Inflation, pensions and insurance

Presentation to the Milliman European Forum

By Malcolm Kemp

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About the speaker: Malcolm Kemp

- *Malcolm is chairperson of the Actuarial Association of Europe's Risk Management Committee, a lecturer in risk management at Imperial College Business School, London, a member of the Advisory Scientific Committee of the European Systemic Risk Board (ESRB) and Managing Director of Nematrian*

- *He has over 35 years' experience in the financial services industry including senior roles in insurance and investment management. He was until 2021 the Chief Actuary (Actuarial Function Holder) for Threadneedle Pensions Limited and an Associate in Barnett Waddingham's insurance consulting practice*

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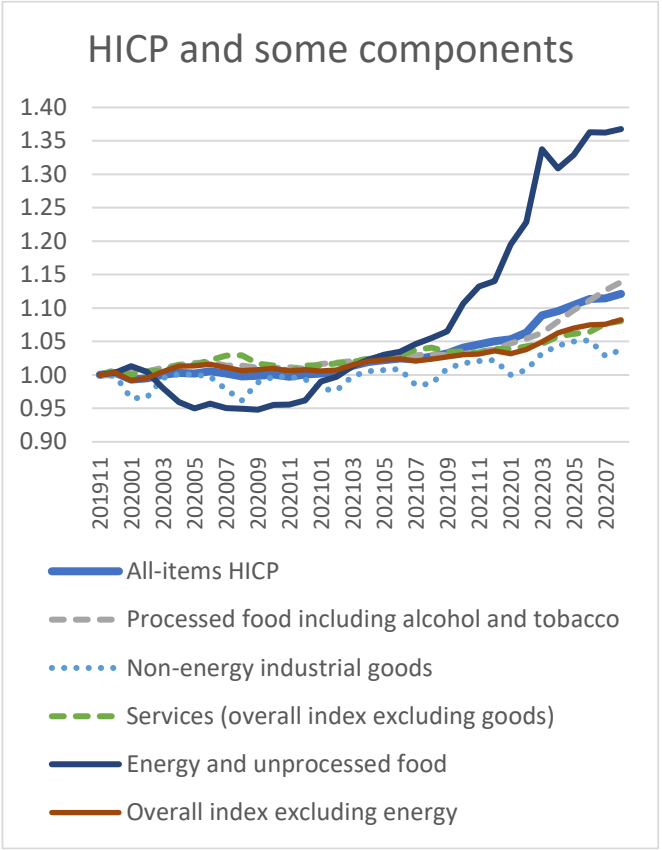
Agenda

- The current inflationary background
- How inflation and its uncertain evolution impacts insurers and pension funds
  - The asset side
  - The liability side
- Broader (financial stability) implications

Background: A sharp inflationary shock in many locations

- Mostly seen as an unexpected cost-push driven inflationary shock (from energy prices and food)
- But there have been both supply and demand contributors, e.g. a call for papers for a forthcoming joint ECB / ESRB workshop notes:

Consumer price inflation has risen sharply around the world reaching, in several jurisdictions, record levels not seen in decades. A combination of demand and supply factors is behind these dynamics. On the one hand, economic rebound in the post-Covid era has occurred more rapidly in some areas and boosted demand also amid high saving stocks. On the other hand, high energy and food prices and supply-side bottlenecks have been exacerbated by the Russian-Ukraine war and the persistent pandemic impacts. While some of these factors are expected to fade out over time, others may be more persistent. This, combined with the rapid and sharp nature of upward revisions to inflation, may represent tail risks to financial stability.



Source: Eurostat

… different magnitudes in different locations

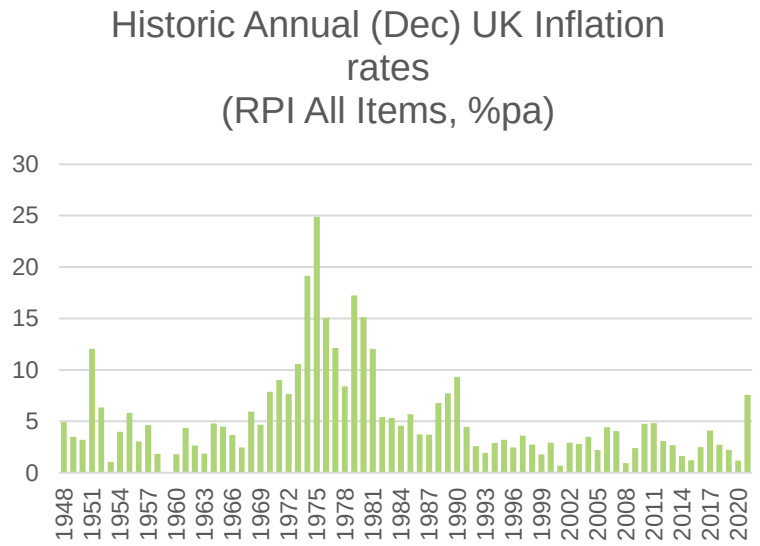
- Actual levels diverge considerably, even within EU/EEA
- Impacts on different parts of the economy, even on different parts of the financial system, are likely to be similarly varied
- And potentially strongly influenced by political decisions and the trajectory of monetary policy:
  - E.g. On 3 Oct 2022 Reuters reported that Turkish annual inflation hit 83% (a 24-year high) after interest rates were lowered to 12%, "*going against a global tightening cycle despite the sustained rise in inflation, surging energy prices and the lagged effect of the lira's decline*"

Inflation y-o-y (HICP, %), Sep 2022	
Estonia	24.1
Lithuania	22.5
Latvia	22.0
Hungary	20.7
Czechia	17.8
Netherlands	17.1
Poland	15.7
Bulgaria	15.6
Slovakia	13.6
Romania	13.4
Croatia	12.6
Belgium	12.1
Greece	12.1
Denmark	11.1
European Union	10.9
Germany	10.9
Austria	10.9
European Economic Area	**10.9**
Slovenia	10.6
Sweden	10.3
Euro area	9.9
Portugal	9.8
Italy	9.4
Spain	9.0
Cyprus	9.0
Luxembourg	8.8
Ireland	8.6
Finland	8.4
Norway	7.7
Malta	7.4
France	6.2
Iceland	5.9
Switzerland	3.2

Source: Eurostat

… authorities hope they can rise to the challenge

- Typical assumptions by (EU) authorities seem to be that:
  - **Monetary policy will keep inflationary expectations "grounded"**
    - Despite politicians worrying that this will deprioritise growth too much
    - I.e. inflation will return to levels approximating targets given to central banks, e.g. c. 2% pa, over a reasonably short timeframe
  - **We won't enter a persistently high inflation rate regime**
    - Akin to the c. 15+ years of stagflation seen in e.g. the UK after the oil price shocks of 1973 and 1979



Source: UK Office of National Statistics

How likely is monetary policy to keep up?

- Average real return on treasury bills (cash) between 0% and 1%pa for USA and UK over last c. 120 years
  - Boundary “loose” vs “tight” monetary policy. Is this ≈ 0.5%pa real gap between short interest rates and inflation rates? Or is this “long-term” no longer relevant?
- C.f. Eurozone HICP Sep 2022 y-o-y inflation rate of 9.9% (Eurostat) vs ECB MRO rate of 2.0% (ECB, with effect from 2 Nov 2022)
  - Large negative gap: will it encourage short-term spending over saving?
  - Is the **current rate** or the **direction of travel** the more important driver of consumer / business behaviour?
  - How do fixed term contracts (e.g. fixed term mortgages, fixed annuities) impact the picture?

Stylised instantaneous impacts on assets and liabilities

- E.g. according to Achord & Dotterweich presentations to Convention A (Sept 2022) and AAE (Oct 2022) “Impacts & Implications of Inflation on Insurance & Pensions”:
  - **Assets** are **what they are**:

$$MV_{bond} = \sum \frac{c}{(1+r)^j} + \frac{N}{(1+r)^t} \qquad MV_{equity} = \sum \frac{d(1+g)^j}{(1+r)^j}$$

$$r = discount\ rate, c = coupon, N = par\ value, d = dividend, g = growth\ rate$$

  - Insurance and pensions **liabilities** are as **we design them** …
    - Potentially including more complex risk-sharing mechanisms & impacts

Typical stylised cash flow discounting models

- Can expand those on the previous slide to:

$$MV_{bond} = \sum \frac{c}{(1 + rfr_{real} + E(i) + CS + IURP)^j} + \frac{N}{(1 + \cdots)^t}$$

Inflation expectations are not directly affected by recent historical inflation, but by market participants' and consumers' expectations

Affected by rising rates and inflation, differential effects by credit rating

Only adjusts in current market yields, not in the yield to redemption when you bought it

$$MV_{equity} = \sum \frac{d(1+g)}{(1 + rfr_{real} + E(i) + CS + ERP)^j}$$

Depending on the asset, the growth rate has a link to past inflation and expected inflation

Note: rfr_{real} = real risk-free rate, E(*i*) = expected inflation, CS = credit spread, IURP = inflation uncertainty risk premium, ERP = equity risk premium

Leads to assumed stylised (equilibrium) impacts such as:

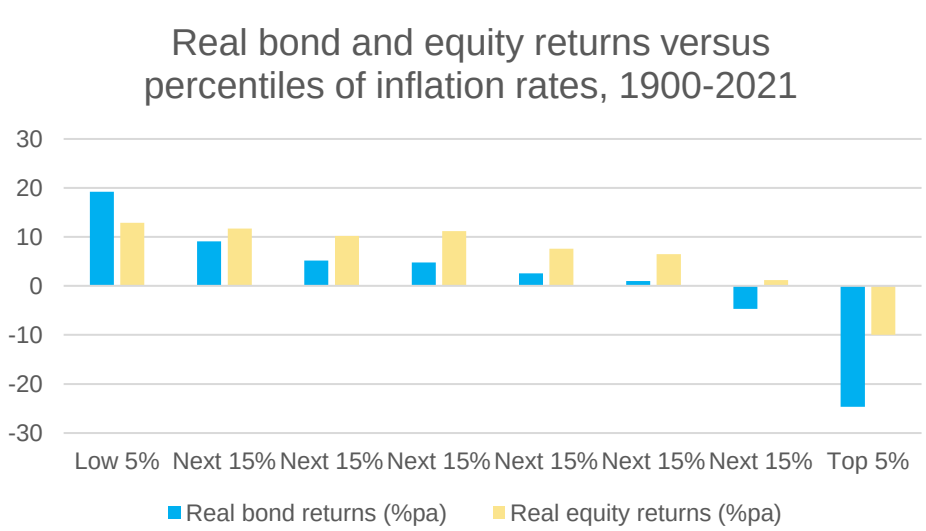
Asset class	Stylised impact channels	Nominal impact of rising inflation (in isolation)	Nominal impact of rising nominal rates (in isolation)
Bonds (fixed income) [1]	Duration and convexity effects and a credit element linked to rating	Flat to ↓ depending on credit rating	↓
Equities	Dividend discount model (growth and discounting terms)	↑↑ [2]	↓ [2]
Real Estate	Rental discount model	↑↑ [2]	↓ [2]

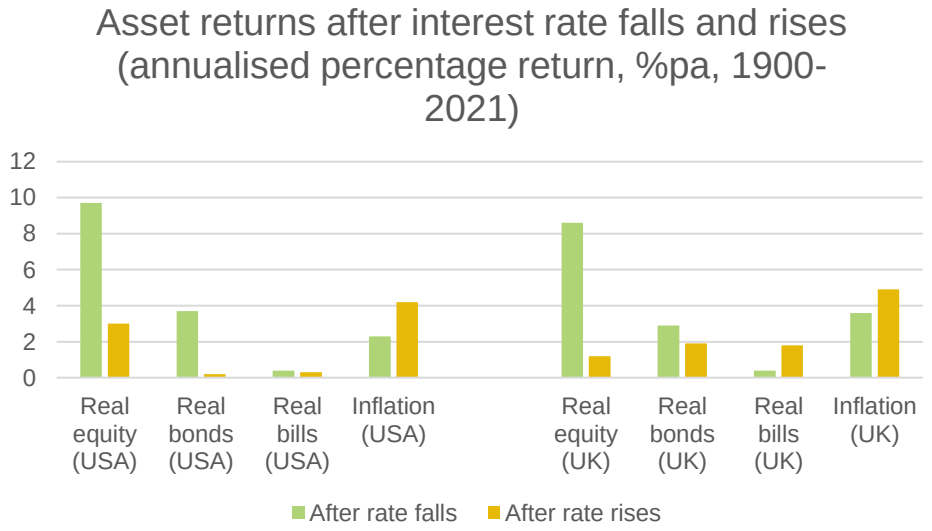
[1] Needs adaptation for inflation-linked bonds, as coupon / principal then also linked to inflation

[2] Hence notion that such assets are “real” assets that provide a natural hedge against inflation

Real-life behaviour much more complicated

- Considerable differences between real bond and real equity returns for different inflation levels and for different directions of interest rate movements
- Reflects importance of investor's **future expectations** on market prices
  - These can be heavily influenced by investor views on franchise values





Source: Credit Suisse Global Investment Returns 2022 Yearbook Summary

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Impact on insurance industry and its liabilities

- Backdrop in 2020 and 2021, according to Achord and Dotterweich, was:
  - Business profitability of Property and Casualty had benefitted from:
    - Windfall profits from Covid in some lines
    - Hardening rates for commercial P&C lines
  - Business profitability of Life & Health had been influenced by:
    - Care business lines: demography, social laws, medical inflation
    - (Long-term) life insurance lines: the then low interest rate environment
    - All lines: ongoing need to modernise IT systems etc.
  - Year end reserving at year end 2021 still assumed stable/low general inflation akin to that experienced in the preceding decade

Property & Casualty

- Looking forward over the (more predictable) shorter term, according to Achord and Dotterweich:
  - P&C profitability
    - Immediate increases in costs from short-tail claims (if not fixed in nominal terms)
    - Increased servicing and wage costs
    - Offset by better portfolio yields (with some time lag)
  - P&C reserving
    - Market wide increases in affected P&C short tail lines
    - Increases in liability classes, reflecting judgemental decision making
    - Closer attention to indexation clauses in annuity-like products

- Looking forward over the (more predictable) shorter term, according to Achord and Dotterweich:
  - L&P profitability
    - Importance of fixed nominal terms in some life products versus cost-of-living adjustments in others
    - Increase in cost of living for older people could even provide some growth opportunities
    - Better portfolio yields (with a typically longer time lag than for P&C)
  - L&P reserving and risk management
    - No longer so worried about time value of guarantees in SII best estimate liabilities
    - But liquidity risk (including possible collateral calls) and potential adverse lapse risk experience receiving greater focus
    - Again closer attention to indexation clauses etc.
    - Persistently high inflation rates could negatively impact new business

Liability picture similar in e.g. Swiss Re Sigma No. 4/2022

- Slowing economic growth typically leads to lower demand for insurance
- Main direct expected (liability) impact linked to rising claims costs, more in non-life than in life insurance in which policy benefits are defined at inception
  - Property and motor expected to be most impacted in near term, due to supply disruptions and labour and parts shortages. Accident, motor liability and general liability also likely to be impacted
- At time written (July 2022), still expecting inflation to remain well grounded

	Inflation - next 10 year forecast average (Swiss Re Institute)		Historical data	
	Current (Jun 2022)	Pre-pandemic (Nov 2019)	Previous decade (2010-2019)	Last two decades (2000-2019)
US	3.0	2.3	1.8	2.2
Euro area	2.7	1.8	1.4	1.7
China	2.3	2.5	2.6	2.2

Source: Swiss Re Institute

Broader (financial stability) impacts: shorter-term

- A mostly unexpected cost-push driven inflationary shock will likely have a range of broader impacts:
  - **Reduces real incomes**
  - Likely leads to generalised **increases in nominal rates**
  - Likely **redistributes real wealth** from lenders to borrowers (and hence between different demographic sectors of society)
  - Tends to create **higher financial market volatility and uncertainty**
- Potentially increases financial stability risks, e.g. from asset price valuations
- Although higher inflation may also be associated with lower real debt burden (for fixed-rate borrowers) and higher bank profits via net interest income

Broader (financial stability) impacts: longer-term

- Key is whether inflation remains “grounded”
  - An obvious requirement for financial stability is that inflation does not spiral out of control and reach hyper-inflationary levels
- But even a normalisation of a persistently higher inflation environment would likely lead to substantial adaptations by different economic players
  - Economic agents typically adapt behaviour to limit redistribution effects away from themselves
    - E.g. possible increased labour unrest as workers attempt to avoid excessive declines in their real income levels
  - Might increase political uncertainty and lead to e.g. more windfall taxes and/or broader restructuring of tax systems

Solvency II Review proposals

- EU Commission 2021 Solvency II Review proposals highlight financial stability:
  - Page 1: "*The principal objectives of Solvency II are to protect policyholders and beneficiaries, as well as to preserve financial stability… These "long-term guarantee measures" aim to mitigate … More stable solvency ratios avoid undue competitive disadvantages for business models based on offering long-term guarantees and, ultimately, increase financial stability.*"
  - Page 2/3: "*Solvency II, unlike the prudential framework for credit institutions, currently has no specific macro-prudential tools to explicitly address the build-up of systemic risks, and there is so far no dedicated common framework for crisis preparedness and resolution for failing insurers, in the interests of policyholders and the public at large. Against this background, the present review aims to … better address the potential build-up of* ***systemic risk*** *in the insurance sector …*"
- And propose changes to **Own Risk and Solvency Assessment** (ORSA) requirements and to **Prudent Person Principle** (PPP) particularly in terms of investment decision-making

ORSA proposal

- Proposed to add text to Article 45 ("Own risk and solvency assessment"):
  - "*1(d) consideration and analysis of the macroeconomic situation, and possible macroeconomic and financial markets' developments, and, upon a reasoned request of the supervisory authority, macroprudential concerns, that may affect the specific risk profile, the approved risk tolerance limits, the business strategy, the underwriting activities or the investment decisions, and the overall solvency needs referred to in point (a) of the undertaking;*
  - *1(e) consideration and analysis of the activities of the undertaking that may affect the macroeconomic and financial markets' developments, and have the potential to turn into sources of systemic risk;*
  - *1(f) the overall capacity of the undertaking to settle its financial obligations towards policyholders and other counterparties when those obligations fall due, even under stressed conditions.*"
- For (d) and (e) add text to ensure "*macroeconomic and financial markets' developments*" include, at least, changes in:
  - "*the level of interest rates and spreads; the level of financial market indices; inflation; interconnectedness with other financial market participants; climate change, pandemics, other mass-scale events and other catastrophes, which may affect insurance and reinsurance undertakings*"

Prudent Person Principle proposal

- Proposed to add text to Article 132 (“Prudent person principle”):
  - “*5. Member States shall ensure that insurance and reinsurance undertakings take account of possible macroeconomic and financial markets’ developments and, at the request of the supervisory authority, macroprudential concerns when they decide on their investment strategy.*
  - *6. Insurance and reinsurance undertakings shall assess the extent to which their investment strategy may affect macroeconomic and financial markets’ developments and have the potential to turn into sources of systemic risk, and incorporate such considerations as part of their investment decisions.*
  - *7. For the purpose of paragraphs 5 and 6 of this Article, macroeconomic developments and macroprudential concerns shall have the same meaning as in Article 45*”
- (Larger) insurers will likely need to pay more attention to systemic risk going forwards, especially if economic uncertainty persists or gets worse

Summary

- We have experienced an unexpected inflationary shock. Compared to potential impacts on assets, the (direct) short-term impacts on **insurance and pension liabilities** are (by design) probably relatively well understood
  - **Property & Casualty Insurance**: Likely short-term under-allowance for claims inflation and associated reserving challenges
  - **Life and Pensions**: Impact on long-term business likely heavily influenced by second-round yield curve effects. Overlaid on these will be impact of higher future expense levels and maybe lapse and liquidity (if e.g. derivatives are used to extend duration)
- Broader **impact over the longer term (and on assets)** is **less clear**
  - **Will inflation expectations remain grounded?** In my opinion, regulatory direction of travel likely to emphasise increased focus on macroeconomic and macroprudential issues within e.g. ORSA and PPP

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