International Center for Insurance Regulation

Prof. Dr. Helmut Gründl

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

Global Insurance Supervision Conference
September 9th, 2014

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

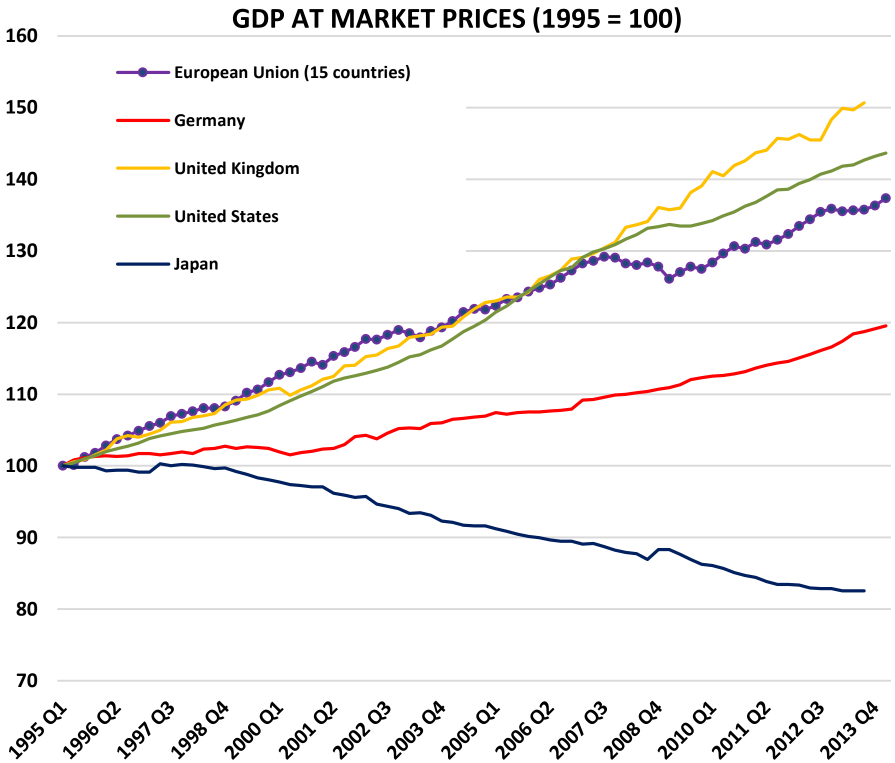
- Similar situation in Japan during the 1990s

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: Bancruptcy 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

- Elia Berdin and Helmut Gründl: **The Effects of a Low Interest Rate Environment on Life Insurers**, ICIR Working Paper Series, July 2014

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

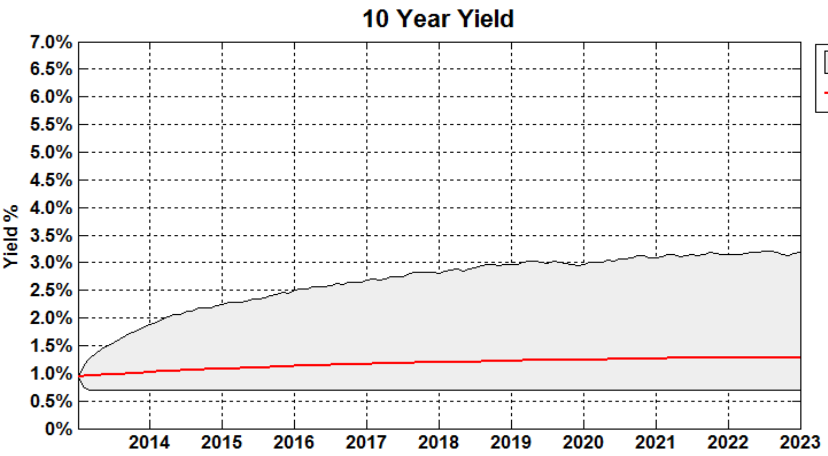
- **Methodology**
  - Simplified balance sheet with initial pre-existing *asset allocation* and *liability portfolio*, projected 10 years ahead with stochastic capital market developments (CIR model for term structure, GBM for stocks and real estate)
  - Book Value and Market Value dynamics

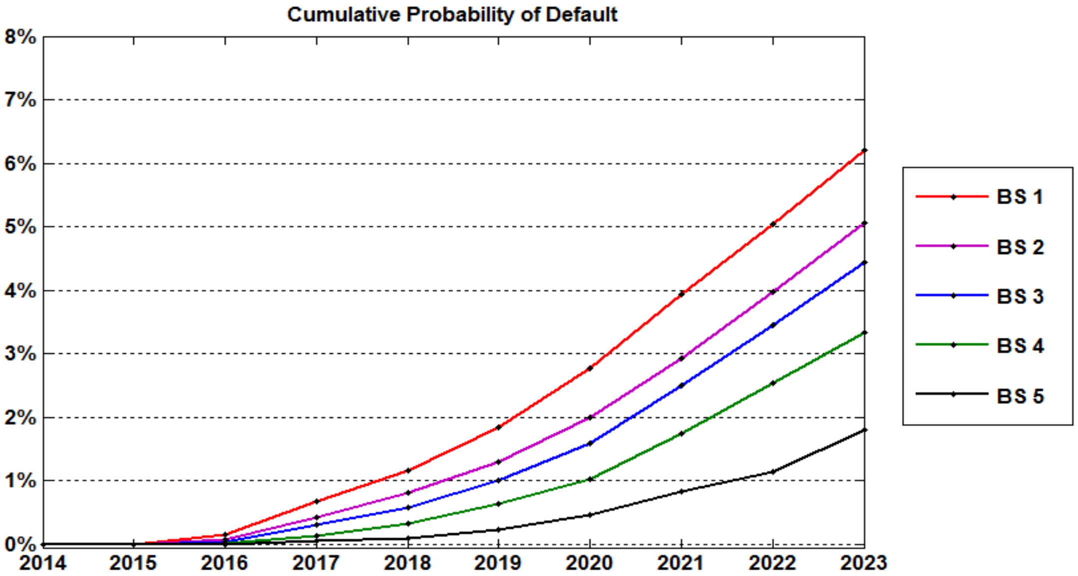
- **Regulatory framework**
  German Insurance Regulation and Solvency II capital requirements

- **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

Conclusions and Discussion

- **Macroprudential aspects**
  of a loose monetary policy and low interest rates

  - **Redistributional 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**

EARLY WARNING SYSTEM

EARLY REACTIONS

GLOBALLY COORDINATED ACTIONS