Navigating Inflation Risk
Insights from DNB's Good Practices

Written by Yuan-Yow Wu, Consultant (Finalyse)

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Summary

In response to the recent inflation volatility that insurers have experienced, the Dutch Central Bank (DNB) has compiled a set of good practices for managing inflation risk. These good practices are categorised into the following key areas:

1. **Risk Identification:** Insurers are advised to break down their exposure to inflation in costs and claims into measurable levels.
2. **Risk Policy, Tolerances, and Limits:** Insurers are encouraged to set a tolerance on inflation risk, monitor it with scenarios, define early warning indicators, and identify potential management actions.
3. **Inflation Assumptions**: Insurers are advised to use as much market-consistent information as possible, documenting their methodology and evaluating it regularly.
4. **Business Operations:** Insurers should consider using hedging instruments, adapt their product development process, and include inflation considerations in their outsourcing policies.

Introduction

With the recent surge in inflation, insurers who previously did not see the need to prioritise inflation risk are now required to do so. These surges in inflation can be attributed to supply chain disruptions caused by events such as the COVID-19 pandemic and various geopolitical conflicts.

In response to this emerging challenge, De Nederlandsche Bank (DNB) developed a set of "Good Practices" for insurers to manage and control their inflation risk. "Good Practices" are principles insurers can use for inflation risk management.

The DNB substantiates their suggestions with relevant laws and regulations, such as the Solvency II Directive, and provides their perspective on why these suggestions were made.

In this article, we offer insights into these recommendations and demonstrate the implications of these recommendations for insurers.

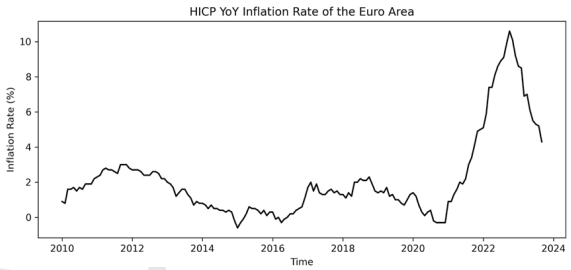

Figure 1: Euro Area Harmonised Index of Consumer Prices (HICP): year-on-year (YoY) changes over the past 15 years

Risk Identification

Ensure sufficient granularity of risk measurement

The risk identification phase provides insight into the sensitivity of your balance sheet to inflation, to establish a robust foundation for conducting risk analysis and measurement.

Exposures should be mapped at a sufficiently granular level and for homogeneous items as inflation will vary across several dimensions such as geography, industry, and the way the price index is calculated.

For instance, an insurer offering both motor and property insurance may face different inflation risks for each line of business.

Inflation can also be broken down into different categories such as inflation in operational costs, including wages, and inflation in claims.

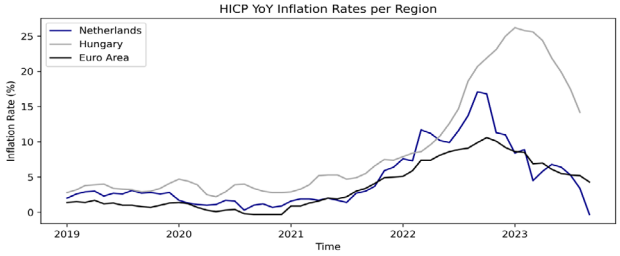

Figure 2: Comparison of HICP YoY inflation rates in the Netherlands, Hungary, and the Euro Area.

Policy, Risk Tolerances, and Risk Limits

The second area of focus for effectively managing inflation risk involves establishing appropriate policies, risk tolerances, and risk limits.

Establish and Monitor Risk Limits

Once risks are identified, insurers must determine how to manage them. For example, insurers can set risk limits around the Solvency II ratio under inflation scenarios, as shown in the table below.

Inflation Shock Scenarios	SCR After shock	Early Warning Trigger	Limit	Management Action Required
Base	1.5	1.3	1.1	N
Up Shock (2%)	1.3	1.3	1.1	Y
Down Shock (2%)	1.6	1.3	1.1	N

The insurer should formulate in advance the management actions to be taken in case the inflation risk falls outside the set triggers or limits. Regularly reporting risk measures against their limits at forums, such as ALCO meetings encourages discussion about the risks and the management actions, such as increasing premiums, hedging, or reinsuring inflation-sensitive liabilities.

Own Risk and Solvency Assessment (ORSA)

Incorporating the effect of a prolonged high inflation scenario into the ORSA is important to help insurers understand the potential impact of inflation on their organisation. This could be a valuable addition, considering inflation was not a major concern previously.

Inflation Assumptions

The third area considers the assumptions used by the insurer to build the inflation curve needed to project future costs and claims in a realistic manner.

Base Inflation Curve

Firstly, insurers should establish a process to construct a base curve that is as market consistent as possible. For most European insurers the Euro Area HICPxT index (which excludes Tobacco) will be appropriate, as an active swap market is based on this index.

Adding Spreads to the Base Inflation Curve

Secondly, the insurer should apply adjustments or spreads to the base curve to reflect the inflation expected on specific groups of homogeneous items. For example, an insurer with a motor insurance book will see inflation develop differently than on the HICPxT index, which can be reflected by the application of a spread on the base curve implied from HICPxT swap contracts.

These spreads should be estimated based on historical data and possibly expert judgements. The methodology should typically be subject to an annual back-testing.

Extending the Inflation Curve

Thirdly, inflation expectations should be extrapolated beyond the last liquid market data point to cover the insurer's long-dated exposures. This can be done using an appropriate Ultimate Forward Inflation Rate (UFIR) assumption. If properly substantiated, a European insurer could rely on the HICPxT swap market for up to 30 years and use the ECB's long-term inflation target as the UFIR beyond that horizon.

Own Estimates

When there is no market data or when the data significantly differs from the insurer's inflation expectations, insurers can use their own estimates for inflation.

However, they will need to substantiate why their own expert judgment is more appropriate than the available market information.

Use of Loss Triangles in Inflation

Non-life insurers using loss triangles should assess the inflation implicit in the loss triangle.

If the implicit inflation does not accurately reflect inflation expectations, the insurer should account for the expected inflation through appropriate reserving methods or other manual methods.

Process of Setting and Determining Assumptions

The last 'good practice' related to assumption setting aims to ensure that the process of monitoring changes and adjustments in material assumptions is adequate. This can be done by following tight feedback loops between parties such as the accountants, actuaries, and reinsurers.

Business Operations related to inflation risk arrangement

The fourth focus area relates to the insurer's business operations and how inflation risk management should be conducted in the context of these operations.

ALM and Hedging

Insurers should conduct an Asset & Liability Management (ALM) analysis to understand the mismatches between their assets and liabilities in terms of their exposure to inflation risk.

If mismatches fall outside the established risk tolerance, insurers should set up a hedging policy to mitigate inflation risk. Hedging may involve the reinsurance of inflation-sensitive liabilities, the purchase of inflation-linked bonds or entering into (more liquid) inflation-linked swaps.

The ALM analysis and the hedging policy should cover the basis risk arising from differences in inflation curves. For example, the insurer will incur a basis risk when Dutch HICP-linked cashflows are hedged with European HICPxT swaps.

Product development

Fundamentally, insurers should aim to structure products in such a way that the inflation risk for the insurer can be better controlled.

This involves considering the impact of inflation on the behaviour of policyholders (pushing inflation risk on the policyholder may reduce the demand) and aiming to sell products with inflation guarantees that can be hedged.

Outsourcing Policy

Outsourcing agreements and contracts could introduce inflation risk through an increased cost associated with outsourced services. Whenever possible, insurers should consider establishing contracts of a long-term nature with fixed-price agreements, or at the very least, ensure that any price increase aligns with the insurer's inflation risk budget.

Conclusion

The 'Good Practices' outlined by the DNB serve as a comprehensive guide for insurers to effectively manage inflation risk. These practices provide practical ways to manage the financial impact of inflation on their business whilst mitigating the losses associated with the uncertainty of inflation.

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About the author

Yuan-Yow Wu
Consultant
Yuan-Yow.Wu@finalyse.com

Yuan-Yow is an Actuarial Consultant at Finalyse, bringing with him more than five years of professional experience. He is also a Fellow at the Koninklijk Actuarieel Genootschap (AG). Specializing in market risk reporting, product development, balance sheet management, and asset liability management at Finalyse, he has actively participated in various initiatives, including the implementation of IFRS17 and the pricing and development of Asset Structures for products.

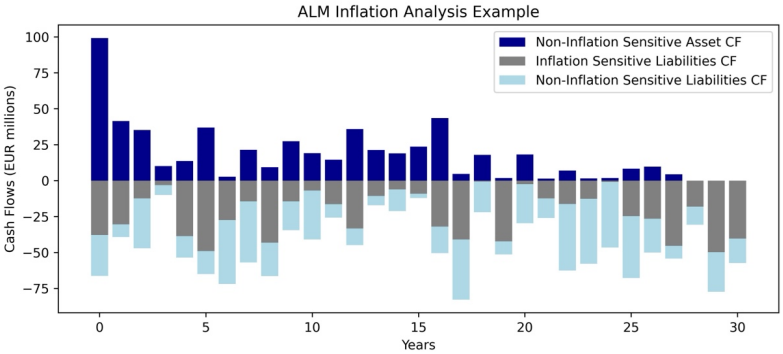

Figure 3: Example of assessing asset cashflows against liabilities for ALM while accounting for inflation