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The Impact of the Interest Rate Environment on Insurance -
with a Special Focus on Life Insurers

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The Current Interest Rate Level

- **Decline of interest rates** for the last decades in major economic areas

- **U.S. financial crisis** induced central banks to reduce interest rates and boost money supply to stimulate economic activity (monetary easing)

- **Sovereign debt crisis in Europe**
  Increased risk aversion: “Flight-to-quality" to safe havens (e.g. Germany) with consequent increase in sovereign bond prices (decrease in yields)

- Monetary policy still very loose (forward guidance): **Economic activity still weak**, especially in Europe
Impact on the Life Insurance Industry

- Effects of a loose monetary policy different for borrowers and lenders
  - **Cost of borrowing decreases**
    (positive effect for governments and borrowers in general)
  - **Returns on bond markets fall**
    (negative effect for life insurers, pension funds and depositors in general)

- Current low interest rate level: **Challenge for life insurers** offering savings products with minimum guaranteed returns
Impact on the Life Insurance Industry

• **Swiss Re (2012):**
  Due to product characteristics, Germany, the U.S. and Italy: Highest exposure to interest rate risk among major insurance markets

• Similar situation in Japan during the 1990s

What did we learn from the Japanese case?
The Japanese Experience
The Japanese Experience

• Economic stagnation since the end of the 1990s

• Falling stock prices and land prices after peak in 1989

• Monetary authorities reacted with very low interest rates to revive the unsatisfactory economic activity

Source: Eurostat & Datastream
The Japanese Experience

• Impact on the Japanese Life Insurance Industry

  • Between 1997 and 2001: Bankruptcy of 7 midsize life insurers
  • Underwriting portfolio sold or transferred to a relief company (with 90% of policy reserves guaranteed as coverage)
The Japanese Experience

• Impact on the Japanese Life Insurance Industry:
  • Shrinkage for the past 15 years and change in business model
    • Lowered profit margins by about 70%
    • Other forms of investments gain popularity
    • Industry shift towards other business (e.g. health insurance)
Challenges for Traditional Life Insurers
Challenges for Traditional Life Insurers

• Should we expect other countries, especially in Europe, to go the Japanese way?
  • Interest rates in many European countries close to the Japanese level
  • Economic activity still very weak
  • Inflation below inflation targets

• An exemplary case: the **German Life Insurance Industry**
  • Similarities to the Japanese situation
  • Large stock of policies carrying a high guaranteed return
  • Very low interest rate level
Challenges for Traditional Life Insurers

• Germany is a major insurance market with both high exposure to interest rate risk and very low sovereign yields

• Bundesbank Financial Stability Review (2013):
  A very low interest rate scenario would affect solvency of several German Life Insurers (Solvency I regime)

• German situation:
  Average guaranteed return of life insurance contracts: 3.12% in 2013 (in contrast: 10 YTM Bund average yield from 9/2011 to 8/2014: 1.62%!)

• Products with a guaranteed return of 4%:
  still about 24% of total outstanding contracts
Our Research
Our Research


• Goal of the study
Assess the solvency situation of a stylized German life insurer in a protracted low interest rate environment

• Methodology
  • Simplified balance sheet with initial pre-existing asset allocation and liability portfolio, projected 10 years ahead with stochastic capital market developments (CIR model for term structure, GBM for stocks and real estate)
  • Book Value and Market Value dynamics

• Regulatory framework
German Insurance Regulation and Solvency II capital requirements

• Calibrations
5 different initial equity capital endowments, each representing 20% of the market
Our Research

- Interest rate scenario similar to the level observed in Japan: Long-run (instantaneous) interest rate value: 1%
Conclusions and Discussion
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• Macroprudential aspects
  of a loose monetary policy and low interest rates

• Redistributinal concerns
  Borrowers / investors (advantage) vs.
  Lenders / depositors (disadvantage)

• Financial Stability concerns
  • Reduction of Solvency margins for life insurers and pension funds
  • Increased insolvency risk for financial services providers
Conclusions and Discussion

• Development of approach for *assessing and quantifying* the impact of a protracted period of low interest rates

  • Useful for insurers in view of the incoming ORSA
    (*Own Risk and Solvency Assessment*)

  • Part of an *Early Warning System* for financial supervisors
Conclusions and Discussion

• **Regulation and supervision**
  - Risk-adequate rules for capital charges (e.g. on sovereign bonds holdings)
  - Restrictive ceilings for long-term guarantees (because of prisoners’ dilemma for the insurance industry)

• **Life insurance industry**
  - Lower long-term guarantees and more flexible return guarantees
  - Less concentration on sovereign bonds and more on (asset backed) corporate bonds and long-term investments
Conclusions and Discussion

• One of the main tasks of insurance supervision: Detecting and avoiding Black Swans

• Does the present low interest rate environment exhibit the main characteristics of a Black Swan?

  • Did it come as a surprise?
  • Does it have a big impact?
  • Was it predictable in an ex-post view?
Conclusions and Discussion

• How to avoid a Black Swan
  • Installing an Early Warning System
    • Institutionalized brain storming on strategic hazards, e.g.
      • Inflation risk
      • Political risks
      • Demographic risks
    • Take behavioral aspects into account (e.g. planning horizons of management)

• Early reactions
  (require courage and assertiveness)

• Globally coordinated actions