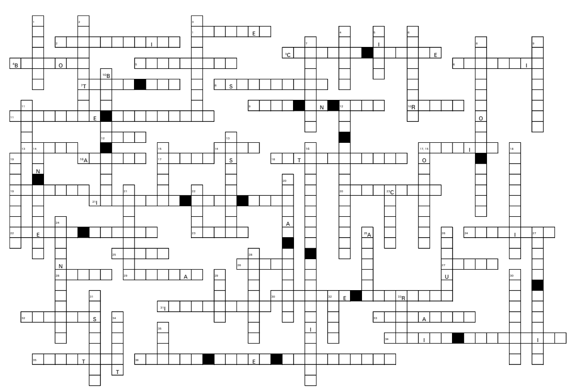
Swiss Re Institute

Economic Insights

Annual compendium 2023



See puzzle & clues inside!

Foreword

That the world has become more volatile over the early 2020s is, at best, an understatement. After the pandemic and then (ongoing) war in Ukraine, this year has brought another crisis with, beyond the human tragedy of those directly involved, global ramifications: the outbreak of war in the Middle East. All along, tensions between the US and China remain strained, and the still running cost-of-living crisis has added to and sustained the high-risk premium of geopolitical circumstances.

This compendium contains all the 2023 editions of our Economic Insights (EI) series, which touch on these topics and more. The main economic story of the year has been the stubbornly high levels of inflation, which have delayed the start of the widely anticipated interest rate cutting cycle in advanced markets. Interest rates in the US and Europe have likely peaked, but first cuts remain pending. In Asia, however, a strong US dollar leaves upside risk of rate hikes.

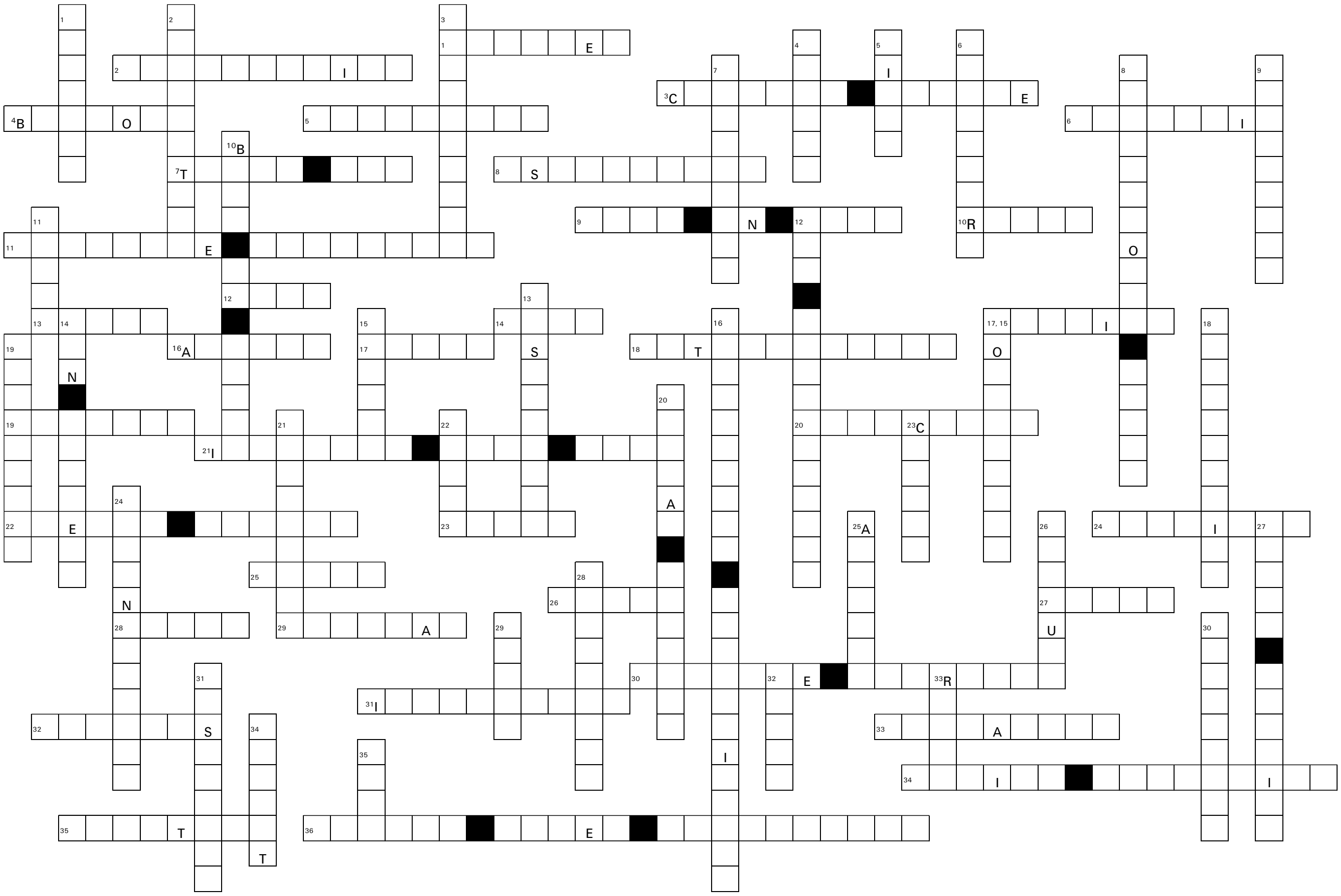
Stronger-than-expected economic growth, notably in the US, further justified central banks' decisions to not cut interest rates. We expect global growth to slow next year. The US economy is still growing, but we maintain our forecast of 1.1% real GDP growth in 2024 (down from an estimated 2.3% in 2023). In Europe, signs of stagnation, if not recession, are already showing in some economies, and China is grappling with domestic structural growth challenges.

The higher-for-longer interest rate environment has supported insurance sector profitability by delivering healthier investment returns. And in life insurance, high rates have supported demand for savings-type products. In non-life, inflation has translated in higher claims costs for Property and Casualty insurers, with property and motor business most exposed. As a result, and with inflation pressures still present, we expect hard market conditions to continue into next year.

I hope you enjoy reading this year's EI compendium and take some time to have a go at our annual end-of-year crossword puzzle. We'll publish the answers alongside the first EI of next year.

Happy holidays!

Jerome-Jean Haegeli
Swiss Re Group Chief Economist



Across

1 Direct premiums earned, amount of
2 This was the style in the 1970s
3 Warming temperatures (6, 6)
4 This currency trades free of controls
5 Venus rotates this way
6 Making properties more resilient
7 Growth or inflation? (5, 3)
8 Non-equivalent
9 Production for now (4, 3, 4)
10 The business of insurers
11 Swiss Re Institute communicates these (8, 9)
12 An open committee
13 Digital reportage
14 This cat does not bounce
15 Digital snacks
16 Accounting for inflation
17 Lending rate for banks
18 Transferring risks in reinsurance
19 A series of waves
20 When operations run optimally
21 In many advanced markets, these remain pending (8, 4, 4)
22 Likely gone by 2025 (6, 6)
23 These can be found at Lloyds of London
24 Of great interest for shareholders
25 He took a tumble
26 What shook Japan 100 years ago?
27 Displaying satisfaction
28 Cash movements
29 Neither restrictive nor accommodative
30 The USD is this (6, 8)
31 Bankruptcy
32 High interest rates support demand for these life products
33 Banks in Asia avoided this in 2023
34 With disinflation, this may come to the fore, again (6, 9)
35 Things are shaky
36 These can yield returns (6, 5, 10)

Down

1 Seaside towns/cities
2 This is likely in Europe in 2024
3 Too much of a good thing
4 A spice that goes through legs
5 Special lines
6 Standard point of reference
7 According to EI edition 22/2023, withdrawal of this can cap equity returns
8 Disaster debt instruments (11, 5)
9 As bad as losses could be
10 This institution has eased yield curve control (4, 2, 5)
11 GBP/USD
12 Going right? (3, 11)
13 The US economy demonstrated a lot of this in 2023, arguably unexpectedly so
14 Trade credit insurance protects sellers against this (3, 7)
15 Inflated by economic inflation, in P&C insurance
16 Smart but not real (10, 12)
17 In the UK, this happened for the first time in 70 years
18 Simple insurance products can take this form
19 The IMF and World Bank met here
20 In Germany, they asked for 15% more (6, 7)
21 The US avoided this in 2023
22 Areas where asset exposures are most concentrated
23 It's also COVID
24 This has been long awaited
25 A sharp tongue
26 This country cut interest rates early on
27 It's not only linen that can be cleaned (5, 8)
28 There were reportedly many of these in advanced market economies in 2023
29 It can invert
30 Ratings agencies do this
31 Going home
32 The higher it is, the greater insurance losses can be
33 Japan's largest union
34 Inflation has been far from this
35 Renewable

Swiss Re Institute

Issue 1/2023

Economic insights

The old normal: interest rate rises signal relief for insurers' returns, but likely more volatility

Key takeaways

- The market environment for fixed income is now far more benign than even three years ago.
- Investment income is a key driver of insurers' earnings. In Europe, investment income contributes between 30-70% of earnings.
- Monetary policy normalisation might also mean a return to a more "normal", and hence higher, bond market volatility regime.
- For insurers, we expect this could make balance sheet management more important and challenging.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

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In a nutshell

Monetary policy normalisation is in principle good news for insurers, as investment income is a key driver of insurers' earnings. Higher interest rates and less bond market intervention by central banks also means a return to a more "normal" volatility regime. Consequently, we see balance sheet management becoming more important for the insurance industry.

After more than a decade of zero and negative interest rate policies, advanced economies are normalising monetary policy and transition back to a "no-quantitative easing (QE)"-environment. Last week the US, European and UK central banks all raised their key policy interest rates again by at least 25 basis points (bps), reaching rates of 4% or above in the US and UK. This return to pre-global financial crisis interest rates is very welcome for the insurance industry, as investment-related income is a substantial driver of its earnings. However, although we expect higher yields to support insurance industry profitability, an environment of less central bank intervention to also mean higher bond market volatility in the future, which could make balance sheet management more challenging.

The fixed income capital market backdrop is fundamentally more benign than even only three years ago, as Figure 1 shows. Risk free bonds are no longer return free and yields on corporate bonds have risen in turn, to offer more return for the risk. While insurers' asset-liability management (ALM) frameworks can help to isolate interest rate risk across their balance sheets, investment income is nonetheless a key contributer to insurance companies' earnings. For example, investment income typically contributes about 30-70% of the earnings of European insurers.[1] Market risks are also a substantial component of insurers' solvency capital requirement (SCR). The expected return on invested capital is now above 20% for fixed income market risk, compared to medium or even negative single-digit returns in 2016.[2]

A normalisation of the yield environment, however, might also bring higher interest rate volatility in the future. Indeed, as is the case in the US, the volatility regimes before and since the US Federal Reserve's (Fed) launched its bond-buying QE programme differ significantly. The Fed's intervention materially lowered volatility in the US sovereign debt market, as seen in the ICE BofAML MOVE Index, which measures the market-implied volatility of the Treasury yield curve (see Figure 2).[3] In contrast, the pre-QE period shows more extreme swings in yields. A monetary policy transition which means less

[1] *European Insurance: asset allocation will be key in 2023*, Barclays, 24 January 2023.
[2] Ibid.
[3] We take data from the MOVE and VIX indices since 1995. The data from "pre-QE1" includes observations between January 1995 and 25 November 2008 when QE1 was announced. Post-QE1 includes all observations since. The number of observations is hence roughly symmetric.

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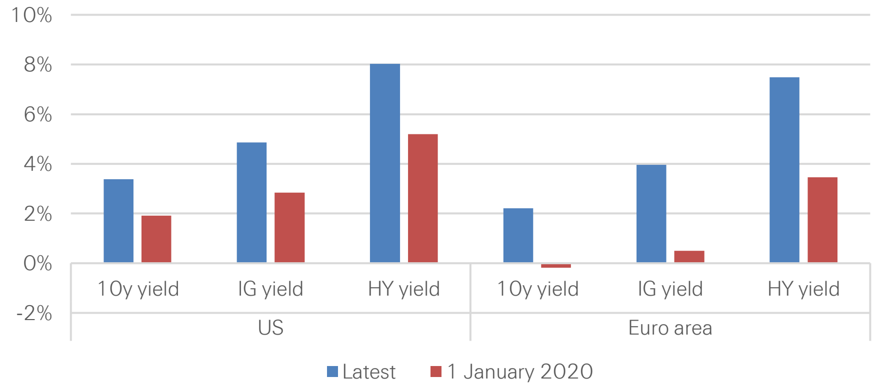
invasive central banks in capital markets might therefore also mean higher bond market volatility in the future.

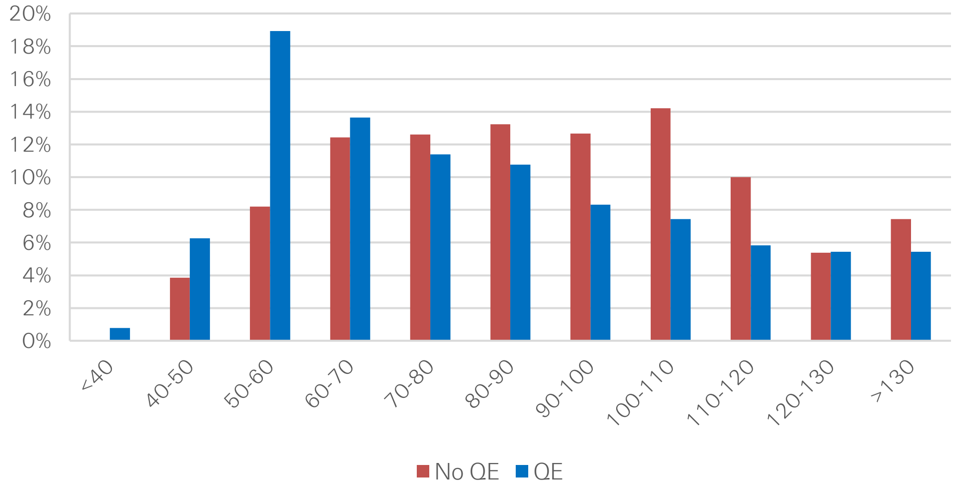
A higher interest rate environment is in principle good news for the insurance industry. At the same time, higher yields and less central bank intervention in capital markets also suggest a return to an "old normal" regime that has potentially higher bond market volatility, which makes in turn insurers' balance sheet management more important.

Figure 1: US and euro area fixed income nominal yields



Note: Latest refers to 2 February 2023.
Source: Bloomberg, Swiss Re Institute

Figure 2: MOVE (US yield curve) index distributions, pre- and post-QE



Source: ICE BofAML, Swiss Re Institute

Economic insights
China's reopening spillovers may be more ripples than waves

Key takeaways

- After lifting COVID-19 restrictions, China is set for a GDP rebound led by domestic services consumption, with small growth spillovers to the US and euro area.
- The impact of the reopening on global commodity prices will likely be smaller than from China's previous recoveries as we expect investment to play less of a role.
- Supply chains have already eased considerably, but further reopening may help to reduce core inflation pressure in the West.
- US and European aviation, marine and credit insurance lines may benefit from the transport recovery.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Charlotte Mueller
Chief Economist Europe

Xin Dai
Chief Economist China

Mahir Rasheed
Senior Economist

Diana Van Der Watt
Economist

In a nutshell

We see China's post-COVID reopening boosting its domestic economy with likely small growth spillovers outside Asia. Spillovers to Europe will likely be larger than to the US, albeit with wide country differences in Europe. A rebound in trade and transport with China may benefit US and European insurers' aviation, marine and credit results. Higher Chinese consumption of commodities, services, and goods could at the margin add upside inflation risk to insurance claims, but we still expect global disinflation this year.

In the two months since China began its rapid, earlier-than-expected economic reopening in December 2022, and after a shorter-than-expected major wave of COVID-19 infections, leading indicators suggest a domestic economic revival has begun.[1] We anticipate a recovery led by domestic services consumption, such as hospitality and entertainment, like other countries' reopenings. This would contrast with the investment-led recoveries from prior Chinese downturns, making it harder to use historic comparisons to assess the likely impacts on economies. We expect a smaller growth rebound in China this year than in past cycles, such as the 10.6% GDP growth in 2010 after the Global Financial Crisis and the 8.1% growth in 2021 after the first pandemic crisis. We anticipate spillover effects on growth and inflation in other regions through (i) higher Chinese domestic demand for foreign goods and services; (ii) higher Chinese demand for global commodities; and (iii) the stabilisation of China-focused supply chains.

Given the size and composition of China's recovery, growth spillovers beyond Asia are likely to be small, not fundamentally changing our GDP growth and insurance premium growth outlook. A large increase in Chinese domestic services consumption would have a negligible impact on US or euro area GDP, but an increase in trade would improve global growth prospects. For example. Chinese tourists historically accounted for almost 20% of all global spending on international tourism.[2] However, normalisation of outbound Chinese tourism flows is expected to be gradual, muting the growth impact. In the West, Europe is set to benefit more than the US, with tourism directly contributing 12.4% and 7.5% to GDP in Spain and France respectively, versus 3% of US GDP.[3] The US trades almost 10x more goods by value than services with China.[4] Depending on how fast consumer confidence recovers, China's demand for foreign goods and services may lift on rising incomes and record-

[1] China's non-manufacturing PMI in January rebounded to expansionary territory of 54.4 (up by 12.8 points from last month) after staying in contraction for three consecutive months to December, according to National Bureau of Statistics.
[2] China Outbound Tourism Expenditure was USD 254.6bn out of a global total of USD 1494bn in 2019. UNWTO Tourism Data Dashboard.
[3] 2019 data OECD (2023), Tourism GDP (indicator). doi: 10.1787/b472589a-en (27 January 2023).
[4] Office of the U.S. Trade Representative (USTR).

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high excess savings.[5] Negative wealth effects from China's property market downturn could also limit the strength of this recovery. For insurers in Europe and the US, aviation, marine and credit insurance could benefit from greater transportation with China, though these are relatively small lines of business.

Higher demand in China will not reverse our baseline outlook of global disinflation this year, but it may slow the pace.[6] We see commodities prices as a key channel, since China is the largest global consumer (see Figure 1). Higher energy demand may push up prices for commodities like oil, even if the recovery is less investment-driven and commodity-intensive than previous cycles. For example, the Oxford Economics macro model estimates a boost of about 20bps to euro area and US CPI inflation this year on higher oil prices and Chinese private consumption, holding all else constant. Price pressures may also rise in the US and Europe's still capacity-constrained travel and entertainment sectors as Chinese tourist flows return to pre-pandemic levels. For the US and European insurance industries, this implies that claims costs may be higher at the margin than expected this year.

Supply chain easing may lower the inflation spillover from the reopening. Yet gauges of supply-chain pressure have already fallen (see Figure 2), implying only a small impact yet to come. We see a short-term risk that the demand rebound could re-tighten supply chains, especially if recent loosening is more a function of weaker global demand than increased supply and efficiencies. As China's economy returns to normal in the medium term, supply chain disruption should fall, and with it core inflation pressure in the US and Europe.

Figure 1
China's consumption of commodities as a percentage of world consumption, 2019

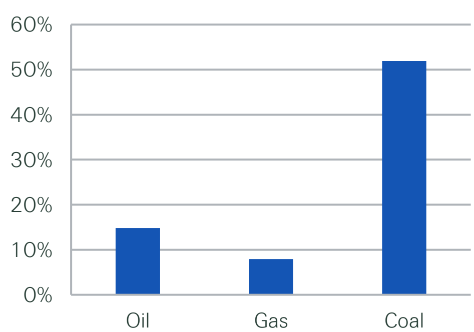
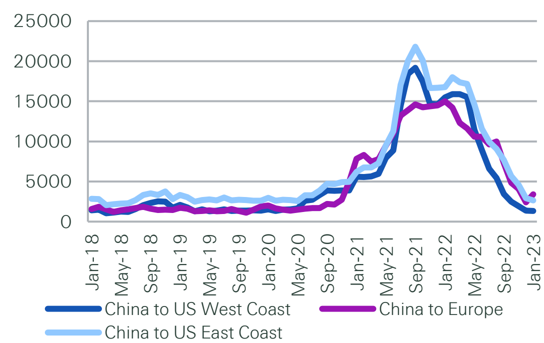


Figure 2
Freightos ocean freight rate index, USD/40-ft box



Source: BP Statistical Review of World Energy, Freightos, Bloomberg, Swiss Re Institute

[5] China's household deposits increased by CNY 8 trillion (~USD1.2 trillion) in 2022 from 2021, a record high. Excess savings are estimated to be CNY 4-8 trillion or 3.5~6.7% of GDP. People's Bank of China.
[6] We see these regions' inflation outlooks influenced principally by other forces including the evolution of the local energy crisis or interest rates, see our next *Economic and Financial Risk Insights* out next week.

Swiss Re Institute

Issue 3/2023

Economic insights
Asset allocation decisions: keeping it real

Key takeaways

- After a significant repricing in bonds, inflation-adjusted yields now look substantially healthier than even 18 months ago.
- This supports long-term investors like insurers who are fixed-income heavy investors that are subject to inflation uncertainty.
- Scenario-based approaches can help to increase the ability of an insurer's asset mix to weather inflation and economic uncertainty.
- For insurers, inflation mitigation needs to take a balance sheet view. A "hard" market as is currently the case as well as underwriting discipline help insurers ride out a period of elevated inflation.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

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In a nutshell

After significant repricing in bonds over the past 18 months, inflation-adjusted fixed income yields now offer healthier expected returns. This is important for long-term investors like insurers as they hold fixed income-heavy asset portfolios that are subject to inflation uncertainty. Insurers should use scenario-based approaches to ensure their asset mix can weather inflation uncertainty, while also ensuring that underwriting discipline remains key.

After a significant repricing of bonds over the past 18 months, inflation-adjusted fixed income yields now offer healthier expected returns. This is important for long-term oriented investors like insurers, as a key objective is to preserve the purchasing power of their capital. Largely due to asset-liability management considerations and regulatory requirements, most insurers primarily invest in fixed income assets, which are subject to inflation uncertainty.[1] US and European insurers currently hold roughly 80% of their assets in fixed income, with the rest allocated to equities, real estate and other risky assets.[2] Higher interest rates typically provide significant relief to insurers earnings, as discussed in a recent *Economic Insights.*[3] However, given the current economic and inflation uncertainty, it is crucial to better understand to what extent inflation can affect the asset mix.

To quantify the inflation impact on insurance asset portfolio returns, we model how a typical insurance asset allocation would have performed over the past 100 years. The simulated portfolio consists of 40% US Treasury bonds, 40% USD investment grade corporate credit and 20% equities as a proxy for higher risk assets.[4] As Figure 1 shows, such a portfolio would have increased in value in nominal terms for almost the entire century. Yet there have been several extended periods when inflation-adjusted returns decoupled significantly versus nominal returns. For example, in prior high-inflation episodes such as 1945 to 1962, or between 1965 and 1984, such an asset portfolio would have remained flat in inflation-adjusted terms for the majority of the time spans.[5]

[1] Bonds' typically fixed nominal coupons can be eroded by unexpected inflation.
[2] *Capital Markets Special Report 2021*, NAIC; and *European Insurance: Asset allocation will be key in 2023*, Barclays.
[3] *The old normal: interest rate rises signal relief for insurers' returns, but likely more volatility*, Swiss Re Institute, 6 February 2023.
[4] Due to data limitations, the 10y US Treasury yield is used as a proxy for the government bond portfolio. We use the same maturity for investment grade corporate bonds by adding credit spreads to the government yields. For equities, we use the S&P 500. We then calculate the total return of all assets and rebalance the portfolio on a monthly basis. We then subtract the monthly US headline inflation rate.
[5] In the six years after World War II, the US experienced several inflation spikes that eroded all portfolio returns for 17 years. From 1965-1984, the average annual inflation rate was roughly 6.4%.

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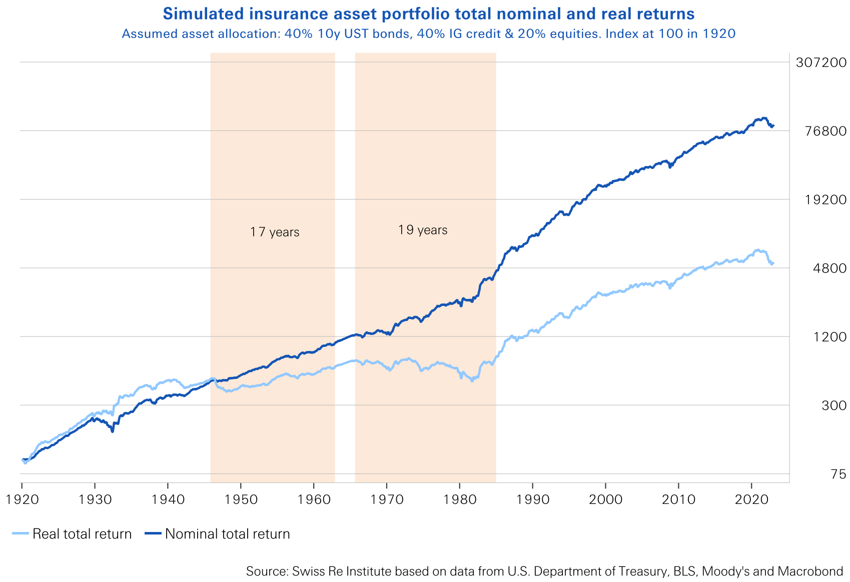
Figure 1: Stylised insurance asset portfolio nominal and real returns since 1920



While we believe the peak in US headline inflation has passed, we do expect inflation pressures to remain elevated. Recent economic data has underlined the relative strength of the US economy, thereby raising fixed income yields amid inflation uncertainty. Even though inflation-adjusted yields look substantially healthier now than even 18 months ago ago, insurers should use scenario-based approaches to ensure their asset allocation mix can weather the current inflation and economic uncertainty.

Needless to say, inflation mitigation for an insurer needs to be looked at across the entire balance sheet. In this regard, a "hard" underwriting market, as the insurance industry is witnessing currently, contributes to strengthening profitability. In addition, insurers have a menu of options available with which to mitigate inflation risks.[6] Besides a robust asset mix, underwriting discipline remains crucial and can help insurers to ride out a period of elevated inflation.

[6] These include re-pricing of insurance risks, index covers, reviewing reserves, etc. We have outlined a list of considerations in *World insurance: inflation risks front and centre*, sigma 4/2022, Swiss Re Institute:

Swiss Re Institute

Issue 4/2023

Economic insights

Inflation may be easing, but claims severity pressures in P&C to remain

Key takeaways

- We estimate that high inflation alone led to an increase in P&C claims of 5-7.5% in 2022, close to rate rises.
- However, the change in price is not enough to counter the upward pressures from other non-economic factors, in our view.
- We believe inflation has peaked but is likely to remain more persistent in 2023.
- Ongoing elevated prices in certain areas are expected to pressure lines of business in casualty and liability.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Roman Lechner
P&C Economic Research Lead

Arnaud Vanolli
Economist

Li Xing
Head Insurance Market Analysis

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

We estimate headline inflation to decline but stay elevated in 2023, to some extent alleviating upward pressure on claims compared to 2022. However, cost inflation in certain prices, such as labour and healthcare, may remain high. These, and non-economic factors like social inflation and more frequent traffic accidents, will likely underpin still-elevated claims, notably in motor and liability. This environment will require P&C insurers to consider continuing underwriting discipline in 2023.

The high-inflation environment has been expensive for P&C insurers. The losses from Hurricane Ian at the end of 2022 contributed to a worsening of the P&C loss ratio, but the main driver was the sharp increases in economic inflation. We estimate that inflation alone increased P&C payouts by 5-7.5% across main five markets in 2022. In 2023, we see inflation adding another 3.5-6.5% to claims costs. And for property, a short-tail business sensitive to inflation impacts and rising construction costs, we estimate a 6-13% increase in 2022, followed by an additional 3.5-10% in 2023 (see Figure 1).[1]

We expect P&C claims growth to ease in 2023 alongside moderation in inflation. Coupled with a repricing in loss-making areas during recent primary market renewals, this may alleviate some of last year's underwriting pressure. Still, insurers will need to maintain discipline in pricing, and terms and conditions, as we forecast inflation to continue to impact many claims-relevant price categories, such as labour and medical costs. Prices in these areas typically grow more slowly than in other segments, and they remain elevated.

Non-economic factors, such as social inflation and increased loss frequency in motor and property lines, reaffirm that further rate hardening is required to narrow the estimate that all else equal, premium income needed to have risen 13% to offset inflation-driven claims gains in 2022. Property premium income fell short of rising claims costs in Australia, Germany and the UK.

We estimate that the average combined ratio in P&C insurance in our profitability analysis of eight major markets rose to 99.3% in 2022 from 96% in 2021, driven mostly by inflation.[2] In France, the loss ratio in P&C in the third quarter of 2022 was 9 percentage points (ppt) higher year-on-year while in the UK, the loss ratio for motor was up 5.1 ppt in the same period. In the US, the motor physical damage loss ratio reached 84% in 9M22, almost 20 ppt above the annual average of the 10 years before the COVID-19 pandemic.

For 2023, we forecast a P&C combined ratio of around 98%, close to the pre-COVID-19 2019 level of 97.7%. Cost increases in construction, which peaked in 2022, should ease but will remain high by historical standards, as building activity is still strong and China's re-opening will increase global demand for

[1] *Global Insurance Market Index 2022*, Marsh.
[2] The eight major markets are Australia, Canada, France, Germany, Italy, Japan, the UK and the US.

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commodities. For example, we forecast the producer price index for construction (PPI-C) in the UK to rise by 8% this year, and in the US by 11.4% (see Figure 2). Cost rises in motor vehicle repairs and replacements should ease in key markets (except France, where price increases in inputs such as energy lag other markets), but will still be above pre-pandemic levels. Regarding other inflation drivers, we expect tight labour markets to increase wages (eg, we forecast that wages in the UK will rise by 6.2% this year, more than our 5.5% projection for core CPI) and backlogs of medical procedures to increase healthcare costs, putting pressure on long-tail lines of business in casualty and motor liability.

Figure 1: Modelled impact of inflation on claims in 2022 and 2023, compared with Marsh average of 2022 commercial insurance price changes

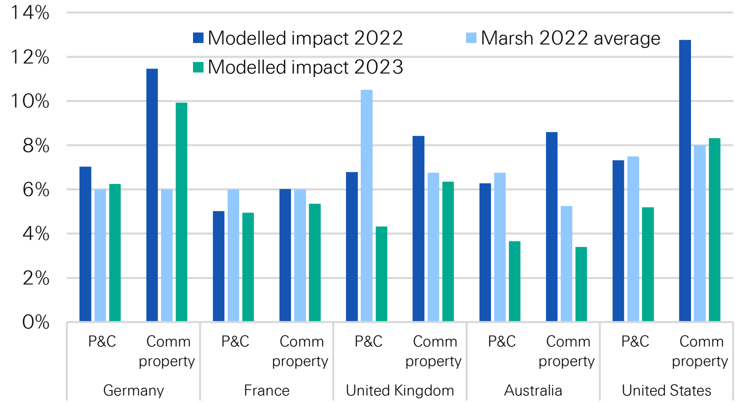
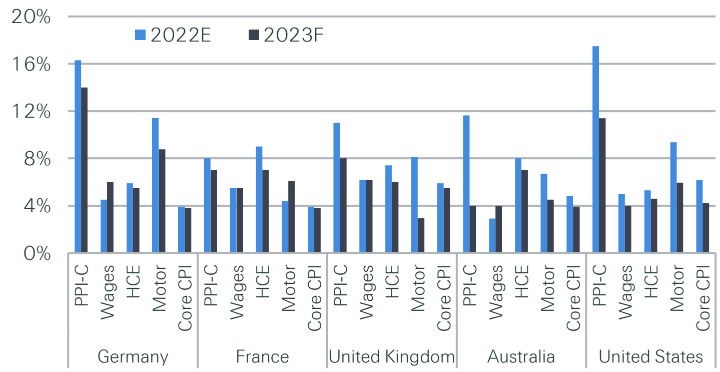


Figure 2: Annual changes in inflation components for 2022-23, actual and forecast



Note: Motor inflation is a combination of prices for used and new cars, spare parts, maintenance and repair. HCE = healthcare expenditures. PPI-C = producer price index for construction.
Source: Marsh GIMI, Swiss Re Institute

Signals for a market correction had been mounting long before the inflation-driven rise in claims 2022. The underlying claims drivers indicate that higher primary insurance rates are likely. Sustained insurance underwriting discipline will be needed in 2023 to help improve underwriting results.

Economic insights

Banking turmoil rattles financial markets, not central bank inflation-fighting resolve

Key takeaways

- Last week, the ECB demonstrated that central banks can use separate tool kits to address inflation and financial market stresses.
- We expect the Fed, BoE and SNB to follow the ECB and continue raising interest rates this week to tackle persistent inflation.
- However, the interest rate increases are likely to be at a more cautious pace than that seen last year.
- The risk of hard(er) landings and a policy mistake have increased. The lagged impact of interest rate rises could prolong market volatility.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Mahir Rasheed
Senior Economist

Diana Van der Watt
Economist

Weijia Yao
Economist

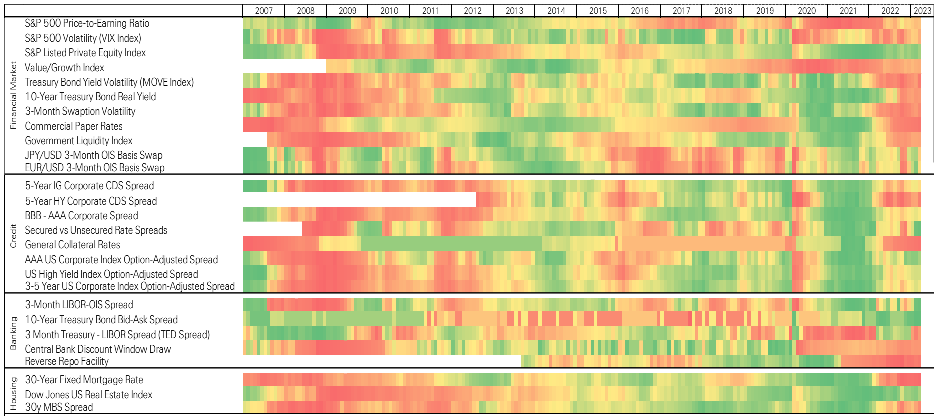
We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Recent turmoil in the US and European banking sectors has shaken market confidence. The risk of a credit crunch and hard landings has increased, which would help to bring inflation down. We look for central banks to stay the course on more restrictive policy, albeit more cautiously.

Turmoil in the US and European banking sectors has drawn narrative parallels with the start of the global financial crisis (GFC) in 2007-08. Our US financial stability monitor (see Figure 1) shows worsening risk parameters, with measures of high-yield credit spreads and swaption volatility already reflecting lower liquidity and mounting stress. However, while there are signs of market tensions, the monitor also suggests we are not currently in a systemic financial crisis. Provided this endures, we expect that key central banks will retain restrictive stances and continue to raise interest rates, although at a slower pace than seen last year.

Figure 1: US financial stability monitor



Note: The data for each variable is transformed into percentile ranks, based on the distribution of its values since 2007. The heatmap presents the distribution of the percentile ranks. Red indicates high perecentile ranks (bad) and green indicates low percentile ranks (good)
Source: Bloomberg, Federal Reserve Economic Data, BofA, Swiss Re Institite

The creation of the Bank Term Funding Program (BTFP) in the US should help prevent failures of other small banks. It allows the Federal Reserve (Fed) to add liquidity to distressed banks as a "lender of last resort", which should help restore confidence in the sector. The Fed has also opened daily dollar swap lines with other central banks as a USD liquidity backstop, which eases the risk of potential currency mismatches for USD borrowers overseas.

However, we would not underestimate the second-round hits to confidence on smaller banks and non-bank financial intermediaries, as these are significant to the overall financial system. For example, small US banks account for roughly 50% of US commercial and industrial lending, 60% of residential real estate lending, 80% of commercial real estate lending, and

45% of consumer lending.[1] A potential cumulation of US small bank defaults is therefore a key concern. Given the higher risk premium and subsequent higher funding costs facing the banking sector, a further tightening in credit conditions may reduce US GDP growth by 0.5 to 1.0 percentage points (ppt) in the coming quarters, and by 0.3% in the euro area. The extent of growth retraction will depend on the severity of contraction in bank lending.[2] Meanwhile, non-bank financial intermediaries (NBFIs) own almost 50% of total global financial assets (as of 2021).[3] Forced selling by NBFIs amid a rush of investor redemptions and margin calls could raise market instability like that seen in last autumn's UK pension funds gilts crisis.[4] However, even as financial market woes will impact insurers' investment portfolios, their asset-liability management operating framework means they are duration matched, and their "long liquidity" business models implies they are not vulnerable to rapid withdrawals like banks.

Uncertainty remains high in this environment, and we see downside risks for economic growth, which could in turn slow inflation. The odds of a hard landing have risen, as a further tightening in bank lending standards and financial conditions would lead to lower demand, and ultimately lead to a potentially higher rate of corporate defaults and more bank risk aversion. Further, the latest central banks' commitments to bring inflation down to target despite financial market instability should keep long-term inflation expectations well-anchored.

Financial markets have repriced for lower terminal rates as the policy trade-off of fighting inflation versus financial stability has become more challenging. In our view, central banks will use separate tool kits to address inflation versus financial instability concerns, and thus continue raising interest rates, albeit at a slower pace. This is because of the current high inflation environment, which contrasts to prior years of financial stress when central banks cut policy rates (eg, annual average CPI in the US stood at just 2.9% in 2007 when the Fed cut interest rates). Today, core CPI alone is at 5.6% in both the US and the euro area. However, if a systemic crisis were to develop, central banks could fall subject to financial dominance and cut their current tightening cycles short, prolonging the fight against inflation. In turn, this could potentially necessitate renewed aggressive tightening in the medium term, threatening greater volatility in financial markets and a sharper economic downturn.

---

[1] *The Macroeconomic Impact of Small Business Stress*, Goldman Sachs, 2023, define small US banks as those with less than USD 250 billion in assets.
[2] *Crunching the numbers: A bank lending shock and recession risks*, Deutsche Bank, 2023 and *The Implications of Banking Stress for the European Outlook*, Goldman Sachs, 2023
[3] *Global Monitoring Report on Non-Bank Financial Intermediation*, Financial Stability Board, 2022
[4] *Risks from leverage: how did a small corner of the pensions industry threaten financial stability – speech by Sarah Breeden*, Bank of England, 7 November 2022

Swiss Re Institute

Issue 6/2023

Economic insights
A US hard landing is pushed out, but not away

Key takeaways

- We expect a US recession later this year as the most likely outcome of the Federal Reserve's aggressive monetary tightening.
- The latest Fed meeting signalled further tightening is likely, but elevated uncertainty increases the chances of a policy mistake.
- Consumers face headwinds to their incomes in the coming months, and savings buffers are being eroded.
- Financial instability and weakening demand are expected to pressure corporates to curb production and hiring, likely weakening the labor market.
- Several factors suggest a soft landing is unlikely, including the breadth of price pressures, a data-driven Fed, and the risk of a disorderly credit tightening after recent banking sector stress.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Mahir Rasheed
Senior Economist

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In a nutshell

The US faces a mild recession later this year, in our view, induced by the mounting weight of aggressive monetary tightening and a weakening consumer backdrop. The Federal Reserve's March meeting highlighted their caution about operating under extreme policy uncertainty, which we believe raises the risk of a policy mistake. A "soft landing" for the economy is possible, but we believe the breadth of inflation pressure and the rising threat of financial instability make this increasingly unlikely.

The US economy is still growing at pace, but we believe the magnitude of policy tightening makes a hard landing unavoidable. The Fed's March FOMC meeting suggests that a challenging macro environment, now complicated by recent banking stress, makes the future path for interest rate rises extremely uncertain, raising the risk of a central bank policy error.

Consumption is expected to deteriorate as one-off boosts fade. In January, about 63 million US retirees received a one-time 8.7% Social Security cost-of-living adjustment, the effect of which was seen in a sharp 3.2% rise in nominal retail sales. The impulse looks to have faded in February's 0.4% decline in retail sales, suggesting households may be turning cautious. Further benefit reductions are expected to cut into spending this year. The end of pandemic-enhanced household food benefits this month will withdraw USD 34bn of income support. A three-year student loan repayment moratorium ends this summer, restarting repayments for some 43 million borrowers. We expect sticky inflation to keep real wage growth in negative territory for most of the year, and even further Fed tightening just as the long and variable lags of 2022's tightening are becoming more apparent.

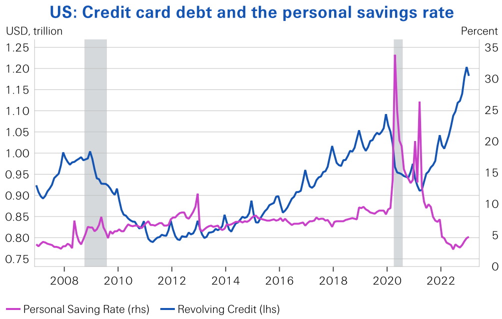
US households have generally strong balance sheets, with low debt servicing ratios and loan delinquency rates. Yet the US savings rate is near lows last seen just before the global financial crisis (see Figure 1). The pandemic-era savings buffer that sustained above-trend consumption in 2022 is rapidly eroding. Estimated excess savings declined by USD 800bn in the past 12 months, while wealth and income effects are exacerbating the savings decline. Wealthier households saw over USD 8.7 trillion in equity and mutual fund losses in 2022[1], while Fed and BEA data show middle- and lower-income consumers increasingly relying on credit as inflation erodes purchasing power.

Corporate margins are anticipated to feel increasing pressure. The banking system's stress highlights the private sector's sensitivity to higher interest rates, just as consumption is poised to slow. The housing and manufacturing sectors have been in recession since late 2022, and we

[1] "Households; Corporate Equities and Mutual Fund Shares; Asset, Level", FRED, https://fred.stlouisfed.org/series/BOGZ1FL193064005Q

Figure 1 (left)
US credit card debt and personal savings rate

Table 1 (right)
The Fed's track record of hard and soft landings



Source: Fed, BEA, Macrobond, Swiss Re Institute

Period	Change in Fed funds (bps)	Peak headline inflation	Real GDP decline	Soft landing?
Sep '65 - Nov '66	175	3.8%	None	Yes
Jul '67 - Aug '69	540	5.5%	-0.6%	Yes
Feb '72 - Jul '74	960	11.5%	-2.7%	No
Jan '77 - Apr '80	1200	14.6%	-2.2%	No
Jul '80 - Jan '81	1000	13.2%	-2.1%	No
Feb '83 - Aug '84	315	4.9%	None	Yes
Mar '88 - Apr '89	325	5.0%	-1.4%	Yes
Dec '93 - Apr '95	310	3.1%	None	Yes
Jan '99 - Jul '00	190	3.8%	-0.1%	Yes
Jun '04 - Jun '06	425	4.7%	-3.8%	No^
Oct '15 - Jan '19	225	2.3%	-10.1%	No^
Mar 22 - present	500*	9.1%	?	?

* SRI forecast of 5.125% terminal rate, ^Hard landing unrelated to Fed tightening
Source: Swiss Re Institute, Federal Reserve, Alan Blinder

expect weakening aggregate demand, higher borrowing costs and further tightening in lending standards to compress corporate profit margins. Data suggests redundancies are already rising: layoffs spiked by 1.7 million in January, according to the JOLTS report, while in February the LinkedIn Hiring Rate fell by 6.5% month-on-month and 27.9% year-on-year. We expect US businesses to unwind excess capacity in capital, too, offloading inventory via discounts and production cuts.

We expect only a mild recession... since the pandemic stimulus has left consumer, corporate and state and local government balance sheets in far better shape than in past cycles. Historically high job openings suggest the labor market can avoid a sharp rise in unemployment and find a new equilibrium with a better balance of labor demand and supply. There is also still pent-up demand in some sectors, including vehicles and travel.

... but a soft landing is unlikely. The Fed has achieved soft landings before; the 1994 tightening cycle is the clearest example, but it may have achieved soft landing in six of its twelve hiking campaigns since the 1960s (see Table 1). However, in previous soft landings, cyclical inflation rates were well below today's levels. Price pressures now are broad and structural, with core inflation sustained by a red-hot labor market facing a shortage of 3.1 million workers. The Fed is also being challenged by economic data distortions left by the pandemic, such as to seasonal adjustments[2],that makes it very difficult to determine true economic strength. This creates a dual risk of the Fed either not tightening enough or over-tightening a weakening economy. Finally, regional US bank failures show the "long and variable"[3] lags in monetary policy reaching the financial system. A rapid tightening in credit conditions could even lead to a more disorderly recession, sooner.

[2] *The challenges of seasonal adjustment for the Current Employment Statistics survey during the Covid-19 Pandemic*, BLS, May 2022.
[3] *On Long and Variable Lags in Monetary Policy*, Federal Reserve Bank of Atlanta, 15 November 2022.

Swiss Re Institute

Issue 7/2023

Economic insights
Treading carefully: US banks and the risk of a credit crunch

Key takeaways

- US bank lending is slowing and lending standards are expected to tighten further as banks adjust to higher interest rates and a weaker macro outlook.
- Ongoing credit reductions are worth about 25 to 100bps of policy tightening, implying a US Federal Funds rate of 5.25-6% at the end of Q1. This supports our view that the Fed is likely approaching the end of its hiking cycle.
- We expect financial conditions to tighten further from here, with real estate lending particularly exposed to small bank stress.
- However, current tightening falls well short of a credit crunch and policymakers are watching closely, with leeway to ease policy again should the situation deteriorate.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

Mahir Rasheed
Senior Economist

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In a nutshell

Concern about banks' ability to weather the higher interest rate environment is raising fears of a credit crunch. Credit has already been tightening in the US and EU, just as smaller banks are experiencing renewed pressure on assets. While we anticipate further tightening over the coming quarters, with corporate bankruptcies likely rising modestly, central banks will seek to safeguard financial stability.

Banking system weakness, initially in smaller US banks, has progressed to a confidence deficit in even large listed global banks. This has raised some concerns of a potential credit crunch, in which lending to businesses and households is restricted suddenly and sharply. This can cause serious damage to the real economy, for example in the Global Financial Crisis (GFC), when banking system failures virtually halted the supply of credit. In the US, monthly business bankruptcies more than doubled to a peak of 8,812 in April 2009 from 4,319 in November 2007, according to the American Bankruptcy Institute. Current conditions are not comparable to that extreme, with US bankruptcy filings at a relatively low 1,696 in February 2023. Instead, we expect additional credit tightening by banks to proceed steadily in response to impaired liquidity and the higher-for-longer interest rate environment.

US banks have been gradually reducing credit supply for the last 18 months, reflecting a weaker and more uncertain macro outlook and reduced tolerance for risk.[1] A net 43.8% of banks reported tightening lending standards for small firms in Q1 2023, up from 31.8% in Q4 2022. This is corroborated by the NFIB small business survey, which shows net loan availability for small businesses falling since late-2021 (see Figure 1). Commercial and industrial loan growth, too, has slowed for three months to 13.2% in February from a November 2022 peak of 15.5%. In Europe, banks reported in Q4 2022 the most significant tightening in criteria for approving loans to businesses since the region's sovereign debt crisis in 2011.[2]

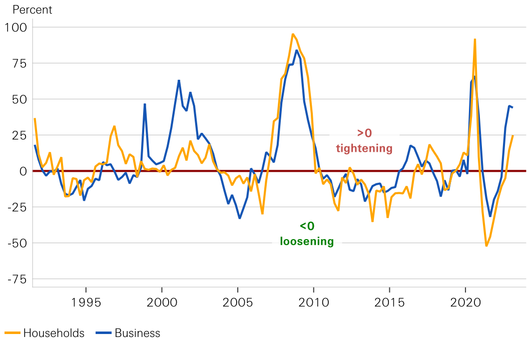
The contraction in US lending acts to further tighten financial conditions (see Figure 2). To bring down inflation sustainably, bank lending and financial conditions would need to both tighten steadily for a prolonged time. Research[3] suggests that ongoing credit reductions are the equivalent of 25 to 100bps of policy tightening. This implies a US Federal Funds rate of 5.25-6% at the end of Q1, which supports our view that the Fed is likely approaching the end of its hiking cycle with one additional 25bp increase expected in May.

[1] *Senior Loan Office Opinion Survey on Bank Lending Practices*, Federal Reserve, 6 February 2023.
[2] *The euro area bank lending survey – Fourth quarter of 2022*, ECB, January 2023
[3] *The Macroeconomic Impact of Small Bank Stress*, Goldman Sachs, 15 March 2023.

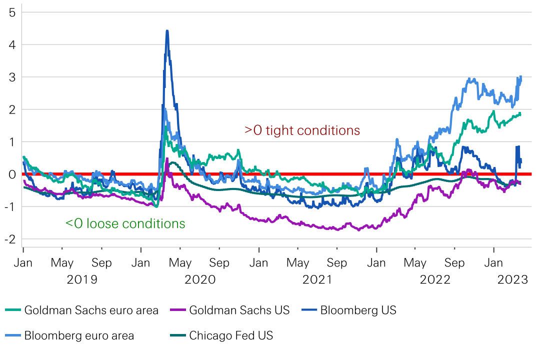
30 March 2023

Figure 1
The net tightness of US loan standards and availability

Figure 2
Tightness of US financial conditions



Source: Fed, Macrobond, Swiss Re Institute



Source: Goldman Sachs, Bloomberg, Chicago Fed, Macrobond, Swiss Re Institute

Some smaller US banks are experiencing challenges as this new environment of higher interest rates and slowing growth decreases the quality of their asset collateral. Bank deposits, until recently a cheap and ample funding source, have declined as money market funds become more attractive.[4] Real estate activity is also vulnerable to small bank strains as they originate nearly 60% of all US residential lending and 80% of commercial real estate lending. One commercial property research provider finds that office appraisal values have fallen by 25% in the past year, and by 10% in February 2023 alone.[5]

To simulate the economic impact of a disorderly credit tightening, we estimate a scenario in which small bank stress spreads more broadly over the coming quarters, sharply reducing credit availability in a manner similar to a credit crunch. The results suggest US GDP growth would feel a moderate impact (-0.3ppts) in 2023 before a sharper (-2.0ppts) contraction took hold in 2024. We envisage that this would prompt the Fed to cut its policy rate sooner than our expectation of Q1 2024, especially given the disinflationary impact on household spending and business activity from such tightening.

We expect turbulence and uncertainty to be the common themes in the banking system and financial markets in the near term. However, the Fed is openly operating with extreme caution to reduce inflation in a controlled manner while preserving financial stability. Recent policy interventions have so far been effective at maintaining liquidity and market functioning, and we expect policymakers will continue to monitor banking stress and credit conditions closely to prevent a sharper recession from coming to fruition.

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[4] Interest rates in money market funds are currently slightly above 4%, whilst the average bank deposit account yields under 0.5%.
[5] According to Green Street. See *Global Markets Daily: CRE: Positioning for a Challenging Backdrop*. Goldman Sachs, 21 March 2023.

Swiss Re Institute

Issue 8/2023

Economic insights
Asia contagion: another close shave

Key takeaways

- Asia has so far avoided contagion from banking sector stress in the US and Europe.
- Lower inflation enabled slower interest rate rises in emerging Asia, while faster growth adds to the region's shock-absorbing capacity.
- Policymakers prevented a global crisis, but advanced market credit tightening still implies weaker export demand and tighter global financial conditions for emerging markets.
- Insurers could stress test larger shocks and reevaluate their risk mitigation facilities including reinsurance.

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Authors
John Zhu
Chief Economist Asia Pacific

Shuyang Wu
Economist Associate

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In a nutshell

Banking sector stress in the US and Europe has so far not resulted in contagion to Asia. The rapid actions of the authorities where the shocks originated helped, but lower inflation in Asia has also enabled slower interest rate rises. Nevertheless, spillovers from weaker growth and sharper credit tightening are hard to avoid entirely, so risk mitigation including reinsurance gains in value.

Emerging Asia has so far avoided contagion from the banking sector turmoil in the US and Europe.[1] The actions of the Fed and the FDIC to expand deposit insurance and remove bank run risk calmed market sentiment towards emerging markets.[2] Emerging market fund outflows were significant during the initial days of the banking stress episode, but have stabilised quickly, in contrast with prior crises (see Figure 1). The emergency interventions in the US may increase moral hazard and future inefficiency, but likely mitigated contagion. This is crucial for emerging markets, for whom financial panics originating in advanced markets can cause crises for which governments have limited policy responses. For example, Fed-style liquidity backstops or loans would incur such large fiscal liabilities it would raise concerns of a "sovereign-bank nexus"[3].

The lack of contagion is not all down to regulators in the US and Europe, though. Asia's inflation rates were comparatively low due to slower and delayed reopenings from pandemic restrictions. That gave regional central banks room to raise policy interest rates more gradually than the US Fed (Figure 2), which would have reduced concerns over large mark-to-market losses and asset-liability mismatch in Asia. We forecast inflation and interest rates to have peaked for all Asian markets in Q1 2023. Less restrictive interest rates in Asia also support economic growth, also an important factor for financial stability given debt must be serviced regardless of the state of the economy. Asia has a strong foundation to deliver sustainable growth in earnings and wages needed to service debt. We expect the US to enter recession later this year[4], which would imply weaker external demand for Asian exporters, but China's economic reopening is a welcome offset. We expect emerging Asian economies to grow much faster (5.5%) than the US (0.9%) and euro area (0.4%) in 2023.

Emerging market corporates can often only borrow in US dollars, so currency mismatches are a potential channel of contagion. USD appreciation pressure should ease if the Fed pauses rate rises soon (we expect one more increase in

[1] *Banking turmoil rattles markets, not central banks' inflation-fighting resolve*, Swiss Re Institute, 21 March 2023.
[2] The MSCI APAC ex. Japan Financials Index is down 1.5% since 8th March (when Sillicon Valley Bank announced losses on securities sold to cover deposit withdrawals) compared with -9.8% for US and -9.1% for European financials respectively over the same period (data as of 28 March).
[3] The tendency for domestic commercial banks' and their government's borrowing costs and solvency risk perception to move together when fiscal support is provided to banks.
[4] *Treading carefully: US banks and the risk of a credit crunch*, Swiss Re Institute, 30 March 2023.

the Fed funds rate this year, to 5.0%-5.25%). Central bank bilateral currency swap lines, the Fed's FIMA facility, and regional agreements such as the Chiang-Mai initiative in Asia all now provide expanded and crisis-tested pools of FX liquidity insurance. Authorities have also "self-insured" with large FX reserves. The USD/EM FX index shows the US dollar is actually 1.4% down year-to-date.

Figure 1
Cumulative EM portfolio outflows, (USD billions) days since t=0

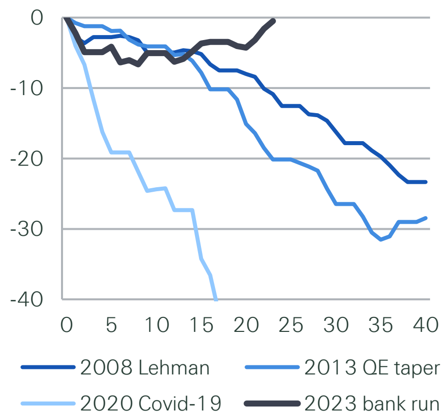
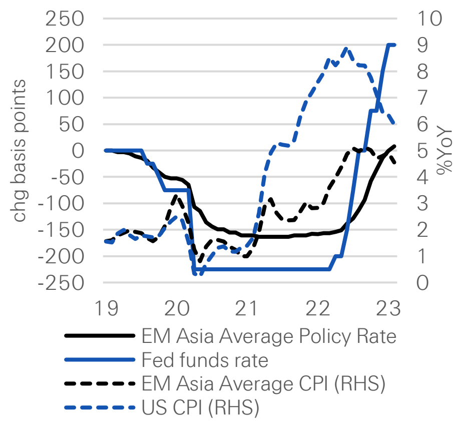


Figure 2
CPI inflation (%YoY) and cumulative changes in policy interest rates (basis points)



Source: national statistics offices, BIS, IIF, SRI calculations; EM Asia sample include China, India, Indonesia, Malaysia, Philippines, South Korea, Taiwan, Thailand, Vietnam.

The weaker US regional banks individually have very limited interlinkages with Asia. However, a banking sector shock in a market such as the US could transmit tighter financial conditions to emerging markets through major US banks' foreign affiliate bank branches. Emerging market bank funding sources have generally shifted from cross-border to local[5], which we expect to increase stability at the country level. Macroprudential policies in advanced economies, whether new, tightened or loosened, should be monitored for spillovers to EM.

In a volatile, slower growth environment, insurers too may come under financial pressures that cause them to slow or stop writing new business. Contagion can therefore have a significant long-term impact given still-large protection gaps in emerging markets. There is no global lender of last resort of a scale able to meet the mismatch between global financial risk and financial resources – even the massive monetary and fiscal response to COVID-19 in 2020 did not prevent some USD 90bn of EM portfolio outflows in just over a month. However, reinsurance can still play an important role as a risk mitigant for the insurance industry, and its countercyclical shock-absorbing properties contribute to the resilience of the global financial system.

[5] Caparusso and Hardy, "Bank funding: evolution, stability and the role of foreign offices", *BIS Quarterly Review*, 2022. https://www.bis.org/publ/qtrpdf/r_qt2209f.htm

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Emerging market borrowers, private and public sector, sometimes need to issue or repay foreign debt in US dollars, so currency mismatches are a potential channel of contagion. USD appreciation pressure should ease if the Fed pauses

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06 April 2023

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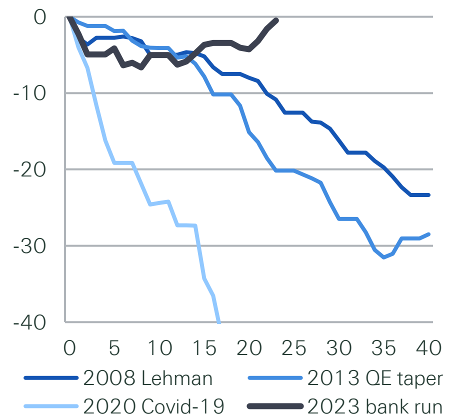

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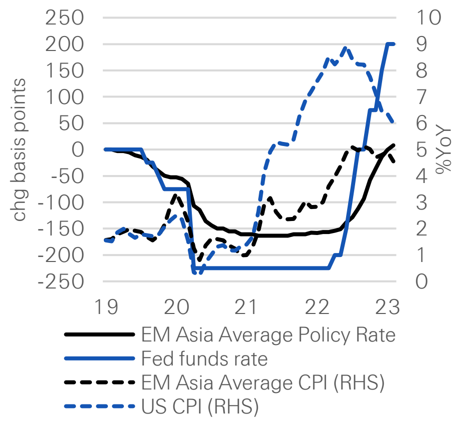

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[5] Caparusso and Hardy, "Bank funding: evolution, stability and the role of foreign offices", *BIS Quarterly Review*, 2022. https://www.bis.org/publ/qtrpdf/r_qt2209f.htm

Swiss Re Institute

Issue 9/2023

Economic insights
US commercial real estate: expecting prolonged challenges

Key takeaways

- Structural and secular declines in the commercial real estate (CRE) sector will contribute to the fragility and weakening of the US economy.
- Smaller US banks face additional vulnerabilities and there is potential for further asset deterioration in an economic downturn.
- The office sector faces the most stress, with increasing credit default risk, a difficult refinancing environment, and reduced appetite for additional equity investments.
- While also vulnerable, higher quality CRE exposures for insurers should aid in mitigating downside risk, relative to other investors.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Mahir Rasheed
Senior Economist

James Finucane
Senior Economist

Shin Yukawa
Group Asset Management

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Pressure in the office sector and tighter lending standards are challenging US commercial real estate, contributing to the weaker economic growth outlook and financial sector vulnerability. While the pressures are unlikely to pose systemic risks, we do expect the correction to last several years. The impact on small banks will likely be greater than for long-term investors and insurers.

The US commercial real estate (CRE) sector faces material headwinds over the coming years. Small US banks originate 80% of CRE bank loans[1] and, in addition to substantial mark-to-market losses on securities holdings and deposit uncertainty, distressed real estate assets have fed anxieties over overall financial stability. Even before recent bank sector stresses, the US CRE market saw prices slump[2] amid weakening demand while lending standards tightened rapidly (see Figure 1). Looking forward, we see a multi-year downturn in the office space, driven by entrenched structural changes in the post-pandemic economy. This will pressure both small banks and insurers, but the challenges will likely be more pronounced for the former, and they are unlikely to pose systemic threats to financial stability.

Our outlook is based on many factors. First, CRE stress preceded the recent turmoil in the banking sector and represents more fundamental long-term changes in demand. The office segment (32% of the CRE sector[3]) has faced secular shifts, particularly from work-from-home trends, which lifted the US office vacancy rate to a record high of 18.2% in the fourth quarter of 2022.[4] The retail segment (18%) struggled long before the pandemic due to structural changes tied to the e-commerce boom. Retail will continue to face long-term, but not new, cash-flow and geographic pressures. In contrast, the industrial segment (20%) has actually benefitted from the pandemic-driven surge in goods demand. In Europe, meanwhile, office demand is relatively stronger than the US. The average vacancy rate is less than 8%[5], while leasing activity rose 14% year-on-year in 2022 and office take-up rose 2% above the pre-pandemic average.[6]

Maturity risk for pressured CRE segments in 2023 is less acute than in the global financial crisis. Banks hold 45% of debt in the USD 4.5 trillion CRE mortgage market, but offices represent just 17% of income-producing property loans relative to 44% for the multi-family sector.[7] Offices account for less than USD 100 billion of debt repayments due this year, even though a ramp-up in maturing debt in future years will likely lead to more sector defaults and increase loss severities over the medium term.

[1] *The Macroeconomic Impact of Small Bank Stress*, Goldman Sachs, 15 March 2023
[2] *Property Prices Down 15% vs. Last Year*, Green Street, 6 April 2023
[3] According to the National Association of Realtors.
[4] *US National Marketbeat*, Cushman and Wakefield, Q4 2022.
[5] *Best-in-class outperforms despite softening demand*, JLL, Q4 2022.
[6] European Office Outlook, Savills, March 2022.
[7] *The commercial real estate debt market: Separating fact from fiction*, Cohen and Steers, March 2023

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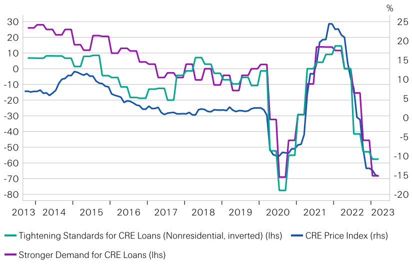
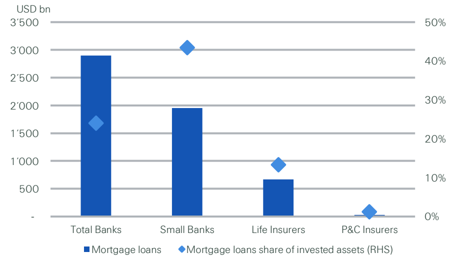
Figure 1
US commercial real estate activity has faltered due to falling prices, tighter lending, and reduced loan demand



Source: Green Street Advisors, Fed, Macrobond, Swiss Re Institute

Figure 2
US insurers have relatively lower CRE exposure



Source: S&P Global Capital IQ Pro, Fed, Swiss Re Institute

While we expect moderate increases in defaults, the workout period will be lengthy, and lenders will likely also pursue loan modifications with challenged borrowers dampening some of the negative impact. Loan-to-value ratios for loans range from 50-55% while debt-service coverage ratios are conservative, providing material cushion. Longer loan terms of typically 5- to 10-years also reduce maturity default risk, and maximizing value through liquidations and restructuring can take several years. That said, increased property supply, higher financing costs and available reinvestment alternatives may increase incentives to foreclose on a property, especially in lower-quality segments. Any further liquidity stresses faced by banks or a deeper US recession would also pressure CRE valuations. While loan losses will depend heavily on the transaction, average loan-to-value ratios imply a 40-50% decline in values before losses are taken.[8]

Insurers face less immediate pressure than small banks given a lack of deposit risk, a larger weight toward higher-quality CRE mortgages and securities, a lower overall CRE weight in investment portfolios, and positioning towards less-affected segments such as residential. In the US, only 36% of annuity liabilities can be withdrawn by policyholders without penalty, and P&C liabilities are run proof. In statutory filings at 2022, life insurers held USD 668 billion of mortgage loans and P&C insurers just USD 28 billion. That's 13% and 1% of their respective investment portfolios, compared to 24% of US banks' lending (see Figure 2). Adding direct real estate holdings brings the portfolio shares to 14% and 2%. Insurer investment exposure to office is estimated at 21%, 11 ppt below the national share, and at 29% for the relatively strong multi-family segment.[9] Insurance exposures are also well-diversified across property types and geographies. This suggests a broad-based CRE downturn poses less solvency risk to most insurers than to banks.

[8] Ibid.
[9] *Capital Markets Bureau: Small Increase to U.S. Insurers' Mortgage Loan Exposure at Year-End 2021*, NAIC, 5 August 2022.

Economic Insights

Seasons of discontent: strikes in Europe

Key takeaways

- Ongoing strikes in Europe reaffirm our baseline view of stagnation across the region.
- However, the GDP growth hits are likely to be confined to the near-term and the strikes in their current scope do not prompt us to change our full-year forecasts.
- Tight labour markets will add to individual worker and union bargaining power, but any wage increases are unlikely to result in a 1970s-style wage-price spiral.
- Higher nominal wages could raise claims costs; direct exposure to strikes is moderate from an overall P&C insurance perspective.

In a nutshell

Ongoing public and private sector strikes for pay pose a minor and temporary hit to real GDP growth in Europe. Tight labour markets are supporting worker and union bargaining power, adding to nominal wage growth. The direct exposure to strikes is deemed moderate from an overall gross P&C insurance perspective, predominantly stemming from insured physical damage covers.

Transport workers, medical staff and teachers are among the thousands of Europeans striking in recent months for greater pay. The common cause in key economies like the UK and Germany is the cost-of-living crisis.[1] Real incomes are being squeezed, with inflation at multi-decade highs but with nominal pay growth lagging the rate of gains in inflation. Longer-term structural trends like globalisation and technological shifts have also weighed on real wages. With a record number of businesses (~25-35%[2]) across various sectors reporting labour shortages as a factor limiting production, unions' bargaining power and ability to organise collective action has strengthened. We see the strikes as continuing in the near-term,[3] with the summer travel season a next key period to watch for potential Europe-wide disruption. The impact on traditional P&C business will likely by limited. The implications of strike actions manifest through three key channels: economic growth, inflation and wage growth, and the direct insurance market.

The strikes reaffirm our existing baseline of economic stagnation in Europe. Yet, we expect the strike action in its current scope to not meaningfully alter our full-year GDP forecasts, as they typically have only a temporary effect on growth.[4] Sectors reporting reduced working days[5] have seen GDP growth shrink (see Figure 1) on lower labour input. The strikes have had negative second-order effects in other sectors too. For instance, transport strikes can alter spending not only on transport, but also in restaurants and on leisure and entertainment. Even then, the cost of the UK strikes in the eight months to January 2023 is small, estimated at just 0.1 ppts of expected GDP.[6] Similarly, using the Oxford Global Economics Model, we find that German year-on-year average 2023 GDP growth would be only ~0.1 ppts lower if the average hours of work per week were to stay subdued at Q4 2022 levels for the remainder of this year. However, policy outcomes may be more significant, such as a lasting impact on public finances from public-sector pay deals. An adverse scenario to our baseline forecasts would be if the strikes turn even

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Charlotte Mueller
Chief Economist Europe

Diana Van der Watt
Economist

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[1] The current protest/strike actions in France have been sparked by pension reforms more so than the cost of living crisis.
[2] Euro Area Business Surveys, DG ECFIN.
[3] Broader public opinion is one signpost, with polls supportive of latest strikes in the UK and Germany. *Europe's Era of Agitation Heralds More Clashes on Spoils of Work*, Bloomberg, 1 April 2023.
[4] For example, the famous 2007 strikes in France that amounted to 10 days of major transport strikes saw real GDP growth slow to 0.2% q/q in Q4-2007, but rebound the following quarter to 0.5% q/q, which was the same growth rate in the quarter prior the strikes. Source: Bloomberg.
[5] Office of National Statistics Labour Disputes in the UK Dataset reports ~786,000 working days lost in December 2022 in education, health and social work and transport, storage, information and communication industries versus ~286,000 working days lost in February 2023.
[6] *Eight months of strike action to have cost the UK economy at least £1.7bn, adding to existing recessionary pressures*, CEBR, 19 December 2022.

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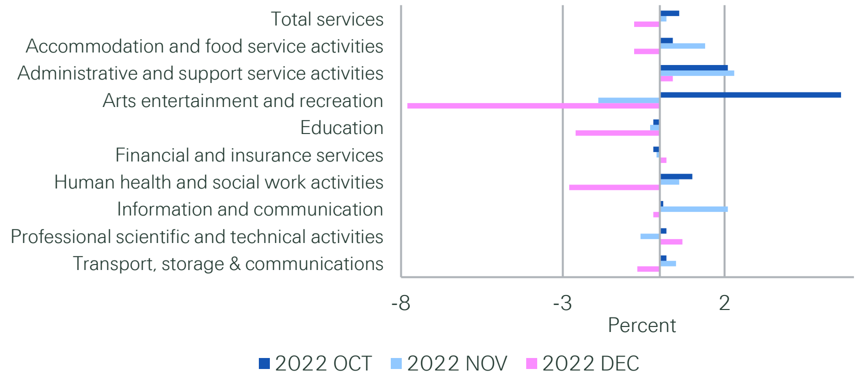
more widespread and last much longer than expected, and/or if they erupt into sustained social unrest, which could shake broad economic confidence.

Figure 1: Month-on-month GDP growth of select sectors in the UK, Q4 2022



Source: ONS, Swiss Re Institute

With respect to inflation, strike action will likely fuel further wage growth, this adding to core CPI pressures. Union demands are high, with for instance Deutsche Post workers asking for a 15% pay raise (they agreed to 11.5%), and junior doctors in the UK asking for 35%.[7] We estimate high wage growth in Europe in 2023, with the UK and Germany projected at around 6% on average, at least, followed by France at 5.5%. Yet, we maintain our view that a 1970s-style wage-price spiral is unlikely, as headline CPI disinflation continues and long-term inflation expectations remain well anchored.

In their current scope, the strikes will have muted impact on P&C insurance. The direct effects on traditional and business interruption (BI) insurance will likely be moderate, limited to the actual physical losses or damages and the resulting disruption to operations. More severe scenarios such as the strikes turning into social unrest, are risks to watch, though destruction to property from strikes (or other "social perils") are often subject to lower indemnity sub-limits. Covers responding to limitations of access or cancellation, such as travel and event cancellation, could also be impacted. Indirect effects of the strikes may be more significant, showing through higher-than-expected wage growth and also social inflation, which civil discontent and an uncertain legal environment can foster. This would add to casualty, liability and accident insurance claims. Overall, these strikes are making economic, political, legal and social landscapes even less predictable than before, and this might prolong the hard market in commercial lines of business, amongst others.

7 "Deutsche Post says it agrees wage deal with union to avoid strike", Reuters, 11 March 2023; "Junior doctors in England begin four-day strike over pay, The Guardian, 13 April 2023.

Swiss Re Institute

Issue 11/2023

Economic Insights

Illusions of stability: when financial market pricing doesn't tell the whole story

Key takeaways

- Amid the fastest interest rate hiking cycle in over 40 years, we expect a US recession later this year.
- Current market pricing across assets, however, is relatively benign and does not signal expectations of recession.
- However, market pricing says little about the underlying functioning of financial markets, which has deteriorated over the past years.
- Further, many measures of financial market functioning suggest that markets are prone to sudden volatility spikes.
- Insurers are long-term investors and financial market volatility with liquidity gap risks call for disciplined balance sheet management.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

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In a nutshell

Current US financial market pricing does not signal expectations of recession. Amid the fastest and ongoing interest rate hiking cycle in over 40 years, we continue to expect a US recession in the second half. As financial market functioning has deteriorated over the past years, markets are not only vulnerable to a repricing of recession risks, but also prone to additional volatility spikes.

The global economy and financial markets have weathered a slew of bad news over the last year. Recurring inflation scares, the fastest monetary tightening in over 40 years and recession fears have contributed to substantial volatility. Yet, markets are largely pricing in a "fair weather" scenario, one in which economic growth decelerates, inflation pressures gradually abate and central banks can look to start easing policy again. Market pricing, however, conveys little about underlying vulnerabilities. The UK liability-driven investment (LDI) crisis last year and recent bank-related stresses are but a few examples showing that the interconnectedness of markets is not always transparent. What's more, market functioning is often impaired in times of stress, exacerbating volatility when it is least desired. In the context of 2023, that is with our expectation of more monetary policy tightening and recession in the US in the second half of the year.

Many measures of functioning suggest that financial markets are currently prone to sudden volatility spikes. For example, Figure 1 shows the Bloomberg liquidity index for US government bonds, which provides an overall gauge of the underlying "health" of the US Treasuries market.[1] The index has recovered somewhat from recent stress episodes, but it remains structurally higher than in the past, suggesting that market functioning has become more patchy. Similarly, measures of the USD credit market functioning show that both investment grade and high-yield bond market functioning appear to have deteriorated. For example, average daily trading values have decreased over the past years, and primary dealers are warehousing less risk (see Figure 2).[2] This means that these markets will struggle more than in the past to efficiently facilitate risk pricing. In addition, the CBOE Volatility Index (VIX) – which measures implied equity market volatility – is currently at its lowest in about 15 months. We continue to expect a mild recession later this year and hence markets are prone to repricing of macro risks. But even without a recession, markets have structurally become more prone to "gap risk", that is sudden

[1] The Bloomberg government bond liquidity index measures prevailing liquidity conditions in the US Treasury market. It displays the average yield error across the universe of US Treasury notes and bonds. When liquidity conditions are favourable, the average yield errors are small as any dislocations from fair value are normalised within a short time frame. Under stressed liquidity conditions, dislocations from fair value result in larger average yield errors.
[2] Warehousing risk refers to primary dealers' capacity to hold and manage various financial assets on their balance sheet to help maintain stable and efficient markets.

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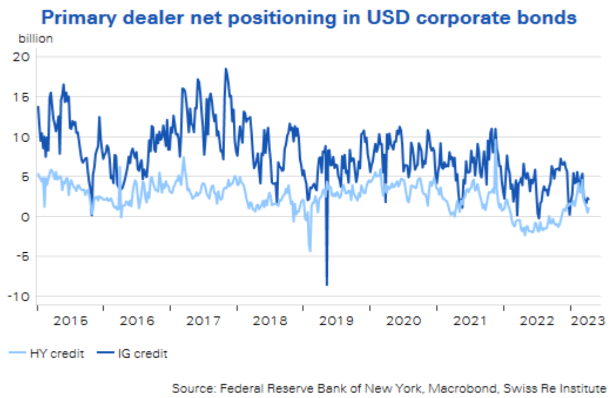
price jumps that accentuate volatility in times when smooth market functioning is most needed.

Current market pricing across assets is relatively benign. Interest rate futures price a little over 100bps of Fed cuts over the next 12 months towards a more neutral policy stance, contrary to our expectations of no cuts during that time. 1-year forward equity earnings expectations have come down to roughly 0% but do not reflect recession expectations. Neither do standard equity valuation measures where the forward P/E is at 18.4 compared to the median forward valuation of 13.8 during recessions. Likewise for credit spreads, which are broadly in line with historical non-recession averages. Yet, given how unusual this economic cycle has been, and the lead and lag times of monetary policy amid the fastest hiking cycle in decades, in our view times of market volatility are far from over. Our baseline scenario of US recession in the second half further supports our view. Insurers are long-term investors and financial market volatility with liquidity gap risks underline the need for disciplined balance sheet management.

Figure 1
Bloomberg government bond liquidity index

Figure 2
Primary dealer net positioning in USD corporate bonds



Swiss Re Institute

Issue 12/2023

Economic insights
Japan: the long goodbye to QE

Key takeaways

- The BoJ kept policy unchanged at its April meeting but aims to deliver a smooth transition out of yield curve control in future meetings.
- The recent banking stress in the US and Europe likely means the BoJ must minimise financial stability risks of future policy changes.
- Banks and insurers in Japan are largely well-capitalised but remain exposed to FX and duration risk.
- Terminating YCC policy is set to eventually lift the floor of global rates, enhancing insurers' profitability in the long term.

In a nutshell

After more than two decades of quantitative easing (QE), the Bank of Japan's first meeting with new Governor Ueda today embarked on a comprehensive review of its ultra-loose monetary policies. We expect the BoJ to aim for a lower-volatility transition to higher bond yields, to maintain near-term financial stability and align with the long-term "higher for longer" global interest rate regime.

The highly anticipated first Bank of Japan (BoJ) monetary policy meeting under new governor Kazuo Ueda, as we expected,[1] maintained its yield curve control (YCC) on the 10-year Japanese government bond (JGBs) at the current +/- 50bps range. But no change does not mean unimportant. The Bank has initiated a broad-perspective review of its QE programme over the next 1 to 1.5 years. We think it is a matter of when, not if, the BoJ adjusts YCC. They can shorten the yield target from 10-year to 5-year tenor[2], or exit YCC altogether, at the June meeting or later. The 10y JGB yield is currently trading within a range of 0.35%-0.45%, and the recent receding selling pressure on JGBs will provide a more conducive environment for the BoJ's YCC adjustment.[3]

The Bank estimates that Japan's GDP in Q4 2022 is below its potential (a negative output gap) and judged that rising wage growth is still insufficient to sustainably achieve its 2% inflation target. We do not envisage an exit from the negative interest rate policy (NIRP) on the short-end of the yield curve, until at least mid-2024, after the release of next year's *Shunto* wage negotiation outcome. The BoJ will likely provide advance guidance on the pre-conditions for a NIRP change to anchor market expectations, as suggested by the IMF.[4]

We believe Japan's policymakers have taken on board lessons from the US and European banking sector stress, on the unintended impact on financial stability from monetary tightening. The BoJ appears to be moving slowly and carefully to avoid creating a fire-sale scenario like in the US that led to the failure of Silicon Valley Bank in March, as a sharp rise in the long-end yield would imply large unrealised investment losses on bank balance sheets in the short term.

Domestically, many Japanese financial institutions are large buyers of JGBs (see Figure 1). Banks and insurers in Japan are well-capitalised to date but remain exposed to FX and duration risk. The BoJ's latest Financial System Report[5] assessed that, although most banks have stable funding bases, there is heterogeneity in their interest rate risks and capital standards. A simulation of a

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Jessie Guo
Senior Economist

John Zhu
Chief Economist Asia Pacific

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

[1] *Economic and financial risk insights: Patched up for another round of tightening*, Swiss Re Institute, 13 April 2023.
[2] The IMF estimates that the JGB yield curve up to three years matters most for Japan's economic activity, which is consistent with the average duration of loans at close to 3.5 years.
[3] Following the US and Europe banking sector turmoil, the 10y JGB yield traded back well below its 0.5% upper limit in recent months, along with an improvement in the JGB market liquidity.
[4] *IMF Executive Board Concludes 2023 Article IV Consultation with Japan*, IMF, 30 March 2023.
[5] *Financial System Report (April 2023)*, Bank of Japan, 21 April 2023.

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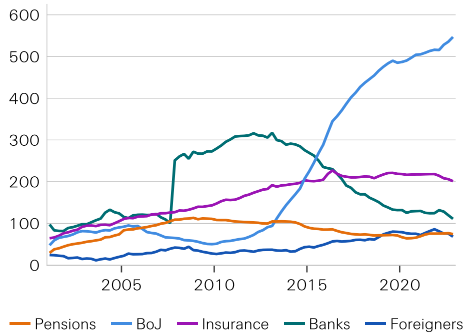
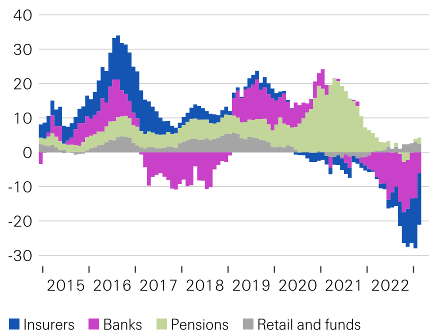
25bps parallel upward shift of the JGB yield curve found that unrealised losses could exceed 10% of shareholders' equity in 19 of a sample of 65 banks.[6]

Figure 1
JGB holdings by investor type, 2000-2023 (JPY trillions)



Sources: BOJ, Macrobond, Swiss Re Institute

Figure 2
Japan residents' net purchase of overseas debt (JPY tn, 12-month rolling sum)



Source: BOJ, Macrobond, Swiss Re Institute

Meanwhile, Japanese life insurers invest about 30% of their assets overseas, but have become net sellers of foreign bonds since March 2022 following the Fed's steep policy rate rises and surging FX hedging costs (see Figure 2). Some leading life insurers reported a complete wipe-out of accumulated unrealised gains on their bond holdings (based on FY22-Q3 financial reports), meaning a large decline in solvency margin ratio (SMR). Although the industry is moving to an economic value-based solvency regime, which makes life insurers more neutral to interest rate moves, the existing SMR regulation can still bind for some smaller insurers, because it may trigger interest payment suspension mandatorily in many contracts for subordinated debt issued by insurers.[7]

Despite the mild market reaction today, we expect the spillover effect to global rates from future rises in yen interest rates to be significant, given the large positioning in global carry trade with the yen serving as the floor of global rates. We project the fair value of the 10-year JGB yield to stay within a range of 0.5% to 0.8% without YCC.[8] The impact on US Treasury yields of gradual YCC removal should be moderate, but could still cause volatility, eg, triggered by financial institutions' continued repatriation of foreign assets, especially in those markets where Japanese investors have a larger footprint such as Australia and France. In the longer-term, as the amount of outstanding global negative-yielding bonds continues to fall from the peak of USD18trn (currently around USD1trn), a steepening yield curve would generally improve the profitability of banks and insurers going forward, by lifting their investment yields.

[6] *Japan's banking system: Resilience and risks*, BofA Securities, 27 March 2023.
[7] *Japan Insurer Outlook: Capitalized for Chaos*, S&P Global Ratings, 6 February 2023.
[8] As long as the BoJ does not commence quantitative tightening, we assume the stock effect will cause downward pressure on the 10yr JGB yield of more than 1.0ppt.

Swiss Re Institute

Issue 13/2023

Economic insights

Inflation in China: muted, reflecting weak demand; near-term global spillover limited

Key takeaways

- China's inflation remains muted after reopening; CPI up on average by 1% yoy in the first 4 months of the year.
- The low inflation reflects weakness in domestic demand.
- China's recovery is domestic-demand driven and we see little spill over to global growth and inflation.
- A soft labour market, slow income growth and negative wealth effects from a property market slowdown has reduced household purchasing power and confidence.
- In insurance, household fears over income security have generated demand for savings-type products.
- This could add upside to global L&H premium volumes in 2023.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Xin Dai
Chief Economist China

Yaxin Chen
Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Inflation in China is muted, reflecting soft domestic demand. We flag rising risk of a liquidity trap in China, a factor in our decision to keep our full-year GDP growth forecast unchanged, even after a stronger-than-expected first quarter result. The low-inflation and subdued domestic demand will have limited impact on global growth and inflation; and marginal upside risk for L&H insurers.

Inflation in China is subdued. Consumer price index (CPI) inflation rose on average by 1% in the first four months of 2023 year-on-year (yoy), reflecting weakness in overall demand. The outcome is well below the CPI averages of 5.6% for US and 7.7% for the euro area for the same period. The divergence between GDP growth and inflation is atypical of an economy primed for recovery from pandemic-induced shutdown. The weakness in overall demand manifests through slow consumption growth and low demand for credit, even though borrowing costs are low. Such a liquidity trap-like situation could undermine the effectiveness of still easy monetary policy. Hence, in spite of a stronger-than-anticipated outcome in 1Q23, we keep our full-year real GDP growth forecast for China at 5.5% yoy, with risks to the downside. With the soft demand environment, we estimate inflation will be sub-2% in 2023. The increasing integration of China into world activity over many years, including in international supply chains, has made economic developments there a main factor shaping global growth and inflation conditions. However, currently the dynamics impacting recovery in China are heavily domestic-focused and we see little spillover effect on global inflation and growth in the near term. In insurance perhaps more so: households' fears over income security have generated demand for savings-type products and boosted L&H premiums.

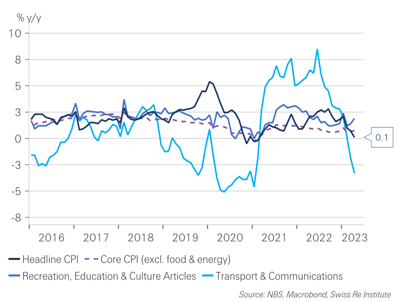
In April alone, CPI was up just 0.1% yoy in China. Cyclical factors like falling commodity prices (energy and food (pork)), were a main driver. Excluding these, core CPI was on average 0.75% in the first four months of 2023, even with an increase in service sector prices (see Figure 1). That was less than the 0.86% a year earlier and in 2019, when the pre-COVID monthly average was 1.6%. Underpinning the overall low inflation environment has been a sluggish recovery in demand due to labour market softness and slow income growth.

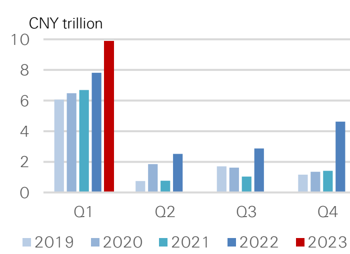
The labour market softness means China does not face a wage-price spiral threat like the US and other major economies. There was a slight improvement in the unemployment rate of China's urban labour force in April to 5.2% from a February peak of 5.6%. However, that is still high by international standards: in the US, for example, the unemployment rate is at 3.4%. Further, the jobless rate for China's younger working age urban population hit 20.4%, another signal of weak recovery with corporates hesitant to hire new workers and expand their business. The total number of newly employed in urban regions rose 4.2% yoy to 3 million 1Q23, but this is still 8% lower than pre-COVID.

The soft labour market and slow income growth is due to the prolonged pandemic related restrictions on economic activity, which eroded households' purchasing power and consumer confidence. Annual average nominal wage growth in China slowed to 5% in 2022, this coming after an 8.2% slump in 2020-21, and is less than half an average annual growth rate of 11.4% in 2010-2019. Adverse wealth effects from a slowdown in the property market has further compounded income concerns. These factors reflect in the increase in household bank deposits, which rose by CNY 9.9 trillion in 1Q23 (up nearly 30% yoy) after reaching an historical high of CNY 17.8 trillion (~USD 2.7 trillion) in 2022, up almost 80% yoy (see Figure 2).

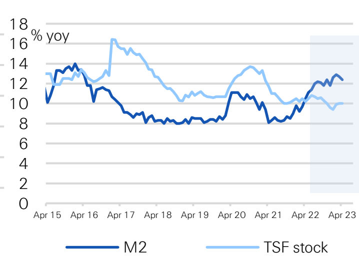
China did not ease interest rates as much as other countries during the pandemic,[1] another factor keeping a lid on inflation pressures. It affords China more policy leeway to address an external shock but even so, the authorities may need to consider alternative growth-supporting policy actions. In times of income insecurity, people save more and spend less. With sustained easing monetary, we see rising risk of a liquidity trap, with consumers and investors holding cash and repaying loans rather than spending or investing, even while the cost of borrowing is low. M2 money supply growth reached to 12.8% yoy in April 2023, higher than around 10% in 2020 during pandemic, and 8.3% in 2018-19, yet growth of total social financing[2] has stayed below M2 growth (see Figure 3), which brings the effectiveness of existing monetary policy into question. The weakness in credit demand would stymy efforts by policymakers to stimulate economic growth while keeping inflation contained. For insurers, the lower willingness to spend and fears over income security has generated demand for savings-type products. This shows in the life insurance premium growth of 10.8% yoy in the first four months of this year, up from 3.1% for 2020-22. There has been less interest in risk protection solutions. For instance, health insurance premiums grew 5.1% yoy in the first four months, down from an average of 7.2% for the same period in the previous three years. The net result on China's L&H sector has been slightly positive, which should also support global premium volume growth this year.

Figure 1 (left)
China's CPI inflation breakdowns
Figure 2 (middle)
Household bank deposits
Figure 3 (right)
Growth of M2 vs total social financing





Source: PBoC, Swiss Re Institute



Source: PBoC, Swiss Re Institute

[1] PBoC cut policy rate such as 7-day open market operation rate, down by 50bps in total during pandemic.
[2] Total social financing (TSF) reported by PBoC refers to the aggregate volume of financing provided by domestic financial system to real economy with a given timeframe. TSF includes bank loans, off-balance-sheet lending, corporate bonds financing, government bonds financing and equity financing etc.

Swiss Re Institute

Issue 14/2023

Economic Insights
The course of true disinflation never did run smooth

Key takeaways

- Headline CPI disinflation is set to slow in the next months as services inflation comes down at an even slower pace, or even accelerates.
- With high inflation persisting, we do not see central banks cutting interest rates before the end of the year.
- High inflation will continue to pressure claims and sustain hard market conditions in insurance.
- Upside inflation risks will make it unclear how central banks will proceed with rate cuts in 2024.
- Rates may need to ease only gradually to ensure that disinflation pressures persist long enough to reach central bank targets.
- Insurers will need to manage a volatile yield environment through asset-liability management.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Mahir Rasheed, Senior Economist

John Zhu, Chief Economist APAC

Diana van der Watt, Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Despite rapid interest rate rises over the past year, central banks are still far from their inflation targets. We see persistent price pressures precluding rate cuts this year, with services inflation the biggest obstacle to disinflation. The hard market in insurance will likely continue as claims costs also remain elevated; a volatile yield environment will need discipline in balance sheet management.

Central banks continue to battle well above-target inflation, and the resilience of first-half price data so far signals that further interest rate hikes may be in store. A second inflation surge is the main concern, especially if long-term consumer and business expectations become unanchored after a prolonged inflation overshoot, this followed by a "catch-up" in wage growth. With persistent high inflation into 2024, hard markets in insurance will likely continue as insurers seek to keep pace with still elevated claims costs.

Markets may be underpricing that the next move from the major central banks on interest rates is up, and a possible "skip" in rate hikes for one policy meeting should not be mistaken as a peak in terminal rates.[1] The Federal Reserve's (Fed) risk management approach is to do whatever it takes to prevent a return to the 1970s, when the central bank pursued a so-called "stop-go" policy that alternated between fighting high unemployment and high inflation.[2]

The global outlook for disinflation depends primarily on the services sector. This will impact personal lines insurers on account of high bodily injury claims. In the US, core CPI goods inflation peaked at 12.4% in February 2022 and has since eased to 2.1% in April 2023. While the disinflationary impact from supply chain improvements and base effects will fade and goods inflation may reaccelerate, core goods make up just 21% of the US CPI basket compared to core services' 58% share. We expect US core services inflation will cool from 6.8% currently to a still high 5.2% by year-end, contributing 3.0 percentage points (ppt) to headline inflation alone. The bulk of services disinflation will be driven by lagging shelter prices, but price pressures in non-housing segments is unlikely to abate sustainably until wage growth eases from its current 5% pace to the 3.5% y/y rate consistent with 2% inflation.

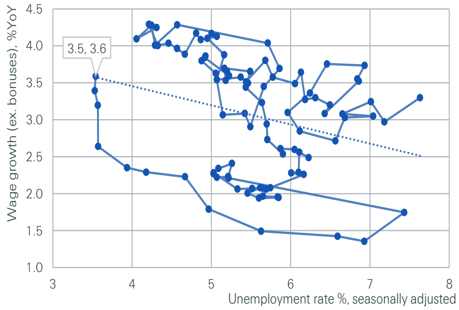
In the euro area, we expect the disinflationary path of core measures to prove more shallow. Tight labour markets are underpinning worker and union bargaining power[3] but unlike in the US, wage contracts are settled as multi-year agreements, meaning that the catch-up in real wages lasts longer. Public sector pay settlements can set a high benchmark for subsequent wage negotiations in other sectors (eg, in Germany, where part of the public sector negotiated a 5.5% increase after striking).This sets the stage for a prolonged disinflation simultaneously risking a de-anchoring of inflation expectations.

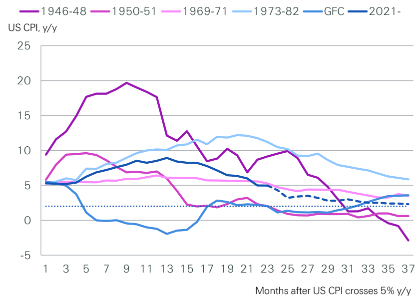
[1] *Christopher J Waller: Hike, skip, or pause?*, Federal Reserve Board, 2023.
[2] *Recession of 1981-82*, Federal Reserve Bank of Richmond, 22 November 2013.
[3] *Season of discontent: strikes in Europe*, Swiss Re Institute, 2023.

09 June 2023

Figure 1
Wage Phillips curve in Australia

Figure 2
Prior US disinflations in relation to our outlook





Source: Australian Bureau of Statistics, US Bureau of Labour Statistics

Other central banks offer a template for how too-slow disinflation from too-high inflation means a rate "pause" may just be a "skip". The Reserve Bank of Australia (RBA) paused in April after increasing its policy rate at its previous 10 meetings. But it surprised markets by resuming tightening with 25 bp increases in both May and June, citing persistent services price inflation and an uptick in house prices. Wage growth has started to accelerate, suggesting a "kinked" Phillips curve at record-low jobless rates (see Figure 1). In June, RBA Governor Lowe acknowledged that inflation has peaked but that further tightening is still needed to send a signal that interest rates will be high enough for long enough to prevent price pressures from building again. The Bank of Canada has followed suit in early June, raising its policy rate by 25 bp after two consecutive skips, expressing concern that CPI inflation could get stuck above the 2% target.

Our disinflation path (see Figure 2) is quicker than the 1970s inflation burst, which was accompanied by a wage-price spiral. Supply-side shocks (mainly commodities), the major cause of inflation today, typically have asymmetric pass-through: faster and more complete on the way up than on the way down. However, the current cycle is different given ongoing labour market tightness and late-cycle catch up in real wage growth. Both are underpinning ongoing strengthen in aggregate demand.

How persistent inflation will remain is uncertain. But the risk that it could be longer lasting is one reason why we do not expect the Fed or European Central Bank (ECB) to begin cutting interest rates until 1Q24 at the earliest (the speed and magnitude of cuts is also highly uncertain). In our baseline scenario, a US recession in 2H23 will not prove severe enough to trigger outright deflation, suggesting policy rates may need to ease only gradually to ensure that disinflation pressures persist long enough to reach central bank targets. We see the balance of risks skewed slightly higher for the ECB: the question is less directional but by how much higher rates will go. For insurers, higher rates support investment returns, although what could be volatile yield environment will require careful balance sheet management.

Swiss Re Institute

Issue 15/2023

Economic insights

Reserving: higher uncertainty puts adequacy in the spotlight

Key takeaways

- Direct insurance reserve releases in advanced markets are slowing after a decade of favourable progress.
- The recent pandemic, war and inflation shocks are pushing claims higher and raising questions about reserve adequacy.
- Insurers have increased the share of incurred-but-not-reported (IBNR) claims in response.
- Higher uncertainty over coming claims suggests that reserves are at risk of being insufficient despite the large current buffer.
- A greater focus on reserve adequacy may fuel further hard market conditions and restrain new business capacity.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
James Finucane
Senior Economist

Arnaud Vanolli
Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Direct non-life insurers in advanced markets have on average released prior-year loss reserves, although the pace has been slowing recently. Larger reserves for the most recent years and a cushion for as-yet unreported claims suggest a solid buffer is in place, but recent shocks are pushing up claims, raising questions about adequacy. With uncertainty high, insurers may reduce risk appetite and new business capacity, which may in turn sustain the hard market conditions.

The adequacy of non-life insurers' reserves is in the spotlight after recent systemic shocks: elevated inflation and natural catastrophe losses, COVID-19, the war in Ukraine and supply chain issues. In 2021 and 2022 insurers released reserves built up in anticipation of pandemic-related claims, although overall releases were slightly lower than in prior years. By some measures, reserve positions are elevated.[1] For example, insurers in the US reserved cautiously during the pandemic years in anticipation of claims such as those related to cyber and business interruption. However, the surge in inflation and other pandemic impacts like court backlogs bring added uncertainty to reserves analysis. On balance, we see higher uncertainty around loss reserves estimates, with downside risks to adequacy.

Reserve developments in some key markets suggest that there is a high reserve buffer. US insurers have released reserves consistently since 2006. In the US, the average reserve development has been a 1% release per year for the past 25 years (see Figure 1 left). In the UK, meanwhile, the long-run trend in reserve development has been close to equilibrium, without large releases. Underwriters in continental Europe have historically been conservative in their loss estimates, and releases in the years leading up to 2021 have been even larger than the already-significant historical average.

Insurers' cautious initial loss estimates for the events of 2020-2021 have contributed to the pattern of reserve releases. COVID-19 claims estimates have come down from initial calls of up to USD 100 billion,[2] to re/insured life and non-life losses of about USD 45-50 billion.[3] Lower motor claims frequencies during COVID-lockdowns also contributed to the build-up of excess reserves even after releases for the 2020 and 2021 accident years. However, caution is still warranted as the ultimate result of many COVID-19 court cases remains unknown, and third-party investors are purchasing stakes in the litigation, which could contribute to social inflation. The war in Ukraine has added to reserve risk, as losses remain highly uncertain in lines that include aviation, political risk, cyber and D&O. While estimates are likely to keep evolving significantly, tentative tallies for Ukraine war-related claims vary

[1] Measured as the share of reserves set aside for as-yet unreported claims (IBNR). For the US industry, IBNR / reserves reached 57% in 2022 compared to an average of 52% during 2010-19.
[2] Estimates gathered by SRI based on reports from Autonomous, Barclays, BofA and UBS, May 2020.
[3] Around 70% of those are non-life losses, and about 45% of the total was IBNR. *The great realignment*, Howden Group, January 2023.

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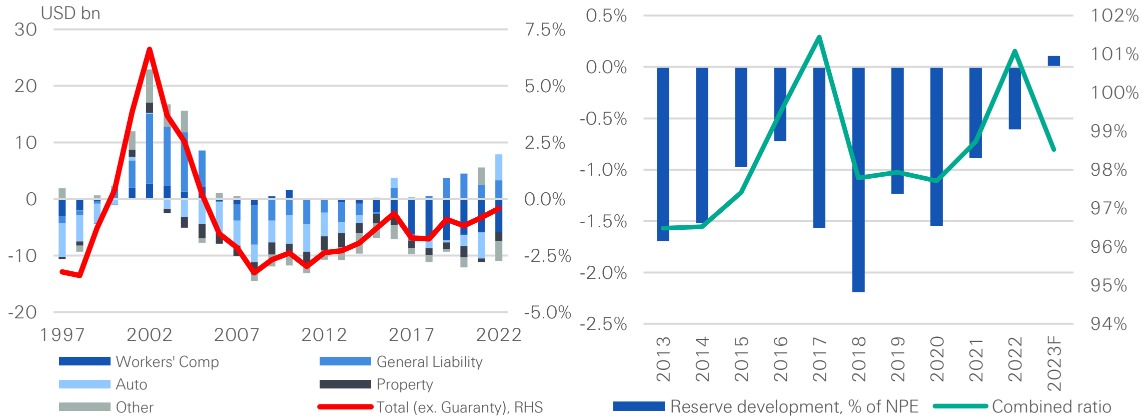
around USD 10-20 billion.[4,5] High natural catastrophe losses are a further factor creating uncertainty. The potential for more supply chain issues and shortages has made it harder to predict claims cost increases from a demand surge after a large natural disaster. Among recent events, high initial estimates of Hurricane Ian's losses may help ensure sufficient reserves have been booked.

The inflation shock has interacted with other events of recent years to increase the magnitude and variability of loss reserves. Inflation affects claims through multiple channels. For example, as price pressures transition from goods to services during 2023, long-tail (typically liability) lines can be disproportionately affected. These make up most reserves and are impacted by medical, wage and social inflation. Additionally, delayed settlements can be a larger problem during inflationary episodes, linking economic and social inflation and pushing jury verdicts and claim settlements higher.

Releases in large advanced markets eased slightly from 2020 through 2022, driven by motor and general liability in the US and UK. Despite current high reserve buffers, the pressures from recent systemic shocks and elevated inflation create more uncertainty, and we believe there is a higher probability that adequacy may weaken (see Figure 1 right). This risk, and uncertainty over legacy business, could limit insurers' capacity available for new business and require more premium to cover. This could extend or exacerbate the current hard market conditions in non-life insurance.

Figure 1
(left) US P&C reserve developments, USD billions (left axis) and as % of net premium earned (right axis)

(right) Global P&C industry reserve developments, % of net premiums earned (left axis) and combined ratio (right axis)



Note: The sample for industry-wide financial metrics consists of the US, United Kingdom, Germany, France, Italy, Australia, based on statutory accounting. No data for Japan and Canada. Reserve changes on the RHS chart are relative to the historical average. Source: NAIC Schedule P, Swiss Re Institute

[4] *Ukraine invasion: claims activity manageable, but uncertain*, Allianz GCS, July 2022.
[5] Howden Group (n 3).

Economic Insights
Inflation deviations past drive rate divergences present

Key takeaways

- Varying process in the fight against inflation is creating a divergent rate and growth outlook for economies
- The current policy trade-offs for emerging looks better than for advanced markets,
- In emerging Asia, currency depreciation and lower inflation has meant less need for a very sharp adjustments in interest rates.
- Central banks in Latin America are now also poised to start cutting rates as economies see gradual but steady progress on disinflation
- Insurers in Asia have likely benefited from the more stable inflation levels, with their pre-pandemic reserving assumptions deviating least.

About Economic Insights
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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
John Zhu
Chief Economist, Asia Pacific

Fernando Casanova Aizpun
Senior Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell
Growth, inflation and interest rate trajectories are diverging. More rate hikes in many advanced markets are likely, while emerging economies appear to be turning a corner. But there is heterogeneity among emerging markets too. Inflation in Asia never quite reached the heights of the west, and rates were not tightened to the same extent as in Latin America. Insurers in emerging Asia have likely benefited most from more stable inflation, with pre-pandemic reserving assumptions most on mark.

COVID-19 and the war in Ukraine were two huge shocks in quick succession that synchronised global economic and policy cycles. Now, however, the base effect of these shocks is fading, and idiosyncratic domestic factors will regain primacy in driving diverging cycles in the second half of this year. For example, in emerging Asia, broadly speaking inflation has fallen back to target, or will do so soon, giving central banks room to loosen policy and focus on achieving a soft landing for growth. In China, too-low CPI inflation/PPI deflation due to weak domestic demand led the central bank to cut interest rates in June. Vietnam, meanwhile, started cutting rates even earlier in March and at 100 basis points at a time, in the face of weak exports. The current policy trade-offs for emerging looks better than for advanced markets, where delayed acknowledgment of the inflation issue meant a later lift-off for rates. Their tighter bias is expected to prevail over the short term, perpetuating growth slowdowns into 2024.

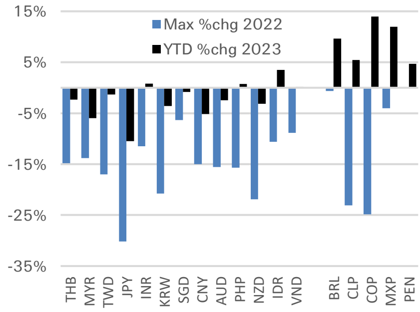
The expected divergence in interest rates between advanced and emerging Asian markets means that Asian currencies will likely face depreciation pressure against the US dollar. Yet most of the adjustment may have already happened or been priced in, for two reasons. First, the region's currencies have already depreciated significantly in 2022 during a period of unexpected and outsized interest rate increases in the US. Second, the Federal Open Markets Committee has signalled moderation in the pace and magnitude of future tightening now that rates should be close to peak. That means less room for further spread widening and more muted Asia FX depreciation in 2023 (see Figure 1).

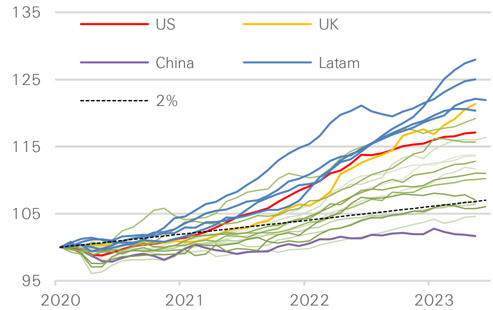
In contrast, financial conditions in Latin America remain much more restrictive than in Asia. From early 2021, central banks there embarked on the sharpest monetary tightening cycle of all regions, likely with the dual intention of dampening higher inflation and minimising policy divergence vis-à-vis the US to prevent capital flight. This "fear of divergence" resulted in historically high real interest rates, and also avoidance of FX weakness and passthrough to imported inflation. But it comes at the cost of growth. We expect GDP growth of 1.1% in Latin America this year: our forecast for emerging Asia is 5%-plus.

Central banks in Latin America are now also poised to start cutting rates as economies see gradual but steady progress on disinflation. Those that raised quickest and firmest (Brazil) are ahead of the curve, while those that did not suffered second waves of inflation (Colombia) and are behind. In other smaller markets like Uruguay (-25bps), Costa Rica (-50bps) and the Dominican Republic (-75bps), interest rates cuts are already underway.

Figure 1 Maximum currency depreciation against the USD in 2022 vs 2023 YTD

Figure 2 Headline CPI index levels, rebased Jan 2020=100; green lines are other economies mainly in APAC





Source: Macrobond, Swiss Re Institute

How soon and by how much different central banks can cut interest rates this cycle may depend more on cumulative misses, in our view. Historical inflation and central bank targets in emerging market tend to be higher, so actual inflation in this cycle has been closer to objectives, for more time, than in advanced economies. For emerging markets, the annual inflation rate reached a high of 9.9% in September 2022, 2.6x higher than in the preceding decade.[1] In advanced markets the peak was 8.0% in October 2022, or 4.1x higher. In emerging Asia price increases since the pandemic have been more moderate than in Latin America and most advanced economies. If judging central banks by *average* inflation, then Asia should have more room to ease.

This also matters for insurers because for the industry, with respect to inflation, "bygones are not bygones": price *levels* matter (see Figure 2). Once global inflation *rates* fall back to target elsewhere, Asian insurers will have benefited from years of price *levels* closer to what their reserving assumptions had factored in. They have experienced less "excess inflation", and so even though interest rates cuts may lower asset returns, there is also less need to "make up" for costs of claims that turn out to be much higher than anticipated.

However, it is too early to definitively cite winners and losers given significant uncertainties on the horizon. For example, the US National Oceanographic and Atmospheric Administration recently noted that the El Niño weather phenomenon is already here.[2] El Niño typically increases global food prices and is another supply shock that central banks cannot control. The inflationary impact would be felt the most in emerging markets where food is a bigger share of CPI baskets, holding inflation risks for insurers still front and centre.

[1] sigma 4/2022:World insurance - inflation risks front and centre, Swiss Re Institute.
[2] *El Niño conditions are present and are expected to gradually strengthen into the Northern Hemisphere winter 2023-24*, NOAA, 8 June 2023.

Economic Insights

A step ahead: the success of monetary policy making in Latin America

Key takeaways

- Policymakers in Latin America have made good progress on disinflation.
- Core inflation is proving more persistent than headline, and the current approach is "wait and see".
- Even so, we do expect interest rates in the region to start coming down soon, well before the same happens in advanced markets.
- Countries that responded quickest and firmest to the inflation crisis starting in 2021 have first-mover advantage and more scope to cut.
- The growth outlook for Latin America is more positive than for advanced markets, but less so than for emerging Asia, where inflation and rates never spiked up as high.
- Disinflation, more stable FX rates, and higher equilibrium interest rates should support insurer earnings.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Caroline Cabral
Senior Economist

Fernando Casanova Aizpun
Senior Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Central banks in Latin America are poised to start cutting interest rates. Early tightening in 2021 helped moderate the inflation outlook. Policymakers will soon seek to accommodate a soft-landing. Those that raised quickest and firmest are ahead of the curve. Disinflation and more stable FX should ease pressure on insurers' claim costs, which, with the still higher rates expected to prevail over the longer term, could boost industry profitability.

It could be said that central banks in Latin America have done a good (so far) monetary policy job with respect to the recent inflation crisis. Many countries in the region are already in disinflation mode, and we expect central banks there to start to cutting interest rates soon, well before their advanced market peers do. The "success" on inflation resulted from early and some of the sharpest monetary tightening in the world in 2021, with rates going as high as 13.75% in Brazil, 13.25% in Colombia and 11.25% in Mexico. That helped better contain inflation than in the euro area, although the annual pace in Latin America currently remains higher (see Figure 1). Inflation in the US and Latin America are both heading south, while Latin America policy seems to be a step ahead, with the gap to core inflation target (2x) less than in the US (2.4x).

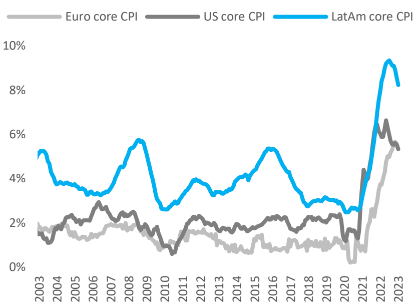
Further, net capital inflows were attracted by high real interest rates, and many the region's currencies have outperformed globally. Currency strength has meant lower import prices and these, in turn, have also contributed to easing inflation pressures. More weight to the policy success narrative comes from a milder-than-anticipated regional growth slowdown in 2023, with economies like in Brazil and Mexico starting to show the markings of a soft-landing. Note, however, while the growth story is favourable relative to the advanced markets, it is less so versus emerging Asia, where inflation and rates never reached the same heights (see Figure 2).

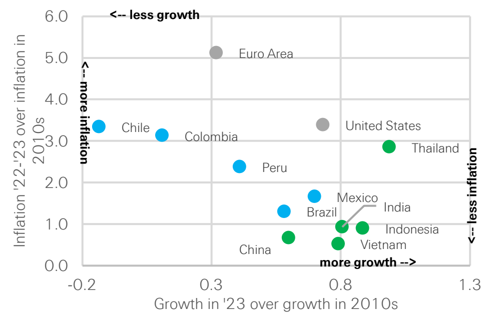
Falls in food and energy prices have contributed most to slowing headline inflation in Latin America. However, in the region's five largest markets, core price rises have also slowed notably in the past four months. For example, core CPI in Mexico have been at their lowest since November 2020 in each of the last three months, with June marking the fifth consecutive month of disinflation. And in Colombia, after a second wave of rising prices earlier this year, core CPI is now pacing at its lowest month-over-month rate since the end of 2021, and the last three months have all been ones of disinflation. Even so, we forecast that headline inflation will remain above the upper limit of the central bank's target range until around 3Q24. In Brazil, annual inflation (3.2% as of June) is already below the central point (3.25%, +/- 1.5%). However, we see a rise to about 5% by the year-end due to the reimposition of taxes measures that were cut and reduced price levels in 3Q22.

Several factors contributed to pushing inflation in Latin America so high: 1) the sudden lifting of COVID-19 mobility restrictions led to a strong recovery in domestic demand; 2) the generous fiscal spending during the pandemic; 3) severe droughts that affected food prices and hydroelectric energy prices locally; 4) supply chain bottlenecks and the war in Ukraine leading to higher prices for goods and commodities, and (5) the habitual practice of wage indexation as a lesson learned from previous episodes of high inflation.

Figure 1 (LHS)
Annual core CPI inflation.

Figure 2 (RHS)
Growth and inflation historical comparison vs current outlook. Latin America in blue, emerging Asia in green.





Note: Figure 1 is the average of the 5 largest economies in Latin America (Brazil, Chile, Colombia, Mexico, Peru).
Source: Swiss Re Institute

While we expect central banks in Latin America will start cutting interest rates soon, at present the approach is wait-and-see with core inflation proving stickier than headline (see Figure 2). Policymakers are also watching the Federal Reserve's forward-looking statements. Diverging from Fed policy stance more than necessary would mean extra pressure on local currencies and risk import inflation. Those central banks that raised quickest and firmest in 2021 are ahead of the curve and have more space to cut. Hence, we expect to see rates cuts in Chile starting this month, followed by Brazil and Peru in August. The central bank in Colombia, which was slower to react to the inflation spoke, will probably have to wait longer. Mexico is perhaps the most constrained in its ability to cut rates as it cannot afford to deviate from the US stance given the interconnectedness of the two economies.

The success of monetary policy actions to date should support macro stability in Latin America. There were significant increases in inflation and policy rates, but long-dated yields did not increase by as much. That said, we expect the growth differential against the broader emerging market aggregate to remain negative, as many countries in the region still face structural ailments such as high levels of indebtedness, low productivity, political & social instability, and aging populations. For now, momentum suggests growth in the region will accelerate in 2024. A dampening of inflation pressures and a more stable FX rate should help moderate insurance claims costs. This, and what we expect will be still-elevated rates in relative terms over the long term, will boost industry earnings.

Swiss Re Institute

Issue 18/2023

Economic Insights
Pulling the plug on the profit-price-wage spiral fears in Europe

Key takeaways

- The economic debate in Europe on rising corporate profit margins adding to inflation pressures has picked up again.
- We expect corporate profit growth to moderate due to still rising wage inflation in a weak growth outlook and amidst an overall disinflation environment.
- This would reinforce disinflationary and economic slowdown dynamics and create a challenging backdrop for risky assets.
- This calls for discipline in insurers' asset-liability matching strategy.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Charlotte Mueller
Chief Economist Europe

Diana Van der Watt
Economist

Michel Roth
Senior Global Investment Strategist

In a nutshell

Excess demand vs supply imbalances have seen firms increase price mark-ups over costs and expand profit margins. This has encouraged greater nominal wage demands and reinforced fears of inflation persistence. We expect profit margins will moderate with slowing growth and a lagging (relative to overall inflation) rise in wages. Risky assets could face a challenging 2H 2023.

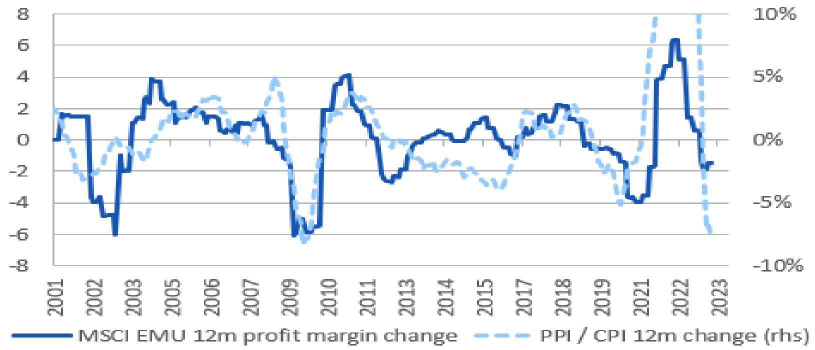
The contribution to inflation – or, the manifestation of inflation – in corporate profit margins has gained attention, including from the European Central Bank and governments. Firms have protected their margins by passing on higher input costs to consumers, and in some cases even expanded mark-ups.[1] The IMF recently said that rising corporate profits have accounted for almost half the increase in euro area inflation over the past two years.[2] Moreover, though producer input costs eased earlier this year, consumer prices have remained comparatively elevated, as have profit margins (see Figure 1). Some say firms have capitalised on the situation, giving rise to the so-called "greedflation" narrative. We see that as "muddling inflation's symptoms with its cause"[3] with firms' resilient profit margins rather driven by free market forces and supply-demand imbalances. Either way, we do not expect a "profit-price-wage" spiral,[4] even with wages currently accelerating in response to high prices.[5]

Instead, we expect corporate profit growth to moderate in line with our expectation of disinflation in Europe, as supply-demand imbalances ease amid slowing economic activity and normalising supply issues. We see the recent acceleration in wage growth as catching-up rather than as the start of a self-reinforcing spiral. The economic stagnation in the euro area and UK[6] that we forecast will reduce demand, weaken firm price-setting power and therewith moderate corporate profit margins. Second, as knowledge of broader supply shocks fade, firms may be pressed to moderate prices. This could further squeeze profit margins, as firms are forced to absorb higher labour costs, pulling the plug on the profit-price-wage spiral thesis. Finally, some governments have intervened to influence price setting behaviour, such as the UK Chancellor's appeal to food manufacturers[7] and the French finance minister's agreement with 75 manufacturers to lower prices.[8] More of the same could be forthcoming if this situation persists.

[1] I. Weber and E. Wasner, "Sellers' Inflation, Profits and Conflict, *University of Massachusetts Amherst Economics Department Working Paper Series*, 2023
[2] Hansen, N.J., Toscani, F., Zhou, J. *Europe's inflation outlook depends on how corporate profits absorb wage gains*. IMF chart of the week, 2023
[3] Shearing, N. "*Greedflation debate muddles inflation's symptoms with its cause*". Capital Economics, 2023
[4] O.Arce, E.Hahn et al. *How tit-for-tat inflation can make everyone poorer*, The ECB Blog, 30 Mar 2023.
[5] For example, Deutsche Post and ver.di agreed an 11.5% increase (equivalently 5-6% per year for 2 years plus a small one-off), while the UK Construction Industry Joint Council agreed up to 8% pay rises for some workers
[6] See our last quarterly *European economic outlook* for our below-consensus GDP forecasts.
[7] *Readout of the Chancellor's meetings with food manufacturers and the CMA*, HM Treasury, 23 May 2023.
[8] *France strong-arms big food companies into cutting prices*, Reuters, 9 June 2023.

24 July 2023

Figure 1
Corporate profit margins vs PPI to CPI ratios in Europe



Source: Bloomberg, Swiss Re

For these reasons, we believe "sellers' inflation" will moderate, this reinforcing our forecast of headline CPI disinflation into next year. The speed at which this happens will have implications for monetary policy. If profit margins decline rapidly due to a more severe economic downturn than anticipated, firms may need to lay off workers. This would undermine the bargaining position of labour and ease wage inflation pressures. In this scenario, central banks would be more inclined to move away from their tight policy stance. This as a cooling of labour in addition to product market conditions, is a fundamental requirement for success in the fight against inflation. On the flipside, if profits continue to surprise to the upside, there could be a revival of profit-price-wage spiral fears. This could lead to more monetary policy tightening to combat excess demand in product and labour markets.

From an investment perspective, the different scenarios all present potentially challenging backdrops for risk assets. Should profit margins moderate more than expected – due to a deeper-than-expected economic downturn or potential government interventions to change corporate pricing behaviour (eg, windfall taxes, price controls, structural reforms to redress market concentrations) – this would hurt the valuation of listed companies. A "no landing" scenario where profit margins remain resilient could also pose headwinds to risk assets if it coincides with slower disinflation and results in prolonged restrictive monetary policy. This would keep discount rates higher for longer and hurt valuation multiples. We also believe that restrictive monetary policy would eventually bite: it's just that the transmission mechanism may be slower this time. In addition, regardless of whether a "hard", "soft" or "no" landing scenario materialises, other factors like market liquidity from central banks will be key to watch for risk assets too. In sum, in our view asset-liability matching decisions should still not lose sight of the overall weak macroeconomic backdrop expected in Europe in the second half of 2023 and into 2024, in addition to technical market factors.

Swiss Re Institute

Issue 19/2023

Economic Insights
Emerging Asia: becoming less shock prone

Key takeaways
- Core inflation has fallen significantly in many emerging Asian economies allowing some to cut rates this year.
- Weaker China data and the Bank of Japan's decision to allow yields to rise have not had material impact on growth or asset prices in the region.
- In the near-term, the return of food price is a risk that warrants monitoring and cautions against too-large interest rate cuts.
- The relative outperformance of emerging Asian economies post-pandemic has increased credibility, and reduced "external dominance".
- The better growth and inflation trade-offs in the region are attractive for insurers and investors alike.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
John Zhu
Chief Economist, Asia Pacific

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In a nutshell
Emerging economies, especially in Asia, have made significant progress on disinflation in 2023 and at relatively little cost in terms of forgone growth or employment. Having demonstrated greater resilience to external shocks, the region may be on the cusp of a virtuous cycle with enhanced economic credibility lowering long-term volatility of growth, inflation and interest rates. An attractive proposition for global insurers and investors alike.

Faster-growing emerging market economies are moving more to the beat of their own drums. We expect that emerging Asian economies' will outperform the rest of the world in terms of real GDP growth in the second half of 2023 and into next year. That's no mean feat given recent developments in the region's two largest economies. First, economic data from China remain weak. That said, we did not assume large growth spill overs from its reopening year, so disappointing economic data now is not a big drag on the growth outlook for emerging Asia either. And second, the Bank of Japan has recently relaxed its yield curve control by raising the cap on the 10-year sovereign bond yield from 0.5% to 1%. Yet, fears of a sharp correction of asset prices as returns on the lowest-yielding global safe asset rose, have also not come to pass.

Headline and core CPI inflation rates have fallen notably in many in emerging Asian economies, and are now close to or within central bank target ranges (see Figure 1). China and Vietnam have already eased monetary policy, and we expect Indonesia will also cut interest rates before the end of this year. Others will likely wait until 2024 to do so. Looser financial conditions and lower inflation should help sustain the domestic consumption growth that is shielding many emerging economies in Asia from weaker external conditions.

By contrast, due to slower disinflation so far this year, policy easing in the advanced economies of the region (Australia, New Zealand, Singapore) is much further off. In the case of Australia, we expect that the central bank will raise its policy rate once more in November to counter still-high core inflation. Japan is in a different inflation cycle altogether: it is one of the few economies where headline and core CPI inflation increased in June, but we do not see the Bank of Japan exiting its negative interest rate policy before next year.

Strong labour markets in many Asian economies should support wage growth and consumer confidence. Whether the disinflation momentum on core and services CPI inflation continues depends on how labour market conditions evolve. In some emerging Asia economies, unemployment rates have fallen to their lowest in decades (see Figure 2). Yet we do not think central banks are "behind the curve". In general, lower average CPI inflation rates in emerging Asia since 2020 (around 2.5% year-on-year, compared with more than 4% in the US and Europe) mean consumers' real incomes have fallen by less. That should mean less pressure for higher-than-CPI wage demands to reclaim lost purchasing power.

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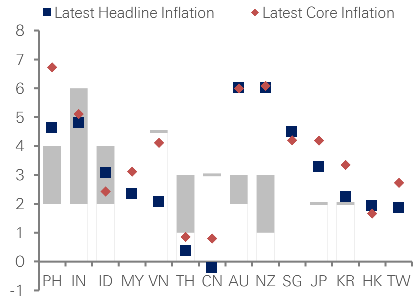
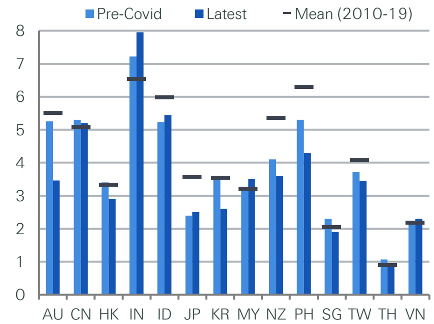
Figure 1 Headline and core CPI inflation rates vs central bank targets/official forecasts (shaded)

Figure 2 Unemployment rates, latest vs historical





Source: Macrobond, Swiss Re Institute

There are downside risks to our optimistic outlook for emerging Asia, first from potentially worse-than-anticipated slowdowns in major economies. The most uncertain factor in Asia is mainland China, where the youth jobless rate reached a record high of 21.3% by the end of the second quarter. Compared with previous periods of slowdown, the economic impact of the pandemic has been more persistent and unequal. Growth in disposable income per capita was 1.3% for the bottom 20% by income last year (versus CPI inflation of 2% in 2022), compared with 4.5% for the top 20%. More decisive fiscal policy support to boost confidence will likely be needed to stabilise GDP growth to meet the official target of around 5% in 2023.

A greater risk to Asia's consumption growth story may be the return of food price inflation due to supply shocks. The current lower-headline and higher-core CPI pattern may reverse next year. Extreme heat this summer and the impact of El Niño is bad news for global agriculture, as is the expiration of the Black Sea agreement to allow grain exports out of Ukraine. And in July, India imposed an export ban on certain types of rice. That's a concern, as India is the largest rice exporter in the world, and rice is the food staple for many Asian countries. The UN Food and Agriculture Organisation's rice price index rose 19.7% in July from a year earlier to its highest since September 2011.

On balance, in our view, the higher growth and lower inflation profile of emerging Asia this year and next implies that the "sacrifice ratios" (ie, the cumulative slowdown in GDP growth in return for cumulative disinflation), have been relatively low. In the past, an issue specific to emerging markets was sudden stops of capital inflows due to perceived institutional weaknesses (leading to "external dominance"). Low credibility in turn used to lead to slower convergence of inflation to target at higher cost to growth. Arguably, the return of food price inflation risk notwithstanding, emerging Asia has emerged from the pandemic with enhanced credibility. That should mean more independent economic cycles, and less volatile inflation, economic growth and interest rates in the long run – conditions all favourable for insurers.

Economic Insights

US Treasury yields: an inflation rather than bond market crisis

Key takeaways

- Different factors have converged to push US longer-dated yields higher.
- Our analysis shows the increase in US yields is attributed to global factors such as inflation persistence and goes hand-in-hand with a repricing of the longer-term nominal "neutral" policy rate.
- Increases in longer-dated yields are usual at the end of hiking cycles. Yet, sustained and rapid increases have only ever occurred when the Fed funds rate was at 0%, which isn't the case right now.
- For longer-dated yields to go even higher, a reacceleration of core and wage inflation is probably needed.

About Economic Insights
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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

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In a nutshell

Different factors have pushed US long-dated yields higher, but we believe a looming bond crisis or issues around US credit worthiness are unlikely. Our analysis shows that US-specific factors like deficits and government bond supply have little to do with the uptick in yields: the driver, in our view, is more a market reassessment of the nominal "neutral rate" due to inflation persistence. For yields to go higher still would require economic reacceleration. US insurer asset portfolios are more than 40% Treasuries, and yields remain key for balance sheet management.

The recent significant increase in longer-dated US government bond yields has raised questions around whether the US could be at risk of government bond crisis. We think that is unlikely. The increase in yields has been driven by a perfect storm of different factors and associated worries coming together. First, in early August, the US Treasury announced higher-than-expected debt supply, while ratings agency Fitch downgraded the credit quality of the US.[1] Second, the Bank of Japan relaxed its yield curve control policy in July, likely leading to less demand from Japanese investors. Third, Federal Reserve Chair Powell signaled that quantitative tightening may continue into 2024, meaning less central bank buying of US bonds. These factors imply elevated levels of US debt supply, and fuel questions about how easily the private sector will be able to absorb it all and whether the US faces credit-worthiness issues. We are more "sanguine": the most important factor supporting longer-dated yields, in our view, is continued economic resilience and the to-date slow progress on disinflation, suggesting interest rates will remain elevated.

Our analysis[2] shows that deficits, the amount of government bond supply and country-specific monetary policy choices have not mattered much for US 10-year yields, at least for now. What appears to have driven 10-year yields most is the market pricing in a higher "neutral" nominal policy rate across advanced economies (see Figure 1).[3] We proxy the market-implied nominal neutral rate through forwards, using the 1-year yield in 10 years' time, which currently stands at around 3.7%, significantly higher than Fed, academic and our current estimate of around 2.5%. If anything, higher 10-year yields have been driven by inflation persistence. Elevated debt supplies and credit worthiness

[1] *Fitch Downgrades the United States' Long-Term Ratings to 'AA+' from 'AAA'; Outlook Stable,* Fitch Rating, 1 August 2023.
[2] Our analysis uses Principle Component Analysis for five developed-market 10-year yields and the "neutral rate" proxies (US, UK, Germany, Canada, Australia). The first principle component captures 96% of cross-country variation, suggesting that one common factor explains most of the 10-year yield fluctuations. Such a common factor could be a global "neutral rate proxy", which is highly correlated with the 10y yield first principle component and economically makes sense.
[3] The nominal neutral rate is the estimated rate at which monetary policy is neither restrictive not accommodative over the longer-term.

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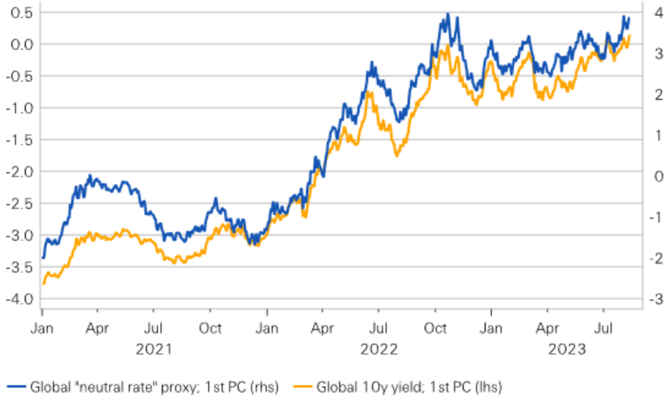
issues have unlikely exerted much influence on yield differences across advanced economies where there are no restrictions on own currency issues.

Besides a repricing of the nominal neutral rate, history shows that increasing 10-year yields are nothing unusual at the end of the hiking cycle (see Figure 2). Furthermore, "bear steepening" of the yield curve whereby longer-term yields increase more than shorter-term yields is hardly ever sustained. Indeed, all such moves in the US since 1985 came when the Fed funds rate was at or close to 0% and inflation-adjusted yields were very low or deeply negative. None of this resembles the current yield curve environment.

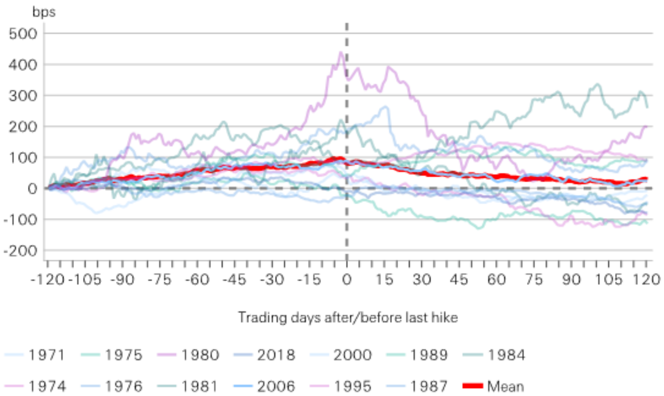
Can 10-year yields still go higher from here? Yes, but what would most likely be needed is a reacceleration of the economy, including sustained upticks in core inflation and wage growth, and a prolongation of the high interest rates. While possible, we believe the ultimate upside for US yields is capped: much of current-cycle monetary tightening has already occurred, and we see US growth slowing in the second half of 2023. For insurers, Asset Liability Management (ALM) frameworks partly insulate from strong yield moves. That said, US insurers hold more than 40% of their assets in Treasuries and hence yields are a very relevant topic.[4] In addition, beyond ALM, violent yield movements can easily have spillover effect on other asset classes, calling for sustained discipline in balance sheet management.

Fig 1: Global 10y yield mirrors the market-implied global neutral rate



Source: Bloomberg, Macrobond, Swiss Re Institute

Fig 2: Change in US 10y yields around last hike of a cycle



Source: U.S. Department of Treasury, Macrobond, Swiss Re Institute

[4] *Global Insurance Market Trends 2022*, OECD 2023

Swiss Re Institute

Issue 21/2023

Economic insights
The 100-year legacy of Japan's Great Kanto Earthquake

Key takeaways

- The Great Kanto Earthquake is still Japan's worst natural disaster, with more than 100 000 lives lost and economic losses of close to a third of its GDP in 1923.
- Despite extraordinary improvement in the structural resilience of buildings, seismic risk is still extremely high in Japan.
- Today, the high concentration of population and wealth in the Tokyo region mean a serious quake could cause insured losses of an estimated USD 130-150bn.
- This would be the highest ever loss globally from one event.

About Economic Insights
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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Dr Chandan Banerjee
Natural Catastrophe Economist

Lucia Bevere
Senior Catastrophe Data Analyst

Jessie Guo
Senior Economist

We welcome your feedback. For any comments or questions, please contact:
institute@swissre.com

In a nutshell

A hundred years on from the Great Kanto Earthquake, Japan is a global leader in enforcing stringent building codes and disaster mitigation measures. Yet its areas of very dense populations and asset values create great potential for huge losses today. We estimate that, depending on location, a single quake could cause insured losses of USD 130-150bn.

The Great Kanto Earthquake in Japan in September 100 years ago claimed around 105 000 lives, the largest loss of life from any earthquake in Japan in recorded history.[1] The death toll was largely caused by the fires and aftershocks that followed the earthquake. It registered a moment magnitude (Mw) of 7.9, with the epicentre near the southern Kanto region (see Figure 1), then already a densely populated area. Economic losses were estimated as equivalent to 30% of Japan's gross domestic product (GDP) of 1923.[2] The disaster sparked the development of a strong culture of risk prevention and preparedness in Japan: necessarily so, given the high probability of further strong earthquakes there. However, despite the strict building codes and other measures, earthquakes in Japan could still trigger staggering losses. For example, the economic losses from a Mw 7.3 quake beneath the Tokyo Metropolitan area could be nearly USD 1 trillion in today's prices – and we estimate that the associated insured losses could be almost twice the annual average loss from *all* natural disasters *globally* for the last 10 years.[3]

Japan is one of the world's most earthquake-prone countries. Since 1950, it has been struck by four large quakes of Mw 8 or more, and 148 mid-sized earthquakes of Mw 5-7.[4] The Tokyo Disaster Management Council estimates up to a 6% probability of a repeat Mw 7.9 earthquake striking the city within the next 30 years.[5] Today, strict building codes are continuously updated to increase the seismic resistance of buildings.[6] It is a testament to these high standards that in 2011, the Mw 9 Tohoku earthquake and tsunami saw relatively low loss of life despite being the strongest-force quake ever to strike Japan, and the fourth-strongest worldwide.[7] Even so, and despite it striking a relatively rural region, economic losses were above USD 280 billion (inflation adjusted), the highest from any natural catastrophe globally since 1970. The event also exposed vulnerabilities, since most deaths and about a third of the economic damage were caused by the follow-on tsunami, which breached preventative seawalls, rather than the quake itself.

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[1] *Earthquake Insurance in Japan*, General Insurance Rating Organization of Japan, October 2022.
[2] https://www.boj.or.jp/en/about/press/koen_2011/data/ko110628a.pdf
[3] *sigma* 1/2023: Natural catastrophes and inflation in 2022: a perfect storm, Swiss Re Institute.
[4] *Recent earthquakes and their magnitudes in Japan*, worlddata.info.
[5] *Report on Estimated Damages in Tokyo Due to an Earthquake Directly Beneath the Capital*, Tokyo Disaster Management Council, 2013.
[6] See *Building Standards Act, English*, Japanese Law Translation.
[7] *20 Largest Earthquakes in the World Since 1900*, USGS, 26 June 2019.

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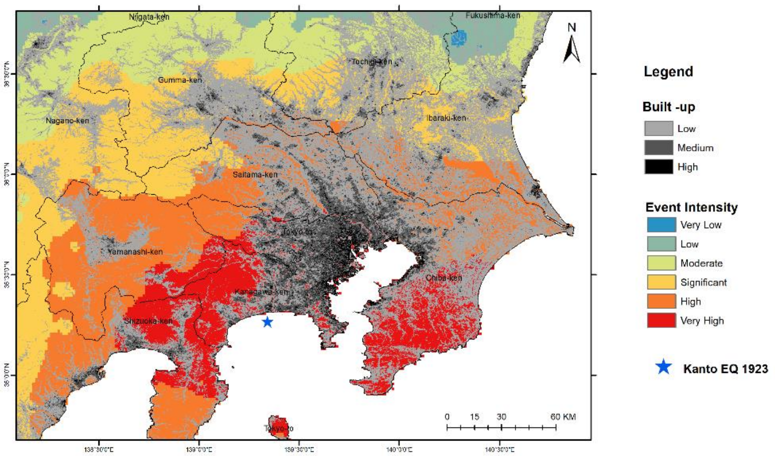
Today the height of seawalls has been increased to make mitigation readiness higher than in 2011. But a sizeable percentage of buildings were constructed before 1981, when the last major update to the building code took place.[8] If a major earthquake were to strike the Kanto region again today, the human toll and economic fallout could be vast. The region is very densely populated with about 39 million people (about 4x that of 1920), has a high concentration of asset value (see Figure 1) and produces 39.3% of Japan's GDP as of 2019.[9]

Figure 1
Increased risk exposure in extreme seismic hazard zone in and around Tokyo (Kanto region). Built-up volumes 2025 and 1923 earthquake footprint.



Sources: Swiss Re CatNet; International Seismological Centre (ISC)-GEM Earthquake Catalogue; Joint Research Centre (JRC), European Comission; Swiss Re Institute.

In 2022 the Tokyo Metropolitan Government estimated that a Mw 7.3 quake below the city – an event with an expected 70% probability in the next 30 years – could claim 6 000 lives and destroy or severely damage more than 190 000 properties. The estimated economic loss from direct and indirect damages would be JPY 95.3 trillion, or USD 940 billion in today's values – about 3.5x the typical total economic loss from *all* natural disasters *globally* in a year. We estimate the associated insured losses from residential and non-residential claims at about JPY 13.3-15.2 trillion, or USD 130-150 billion today: the biggest ever single-event loss to the global insurance industry. In Japan, the underwriting risk on earthquake is shared between government and private sectors. Despite Japanese non-life insurance companies' capital resilience under stringent solvency regulation, earthquake risk in Tokyo remains a major threat that calls for continuous strengthening of worst-case scenario planning and modelling of all loss drivers.

[8] https://www.eeri.org/site/images/awards/reports/reithermanpart1.pdf, EERI, 2008.
[9] Japan Prefectures Population from 1920 and Area (demographia.com); Japan Cabinet Office.

Swiss Re Institute

Issue 22/2023

Economic Insights

Equity returns: where growth tells most of the story

Key takeaways

- Historically, economic activity has been more important than inflation as a driver of equity returns. Current US equity strength mirrors the economic resilience seen to date.
- But bad macro doesn't necessarily mean bad markets: equities generally profit from central bank liquidity expansions, even when economic momentum is subdued.
- A recession, ongoing disinflation and central bank liquidity withdrawals could cap the upside of equities in the shorter-term. However, a soft-landing scenario where central banks manage to not over-tighten could avoid a deeper equity sell-off.
- Insurance asset allocators may want to consider such a scenario given the large share of fixed income investments in their portfolios.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Patrick Saner
Head Macro Strategy

Daniel Ellarby Sánchez
Intern Macro Strategy

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Inflation and especially liquidity impact stock market performance. Historically, however, the business cycle has been the key determinant for equity returns. A recession or marked growth slowdown alongside disinflation and central bank liquidity withdrawals could cap equity upside in the shorter-term. That said, central bank caution to not over-tighten could yield a soft- or no-landing scenario, with equities holding their ground vs fixed income. This should keep insurance asset allocators on their feet, given the high exposure of the industry to the latter.

Equities have been performing well despite the ongoing monetary policy tightening cycle, the fastest in over 40 years. This has fuelled debate around how stock markets perform under inflationary environments and why, given looming recession fears, a longer-lasting equity sell-off has so far proven elusive. Figure 1 is revealing for the former: historically, changes in economic activity rather than in inflation have been more important drivers of US stock market performance. Using data since 1955, our analysis shows that in all cases, and irrespective of inflation dynamics, returns are positive when an economy is in expansion or recovery mode, and negative when the business cycle signals a downturn or a contraction.[1,2] This is an important result, and consistent with the current macroeconomic environment. Strong second quarter US GDP, personal spending and consumer confidence data, and a positive change in the OECD leading indicator, all point to environment that we label as "recovery" in Figure 1. In the past, such periods have typically been characterised by positive returns in equity markets, especially when coupled with high but decreasing inflation.

But "bad macro doesn't necessarily mean bad markets". The liquidity backdrop influences the behaviour of risk assets too (see Figure 2). Ample liquidity is an especially favourable scenario for equities under environments of recovery and expansion, where returns are boosted compared to the inflation regime analysis. Importantly, and in contrast to different inflation regimes, equities also perform decently during economic downturns with increasing liquidity. This helps explain the overall strong performance of stocks over the last decade of sluggish economic growth, coined with the expression "secular stagnation". That said, high levels and rising liquidity cannot prevent significant equity drawdowns during an economic contraction, as was the case in the 1980s, the dot.com bust and during the global financial crisis.

[1] We use the Hodrick-Prescott filter to determine whether inflation is high or low (ie, above target), and inflation dynamics are captured by the change in 3-month rolling averages. Economic activity is classified according to the level and monthly change of the OECD Leading Indicator, which signals changes in the business cycle, and co-moves with growth. In both cases, levels and momentum are observed to monitor changes in returns. We then repeat the same analysis exchanging inflation for central bank liquidity, using M2 growth since 1959 as a proxy.
[2] The results for the inflation and liquidity regime analysis are directionally robust, also across more recent time horizons.

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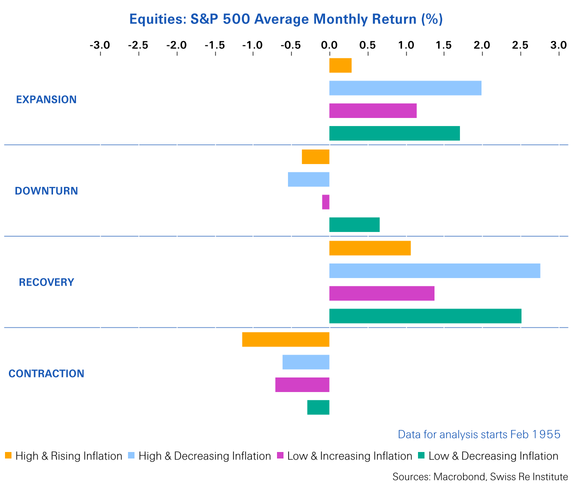
Economic Insights
Equity returns: where growth tells most of the story

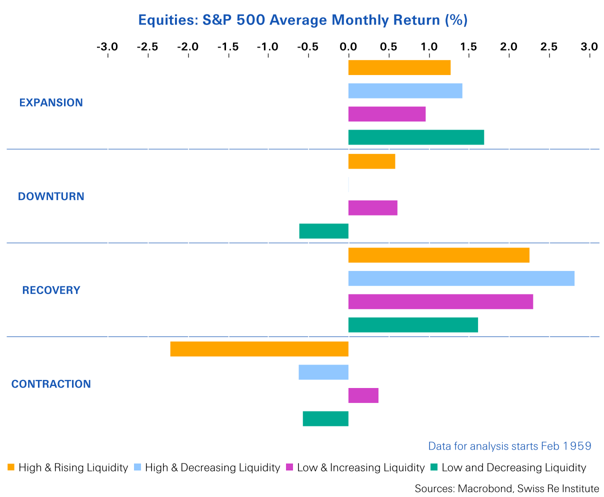
When we overlay our analysis with our economic outlook, it appears that the upside to stocks is capped in the shorter-term. We continue to expect a significant economic slowdown around the turn of the year, given ongoing disinflation and that central bank liquidity is decreasing. Historically, such an environment has been associated with muted or negative returns.

A key question for insurance asset allocators is how serious monetary policy makers are around bringing inflation back to the 2% target, and whether monetary policy lags will bite forcefully soon. US insurers hold more than 60% of their asset allocation in fixed income and slightly more than 10% in equities.[3] An environment where policy makers want to avoid "over tightening", do not withdraw liquidity too aggressively and tolerate above-target inflation for the sake of growth for a while, may favour equity over fixed income investments. This is not our baseline, but something that investors should nonetheless take into consideration.

Figure 1 (left)
Average monthly US equity returns, sub-classified into phases of the economic cycle and the inflationary regime

Figure 2 (right)
Average monthly US equity returns, sub-classified into phases of the economic cycle and the central bank liquidity regime





[3] *Global Insurance Market Trends*, OECD, 2022.

Swiss Re Institute

Issue 23/2023

Economic insights

Crop insurance: offering a way to support food security

Key takeaways

- Food price inflation reached 41% in May 2021 and 34% in March 2022, driven by supply shocks.
- Crop insurance is an effective risk management tool to reduce price volatility and support food security.
- We estimate that about 60% of insurable crops globally were unprotected by insurance in 2022.
- Crop insurance resilience is typically higher in sample countries that have higher public spend on agriculture vs the sector's GDP contribution.
- Public-private partnerships with both insurance and state support can maximise benefits to farmers.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Roopali Aggarwal
Insurance Research Associate

Li Xing
Head Insurance Market Analysis

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Food price inflation of more than 20% for much of the past two years highlights the need to make crop supply more resilient. We estimate that about 60% insurable crop production globally was unprotected as of 2022, a USD 113 billion crop protection gap. Countries with higher crop insurance resilience typically also have a bigger government focus on agriculture. This public and private support for crop insurance is associated with lower food insecurity and suggests combined efforts boost crop resilience.

The past two years have highlighted the importance of making the world's crop sector more resilient. In May 2021, global food inflation spiked to 41% due to supply chain disruptions in the COVID-19 pandemic, the FAO's monthly Food Price Index shows. Food inflation stayed above 20% throughout 2021 and peaked again to 34% in March 2022 after Russia invaded Ukraine.[1] Though the price index has declined in recent months, the lags in cost transmission mechanisms mean the shock is still being felt along the value chain, including continued high food retail inflation and distribution costs.[2] Weather disasters have also reduced yields of staple crops in many parts of the world. A severe drought in Brazil, the world's second-largest soybean exporter, led to an 18% soybean crop decline in 2021, for example. Food supply and price shocks tend to exacerbate poverty and reduce nutrition, leading to food insecurity and hunger, especially in low- and middle-income countries. Severe food insecurity could affect more than 345 million people in 2023, double the 2020 level, the World Food Programme estimates.[3]

To curb the impact of high food prices domestically, governments often resort to targeted interventions such as trade policies, cash and in-kind transfers and risk management tools.[4] Crop insurance is an effective risk management tool that can reduce price volatility, stabilise income for farmers, improve resilience against weather hazards, and ease access to agricultural finance, as shown by studies focusing on major food producers such as China and the US.[5] Our SRI Crop Insurance Resilience Index (Crop I-RI) seeks to measure the value of crop insurance coverage.[6] The index measures the share of global insurable crop production that is insured against shock events.[7] Crop resilience globally is rising, reaching 40.8% in 2022 from 27.7% in 2016, suggesting a healthy

[1] Calculations based on FAO Food Price Index data.
2 *Retail Food Price Inflation Still High Despite Falling Input Costs* (fitchratings.com)
[3] *A global food crisis-2023: Another year of extreme jeopardy for those struggling to feed their families*, World Food Programme, 2023.
[4] *Food Price Shocks: Channels and Implications*, World Bank, April 2019.
[5] H. Wang et. al, "Agricultural Insurance, Climate Change, and Food Security: Evidence from Chinese Farmers", Sustainability, 2 August 2022.
The Vital Role of Crop Insurance: Protecting Farmers, Ensuring Food Security, and Strengthening Rural Economies (insurancejournal.com)
[6] *sigma* 2/2023 – *Restoring resilience*, Swiss Re Institute, 21 June 2023.
[7] "Crops" refers to all food crops grown in a country, such as cereals, fruits, vegetables, roots and tubers, sugar crops, oilseeds. "Shock eve nts" include extreme weather events and accidents (eg, fire, disease, insect swarms).

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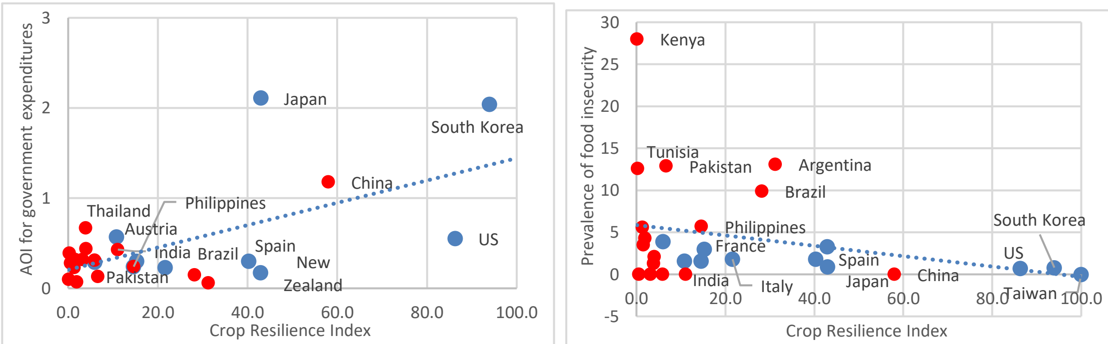
expansion of crop production protected by insurance coverage. Still, about 60% is still unprotected, and we estimate the protection gap at USD 113 billion globally in premium equivalent terms in 2022.

Figure 1
Left: Agriculture orientation index (AOI) for government expenditure vs Crop I-RI, 2021

Right: Prevalence of food insecurity vs Crop I-RI, 2021



Note: Red dots denote emerging markets and blue dots denote advanced markets.
Source: FAOStat, Swiss Re Institute

Crop I-RI and protection gaps vary significantly by country. Typically, countries in our sample with higher government orientation to agriculture (ie, relatively higher public expenditure on the agriculture sector in comparison to the sector's contribution to its GDP) have higher crop resilience values (see Figure 1, left).[8] These markets usually have less food *in*security (see Figure 1, right). This is because crop production typically has components of systemic risks and information asymmetries, adverse selection and moral hazards, that can only be diversified or reduced through public-private partnership (PPP).[9]

Government support motivates both insurers and insureds to engage in crop insurance initiatives. In turn, with higher private involvement in crop insurance, governments' fiscal burden can also reduce. In major crop producers with high gains in resilience, such as China and Brazil, growth in insurance coverage has been significant (16% and 9% per year, respectively), supported by high premium subsidies from the government (nearly 80% in some cases) and more PPPs in crop insurance. By region, emerging Asia achieved the highest resilience gain of 202bps to 47% in 2022, attributed to a mix of government support, the expansion and involvement of private agriculture insurance providers, and the introduction of parametric insurance products such as Weather Index Based Insurance.[10]

[8] Fig 1 left shows the Agriculture Orientation Index (AOI) for government expenditure. This measures government spending on agriculture relative to its contribution in the GDP. It is defined as: $AOI = \frac{Agriculture\ Share\ of\ govt.expenditures}{Agriculture\ value\ added\ Share\ of\ GDP}$. An AOI higher than 1 reflects higher spend vs GDP contribution.
[9] *Government Support to Agricultural Insurance*, World Bank, 2010.
[10] *Climate Change and Agricultural Insurance in the Asia and the Pacific Region, Asian Development Outlook 2021 Update*, Asian Development Bank.

Swiss Re Institute

Issue 24/2023

Economic Insights

US liability claims: the shadow of social inflation still looms

Key takeaways

- US liability claims costs rose 16% on average for the last five years, far exceeding economic claims drivers.
- The US is in the middle of a wave of social inflation, which is likely to continue unabated.
- Non-economic drivers of liability claims have been disrupted but not changed by COVID-19.
- Economic disinflation will not provide much relief for liability claims costs, and nor will stronger investment returns.
- The current rate of liability claims inflation (15% in 2022) is unsustainable. There can be no lapse in underwriting discipline.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Thomas Holzheu
Chief Economist Americas

James Finucane
Senior Economist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

The last two years of surging economic inflation has impacted motor and property insurers most. With personal lines seeing disinflation as headline inflation moderates, the spotlight will be on liability lines. We expect still elevated wages, a medium-term rise in medical inflation and social inflation to continue to push up liability claims. Social inflation has been ever-present since around 2015 and will have the longest lasting effect. Factors that contribute to a higher frequency of large verdicts and a rising scope of mass tort pose the most risk.

US liability claims costs have risen by an annual average of 16% over the last five years, well above average rates of economic inflation at around 4% (see Figure 1). The gap indicates that social inflation remains alive and kicking. Over the last two years, surging economic inflation has grabbed the headlines, with personal lines insurers in particular feeling the impact in terms of higher claims. With the macroeconomic environment now turning to one of disinflation, the social inflation story is set to come to the fore again, with liability insurers most exposed. Excluding reserves changes, US general liability claims were up 15% in 2022. This degree of claims severity, due mostly to social inflation factors, is unsustainable. Higher investment returns due to higher interest rates will not be enough to cover the high claims, and liability insurers will need to retain focus on underwriting discipline.

Personal lines insurers have felt the impact of the economic inflation of the last two years most. US car insurance prices in the August CPI were up 19.1% from a year earlier, echoing prior surges in used car prices (peaked at 45% yoy in June 2021) and repairs (peaked at 23% yoy in January 2023), which had pushed up claims costs. Meanwhile, construction costs in the Producer Price Index peaked at 23% in July 2022, driving up claims costs for a range of property lines. With disinflation for cars and construction materials progressing steadily, we see light at the end of the tunnel, although still-high wages for repairs and construction could continue to exert upward pressure on claims.

With the current rotation from economic goods to services inflation, attention is shifting back to liability lines, where wages and health care expenditures (HCE) are key drivers for claims severity. Figure 1 illustrates long-term trends (5-year averages) between claims severity and HCE, wage and headline CPI inflation over the period 1960-2022. The correlation coefficient with claims severity was 0.62 for HCE and 0.53 for wage inflation.[1] The correlation between CPI inflation to claims severity was weaker (0.45). And this all in addition to the looming shadow that social inflation casts over the market, which we expect will continue unabated.

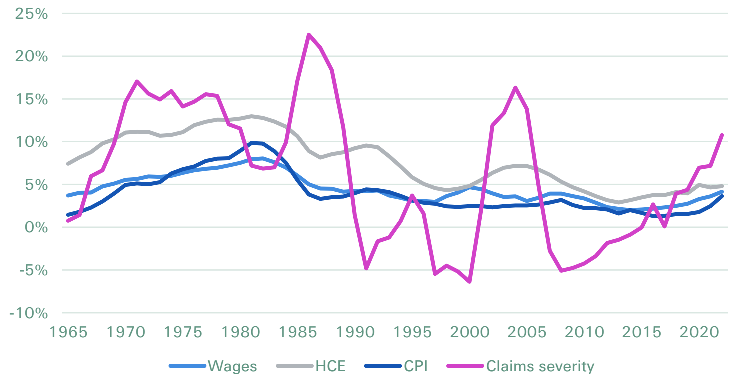
Social inflation has played a dominant role in previous periods of rising claims severity. The US liability crisis of the mid 1980s was the first episode of runaway social inflation. Corporates and their insurers were retroactively held liable for environmental damage and huge claims related to asbestos. The second episode of

[1] The correlation coefficient measures the strength of a linear relationship between two variables: 0 is no and 1 is perfect correlation.

social inflation in the early 2000s was driven by an expansion of mass tort. The current wave is characterised by a rising frequency of large single-claimant events, often based on ballooning non-economic damages. At the same time, the number of claimants in multi-district litigation cases has risen to a historic high.

The current outlook for social inflation is based on several interconnected factors: 1) *Changing jury attitudes* with larger sums awarded in tort cases, especially for non-economic damages. This trend has been driven by the belief that large corporations can afford substantial payouts and that the legal system should correct social injustices; 2) The growing availability of *third-party litigation funding* allows plaintiffs to pursue better-funded cases for longer. According to Westfleet Advisors, the US litigation funding market grew by 44% between 2019 and 2022;[2]
3) Additional capital also leads to increases in *legal advertising* by plaintiff lawyers, further contributing to growth of mass torts; 4) *Social sentiment*: trust in institutions has declined. There is a growing sentiment that corporations should be held accountable for a wide range of issues, from environmental damage to product defects; and 5) *Expanding legal concepts*: courts have expanded liability in certain areas, making it easier for plaintiffs to sue. Examples are public nuisance claims against manufacturers that have damaged public health.

Figure 1
US CPI, healthcare and wage inflation (5-year averages) and claims severity proxy



Note: "Claims severity" refers to a proxy calculated as liability claims growth (claims incurred on a calendar-year basis) minus real GDP growth (as a proxy for exposure growth). Source: Bureau of Labour Statistics, Oxford Economics, Centers for Medicare & Medicaid Services, AM Best, Swiss Re Institute.

We see social inflation as particularly disruptive for liability insurance because it is difficult to measure and predict, and it can disproportionally affect the longest-tail lines. With long tail lines, any change in trends can have a leveraged impact, impacting both new business and prior-year loss reserves. Based on current trends, the impact of social inflation outweighs the benefit of higher interest rates on long-tail lines' investment income. Current claims growth is unsustainable, and further pressure points are ahead, with emerging litigation risks originating from factors such as per- and polyfluoroalkyl (PFAS) chemicals, obesity, climate change, algorithmic liability, addictive software design, etc. This could raise additional uncertainty for tort liability claims trends in the coming years.

[2] *The Westfleet Insider: 2022 Litigation Finance Market Report*, West fleet Advisors, 2022.

Swiss Re Institute

Issue 25/2023

Economic Insights

Global economy not out of the woods yet: alternative scenarios for re/insurers

Key takeaways

- Ongoing economic uncertainty highlights the value of scenario planning for insurers.
- As one of two alternatives, a "severe global recession" scenario would hit both sides of the balance sheet and raise solvency concerns.
- The impact of "1970s style stagflation, meanwhile, would stress underwriting performance most.
- Key developments to monitor for a shift to either scenario are inflation momentum, monetary policy mistakes, renewed energy/ commodity price pressures, and financial market stress.
- Even with strong balance sheets, insurers should remember that mitigation actions can come with long lead times.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Hendre Garbers
Senior Economist

Ayush Uchil
Insurance Economist & Data Scientist

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

Economic uncertainty is high, with recession and inflation risks still elevated. In this environment, a "severe global recession" and "1970s style stagflation" are two key alternative scenarios that insurers should think about. Each poses distinct challenges, the former around balance sheet strength and solvency concerns, and the latter around underwriting performance. Valid to both scenarios is that mitigation responses can involve long lead times.

As our baseline, we expect the world economy to continue to slow gradually, growing only 2.2% in real terms next year, down from 2.5% in 2023, and 3% in 2022. At the same time, we expect inflation to remain above central bank targets through 2024. The tenuous growth outlook is rooted in advanced economies, where we forecast the lowest real GDP growth since the 1980s (outside of the global financial and COVID-19 crises), due to the cumulative impact of the unprecedented 2021-2023 global monetary policy hiking cycle.[1] Amidst these challenging conditions, we expect the insurance industry to demonstrate resilience over the next two years.[2] Nevertheless, slow growth, elevated inflation and the resulting uncertainty around the economic outlook will present challenges for insurers, and risks are to the downside.

In this context, we regard two distinct and more adverse scenarios as key to think through for balance sheet resilience, capital planning and risk appetite: a "severe global recession" and "1970s style stagflation". A global recession would generate unfavourable macro and financial conditions, with sharp slowdowns in economic growth, falling interest rates and significant financial market losses. A scenario of 1970s style stagflation would bring severe inflation amid stagnating growth. As of now and based on our monitoring of scenario signposts, the risks of either scenario playing out appear contained. Still, developments that could portend a shift to one of the alternatives include unanticipated inflation persistence or reacceleration, renewed energy price pressures, monetary policy mistakes, and/or financial market distress.

A severe global recession would hit both sides of insurers' balance sheets and raise solvency concerns. Contracting demand would lead to falling nominal premium growth in both non-life and life insurance (see Figure 1). At the same time, lower interest rates, widening credit spreads and asset price declines would generate negative investment returns. In addition, for life insurers falling incomes and rising unemployment would likely see premium volumes contract with savings products most affected due to the added impact of low interest rates. In non-life, however, lower inflation and economic activity would reduce claims relative to our baseline.

[1] For further details of our baseline economic outlook see *Economic and financial risk insights: the wrong kind of reacceleration makes for tough policy choices*, Swiss Re Institute, 18 September 2023.
[2] *sigma* 3/2023 - World insurance: stirred, and not shaken, Swiss Re Institute.

03 October 2023

1970s-style stagflation, meanwhile, would stress underwriting performance most. Demand for both life and non-life insurance would be curbed, and non-life insurers would be most exposed to the inflation shock through increased claims severity and weakened profitability. As rates rise to meet claims costs, nominal premium growth would be strong, but high inflation would result in lower real premium growth than in our baseline scenario. The adverse impact on investment income would depend on the degree of ALM matching (ie, the extent to which higher reserves are immediately matched with additional assets, which lose value with higher yields). Reinvestments in higher-yielding bonds, however, could support longer-term investment income.

Figure 1
Swiss Re's alternative scenario narratives, key US forecasts, and insurance industry impacts relative to the baseline

	Severe global recession	1970s-style Stagflation	Baseline
Narrative	Significant global financial system stress	Commodity shocks, wage-price increases	Significant global growth slowdowns
	Abrupt tightening in financial conditions	Lacklustre growth and runaway inflation	Sticky core inflation
	Severe economic contractions	Central banks loose credibility	Higher rates for longer

Key US forecasts	Severe global recession 2024	Severe global recession 2025	1970s-style Stagflation 2024	1970s-style Stagflation 2025	Baseline 2024	Baseline 2025
Real GDP growth	-2.5%	0.5%	-1.4%	0.1%	0.9%	1.9%
Inflation	1.5%	1.0%	10.0%	7.0%	2.5%	2.4%
10y yields	1.2%	1.8%	6.2%	5.0%	3.5%	3.7%
USD IG spreads	280 bps	210bps	230bps	190bps	125bps	130bps

Industry impacts	Severe global recession Life	Severe global recession Non-life	1970s-style Stagflation Life	1970s-style Stagflation Non-life
Nominal premium growth	↓	↓	↓	↑
Real premium growth	↓	↓	↓	↓
Underwriting profitability	→	↑	→	↓
Investment returns	↓	↓	↓	↓

Our scenarios are parametrized to capture 5-10% likelihoods. Select parameters for only the US are shown, though we monitor the broader scenarios and across major economies. Green/red arrows indicate an overall rather positive/negative impact on the industry relative to the baseline, whereas purple indicates neutral or mixed impacts, reflecting variation across different lines and/or between new and in-force business. Non-life impacts comprise property, liability, and motor, excluding trade credit. Underwriting profitability for non-life: claims; for life: operating margins. Source: Swiss Re Institute.

The good news is that the insurance sector entered 2023 with solid capital buffers, and solvency and liquidity positions well above 100% and only slightly below pre-COVID levels.[3] Monetary tightening has brought the end of financial repression, and new business can be written on more profitable terms.[4] Reserve adequacy, however, is more of a concern.[5]

But mitigating potential downside scenarios is not about capital and risk management alone. It is also about recognising that strategic actions can come with long lead times. For example, when facing inflation pressures, mitigation options include repricing risks and steering new business to lower-risk products, both of which take time. And, while asset allocation and other hedging tools enable more agile management of investments risk, repositioning still has to consider capital requirements and liquidity needs.

[3] *Global Insurance Market Report: mid-year update*, International Association of Insurance Supervisors, July 2023.
[4] *sigma* 4/2023: Raising the bar: non-life insurance in a higher-risk, higher-return world, Swiss Re Institute.
[5] *Reserving: higher uncertainty puts adequacy in the spotlight*, Swiss Re Institute, 26 June 2023.

Swiss Re Institute

Issue 26/2023

Economic Insights

Trade credit insurance: in gear, to keep the global economy and supply chains moving

Key takeaways

- We expect trade credit insurance (TCI) to grow, even as world trade volume flows slow.
- Global TCI premiums will grow by around 6% to an estimated USD 14.1 billion in 2023, and to USD 14.8 billion in 2024.
- The growth will be largely based on premium rate increases.
- In the context of economic global slowdown, counterparty risks will remain elevated.
- Previous downturns have seen a rise TCI loss ratios as corporate failures rose, necessitating price increases.
- In the longer term, the development of new trade arrangements as a new world order takes shape will make supply chains more complex, particularly for intermediate goods. This will boost demand for TCI.

In a nutshell

Trade flows are down as the global economy slows. At the same time, geopolitical risks are leading to fragmentation of trading relations. In the near term, we expect that rising counterparty risk on account of economic slowdown will support prices, and thereby growth in trade credit insurance (TCI). Longer term, demand for TCI will increase as new supply chain arrangements take shape, and as re- and friend-shoring activities continue.

This year's annual meetings of the International Monetary Fund and World Bank take place at a time when the world is evermore in state of geopolitical flux. The spectre of uncertainty prevails, not least with respect to the economic outlook, including for trade. In these times of global transition, in our view trade credit insurance (TCI) will show to be a stabiliser of economic resilience. In its latest *Global Trade Outlook*, the WTO lowered its forecast for world merchandise trade growth in 2023 to 0.8% from the 1.7% it had forecast in April.[1] The cut is no surprise given current economic slowdown, which we expect will continue into and through 2024. Adding to the uncertainty are ongoing geopolitical tensions. These are leading to fragmentation of existing trade relations, a consequence of which has been the signing of new regional, multilateral and bilateral trade agreements. Longer term, we expect this will make supply chains, in particular for intermediate goods, more complex and further raise the utility of TCI in keeping businesses and economies running.

We forecast that global real GDP growth will fall to 2.1% next year from 2.5% in 2023, the lowest it has been since the global financial crisis (other than for the contraction during COVID-19 period), and below historical trend (2013-2022, see Figure 1). In this environment, we anticipate global TCI premiums to continue to grow, based largely on price increases. We estimate that global TCI premiums will grow to USD 14.1 billion in 2023 (after a 7.3% year-on-year increase to USD 13.3 billion in 2022), and to USD 14.8 billion in 2024. This is because with slowdown and potentially even recession in some advanced markets, counterparty risks will remain elevated. A main purpose of TCI is to protect the seller of a product against the risk of non-payment by the buyer, typically due to insolvency or bankruptcy of the buyer and long-term default. As in the global economic crises of the past two decades, an increase in corporate default rates saw trade credit insurance loss ratios rise (see Figure 2), which in turn necessitated rate increases.[2]

Implicit within economic slowdown will be reduced trade flows, which, added to the cost of living crisis that many households have been struggling with since the start of 2022, could further weigh on living standards. Although the incidence of social unrest has largely stabilised since last year, still high costs of living means general dissatisfaction will remain. And this could add impetus

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Li Xing
Head Insurance Market Analysis

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[1] *Global Trade Outlook and Statistics Update: October 2023*, World Trade Organization, October 2023.
[2] *Credit and surety in the age of economic uncertainty*, Swiss Re Institute, September 2023.

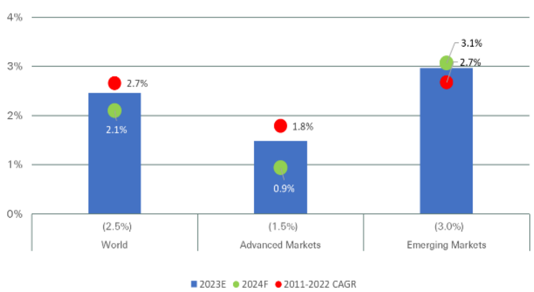
to another longer-term dynamic of today's world. One of ongoing geopolitical frictions and the progression of a new world order taking shape. With a view to safeguarding economic sustainability, this has seen a reshaping of trade patterns along regional and political lines, characterised by the signing of new regional, multi-lateral and bilateral trade agreements. At the same time, many advanced markets are seeking to "re-industrialise" their manufacturing sectors with strategies that include subsidies and incentives such as tax credits, and, in the same vein, "re-" and "friend-" shore production operations.[3]

A new multi-polar world in which advanced market manufacturers re- and/or friend-shore production, and which also sees the rise of parallel and multiple supply chains with shifting suppliers and relocation of production facilities, will make trade, particularly of intermediate goods, more complex. Indeed, signs of trade fragmentation are emerging. For example, the share of intermediate goods in world trade, an indicator of global supply chain activity, fell to 48.5% in the first half of 2023 from an average of 51.0% in the previous three years. The WTO attributed the 0.9 percentage point cut in its trade growth forecast for 2023 mostly to a 17% decline in iron & steel, a 16% fall in textiles, and a 15% drop in fuels & minerals trade, which contributed to an overall 5% drop in trade value in current US dollar terms in the first half.[4]

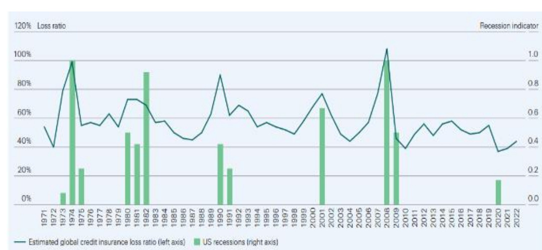
This greater complexity of supply chains will raise the profile of counterparty risk and need for TCI protection. Further, new regional/bilateral agreements will see a re-allocation of trade resources, in turn giving rise to trade creation, and boost demand for both TC and credit surety insurance. As for one instance, we estimate that the increase in export volumes generated by the Regional Comprehensive Economic Agreement (RCEP) will add around 4.4% (USD 1.29 billion) to credit & surety insurance premiums across the Asia Pacific region in 2030, demonstrating the role of the industry as supporter and facilitator of the transition to a sustainable new world order in the future.

Figure 1: Global GDP growth, historical and forecast (left)

Figure 2: Estimated TCI losses ratios for global credit insurance and US recession years (right)



E = estimates, F = forecasts. Source: Swiss Re Institute



Note: TCI loss ratios estimated by Swiss Re. The recession indicator is US based and equals one if all 12 months of the year experienced recessionary conditions. It equals zero if no month saw a recession. Source: St. Louis Fed, NBER, Swiss Re Institute

[3] sigma 2022/5: *Maintaining resilience: the role of P&C insurers in a new world order*, Swiss Re Institute.
[4] WTO, op cit.

Swiss Re Institute

Issue 27/2023

Economic Insights

IMF/World Bank annual meetings: a postcard from Marrakech

Key takeaways

- IMF/World Bank annual meetings conveyed a sombre mood: the global economy is fragile and faces a swath of potential non-linear risks.
- Inflation: the last mile is the hardest and a 1970s stagflation repeat could be closer than many think.
- Monetary policy and US bond market: puzzled nervousness.
- Debt levels, emerging market debt distress and net zero ambitions: precarious situations
- Geopolitical risks: acknowledged but not priced in.

In a nutshell

Global economic growth has been resilient, but the outlook is fragile and many potential non-linear risks prevail. Inflation risks, monetary policy effectiveness, elevated debt levels and geopolitical tensions all featured prominently at the IMF/World Bank Annual Meetings in Morocco. We share many of the concerns, and overall see more down- than upside risks for the global economy in the short- to medium term.

The Annual Meetings of the International Monetary Fund, The World Bank and The Institute of International Finance in Morocco conveyed a sombre mood on the global economy. Although the IMF revised up its growth forecasts for next year, it did so for inflation also. At 5.8%, it now expects global inflation in 2024 to be almost 1 percentage point higher than it had forecast in April. This is a substantial change and reaffirms that while there has been progress on disinflation this year, the inflation crisis is far from resolved. As a result, at the meeting the IMF and also many central banks reiterated their message that policy rates will remain "high for longer". Our inflation forecasts for the US and euro area next year are lower than both the consensus and IMF projections, but this is mostly due to our expectations on growth and being much more conservative. The latter is based on our expectation that the sharpest monetary tightening cycle of the past 50 years will constrain growth, which in turn will help keep inflation on its path lower.

Summary of economic and inflation forecasts

	Swiss Re Institute		Consensus		IMF Outlook	
	2023	2024	2023	2024	2023	2024
Real GDP (% change)						
US	2.1	0.9	2.1	1.0	2.1	1.5
Eurozone	0.4	0.3	0.5	0.8	0.7	1.2
China	4.8	4.2	5.0	4.5	5.0	4.2
CPI (% change)						
US	4.0	2.5	4.2	2.7	4.1	2.8
Eurozone	5.5	2.6	5.6	2.7	5.6	3.3
China	0.7	1.9	0.6	1.9	0.7	1.7

Sources: Bloomberg Consensus, Swiss Re Institute

Besides point forecasts, the meetings' discussions revolved around the extreme levels of uncertainty with regards to the economic outlook, the inflation and bond market trajectory, and also geopolitics. We highlight the main points of these topics below.

Inflation: the last mile is the hardest and a 1970s stagflation repeat could be closer than many think. We and the consensus expect the disinflation process in advanced economies to continue. But there is near-universal agreement that there will be no swift return of inflation to 2%. In our

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Patrick Saner
Head Macro Strategy

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view, inflation will be structurally and hover between 2.5-3% on average this decade. Should the world face another external shock, be the through higher commodity prices or other, the elevated starting level of inflation today raises the likelihood of a repeat of the stagflation environment seen in the 1970s.

Monetary policy and US bond market: puzzled nervousness. Policy makers appear puzzled by the lagged effects of monetary policy and the recent increase in longer-dated government bond yields. We have also been surprised by the US economic and labour market resilience so far, but we flagged recently, the increase in longer-dated US government bond yields has been primarily driven by financial markets' assessment of a higher nominal neutral rate.[1] That said, the rise in the term premium[2] probably also reflects the enormous increase in government bond supply, and potential fiscal concerns given expected US budget deficits of 5% or more over the coming years. Ultimately, however, we believe higher long-term yields are self-defeating, since abrupt rises in yields raise the likelihood of a recession.

Debt, emerging market debt distress and net-zero ambitions: precarious situations. The IMF highlighted that almost half of all emerging market and developing economies (EMDEs) are in or at a high risk of debt distress, while at the same time needing to spend more on climate mitigation. Given very elevated global government debt levels, it seems clear that more private-sector capital involvement is needed make net zero happen. Given higher interest rates, however, this will require more prioritisation on how public and private capital is invested.

Geopolitical risks: acknowledged but not priced in. Geopolitics risks featured prominently in many discussions. Whilst acknowledged in the policy domain, financial markets have not fully priced in the risks. The hope is that geopolitical tensions will eventually abate. If they don't, financial markets will remain vulnerable to a repricing of such risks.

The bottom line: many risks are known by now, but the global economy is in a fragile situation given a swath of potential non-linear risks. Many advanced economies have shown surprising resilience of late, but we do not expect this to last and see instead a significant economic slowdown next year.

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[1] More on this topic available here: *US Treasury yields: an inflation rather than bond market crisis*, Swiss Re Institute, 16 August 2023.

[2] The term premium is the compensation that investors require for bearing the risk that interest rates may change over the life of the bond.

Swiss Re Institute

Issue 28/2023

Economic insights
The Bank of Japan takes off the yield bumpers

Key takeaways

- The Bank of Japan has relaxed yield curve control further, rephrasing the 1% upper bound on 10yr Japanese government bond yields as a "reference" not a "rigid cap".
- We see a full exit from NIRP and YCC towards mid-2024. The spring wage negotiations are key to watch.
- Japanese life insurers plan to increase JGB purchases at higher yields, but are likely to do so only gradually.
- We view disruptive spillovers to global bond markets as a tail risk only, since high yield differentials with US/Europe limit repatriation flows back to Japan.
- The risk of a UK-style pension crisis is moderately low with limited use of leverage among Japanese institutional investors.

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Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Authors
Weijia Yao
Economist

John Zhu
Chief Economist Asia Pacific

We welcome your feedback. For any comments or questions, please contact: institute@swissre.com

In a nutshell

The Bank of Japan (BOJ) has effectively removed the cap on bond yields, though it can still intervene to manage yield increases. Inflation data suggests wage-price rises are sustainable, and we expect the exit from negative interest rate policy (NIRP) and yield curve control (YCC) in 2024. We see muted global spillovers, as Japanese investors, including insurers, are only rotating gradually back to JGBs. The risk of a yield spike triggering a liquidity crunch as in UK pension funds is moderately low for now.

The BOJ at its October meeting further relaxed its YCC policy by rephrasing the 1% upper bound on the 10-year government bond (JGB) yield as a "reference" rather than a rigid cap. This frees the BOJ from its former pledge to defend a yield level with unlimited bond purchases, though it will likely still intervene to minimise disruptively large changes. The BOJ's decision was in line with our long-held view[1] that it will wait for more evidence of sustainable wage-price growth before full exit from NIRP and YCC policies, likely by mid-next year after seeing the results of the 2024 wage negotiations. JGBs yields are becoming attractive again to Japanese institutional investors, including insurers, but we expect their asset reallocation process to be gradual and not create abrupt spillovers to global bond markets. Sharply higher yields and yen appreciation could hit valuations of both foreign and domestic bond holdings, but we view the likelihood of a UK-style liquidity crisis as moderately low at present.

Strengthening inflation fundamentals support the case for monetary policy normalisation in Japan. Though goods inflation has already declined from a peak, service sector inflation is broadening in tandem with resilient economic growth (see Figure 1 left). Japan's largest labour union, Rengo, has said it will target a "5% or more" wage rise in the Spring 2024 negotiations, stronger than last year's wording ("around 5%").[2] A weak yen, and expected higher energy prices once government subsidies end next May, are contributing to higher inflation expectations. The BOJ also lifted its inflation (ex. fresh food) forecasts in this meeting for FY2023 and FY2024 by 90bps to 2.8%, as widely expected.

Japanese insurers have long awaited higher yields and intend to add to their long- and ultra-long-duration JGB holdings.[3] But they are not yet buying on a large scale due to expectations of even higher yields as the BOJ's policy shifts. Due to the weak yen, insurers are paying high currency hedging costs on the large stock (c.30%) of foreign assets in their portfolios, eating into investment profitability in 2023. However, selling foreign assets now would also mean realising significant mark-to-market losses. Policy normalisation in Japan adds upward pressure to global yields, but we think the magnitude of spillovers will

[1] *Economic Insights: Japan: the long goodbye to QE*, Swiss Re Institute, 28 April 2023.
[2] *Japan's largest labour union to seek wage hike over 5% next year - NHK*, Reuters, 17 October 2023
[3] *Japan's life insurers to boost JGB buying but wary of policy shift*, Reuters, 27 October 2023.

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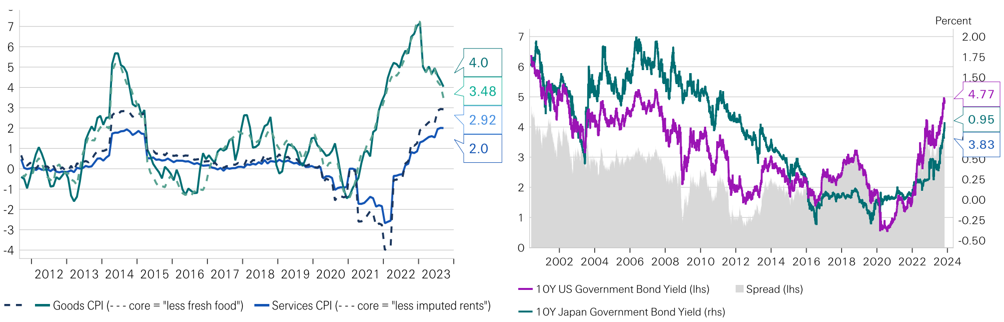
be muted. The near-term economic resilience in the US had widened the yield differential between the 10Y US Treasury (UST) and JGB to around 400bps, the largest since 2002 (see Figure 1 right). For now, Japanese investors may still be inclined to add to their UST holdings rather than repatriating back home.

Figure 1
(left) Japan inflation metrics
(right) 10-year Japan and US government bond yields



Sources: SBJ, Macrobond, Swiss Re Institute

Source: Macrobond, U.S. Department of Treasury, Macrobond, Swiss Re Institute

Rising Japanese yields may bring flashbacks to the liquidity shock to UK pension funds in September 2022. This risk is moderately low at present, we believe. First, the potential yield increases in JGBs would probably smaller than those of UK gilts in 2022. We estimate the fair value of the 10Y JGB yield to be 1.0%-1.2% without YCC[4]. The BOJ is unlikely to keep increasing short-term policy rates as the BoE did, as we expect global growth to slow and Japanese inflation to moderate further next year. Japan's institutional investors generally use few leveraged transactions such as interest rate swaps and repos, given different accounting standards to the UK, and better funding adequency.[5] Still, ahead of the introduction of economic value-based solvency margin ratio (ESR) regulation in 2025, life insurers have begun to use more leveraged transactions to reduce asset-liability duration gaps. The potential broadening of this trend to more interest rate-sensitive investments is a risk to be closely monitored.

The BOJ still retains the option to use large-scale JGB purchases to bring down yields. Giving up the rigid 1% cap risks yields rising so high as to raise financial stability concerns. But the BOJ's previous widening of YCC range have tended to "attract" yields up to (and occasionally beyond) the cap, as BOJ interventions are not triggered intraband.[6] We think that on average, the benchmark 10-year yield may overshoot fair value temporarily in 2024, but eventually settle closer to 1.2% by year-end as other central banks begin to loosen policy again.

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[4] Based on a regression on 10Y UST yields, Japan core inflation and the ratio of job openings to applicants in Japan, assuming cumulative BOJ asset purchases put about 100bps downward pressure on JGB 10y yields.
[5] *Corporate Pension Funds' Investment Strategies and Financial Stability: Lessons from the Turmoil in the UK Gilt Market*, Bank of Japan, March 2023.
[6] Like in a currency target zone, where the spot exchange rate tends to cluster around the edges of the band rather than the mid-point, as is the case with the HKD-USD peg that recently celebrated its 40th anniversary.

Swiss Re Institute

Issue 29/2023

Economic insights

Higher for (even) longer: the long-term outlook for US 10-year Treasury yields

Key takeaways

- We now see 10 year Treasury yields averaging 4.2% in the long run – 40 basis points higher than our prior forecast of 3.8%.
- We believe the Federal Reserve's long-term policy rate has moved higher from 2.5% to 3%, supported by a higher "natural" rate of interest.
- We see scope for the term premium to normalise further as predictable sources of Treasury demand fade, policy rates gradually decline, and investors seek greater compensation for inflation volatility over the long run.

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Author
Mahir Rasheed
Senior Economist

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In a nutshell

The sharp sell-off in US 10-year Treasury bonds this autumn has primarily reflected markets coalescing around expectations of a higher natural long-term policy rate, greater inflation volatility, and a shrinking Fed balance sheet. We see these trends maturing further and now see 10 year US Treasury yields averaging 4.2% over the long term: 40 basis points above our previous forecast.

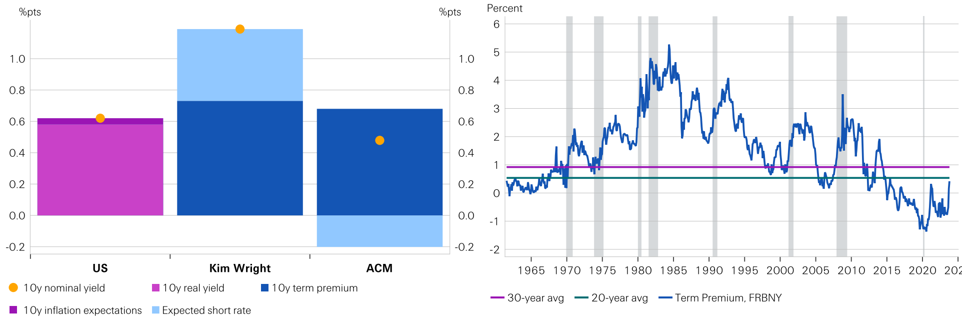
Long-dated US Treasury bonds have sold off sharply this autumn, surprising many investors and taking yields on the benchmark 10-year bonds to levels last seen in 2007. It was a stark contrast to the first half of 2023, when long-dated Treasury yields remained low, depressed by expectations that the Fed would cut policy rates quickly and deeply in response to an expected recession in late 2023 or early 2024.[1] We now forecast a milder economic slowdown in the US accompanied by only about 75bps of rate cuts next year, implying that policy rates will remain restrictive for some time and long-end bond yields are unlikely to fall sharply from current levels.[2] While these near-term cyclical factors will contribute to ongoing volatility in the Treasury market, the maturing of structural trends in in the background has motivated an upward revision to our long-run forecast for the 10-year Treasury yield.

A key driver for this in our view durable rise in 10-year Treasury yields, is that the Federal Reserve's "neutral" long-term policy interest rate has moved higher than the 2.5% stated since June 2019.[3] We estimate the US natural policy rate, at which monetary policy is neither restrictive nor accommodative, today at about 3-3.25%. This is consistent with the latest projections from the Fed's open market committee, which show a widening range for the neutral policy range of 2.4-3.8%. Market pricing of the long-run neutral rate can be proxied by the one-year Treasury yield in 10 years' time (see Figure 1, left). As future policy rates reflect inflation and growth expectations, this may reflect an emerging belief on the Fed that inflation will be more volatile in the years ahead. We have expressed this view for some time due to a number of structural factors, namely demographics, decarbonization, deglobalisation, and higher debt levels. At the same time, greater public spending on the green energy transition may raise long-run GDP growth by fortifying the supply side of the economy. Advances in artificial intelligence may further unlock productivity improvements that support stronger long-run economic growth, contributing to higher policy rates and consequently sovereign bond yields.

The long end of the yield curve has also seen the 10-year term premium, the extra compensation investors demand for holding longer-dated government debt, rise sharply in H2 2023. The term premium can be proxied by the

[1] See *US Treasury yields: an inflation rather than bond market crisis*, Swiss Re Institute, 16 August 2023.
[2] *sigma* 6/2023 – risks on the rise as headwinds blow stronger, Swiss Re Institute, 21 November 2023.
[3] *FOMC projections materials*, Federal Reserve, 2019.

Figure 1
(left) 1-year Treasury yield in 10-years' time
(right) US term premium models



Source: Macrobond, Swiss Re Institute

Source: Federal Reserve Bank of New York, Macrobond, Swiss Re Institute

difference between short-term policy rates and 10-year yields. While it cannot be observed directly, two models estimate its value: Adrian, Crump and Moench (ACM) and Kim-Wright (KW), using slightly different methodologies. Both exhibit a sharp rise in the second half of 2023 (see Figure 1, right).

We see several reasons for this normalisation of the term premium to its long-term trend to continue. First, as the Fed's policy rate declines toward neutral from its current level, we expect a bull steepening in the Treasury yield curve to add upward pressure to the term premium as short-end rates fall below long-end rates. Second, we expect heightened inflation volatility to fuel demand from investors for additional yield compensation going forward, creating an additional channel through which the term premium may rise further over the long run. Third, research estimates that every 1% reduction in the Fed's balance sheet holdings should steepen yield curve by roughly 3 basis points.[4] Further curve steepening resulting from a shrinking Fed balance sheet is likely to exert some degree of upward pressure on the term premium.

Finally, while the Fed's balance sheet normalisation reduces a predictable domestic source of Treasury demand, foreign demand for Treasuries is also slowing. China now holds USD 805 billion of US treasuries, its lowest share since mid 2009, while Japan's share of Treasury holdings is down by USD 210 billion from a peak of USD 1.33 trillion in November 2021. While this is not worrisome on its own, the diversification of reserves away from US Treasury notes will add to upward pressure on the long end of the curve and support a higher term premium, all else equal. With these structural factors in mind, we now expect the US 10-year Treasury to yield 4.2% in the long-term relative to our prior forecast of 3.8%. While the increase is not dramatic, it represents a significant departure from the 2.5% average yield on 10-year Treasuries in the post-global financial crisis decade from 2009-2019.

[4] *In the eye of the beholder*, JP Morgan, 12 September 2023.

Swiss Re Institute

Issue 30/2023

Economic insights

US public debt concerns are growing in the higher interest rate regime

Key takeaways

- We share investor concerns regarding the long-run US fiscal trajectory, but do not anticipate a government debt crisis.
- We are optimistic on the US economy's long-run growth prospects, but as interest rates normalise it will be challenging to achieve debt sustainability without fiscal consolidation, in our view.
- Given insurers' role as long-term investors in fixed income securities, the expected higher bond yields for US treasuries can support investment returns.

About Economic Insights
Analysis of key economic developments and their implications for the global re/insurance industry.

Managing Editor
Jérôme Haegeli
Swiss Re Group Chief Economist

Author
Mahir Rasheed
Senior Economist

Daniele Burgin
Junior Economist

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In a nutshell

US credit rating downgrades highlight another effect of the rapid rise in interest rates: unease about the government's ability to maintain serviceable public finances in the long term. The US public debt-to-GDP ratio is at 94% and rising by more than 5% per year, enough to double the ratio within 13 years. Fiscal policies that support long-run growth and gradual fiscal consolidation can address this, but may be economically and politically challenging. We expect to see upside pressure and volatility on Treasury yields.

The US government's finances are in the spotlight for investors as higher interest rates are expected to put upward pressure on spending and debt issuance. Recent credit rating agency downgrades reflect this unease.[1] The pandemic spending bills that supported the economy also raised the public debt-to-GDP ratio to 94.2% in Q2 2023 from 77.6% four years ago (see Figure 1, left). This is a 5.6% annualised growth rate, against an historical rate of 2.5%. The US is not an outlier – public debt-to-GDP ratios are high in many advanced markets including Japan (261%), Italy (144%), France (112%) and Spain (112%).[2] However, the USD 1.7 trillion US primary deficit in the 2023 fiscal year cannot be reduced without drastic action such as major tax rises or spending cuts, either of which would likely trigger a recession. In the coming years, US debt issuance is expected to rise dramatically to cover growing spending needs and higher interest expenses.[3] While there is no specific threshold at which a debt-to-GDP ratio becomes untenable, higher ratios constrain economic growth over time.[4] We estimate that if the 5.6% annual growth rate in the US ratio were to continue, the ratio could double in less than 13 years (see Figure 1, right).

We see pressure on government spending increasing due to structural factors as well as specific spending bills. The largest of the federal programmes, Social Security, is economically irreplaceable – four in 10 adults over age 65 would fall into poverty without monthly retirement benefits.[5] Yet the latest social security trust fund projections imply a 20% revenue shortfall by 2034 without Congressional intervention as the number of retirees rises faster than the working population.[6] In addition, after the rapid end in 2022 to the 30-year "Great Moderation" era of low interest rates, we expect positive real interest rates to pressure government debt obligations. With 30% of US government debt (USD 7.6 trillion) up for refinancing in the next 12 months, interest expenses are likely to consume an increasingly large share of the budget.[7]

[1] *Moody's changes outlook on United States' ratings to negative*, Moody's, 10 November 2023. *Fitch Downgrades the United States' Long-Term Ratings to 'AA+' from 'AAA'*, Fitch Ratings, 1 August 2023.
[2] *General Government Debt*, Global Debt Database, IMF, as of 2022.
[3] T. Slok, "*23% Increase in Treasury Auction Sizes in 2024*", *Apolloacademy.org*, 5 October 2023.
[4] *Debt and Growth: A Decade of Studies*, Mercatus, April 2020.
[5] *Policy Basics: Top Ten Facts about Social Security*, Center on Budget and Policy Priorities, 2023.
[6] 2023 OASDI Trustees Report, Social Security Administration, 31 March 2023.
[7] *Assessing the Costs of Rolling Over Government Debt*, St. Louis Fed, June 2023.

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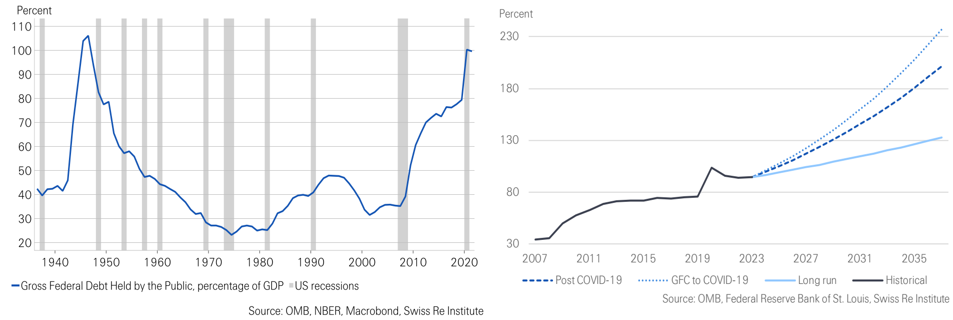
Figure 1
(left) US publicly held debt-to-GDP ratio
(right) US publicly held debt-to-GDP ratio, under different debt growth assumptions



There are two channels by which to achieve long-term debt sustainability. The first is to narrow the differential between interest rates and economic growth. Stronger nominal GDP growth that outpaces long-term interest rates would allow the government to more quickly meet debt obligations. At present our long-run forecasts for US nominal GDP growth and the 10-year Treasury yield are equal at 4.2%. However, we see greater upside risks to interest rates than growth due to higher inflation volatility, reduced demand for Treasury bonds, and a smaller Fed balance sheet. Softer demand from foreign central banks and the Fed also places greater onus on domestic investors, driving rates even higher. Though a downside risk to economic growth, this may benefit insurers, who favor long-dated bonds. At the moment, US Treasuries represent 19% of P&C insurers' investment porfolios and 5% for life insurers.[8]

The second channel is fiscal consolidation to balance government revenue and spending more effectively. This is a key challenge for fiscal policymakers, who can be faced with unpalatable and politically unpopular choices over which taxes to raise or spending areas to cut. As the Peterson Institute outlines,[9] the most feasible path of fiscal consolidation is gradual primary deficit reduction through higher revenues and lower outlays. However, this is a challenge given the electoral cycle and political polarisation.

A key safeguard for the US is the luxury of both reserve currency status and the world's deepest capital markets. For now, this affords it the flexibility to address debt concerns, as the US dollar remains the most reliable currency anchor of global capital markets. While this should alleviate near-term concern, the risks of global geopolitical fragmentation are higher today.[10] For long-term bond investors such as insurers, we expect US debt affordability to be a recurring issue to monitor as it contributes to interest rate volatility.

[8] National Association of Insurance Commissioners, S&P Global.
[9] *If markets are right about long real rates, public debt ratios will increase for some time. We must make sure that they do not explode*, PIIE, 2023.
[10] *Geopolitical fragmentation risks and international currencies*, ECB, June 2023.

Swiss Re Institute

Issue 31/2023

Economic insights

Surge in catastrophe bond issuance stabilises transfer of mounting peak risks

Key takeaways

- Catastrophe bond issuance has reached a record high of USD 15 billion this year.
- We expect the AC market dichotomy to continue into 2024 with cat bonds expanding further and collateralised reinsurance declining.
- Capacity limitations in the retrocession market are likely to continue into 2024.
- The increase in cat bonds reinforces the role in transferring peak risks, such as large natural catastrophes.

About Economic Insights
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Managing Editor
Jérôme Jean Haegeli
Swiss Re Group Chief Economist

Authors
Thomas Holzheu
Chief Economist Americas

Roman Lechner
P&C Economic Research Lead

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In a nutshell

Record-high catastrophe bond issuance in 2023 is a sign of attractive conditions for investors as well as the growing demand for transfer of peak risks such as large natural catastrophes. The USD 15 billion new cat bond issuance will not tilt the supply-demand balance in the global reinsurance market significantly in our view, since alternative capital for reinsurance has been flat overall since 2017 and the retrocession market remains tight.

A bumper year for cat bond issuance in 2023 highlights the ongoing transition in the alternative capital (AC) market, in which investors can directly invest in (re)insurance risks rather than via traded (re)insurance companies. AC securities include risk securitisations to transfer insurance risks directly to the capital markets. Most risks relate to property catastrophe (cat) risks and the reinsurance retrocession market has increasingly come to depend on AC.

Cat bond issuance has reached a new record of USD 15 billion this year, up by 8% from 2022. This takes total capital deployed into cat bonds globally to USD 41 billion (see Figure 1).[1] Global cat bond capacity has grown at about 4% annually for the past six years, adjusted for inflation, roughly in line with the growth of global natural catastrophe exposures, as illustrated by Verisk's estimated global aggregate average annual losses (see Table 1).[2] The recent inflation surge has boosted exposures in addition to the longer-term trends of migration, value accumulation and climate change. For example, the replacement cost of US residential structures increased by 42% from the end of 2019 to end-2022.[3] Solid growth in cat bonds is needed to maintain their role of providing capacity for peak risks and therefore freeing up traditional reinsurance capacity for lower layers. Since 1992, global insured nat cat losses have grown by 5-7% annually on an inflation-adjusted basis.[4]

We expect investor capital to continue to favour cat bonds as they offer exposure to peak risk layers, where the risk-return profile is currently attractive and liquidity can be provided in the secondary market. Cat bonds have a solid track record despite above-average global natural catastrophe losses annually in recent years.[5] Based on floating rate collateral, they were also not exposed to valuation losses from rising interest rates. We see a similar "flight to quality" by investors in the expansion of investment in cat-related reinsurance sidecars in recent years.[6]

[1] *Catastrophe Bond & Insurance-Linked Securities Deal Directory*, Artemis, including cat bonds yet to settle.
[2] Verisk, *Global Modeled Catastrophe Losses*, 28 September 2022.
[3] *US property & casualty outlook: growth momentum shifts toward personal lines*, Swiss Re Institute, 28 June 2023.
[4] See *sigma* 1/2023, *A perfect storm: Natural catastrophes and inflation in 2022*, Swiss Re Institute.
[5] *Insured losses from severe thunderstorms reach new all-time high of USD 60 billion in 2023*, Swiss Re Institute, 7 December 2023.
[6] Sidecar structures allow investors to participate in a specific portfolio of risks, underwritten by a (re)insurance company, often for a specified limited duration.

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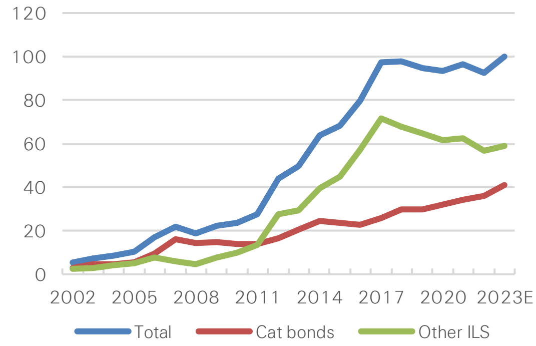
Figure 1 (left): Alternative capital deployment, 2002-2023E, USD billions

Table 1 (right): Nat cat aggregate average annual loss, AC deployment, annual growth, 2017 – 2023E



Source: Aon Securities

2017-2023E	Nominal	Inflation-adjusted
Nat cat: aggregate average annual loss	+10%	+6%
Alternative capital	0%	-3%
Cat bonds	+8%	+4%
CR and others	-3%	-7%

Source: AM Best, Aon, Verisk, Swiss Re Institute

However, overall AC capacity is stalling, with total capital deployed of around USD 100 billion in 2023, we estimate, broadly unchanged from 2017. Adjusted for inflation, capacity was 17% lower in 2023 than in 2017. The main driver is declining capacity from collateralised reinsurance (CR), where investors participate in lower-layer indemnity-based reinsurance structures. CR has suffered poor returns from unanticipated (and unmodeled) loss exposures since 2017. CR structures can also face competitive disadvantages relative to traditional reinsurance in terms of cost of capital (less scale, diversification and need for collateralisation) and underwriting knowledge. Meanwhile, the competitive position of the traditional reinsurance business model has improved strongly with the normalisation in interest rates and the benefits of more asset leverage.[7]

We expect the market dichotomy in AC to persist in 2024, with the cat bond market expanding further and collateralised reinsurance declining. Strong cat bond issuance is complementing and stabilising the traditional (re)insurance markets. The limited and selective deployment of cat capacity will likely continue in the retrocession and reinsurance markets into the next year. We think current hard pricing is not primarily driven by a capital crunch but rather a significant step-up in the cost of capital and elevated economic and model uncertainties; all factors that will continue next year.

[7] See sigma 5/2023, *Raising the bar: Non-life insurance in a higher-risk, higher-return world*, Swiss Re Institute.

Swiss Re Management Ltd
Mythenquai 50/60
P.O. Box
8022 Zurich
Switzerland

Email institute@swissre.com
www.swissre.com/institute