the portfolio), to reflect that cash or MA-inefficient assets may be required to be injected into the MA portfolio to restore matching

   b. MA benefit on the SCR that results in required capital twice as large for that portion of the business recaptured (17%)

Under these assumptions, it is clear that the impact of this scenario on individual insurers with material asset-intensive reinsurance could be material. However, it is also important to note that in our example, the firm itself remained well above regulatory intervention levels (100% solvency ratio) and quite possibly internal risk appetite thresholds (this varies by firm but is typically set around 140-150% solvency ratio).

27 YE 2023 market average MA spread = 156bps based on firm-published SFCRs

The firm would likely have also had a range of management actions available to further mitigate the impact of the stress and/or restore solvency; for instance, de-risking the broader investment portfolio or re-ceding part of the risk. We note that as part of recent regulatory changes (PRA Supervisory Statement 5/24), UK cedents are required to establish internal investment limits specifically for AIR transactions, and for these to be set in relation to "immediate recapture" to ensure that recapture from the single largest AIR counterparty does not threaten the firm's business model.

To explore this further, we perform a reverse stress test to understand the quantum of AIR our illustrative insurer would need to cede (as a proportion of overall liabilities), such that a simultaneous credit stress and re-capture event across all counterparties would lead to its solvency ratio falling to 100%. Based on the generally prudent assumptions above, we estimate this to be ~25% total liabilities. This means that for our illustrative insurer ceding a material portion (~25%) of liabilities via AIR and experiencing a severe credit stress and simultaneous recapture of all its AIR exposure from all counterparties (and without further management actions) will be in a position to just meet regulatory capital requirements (i.e. pay policyholders after a further 1 in 200 year event).

It is possible to develop more severe stresses that might threaten the solvency of individual firms (even after accounting for management actions), however given the regulatory and firm level safeguards in place and the analysis above, it is important not to conflate this with systemic risk (as defined and discussed previously). We therefore also investigate the potential impact of recapture on the UK sector as a whole; noting that ~$22 billion liabilities are ceded to Bermuda from the UK.

Extending the analysis to the UK life industry as a whole, the impact on aggregate cedent solvency is dampened, reflecting the lower use of AIR across the industry compared to the illustrative individual cedent. For this analysis, we assume the same scenario as for the illustrative firm, but apply aggregate balance sheet and AIR data across the UK life sector.

We estimate that such an event would reduce the UK life and annuity industry's aggregate solvency position by ~36 points, and the subsequent mass recapture of liabilities from Bermuda would result in a further decline of ~8 points, with the resulting aggregate solvency position ~140%, i.e., above the level at which the PRA would typically intervene in the case of individual insurers, event before consideration of management actions that could further de-risk UK cedants' balance sheets and improve solvency.

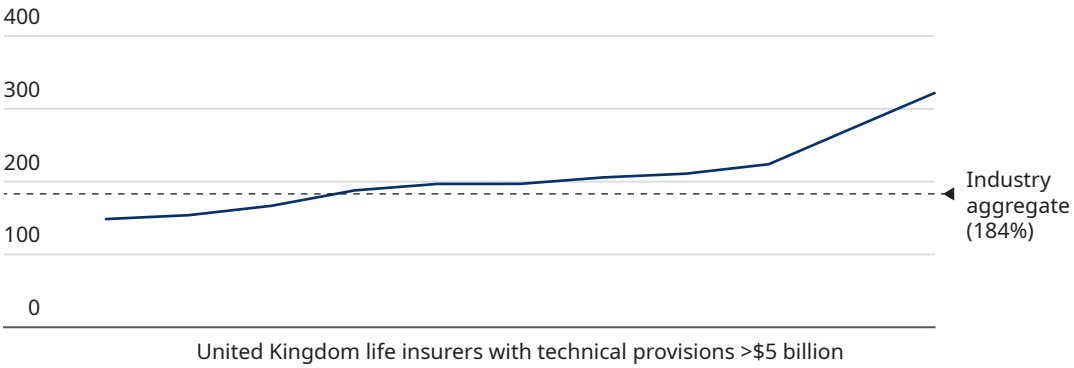
We estimate that the credit event would reduce the UK life industry's aggregate solvency position by ~34 points, and the subsequent mass recapture of liabilities from Bermuda would result in a further decline of ~8 points, with the resulting aggregate solvency position ~142%, i.e., well above the level at which the PRA would typically intervene in the case of individual insurers, and before consideration of management actions that could further de-risk UK cedents' balance sheets and improve solvency.

We believe the assumptions underlying this analysis are conservative; in particular, the assumption that all asset-intensive reinsurance arrangements across all counterparties are recaptured concurrently. Consequently, while the impact of mass recapture would be significant to individual cedents engaging in AIR to Bermuda, the impact of such an event would likely be smaller than the primary impact of such a credit event on UK insurers' own balance sheets.

In summary, we do not believe that the current magnitude of asset-intensive business ceded to Bermuda contributes to systemic risk. With use of AIR increasing, we are also generally supportive of the PRA's evolving expectations for firms in managing the risks associated with AIR.

Exhibit 44: UK cedent aggregate solvency ratios

Solvency ratio (%), 2023

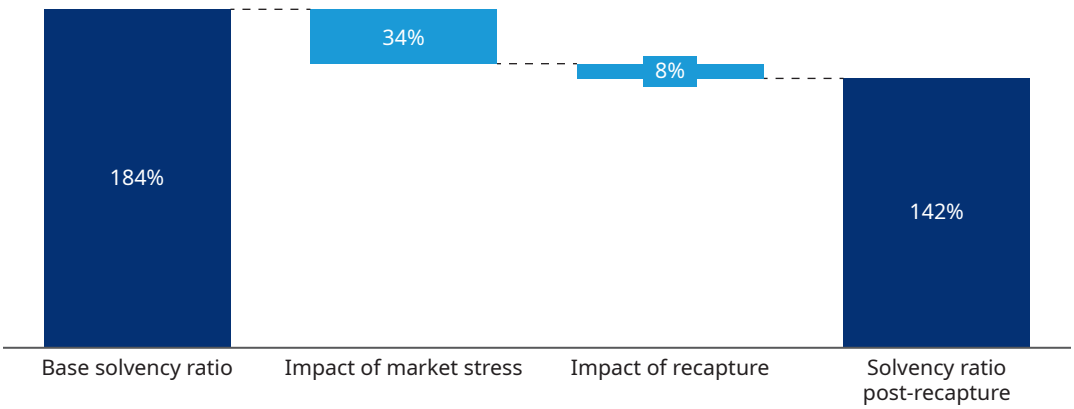


Note: Data shown at YE 2023. As of YE 2024, the aggregate solvency position of UK life insurers was 189%.

Source: SFCR and Solvency UK Template data consolidated by AM Best

Exhibit 45: Potential impact of credit-driven recapture event on UK industry balance sheet

Solvency ratio (%), 2023



Source: Oliver Wyman analysis based on SFCR and Solvency UK Template data consolidated by AM Best

5.1.2. SCENARIO 2: CONFIDENCE SHOCK TO THE BERMUDIAN INSURANCE MARKET, TRIGGERING MASS LAPSE AND FIRE SALE OF ASSETS

Scenario overview and context

What is "lapse" and "surrender"?

A lapse occurs when a policyholder fails to make the required premium payments on their life insurance or annuity policy, leading to the termination of the policy.

Surrender refers to the voluntary termination of a life insurance or annuity policy by the policyholder, often in exchange for its cash value.

Regulators, including the IAIS, have raised concerns that in periods of market stress, reinsurers could be forced to sell illiquid assets driven by heightened lapses on underlying insurance contracts, with knock-on impacts to credit markets as well as their own solvency. This concern echoes a "run-on-the-bank", although historically insurance companies have not experienced large-scale runs[28] akin to those seen in the banking sector, reflecting the fundamental differences in the nature of insurance and banking liabilities. This outcome reflects the nature of insurance liabilities, which are generally long-term contracts and include meaningful disincentives to taking liquidity during periods of market stress.

This scenario is designed to examine the potential for heightened liquidity demands (a "mass lapse" event) on reinsurers during a period of market stress, and whether it is plausible that such demands could cause reinsurers to liquidate assets to such a degree that it could impair the relevant asset markets and have knock-on effects to the financial system. In particular, the IAIS raises the concern that: "there may be a general attempt at disposal of alternative assets. Such fire sales could result in large price haircuts, requiring the insurer to liquidate more assets in stress to meet the same liquidity demand. This procyclical behaviour can exacerbate existing market stresses and destabilise asset markets."[29]

28 The notable exception is General American Life Insurance Company (GALIC), which experience a liquidity-driven failure in 1999. GALIC had a large book of 7-day puttable funding agreements and, following a credit downgrade, experienced withdrawals of ~$4 billion in institutional policies. These products are no longer offered in the market.

29 IAIS *Issues paper on structural shifts in the life insurance sector* March 2025.

How do lapses and surrenders impact policyholders and insurers?

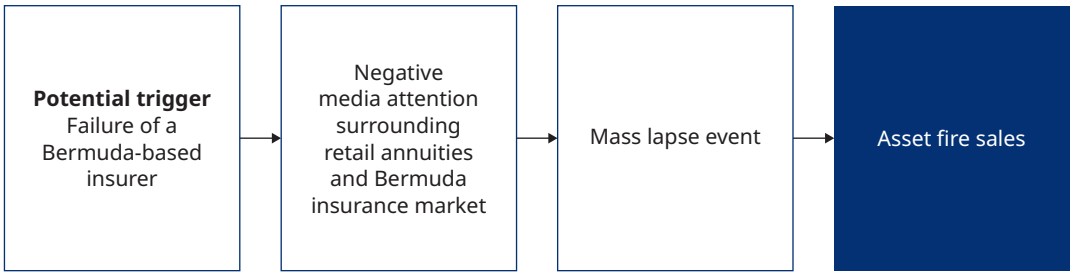
For policyholders, lapses result in the loss of life insurance coverage, while surrenders provide immediate access to funds but may incur penalties and reduce the overall return on investment.

For insurers, lapses can reduce insurers' future liabilities but may also disrupt cash flow and long-term planning. Surrenders increase liquidity needs, as insurers must return invested funds, potentially at a loss.

In the context of the Bermuda long-term insurance sector, such a scenario would need to be driven by actions by the policyholders for the underlying contracts in the reinsurance arrangements, as cedents in these transactions do not have the ability to force a liquidation event. Generally, Bermuda's capital framework is not regarded as procyclical and unlikely to experience asset sales driven by economic movements. Thus, we consider a scenario where the failure of a Bermuda-based reinsurer (for example, by a cyberattack) leads to significant negative media attention around the retail annuity market generally, and in particular, insurers with ties to the Bermuda reinsurance market. This attention shifts the public's perception, particularly concerning annuities, as policyholders — or more likely their financial advisors — begin to scrutinise their providers' links to Bermuda and in some instances choose to surrender their contracts. In an event specific to Bermuda, policyholders will opt to surrender their contracts via a 1035 exchange, which would result in offsetting asset purchases by the insurer to which the contract is moved. This effect is not considered in our evaluation, but could serve to significantly offset asset sales at an industry level.

The concern raised is that such surrenders could force insurers to liquidate assets, particularly alternative assets, to meet these liquidity demands and exacerbate existing market stresses. To assess the plausibility of such a scenario, we examine the potential level of demands from policyholders, the liquidity resources available to meet these demands, and the implied volume of asset sales relative to trading volume in the relevant markets. Lastly, we also consider whether such events could cause the reinsurers solvency position to worsen their financial position, further exacerbating the scenario.

Exhibit 46: Scenario 2 overview — confidence shock to the Bermudian insurance market, triggering mass lapse and fire sale of assets



Note: Illustrative.

Scenario impact evaluation

To understand the potential for such a scenario, we examine each step within the hypothesised chain of events and consider how it would unfold in the context of the Bermuda long-term insurance sector. In particular, we ask:

- What is the potential level and timing of liquidity demands that the sector could face?
- What is the availability of assets to meet these demands?
- How would any asset sales compare to the trading volumes for relevant assets?

Potential level and timing of liquidity demands

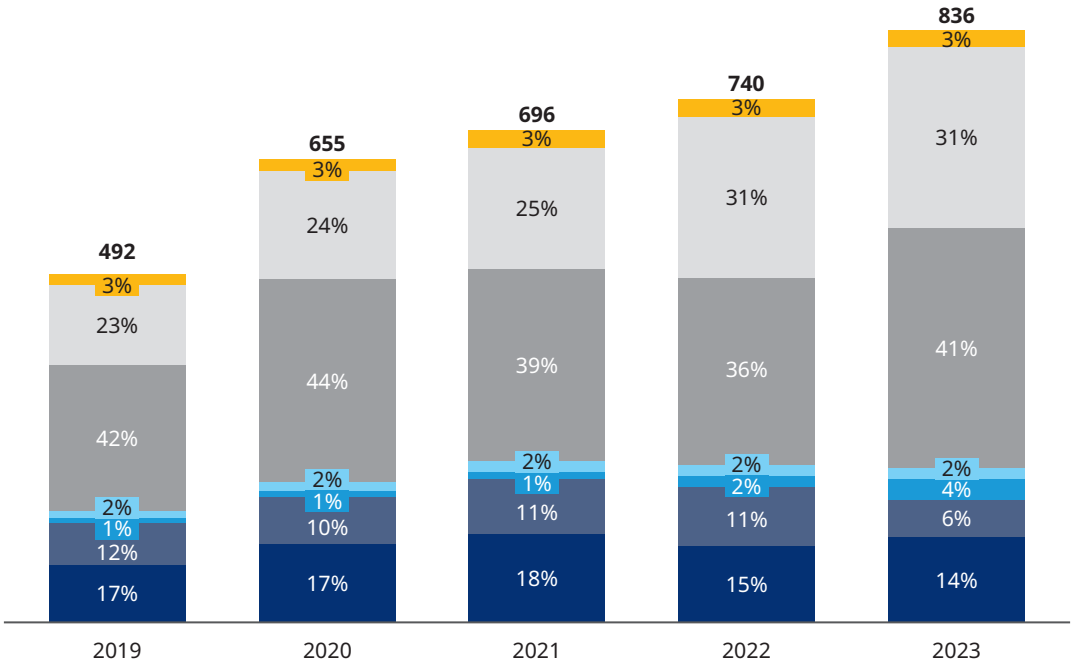
First, we must evaluate the potential for lapses and surrenders from underlying policies to create a liquidity demand. When policyholders surrender their contracts, reinsurers must provide cash payouts to the cedent via contractual payments (refer to section 2.3 for illustration of AIR arrangement). The underlying liabilities for the Bermuda long-term reinsurance sector are, by nature, long-term contracts intended to provide retirement savings, support requests, or provide protection to beneficiaries. This long-term nature underlies both the ability and disincentives for policyholders to surrender their contracts as well as the historical surrender experience.

Many insurance contracts do not provide any liquidity to policyholders. Within the Bermuda market, such products compose ~30% of insurance reserves. As shown in Exhibit 47 below, the remaining ~70% of reserves include deferred annuities and life products that provide policyholders with liquidity options.[30]

30 Not all life products provide liquidity — e.g., yearly renewable term, term, and group life.

Exhibit 47: Bermuda reserves by key line of business

$ billion, 2019-2023



Source: BMA *Bermuda Long-term Insurance Market Analysis and Stress Testing Report* 2024

Insurance contracts include many structural features that discourage policyholders from surrendering their contracts, even in periods of stress, or extend the timing over which liquidity demands can be met. Exhibit 48 lists many of these provisions. Many of these features are important for insurers in managing their own liquidity risk, and in combination are an important mitigate of a potential 'mass lapse' event at the industry level.

Exhibit 48: Structural protections against policyholder lapse and surrender

Structural protection	Life	Annuity
Purpose Products primarily serve long-term needs such as retirement savings or financial protection in the event of death	✓	✓
Surrender penalties Penalties that reduce the cash value of a contract in the initial years and allow insurers to cover acquisition costs in the event of an early withdrawal (typically 3-10 years for annuities; 10-15 years for life)	✓	✓
Surrender process Surrender process includes constraints that limit the speed of surrender. Most contracts allow the insurer an extended period (3-6 months) to fulfil a surrender request from initial receipt	✓	✓
Contractual restrictions Certain policy contractions — e.g., pension risk transfer and funding agreements — do not allow unplanned liquidity	✓	✓
Tax penalties In many jurisdictions, including the US, insurance contracts confer tax benefits (e.g., deferral of taxes on retirement assets) but also result in tax penalties for early withdrawals	✓	✓
Forfeiture of guarantees Many contracts include embedded guarantees (e.g., income riders and premium guarantees) that are forfeited upon surrender	✓	✓
Separate account Separate accounts structures provide protection against a failure of the insurer's general account	✓	✓
Loss of insurance Surrendering a policy will lead to loss of coverage, which may not be replaceable at a similar cost due to factors such as age or health changes	✓	
Market value adjustment Adjusts surrender value of the financial product to reflect interest rate changes and spreads		✓

Note: Reflects US product structures; structural protections vary by jurisdiction.
Source: Oliver Wyman analysis

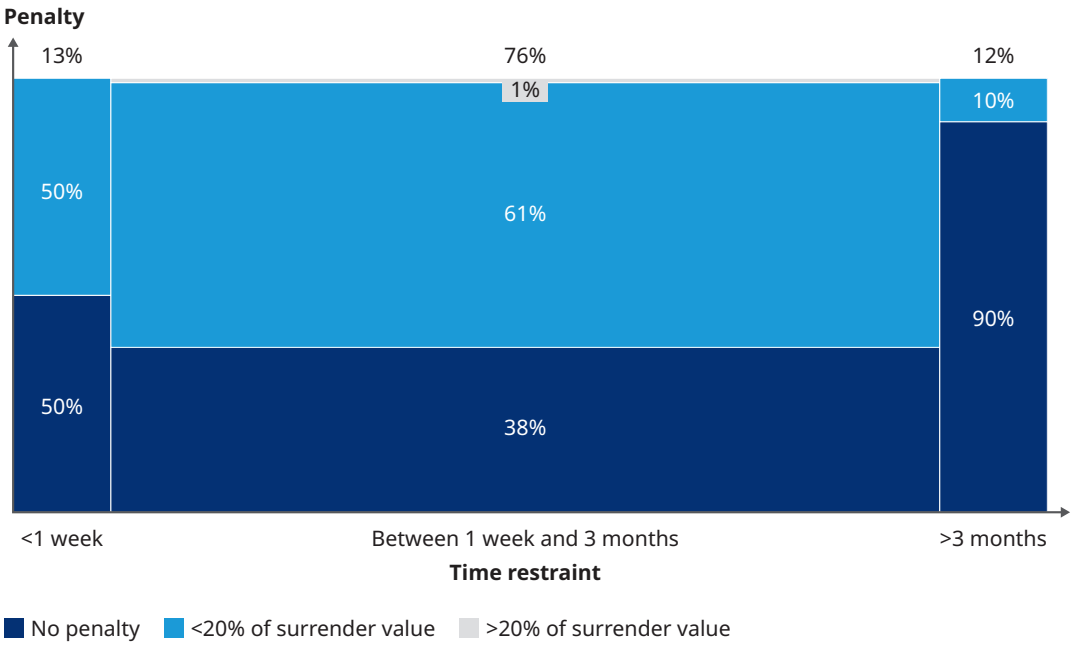
The BMA reports a breakdown on the total cash surrender value for the underlying contracts in the Bermuda long-term insurance sector that considers both the: i) timing over which payments must be made; and ii) the level of surrender disincentives (i.e., share of contract value that a policyholder forfeits by surrendering). Roughly 7% of liabilities present the highest liquidity risk (i.e., must be paid within one week and have no penalty), while more than 50% include a penalty for surrender, and 85% have time restraints of at least one week.

Notably, this quantification excludes the impact of any market-value adjustments (which typically adjust the cash-value of the contract upwards or downwards to reflect market conditions) and are important tools that insurers use to enhance their asset-liability management. In periods of market stress (i.e., when credit spreads widen), these adjustments would reduce the cash value of the contract and act as a surrender disincentive. In 2023, 78% of newly issued annuity contracts in the US market included a market-value adjustment.[31]

It is important to note that for reinsurers, the timing of potential liquidity demands is further complicated by the actual timing of when claims are made. In particular, there is often a meaningful delay (one to three months) between the point at which a loss is made (or policyholder withdrawal takes place) and the point at which the reinsurer pays the insurer per the policy terms, which allows additional time for the reinsurer to secure liquidity.

Exhibit 49: Breakdown of surrender value by penalty and time restraint for Bermuda life insurance liabilities that allow policyholders to surrender

Surrender value breakdown, %, 2023



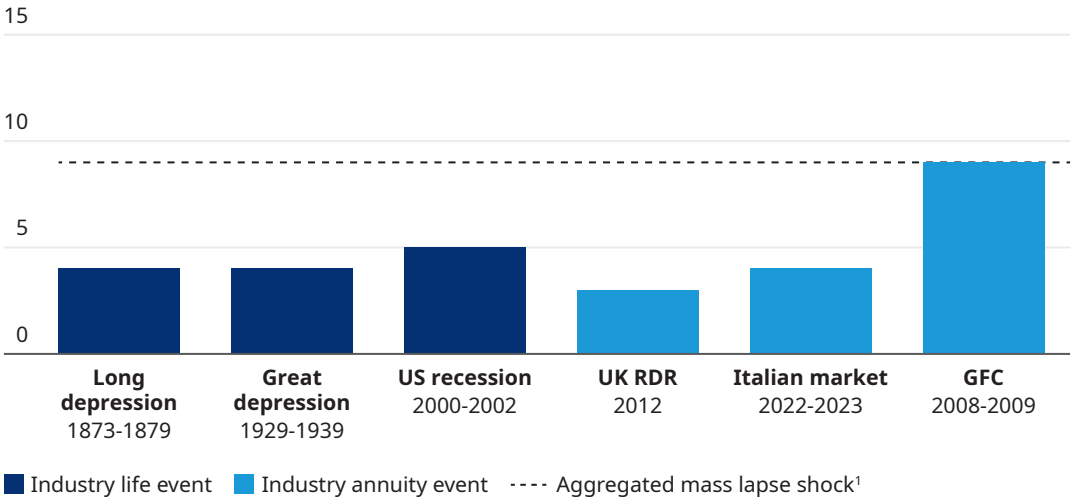
Source: Data provided by BILTIR

Next, we examine historical experience to understand the potential for heighted surrenders during both periods of market and company-specific stress.

31 Winks. For new sales of MYGA and FIA.

Exhibit 50: Excess lapse of historic mass lapse industry events

% above base lapse



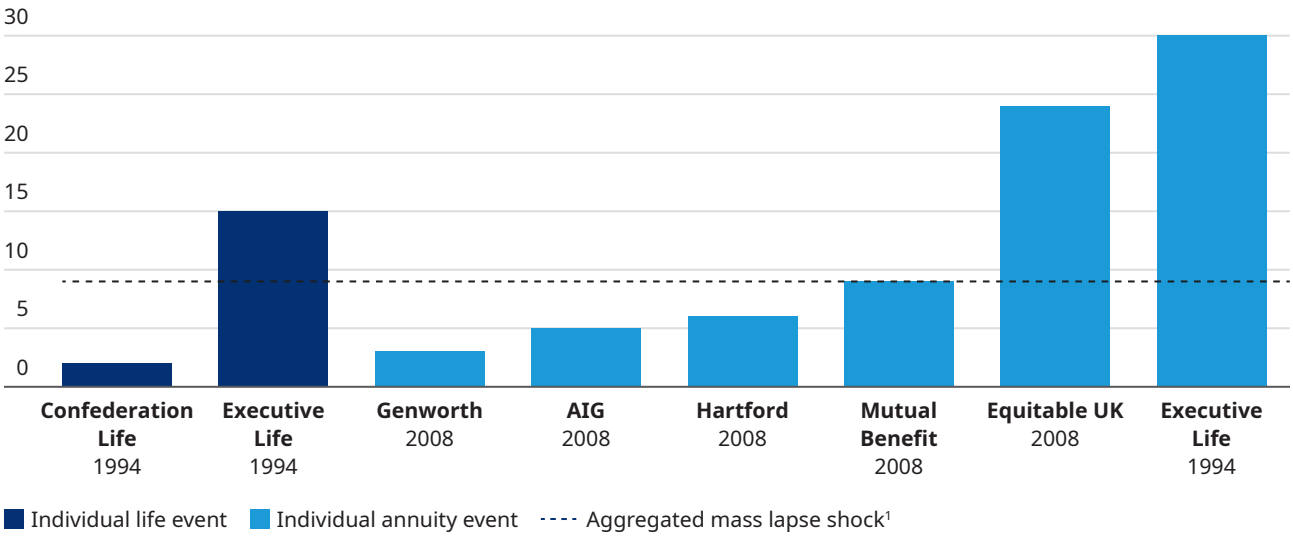
1. Weighted average of BMA mass lapse shocks by surrender value for retail products.

Source: Oliver Wyman analysis

In considering industry-wide events — that is, those economic, regulatory, or other events that impact a wide segment of the insurance sector in a given market event — excess lapses (lapses above expected levels) have been below 5% for life insurance products and 10% for annuity products. These levels are also well-below the level of excess lapse that the BMA requires for insurers to apply in their own liquidity stress testing.

Exhibit 51: Excess lapse of historic mass lapse company-specific events

% above base lapse



1. Weighted average of BMA mass lapse shocks by surrender value for retail products

Source: Oliver Wyman analysis

When company-specific events — that is, distress at or failure of a single company — is considered, a higher level of excess lapse is observed, although levels would have applied only to a single company (and therefore overall surrenders may not have been meaningfully elevated at the industry level).

Availability of assets to meet liquidity demands

Reinsurers hold a portfolio of assets with varying liquidity characteristics — from highly liquid assets, such as cash and cash-like instruments that, to other liquid assets such public corporate bonds that while generally intended to be held can be sold over a moderate timeframe, to illiquid assets that require a more meaningful discount to liquidate.

Liquidity stress testing is an important tool that insurers use to assess the adequacy of their highly liquid and others liquid assets to meet any potential liquidity demands. While insurers often have their own internal approaches, the BMA also requires all reinsurers under its purview to calculate a LCR that compares liquidity sources to potential uses.[32] As shown in Exhibit 51 and Exhibit 52 above, the factors applied to liabilities in evaluating this ratio are more conservative than historical experience with regards to industry-wide lapse events as well as many, but not all, instances of distress at a specific insurer. In determining liquidity sources for purposes of the LCR, the BMA also specifies the assumptions that insurers must make with regards to the availability of their assets. In particular, the BMA does not allow insurers to include private corporate bonds, structured securities rated below AAA, or other forms of alternative assets.[33] In addition, the BMA has evaluated the impact of using the IAIS's assumptions for asset values on the industry median LCR and found that, while declining slightly, it remained over three times the minimum level required by the BMA.[34]

The BMA has demonstrated that, at a baseline market level (i.e., ignoring both the stressed market values for assets but also offsetting effects of market-value adjustments on liabilities), the total surrender value of all liabilities is less than the value of liquid assets held by insurers. This implies that, if all liabilities with the ability to surrender did so, the liquidity demands could be met with available liquid assets and would not necessitate the sale of less liquid (e.g., alternative) assets into a distress market, as shown in Exhibit 54 below.

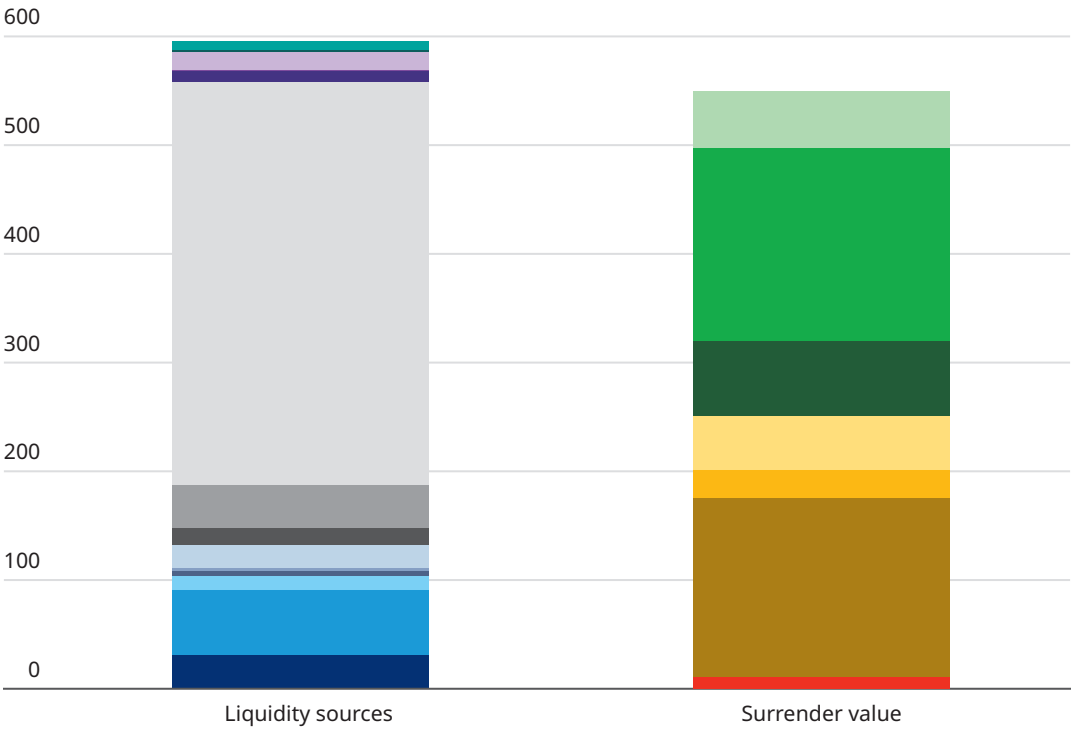
32 Commercial long-term reinsurers.

33 Such as those described in Section 2.3 (e.g., PE funds and unlisted equities).

34 BMA *Liquidity Risk in the Bermuda Long-term Insurance Market*, August 2024

Exhibit 52: Comparison of 'liquid assets' to the total potential surrender values of relevant liabilities

$ billion



Liquidity sources

Cash | Sovereigns rated AA- or better | Common publicly traded equity
Covered bonds rated BBB- or better | Investment funds: Liquid ETFs | MBS rated AAA
Other structured securities rated AAA | Public corporates rated AA- or better
Public corporates rated between BBB- and AA- | Qualified Tier 1 liquid mutual and MMF
Qualified Tier 2 liquid mutual and MMFs | Sovereigns rated between BBB- and AA-
Tier 1 certificates of deposit | Undrawn committed lines

Surrender value

High penalty, medium time restraint | Medium penalty, high time restraint
Medium penalty, medium time restraint | Medium penalty, high time restraint
Low penalty, high time restraint | Low penalty, medium time restraint
Low penalty, low time restraint

Source: BMA *Liquidity Risk in the Bermuda Long-term Insurance Market Report* August 2024

Thus, even in a scenario with unprecedented levels of surrender at a market-level, it would be expected that insurers could meet liquidity demands through the sales of liquid assets, as opposed to alternative assets.

Bermuda asset holdings versus trading volumes for relevant assets

To assess the impact that a mass lapse event might have on asset markets, we consider the total cash value of all surrenderable liabilities: ~$550 billion. If a mass lapse of 9% of surrender value were to occur (in excess of expected lapses), Bermuda reinsurers may be required to sell up to ~$50 billion in liquid assets over the course of ~3 months. The timing over which these sales would occur reflects both the time for the primary insurer (cedent) to pay the policyholders and the incremental period that reinsurers would have due to settlement timing with the cedent. If settled on a quarterly basis in arrears with a 30-day settlement period, this would add one to four months to the time before payment needs to be made.

This $50 billion in hypothetical liquid asset sales over three months compares to daily trading volumes in the US and Europe of investment grade corporate bonds of $35 billion, and government bonds of nearly $700 billion in 2023[35].

What are the liquidity considerations between insurers and reinsurers?

Liquidity dynamics between insurers and reinsurers is influenced by the insurers' claims and their reliance on reinsurance. In summary, after a loss, the insurer settles with the policyholder and subsequently files a claim with the reinsurer for reimbursement per the reinsurance policy terms. While periodic reconciliations, or "true ups," occur with the reinsurer to recover these payments, the delayed settlement timing provides reinsurers with additional time to secure liquidity.

With respect to evaluating the systemic risk that a run on the insurer could have on the broader financial system, three relevant historical events are examined. While each of these events were significant, they did not spill over to other insurers, the broader financial system, or the real economy.

35 SIFMA, ICMA; US corporate trading volumes include publicly traded bonds and 144A and exclude interdealer volumes; US Treasury trading volumes include only coupon securities; European corporate and sovereign bond trading volumes are adjusted to exclude US issuers.

Case study 1
Eurovita

Eurovita was a mid-sized Italian life insurer with approximately €15 billion in assets and was owned by UK-based private equity firm Cinven (2021-2023). Eurovita specialised in life policies with guaranteed, but low returns (<2%) relative to other investments such as government bonds and positioned its products more as an investment solution than protection.

- **What happened:** Eurovita experienced mass policy surrenders triggered by policyholders seeking higher returns after Italian government bond yields rose rapidly in the second half of 2022 (from approximately 1% to 4%).
- **Regulatory response:** Prompt regulatory action to support transferring policies from Eurovita to Cronos Vita, a vehicle backed by insurers and banks, helped to contain the situation and avert broader impacts within the domestic market.
- **Impact:** The mass lapse pressures experienced remained isolated with local insurers and banks playing a crucial role in absorbing Eurovita's liabilities, thereby avoiding fire sales and potential systemic spillovers.

Case study 2
777 Re

777 Partners is a Miami-based private investment firm founded in 2015 and involved in sectors like insurance, aviation, sports, and media. 777 Partners' Bermuda-based life reinsurer (777 Re) managed approximately $3 billion in customer funds, primarily from life insurance and annuity policies.

- **What happened:** Due to 777 Re's heavy allocation to high-risk illiquid investments, such as soccer clubs and payday lenders, the insurer faced significant financial instability, and ultimately suffered a series of credit rating downgrades, fraud related lawsuits, and an overall inability to fulfil its policy obligations.
- **Regulatory response:** 777 Re's financial instability triggered intervention by multiple regulatory bodies, including the BMA and Utah Insurance Department, with the BMA ultimately placing the entity under administrative control to help mitigate risks to policyholders.
- **Impact:** Despite the issues facing 777's affiliates, the situation remained contained as regulatory authorities acted swiftly to intervene and prevent spillover effects on the broader economy.

Note: Enhancements to Bermuda's supervisory regime since (including with respect to Prudent Person Principle, asset approval processes, and group supervision requirements) would serve as effective safeguards against a similar event transpiring in future.

Case study 3

Global Bankers Insurance Group (GBIG)

GBIG was a North Carolina based conglomerate of life insurance companies and included key subsidiaries such as Bankers Life Insurance Company and Colorado Bankers Life Insurance Company, which managed billions in annuity and life insurance assets and operated across several states.

- **What happened:** Lindberg directed approximately $2 billion from GBIG's insurers into his own affiliated businesses, violating investment rules and creating significant liquidity issues for the insurers. Policyholders became unable to access funds for several years due to asset entanglements and regulatory control.
- **Regulatory response:** In 2019, the North Carolina Department of Insurance placed the GBIG companies into rehabilitation, citing their inability to meet obligations without asset recovery, and later in 2024, after years of delays and unsuccessful restructuring, the insurers were formally placed into liquidation by court order.
- **Impact:** Although the failure of GBIG was large in scale, it did not generate systemic spillovers as the risk was contained within the affected insurers, which were not heavily interconnected with the broader financial system. During liquidation, state guaranty associations stepped in to cover claims and protect policyholders where shortfalls existed.

In summary, Bermuda long-term insurers hold a significant allocation of liquid assets, and in the event material sales were required to address liquidity needs, any sales that did occur would be of these assets, rather than less liquid assets such as alternative — this dynamic significantly limits the potential for any impact on alternatives markets even in the event of heighten surrenders.

5.1.3. SCENARIO 3: WITHDRAWAL OF INSURER PRIVATE CREDIT DEMAND

Scenario overview and context

Insurers are (and have been) an important investor in private credit markets, although this allocation has steadily increased in recent years as new pathways developed that enabled a broader range of investments. This trend reflects in part that insurers have more appetite for illiquid, private credit assets, given their longer-term investment horizon and more predictable cash outflows, allowing them to benefit from illiquid premiums that many of these assets afford. The effects have been most pronounced in the US and Bermuda, where insurers hold larger allocations to private credit assets.

The growth has made insurers collectively an important participant in private credit markets, and as a result, the IAIS has raised concerns of whether a "rapid pullback of insurers from lending markets" could be a transmission channel through which stress at insurers is passed to the real economy.

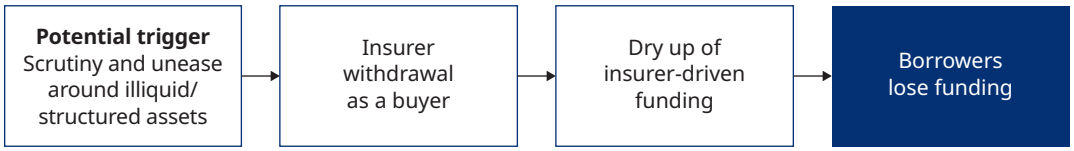
The third scenario considers the role of insurers in funding the private credit market, what types of events could prompt a pullback of credit, the importance of the Bermuda insurance sector to the underlying credit markets, and the extent to which other investors could substitute were a material pullback to occur.

In considering the types of events that could potentially lead to a pullback of reinsurers in the Bermuda long-term sector from private credit markets, several categories of events were considered:

- **Economic stress** — adverse economic conditions including a deep global recession, including those stresses that disproportionally impact the performance of credit assets.
- **Regulatory events** — e.g., significant changes to the capital treatment or permissibility of assets in either Bermuda or cedent jurisdictions. These types of events were not an area of focus given an expectation that regulators would consider the potential for consequences of any significant change in their adoption and implementation.
- **Other adverse events** — idiosyncratic events that affect specifically private credit markets, such as changes to accounting treatment or audit approaches.

In examining this scenario, we consider the chain of events that would lead to insurers pulling back from private credit markets and whether such a scenario could cause a significant source of disruption. That is, for insurers to withdraw as buyers from private credit markets, this pullback would result in borrowers losing access to funding, and in turn, exacerbating financial strain.

Exhibit 53: Scenario 3 overview — withdrawal of insurer private credit demand



Note: Illustrative.

Scenario impact evaluation

To understand the potential for insurers, through their role as participants in private credit markets, to impair the overall functioning of financial markets and the real economy, we examine several questions:

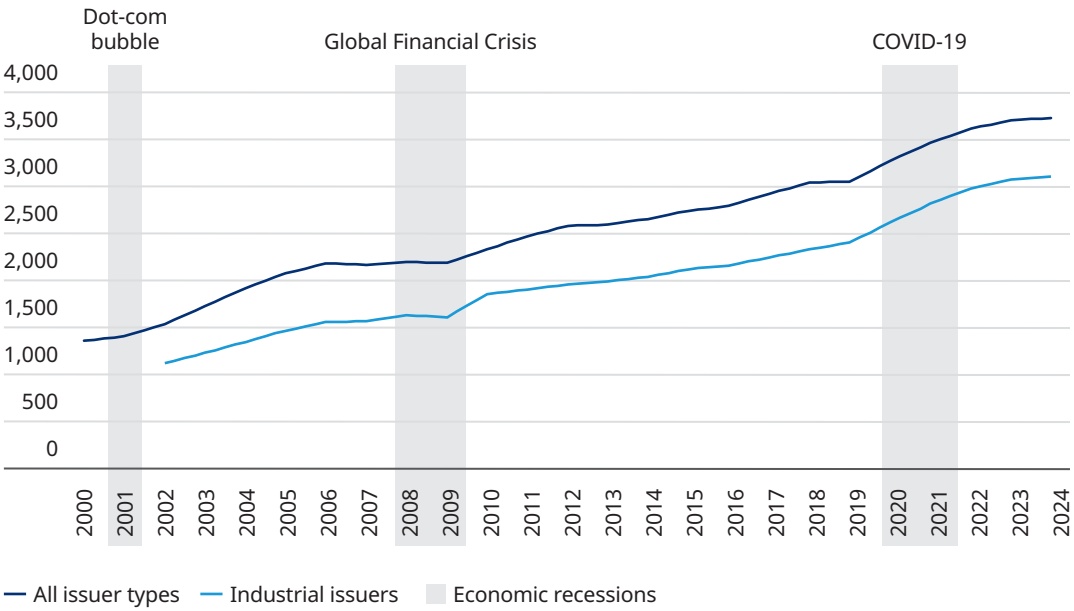
- How have insurer purchases and holdings of credit to the real economy changed during periods of financial distress?
- How significant of a participant is the Bermuda long-term insurance sector in the relevant asset markets?
- What is the role of insurers in the private credit ecosystem? How substitutable is this role?

Insurer purchases and holdings of assets during periods of financial distress

Historically, insurers have provided a source of stability to credit markets during periods of market stress. Because the Bermuda long-term insurance sector did not exist in its current form during either the Dotcom crisis (2001) or the GFC (2008-2009), the analysis focuses on the US market, which comprises 73% of life business ceded to Bermuda. However, it is also noted that the total assets for the Bermuda long-term insurance sector grew by 24% during 2020 despite the stress placed on the broader economy from the COVID-19 pandemic. Exhibit 57 shows holdings of credit by insurers to industrial issuers.

Exhibit 54: Insurer lending: Total bonds and loans to industrial issuers

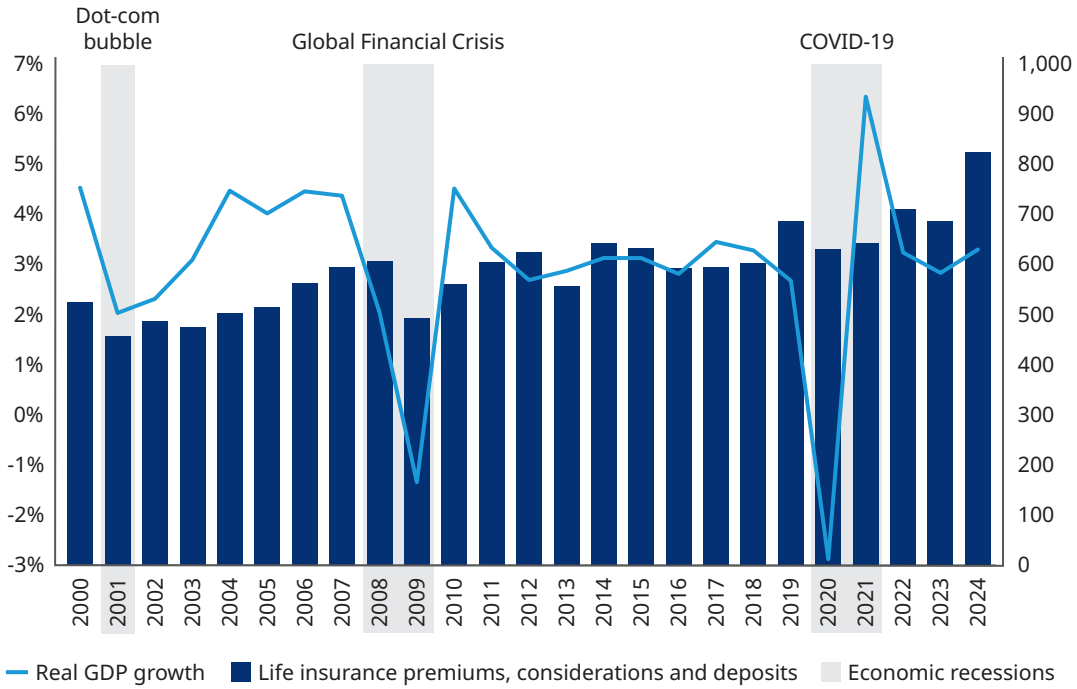
$ billion, quarterly, US only



Source: Federal Reserve Economic Data, Insurer statutory filings pulled from S&P Capital IQ

One contribution to the observed stability of insurer investments is the resilience of new premiums and deposits to market stress. This outcome reflects in part both that life insurance premiums are often paid on a recurring basis and sales of annuities, which provide a protected investment return, generally benefit from periods of market stress. The implications to Bermuda-based reinsurers are two-fold: for affiliated transactions, the ceded reinsurance premium is often directly linked to premiums in the primary markets. Non-affiliated transactions are more varied, and can be directly linked to primary markets (e.g., for flow or new business arrangements) or occur in one-off transactions (e.g., for legacy or closed-block transactions).

Exhibit 55: Insurance cyclicality: Global life premiums versus world GDP growth
$ billion, % growth



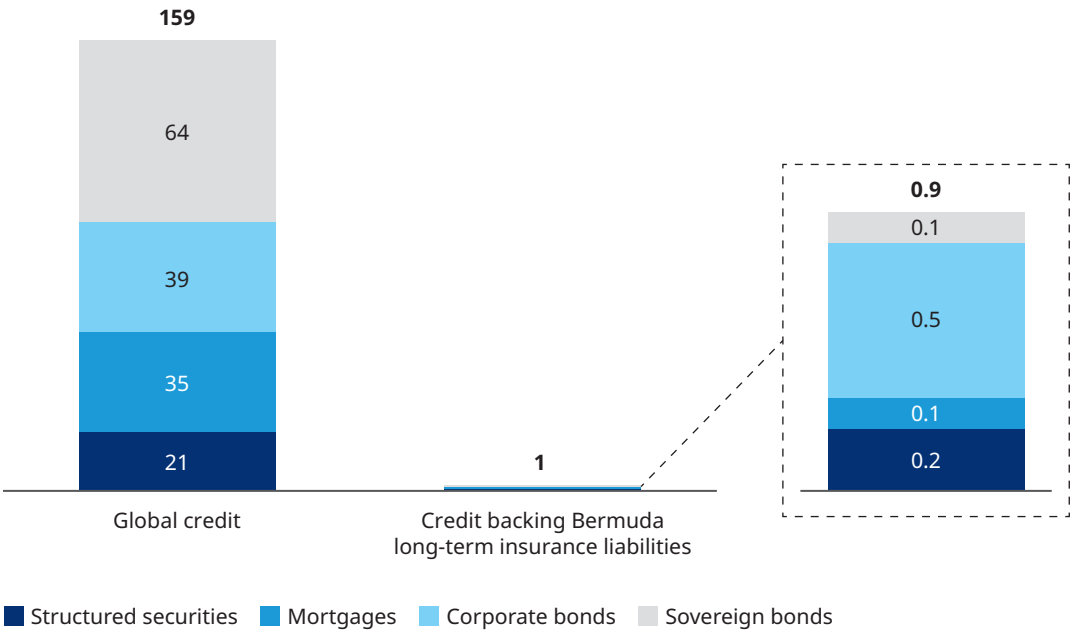
Source: IAIS Global Insurance Market Report (GIMAR) December 2024, Swiss Re Sigma Explorer, Swiss Re sigma 5/2024: Global economic and insurance market outlook 2025-26, World Bank Open Data: GDP growth (annual %)

Significance of the Bermuda long-term insurance sector

While insurers have a material presence in the private credit market, the Bermuda long-term sector represents a very small share of the global credit market as a whole, as shown in Exhibit 56.

Exhibit 56: Global credit market versus Bermuda share

$ trillion, 2023



Source: AFME/SIFMA *Securitisation Data Report*, Data provided by BILTIR, LSEG *The size of global markets 2024 in charts* 2024, OECD *Global Debt Market Report* 2024

Furthermore, across all asset classes, Bermuda constitutes a minor portion of the total global market as shown in Exhibit 57.

Exhibit 57: Share of Bermuda long-term insurer holdings in global market by asset class

$ billion, 2023

	Global market by asset class		Underlying market for securitised asset classes	
	Global market size[1]	Bermuda share of global market	Underlying credit market[2]	Bermuda share of underlying credit market
Collateralised loan obligations	$1,100	5.8% ($64)	$3,600	1.8% ($64)
Asset-backed securities	$3,300	1.8% ($59)	$4,600	1.3% ($59)
Mortgage loans	$35,000	0.2% ($66)		
Mortgage-backed securities[3]	$17,000	0.6% ($99)	$35,000	0.3% ($99)
Private equity	$5,800	0.6% ($33)		
Listed equities and preferred stock	$115,000	0.0% ($24)		
Corporate bonds	$39,000	1.3% ($520)		
Sovereign bonds	$64,000	0.1% ($94)		

1. Underlying credit market for CLOs includes broadly syndicated and middle market; ABS includes auto loans, leases credit cards, student loans, consumer credit cards, and commercial leases; 2. Structured securities and mortgage loan global market size in the sum of European and United States market sizes only (CLO, ABS, RMBS, CMBS, RML, CML); 3. Includes agency mortgaged backed securities.

Source: AFME/SIFMA *Securitisation Data Report* 2024, Bloomberg, Data provided by BILTIR, LSEG *The size of global markets 2024 in charts* 2024, OECD *Global Debt Market Report* 2024, Preqin *Global Private Equity Report* 2024

In addition to considering the scale of insurers in the private credit market, it is also important to understand their role in the provision of credit: as a source of funding, which is only one component in the private lending value chain. In particular, critical roles in the value chain such as sourcing, underwriting, warehousing, structural, and administration for private assets are fulfilled by other parties, including banks, private asset managers, and servicing companies. Although in some instances portions of this value chain are fulfilled by related parties (i.e., an affiliated asset manager), these activities do not typically occur within the regulated insurance entities.

Exhibit 58: Illustrative private lending value chain

Note: Illustrative.

Source: Oliver Wyman analysis

As a result, for insurers to pull back from credit markets, the result would be a decline in the funding available from insurers. This role does not require unique capabilities, and could be fulfilled by other investors such as pension funds, sovereign wealth funds, endowments, family offices, and hedge funds. In particular, if any pullback were material enough to impact the availability of credit, it should also result in a more attractive spread that would encourage other investors to shift their asset allocations and act as substitutes for the funding capacity provider by insurers. Exhibit 62 below shows the volume of assets held by relevant investors in comparison to the insurance sector.

Exhibit 59: Asset and liability characteristics of asset-owners

$ trillion, 2023

		Characteristics	
Asset owner	**Total assets**	**Nature of liabilities**	**Investment strategy**
Insurers	41 1 **42** Bermuda long-term insurers	Insurers have liabilities from policyholder claims, which can vary depending on product. For long-term insurers, liabilities are generally long-term and predictable	Variations by jurisdiction, but typically seek to match the profile of their assets and liabilities
Pension funds[1]	**26**	Provide retirement benefits to participants, meaning their liabilities are long-term, predictable, and have limited liquidity	Mix of liquid and illiquid assets, such as equities, bonds, real estate, and private equity, to achieve returns that match or exceed their liabilities over time
Sovereign wealth funds	**12**	Sovereign wealth funds have specific mandates or address future needs, such as supporting economic diversification, infrastructure development, or currency stabilisation	Flexibility to invest in a diverse range of assets, with a focus on long-term growth and sustainability
Endowments and foundations	**2**	Endowments aim to provide perpetual funding, with annual distributions. They must balance current spending needs with the preservation of capital for future generations	Typically focus on achieving a strong, stable return that allows for annual spending while maintaining or growing the endowment's real value over time

1. Defined benefit only.

Source: Data provided by BILTIR, IAIS *Global Insurance Market Report (GIMAR)* December 2024, WTW Thinking Ahead Institute *Global pension assets study* 2024, Oliver Wyman research and analysis

In summary, insurers have historically provided a stable source of funding to the real economy, serving as a balance to more pro-cyclical parts of the financial system. However, if an event caused the Bermuda long-term insurance sector to pull back from funding the private credit market, while it could impact the availability of credit to certain segments of the economy, the role insurers play — as a provider of funding — is unlikely to disrupt the broader financial system.

SECTION 6

RECOMMENDATIONS

It is important for a well-functioning and resilient financial system to strike a balance between i) ensuring that potential transmission channels for systemic risk continue to be explored, analysed and tested so that any such risks can ultimately be mitigated but also that ii) any such actions are grounded in the nature and magnitude of the risks presented, and do not unnecessarily impede the ability of the insurance sector to support policyholders and address global protection gaps. It is our hope that this report contributes positively to the dialogue around the structural shifts in the life sectors in this respect.

In preparing this report, we have identified several recommendations to enhance the ability of regulatory and other stakeholders to analyse and evaluate the potential risks:

- **More public transparency on AIR structures, transactions, counterparties and volumes** — The insights and analysis contained in our report have been informed strongly by non-public information provided by BILTIR members and supplemented with broader insights from our project work. Regulators have much greater access, and we understand the sensitivity of certain information. However, we also believe that more public transparency (across all jurisdictions) with respect to reinsurance structures, transactions, counterparties, and volumes as part of regular reporting would improve levels of understanding, in particular, in relation to potential concentrations of risk in the system. *This is supported by the BMA's Proposed Enhancements to Public Disclosure Regime: Public Disclosure of Assets and Liabilities for Commercial Long-term Insurers.*

- **Ongoing regulatory oversight and safeguards rather than restriction** — As we have established, a well-functioning reinsurance market is critical to the broader functioning of the global insurance market and to support efforts to close the $70 trillion[34] protection gap. These benefits should not be overlooked when assessing the associated risks, and the policy and regulatory response should be proportionate. As a result, we are strong advocates for regulatory oversight (e.g., enhanced monitoring) and safeguards (e.g., recapture planning, system-wide stress testing) where there are concerns rather than explicit (or de-facto) restriction of AIR as has been observed in some jurisdictions.
- **Risk-based understanding and monitoring of asset and liability portfolios** — As we have explored in this report, long-dated and illiquid fixed income assets can be well-suited to backing long-term insurance liabilities. This will, of course, not always be the case for all assets and all insurers, and it is critical to monitor potential risks both at a firm and system-wide level. However, we urge market participants to interrogate this in a risk-based manner, carefully assessing the specific asset and liability profile rather than making broad-brush assertions. In this context, we are wary of regulatory intervention based on broad definitions of "alternative assets".

In addition, many of the themes raised in this report in exploring the potential for the Bermuda long-term insurance sector to contribute systemic risk also highlight and raise topics that are important from the perspective of prudent risk management. In particular, our analysis highlighted the importance of several risk management processes that occur at the firm-level:

- **Well-defined counterparty risk framework limits informed by recapture impacts** — Sound counterparty risk management is fundamental to participation in AIR markets. While market practice varies across jurisdictions and firms, we believe good practice counterparty risk management should include firm-defined counterparty limits (or incorporation of counterparty risk into existing risk metrics) informed by quantitative analysis of the impact of recapture on cedent balance sheets. In other words, firms should define their "willingness to lose" following default and subsequent recapture under stressed scenarios of their single largest counterparty (or multiple counterparties if there is reason to suspect correlated default) exposure. For firms with material exposures or where AIR is core to the business model, we would expect strong board-level engagement as part of this assessment and limit-setting process.
- **Enhanced counterparty default or recapture planning** — Firms should be prepared operationally to understand how they could respond and the actions available in the event of distress at, or failure of, a reinsurance counterparty. Default specifics will always vary, but we believe firms with material exposure should create a "recapture plan" which explores and outlines the process by which AIR arrangements could be recaptured or resolved (e.g., considering potential legal constraints, contract novation). In our view, this contingency planning applies to both affiliated arrangements (where the focus might be exploring fungibility constraints and decision making on whether and how to support an affiliated counterparty in a time of stress) and non-affiliated arrangements (where the focus might be on the recapture process itself).

34 According to Mercer and World Economic Forum report *We'll Live to 100 — How Can We Afford It?*

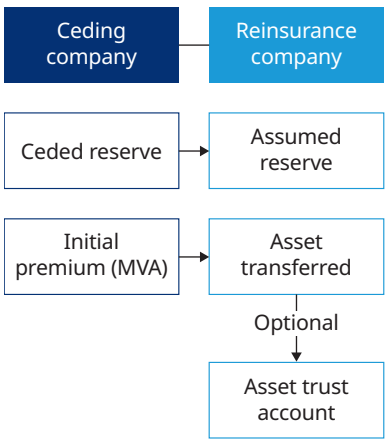
SECTION 7

APPENDIX

INTRODUCTION TO ASSET-INTENSIVE REINSURANCE

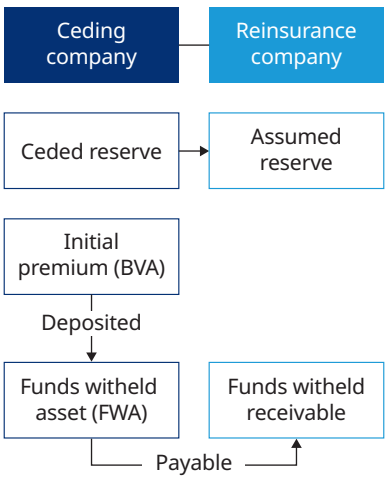
Exhibit 60: Types of AIR structures (additional detail from Section 2.3)

Coinsurance



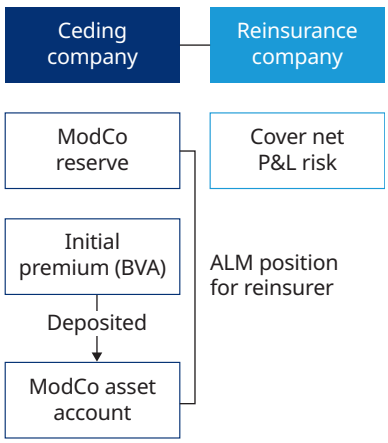
- **Initial transaction:** Starting reserve and initial consideration are transferred to the reinsurer
- **Cash flow:** Reinsurer pays net liability cash flows
- **Investment income:** Reinsurer earns net investment income from own asset portfolio
- **Risk mitigation:** Cedent may request an asset trust account

Funds withheld



- **Initial transaction:** Starting reserve and initial premium are given to the reinsurer, but premium is deposited back to FWA
- **Cash flow:** Reinsurer uses the FWA to pay net liability cash flows
- **Investment income:** Reinsurer earns net investment income from funds withheld assets
- **Risk mitigation:** Cedent retains the funds withheld account

Modified coinsurance



- **Initial transaction:** Only cash settlements occur
- **Cash flow:** Net statutory income and ModCo asset changes is settled quarterly
- **Investment income:** Changes in the ModCo asset account reflect settlements
- **Risk mitigation:** Cedent retains the ModCo asset account

Source: Oliver Wyman analysis

Exhibit 61: Structural protections in AIR

	Coinsurance	Funds withheld	Modified coinsurance
Right to recapture Under certain conditions, cedents can terminate the reinsurance agreement	✓	✓	✓
Collateralisation Reinsurers must hold assets as collateral, based on the value of liabilities, reviewed periodically	Varies	✓	✓
Investment guidelines Rules for reinsurers on asset holdings to limit risk and impact of recapture on cedents	Varies	✓	✓
Asset ownership In specific structures, assets stay with the cedent, keeping them in the same jurisdiction		✓	✓
Early warning triggers Alerts for cedents when reinsurers reach certain risk thresholds	✓	✓	✓
Investment reporting Ongoing updates on investments and collateral to ensure compliance and transparency	Varies	✓	✓
Audit rights Cedents can audit reinsurer activities to ensure adherence to agreement terms	✓	✓	✓
Policyholder servicing Cedents handle payments to original policyholders, reducing reliance on reinsurers	✓	✓	✓

Source: Oliver Wyman analysis

INTRODUCTION TO INSURANCE REGULATORY BALANCE SHEETS

Regulatory balance sheets are financial statements that insurance companies prepare to meet regulatory requirements, focusing specifically on solvency and financial stability. These balance sheets are typically prepared using different reporting standards and requirements than those used for tax reporting purposes.

Regulatory balance sheets vary significantly across jurisdictions but are grounded in common themes. Exhibit 65 summarises the key aspects of a number of important regulatory balance sheets.

Exhibit 62: Summary of regulatory balance sheets across jurisdictions

			Technical provisions/reserves		
	Reporting standard	**Valuation basis**	**Cash flow assumptions**	**Discounting**	**Other**
Bermuda	Statutory Financial Statements (SFS) and EBS	Market value for EBS and SFS dependent on the underlying framework	Best estimate	Standard approach: Published discount rates; Scenario-based approach: Based on actual asset portfolio, subject to asset approvals, certain match criteria and running prescribed interest rate scenarios	Risk margin
United States	Statutory Accounting Principles (SAP)	Amortised cost/ Book value	Principle-based reserves: Partially discretionary Non-principle-based reserves: Prescribed	Principle-based reserves: Discretionary and locked in Non-principle-based reserves: Prescribed and locked in	Cash flow testing
European Union	Solvency II	Fair value	Best estimate	Published discount rates + matching/volatility adjustment	Risk margin
United Kingdom	Solvency UK	Fair value or market consistent	Discretionary	Published risk-free interest rates + matching/ volatility adjustment	Risk margin
Japan	J-GAAP, SMR (ESR from 3/31/2026)	Book value	Best estimate	Prescribed and locked in	Cash flow testing
Cayman Islands	Flexible[1]	Measures are often customised			

Note: Prescribed is defined as the component is fully set by the regulatory body. Discretionary is defined as the component incorporates some degree of company-specific assumptions setting.

1. Any method approved by the company's independent auditor and the Supervisor of Insurance.

Source: IAIS *Issues paper on structural shifts in the life insurance sector* March 2025, Oliver Wyman analysis

Exhibit 63: Summary of regulatory balance sheets across jurisdictions

	Capital			
	Capital framework	**Allocation method**	**Calibration**	**Discretionary**
Bermuda	Bermuda Solvency Capital Requirements (BSCR)	Some factor-based; Some model-based with prescribed shocks OR internal model	Minimum Capital Requirement; Prescribed Capital Requirement; TVaR 99% over one-year time horizon	Pillar II: Capital add on based on supervisory discretion
United States	Risk-Based Capital (RBC)	Mostly factor-based; Some model-based with prescribed interest rate risk scenarios	Varies by risk; assessed over a longer timeframe	Additional requirements or target ratios based on supervisory discretion
European Union	Solvency Capital Requirements (SCR)	Standard formula or internal model	99.5% VaR over one-year time horizon	Pillar II: Capital add on based on supervisory discretion
United Kingdom	Solvency Capital Requirements (SCR)	Standard formula or internal model	99.5% VaR over one-year time horizon	Internal model safeguards
Japan	Before 3/31/2026: Solvency Margin Ratio (SMR)	Factor-based	Varies by risk; Capital calibrated to 99.5% VaR over one-year time horizon	N/A
	After 3/31/2026: Economic Value-based Solvency Ratio (ESR)	Economic valued-based method	Varies by risk	Insurers may adopt undertaking-specific parameters (USP)
Cayman Islands	Non-risk-based capital charges/internal model			

Note: Prescribed is defined as the component is fully set by the regulatory body. Discretionary is defined as the component incorporates some degree of company-specific assumptions setting.

Source: IAIS *Issues paper on structural shifts in the life insurance sector* March 2025, Oliver Wyman analysis

SUPPORTING EXHIBITS FOR SCENARIO 1

Exhibit 64: Representative terms for collateral and recapture, by jurisdiction

			Representative terms (examples)		
Terms		**Description**	**United States cedents**	**United Kingdom cedents**	**Japan cedents**
Collateral	**Collateralisation basis**	Approach to value underlying liabilities for purpose of collateralisation under Funds Withheld or Modified Coinsurance structure	Maximum of: • US statutory reserves + any positive IMR; • Bermuda EBS BEL; • Fixed dollar amount	Best estimate (with discounting assumptions negotiated deal-by-deal basis, but broadly reflective of approaches under Solvency UK or Bermuda EBS reserving)	Economic value of liabilities
	Overcollateralisation (OC) level	Additional collateral provided by reinsurer in excess of the amount required by the collateralisation basis	2-4%	0-10%	0%
	Rebalancing frequency	Frequency with which collateral account is rebalance to reflect changes in liability valuation	Monthly-quarterly	Monthly-quarterly	Monthly-quarterly
Recapture	**Recapture triggers**	Circumstances that would allow the cedent to recapture liabilities from the reinsurer			
	- BSCR	If reinsurer BSCR falls below a certain level	120-130%	110-130%	100-120%
	- Credit rating	If reinsurer credit rating falls below a certain level	Below A-	Below A	Below A
	- Breach of IGs	If reinsurer does not meet investment guidelines	Breach at reporting	Breach at reporting	Breach at reporting
	- Breach of terms	Breach of other terms, e.g., loss of license, insolvency, non-payment of claims, breach of covenant, force majeure	All listed are typical	All listed are typical	All listed are typical
	Recapture amount	Amount paid by reinsurer to cedent in event of recapture (inclusive of assets held in trust)	• Examples: – Stat reserve + IMR if positive + unamortised ceding commission – Withheld account value • Penalty: Max of BEL — FWH; 1% reserves	• Example: BEL • Penalty: Max of 2.5% BEL; OC account	• 100% economic value of liability

Source: Oliver Wyman analysis

Exhibit 65: Representative investment limits (part of broader investment guidelines)

		Asset class/categories	Limit
United States-based cedent		Cash and cash equivalents	**100%**
		US Treasuries	**100%**
		State and municipal bonds	**25%**
		Corporate bonds	**100%**
		Private placements	**40%**
		Infrastructure lending	**40%**
		Emerging market debt (IG)	**10%**
		Structured securities	**30%**
		Mortgage loans	**25%**
		Private equity	**7%**
United Kingdom-based cedent[1]	Rating	Sub-IG assets	**5%**
		Portfolio average rating	**A-**
		Assets rated BBB+ or lower	**30%**
	Sector	Financials	**30%**
		Any other sector	**20%**
	Asset class	Unlisted bonds and loans	**40%**
		Commercial mortgages	**20%**
		Private placements	**20%**
		Infrastructure lending	**20%**
Japan-based cedent		Corporate bonds	**75%**
		Private placements	**20%**
		Non-fixed income assets	**10%**
		Structured securities	**15%**
		Commercial mortgages	**25%**
		Portfolio average rating	**A**
		Assets rated BBB+ or lower	**10%**

Note: Limits are all specified as a proportion of total portfolio market value.

1. All assets not part of the PE allocation must meet UK MA eligibility criteria, i.e., they need to be fixed in nature, amount, currency and timing (other than a dependence on inflation where the asset is replicating liabilities that depend on inflation); and have no material pre-payment risk (cash flow changes must be triggered only by events that are outside of the issuer's or any third party's control).

Source: Oliver Wyman analysis

Exhibit 66: Key drivers of asset rebalancing across jurisdictions

	Driver			Approximate amount of rebalancing required	Commentary
	Internal risk appetite	Reserving treatment	Capital treatment		
United States	✓			Minimal	• **Risk appetite** likely to be the primary driver of any rebalancing upon recapture; mitigated through specification of investment guidelines as part of collateral and recapture terms • **Reserving treatment:** Assets typically recaptured at book value, providing significant disincentive to rebalance portfolio upon recapture (which would result in realisation of market value losses in a stress event)
United Kingdom	✓	✓	✓	Meaningful	• **Reserving treatment** likely to be the single biggest driver of asset rebalancing upon recapture; certain assets recaptured may be ineligible for inclusion in the matching adjustment portfolio, and require liability discounting with no recognition of spread over risk-free – Cedents affected by this will rebalance portfolios accordingly by selling any MA ineligible assets (likely structured products with non-zero prepayment risk) – Though, under Solvency UK: i) 10% of the MA portfolio can be held in assets with 'Highly Predictable' cash flows; and ii) the PRA plans to implement a policy that would allow firms to include a limited quantity of self-assessed MA eligible assets in an MA portfolio without requiring PRA approval in advance • **Penal capital treatment:** Recaptured assets may also face more severe capital treatment (e.g. due to lack of internal ratings), encouraging liquidation and/or rebalancing
European Union	✓		✓	Meaningful	• **Penal capital treatment:** Recaptured assets (in particular, securitisations and equities) face generally very penal capital treatment (e.g., 100% charge for some securitisations under standard formula) encouraging liquidation and rebalancing
Japan	✓	✓	✓	Meaningful	• **Reserving treatment:** JGAAP reserve is generally higher than the economic value of liabilities, which discourage recapture. Meaningful rebalancing may be expected.

Source: BMA *Liquidity Risk in the Bermuda Long-term Insurance Market* August 2024

SECTION 8

GLOSSARY OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AIR	Asset-intensive Reinsurance
ALM	Asset-liability Management
BEL	Best Estimate Liability
BIS	Bank for International Settlements
BMA	Bermuda Monetary Authority
BSCR	Bermuda Solvency Capital Requirement
CISSA	Commercial Insurer's Solvency Self-assessment
CSR	Capital and Solvency Return
EBS	Economic Balance Sheet
ECR	Enhanced Capital Requirement
EIOPA	European Insurance and Occupational Pensions Authority
ERM	Enterprise Risk Management
ESR	Economic Value-based Solvency Ratio
ESRB	European Systemic Risk Board
EU	European Union
FPC	Financial Policy Committee
FSB	Financial Stability Board
FSOC	Financial Stability Oversight Council
GBIG	Global Bankers Insurance Group
GFC	Global Financial Crisis
G-SII	Global Systemically Important Insurers

Acronym	Definition
IAIG	Internationally Active Insurance Groups
IG	Investment Grade
IAIS	International Association of Insurance Supervisors
JFSA	Japan Financial Services Agency
LCR	Liquidity Coverage Ratio
LIST	Life Insurance Stress Test
MA	Matching Adjustment
NAIC	National Association of Insurance Commissioners
OECD	Organisation for Economic Co-operation and Development
ORSA	Own Risk and Solvency Assessment
PPP	Prudent Person Principle
PRA	Prudential Regulation Authority
RBC	Risk-based Capital
RJ	Reciprocal Jurisdiction
SAP	Statutory Accounting Principles
SCR	Solvency Capital Requirement
SFS	Statutory Financial Statements
SIFI	Systemically Important Financial Institutions
SMR	Solvency Margin Ratio
TCL	Target Capital Level
TVaR	Tail Value at Risk
UK	United Kingdom
US	United States
VaR	Value at Risk

Qualifications, assumptions, and limiting conditions

Oliver Wyman was commissioned by the Bermuda International Long-Term Insurers and Reinsurers organization (BILTIR) to independently draft a report that assesses the potential for systemic risk arising from the Bermuda long-term insurance sector.

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