LOW-INTEREST RATE TASK FORCE

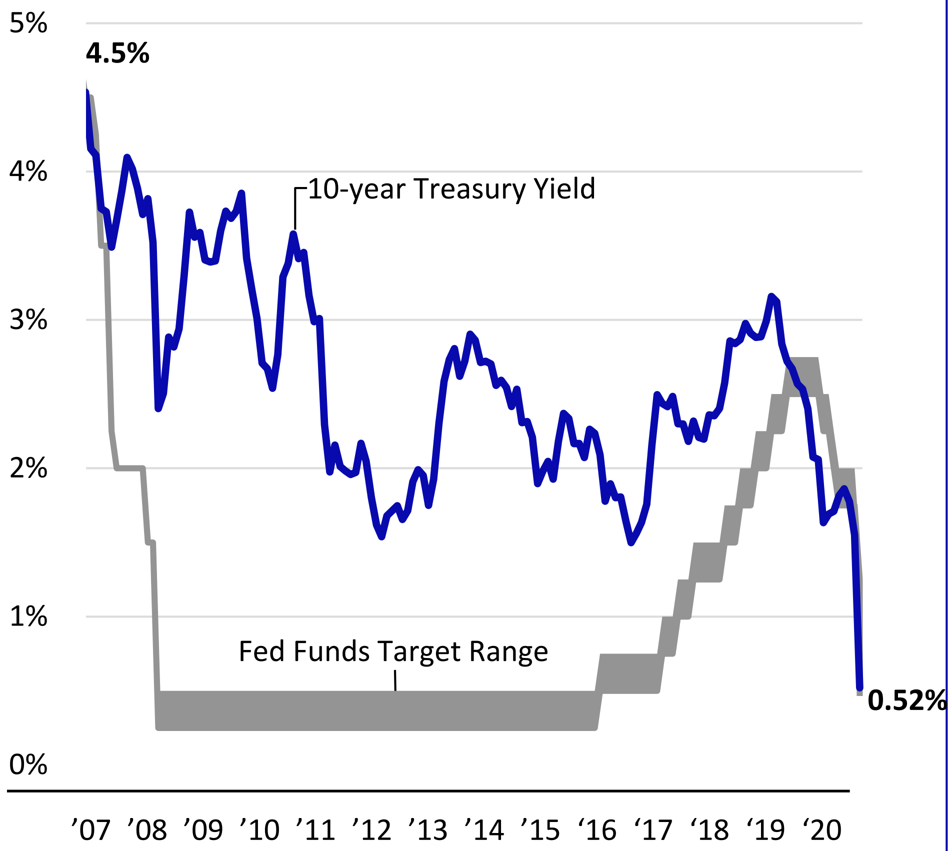
International Market foundations

3/12/2020

CONFIDENTIALITY

THE PROBLEM

Interest rates in the US have fallen by over 350bps since the financial crisis…



Sources: FRED, S&P. Latest rates as of 3/8/20

…and have been falling rapidly in recent weeks in the face of a potential economic downturn

3/3/20

Yield on 10-Year Treasury Dips Below 1% for First Time in Sign of Anxiety

3/5/20

Federal Reserve Cuts Rates by Half Percentage Point to Combat Virus Fear

Central bank lowers federal-funds rate range to 1% to 1.25% in its first between-meeting move since the financial crisis

3/6/20

Corporate Debt Engulfed by Market Turbulence

Is the life insurance industry prepared for a Japanese or European type rate environment?

Japan
#2 global life insurance market

Germany
#8 global life insurance market

- Rates have been below 2% since 1998 and below 1% since 2011
- Current yield of 10-year bond ***-0.152%***

- Rates have been below 2% since 2011
- Current yield of 10-year bond ***-0.712%***

PROJECT OVERVIEW

The Low-Interest Rate Task Force was brought together to determine:

How ready is the industry?

What can be done now to prepare?

What actions can be taken if/when it does happen?

What advocacy efforts can be pursued?

Facilitators:

OLIVER WYMAN

Strategic support

LL Global, Inc.

LIMRA LOMA

Industry group support

ACLI

Advocacy support

30+ life insurers represented in total

WORKING GROUPS

1 This group

INT'L MARKET FOUNDATIONS

What are the US-relevant learnings from int'l markets (e.g., Japan, Germany)?

2

READINESS

How should insurers ensure that they are prepared for a low-rate scenario?

3

CONSUMERS & DISTRIBUTION

How do insurers maintain a strong value proposition for consumers & distribution?

4

REGULATORS & OTHER ENTITIES

What are challenges / impacts to interactions with regulators, rating agencies, etc.?

The international market foundations working group will extract key learnings from other countries who have faced low interest rate environments, and inform the other working groups

KEY QUESTIONS FOR INTERNATIONAL MARKET FOUNDATIONS RESEARCH

Focus area	Key research questions
1 **Market environment**	• What **factors** have led to lower interest rates? (e.g. the economy, policy changes, broader macro-economic picture) • What has been the **nature of the interest rate changes**? (e.g. length, severity, yield curve) • What **other drivers** have affected the life insurance industry? (e.g. changing demographics)
Focus of this discussion **2** **Industry impact and response**	• To what extent have lower interest rates put **pressure on profitability & solvency**? • **How have insurers responded** to a low rate environment? – Changes in product mix / design / pricing – ALM / investment strategies – Distribution – Expense management • How have lower rates impacted **sales**? (i.e. customer value proposition) • What **relief** (if any) **have regulators provided** to insurers? • Who have been the **winners and losers** in a low interest rate environment?
3 **Lessons learned from winners & losers**	• What can be learned from those who **have failed**? • What can be learned from those who **have thrived**?

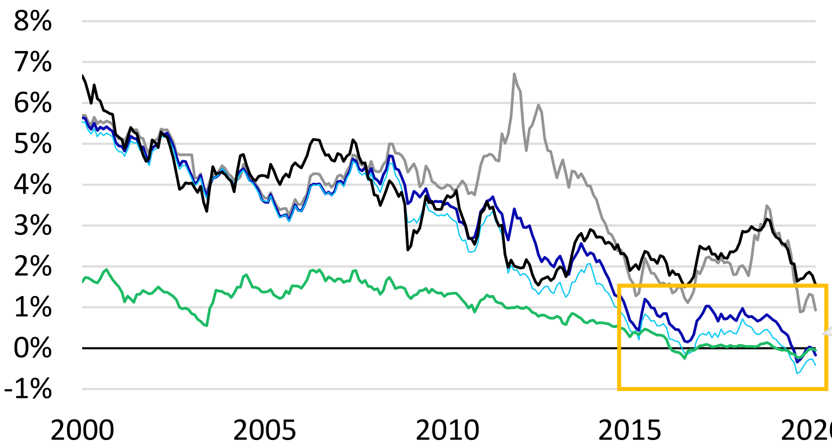
Preliminary

HISTORY OF LOW INTEREST RATES IN LARGE LIFE INSURANCE MARKETS

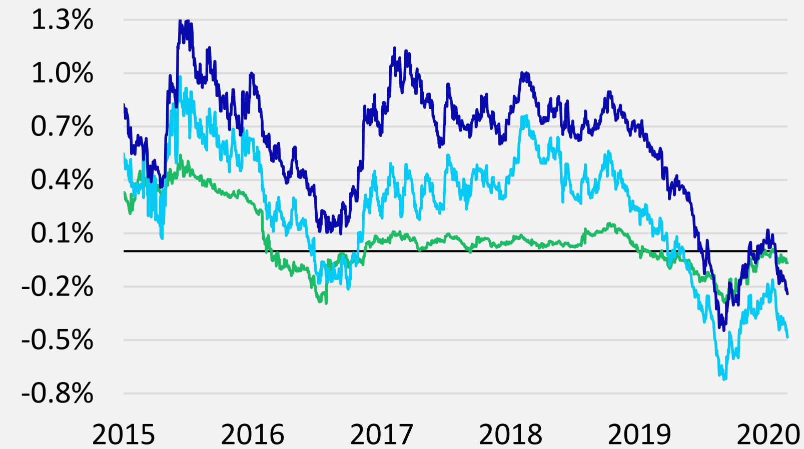
Government bond interest rates have been going down for over two decades, with Japan, Germany, and France experiencing near zero / negative yields on 10-year government bonds in the last 5 years

Interest rate comparison by country

10 year government bond

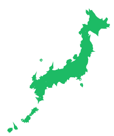


2015-2020 zero, negative rate environment



United States
#1 global life insurance market

- Rates have been below 3% since 2011
- More recently, rates have been below 1%



Japan
#2 global life insurance market

- Rates have been below 2% since 1998 and below 1% since 2011
- The 10 year rate dipped negative in 2016
- Rates have been at or below zero been since 2019

Germany
#8 global life insurance market

- Rates have been below 2% since 2011
- The 10 year rate dipped negative in 2016
- Rates have been at or below zero been since 2019

France
#5 global life insurance market

- Rates have been below 2% since 2011
- Rates crossed the zero mark in April 2019

Italy
#6 global life insurance market

- Rates dropped dramatically from over 6% in 2012 to less than 2% in 2015
- Rates have been highly volatile over the last 5 years

Core focus of international research

Additional markets for discussion

Source: III, Rates as of February 2020

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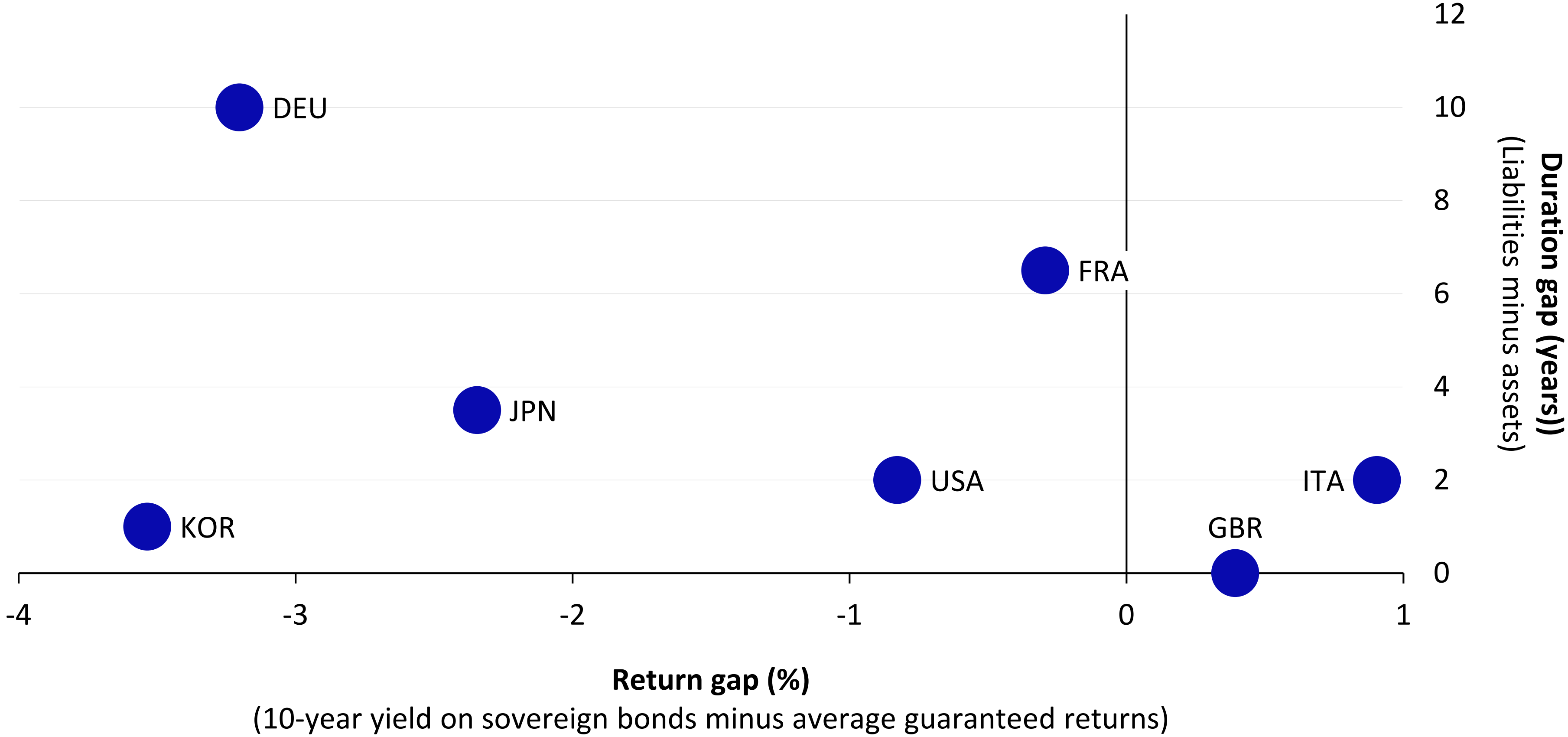
INSURANCE MARKETS CHALLENGED BY LOW INTEREST RATES

Life insurers guaranteed return spreads and duration mismatches
2019



Source: IMG (Based on Data gathered by Moody's)

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01

JAPAN

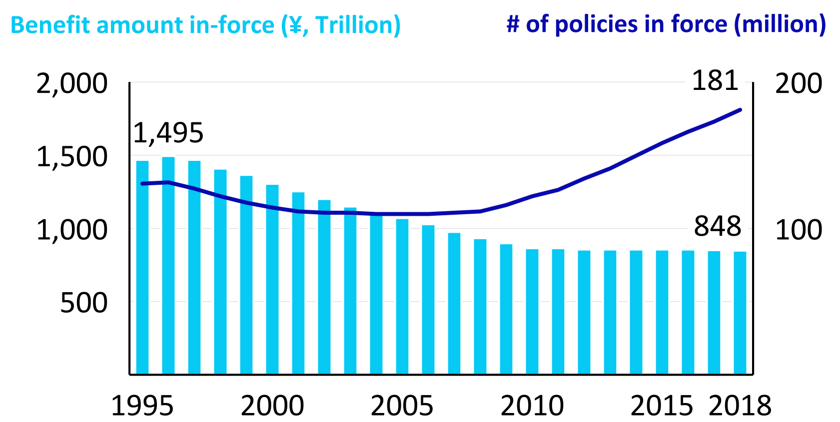
MARKET ENVIRONMENT: OVERVIEW

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

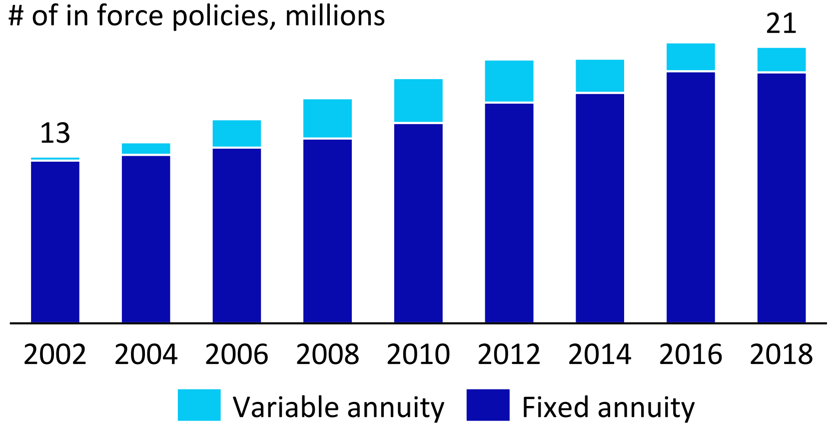
Macroeconomic changes	• The asset bubble burst of the 90's gave way to a long period of low economic growth and disinflation/deflation
Challenged investment returns	• Lower interest rates and volatile stock market returns caused consumers to lose confidence in financial products and put pressure on life 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

Japanese market for individual life insurance



Japanese market for individual annuities

# of in force policies, millions



Source: Axco, Oxford Economics

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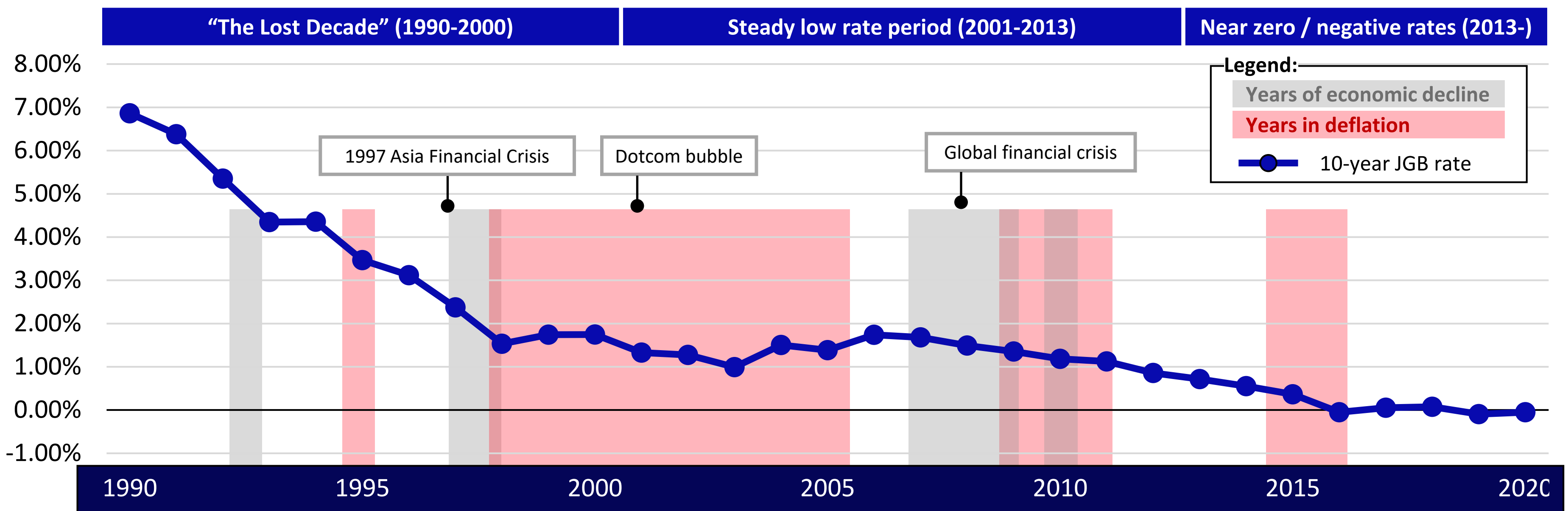
MARKET ENVIRONMENT: MACRO ECONOMIC CHANGES

Since the Asia economic crisis in the 1990s, Japan has maintained an unconventional monetary policy 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%

Source: Oxford Economics, SwissRe

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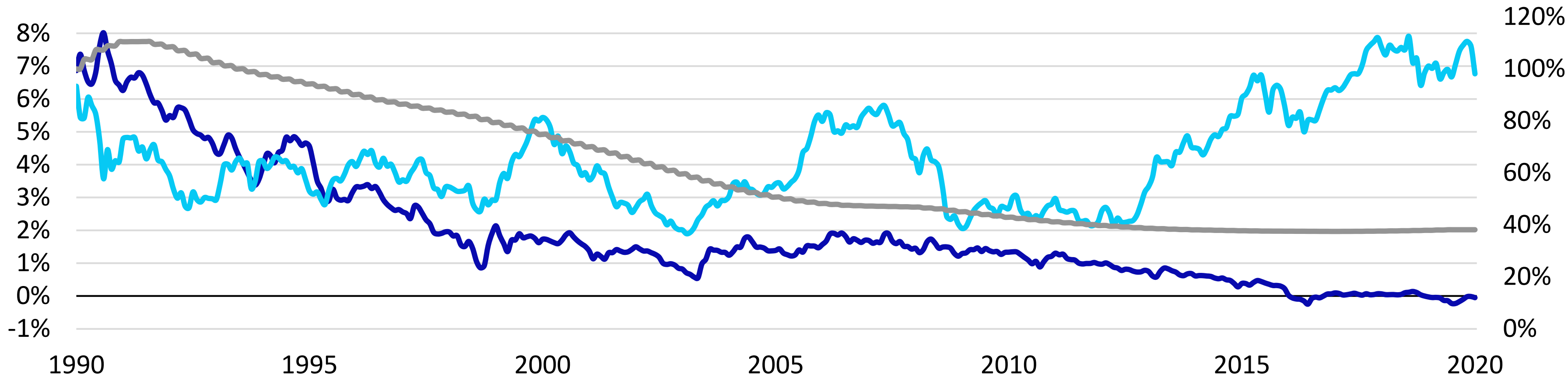
MARKET ENVIRONMENT: CHALLENGED RETURNS

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

Japanese asset performance
1990-2020

10 year bond yield **Market return[1] and real estate prices[2] (indexed to 1990)**



"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 into the new millennium was marked by a **continued 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
Source: DataStream total market return index, S&P Market Intelligence, GenRe

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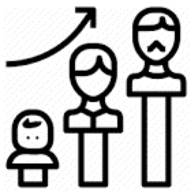
MARKET ENVIRONMENT: CHANGING CONSUMER DEMOGRAPHICS

A declining birthrate, aging population, and lower marriage rates have impacted the demand for life insurance products

Key factors in changing consumer demographics

Declining birthrate

- Fertility rate of 1.43 is among lowest in the world and continues trend of births below replacement rate since 1970
- The population is falling by ~400,000 a year, and population 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

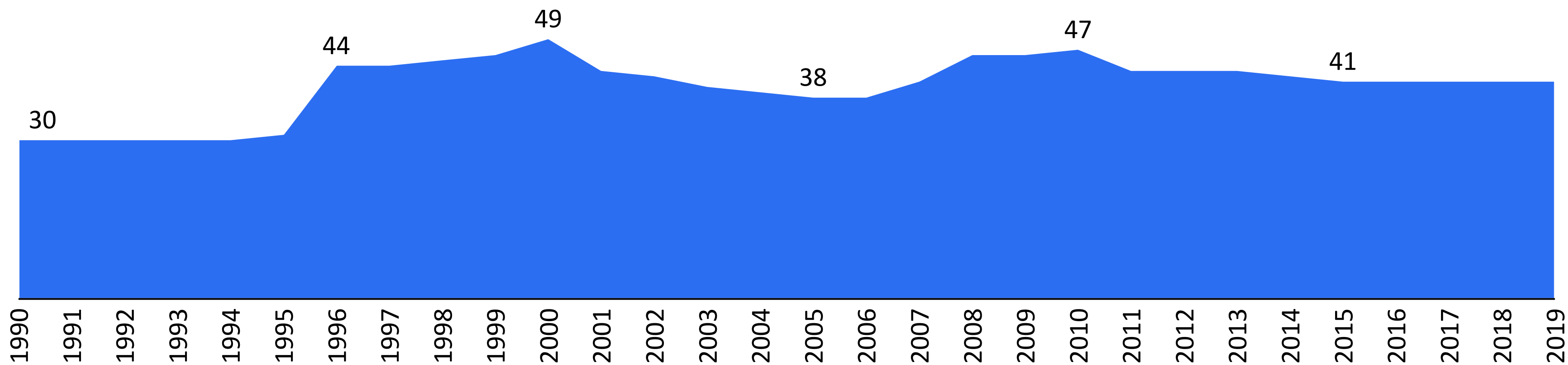
- Marriage rate for ages 25-29 has decreased from 54% to 28% for men and from 78% to 40% for women over past 50 years; older brackets exhibit similar trend
- Leads to more families with fewer children, which decreases need for life insurance but increases need for retirement savings when elderly cannot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

Source: Axco, LAIJ, Aberdeen investments

MARKET ENVIRONMENT: COMPETITIVE LANDSCAPE

The number of life insurance companies increased as a result of relaxed economic reform in the mid 90’s and has been stable since 2000

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, **Banassurance 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. Source: GenRe, Axco, FSA

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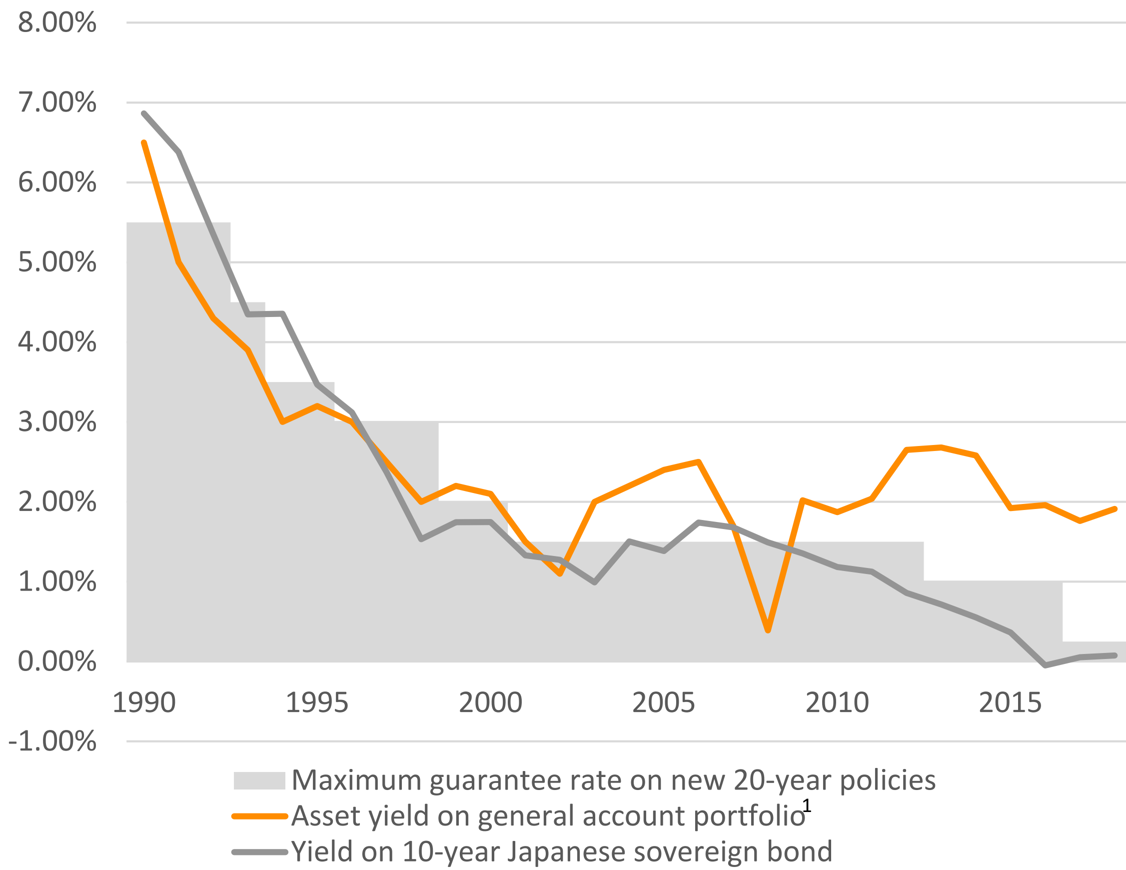
INDUSTRY IMPACT: NEGATIVE SPREADS

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



1. Using book value framework. Source: IMF, Oxford Economics, Dealogic, Datastream, Dai-ichi

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 a **negative spreads,** where investment yields are lower than average guaranteed rate on many in-force policies
- Guaranteed rates on new policies have been steadily declining, and are **now below average investment yields**
- 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

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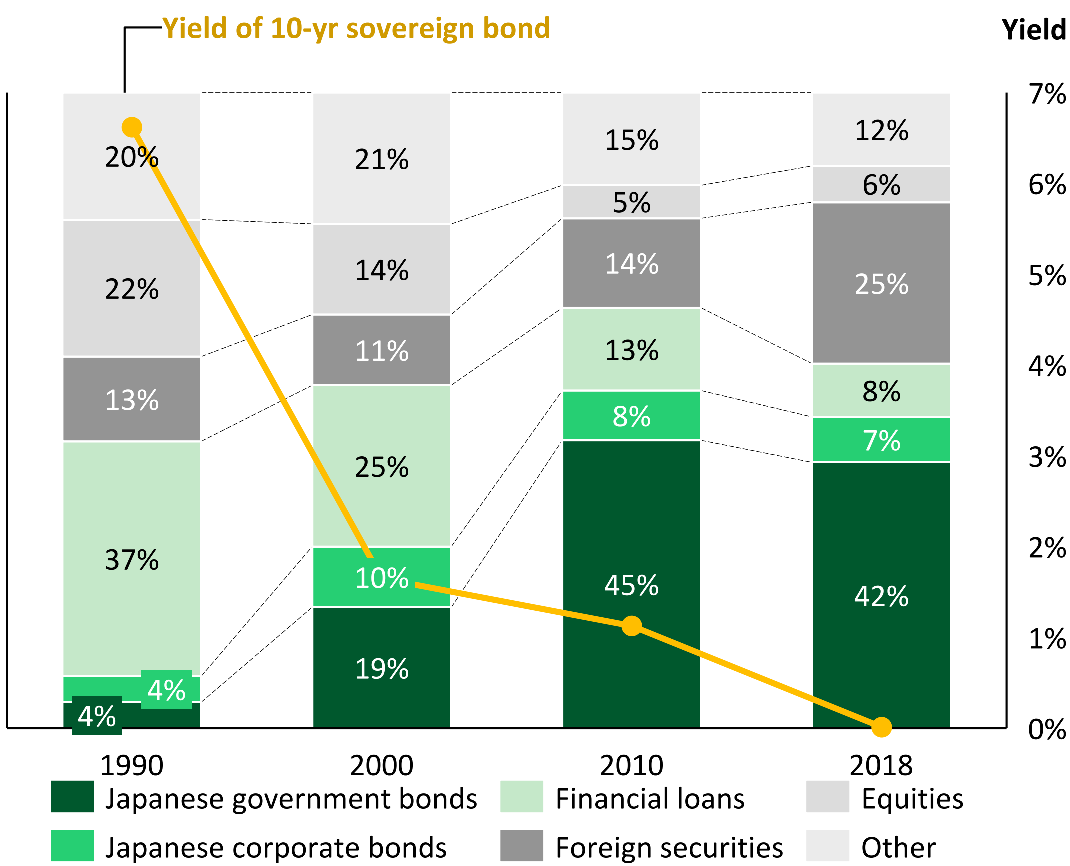
INDUSTRY RESPONSES: INVESTMENT MIX CHANGES

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.

Source: 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., United States, Australia and Indonesia) 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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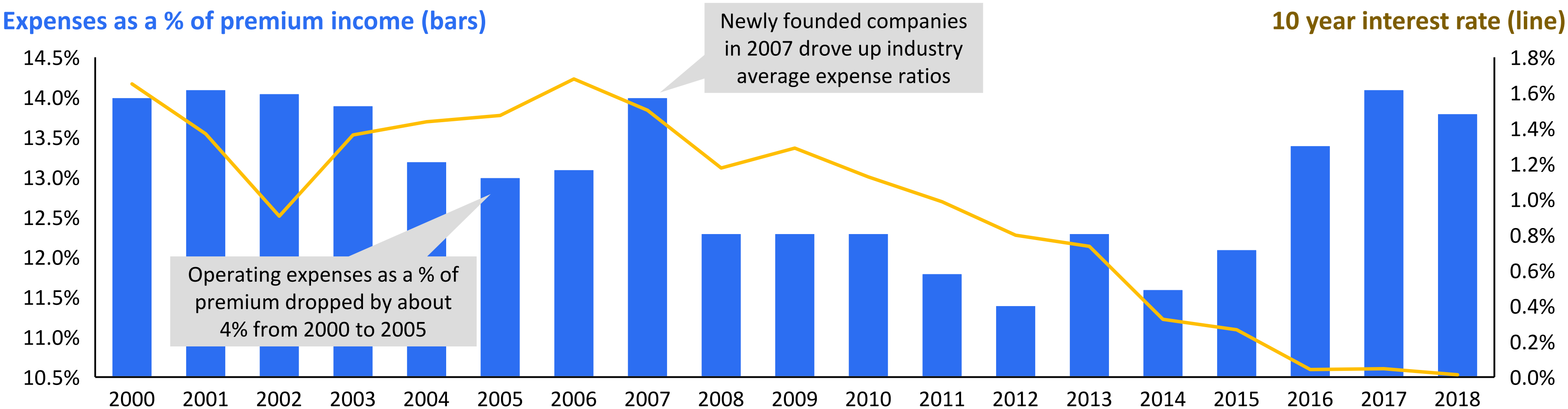
INDUSTRY RESPONSES : EXPENSE MANAGEMENT

Expense changes in reaction to interest rate declines
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)

Souce: LIAJ, GenRe

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INDUSTRY RESPONSES : CHANGES TO INDUSTRY STRUCTURE

Notable M&A activity

1990-2019

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

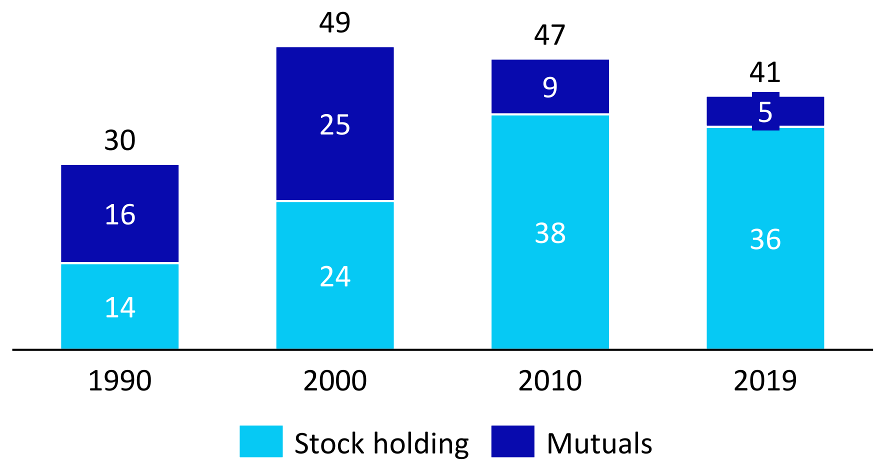
Responses by insurers

- M&A activity has been busy over the last 30 years in response 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 to new markets have been the main deal drivers

Sources: Press releases, LIAJ, GenRe

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)

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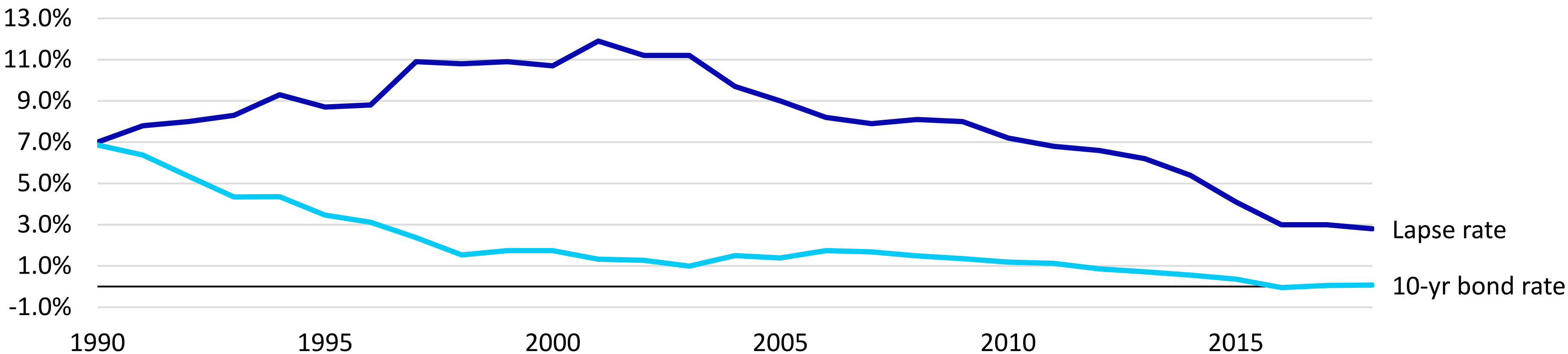
INDUSTRY RESPONSES: IMPROVING RETENTION

Lapse rates of individual life vs 10-yr bond rate

1990 – 2018



Responses by insurers

- In the midst of economic turmoil in the 90's, life insurance companies experienced an **elevated rate of policy lapses**
  - Terminations resulted in short term profit due to surrender value penalties but eroded the customer base, **reducing earnings in the medium-term**
  - Early lapses also **impacted mortality and morbidity profits** due to anti-selective lapsing and impacted expense contributions to the profit
- In response, insurers have significantly **increased the number of policy maintenance specialists** to reduce terminations

DAI-ICHI LIFE	Expanded policy maintenance team from 660 members in 2002 to over 4,000 by 2005
SUMITOMO LIFE	Hired 1,000 policy maintenance specialists during 2002
ASAHI LIFE	Doubled its policy maintenance personnel to 900 in the year 2003

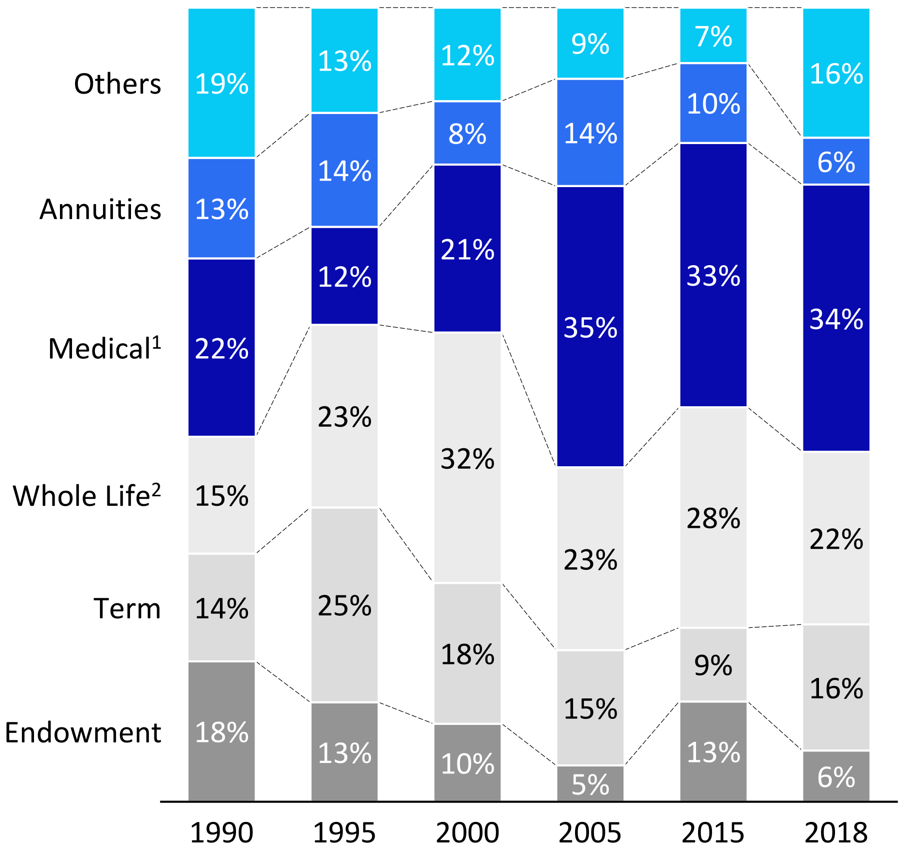
Source: GenRe, Oxford Economics, LIAJ

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

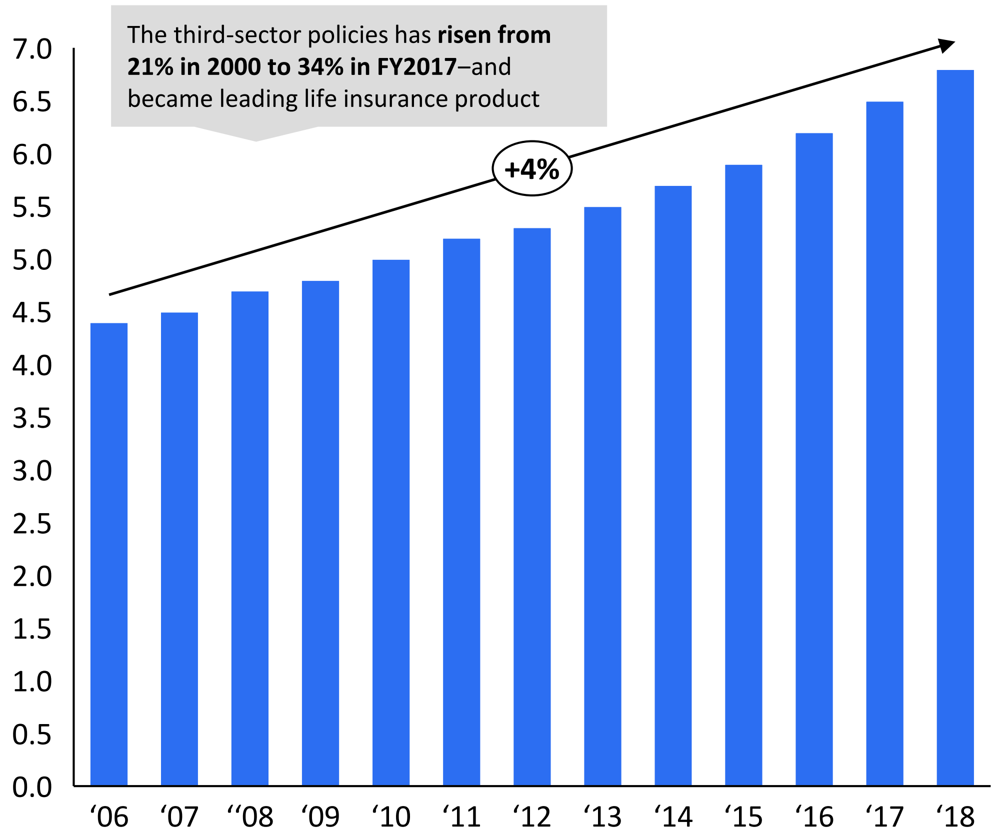
Source: Axco, Oxford Economics

Draft

INDUSTRY RESPONSES: SHIFT TO HIGHER MARGIN MEDICAL INSURANCE

Growth of Third Sector

Annualized premiums[1], trillion JPY



Responses by insurers

- **Changing demographics** in Japan has been accompanied by a rise in needs 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, 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)

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.

Souces: LIAJ, GenRe, Moody’s, Expert Interviews

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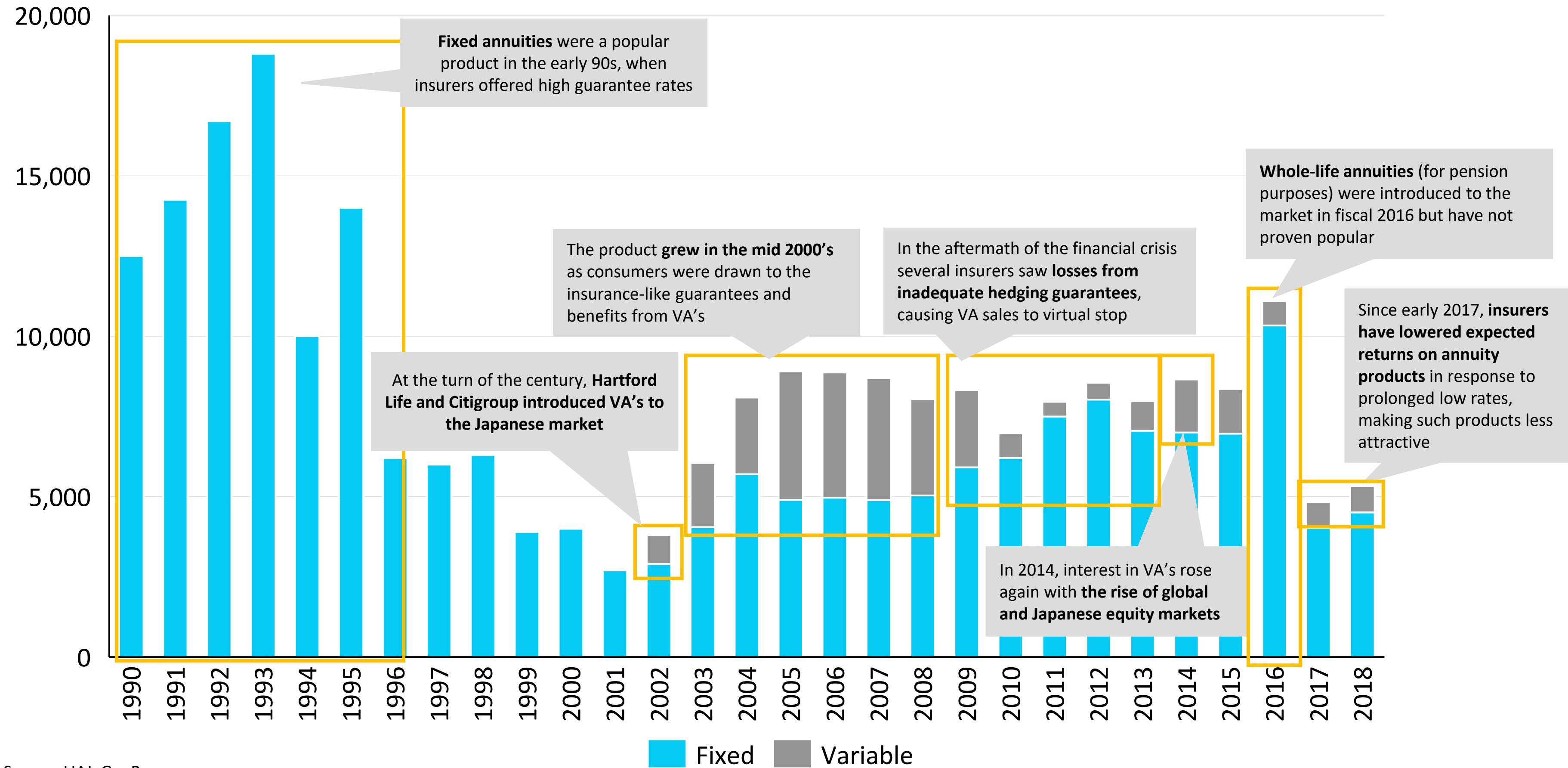
INDUSTRY RESPONSES: SWITCH TO UNIT LINKED SAVINGS PRODUCTS

One major trend, which the Japanese insurance market has seen, was the transfer of investment risks to policyholders

New business premium for fixed vs. variable annuities

1990-2018, ¥B



Source: LIAJ, GenRe

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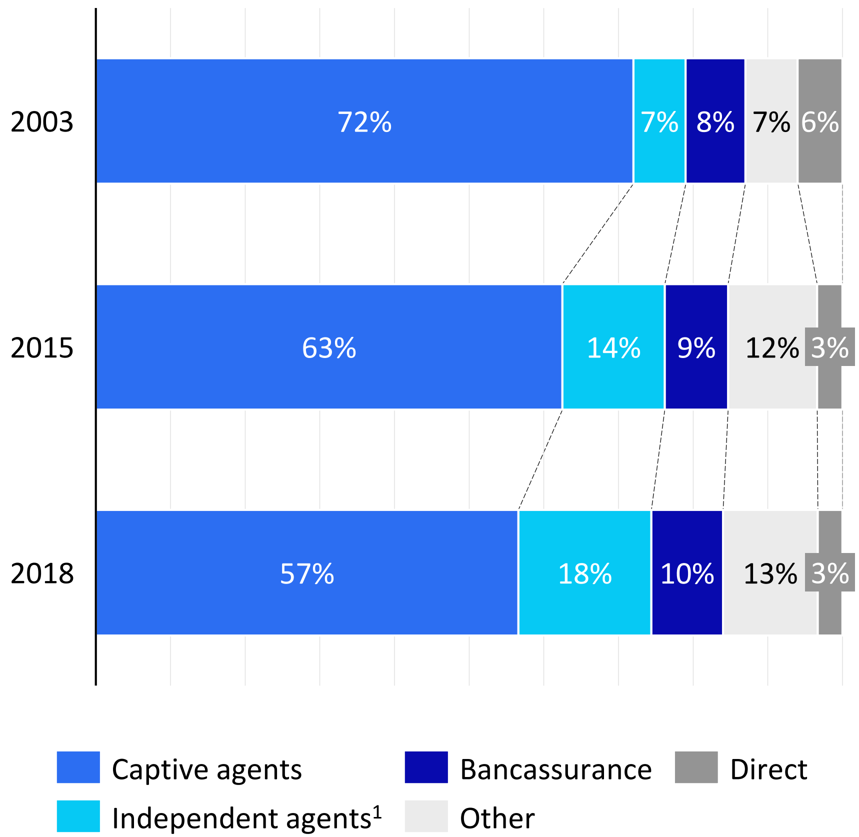
INDUSTRY RESPONSES : DISTRIBUTION TRENDS

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

Source: 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, bank assurance, 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

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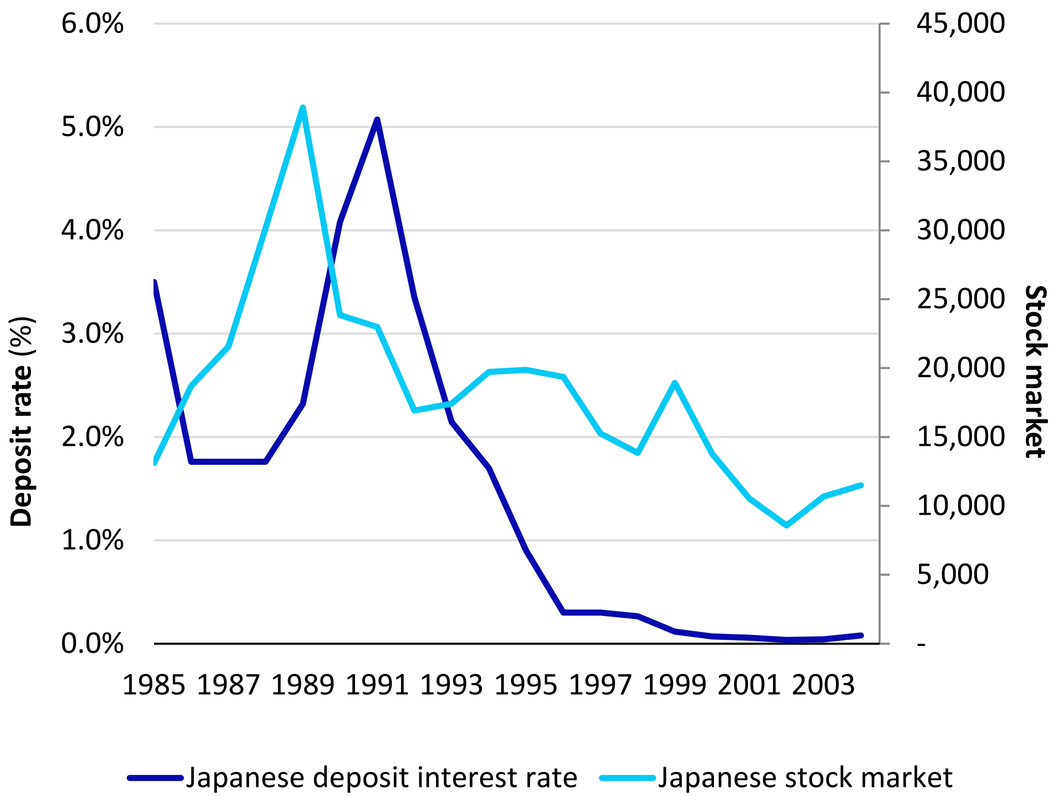
WINNERS AND LOSERS: THE LOST DECADE (1990-2004)

Long periods of low interest rates and declining equity prices sparked a wave of insurer failures

Japanese market conditions

1985 - 2004



Source: World Bank, Nikkei Index, Towers Perrin

Comments

- The late 1980s in Japan were characterized by an asset price bubble in which real estate and stock prices were inflated to a great extent
- Life insurance companies in Japan at that time issued long-term life insurance and annuity policies with guaranteed fixed interest rates of 4%-6% to compete with the high-interest rates of 10-year insurance policies offered by the state-owned Postal Insurance
- The asset portfolio yields of life insurance companies dropped continuously from about 6.5% in the year 1990 to about 2% in the year 2000.3 A so-called "negative spread" developed, which was about 2% around the year 2000, resulting from a portfolio interest rate guarantee in the order of 4%.
- Protracted periods of historically low interest rates and capital markets stagnation sparked seven life insurance failures in the 5 year period from 1997-2001, representing ~10% of the Japanese life insurance market
- The timing of the failures reflect the common market exposure faced by these companies, which had a similar impact on the solvency of each, rather than interconnection between them

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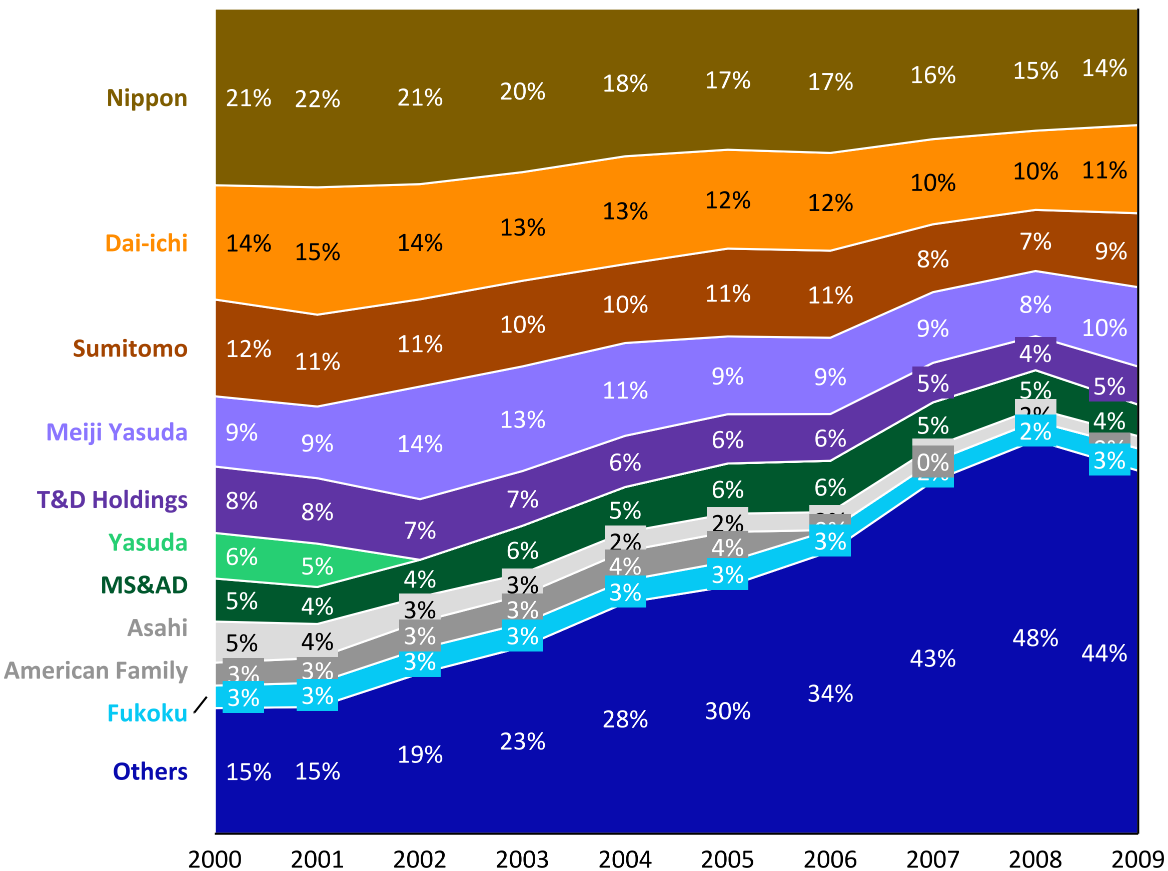
WINNERS AND LOSERS: STEADY LOW RATE PERIOD

Japan's top life insurers lost market share as new players entered the market

Market share by year



Market share changes

Top 10 life insurers[1]

Insurers	2000	2009	pp change
Nippon	**21%**	**14%**	**-7pp**
Dai-ichi	14%	11%	-3pp
Sumitomo	12%	9%	-3pp
Meiji Yasuda	9%	10%	-1pp
T&D Holdings	8%	5%	-3pp
Yasuda	6%	0%	-6pp
MS&AD	5%	4%	-1pp
Asahi	5%	1%	-4pp
American Family	3%	0%	-3pp
Fukoku	3%	3%	0pp

1. Based on 2000 market share. Source: LIAJ

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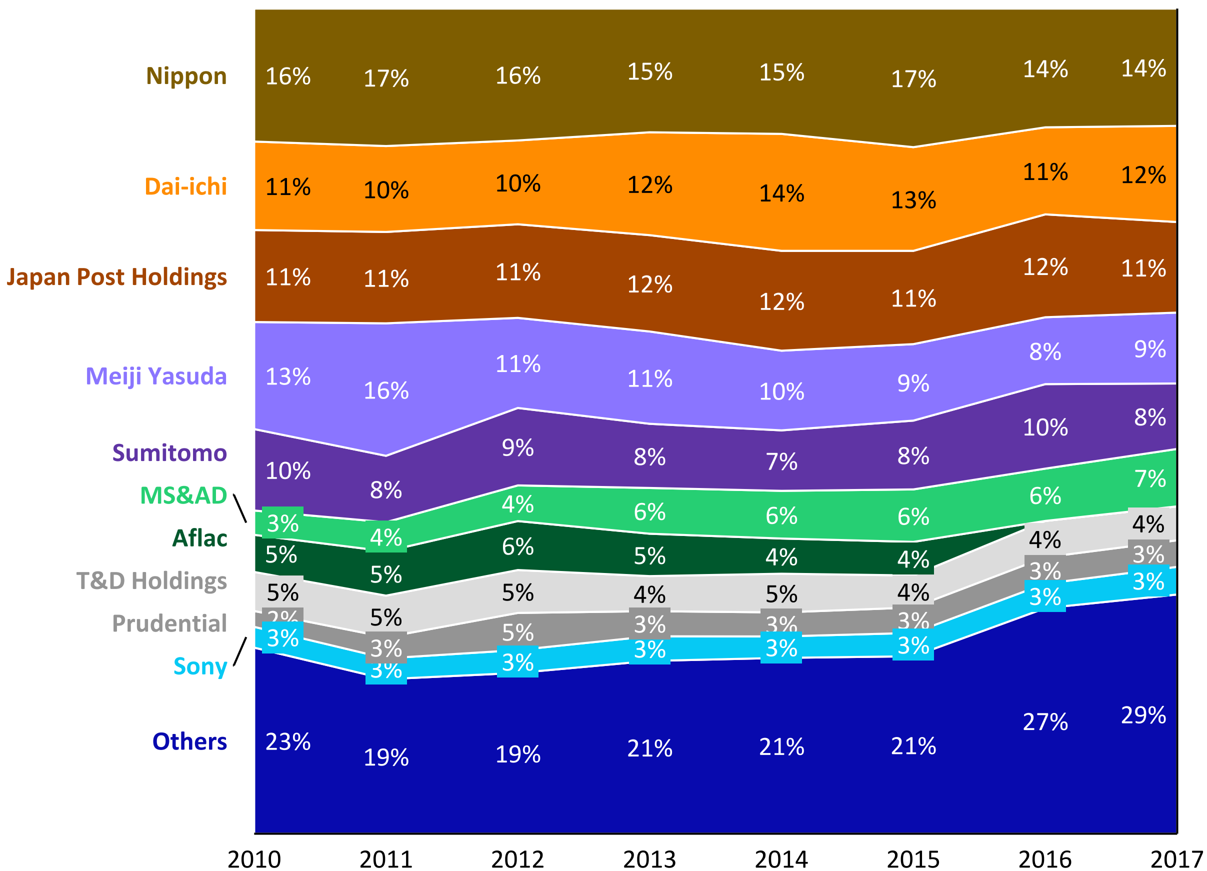
WINNERS AND LOSERS: ULTRA LOW RATE PERIOD

Market shares have been relatively steady in the 2000's with MS&AD as the only major player to gain market share

Market share by year



Market share changes

Top 10 life insurers[1]

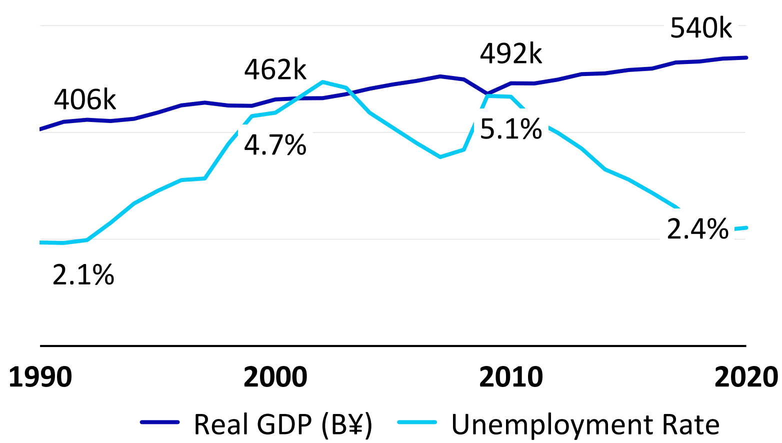
Insurers	2013	2017	pp change
Nippon	16%	14%	-2pp
Dai-ichi	11%	12%	+1pp
Japan Post Holdings	11%	11%	0pp
Meiji Yasuda	**13%**	**9%**	**-4pp**
Sumitomo	10%	8%	-2pp
MS&AD	**3%**	**7%**	**+4pp**
Aflac	5%	**0%**	**-5pp**
T&D Holdings	5%	4%	-1pp
Prudential	2%	3%	-1pp
Sony	3%	3%	0pp

1. Based on 2010 market share. Source: LIAJ

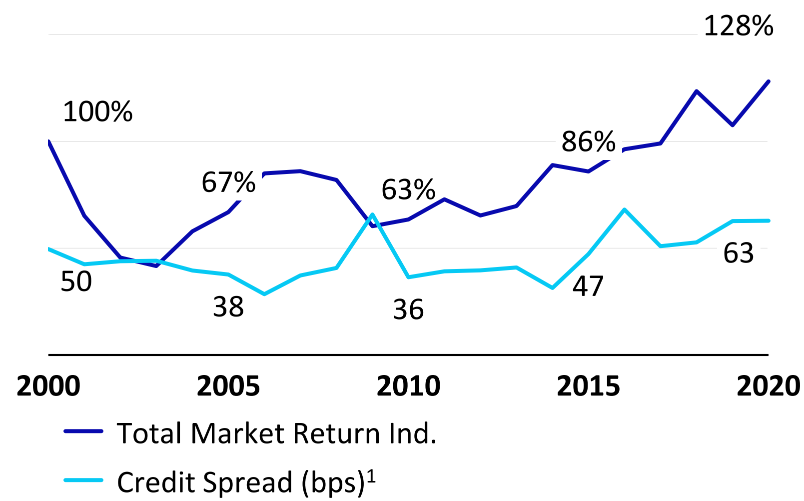
Preliminary

MACRO ECONOMIC PICTURE

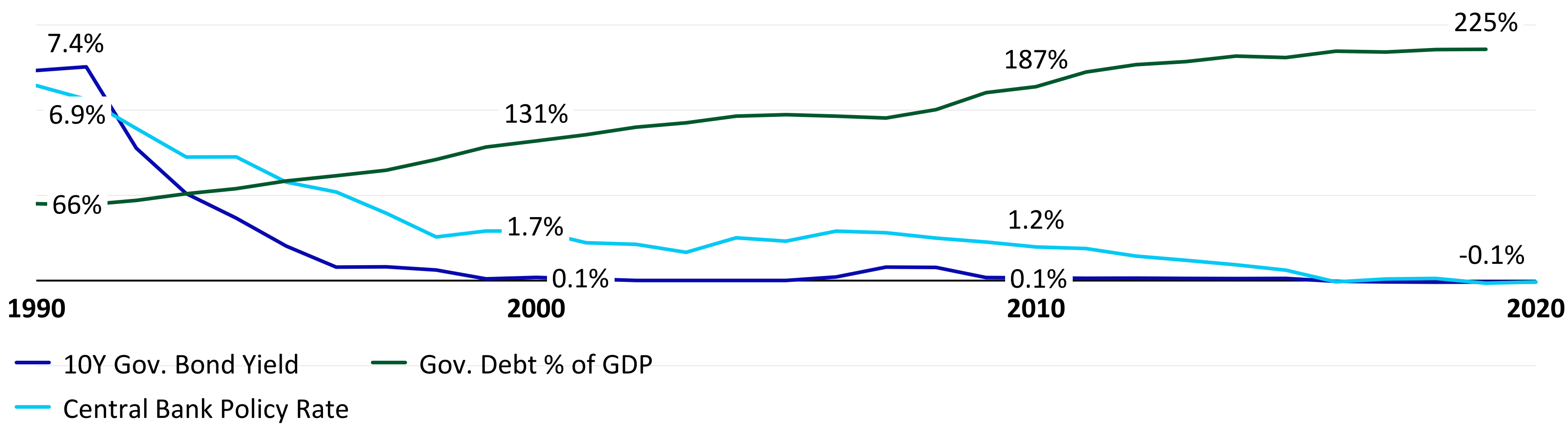
Employment and GDP Indicators



Market Return Indicators



Bond Indicators



1. Average difference in yield of all corporate bonds compared to government bond with equivalent duration. Sources: S&P, Oxford

Preliminary

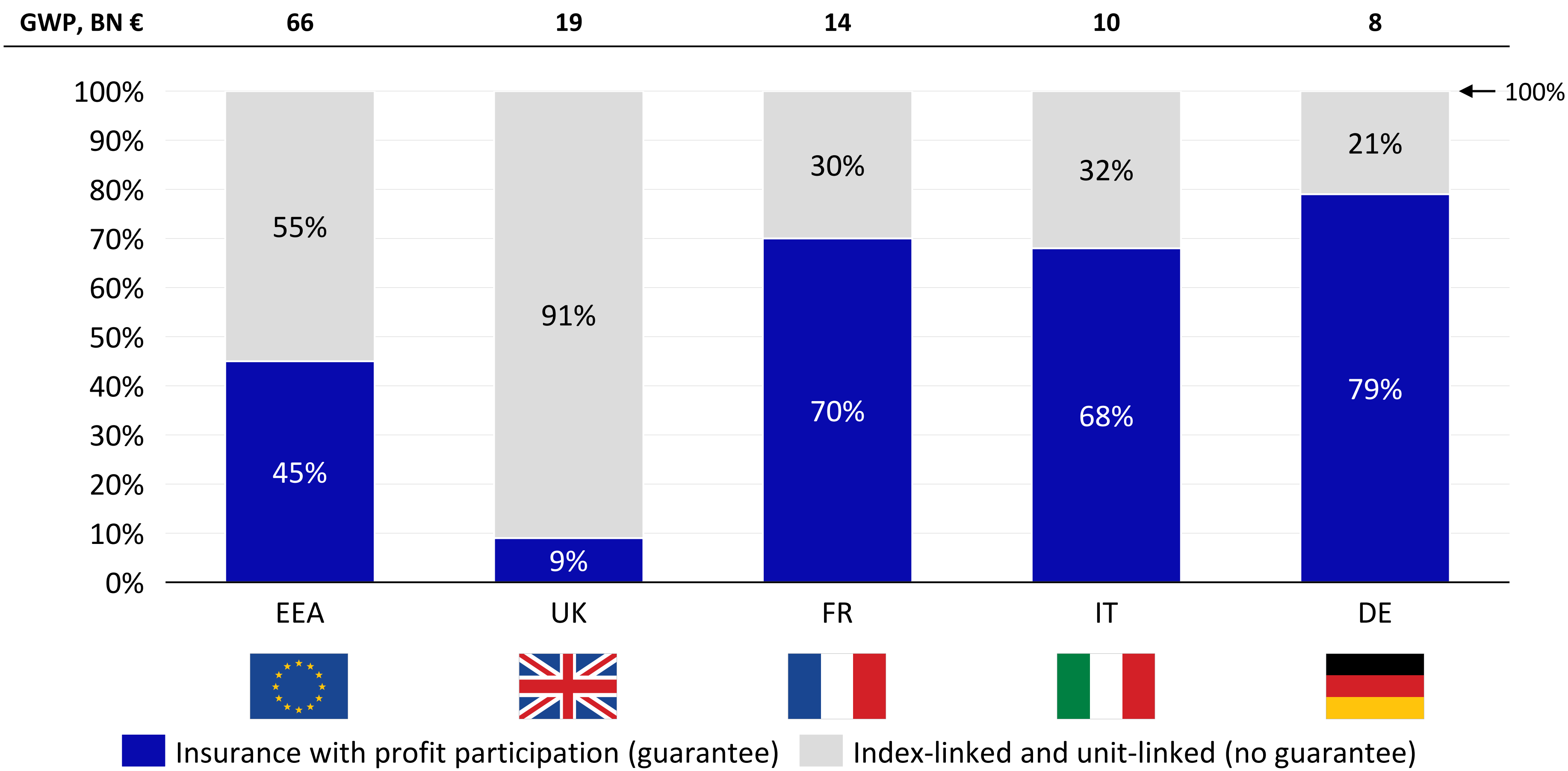
02

EUROPE

Preliminary

INSURANCE GUARANTEES VS UNIT LINKED

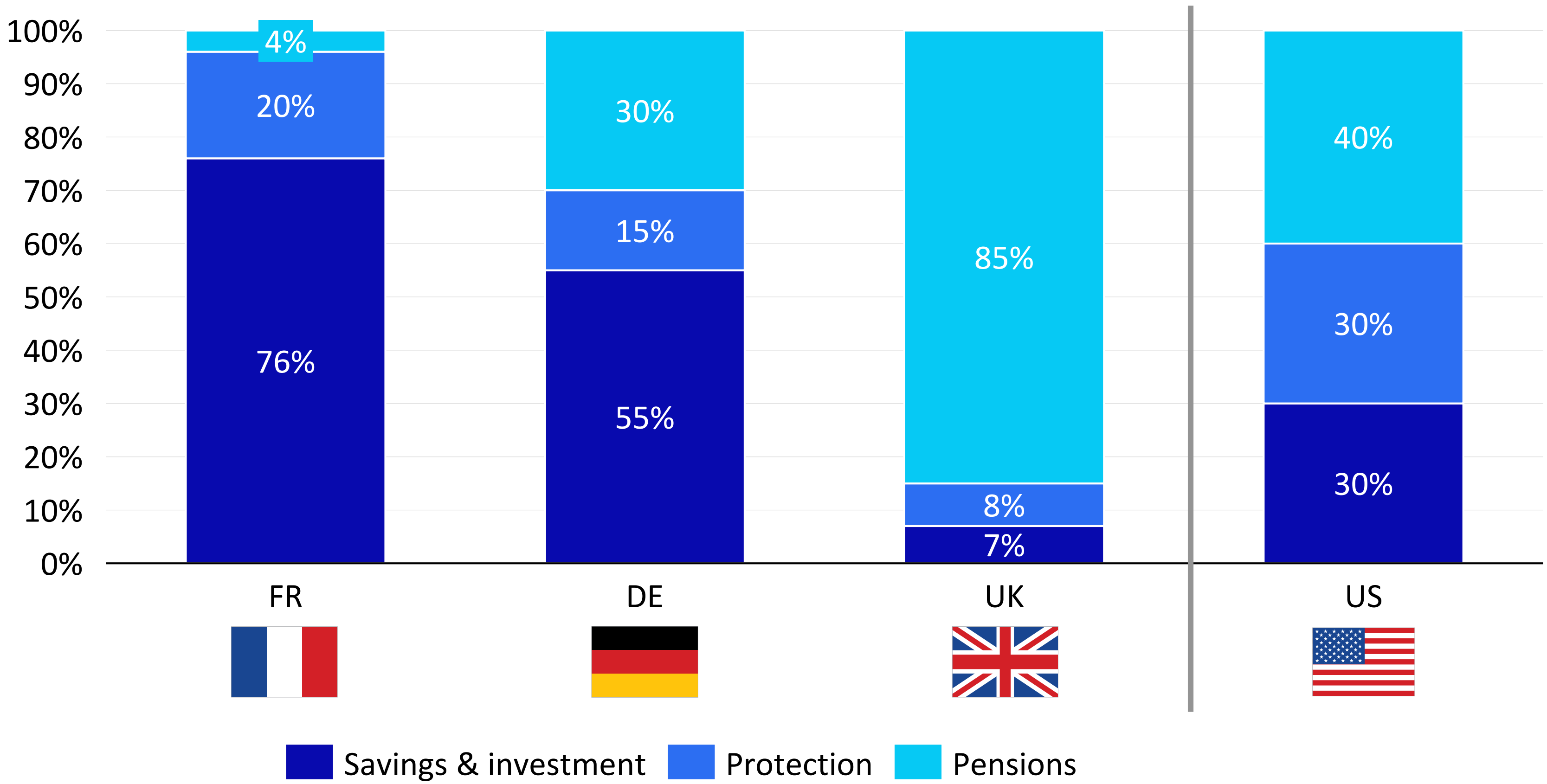
Premium mix between guaranteed vs non guaranteed policies
By country, 2018



Source: EIOPA, OW Analysis

EU PRODUCT COMPARISON

Breakdown of annual life insurance premiums
By country, 2011



Source: Swiss Re Sigma, FFSA, Exane BNP Paribas, Oliver Wyman

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