Response to life insurers' interest rate risk under the ultra-low interest rate
- Case study of Japan, Taiwan, Germany and Korea -

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- Managing Director, Capitas Consulting Corporation
  - Consultation based on experience analyzing and assessing insurers as a credit analyst and regulator over 20 years
- As an analyst at Rating and Investment Information Inc. (R&I), covering mainly insurance industry (1997-2010)
- In FSA Japan, mainly in charge of monitoring and encouraging enterprise risk management (ERM) of insurers (2010-12)
  - Also in charge of upgrading of solvency regulations
- Received Ph.D. in 2008, study of midsize insurers' bankruptcy in Japan
  - *"The Failure without Management: Truths behind the Seiho Crisis in the Heisei Era"* http://olis.or.jp/publication.html

Contents of This Research

- The case study which analyzes interest rate risk correspondence to life insurers under the ultra-low interest rate environment
- Composition of this paper
  - First, I summarize the interest rate risk often dealt with life insurance companies and their countermeasures.
  - Second, I investigate the correspondence situation of insurance companies in major life insurance markets considered to have a high interest rate risk.
  - And I consider differences in management behavior from the viewpoint of an external observer.

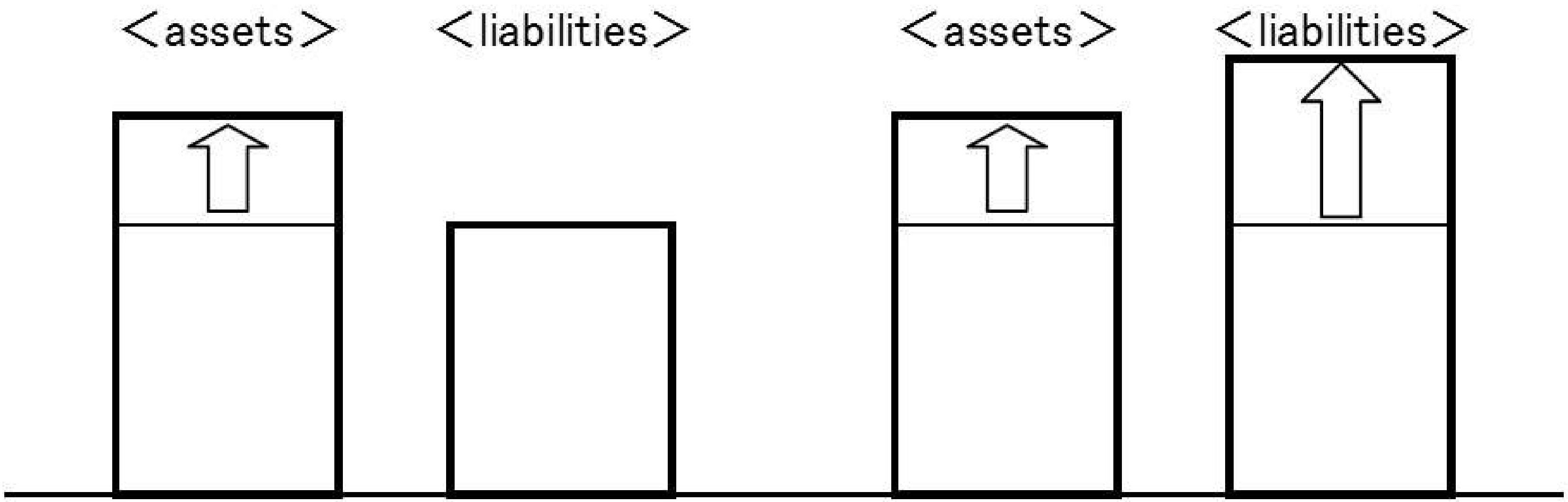
Life Insurance Company and Interest Rate Risk

- Definition of Interest rate risk
  - The risk of impairing the corporate value of insurance companies by fluctuating interest rate levels
  - Insurance companies provide cash flow in the future.
    - For providing future cash flow, they have to get risk-free bond as raw material.
    - Declining interest rate = Increasing raw material price
    - Current situation, the price of raw material has increased before insurers had not got it yet in spite of already selling insurance.

      (= Decreasing net asset based on economic value)

Declining Interest Rate for Life Insurers

Effects of declining interest rates



＊By current accounting plinciple

＊Actually …
(If DuR of liabilities is greater than Dur of assets)

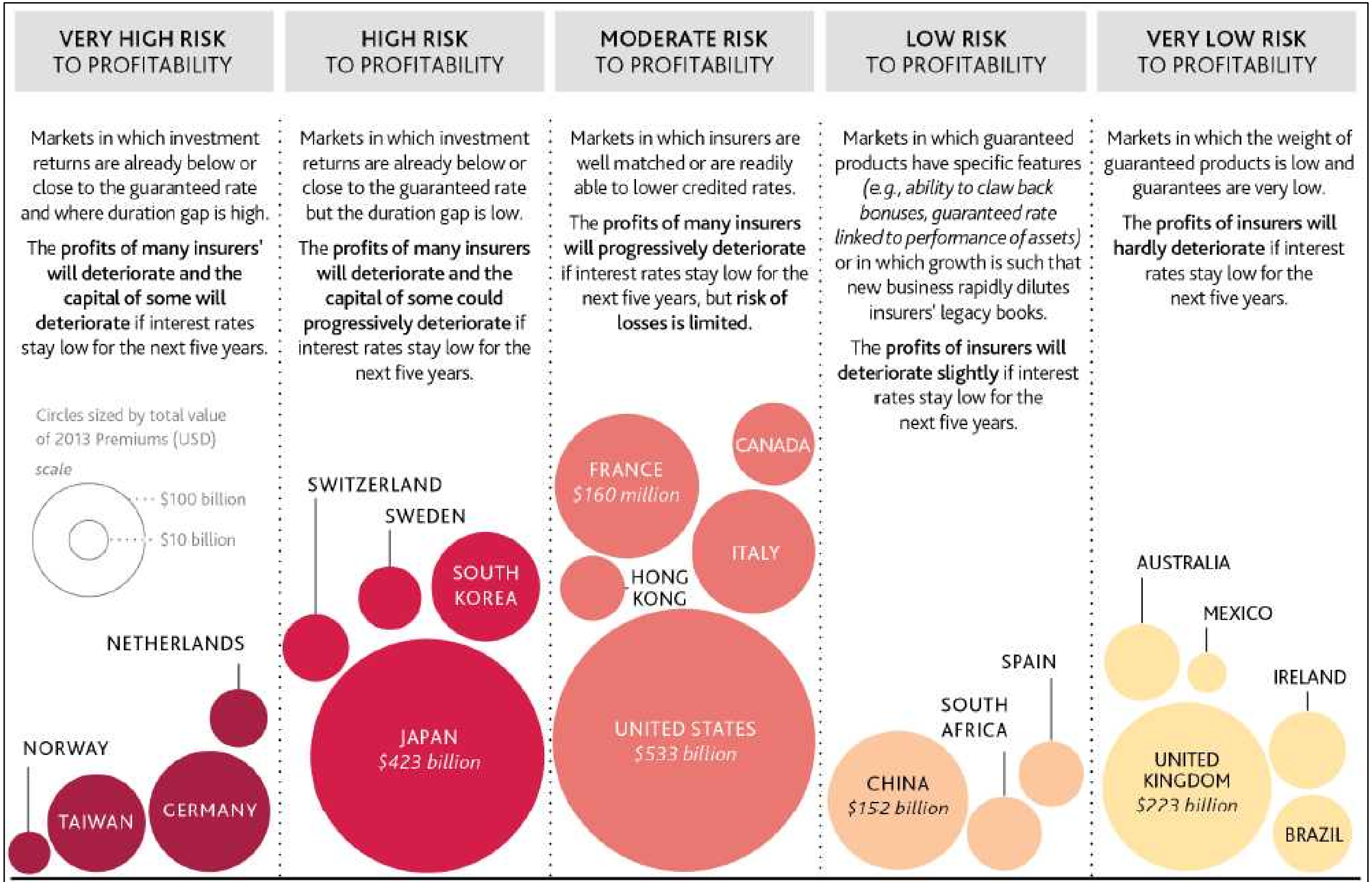
Life Insurance Market with High Risk

- Life insurance market has strong locality.
  - The risk of UK market is generally small.
    - There are many variable type products and actual dividend products with no minimum guarantee.
  - US life insurance companies provide various products.
    - About 80% of their g/a assets account for fixed income, and it is popular the ALM by duration matching.
  - Japan, Taiwan, Germany and Korea take large interest rate risks.
    - Mainly long term traditional products, or with minimum guarantees
    - Large mismatch of the future cash flow between A&L

Life premium volume in USD in 2016

Rank	Country	Premium volume (in millions of USD)	World share (in %)
1	United States	558,847	21.35
2	Japan	354,053	13.53
3	China	262,616	10.03
4	UK	199,369	7.62
5	France	152,817	5.84
6	Italy	122,438	4.68
7	South Korea	104,169	3.98
8	Germany	94,661	3.62
9	Taiwan	84,493	3.23
10	India	61,817	2.36

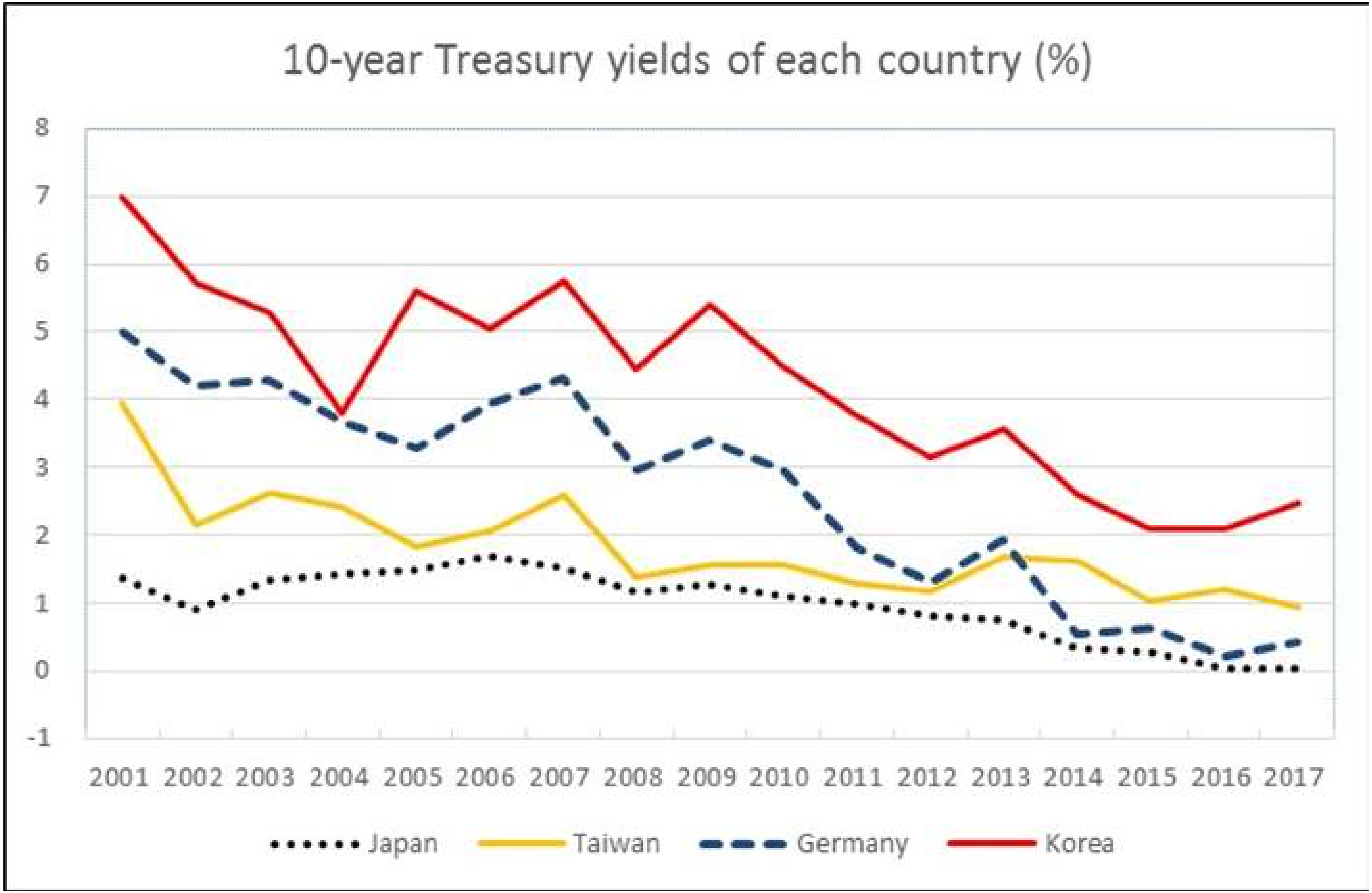
Source：Swiss Re Institute sigma No 3/2017



Moody's Investors Service "Low Interest Rates are Credit Negative for Insurers Globally, but Risks Vary by Country" (Mar 2015)

How to response to interest rate risk

- Examples of direct methods
  - Matching of insurance liabilities to future cash flows due to purchase of super long-term bonds or use interest rate derivatives
  - Reduction of liabilities by reinsurance etc.
  - Increasing capital to enhance their risk tolerance
- Examples of indirect methods
  - Improving profitability of insurance underwriting and asset management
  - Reviewing product strategy for reducing the burden of insurers’ interest rate risk
  - Entering new business which becomes a risk hedge


10-year Treasury yields of each country (%)
8
7
6
5
4
3
2
1
0
-1
2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017
Japan
Taiwan
Germany
Korea

Case 1 : Japan

< Market >

- Mainly traditional life insurance and individual annuity
- Major life insurers provide mainly protection products since 1990s, but lots of liabilities which are whole life and long-term annuities acquired until the mid-1990s
- Among the major 5 life insurers, Dai-ichi Life and Japan Post Insurance are listed. Others are mutual companies.

< Environment of Interest Rate>

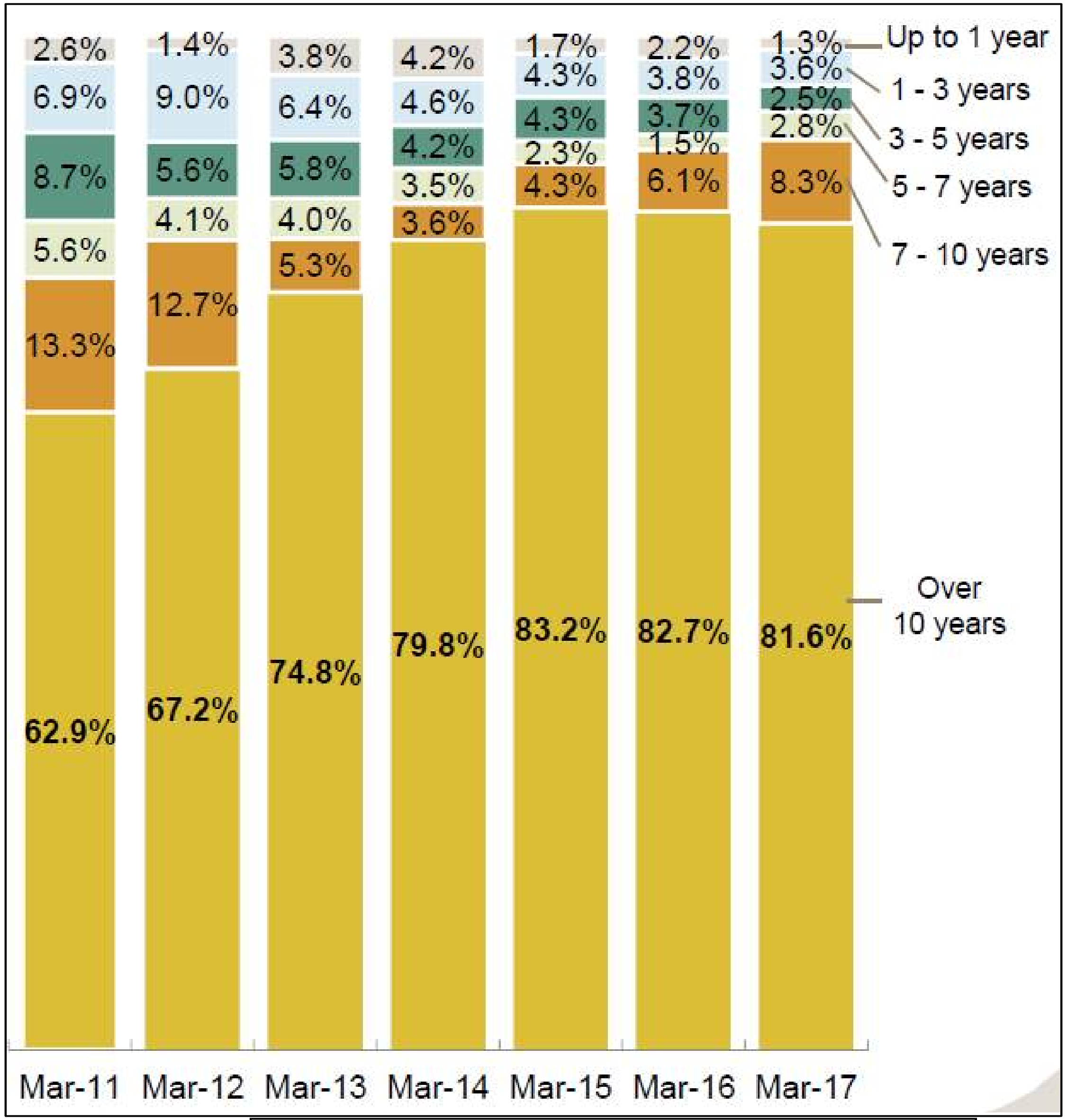
- Further declined after the BOJ monetary easing from April 2013, and negative interest rate policy from January 2016
- 10-year JGB yield has been almost 0% and 30-year yield has been below 1% since 2016.

Case 1 : Japan

< How to response >

- Under the recent declining, major insurers interrupt to reduce the interest rate risk.
- Major insurers increase their solvency margin by issuance of hybrid securities etc.
- Insurers tend to expand investment risks for keeping their yield of assets, such as foreign bonds.
- Insurers suppress sales of saving products, develop wide variety protection products.
- In recent years, major insurers advance their business diversification, including overseas expansion by M&A.

Maturity Profile of Domestic Bonds (Dai-ichi Life)



Sourse : Dai-ichi Life Holdings, May 25, 2017

Case 2 : Taiwan

< Market >

- Lots of traditional long term life insurance with high guarantee rate acquired in the past
- Cathay Life, Fubon Life and Nanshan Life (un-listed) are the top three companies.
- Due to the severe business environment and other reasons, most of foreign life insurers have withdrawn. In recent years, the bankruptcies of life insurers have occurred.

< Environment of Interest Rate>

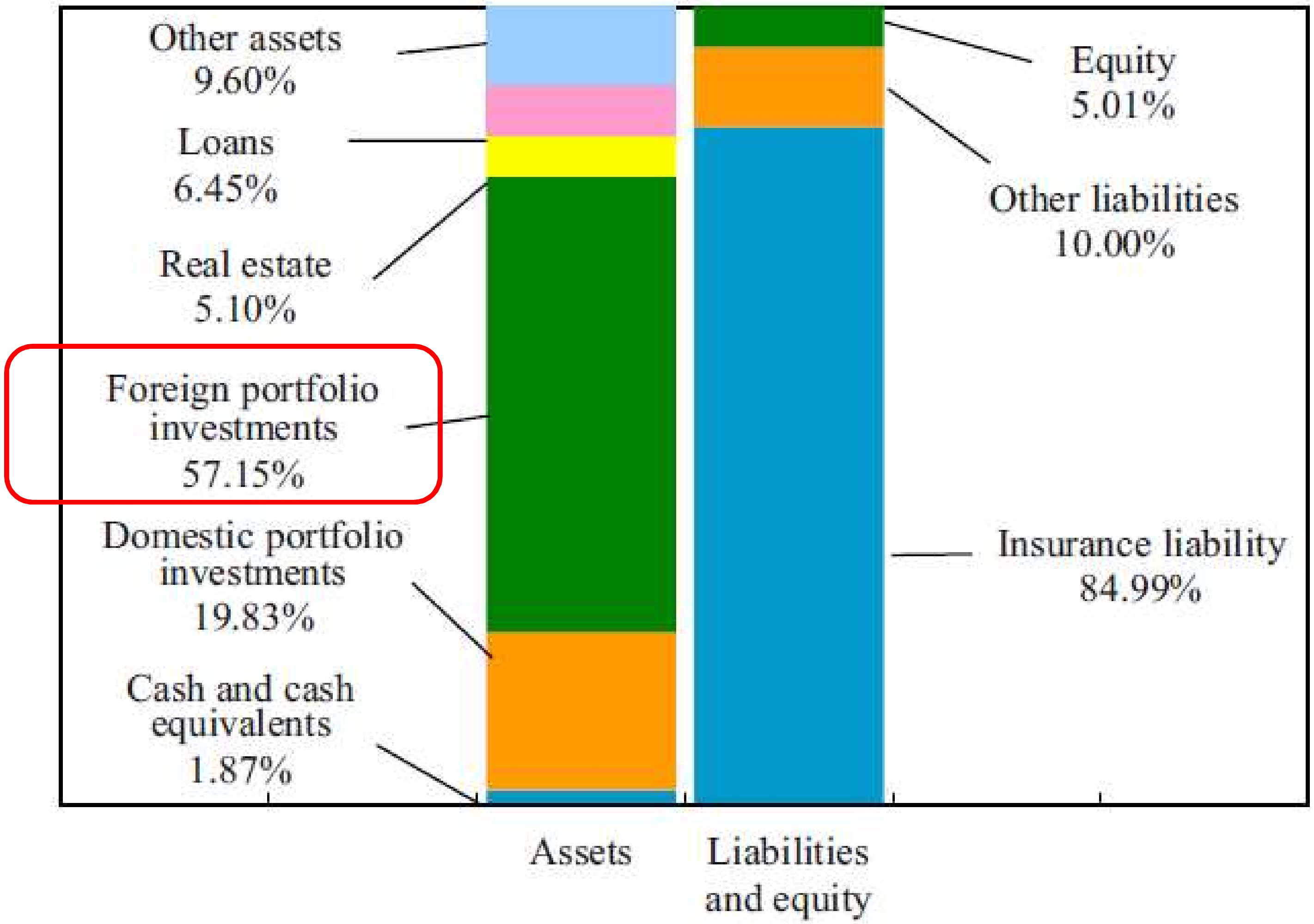
- In response to the financial crisis since 2018, the central bank lowered the policy rate, Taiwan has the lowest interest rate country in East Asia next to Japan.

Case 2 : Taiwan

< How to response >

- Insurers continue to take large interest rate risk and give priority to securing yield of assets.
  - Lack of mature domestic fixed income market
- As a result, foreign securities occupy the majority of general account assets.
- Major insurers develop products that emphasize new business value and reduce capital burden, as far as checking IR materials.
- As financial conglomerate, the holding companies of major insurers proceed to diversify their business.

Asset / liability Structure of Life Insurance Companies
(the end of 2016)



Sourse : Central Bank of the Republic of China (Taiwan), Financial Stability Report May 2017

Case 3 : Germany

< Market >

- Main products are traditional long-term savings, shifting from endowment to individual annuities. Unit-link products are about 15% of the premium income.
- There are about 90 life insurance companies in Germany.
  - There are differences in the response situation to interest rate risk between major companies, such as Allianz, ERGO of Munich Re, and other companies.

< Environment of Interest Rate>

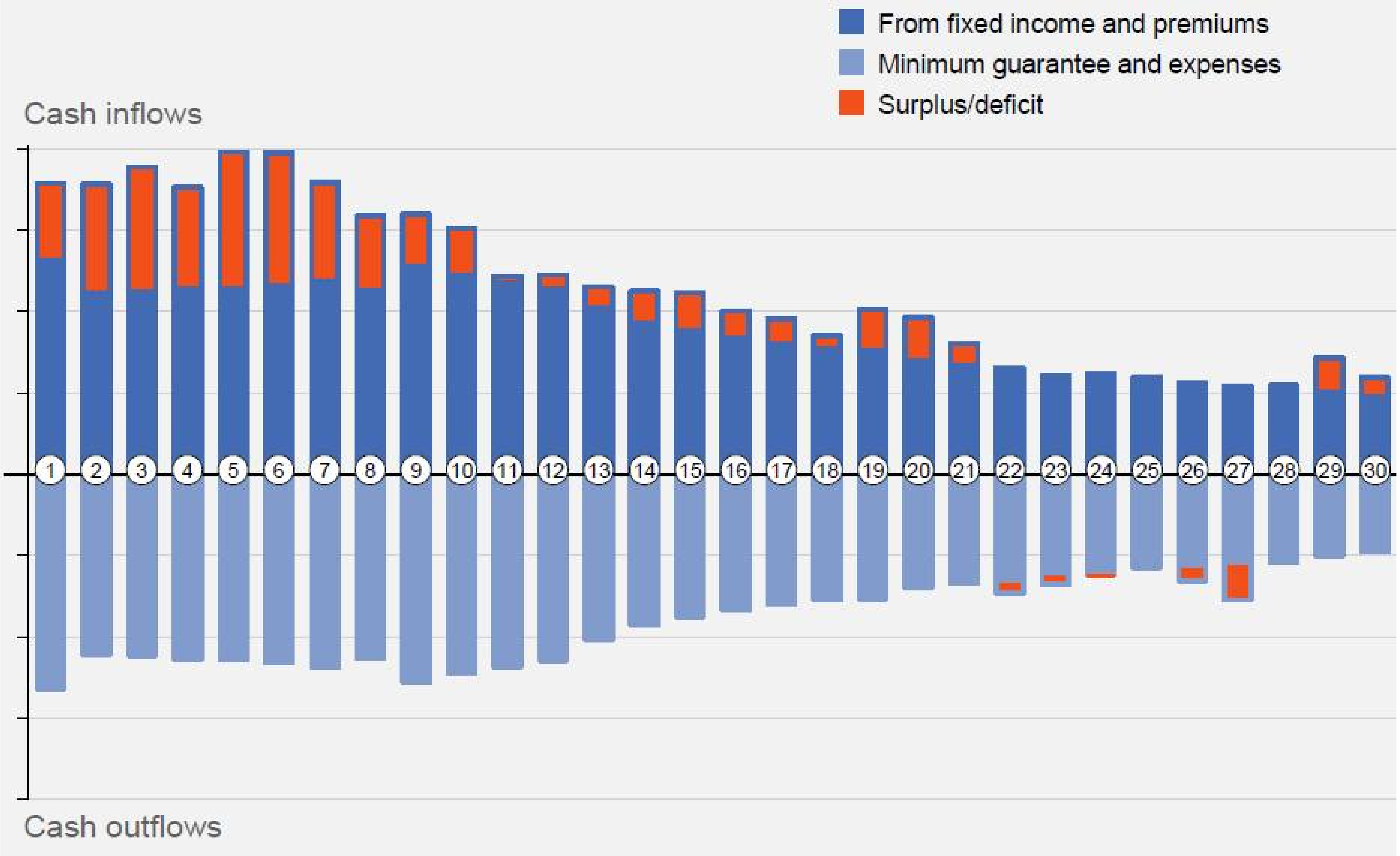
- Under the ECB monetary easing and negative interest rate policy since 2014, 10-year government bond yield has fallen under 1%, 30-year government bond yield under 2%.

Case 3 : Germany

< How to response >

- Major insurers are strongly aware of the importance of interest rate risk management and continuously reduce the risk, even after the declining in recent years.
  - It seems to be different from the movement of the whole industry.
- Major insurers have shifted rapidly from traditional products to lightly capitalized products and they ensure new business value.
- As global insurance group, the holding companies of major insurers proceed to diversify their business internationally.

Cash Flow Matched for 30 years (Allianz Leben)



Sourse : Allianz SA, "Allianz Capital Markets Day" (Nov 30, 2016)

Case 4 : Korea

< Market >

- Main products are shifting to a wide variety of products and variable products, but guaranteed rate products sold in the past remained.
- Variable products with minimum guarantee interest rates of 3% or more mainly sold in the 2000s
- Three major insurance companies (Samsung Life, Hanwha Life, Kyobo Life) is less than 50% share of market.

< Environment of Interest Rate>

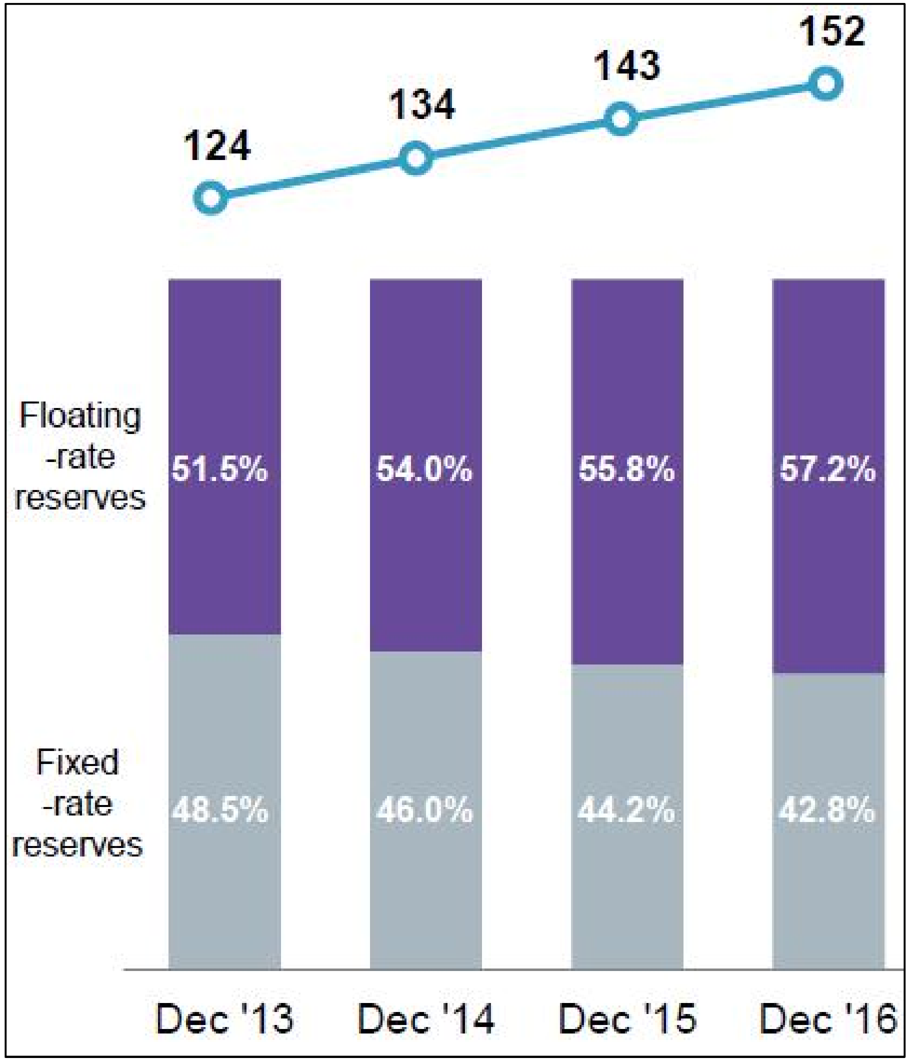
- Korean interest rate was mostly over 5% by around 2009. Therefore it is said that 2% of 10-years bond is quite a low interest rate condition.

Case 4 : Korea

< How to response >

- Focus on improving assets yield rather than interest rate risk control, as far as checking IR materials
  - Domestic fixed income markets are immature.
- Major insurers have been changing their insurance liabilities for focusing on variable products.
- Major insurers emphasize on new business value rather than insurance premium income and provide various products, even declining their market shares.
- For increasing corporate value, major insurers focus on reducing operational costs and maintaining persistency rate.

Reserve Composition (KRW trillion)



Sourse : Samsung Life, Mar 2017

Difference to Interest Rate Risk Management

- Looking at the product strategy, both the major life insurers in 4 four countries emphasize expansion of new business value and reduction of their capital burden.
- On the other hand, some kind of differences are seen in correspondence to interest rate risk.
  - German major insurers seem to consider it is important to control the interest rate risk directly.
  - Other insurers in 3 countries seen to secure accounting profit by taking investment risks for improving their asset yield, rather than control the interest rate risk, as a result.

Backgrounds of the Difference

- There are differences in solvency regulation.
  - In Germany, economic value based solvency regulation (EU Solvency II) has been already introduced in 2016.
- The degree of penetration for management based on economic value.
  - Insurance companies have worked on to disclose of their actual business situation for external understanding such as publishing EV / EEV, ESR from an early stage.
- It is considered to be important a development of ERM.
  - The target of ERM is clearly increasing corporate value.
  - Major European (re)insurance group have been working on the developing ERM framework since early 2000s.

Conclusion

- This research is a case study which analyzes and examines interest rate risk correspondence to life insurance companies under the ultra-low interest rate environment.
- I have shown that there are differences in management behavior, even though there are common business environment.
- As a background to this, I cited three points;
  - Solvency regulation
  - Business management based on economic value
  - ERM
- Of course, it is important not to be a framework itself, but to be a degree of penetration of such a framework within their management.

Thank you !