Preliminary

LOW-INTEREST RATE TASK FORCE

International Markets Subcommittee – Japan and Germany fact base

4/3/2020

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CONFIDENTIALITY

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SCOPE & OBJECTIVES

The international markets sub-committee is focused on identifying learnings from other countries in low-rate regimes than can inform how U.S. insurers should prepare for and respond to low rate scenarios

Research framework

Focus area		Key research questions
1	**Market environment**	• What **factors** have led to lower interest rates? • What has been the **nature of the interest rate changes**? • What **other drivers** have affected the life insurance industry?
2	**Impact and response**	• To what extent have lower interest rates put **pressure on profitability & solvency**? • How have lower rates impacted **sales**? • **How have insurers responded** to a low rate environment? • What **relief** (if any) **have regulators provided** to insurers?
3	**Lessons learned**	• What can we learn from the **winners and losers** in a low interest rate environment? • What can we learn from **actions of regulators** in these countries?

Sub-committee membership

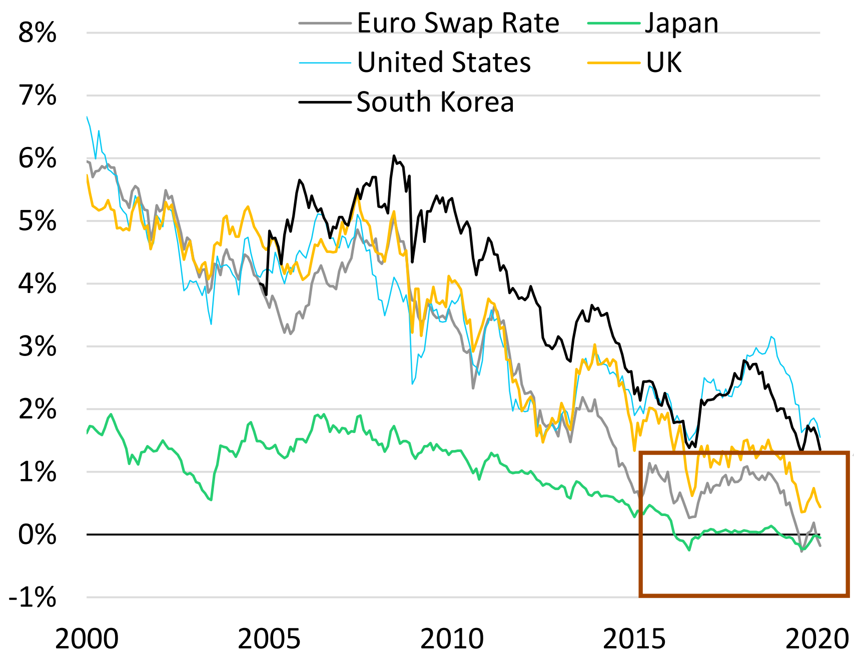
Name	Company
Aadil Lokhandwala	Lincoln
Jean-Roch Sibille	Allianz
Lyndon Oliver	MetLife
Antonio Gonzalez	Prudential
Dave Dowrich	AIG
Michel Perrin	Equitable
Steve Cramer	Protective
Shin Yagisawa	RGA
Rich De Sousa	Scor Re
Alanna Schultz	Swiss Re

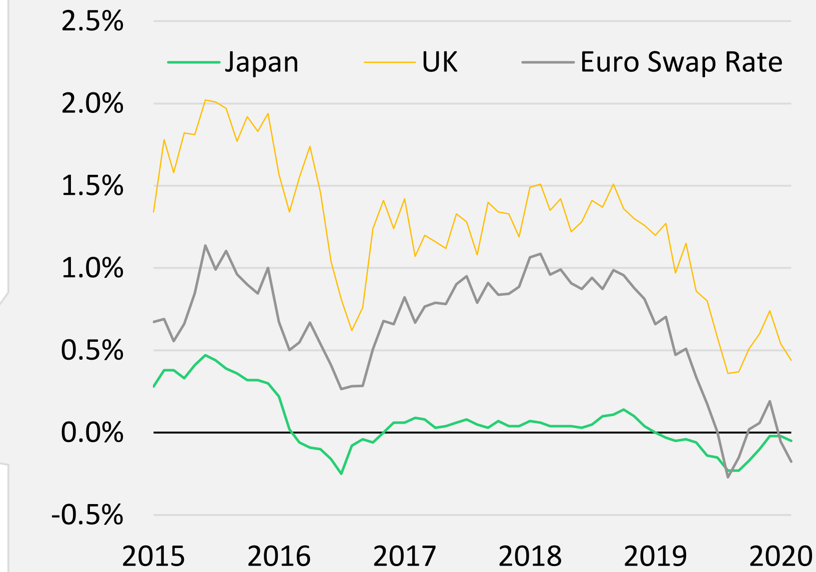
We conducted 1:1 interviews with the sub-committee members

CONTEXT: INTEREST RATES IN INTERNATIONAL MARKETS

Most markets across the globe have faced declining rates over the past two decades, Japan, Germany, and France experiencing negative 10-year rates in the last 5 years

Interest rate comparison by country
10 year bond reference





Countries of interest:

United States	**Japan**	**Germany**	**France**	**Italy**	**South Korea**	**UK**
#1 global life insurance market	#2 global life insurance market	#9 global life insurance market	#5 global life insurance market	#6 global life insurance market	#8 global life insurance market	#4 global life insurance market

Focus (Japan, Germany)

Additional markets for consideration (France, Italy, South Korea, UK)

Sources: iii.org, FRED

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JAPAN

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MARKET ENVIRONMENT: OVERVIEW

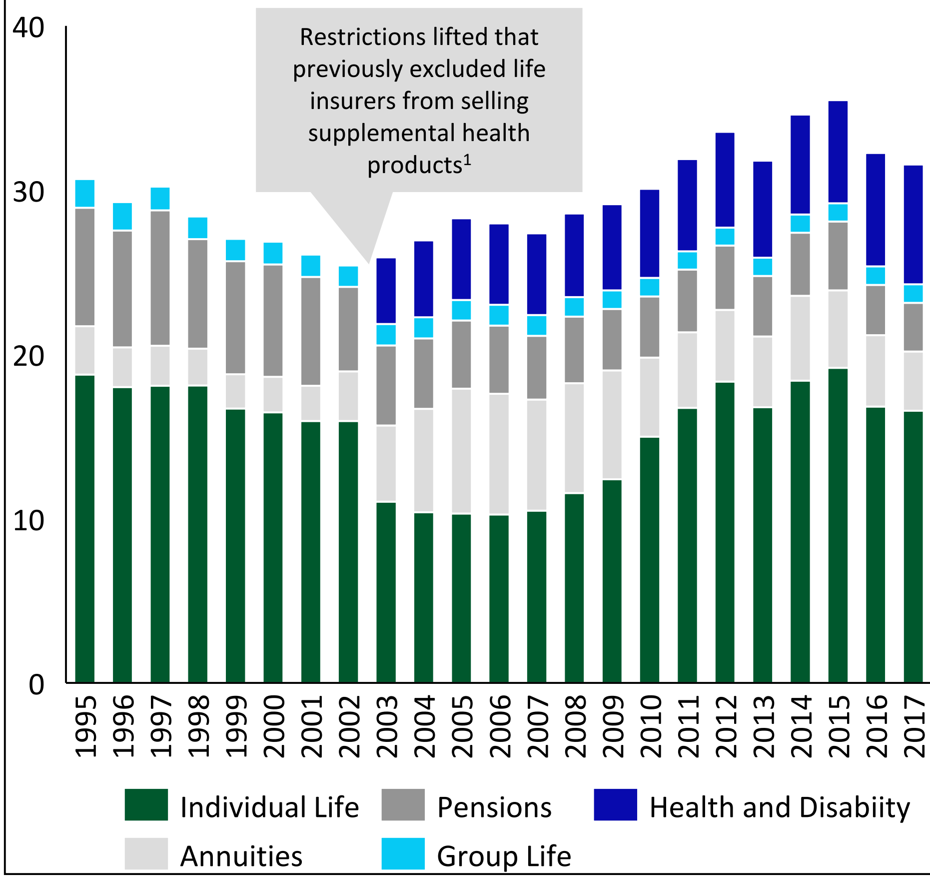
A macroeconomic downturn, challenged investment returns, a changing competitive landscape, and demographic changes have caused challenges to the Japanese life insurance market

Key Market Drivers

Macroeconomic changes	• The asset bubble burst of the 90's gave way to a long period of low economic growth and disinflation/deflation
Challenged investment returns	• Lower interest rates and volatile stock market returns caused consumers to lose confidence in financial products and put pressure on life insurance margins
Competitive landscape	• Insolvencies in the early 2000s, loosened regulations, and privatization of Japan Post have altered the landscape of the Japanese market
Demographic changes	• The declining birthrate, aging population, and low marriage rates gave way to the rise of accident and sickness insurance

Written Premiums by Product

GWP, ¥ Trillions



1. Domestic life insurers began to sell health and medical products after reforms to the Insurance Business Act were passed in 2001, permitting the mutual entry of life and non-life insurance companies into the third sector. Sources: Axco, Oxford Economics

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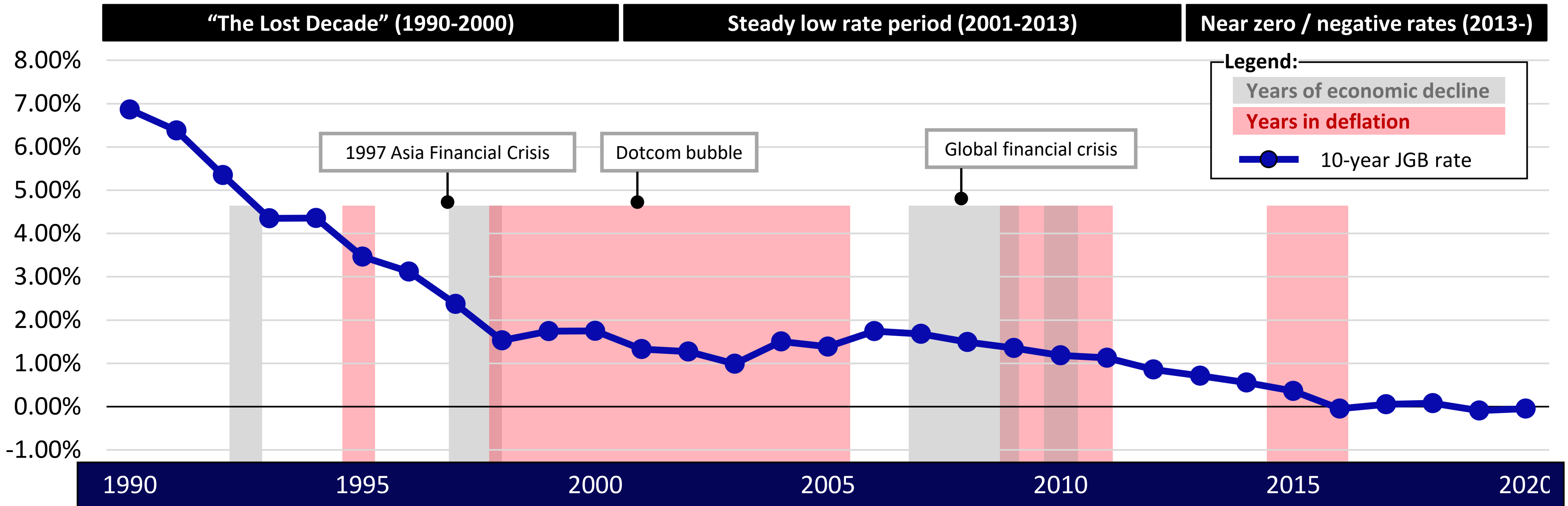
MARKET ENVIRONMENT: MACRO ECONOMIC CHANGES

Since the Asian economic crisis in the 1990s, Japan has maintained a monetary policy intended to stimulate growth and avoid deflation, which has lowered interest rates to a zero / negative rate environment

Interest rates and inflation

1990-2020



Key events

- Japan experienced a catastrophic real estate crisis in the early 90's, beginning a period of low inflation and economic slowdown dubbed the "Lost Decade"
- In 1999, the Bank of Japan cut rates to zero (Zero Interest Rate Policy) in an attempt to avoid deflation
- From 2001-2004, the BOJ targeted long-term government bond purchases (quantitative easing), which somewhat stabilized the economy until the Great Recession
- BOJ raised interest rates
- In 2013, the BOJ introduced a much more aggressive "Quantitative and Qualitative Monetary Easing" policy; BOJ balance sheet tripled by 2015
- In 2016 negative interest rates were applied to bank overnight deposits
- Since 2016, the 10-year benchmark Japan government bond (JPG) has stayed between -0.1% and 0.1%

Sources: Oxford Economics, SwissRe

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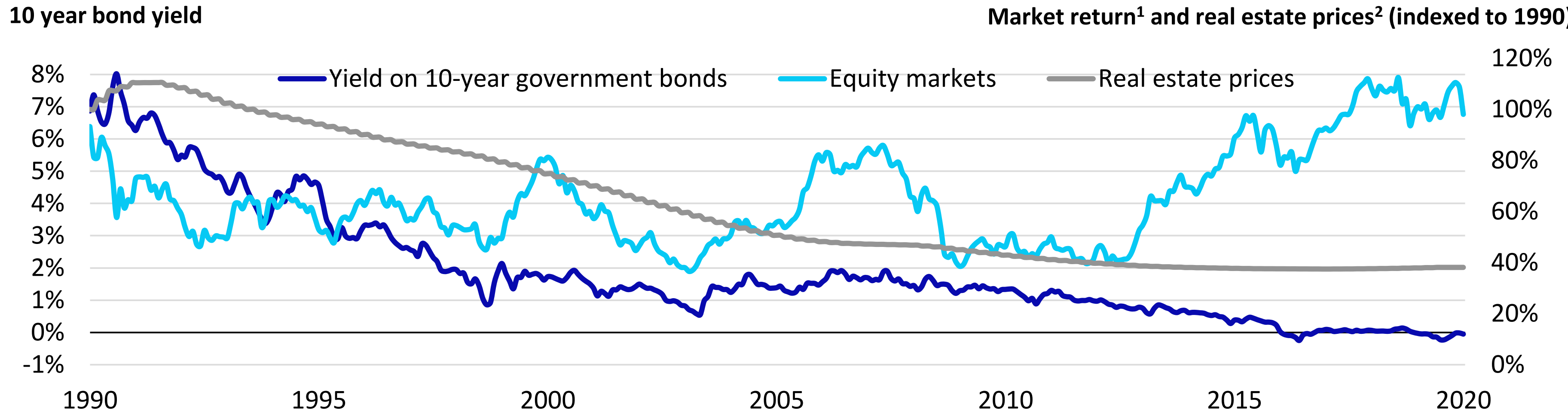
MARKET ENVIRONMENT: CHALLENGED RETURNS

Lower interest rates and volatile stock market returns have caused consumers to lose confidence in financial products and put pressure on life insurance margins

Japanese asset performance
1990-2020



"The Lost Decade" (1990-2000)	Steady low rate period (2000-2013)	Near zero / negative rates (2013-)
• Economic turmoil resulted in **plunging stock prices, tumbling real estate values, and declining rates** • Japanese banks were burdened by bad loans at the end of the 1990s, which had an impact on the financial service industry as a whole, and **resulted in a loss of confidence in life insurance companies** • New business sales dropped and policy terminations increased as **consumers cut back on spending in general and for insurance products in particular** amid continued economic weakness in Japan	• The start of the new millennium was marked by a **sustained low interest rates, declining real estate markets and a volatile stock market,** which could not recover to historical levels until 2018 • As **consumers continued to cut back on expenses and questioned the financial stability of many life insurance companies**, it was challenging for Japanese life insurance companies to improve new business	• Equity markets have rallied since the financial crisis, but rates have been near zero / negative • The bull market has somewhat regained consumer confidence in insurance companies

1. Ratio of Nikkei 225 Index against Nikkei 225 Index on 1 January 2000. Includes dividends. 2. Total housing market prices
Sources: DataStream total market return index, S&P Market Intelligence, GenRe

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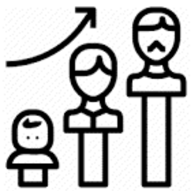
MARKET ENVIRONMENT: CHANGING CONSUMER DEMOGRAPHICS

In parallel, several demographic changes have also impacted the demand for life insurance products

Key factors in changing consumer demographics

Declining birthrate

- Fertility rate of 1.43 is among the lowest in the world and continues trend of births below replacement rate since 1970
- The population is falling by ~400,000 a year, and is projected to shrink by approximately 1/3rd over the next 50 years
- Households continue to shrink as the average size has decreased from 3.2 members in 1980 to about 2.4 today



Aging population

- Japan's already world leading proportion of elderly aged 65+ expected to increase from 28% to ~40% over the next 50 years
- Life expectancy increasing as medical care improves, increasing length of retirement and cost of long-term medical care expenses
- Elderly are expected to be financially self reliant after retirement, driving increasing need to save and stoking fears of consequent deflation

Low marriage rates

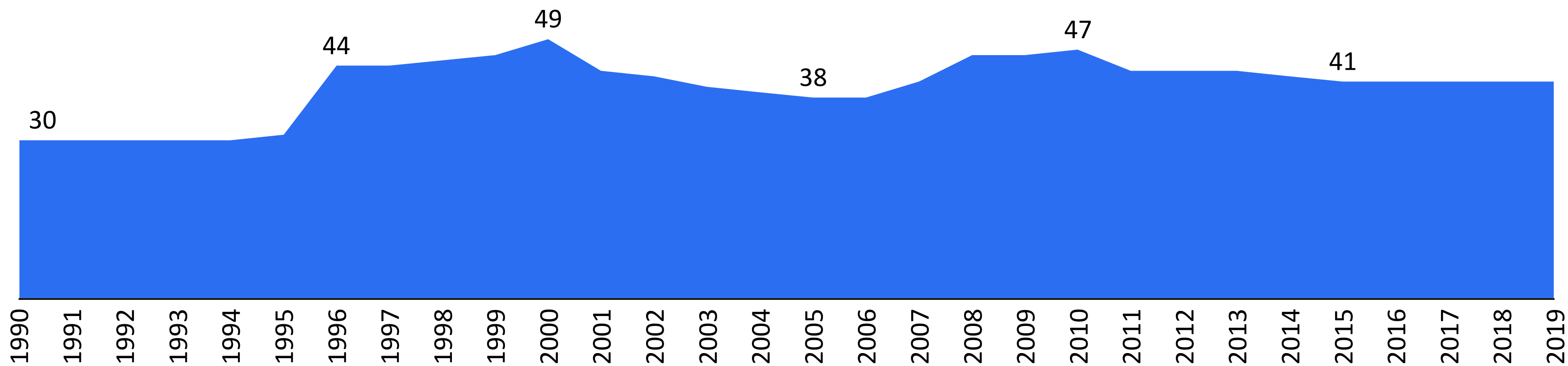
- Marriage rate for ages 25-29 has decreased from 54% to 28% for men and from 78% to 40% for women over past 50 years; older brackets exhibit similar trend
- Leads to more families with fewer children, which decreases need for life insurance but increases need for retirement savings when elderly cannot rely on children as caretakers

Sources: Axco, LAIJ, Aberdeen investments

MARKET ENVIRONMENT: COMPETITIVE LANDSCAPE

Foreign insurers entered the Japanese market in the 1990s; in parallel, low rates drove several insolvencies. The number of insurers has been relatively stable since 2010

Number of life insurance companies in Japan



"The Lost Decade" (1990-2000)

- In 1996, Japan's financial system went through a large reform that deregulated financial markets, allowing **non-life companies to set up life subsidiaries** and **foreign insurers** to more easily enter
- As a result, the number of life insurance companies consequently **increased from 30 in the year 1990 to 49 in the year 2000**
- Protracted periods of historically low interest rates and capital markets stagnation **sparked seven life insurance failures** from 1997-2001

Steady low rate period (2000-2013)

- In 2001, **bancassurance was allowed for the first time**, and the **first major pan-financial groups** were established in 2003
- Variable annuity sales took off in 2002, when **deregulation** enabled their sale at bank branches
- In 2007, **Japan Post**, which includes the largest life insurance organization in the world, announced its plans to privatize[1]
- From 2007-2010, several **internet sales focused companies entered**, and small cooperatives converted into life insurance companies

Near zero / negative rates (2013-)

- Post 2010 saw further **consolidation** of the Japanese life insurance industry to a few major players. Foreign companies operating in Japan have been particularly active in life insurance, exposing domestic companies **to increased competition**
- **New products** emerge, especially in medicine, with insurers undergoing **demutualization** in an attempt to tap into the capital market
- A major battle is underway in the field of **distribution** where the direct sales force still numbers over 236,600, down from 446,600 in 1991

1. The government still owns over a 3rd of the company. Sources: GenRe, Axco, FSA

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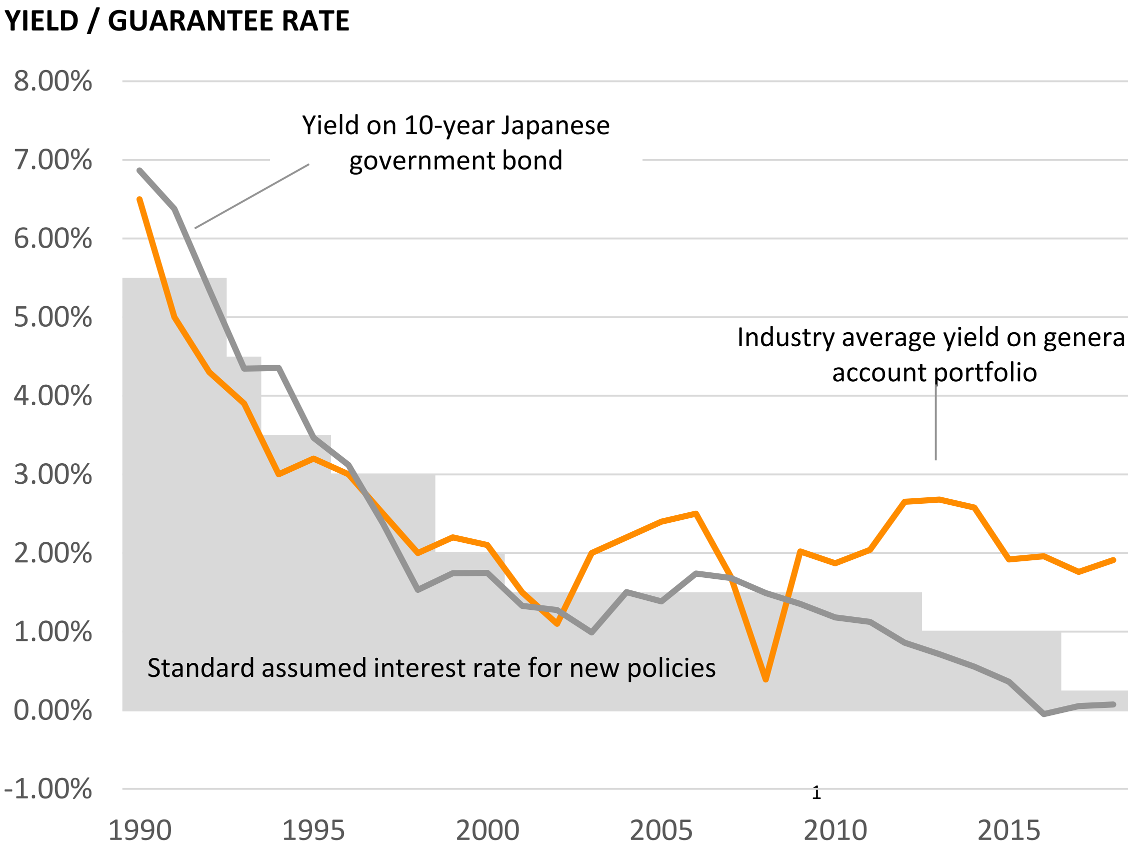
INDUSTRY IMPACT: NEGATIVE SPREADS

Persistent lower rates have made it difficult for life insurers to generate a spread on investment income against guarantees

Guaranteed interest rates for new long term polices vs investment yields

1990-2018



Impacts to insurers

- In the 1980s - 90s, when interest rates were high, Japanese life insurers offered high **guaranteed rates**, some of which were **as high as 5-6%**
- As interest rates have declined, life insurers have faced **negative spreads,** where investment yields are lower than the average guaranteed rate on many in-force policies
- For much of the 2000s, the investment margin for insurers was negative, forcing insurers to **re-think their product and ALM strategies**
- The **average assumed interest rate** has been on a **declining trend** as the existing contracts with high guaranteed yields signed in the 1980-90s have matured; **investment margin turned positive in 2013** as a result

1. Using book value framework.

Sources: IMF, Oxford Economics, Dealogic, Datastream, Dai-ichi

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INDUSTRY IMPACT AND REGULATORY RESPONSES: INSOLVENCIES

Long periods of low interest rates sparked a wave of insurer failures and associated regulatory actions

Background

- In 1996, the FSA introduced new solvency margin requirements standards, which required to maintain a solvency margin ratio of at least 200%
- Low interest rates, high guaranteed interest rates on contracts written in the prior decade, and declining equity prices sparked seven life insurance failures between 1997 and 2001:

Company	Legal structure	Date of insolvency	Solvency margin	PBC fund injection (JPY bio)	Sponsoring company
Nissan Life	Mutual	Apr-1997	-	-/-	Aoba Life
Toho Life	Mutual	Jun-1999	154.3% (March 1998)	366.3	GE Edison Life
Daihyaku Life	Mutual	May-2000	304.6% (March 1999)	145	Manulife
Taisho Life	Stock	Aug-2000	67.7% (March 2000)	26.7	Azami Life
Chiyoda Life	Mutual	Oct-2000	263.1% (March 2000)	0	AIG
Kyoie Life	Stock	Oct-2000	210.6% (March 2000)	0	Prudential
Tokyo Life	Mutual	Mar-2001	446.7% (March 2000)	0	T&D
Yamato Life	Stock	Oct-2008	555.0% (March 2008)	27.7	Gibraltar

Regulatory action

- These insolvencies sparked regulatory action, providing alterative paths to recovery for companies under pressure
- After the failure of Nissan Life in 1997, a **rehabilitation process** was established to provide financial assistance to insolvent life insurers
  - This included a JPY 560 billion (EUR 4.7 billion) fund set up by the Life Insurance Policyholders Protection Corporation of Japan (PPC) and a JPY 400 billion (EUR 3.3 billion) government guarantee
  - As part of the rehabilitation process, a sponsor was nominated which was expected to take over the rehabilitated company
- **Originally,** life insurers were **required to go through insolvency proceedings before the guaranteed interest rate** could be **reduced**, but the spike in insurance failures opened discussions on whether companies should be allowed to reduce the guaranteed interest rates already before filing for rehabilitation
- In 2003, the Financial Services Agency (FSA) provided regulatory relief by revising the Insurance Business Law to **allow life insurance companies to cut the guaranteed interest rates on existing insurance policies**
- At this time, **no company has applied for such a reduction** of the guaranteed interest rate before the start of insolvency proceedings

Sources: World Bank, Nikkei Index, Towers Perrin, CRO Forum – Low Interest Rate Environment, 2012 International Monetary Fund Country Report No. 12/228

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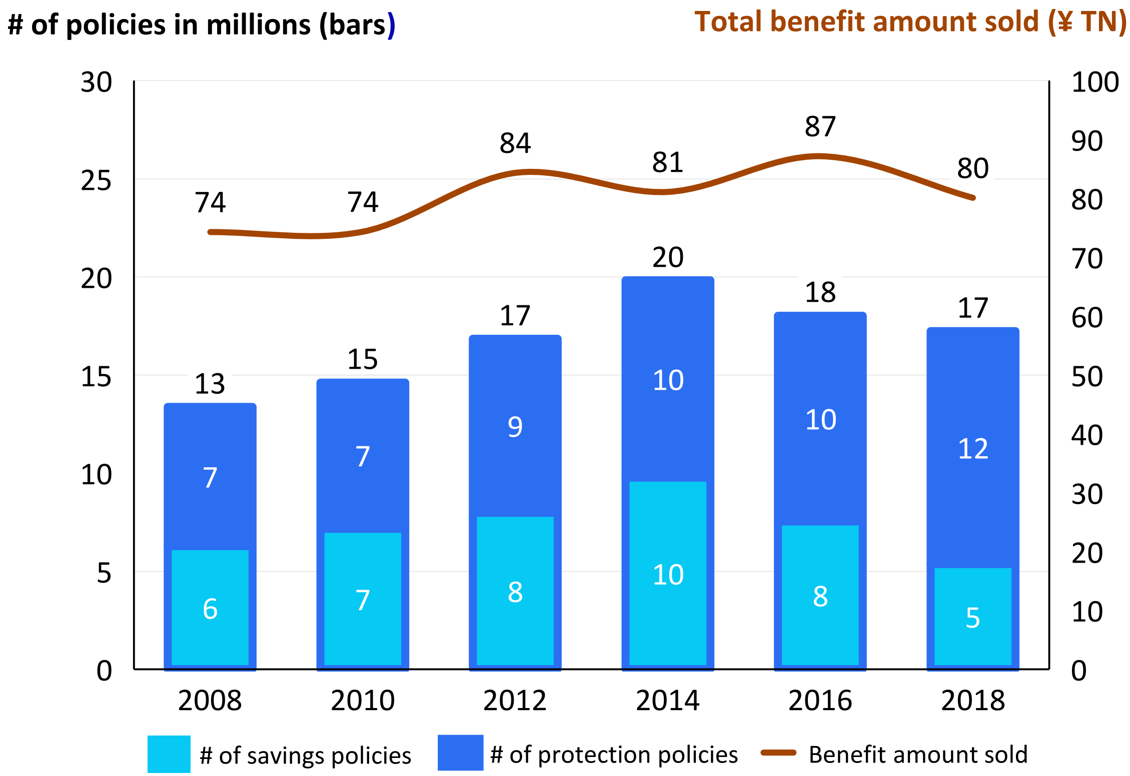
INDUSTRY IMPACT: NEW BUSINESS AND CUSTOMER VALUE PROPOSITION

Interest rate pressure has caused new business to shift away from savings type products in favor of protection type policies due to diminishing margins and the weakened value proposition of savings products

New business policies

All life insurance products[1]



10-year JGB rate	1.49%	1.18%	0.86%	0.55%	-0.05%	0.08%

Comments

- The number of **new policies for individuals increased** between 2008 and 2014 due to **strong sales of medical and whole life insurance**
- In the face of lower interest rates , insurers have **no longer been able to offer high guarantee rates** on new savings products
- Insurers have shifted focus **away from variable annuity savings products** and **toward protection products**, which offer higher margins and where the low rates have a lesser impact on to the customer value proposition
  - Due to demographic and regulatory changes, which increased demand of third sector products, medical insurance sales increased by 36.2% between 2008 and 2018
  - Term policies have seen steady growth
  - Whole life policies rebounded after the 2008 financial crisis, but declined after 2012 due to rate pressures
  - Insurers lowered expected returns on annuity products in 2017 due to low rates, cutting sales in half

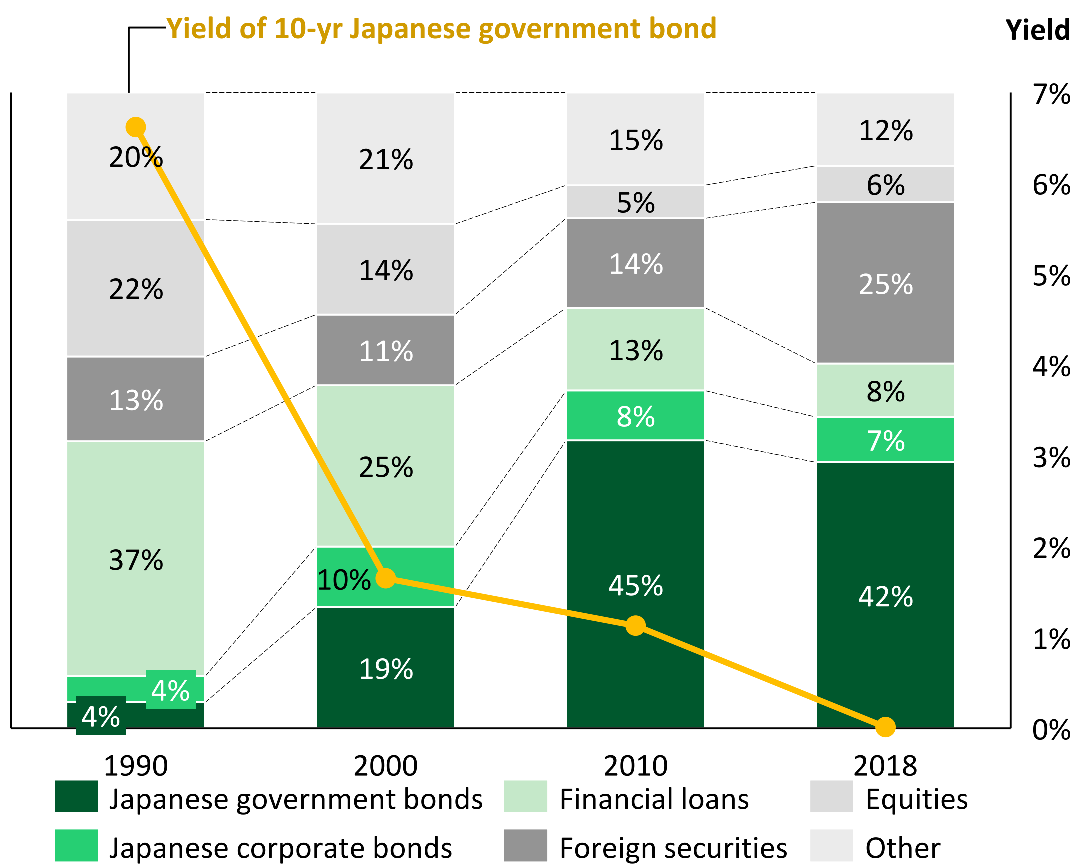
1. Savings includes: Whole Life, Endowment, Individual Annuities, and Group Annuities. Protection includes: Term, Medical, Group and Others.
Source: LIAJ Fact Books 2013, 2014, 2019, FRED

INDUSTRY RESPONSES: INVESTMENT MIX CHANGES

Japanese insurers have changed their investment portfolio mix to respond to changing market environments and risk tolerance

Investments by asset class

1990-2018, JPY denominated



1. The proportion of bonds with a duration of 10 years and more increased from 10.7% in the year 2003 to 45.5% in the year 2009.

Sources: Axco, Oxford Economics

Responses by insurers

- Insurers responded to volatile equity market performance in the 90's and 2000's by shifting **their asset allocation towards safer Japanese bonds**
- In the face zero/negative rates in the last decade, life insurers have responded by changing asset mixes to **enhance yield, favoring riskier investments** than JGBs:
  - **Shifting away from Japanese bonds in favor of foreign securities** (e.g., US, AUS and ID-denominated), particularly foreign government fixed interest bonds, leaving some unhedged against foreign-exchange risk
  - They have also increased their allocation to **illiquid and overseas assets to find yield**
- **Insurers have also increased the duration of bond portfolios** to narrow the duration gap between liabilities and assets[1]

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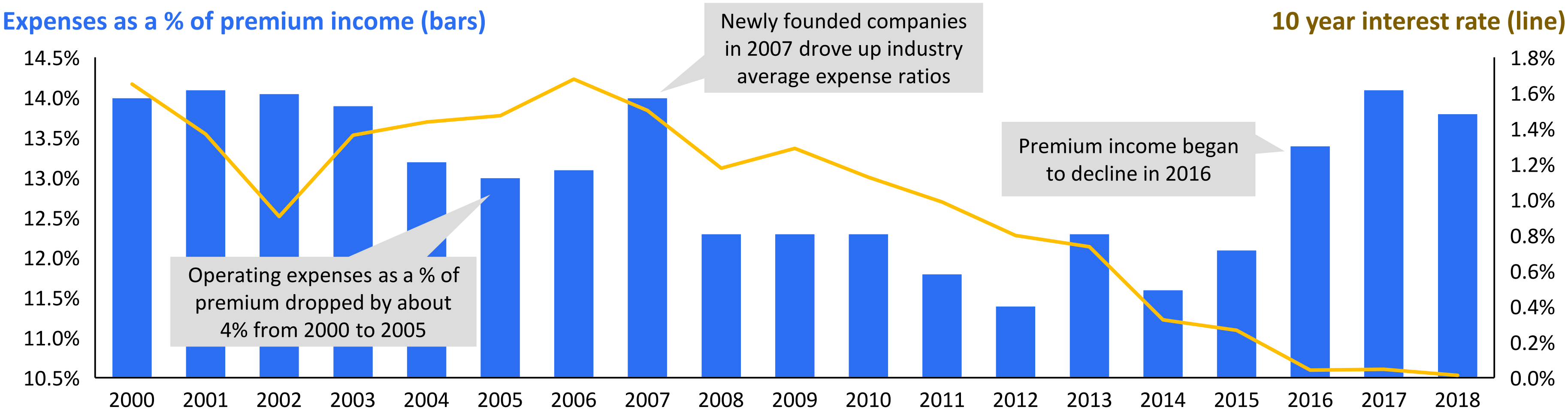
INDUSTRY RESPONSES: EXPENSE MANAGEMENT

Insurers have reduced expenses to maintain a healthy margin to offset negative investment spread issues

Expense changes in reaction to declining interest rates

2000-2018



Responses by insurers

- From 2000-2013, life insurers spent considerable efforts on reducing operating expenses:
  - The number of sales and non-sales staff was reduced; weaker companies also reduced pay to employees
  - Sales offices were closed, and departments were moved out of prime locations in Tokyo
  - Commission structures were restructured to tie payments more closely to agent performance
  - Companies formed joint ventures to operate their internal company information networks or outsourced IT services (e.g. Nippon)
- In 2016, expenses as a % of premium income rose due a decline in premium income and increased costs related to new health product offerings

sources: LIAJ, GenRe, asia.nikkei, spglobal

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INDUSTRY RESPONSES: CHANGES TO INDUSTRY STRUCTURE

Insurers responded by pursuing M&A to reduce expenses and achieve growth (often in markets outside Japan), and many looked to demutualize in order to tap into capital markets

Notable M&A activity

2014-2017

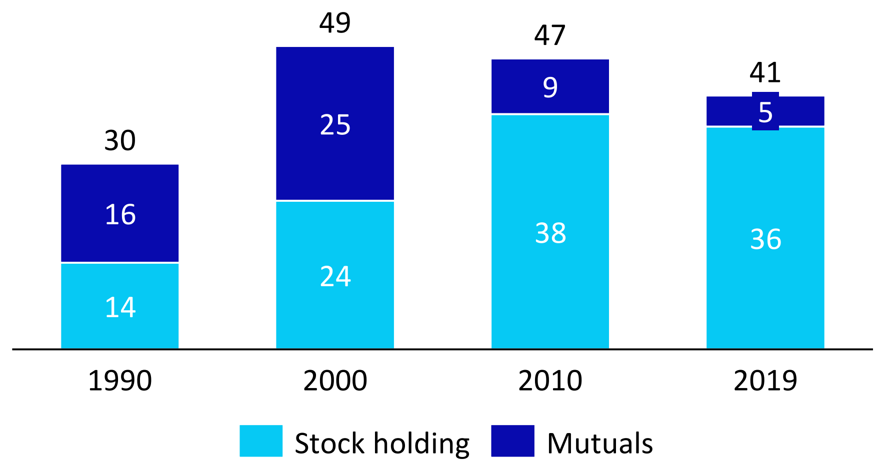
Year	Acquirer	Target	Deal size	Rationale
2014	Dai-ichi Life	Protective Life	$5.7BN	Expand to US market
2015	Nippon Life	Mitsui Life	$2.3BN	Solidify domestic market share
2015	Meiji Yasuda Life	StanCorp	$5B	Reduce expenses & employ greater economies of scale
2017	Tokio Marine	HCC	$7.5BN	Diversify from shrinking domestic market

Responses by insurers

- M&A activity has been busy over the last 30 years in response to pressures exposed by low rates and demographic risks
  – Consolidation of mid-sized insurers
  – Expansion to overseas markets
  – Reduction of costs and improved economies of scale
- Cost efficiencies and growth/expansion into new markets have been the main deal drivers

Capital structure changes

1990-2019



Responses by insurers

- In the early 2000s, several domestic mutual companies demutualized and merged into stock companies in order tap into capital markets and to improve their capital position
- Only 5 mutual remain, and healthy solvency makes it unlikely that they will demutualize in the near future
- Notable companies that changed to a stock capital structure include: Daido Life (2002), Taiyo Life (2003), and Dai-ichi Life (2010)

Sources: Press releases, LIAJ, GenRe

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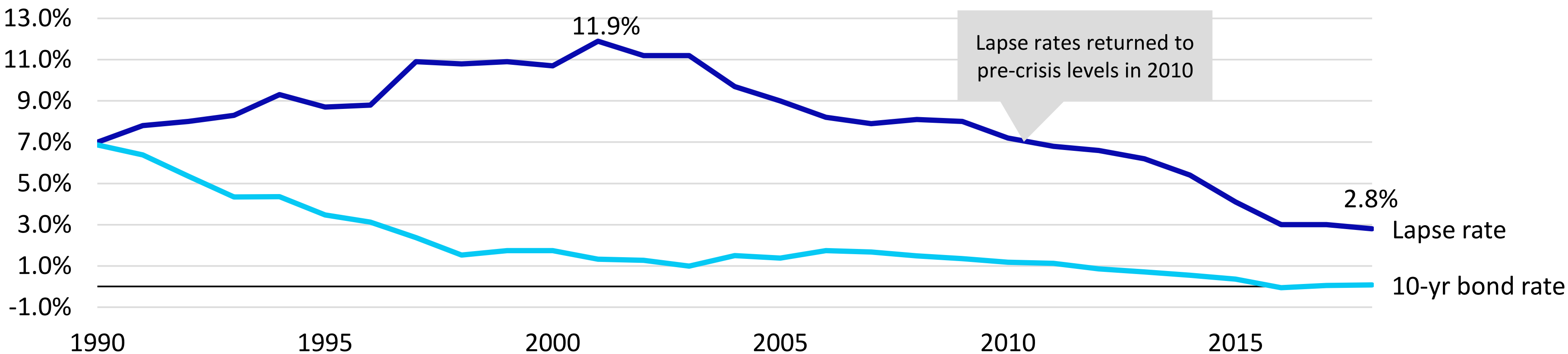
INDUSTRY RESPONSES: FALLING LAPSE RATES

In order to preserve their customer bases, many insurers took action to reduce lapse rates in the face of economic turmoil, however in recent years lapse rates have been so low that they have put pressure on insurer margins

Lapse rates of individual life vs 10-yr bond rate

1990 – 2018



1990-2010

- In the midst of economic turmoil in the 90's, life insurance companies experienced an **elevated rate of policy lapses**
- Insurers responded by:
  - Increasing the number of **policy maintenance specialists**
  - Changed agent incentives to favor policy retention
  - Shifting away from corporate oriented policies, which were more likely to lapse in the face of hard economic conditions

2010-now

- Lapse rates in Japan have **continued to decrease** after the 2008 financial crisis when consumers realized they had favorable products
- Low lapse rates have put some **pressure on insurers** who have had to **honor high guarantees** that they may have otherwise counted on lapsing

Sources: GenRe, Oxford Economics, LIAJ, Geneva Association, Society of Actuaries

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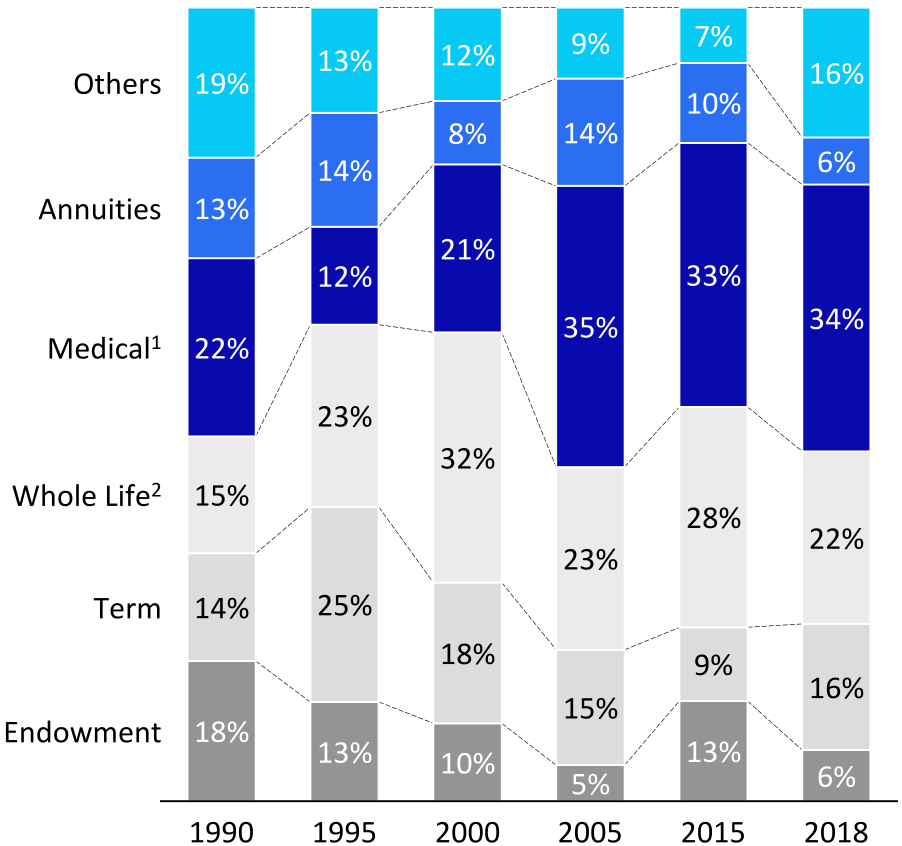
INDUSTRY RESPONSES: NEW BUSINESS PRODUCT MIX CHANGE

Most insurers have moved away from savings type products in favor of protection type policies due to challenged profitability and a diminishing value proposition of annuity products

Product mix change

\# of new business policies, 1990-2018



Responses by insurers

Shifted to higher margin medical insurance	Reacted to demographic changes and took advantage of regulations allowing life insurers to sell “Third Sector” products
Focused more on protection products	Better customer value proposition and higher margins than savings products
Created new products to meet customer needs	Created “modular” products and foreign currency products to offer a more compelling value proposition
Switched to unit linked products	Insurers looked to transfer the risk of policies to consumers

1. Includes Cancer insurance. 2. Includes Variable Individual Insurance and Juvenile Insurance. Note: Excluding converted contracts

Sources: Axco, Oxford Economics

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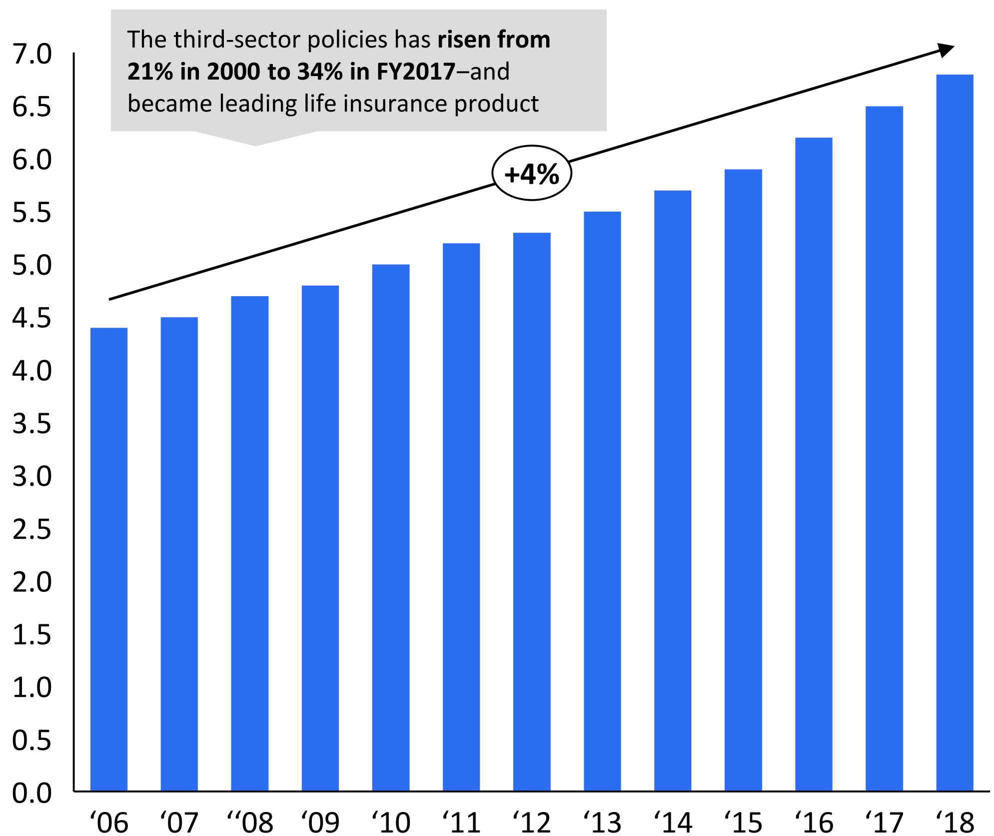
INDUSTRY RESPONSES: SHIFT TO HIGHER MARGIN MEDICAL INSURANCE

To meet the demands of an aging population, life insurers have steadily increased premiums for health and disability products, Japan's so called "Third Sector" of insurance

Growth of Third Sector

Annualized premiums[1], trillion JPY



1. In the third sector, annualized premium for appropriate amounts of health insurance benefits (hospitalization cost, surgery cost, etc.), living benefits (critical illness, long-term care, etc.), and premium waiver benefit (by reason of critical illness and long-term care, but excludes disability) are included.

Sources: LIAJ, GenRe, Moody's, Expert Interviews

Responses by insurers

- **Changing demographics** in Japan have been accompanied by a rising need for **"third sector" policies**
  - Cover hospitalization, outpatient services, and other medical benefits in the event of a critical illness or disability
  - Typically structured as an annual premium whole life cover without a cash value
- Insurers also began to introduce **fee based services** as add-ons to health coverage
  - Marginal services such as doctors' visits, fitness centers, diabetes screening became available
  - "Freemium" model, where baseline services were free, with opportunity to upsell
  - Allowed for greater engagement with customers, which helped with retention
- Insurers often tried to **convert customers with unprofitable savings products** to these higher margin third sector products (e.g. converting the cash value in savings products to LTC coverage)

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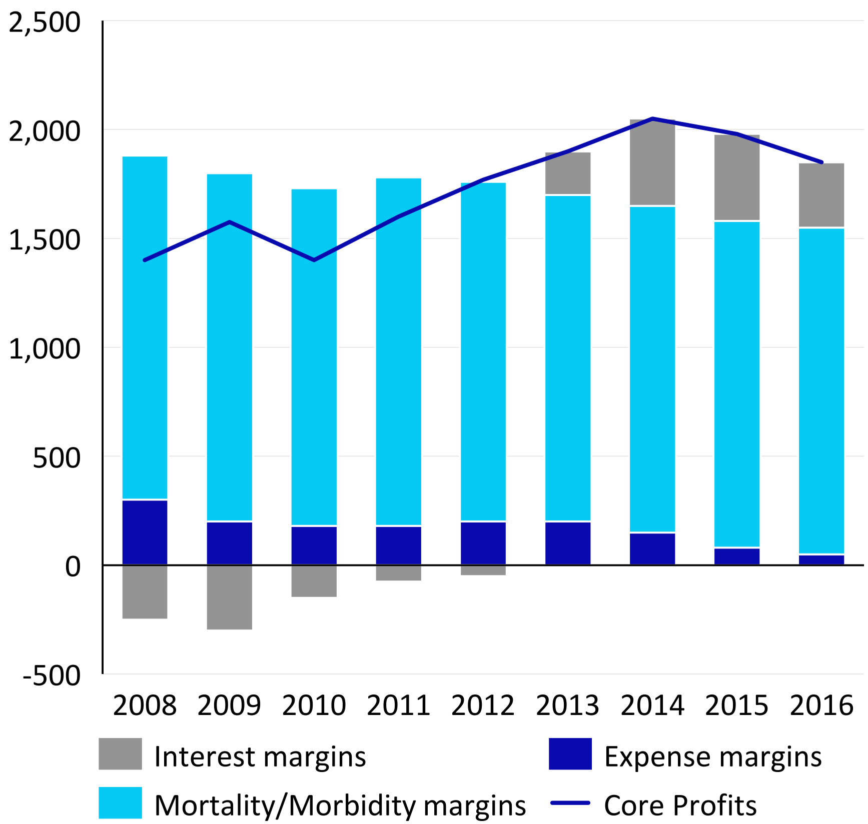
INDUSTRY RESPONSES: FOCUSED MORE ON PROTECTION PRODUCTS

Healthy mortality and morbidity margins sustained life insurers through a period of negative investment margins

Profit breakdown by margin type

Billion JPY

Note: figures are approximated



Sources: Disclosures from Dai-ichi, Fukoku, Fukokushinrai, Meiji Yasuda, Mitsui, Nippon and Sumitomo, Moodys, Toa Reinsurance 2018 market report

Responses by insurers

- In response to low rates, insurers realized that **savings products were too capital intensive and interest rate sensitive** to be sustainable
- As a result, insurers **focused more on their core protection products**, which have more profitable and generally less capital intensive than savings products (especially Term)
- **Mortality and morbidity margins are particularly high in Japan**, due to structural features of the Japanese life insurance market:
  - Japanese Life insurers use a **standard mortality table** to calculate reserves, and this generally influences pricing
  - Because life expectancy has increased in Japan and the mortality table is revised every 10 years or so, the **actual mortality rate has remained lower than the assumed mortality rate**, resulting in high mortality profits
  - Mortality profits have contributed significantly to accumulating retained earnings, whereas insurers recorded negative interest margins until fiscal 2013
  - These margins account for the majority of core profit at rated Japanese life insurers - about 77% in 2017

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INDUSTRY RESPONSES: CREATED NEW PRODUCTS TO MEET CUSTOMER NEEDS

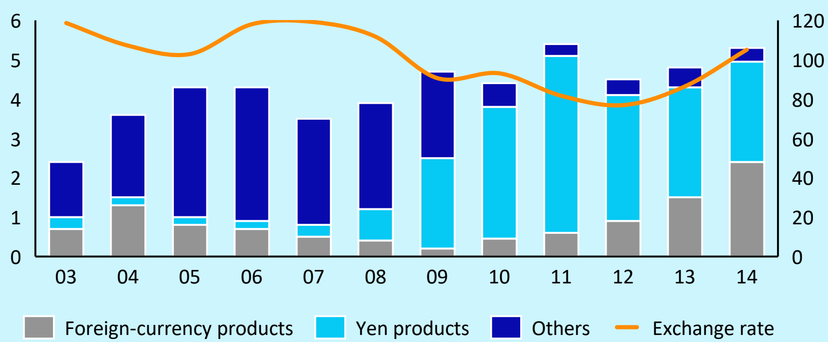
Japanese insurers turned to foreign currency denominated products and flexible modular life products to meet consumer needs

Case Study: Foreign currency denominated savings products

- In the face of low yields for Japanese investments, insurers increasingly **began to sell foreign currency denominated** savings products tied to overseas investments
- These products allowed consumers to receive higher guarantees, due to the **large spread** in interest rates compared to Japanese bonds, but have exposed Japanese life insurers and policyholders to **currency exchange rate risk**
- Insurers took advantage of **bancassurance channels** to sell these policies (typically single premium whole life):

Insurance-product sales at banks
¥ trillion

Exchange Rate (line)
USD/JPY



- As worldwide interest rates have begun to converge, foreign currency-denominated products have become less attractive

Case Study: Modular life products to accommodate changing needs

- In April 2012, Nippon Life launched the *Mirai no Katachi* modular product to respond to the **diversifying needs** of customers throughout their lives
- *Mirai no Katachi* allows customers to **flexibly** choose and combine the insurance they need (death, medical, retirement, and long term care)
- After enrollment, customers can freely **revise** policy details according to changes in their needs and stages of life
- For example, customers can **add insurance**, **increase coverage amounts** and **selectively revise** only the parts they wish to change

Death
- Whole life
- Term life
- Term life with survival benefits

Medical
- General hospitalization
- Limited injury
- Cancer medical

Asset formation and retirement
- Endowment
- Annuity

Serious diseases and nursing care
- Physical disability
- Specified serious disease
- Nursing care
- Three major disease
- Three major disease w/continuous support

Sources: macrotrends, WSJ, Dai-ichi Annual report , Nippon Life Three-year Management plan, Nippon Life 2019 Annual Report, Datastream

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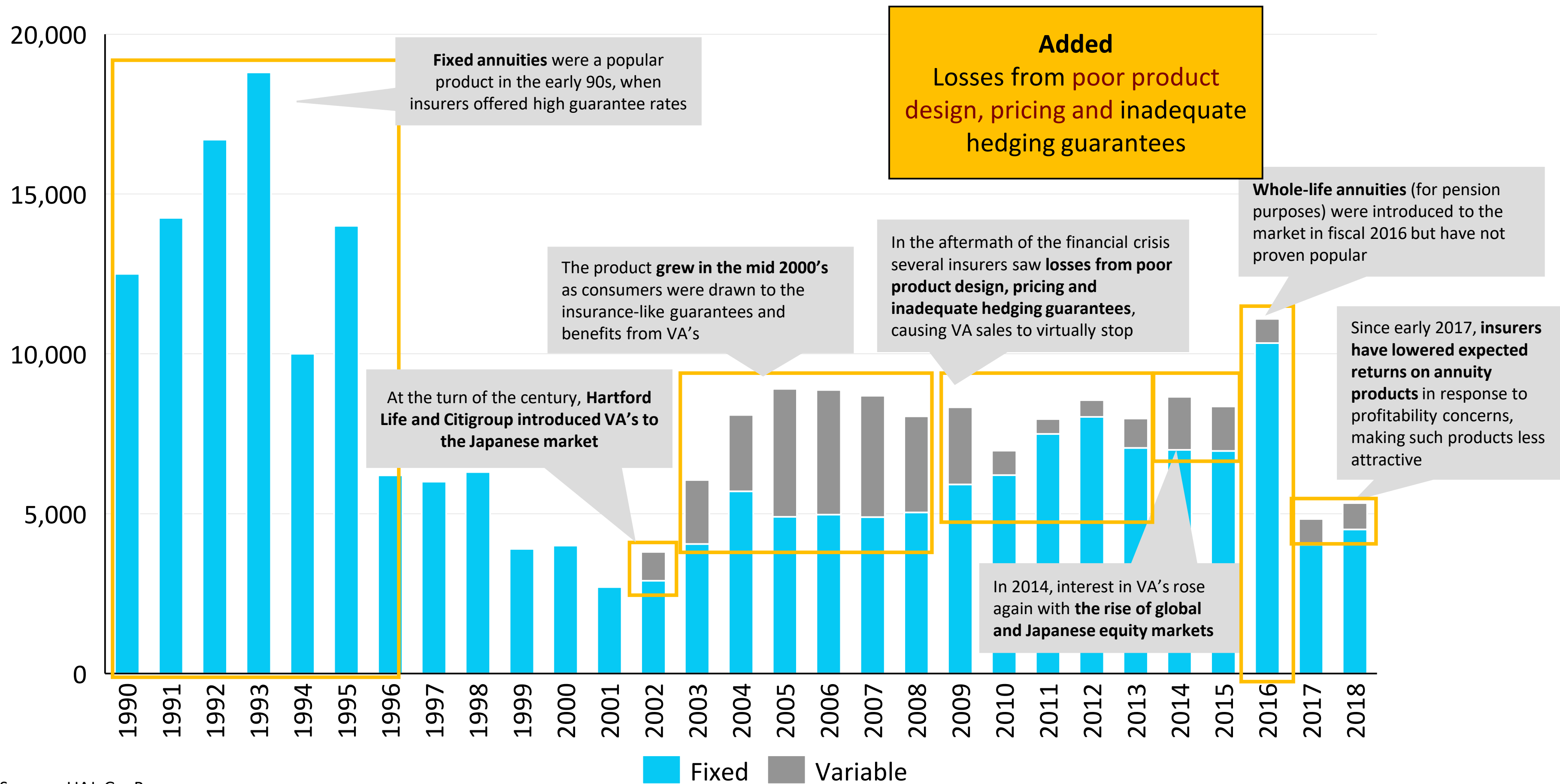
INDUSTRY RESPONSES: SWITCH TO UNIT LINKED SAVINGS PRODUCTS

Insurers introduced VA's in the mid 2000's, but success had died down amidst profitability concerns

New business premium for fixed vs. variable annuities

1990-2018, ¥B



Sources: LIAJ, GenRe

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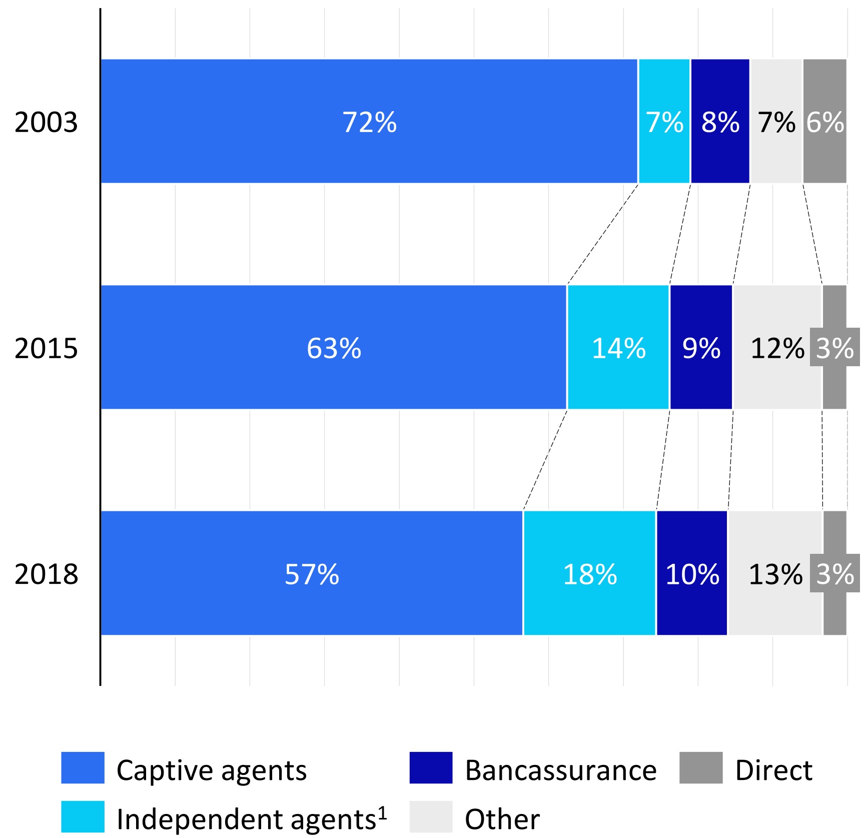
INDUSTRY RESPONSES: DISTRIBUTION TRENDS

Japanese insurers have used their strong control over distribution channels to change their product mixes relatively easily in the face of ultralow interest rates and demographic changes

Distribution mix

2003, 2015, and 2018



1. Includes through workplace sales

Sources: Axco, T&D Holdings, OW Analysis

Responses by insurers

- As the product focus changed for many insurers in the face of low rates, **distribution channels were leveraged to funnel customers into desirable products**
  - Agent commissions were restructured away from lower profit guaranteed products to health, protection, and unit linked products
  - Agents were also incentivized to focus on retention and conversion of unprofitable customers to higher profit products (e.g. converting cash balances to LTC coverage)
- Since the start of the low interest environment, distribution has shifted away from traditional channels towards professional financial advisors, bancassurance, and independent agencies dubbed “insurance shops”
  - **Bancassurance** was allowed in Japan for the first time in 2002, and life insurers began using this channel to sell savings-type products (especially single premium VAs)
  - **Independent agencies:** so-called “Insurance Shops” have also been established, and gained significant market share over captive sales agents
  - **Tax consultants and financial advisors** also became significant contributors to new sales when they started to sell Increasing Term products with unique tax benefits

Preliminary

WINNERS AND LOSERS: CASE STUDIES

Japan's biggest market share gainers moved quickly to expand product lines in response to customer needs and regulatory changes; the biggest losers were typically large national insurers who were slow to respond

Insurers	Market share 2000 (%)	Market share 2017 (%)	+ / - %	Lessons learned
Prudential	0.7%	3.2%	+2.5%	• Strong advantage through its **customer service** and **distribution capabilities** • Relies on **retail banking network** for distribution activity with sales made via insurance agents; has ~3,137 life planners in Japan and is **expanding** its bancassurance model to mega and regional banks
Aflac	2.8%	4.4%	+1.6%	• Gained a **first-mover advantage** in sale of **cancer insurance** product by entering Japan in 1991, and acquired a 99% share of the market; continues to control ~ 50% of the cancer insurance market
TOKIO MARINE	0.7%	2.8%	+2.2%	• **Entered the popular third-sector market** shortly after Japan deregulated its supplemental insurance market in 2001 • Gained market share through concentration of economic power, risk reduction and their ability to provide centralized corporate control
NISSAY	21.4%	14.2%	-7.3%	• Continued to position **death coverage** as its core product and maintained focus on **group life and annuity products**, despite growing demand in the medical space
SUMITOMO LIFE	11.7%	7.9%	-3.8%	• Announced its **suspension of variable annuity sales in 2009**, a delayed move given the VA market remained unfavorable due to the reduced market value of assets in the wake of worldwide financial turmoil
DAI-ICHI LIFE	13.8%	11.7%	-2.2%	• **Decline in sales of individual annuity products** continued to lower expected returns on life insurance and annuity products for new contracts in response to prolonged low benchmark interest rates

Sources: Quartz, Forbes, spglobal, Insurance News Net, JapanTimes, Nissay 2019 Annual Report

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WINNERS AND LOSERS: KEY THEMES

Themes of winners

VS

Themes of losers

Themes of winners

- ★ Had **effective asset liability management**, including willingness to adapt portfolio mix to longer duration assets, higher yielding foreign securities, and alternative investments
- ★ Prioritized M&As, joint ventures and internal consolidation to achieve **economies of scale**
- ★ Were **fast to adapt to changing needs of customer** e.g., by gaining the first mover advantage in offering third sector and modular products
- Expanded into **international markets**
- ★ Shifted focus **away from savings products** and toward protection life products
- ★ **Invested in customer engagement** by training agents to navigate consumers to specific products
- ★ **Balanced expansion of distribution** capabilities with **maintaining a focus on strengths** (e.g., a strong sales representative channel)

Themes of losers

- ★ **Ineffective ALM** and governance
- ★ **Reacted late to changing consumer needs** and macroeconomic events, especially in pivoting to third sector products and building flexibility into existing product mix and pricing
- ★ **Were slow to move away from traditional guaranteed products** e.g., continuing to focus on sales of individual annuity products despite growing demand in other areas
- **Maintained focus on domestic market**, instead of pursuing geographical expansion
- Were **slow to sell foreign currency products**, including US, AUS and EU denominated products
- ★ Remained **passive in expense improvement** by not optimally investing in digitization, lean distribution and data analytics
- ★ Were **foreign players who did not have the scale or capital structure** to compete with Japanese insurers (especially mutuals with lower hurdle rates)

Note: star indicates learnings that translate to US insurers

Preliminary

02

GERMANY

Preliminary

MARKET ENVIRONMENT: OVERVIEW

The German life insurance market has traditionally been a strong market for savings products, but has been challenged in recent years in the face of low rates and other macroeconomic difficulties

Key market drivers

Macroeconomic challenges

- Germany has struggled with **low inflation and GDP growth** in the wake of the global financial crisis and subsequent eurozone debt crisis
- These economic challenges and associated ECB policy measures have caused **interest rates to decline**

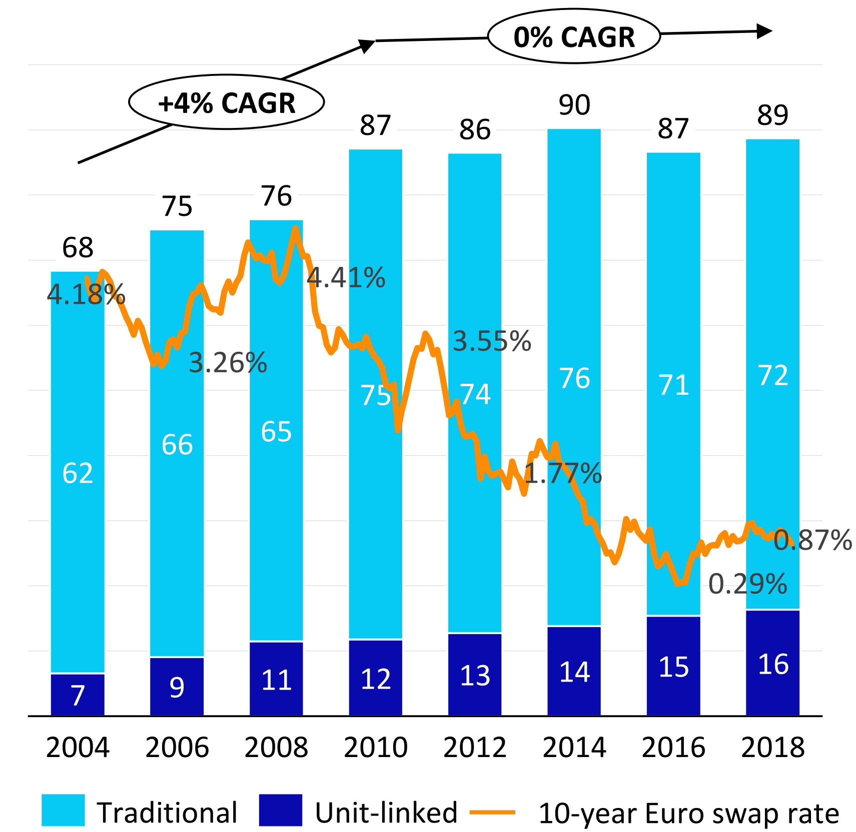
Market structure / consumer preferences

- German consumers have **strong savings habits**, and favor life insurance with guarantees
- The German market structure favors life insurance savings products (e.g. taxes advantages)
- Long policy lengths cause **asset/liability duration mismatches**

Competitive environment

- The German market is mostly dominated by Allianz, which held ~25% market share as of 2018
- Changes in the market and regulatory framework have driven **consolidation** (20% decline in # of insurers since 2004)

German market for life insurance[1] vs. 10-year Euro swap rate
GWP, € BN



1. Includes Endowment, Annuities, Unit Linked, Asset Formation, Disability, and Group life
Source: Axco, S&P Financial, Fred, ICAP

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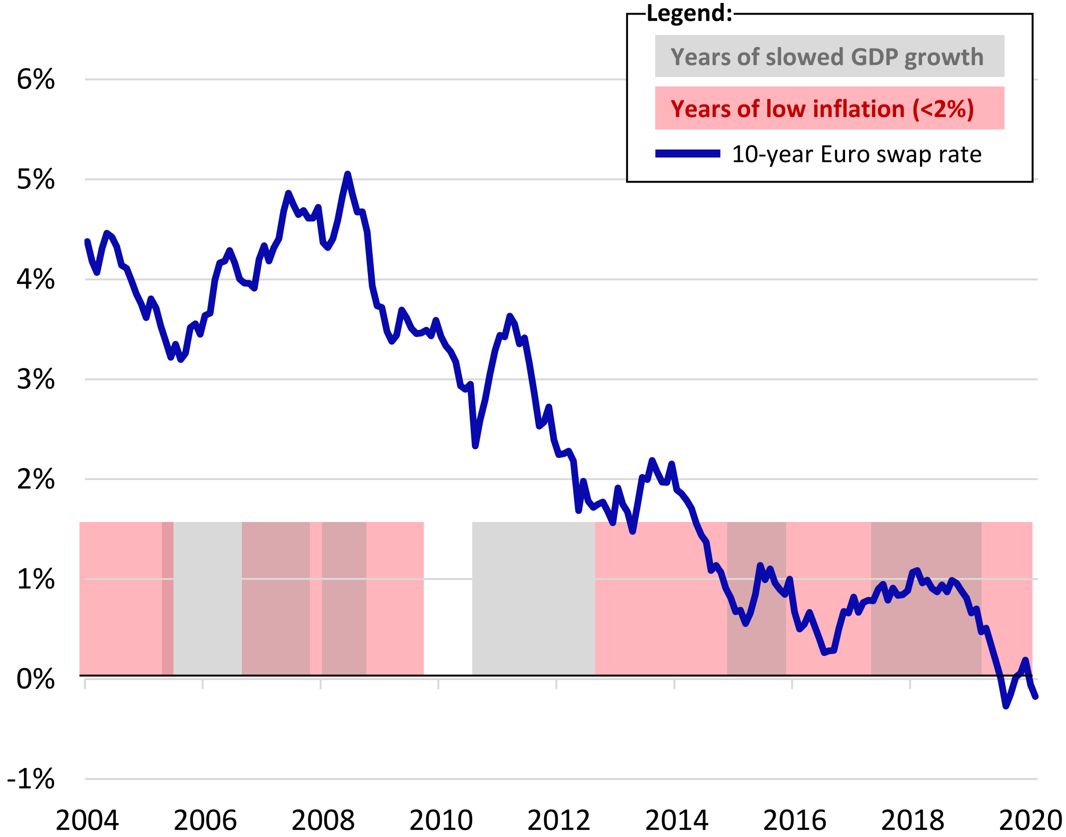
MARKET ENVIRONMENT: MACRO ECONOMIC CHALLENGES

Challenges stemming from the global financial crisis and eurozone debt have caused interest rates to decline

Monthly Euro swap rate and key economic indicators

2004-2020



Source: S&P Global financial, ICAP, inflation.eu, macrotrends data

Key events

- The 2008 Global Financial Crisis triggered a decline in the GDP of the majority of European economies
- Economic challenges accelerating the progression of the **Eurozone Debt Crisis** (2008-2012), which prompted a series of regulatory responses:
  - European nations began to implement a series of **financial support measures** such as the European Financial Stability Facility (EFSF) and European Stability Mechanism (ESM)
  - The ECB **lowered interest rates** and offered **cheap loans** in order to support the flow of money
  - The ECB has sought to achieve a "buffer" **to ward off potential deflationary** risks during a subsequent downturn
- Macroeconomic factors, regulatory actions, high demand for duration-bearing instruments from Solvency II implementation, and high demand for savings have put downward pressure on **rates**

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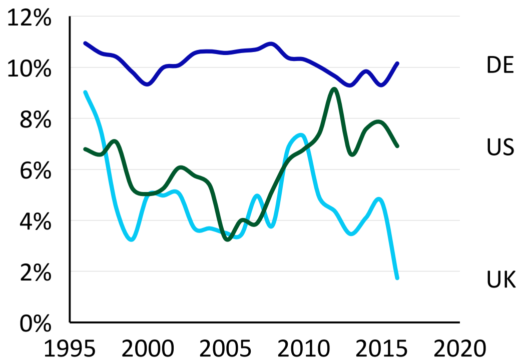
MARKET ENVIRONMENT: MARKET STRUCTURE / CONSUMER PREFERENCES

The German market has a strong savings culture, and consumers use the tax advantages to buy long term life insurance policies as savings vehicles

Consumer behavior

- **Early saving** and **prudent spending** habits are integral to the German financial and social culture, serving both private and collective purposes
- German households save **~10%** of their disposable income, twice as much as the average EU or American
- The German savings rate remains **stable** over time, unaffected by economic crises and interest rate fluctuations

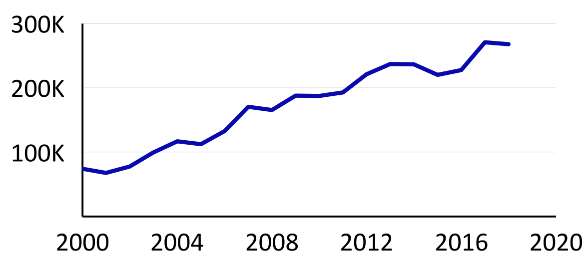
Household savings:
% disposable income saved



Retirement system

- The **three pillars** of the German retirement system include: 1. Mandatory social security, 2. Private company plans, 3. Private insurance
- German citizens utilize **pension plans and life insurance policies** as their primary savings and investment vehicles
- In response to the **widening pension gap**, Germany introduced pension reforms, which **increased the importance of private supplemental savings for retirement**
- The 2004 Retirement Income Act introduced **taxes on occupational pension plans;** endowment policy sales **decreased** and demand for annuities and group products **increased** (aided by tax incentives)

AuM German Private Pension Assets:
USD mm



Very long-duration liabilities

- The German life insurance market has relatively **long contract durations** since individuals typically buy their first savings products in their mid 20s, and hold them until retirement
- These durations **increased significantly in the last decade** due to tax incentive introduced in 2005 that reward holding onto savings product until retirement
- Significant asset-liability duration mismatches, combined with previous widespread use of investment guarantees to customers, expose German life insurers to the **risk of interest rates remaining low** for an extended period

Source: Axco, OECD, 2004 Allianz Annual Report, Oliver Wyman analysis, Financial Times, Thomson Reuters, Max Planck Inst., Verdict.co.uk, OECD, IMF

MARKET ENVIRONMENT: SOLVENCY II

Solvency II was adopted in 2016 and caused insurers to rethink their risk taking strategies on both sides of the balance sheet

Overview

- In the aftermath of the financial crisis, European policymakers recognized **several shortcomings** of the existing regulatory framework (Solvency I):
  - Solvency requirements were calculated as a percentage of the technical provisions, thus **punishing those with good risk governance** with a higher capital requirement
  - Solvency I ratios only focused on the liability side of the balance sheet, **ignoring asset risk**
  - Capital requirements did not take into account the **risks of underwriting liabilities**, or economic and market circumstances
- Solvency II was enacted in 2016, and more closely linked **capital requirements** to the **underlying risk** of insurers' books as compared to Solvency I
  - Valuation of technical provisions (assets and liabilities) was changed to a **market value framework**, rather than **book value**
  - Capital requirements now **depend on the risk exposure of the balance sheet**, and are calculated using a standard model or internal model
  - **Risk aversion activities are rewarded** with lower capital requirements

Industry Impact

- Solvency II most harshly **challenged insurers with widespread sale of products with guaranteed returns and long liability durations**
- Falling rates **increased the value of liabilities**, compounding the obstacles SII create for insurers
- Insurers with **higher-risk investments,** such as the high-yielding asset classes that protected German life insurers from falling rates in the 90s, were subject to **increased capital requirements**
- The new system has encouraged **risk mitigation activity**, reflected in changes to the product mix and increase in pursuing investment hedges
- SII **incentivized life insurers to invest in long-term government bonds** as a way to close their duration gaps by setting a high capital charge on non-Eurozone bonds

Source: S&P Global, Allianz Perspective , Allianz Capital markets Day June 2013, Expert Interview, Milliman Research Report: Capital Efficient Products in the European Life Insurance Market

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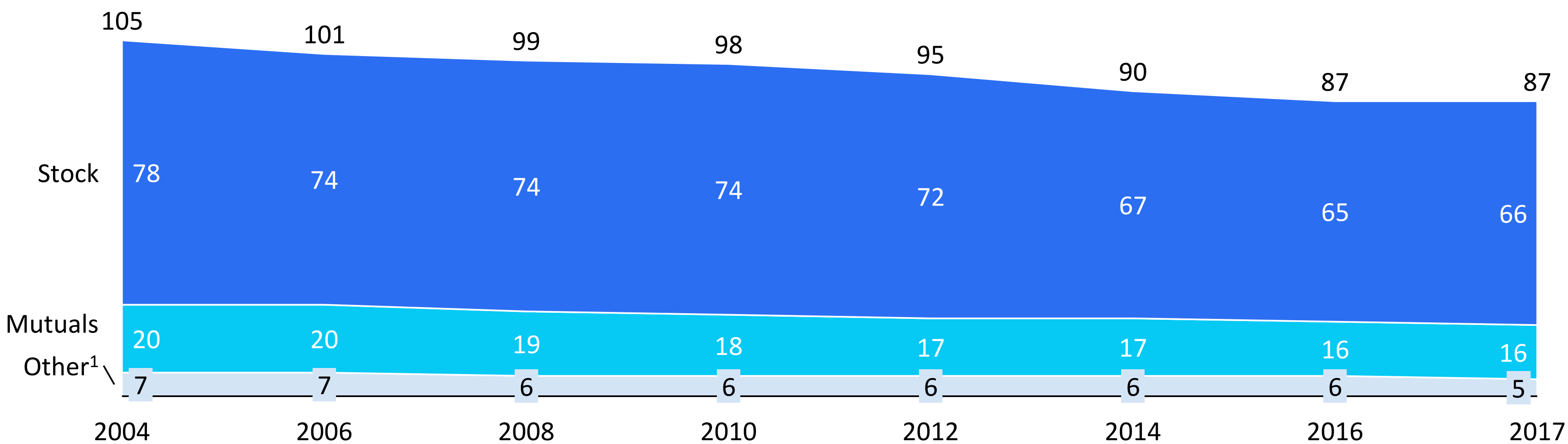
MARKET OVERVIEW: CHANGING COMPETITIVE ENVIRONMENT

The German life insurance market has undergone consolidation, and many insurers have pursued international growth

Life insurance companies by legal form

2004-17



Key events

- Allianz holds the majority of the German life industry's market share[2]. The rest of the market is fragmented, with the remaining share divided among mid-sized regional and national players
- The combination of a challenging market environment and changes in the regulatory framework (Solvency II) have driven **consolidation** of the German life insurance industry
- The leading players all offer **similar products** and have a **wide geographical presence**, creating a **highly competitive market**
- German insurers have looked to acquire foreign targets in line with their **international growth strategy**

1. "Other" includes insurance institutions under public law, and German branches of foreign-based insurance companies, from without branches of insurance companies based inside the EEA
2. As of 2018, Allianz held 24.79% market share for in-force and new business. Source: GDV Statistical Yearbook 2019, exhibit 26.

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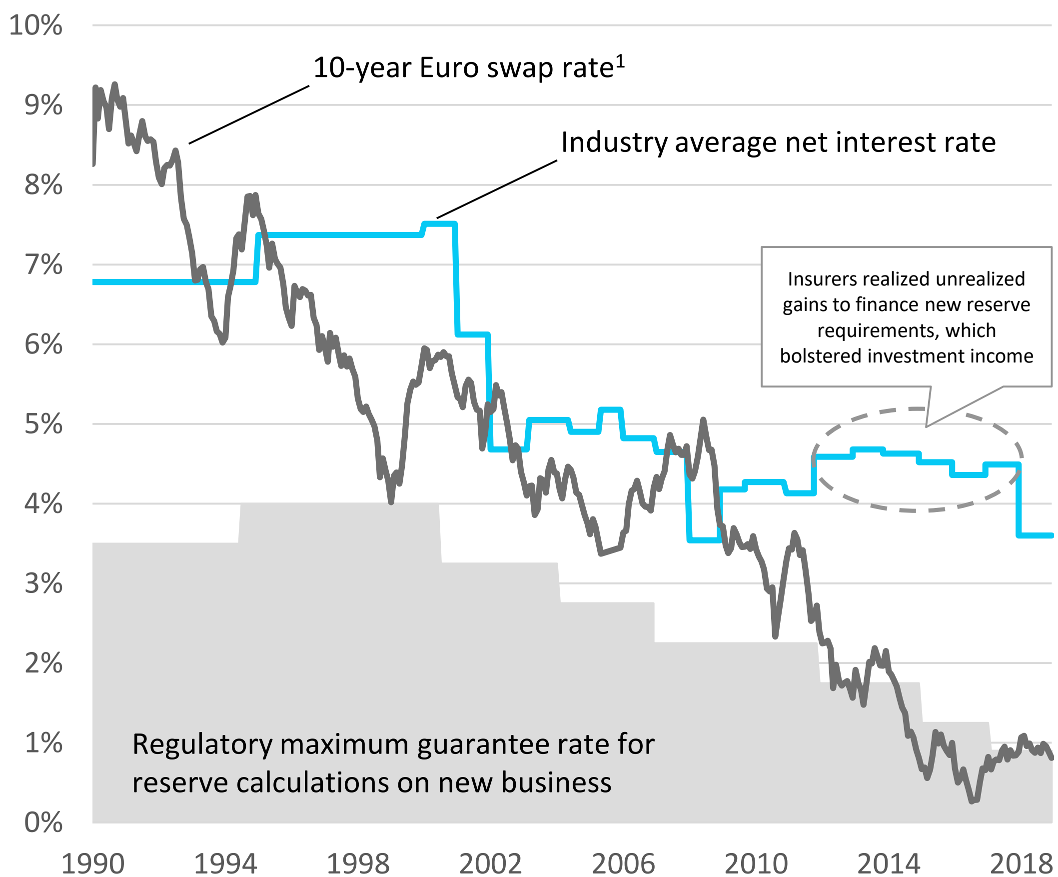
INDUSTRY IMPACT: PROFITABILITY AND SOLVENCY

Declining rates have put pressure on investment spreads of German life insurers, but spreads are still positive (for now)

German life insurer investment margins in the face of declining rates



Key events

- It has become common practice for German insurers to offer a **guarantee rate equal to** the maximum allowed valuation **discount rate**
- In reaction to declining interest rates, regulatory **max guarantee rates on new business have declined** materially over the past 20 years
- The **average running yield** on German life insurers' **investment portfolios still exceeds** the average effective **guarantee on their in-force business;** this margin is **gradually eroding** as insurers reinvest maturing asset proceeds at lower yields
- Further pressure on investment yields could mean increased loses for the industry or even insolvencies if rates remain low

1. 10-year Euro Swap rate used as a proxy for European bond yields, which is a better indicator of low rate pressure for Germany than government 10-year bond yields, due to the fact the German insurers allocate a significant part of their investment portfolio to other bonds in the Eurozone. Sources: Datastream, Assekurata, Analyse von Oliver Wyman, ICAP, Reuters

Germany

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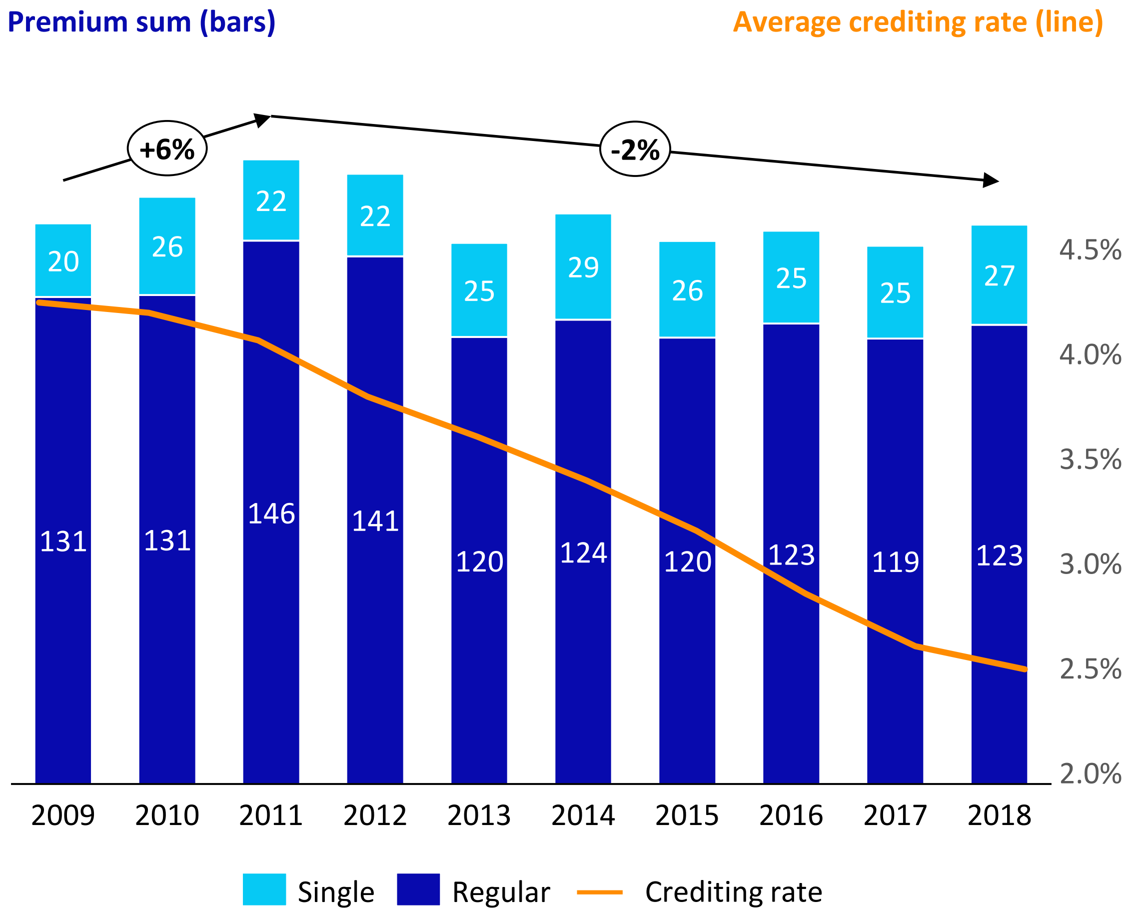
INDUSTRY IMPACT: NEW BUSINESS PREMIUMS

The German life insurance market has remained fairly stable over the past decade, despite volatile financial markets and low rates

New business premiums

Single and regular premium contracts[1], Eur bn



Comments

- Low interest rates have caused life insurers to **lower guarantees on new business** and **have driven down average** crediting rates
- Lower guarantee rates have made traditional guarantee products less attractive, causing Germany insurers to **rethink their product strategy** and **customer value proposition**
- In the face of these challenges, German insurers have demonstrated **resilience, as new business sales have remained** fairly **steady** over the last decade

1. Excludes pension products

Source: GDV Statistical Yearbook 2019, Spglobal, Fitch, Moodys

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REGULATORY RESPONSE

In response to low rates, regulators have implemented several policies aimed at ensuring the financial health of the life insurance industry

- Asset liability mismatch and reinvestment risk issues prompted the German regulator to introduce a **new balance sheet item called Zinszusatzreserve (ZZR)**, which requires insures to hold a **special reserve** held **if market interest rates become lower than the guaranteed yield** for insurance contracts, rather than have that money go to shareholders as a dividend
- Since its introduction in 2011, the ZZR has reached around €60bn, **approximately 7.2% of the total actuarial reserve** for products with guaranteed interest rates
- Relaxed requirements **improved the preservation of asset valuation reserves and capital buffers**, as life insurers no longer needed to reinvest the proceeds of realized gains on longer-duration assets into lower yielding assets
- Lower reserve requirements also **reduced the pressure on management to rid their portfolios of interest rate guarantees**, causing a **slower development of the run-off business**

- The **German Life Insurance Reform Act**, established in 2015, required life insurers to **notify the potential policyholder of the actual expenses** prior to the conclusion of a contract
- Specifically, life insurers disclose the percentage by which these expenses reduce the value of the insurance contract[1]

Zinszusatzreserve (ZZR) Special reserve	**Changes to max discount rate**
Consumer Protection laws	**Solvency II** Regulatory framework

- Regulators have imposed several **changes to the capped discount rate** that insurers use for reserving
- These reserving rates changes have been successful **in stopping insurers from pushing high guarantee contracts** onto consumers that they may not be able to honor
- **Germany has done a particularly good job at this**, as the country has not faced negative spread issues that countries such as Japan have dealt with

- In **negotiations around capital**, German insurance companies got a lot of relief compared to those in other European countries
  - Able to establish a surplus fund, allowing policyholder to absorb future losses
  - Lobby efforts allowed **slower implementation of Solvency II measures** (up to 16 years), to keep German life insurers healthy and **avoid drastic changes to crediting rates**

1. However, this obligation does not apply for purely term life insurance policies.

Sources: BaFin, Expert interviews, Axco, The Actuary, SPglobal, The Actuary

INDUSTRY RESPONSE: MANAGING THE BACK BOOK

In response to margin pressure resulting from high guarantees and low investment yields, insurers have managed their back book through trans-generational profit sharing, runoffs, and policy buyouts

Back book management strategies

Pressures on back book

- High guarantees on in-force books with very long durations (e.g., ~25 years) that make it difficult for insurers to match the liabilities with assets
- Many books have 3-4% guaranteed rates that were offered in past years, and insurers now are having difficultly sourcing investments with sufficient yield to fill the guarantees; Solvency II has also limited ability to do so by taking additional investment risk
- Given the relative attractiveness of these policies compared to other savings options, lapse rates are low, leaving many insurers stuck with unprofitable policies

01 Trans-generational profit sharing

- In Germany, profits are not allocated by product tranches, but are shared across generations (Gleichbehandlungsgrundsatz)
- Therefore, higher yielding returns locked in the past can be used to maintain an attractive customer value proposition (at least in the medium term)

02 Runoffs / book sales

- Recently, some large life insurers are selling existing portfolios to cut traditional life insurance business exposure and reduce liabilities on their balance sheets
- The run-off trend has increased in recent years due to record-low rates, and is expected to persist (e.g. Viridium's 2019 acquisition of Generali Leben marked the largest run-off deal in Germany to date)
- By 2017, 9% (£90 billion of assets) of the German life insurance sector was in run-off. Estimates project these will grow to around £150 billion by 2022

03 Policy buyouts

- Some companies tried to buy out existing policies from policyholders (e.g. Zurich)

Source: Expert interviews, Fitch Ratings

INDUSTRY RESPONSE: EXPENSE MANAGEMENT

German life insurance companies have pursued cost-reduction measures, focused on consolidation and digitized processes to combat the pressure of the persistent low-interest environment

Scale Players

- Market leaders, such as Allianz, consistently work to improve their cost base, **consolidate entities**, and use **shared services** to maximize efficiency
- Size has allowed leaders to **achieve economies of scale** and invest in efficiency improvements, especially in **modernizing IT services and automating services**
- Growth through **M&As**, and internal consolidation have enabled scale players achieve substantial **cost synergies**

Niche Players

- Successful smaller players achieve efficiency by **reducing complexity,** focusing in a niche segment, product, or channel and maximizing its potential

Other Trends

- **New entrants** have developed low-cost models based on **digital technology**
- Some players have **completely sold off their closed books** and **pursued greenfield operations**. For example, Bâloise started greenfield business in Croatia in 2000, focusing on selected customer segments and distribution partners, and entered the Serbian market with a similar business model in 2007
- Players that do not have a dominating position in the market risk losing their most productive agents to the competition. Market leaders are best-positioned to impact reforms of commission structures

Sources: Oliver Wyman Analysis, 2008 Allianz Shared Infrastructure Services SE Annual Report, Allianz Annual Financial Reports, 2006 Baloise Half Year Results, noah-conference, SPglobal: Baloise, insurtech

INDUSTRY RESPONSE: INVESTMENT STRATEGY

German life insurers have looked towards longer duration assets to reduce reinvestment risk going forward, while also expanding into alternative assets with higher yields

Responses by insurers

- German insurers have searched for yield through **changes in asset class mix, asset duration, and asset quality**
- Given the low yield of German government bonds, insurers have moved to **other euro denominated gov't bonds** with higher yields
- With pressure of low rates and asset/liability duration mismatches, insurers have been increasingly active in investment areas with **longer-duration assets to hedge against reinvestment risk**
- More recently, insurers have increased investments in **alternative assets**, such as infrastructure, real estate, mortgages, and private equity
  - Solvency II reduced the capital charges with stable alternative assets, allowing insurers access to long duration fixed income type assets with higher yields than corporate bonds or govies
  - For example, Allianz Leben has replaced unsecured with secured credit exposure through mortgage lending, covered bonds, and direct lending to corporates and infrastructure projects
- There has also been some **change in quality of their corporate bond holdings** (e.g. moved down the credit curve in search of yield)
- Several firms also implemented **hedging programs** to limit downside exposure and associated Solvency II capital charges

Investments by asset class
2005-2018

Sources: OW analysis, Expert Interviews, GDV

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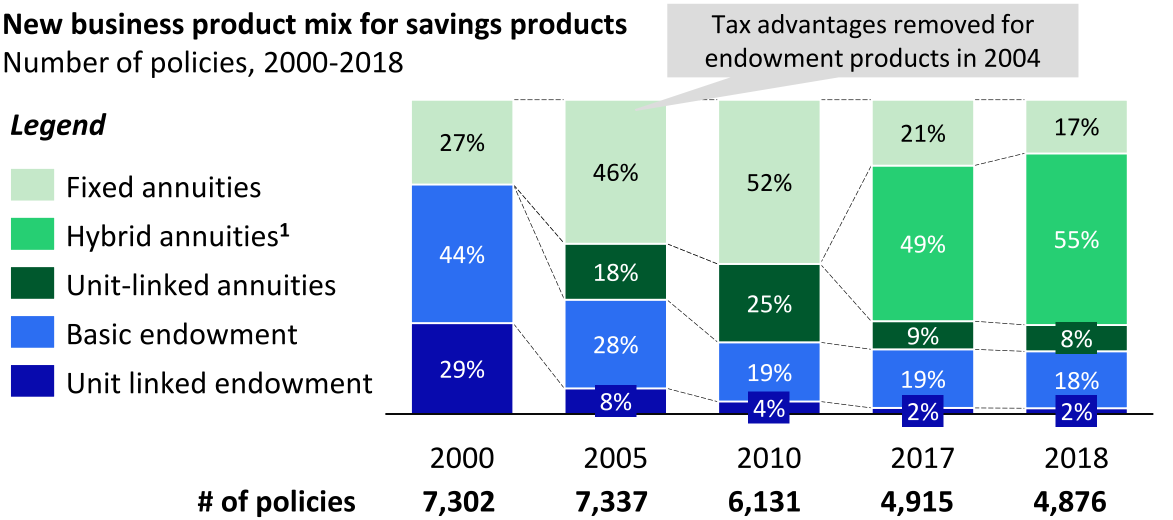
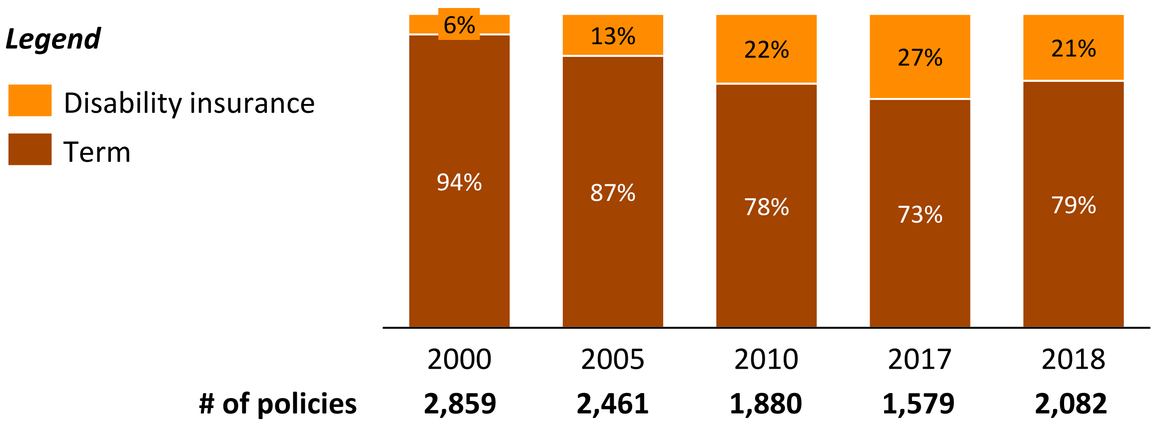
INDUSTRY RESPONSE: NEW BUSINESS PRODUCT MIX

German insurers are gradually making their businesses better-suited to low rates and Solvency II, with a dramatic shift in product mix away from traditional guaranteed savings products to capital light savings products

New business product mix for savings products
Number of policies, 2000-2018



New business product mix for protection products
Number of policies, 2000-2018



Responses by insurers

- Lower interest rates and solvency II measures have forced insurers to **rethink their strategy for new business**
- Given the margin pressure inherent in writing guaranteed business in a declining rate environment, many insurance companies have **repriced** these policies, significantly **reduced these guarantees, or stopped selling traditional savings products** with guarantees altogether
- Given the capital charges imposed by Solvency II for interest rate sensitive products, German life insurers have also shifted their strategy to favor **capital-light products**, including hybrid products and unit linked products; however these products are more complex for consumers
- Insurers have also **favored less interest rate dependent** protection products such as term and disability

Source: Reuters, Journal of Risk and Financial Management, OECD, GDV, Expert Interviews. 1. Hybrid and capital-efficient products still offer guarantees to clients that should be matched in a low interest rate environment; however these guarantees were lower than traditional savings products, which provides some relief for insurers.

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INDUSTRY RESPONSE: SCALED DOWN TRADITIONAL GUARANTEE PRODUCTS

Several German life insurance companies closed traditional products to new business

Listed in chronological order

Company	Details	Date	Type
LVM VERSICHERUNG	• LVM was one of the first insurers to change the product offering and remove traditional endowment	06/2015	Mutual (VVaG)
GENERALI	• First larger insurer to withdraw from traditional endowment products • Aims to sell unit linked and non-traditional products	06/2015	Proprietary company
Allianz	• Targeted reduction of new business in endowment from 52% to 20% within the next three years • Sale of portfolio "out of question"[1]	10/2015	Proprietary company
talanx.	• Facing the long-lasting low interest rate Talanx stated in 07/2015 it would exit traditional endowment products with fixed interest guarantees	12/2015	Proprietary company
ERGO	• Extensive withdrawal from traditional products • Ergo states that this type of product is not profitable and will shift to unit-based products	12/2015	Proprietary company
ZURICH	• One of the first companies to actively reduce writing traditional endowment products (in 2013) • Ultimate closing of book end 2016	12/2016	Proprietary company

1. http://www.versicherungsbote.de/id/4829702

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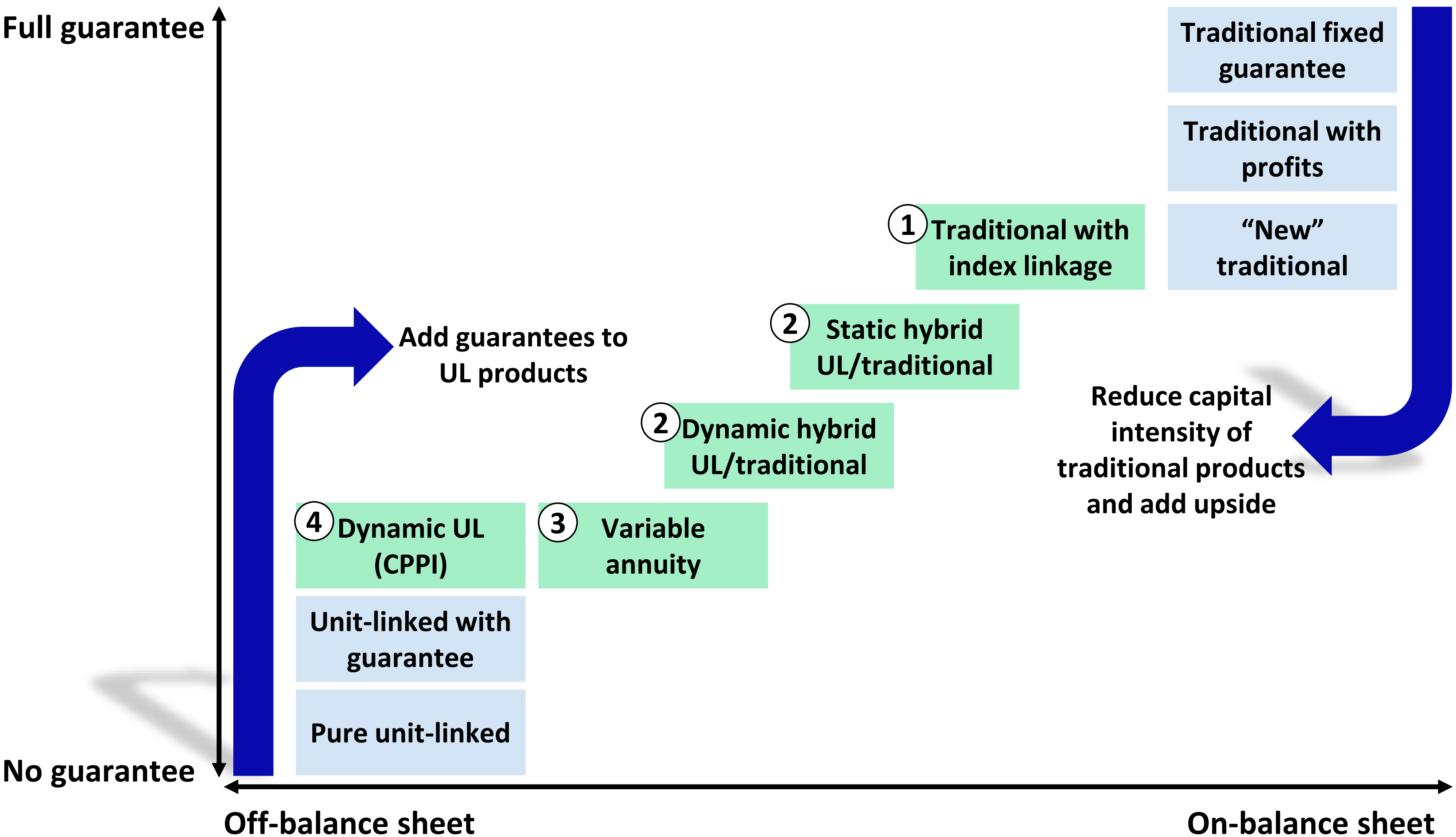
INDUSTRY RESPONSE: PRODUCT INNOVATION (1/3)

In response to low rates, German life insurers introduced several product innovations to satisfy customer preferences for guarantees, while also limiting exposure to interest rate risk



Sources: Lukas Junker, Allianz

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INDUSTRY RESPONSE: PRODUCT INNOVATION (2/3)

New products are aimed at providing guarantees with less risk exposure to the insurer

Product	Details	Example Insurers	Considerations
1 **Traditional with index linkage**	• Traditional savings product with **lower guarantee** • Bonus invested into certificate linked to index		• Longer term asset helps reduce duration mismatch • Includes guarantee, catering to more risk-averse individuals
2 **Hybrids**	• Dynamic hybrids **invest in the policy reserve stock and an equity fund**, optimized to avoid numerous pro-cyclical shifting, especially in a volatile capital market environment • **Capital is only reallocated if necessary to protect the guarantee** and is denominated as an anticipatory investment strategy with the idea to buy and hold investments		• Enriches the pure UL product by **adding guarantees and reducing investment risk** • Offers **flexibility**: fund investment can be chosen by policyholder and altered during the contract term (shift and switch)
3 **Variable annuities**	• UL product with **innovative forms of guarantees** (riders) that are hedged or reinsured • **Has remained niche** so far due to the **substantial risks** involved and **significant competition** in the market		• Distinguished by their **flexibility** and the **clarity of their value proposition**; however, also perceived by customers as **complicated** and **expensive**

Sources: GenRe, Lukas Junker, Allianz, Prudential, Expert interview, The Actuary

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INDUSTRY RESPONSE: PRODUCT INNOVATION (3/3)

CPPI products have been highly innovative and effective, but complexity is a limiting factor

Product	Details	Insurers	Considerations
4 **UL iCPPI**	• UL product with **dynamic asset allocation** • Provides **protected or guaranteed solutions** fully tailored and bespoke to the individual policyholder • The market risk associated with providing such guarantees can be precisely and **fully hedged out to a third party** (typically an investment bank) at a fixed fee, to provide protection against catastrophic market movements, and potentially **offers fund switches** • **Higher expected return than traditional products**	ZURICH CNP ASSURANCES	• **Individualized protection:** Net asset value/ Premiums invested in are protected as designed by the customers • **Flexibility** to fully design the product to fit one's personal needs (e.g., Protection date, protection level and funds • Ability to **daily monitor** the value of the fund and **adjust features** • Considered **complex**

Sources: GenRe, Lukas Junker, Allianz, Prudential, Expert interview, The Actuary

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INDUSTRY RESPONSE: INCREASED FOCUS ON PROTECTION & DISABILITY

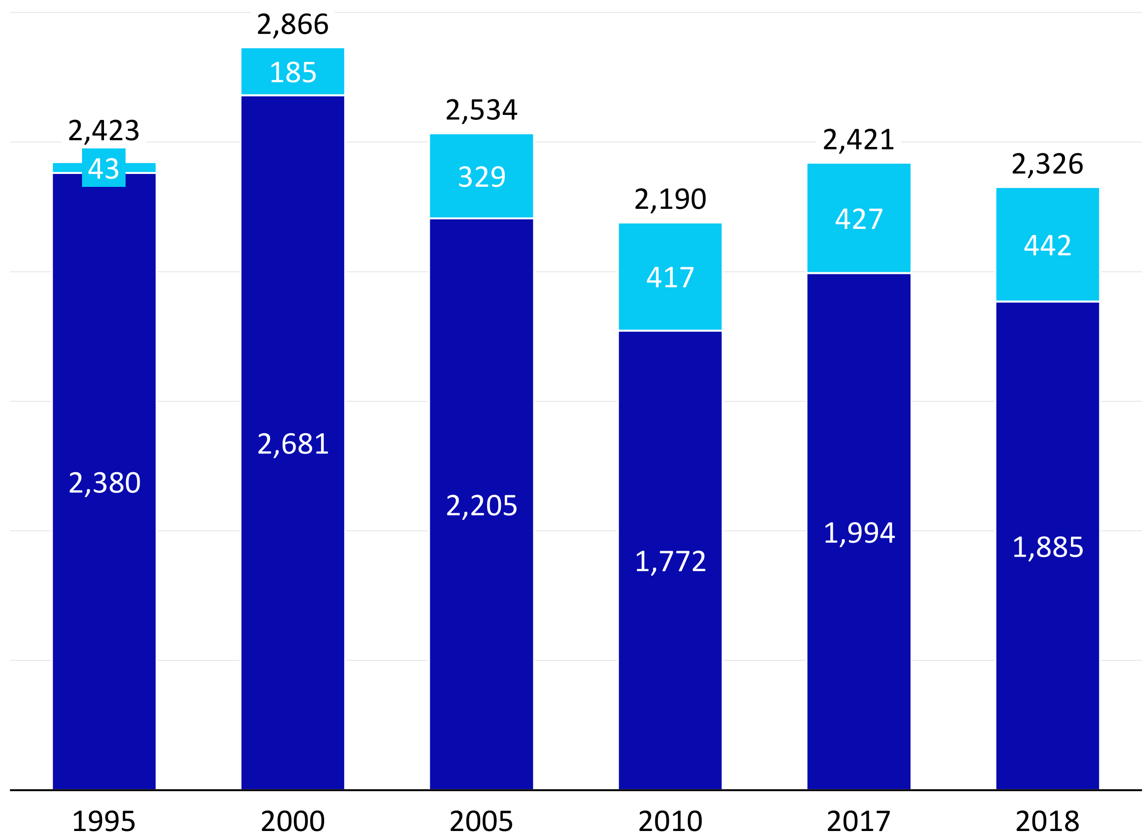
Insurers increased focus on protection products helps mitigate pressure on economics due to low interest rates

Impacts

- Historically, **term insurance had been regarded as lower priority** than endowment/ annuity business, which generates higher volumes and profits
- With persistently low interest rates, **term insurance has been more of a focus**, and insurers have taken action to improve their market share
- Disability and LTC coverage has grown due to **significant need in Germany for private LTC protection** in light of the ageing population and gaps in the benefits of the public LTC system
- Historically, LTC policy sales were dominated by health insurers, but life insurers have recently taken a sizable share of LTC sales

New business policies

Individual life insurance protection products, 000s



1. Includes residual debt insurance.
Sources: OW analysis, GenRE, SwissRe

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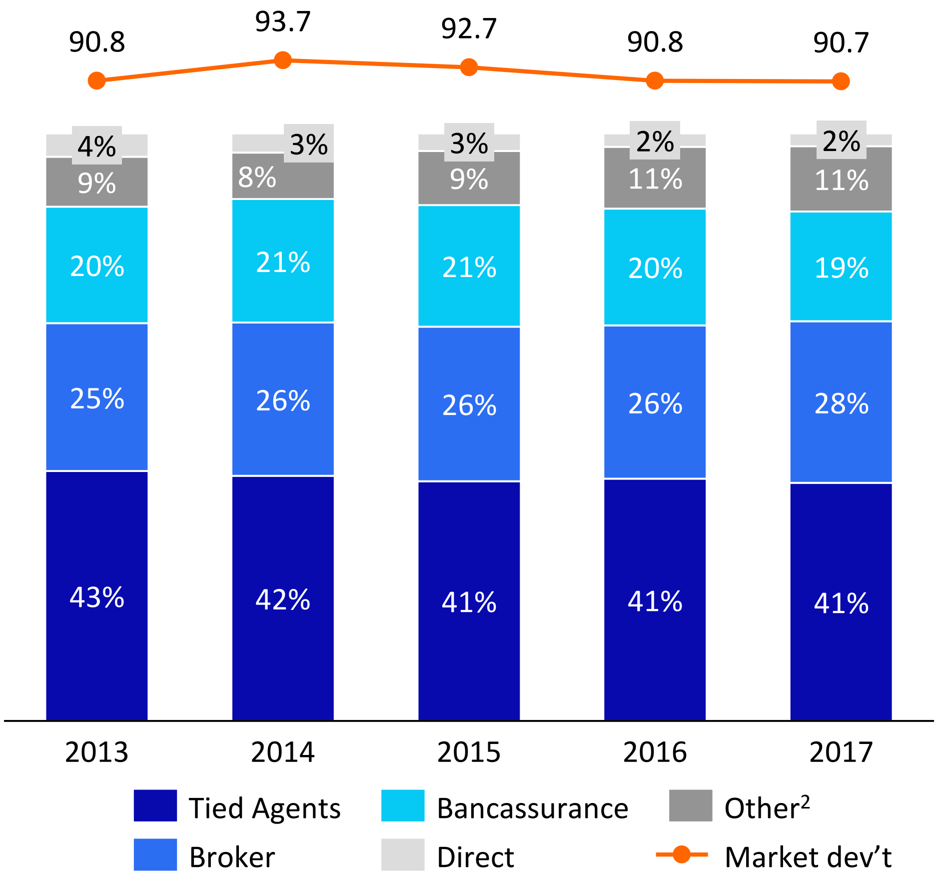
INDUSTRY RESPONSE: DISTRIBUTION

The distribution mix of life insurance has not been drastically changed by low interest rates

Share of distribution channels: Life[1]

In % of new business total premiums, market GWP MM €



1. Includes pensions. 2. Includes multi-insurance tied agents.
Source: GDV, Oliver Wyman analysis, Axco

Comments

- Most insurers in Germany today are aiming for a **healthy mix of distribution channels** while keeping an eye on the persistency of the strategic asset of tied agents
- Low interest rates have **not resulted in a meaningful change** in distribution strategies across the industry
- Commissions, however, have been a focus of **regulatory scrutiny**.
  - The 2014 Life Insurance Reform Act (LVRG) introduced legislation that to curb the size of commissions in Germany
  - The LVRG imposed a soft cap of 4% on agent commissions, but insurers are able to go above this limit if they fund it through other profit sources
  - In practice, **no commission caps have been enforced**
- In the face of low rates, agents have deemphasized guarantees and **focused more on historical crediting rates** to policyholders, noting that these often exceed guarantees

Preliminary

WINNERS AND LOSERS: KEY THEMES

Themes of winners

VS

Themes of losers

Themes of winners

- ★ Took action early to **transition away from traditional guarantee** products, either buy discontinuing new sales of this product entirely, or reducing guarantees substantially
- ★ **Utilized economies of scale and strong branding** to influence pricing and achieve cost savings
- ★ Invested in **infrastructure asset** that were longer duration and had fixed income type payouts with higher yield (e.g. solar and wind energy, parking garages, gas distribution systems)
- ★ Created innovative **new savings products** that were simple enough that consumers were not confused by the offerings
- ★ Niche players **narrowed focus** to achieve cost savings, and didn't try to compete with big players
- ★ **Restructured agent incentives** to focus on selling profitable products
- ★ Encouraged **agents to focus less on return guarantees**, and more on **historical returns** of savings products

Themes of losers

- ★ **Ineffective ALM** and governance
- ★ Were **slow to move away from traditional guaranteed** products and pivot to **creative savings products** such as CPPI, and Hybrids
- ★ Remained **passive in expense improvement**
- ★ Did not have a **focused distribution strategy** to react to changing product profitability
- ★ **Did not have size and scale** to invest in **non-public alternative asset classes** offering higher returns and duration

Note: star indicates learnings that translate to US insurers

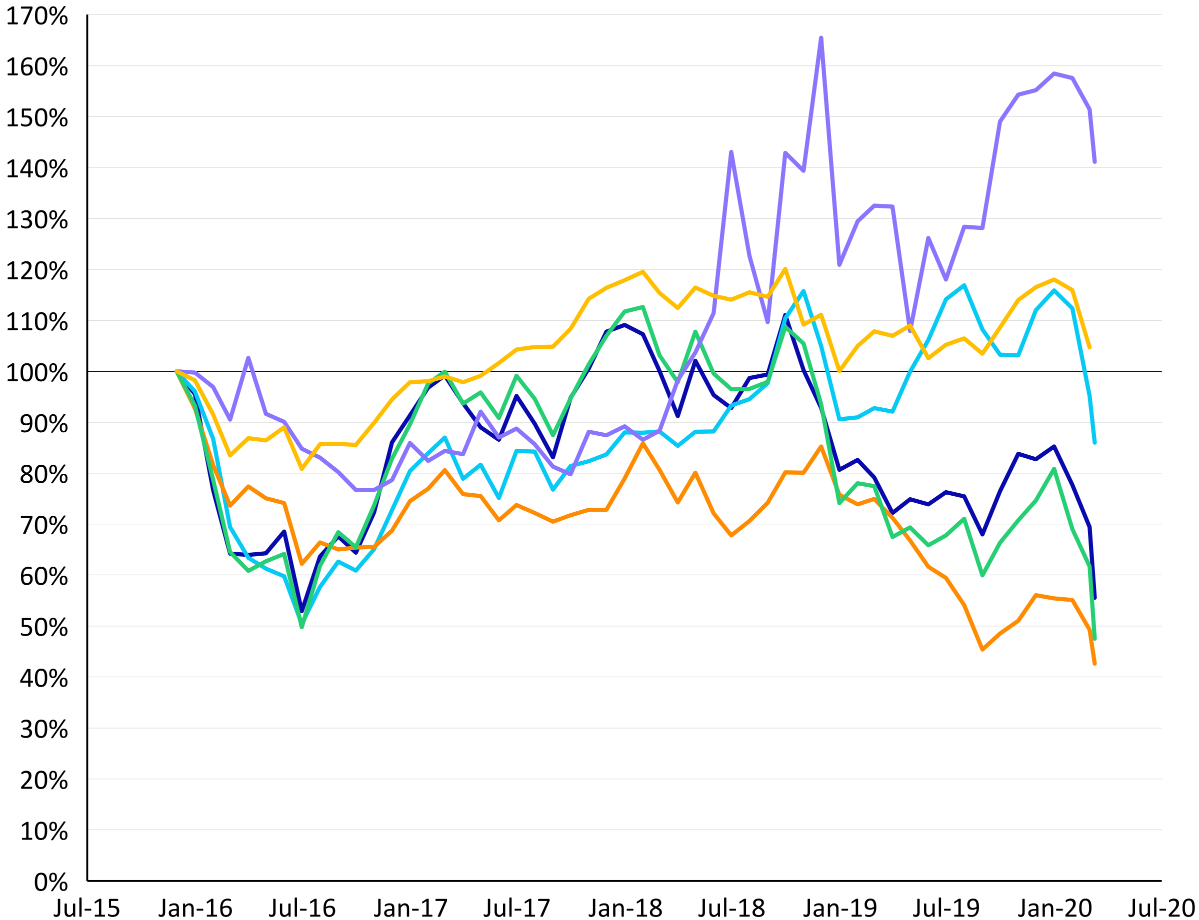
APPENDIX

Preliminary

JAPANESE INSURER STOCK PRICES

Stock Performance of major Japanese life insurers

2015 – present; indexed to 02/01/15 values



Total returns vs. market

As of 02/29/20

Insurers	Return (%)	Legend
Dai-ichi Life Holdings, Inc.	69	
Sony Financial Holdings Inc.	95	
Japan Post Insurance Co.	49	
T&D Holdings, Inc.	62	
Lifenet Insurance Company	151	
Total Market	**104**	

Source: CapIQ

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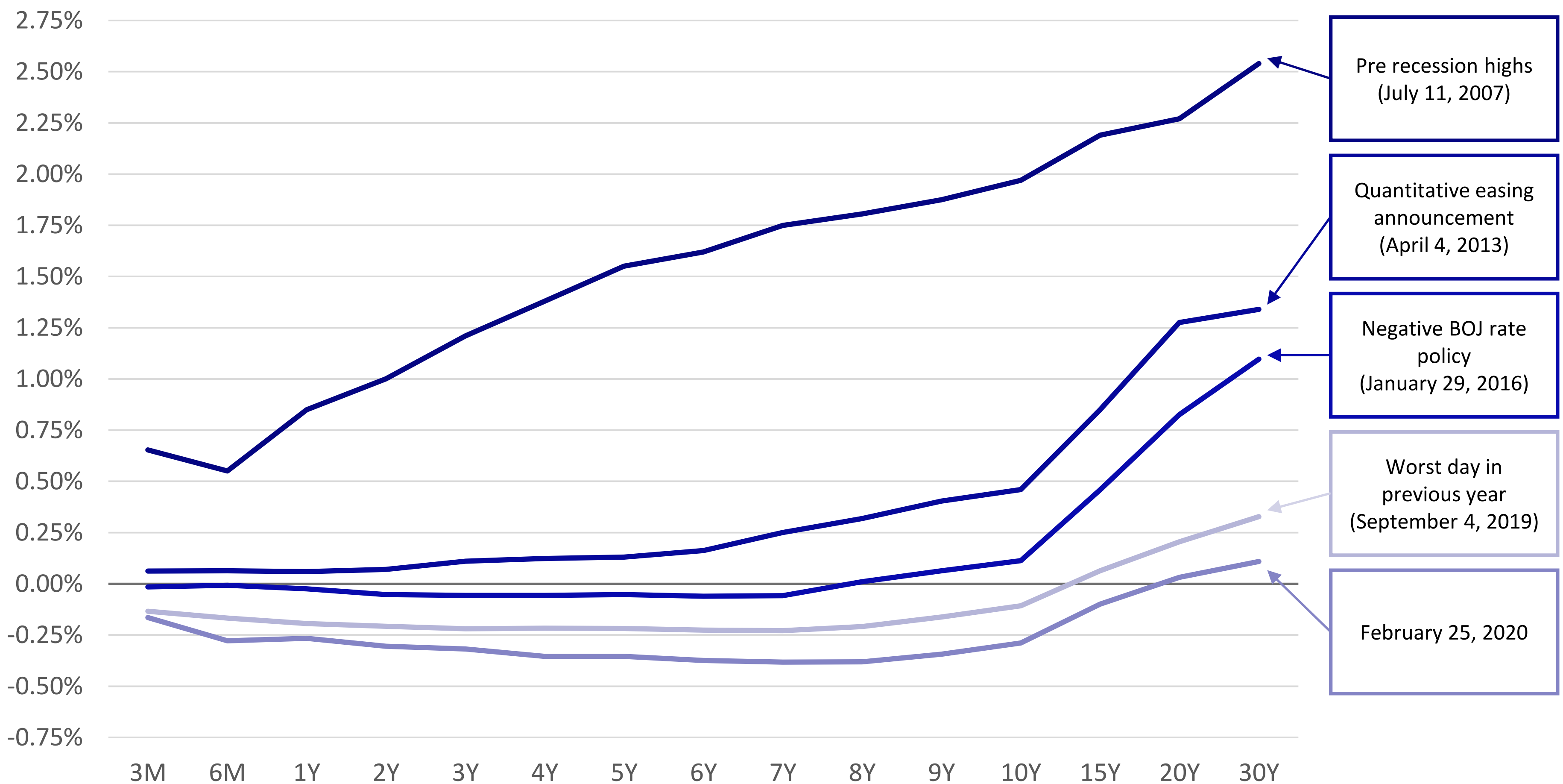
NATURE OF INTEREST RATE ENVIRONMENT

The yields for longer term bonds have continuously gone down with monetary and fiscal policy actions

Yield curve

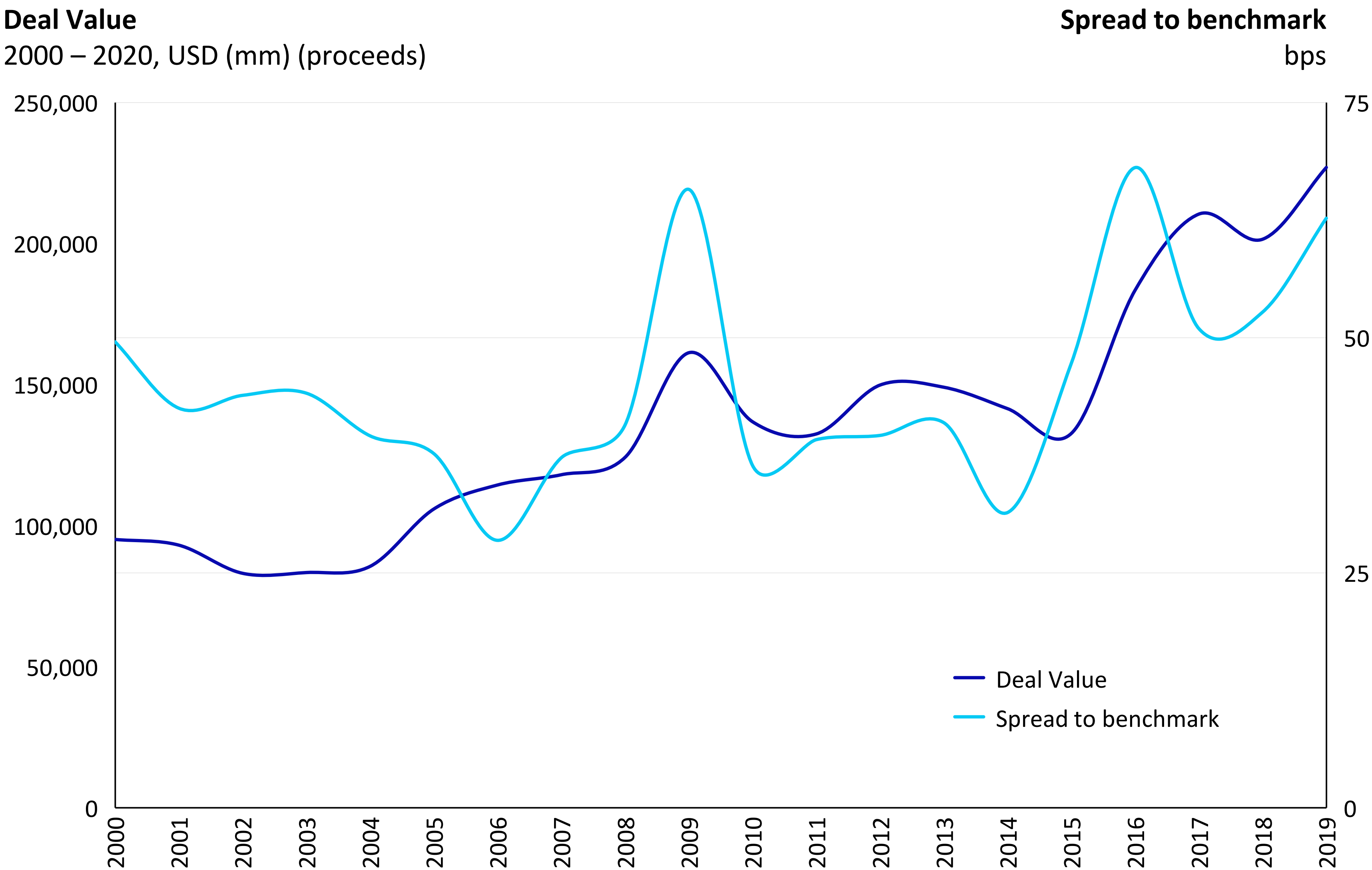
JGB, key dates



Source: S&P

Preliminary

CORPORATE BOND VOLUME: JAPAN



Source: Dealogic

HISTORICAL DEVELOPMENTS: JAPAN

1996	Brokers were allowed to operate in Japan for the first time.
1997	Nissan Mutual Life was ordered to suspend operations by the Ministry of Finance (then responsible for supervision) and the LIAJ was appointed as administrator.
1998	The Financial Supervisory (now Services) Agency was set up.
1999	Toho Mutual was ordered to cease operations and its business was transferred to GE Edison Life.
2000	Following the Asian economic crisis, market restructuring saw several life insurers collapse, mainly to re-emerge under foreign ownership.
2001	Defined contribution (DC) plans were allowed in Japan for the first time. Bancassurance was allowed for the first time.
2002	Variable annuities and DC pension plans were launched. Tokyo Mutual was the seventh Japanese life insurer to become insolvent since 1999.
2003	The first major pan-financial groups were established.
2004	Meiji Yasuda Life Insurance Company was created by a merger of Japan's two oldest life companies. Within a year it ran into regulatory problems leading to the resignation of the company's president, but the company survived.
2006	The Insurance Business Law (IBL) amendment regulating the co-operative insurers (kyosai) was passed with a two-year transitional period. The Financial Instruments and Exchange Law (FIEL) was passed. This regulated sales of life insurance and other financial products.
2007	The privatization of Japan Post, which includes the largest life insurance organization in the world, began. It operated as a private company from October. The full privatization was expected to take until 2017 to complete.

HISTORICAL DEVELOPMENTS: JAPAN (CONT.)

2008	The Financial Instruments and Exchange Law caused problems by making the sales process onerous. In March the FSA attempted to clarify the situation. The new Insurance Law (also known as Insurance Contract Law - ICL) was passed in May and became effective on 1 April 2010. This was the first major revision of what had previously been included in the Commercial Code and affected all insurance apart from marine insurance. The first internet-based company, Lifenet, commenced business. AIG announced that three of its Japanese units, Alico Japan, AIG Star and AIG Edison were to be sold.
2009	Hartford Life Insurance K K ceased acceptance of new business.
2010	The Social Insurance Agency was replaced by the Japan Pension Service in fulfilment of a government election promise. In April two major non-life insurance groups, MS&AD and NKSJ, came into existence. Both groups announced that life insurance subsidiaries would be merged into the groupings. Dai-ichi Life became the first of the major mutual life insurance companies to demutualise. The Financial Instruments and Exchange Law and the IBL were amended on 18 May 2010 to require insurance groups to comply with solvency requirements on a consolidated basis.
2011	On Friday 11 March 2011 a devastating earthquake and tsunami hit the north-eastern coast of Japan causing over 15,800 deaths.
2012	The basis for privatisation of Japan Post Holdings was changed to give the government more flexibility in the sale. Investment regulations were abolished.
2013	The standard assumed interest rate was reduced for the first time in 12 years (from 1.5% to 1.0%) but the basis was to be amended from 2015 to allow for revised investment portfolios.
2014	The new Nippon Individual Savings Accounts (NISAs) were launched. The proposed increase in consumption tax from 5% to 8% was implemented. A revised Comprehensive Guide to the Supervision of Insurance Companies was published by the FSA in July 2014 with a new section thought to be the start of the introduction of Enterprise Risk Management (ERM) and Own Risk Solvency Assessment (ORSA).

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HISTORICAL DEVELOPMENTS: JAPAN (CONT.)

2015	The FSA amended the Comprehensive Guidelines for Supervision of Insurance Companies and Enforcement Orders of the Insurance Business Law on 18 February 2015 to include insurance "shops" and other agencies in the same supervisory requirements as brokers and insurance company field agents.
2016	Negative interest rates were applied to bank overnight deposits and the yield on the 10-year benchmark Japan government bond became negative during the first half of the year. Interest rates subsequently became positive again, but still at very low levels and only temporarily. By 2019, yields on all government bonds with terms of 10 years or less were negative. On 14 and 16 April two major earthquakes, hit the Kumamoto region of the south-western island of Kyushu. By July at least 75 people had been reported killed and around 3,000 injured with another 44,000 people displaced.
2017	Government focuses on work-life balance with various pieces of legislation being considered. The most likely to be affected are non-standard workers and females.
2018	Earthquakes and other natural disasters saw the deaths of around 350 people. Employee pension funds (EPFs) were almost all terminated.
2019	Sales of corporate-owned life insurance were suspended. Gift and inheritance taxes were set to change from 2020 to encourage asset transfer from older to younger generations.

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NOTABLE REGULATORY DEVELOPMENTS

Changing regulations and tax regimes have caused insurers to be nimble

Key developments

- **The *Life Insurance Reform Act* (LVRG)** was published in August, 2014. The intention of the LVRG is to ensure German life realize **sufficient levels of capital** to be able to permanently provide the guaranteed contractual benefits for the insured event, despite persistently low interest rate levels. Under the LVRG and associated regulations, the maximum guaranteed interest rate on life insurance products **reduced** from 1.75% to 1.25% per year effective in January 2015.
- The *Act to Modernise Financial Supervision of Insurance Undertakings* **(GMFV)** was published in the *Federal Law Gazette* in April, 2015, **transposing Solvency II into domestic law**.
- On July 6, 2016, the European Insurance and Occupational Pensions Authority (EIOPA) published its final advice on the introduction of a **pan-European Personal Pension Product (PEPP).**
- In May 2016, BaFin, the German financial regulatory body, published **new guidelines for the selection and appointment of trustees** of the guaranteed funds of insurance companies and pension funds.
- In May 2016, the Finance Ministry of Germany announced plans to **limit the technical interest rate applicable on guaranteed life policies** from 1.25% to 0.9% from January 2017. The government eventually plans to terminate the legal limit on technical rates with a new European risk capital rule by December 2018.
- The new regulatory framework, **Solvency II**, came into force in Germany on January 1, 2016. It is based on three pillars: risk-based quantitative requirements, governance and supervision, and disclosure and transparency.
- In July 2017, the ***Law to Strengthen Occupational Pensions* (Betriebsrentenstaerkungsgesetz - BRStG)** was passed, taking effect in January, 2018. The law contains a package of measures (e.g., tax subsidies and deductions) designed to further spread occupational retirement provision, particularly in small business and low-income earners.
- The new ordinance to change the calculation of the additional interest rate reserve **(Zinszusatzreserve - ZZR)** came into force in October, 2018, enabling life insurers to use the new method from the 2018 accounting period. According to the BaFIN annual report for 2018, taking into account the readjustment at the end of 2018, the ZZR amounted to EUR 65.7bn. The reform of the **ZZR has given life insurers a degree of relief** in terms of the amount of capital required to be set aside.

Source: Axco, BaFin

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OVERVIEW OF HISTORICAL CLOSED LIFE DEALS CONDUCTED

The volume of Closed Life deals in the German market has been limited – however, deal flow has increased lately

Historical deal flow in the German market

Date: October 2011
Acquirer: Augur Capital
AUM: €70 MM
 # contracts: ~30 k

Date: August 2013
Acquirer: Viridium
AUM: ~€6 BN
 # contracts: 600k

Date: April 2014
Acquirer: Viridium
AUM: ~€5 BN
 # contracts: 400k

Date: January 2015
Acquirer[1]: Athene LV
AUM: ~€4.1bn (plus €0.4bn of fee earning unit linked liabilities)

Date: November 2015
Acquirer: Canada Life
AUM: ~€1 BN *(estimation – details not disclosed)*
 # contracts: N/A

Date: September 2016
Acquirer: Frankfurter Leben
AUM: €2.8 BN
 # contracts: 322k

Date: February 2017
Acquirer: Frankfurter Leben
AUM: €1.7 BN
 # contracts: 128k

Date: May 2017
Acquirer: Viridium
AUM: ~€1 BN[2] *(estimate)*
 # contracts: 117k

Mannheimer Leben portfolio

Date: April 2019
Acquirer: Viridium Group
AUM: €40 BN
 # contracts: 4.8m

2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019

Whole company transferred

Portfolio only transferred

1. Attempt of acquisition of Delta Lloyd by Nomura in 2012 failed due to a weak economy and problems gaining approval from BaFin.
2. Mannheimer Leben AuM were scaled for decrease in # of contracts; AuM were ~€3bn as of 2002 with a total number of contracts of 344k

Source: Kivi, ABI, ACLI, Oliver Wyman analysis, Cinven

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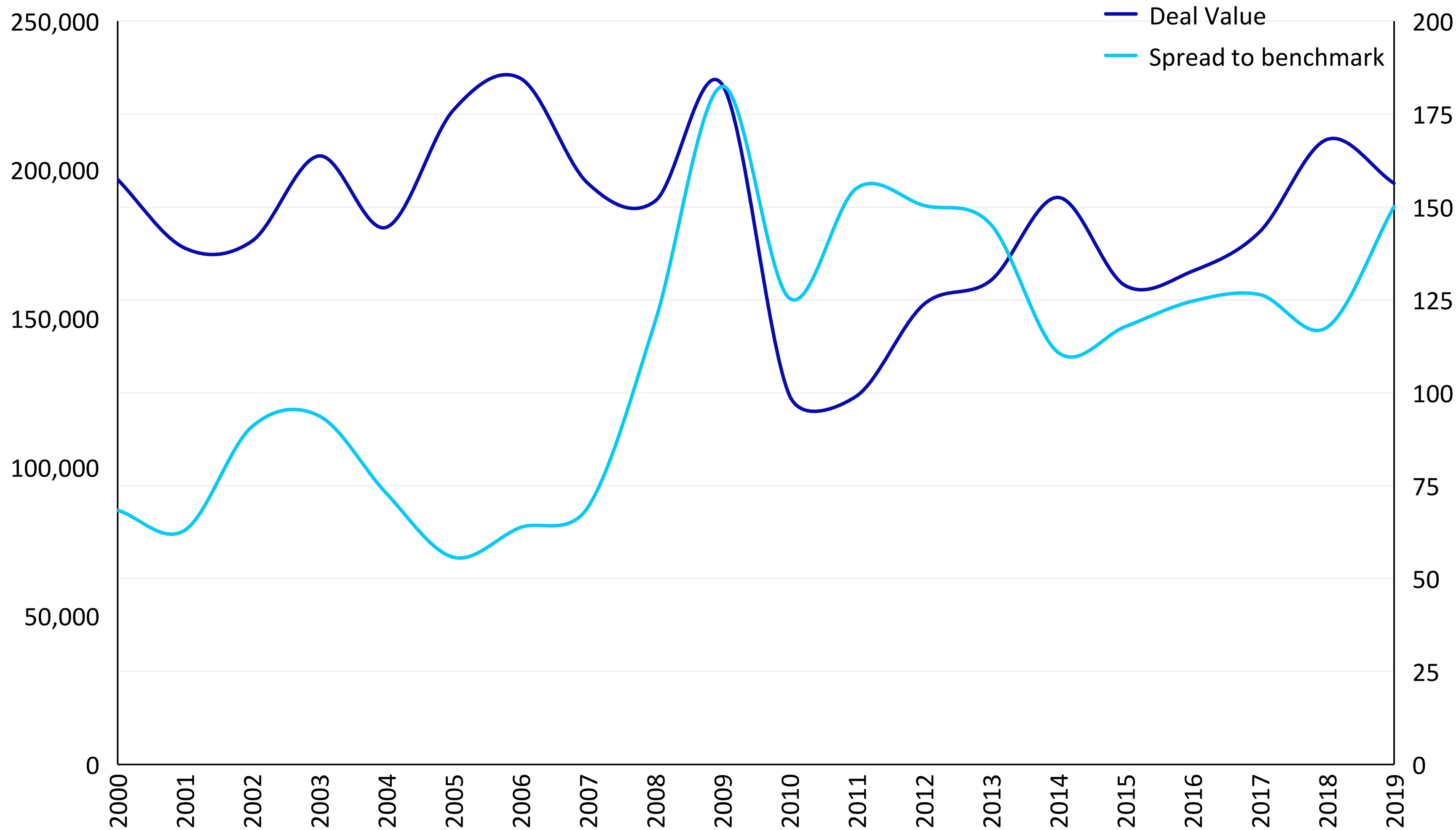
CORPORATE BOND VOLUME: GERMANY

Deal Value
2000 – 2020, USD (mm) (proceeds)

Spread to benchmark
bps



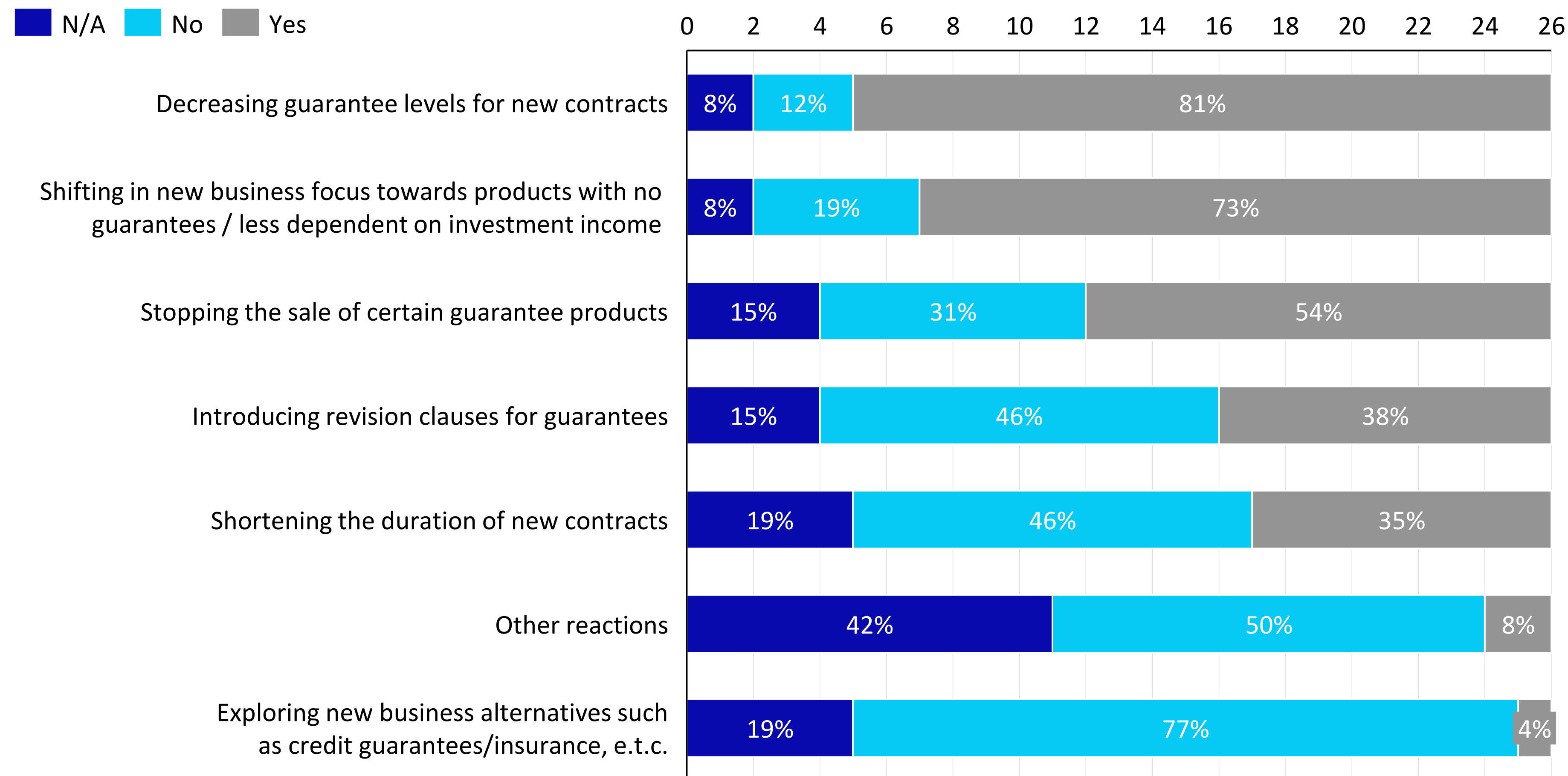
Source: Dealogic

Preliminary

A SURVEY CONDUCTED BY THE EUROPEAN REGULATORY BODY IN 2014 (1/2)

Results of a survey conducted by the European industry regulator shed some light on how some companies have already adjusted their product mix

Product strategy for new business (% of companies answering ‘yes’ or ‘no’ to a question)



Source: EIOPA, CRO Forum – Low Interest Rate Environment

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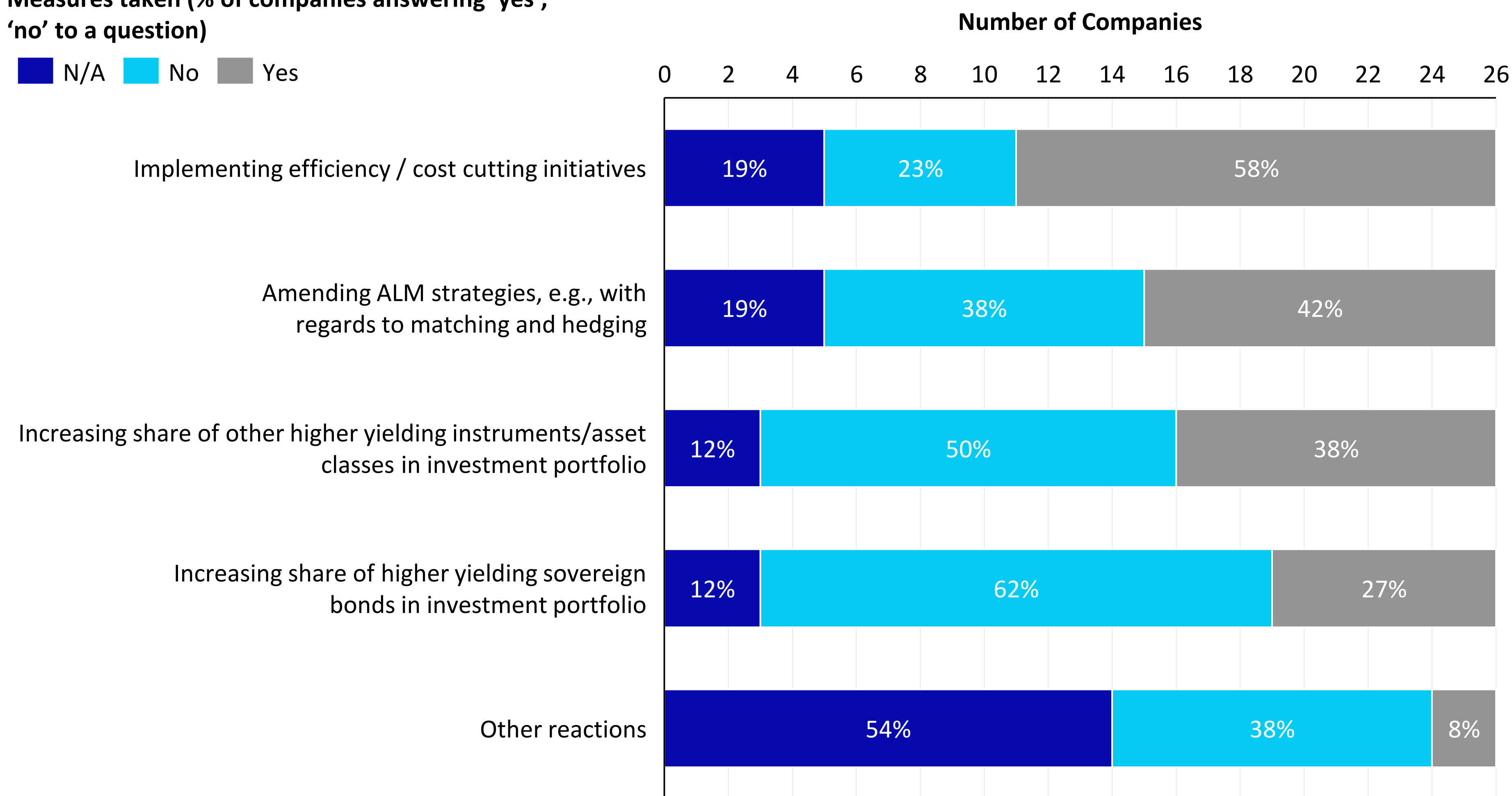
A SURVEY CONDUCTED BY THE EUROPEAN REGULATORY BODY IN 2014 (2/2)

Key measures the insurance companies have already taken to respond to the low interest rate environment

Measures taken (% of companies answering 'yes', 'no' to a question)



Source: EIOPA, CRO Forum – Low Interest Rate Environment

HISTORICAL DEVELOPMENTS: GERMANY

Mid-1990s	East Germany was firmly embedded in the German insurance market. There was a considerable amount of corporate activity. The ERGO group was formed, bringing together all of the insurance interests of Munich Re (Muenchener Rueckversicherungs-Gesellschaft). Generali took over AMB and Volksfuersorge. AXA purchased Colonia/Nordstern, later also incorporating Albingia. The Parion Group of mutuals was formed. Dresdner Bank was purchased by Allianz and there was a co-operation agreement between Munich Re and HVB Bank. Deutscher Herold was purchased by Zurich Financial Services.
2003	Allianz and Munich Re announced that their historic "principles of co-operation" agreement was to be cancelled from the end of the year as their cross-shareholding had dropped below 15% and was therefore obsolete.
2004	Legislation reduced the capital gains tax (CGT) privileges for capital life insurance products for new policies issued after 1 January 2005: high levels of individual life business were completed in the final months of 2004 before the new tax regime took effect.
2005	Under Retirement Income Act of 5 July 2004 the procedures for the Riester pension process were improved to enable individuals to claim their tax relief with less difficulty and allow the insurance providers to offer an improved contract; as a result sales improved in 2005.
2006	Following the increased taxation of certain individual life policies from 1 January 2005 life new business fell dramatically and only regained 2002 levels in 2006. Individual pensions business with a Riester government subsidy and tax advantages saw significant development. A complaint that Riester subsidies are discriminatory was lodged with the European Court of Justice (ECJ).
2007	The Law to Increase Competition in Statutory Health Insurance (GKV-WSG) of 26 March was legislated for implementation in 2008-09 bringing changes to social security health insurance and also PMI.
2008	On 1 January the latest revision of the VVG came into force, providing consumers with important additional rights. Additional benefits and tax subsidies were given for Riester pensions. In August Allianz announced that it was selling Dresdner Bank, which it bought in 2001, to Commerzbank. In the wake of the global banking crisis, and troubles of AIG in the US, insurance and supervisory representatives appeared in the media to reassure insurance consumers about the safety of German insurers.
2009	The Income Tax Act of 8 October (EStG) introduced new rules regarding the definition of a life insurance contract. A minimum sum assured was set in terms of premiums payable plus the taxation rules were changed.

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HISTORICAL DEVELOPMENTS: GERMANY (CONT.)

2010	Further health reform measures, effective from January 2011, included the requirement that, once opted out, an individual could not re-enter the statutory health insurance (SHI) system.
2011	In March the government gazette proclaimed that, with effect from 1 January 2012, the maximum rate that a life insurance contract could guarantee would be reduced from 2.25% to 1.75%. In March the ECJ ruled against discrimination on sexual grounds for any insurance- contract and, in particular, motor, life and private medical insurance (PMI); the deadline for implementation was set at 21 December 2012. In April the first indications from the report on EU Directive 2009/138/EC, the Solvency II directive, the Fifth Quantitative Impact Study (QIS5), were that more German insurers had participated including substantially more small organisations and captives.
2012	QIS6 was carried out.
2014	In 2014 BaFin carried out the "Vollerhebung Leben" market survey into the situation of life insurers own funds. The First Act to Strengthen Long-term Care (PSG I) of 17 December, came into effect 1 January 2015. The Life Insurance Reform Act (LVRG) was published in August 2014. Under the LVRG, and associated regulations, the maximum guaranteed interest rate on life insurance products reduced from 1.75% to 1.25% per year effective 1 January 2015. The act also made other important changes.
2015	The Act to Modernise Financial Supervision of Insurance Undertakings was published in the Federal Law Gazette on 10 April 2015 transposing Solvency II into domestic law (in effect from 1 January 2016). A new version of the Insurance Supervision Act was published.
2016	Solvency II took effect. Changes were made to the legal framework for long-term care.
2017	The maximum guaranteed interest rate for life insurance contracts reduced further from 1.25% to 0.9% per year effective 1 January 2017. Further changes were made to the legal framework for long-term care.
2018	The Law to Strengthen Occupational Pensions (Betriebsrentenstaerkungsgesetz - BRStG) took effect. The Insurance Distribution Directive was transposed into law. An evaluation of the LVRG took place.

QUALIFICATIONS, ASSUMPTIONS AND LIMITING CONDITIONS