Inflation impact on insurers

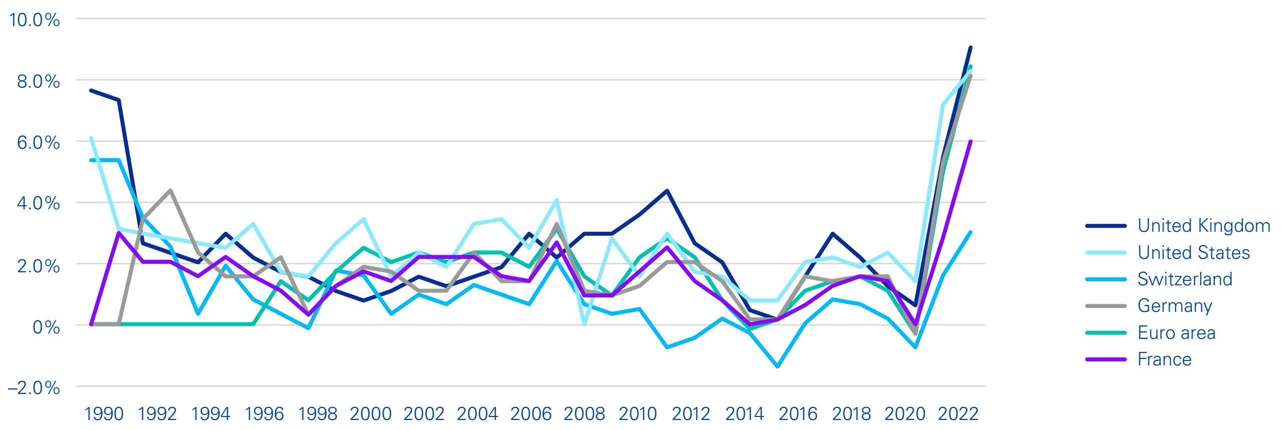
How actuarial models
need to change.

kpmg.ch

Addressing the impacts of inflation on Switzerland's (re)insurers

Inflationary pressure has intensified over the past year, initially from post-pandemic supply chain disruptions, then a surge in energy prices following Russia's invasion of Ukraine. This has led to rates of inflation that were last seen more than 40 years ago. Switzerland's yearly Consumer Price Index (CPI) rise hit 4% in 1992, while the US and UK last hit their current levels of inflation in 1981. The Eurozone has never experienced yearly inflation above 5%. Actuaries in western countries suddenly face having to consider explicit inflation assumptions as part of their models – but how to do so with the right care and assumptions?

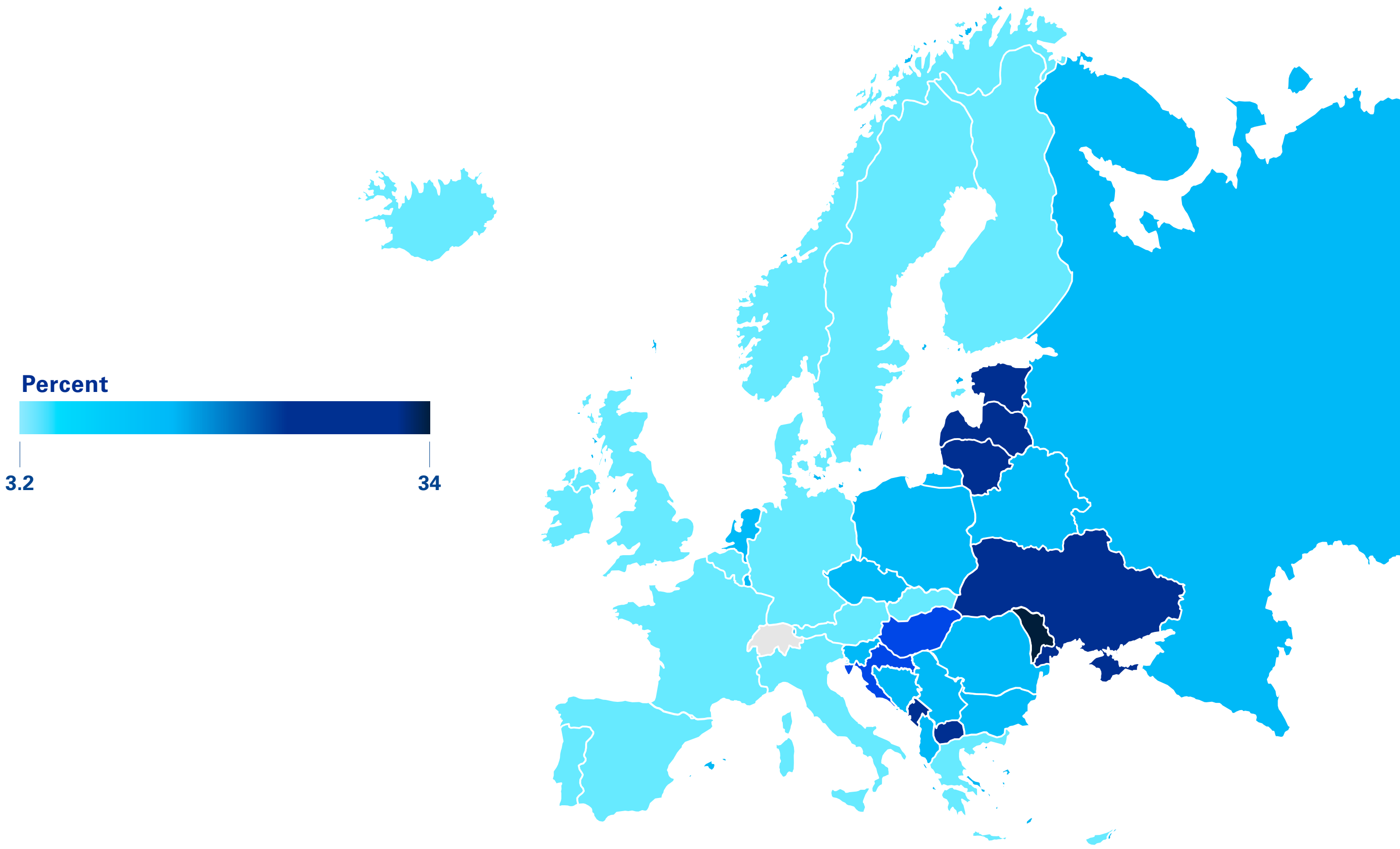
Historical inflation – Consumer Price Index



Historical inflation in selected countries and regions. Data points describe the Year-on-Year CPI growth. 2022 figures contain the regional expectations as outlined in KPMG's Global Economic Outlook.

Europe faces an unprecedented energy crisis, with growing uncertainty over the availability of gas this winter helping fuel inflation. KPMG's Global Economic Outlook set out how year-on-year inflation for the Eurozone is expected to hit at least 8.3% in 2022 and 6.7% in 2023, with the UK expected to hit 8.9% and 5.6% over the same period.

Switzerland will suffer a relatively low impact, with an expected 2.9% in 2022 and 2.3% in 2023; this is mainly due to the Swiss Franc having strengthened significantly against the Euro in 2022 as it continues to be viewed as a safe haven. Switzerland also relies less on fossil fuels, with a large proportion of its electricity coming from hydro-power; has a high degree of price regulation; high import duties on agriculture products – decoupling prices from global market prices; and high labor productivity meaning less input required to produce a given output.



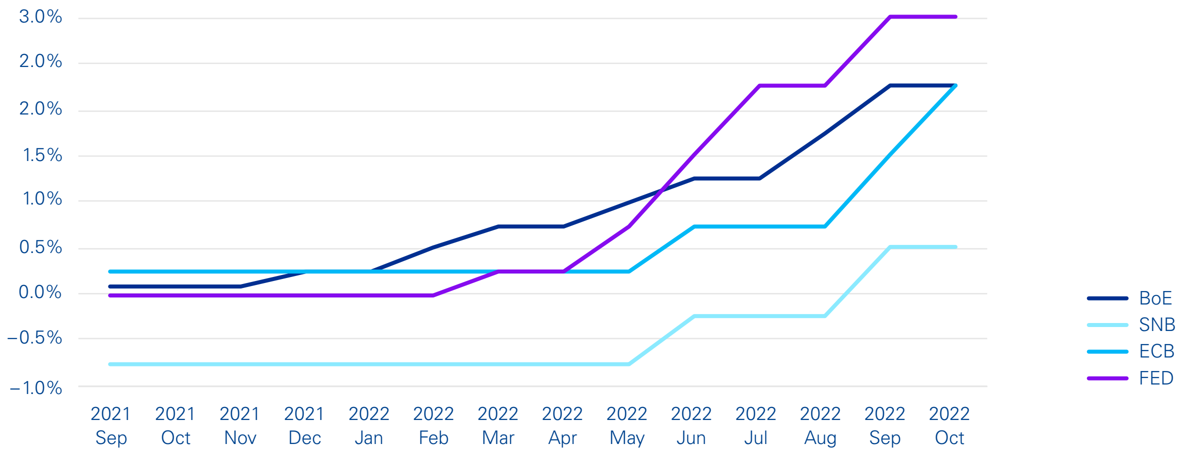
Inflation rates by country, July-October 2022

Source: Euronews, Which countries in Europe are being worst hit as energy and food prices soar? / Trading Economics

We expect inflation to moderate in all markets from mid-2023 as the energy shock is no longer reflected in year-on-year inflation calculations. We may be entering an environment that is structurally more inflationary, however, as production costs remain elevated.

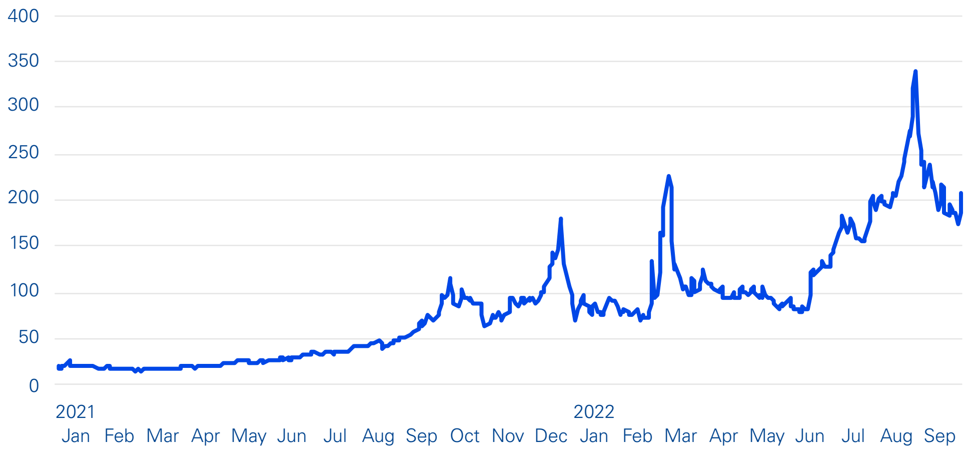
The key will be how effectively central banks combat inflation. Their power may be limited as countries' need for fiscal support may stoke more inflation in the medium term, placing fiscal policy actions at odds with central banks' aims.

Central Banks – Interest rate movement



Increase in interest rates for selected central banks since September 2021

Price of Natural Gas – Europe



Increase in the price of natural gas per MWh (Natural Gas TTF) – starting date is January 2021.

A key uncertainty is how much core inflation will flow into wage inflation which then drives liability claims cost increases. At the start of 2022 it was assumed that the short-term inflation spike would not impact wages. The longer the inflation spike continues, however, the more likely it is to affect wages, generating a wage:cost inflation spiral. We already see signs of increases in wage inflation in many countries in the second half of 2022.

Another key uncertainty is for how long excess inflation will continue. The longer it continues, the bigger the impact. Historically, periods of high inflation in Switzerland have lasted 5-10 years. However, there are many reasons why this time may be different.

Inflation in the insurance industry

Unlike other risks insurers face, inflation affects insurers across the business, both on the liability and asset sides. The largest position on the liability side, insurance technical reserves, are impacted in different ways depending on the underlying business covered. Non-life reserves will be impacted due to the increase in claims linked to the price of materials, goods and wages. Life insurers will be impacted by higher interest rates and indexed payments. In a stable market and price environment, inflation is not a key topic as it is already considered in actuarial estimates. In a high inflation environment, however, standard actuarial models do not adequately capture excess inflation.

1) Non-Life insurance

Excess inflation poses a risk to insurers as it is not included in historical claims figures or in actuarial models which assume the past is a good predictor of the future. Inflation risk is higher for older business where excess inflation was not priced in, while new business written might already reflect it.

Reserving
The impact on non-life reserves depends on the geography of exposure and line of business. Supply chain shortages and rising energy prices are leading to higher claims costs on short-tail lines such as Property and Motor. Nat Cat events such as the German floods in August 2021 or European winter storms in February 2022 are increasing demand on already limited construction materials.

For long-tail business such as Liability and products including annuities, such as Motor, the inflation impact has a time lag and is often more closely linked to wage inflation. The situation is further complicated by social inflation where social costs are in addition to inflation costs. They include the effects of increased litigation, changes in social norms, and rising expenses for medical treatment. Taking social costs into account, liability claims are already growing faster than the consumer price index (CPI) inflation in many markets, in particular in the US.

Lines of business (LoBs) potentially affected by type of inflation

LoB	PPI	CPI	Social Inflation	Wage Inflation	Medical Inflation	Construction Index
Property	×	×		×		×
Liability			×	×		
Motor	×	×	×	×	×	
Workers Comp.			×	×	×	
Engineering	×	×		×		×
Marine	×	×				
Credit & Surety		×				

Source: KPMG analysis

When estimating incurred but not reported (IBNR), insurers should choose the most representative inflation index (or combination thereof) per LoB, also considering geographical differences. Internal inflation assumptions can be used as a base scenario to model excess inflation for LoBs for which inflation is not yet explicitly modelled.

Models need to also consider:

- Existing mitigation factors such as premiums linked to sums insured and stabilization clauses in reinsurance contracts
- The time horizon of the excess inflation impact
- How to treat large or CAT losses
- Case Reserves to ensure consistency between bottom-up adjustments on a case basis and top-down adjustments from inflation models
- Gearing effects, particularly for non-proportional reinsurance but also some direct or proportional insurance
- Triangles will need to be adjusted to strip out excess inflation if distortions in development pattern selection are to be avoided.

Where reserves are discounted, such as in the future under IFRS 17, the impact of inflation may be mitigated by higher discount rates.

Due to the significant uncertainty of inflation projections, actuaries will need to evaluate scenarios and communicate these to reserving committees and management.

Finally, there will be additional reporting requirements from FINMA regarding the handling of inflation in the context of assessing the risk situation and quantifying technical provisions.

Capital

The impact of inflation on a (re)insurer's capital is complex and depends on the time horizon of the investments, type of investments, asset allocation, and possible hedging strategies, among other factors. Companies may have a duration mismatch between assets and liabilities due to the "hunt for yield" over the past few years. This may result in market-consistent losses for 2022 over and above statutory losses which need to be taken into account in ORSA or SST projections. Inflation risk and market risk models within capital models need to be reviewed in light of the new macroeconomic environment. Given the volatility, FINMA's parameters for standard models may change this year.

Following are some assets typically held in insurers' portfolios, and the possible effects of inflation:

Bonds

Bonds traditionally make up the largest share of an insurer's asset portfolio. The price of a bond generally falls when interest rates (as a measure against inflation) rise.

Stocks

Stock prices can be influenced through several channels, including:

- Rising interest rates can cause market participants to change from equity to debt investments
- Consumer spending can fall, leading to a decrease in the company's short-term revenue and profits which in turn leads to a less favorable stock valuation
- Falling demand for loans can lead to a slow-down in economic growth
- If the valuation method of the stock depends on discounting, the present value of cashflows can be negatively affected and hence the stock's valuation can go down.

Currencies

Different monetary policies in different countries can result in an unfavorable change in exchange rates for the currencies of the insurer's portfolio. Using the current drop in the EUR/USD rate as an example, higher interest rates in the US have led to more demand for USD compared to EUR – leading to the adverse development of the EUR/USD rate. The EUR/CHF rate is historically low, leading to a fall in the valuation of EUR shares of portfolios evaluated in CHF.

Pricing

The granularity and appropriateness of assumed inflation indices must be reviewed if inflation is to be reflected correctly in pricing. Further, inflation can be expected to cause rates to increase significantly for European business. Rate increases communicated do not necessarily mean that the market is hardening.

2) Life insurance

High inflation affects the asset and the liability side of the balance sheet, as a consequence of both higher interest rates applied to counter inflation and higher inflation expectations. The impact of higher interest rates on the balance sheet is addressed by the asset-liability management.

A rise in interest rates offers life insurers the opportunity to increase their margins, however. This could see market players offering products with higher guaranteed interest rates to attract new clients. However, possibilities are limited since interest guarantees are strictly regulated, with a legal maximum defined by FINMA. As life insurance contract returns are a key factor for policyholders, low-guarantee interest contracts already in force that do not receive an adequate and competitive surplus participation may need to be closely scrutinized for surrender rates. Indeed, recent policies or products offered by other financial institutions may bear heightened rates due to the new interest and inflation situation, which could encourage people to surrender contracts that appear less attractive.

For life insurers, the impact of a temporary inflation shock on reserving is limited. Inflation impacts projected cashflows primarily through wage increases reflected in projected maintenance expenses and future premiums in the Collective Life business. For claims allowing for an escalation factor (e.g. inflation-linked products), finding the right inflation assumption is needed to project future claims correctly and build reserves accordingly. Discount factors used in reserving are linked to inflation by central bank monetary actions at the short end and by inflation expectations at the long end of the discount-curve.

Depending on the valuation framework and accounting principles, insurers may face unrealized losses in the value of own assets and/or depreciating assets values.

Recommendations for action

Insurance companies must actively consider inflation within their actuarial models. Possible measures to respond to inflation include:

Understand and model

- Understand the impact of excess inflation on the different lines of business for short and long-term portfolios
- Ensure inflation rates are not underestimated in your assumptions (forecasts of central banks have consistently been lower than actual inflation in 2021-2022)
- Build consistent assumptions across reserving, pricing, and capital modelling
- Review the sensitivity of models to different future inflation and interest rate scenarios
- Select the right inflation indices to reflect the impacts appropriately
- Assess the impact on different variables such as sum insured and reinsurance coverage.

Reach a decision

- Decisions on inflation should be actively discussed and documented. Depending on the size of the company, an Inflation Committee could be created to decide on the modelling approach and actions taken. Where this is not possible, the chosen inflation approach should be discussed, justified, and documented during the Reserving Committee.
- If the drivers of inflation remain prevalent in the medium term, especially for energy prices, a new situation may arise where inflation is a constant in the economy and the market embeds it in models and expectations. This could change the market for life insurance business and policyholders' demands for insurance products.
- The current environment could make some products more appealing to customers, introducing the possibility of profits linked to sales. Management should prepare different scenarios to be able to grow market presence ahead of competitors.

Key questions for insurers to ask

Beyond the above matters, Switzerland's insurance executives should be asking themselves:

- Where is my organization in this process?
- Are my models and assumptions up to date?
- What do I expect to happen in the coming months?
- What will the impact of inflation on my closing financials look like?
- Which actions are other functions taking to counter the impacts of excess inflation?
- Am I comfortable with how to include inflation modeling in my actuarial systems with respect to the introduction of IFRS 17?

How KPMG can help

Our strong presence in the Swiss insurance market means KPMG can provide you with tailored solutions to suit your particular needs. We can help you improve your actuarial models and positively impact your organization.

We look forward to discussing these matters with you as you deal with the growing complexities of inflationary trends in your business.

Will Southwell
Partner, Head of Actuarial,
Risk and Finance Transformation
wsouthwell@kpmg.com

Nina Wingate
Senior Manager,
Actuarial and Insurance Risk
nwingate@kpmg.com

Sébastien Loesch
Director,
Head of Life Actuarial and
Insurance Risk
sloesch@kpmg.com

KPMG AG
Badenstrasse 172
PO Box
8036 Zurich
Switzerland