Swiss Re

Outlook for the global economy, interest rates and the impact on the re/insurance industry

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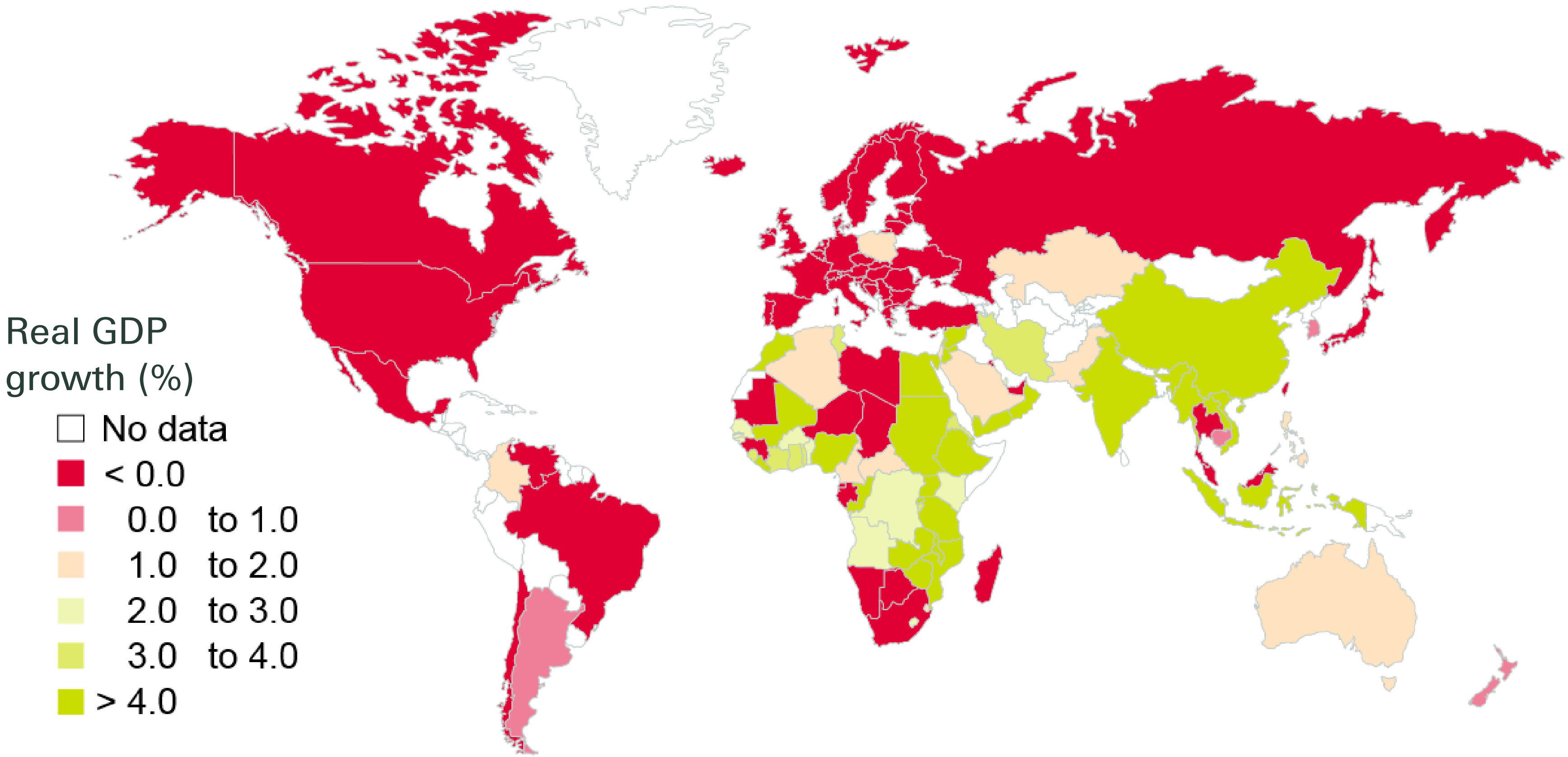
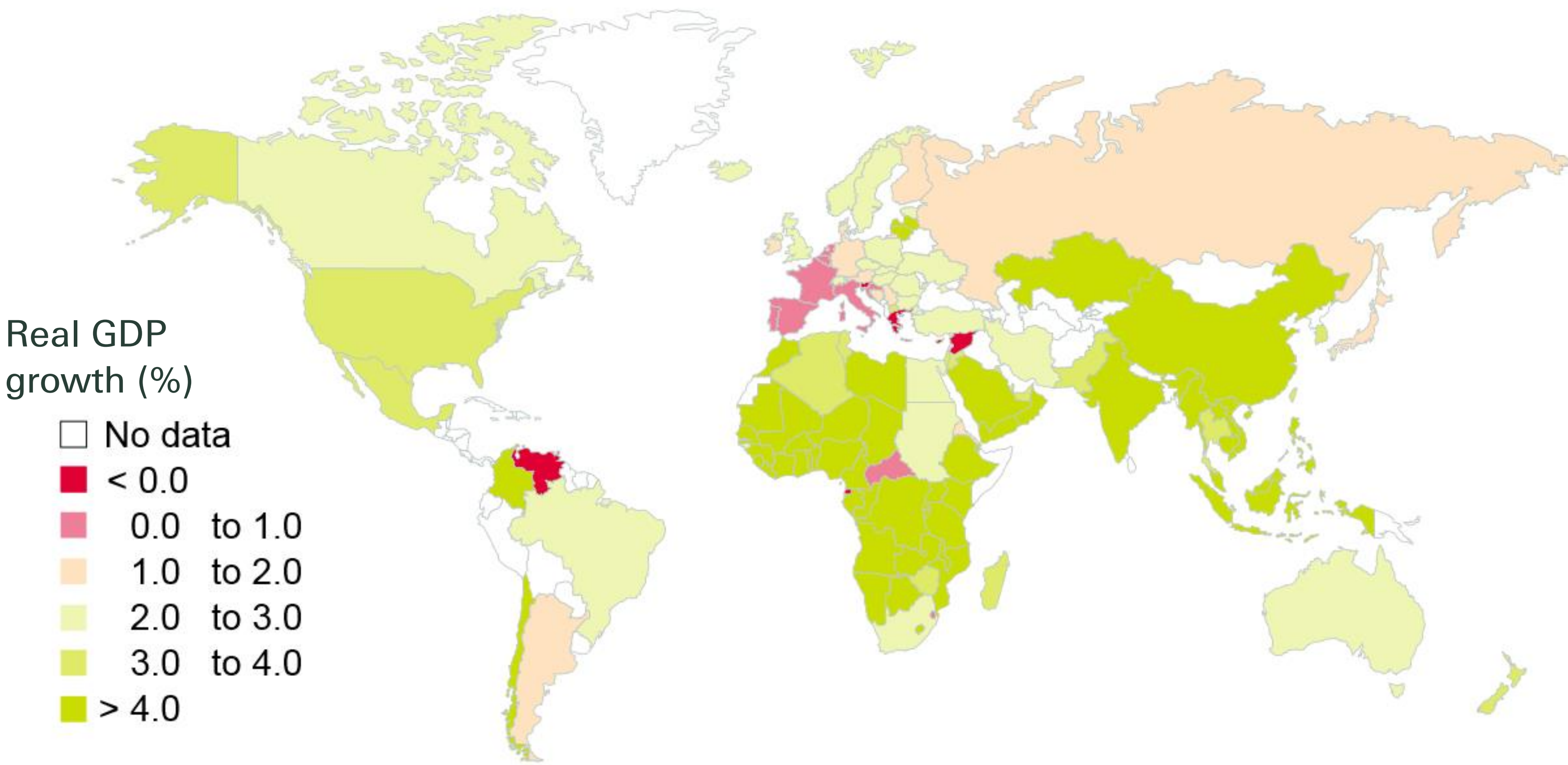
SWISS RE
150
YEARS

The economic environment in 2009...



Source: Swiss Re Economic Research & Consulting

... and in 2014



Source: Swiss Re Economic Research & Consulting

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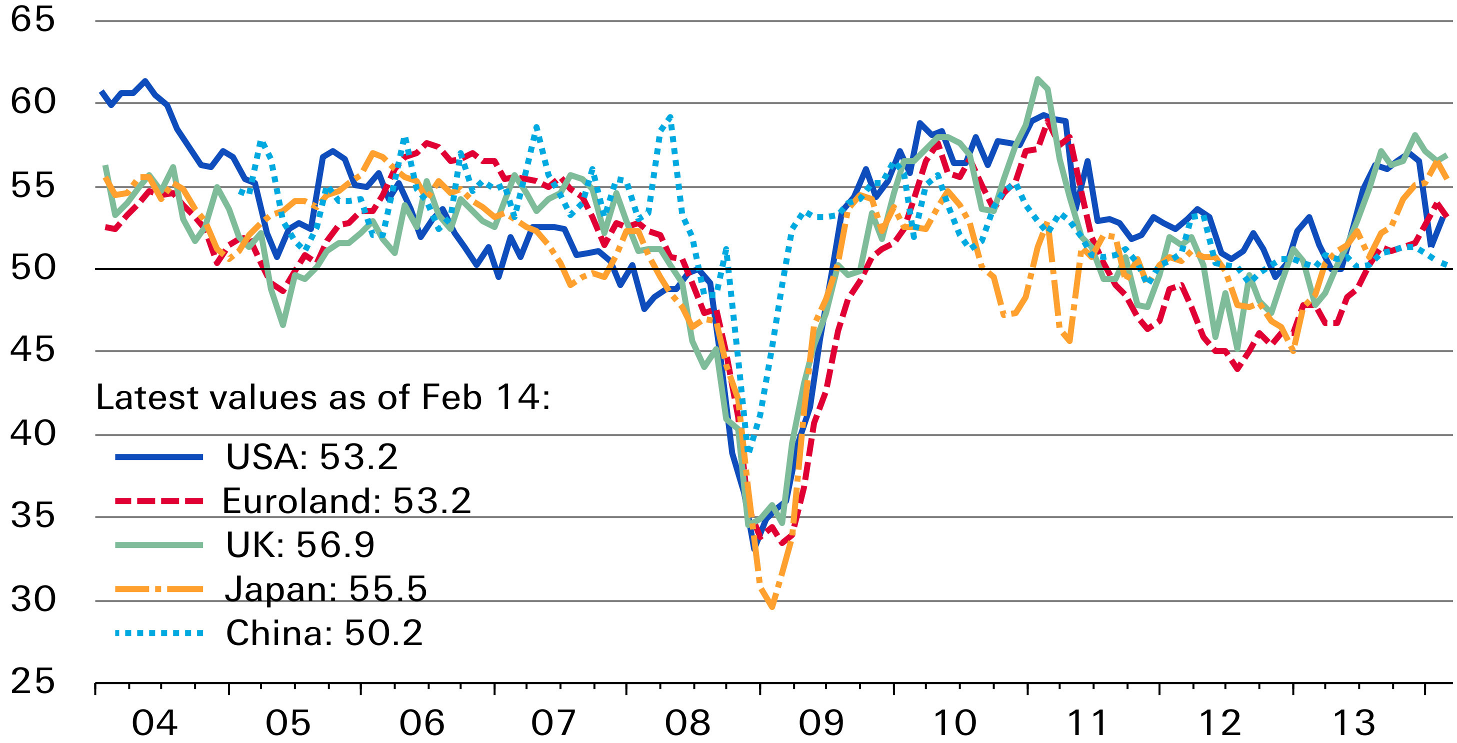
Economic indicators imply global growth acceleration

Purchasing Managers Indices, monthly data

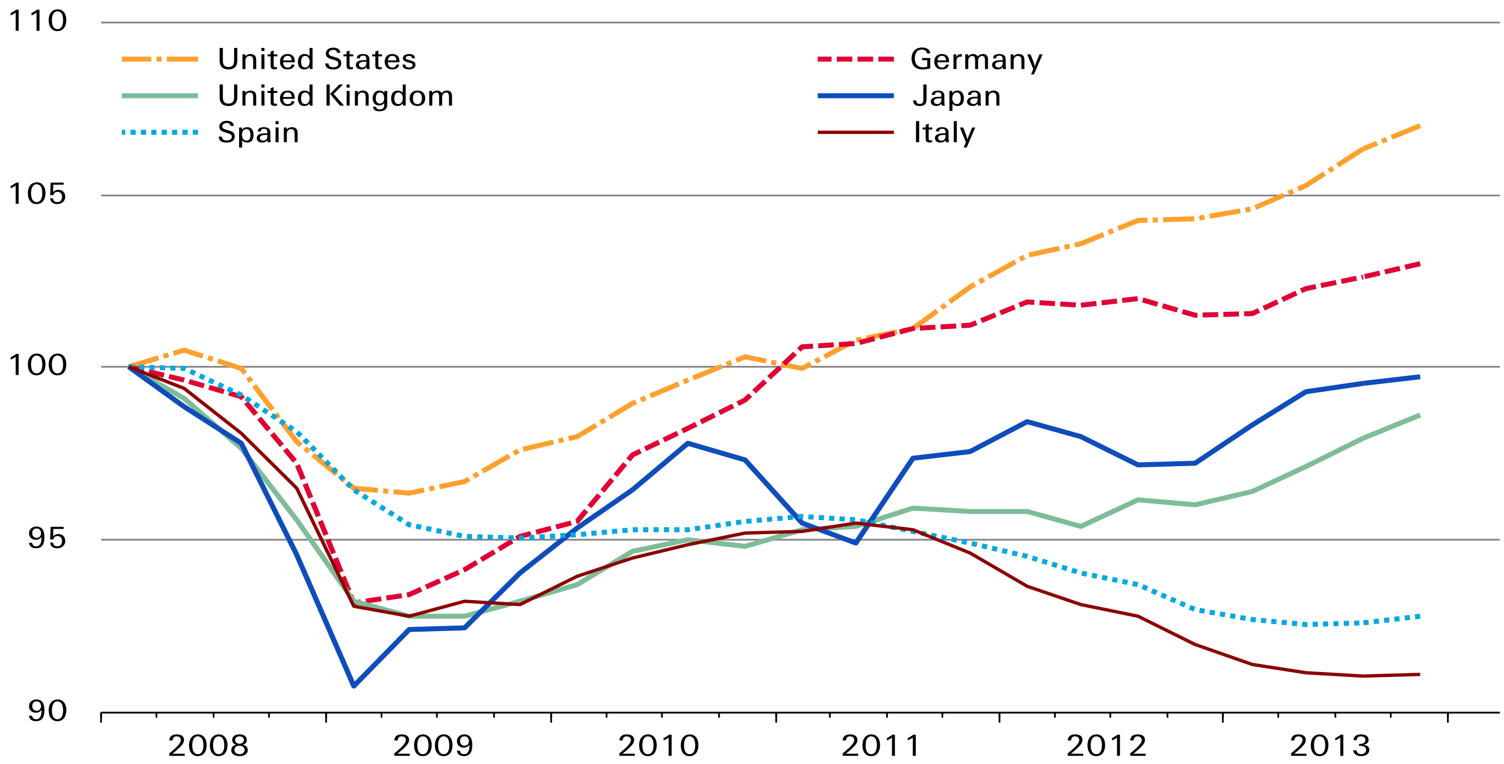


PMIs are survey based indicators. Values above 50 indicate economic expansion, values below 50 contraction

Sources: Datastream, Bloomberg

Economic recovery at different speeds

Real GDP of selected euro area countries (indexed Q1 2008 = 100)



Source: Datastream

Global economic outlook and key risks

- The US expansion is expected to strengthen into 2014, driven by consumer spending, business investment and housing construction
- Europe is growing again and will continue to improve – a huge improvement for global growth prospects, but growth is hampered by fiscal austerity, private deleveraging and tight credit conditions
- Chinese growth will stay close to 7.5% for next several years.
- Some EM economies have been unsettled by Fed "tapering" discussions, but a strengthening global economy will alleviate the downside risks.
- Key short-term economic risks
  - Resurgence of the debt crisis in the Euro area (reform fatigue, fragile banking sector etc.)
  - China's debt problems cause credit tightening and hard landing
  - Global monetary tightening derails emerging market growth
  - Oil price shock

➡ Global growth will pick up this year and next, but the Eurozone remains fragile

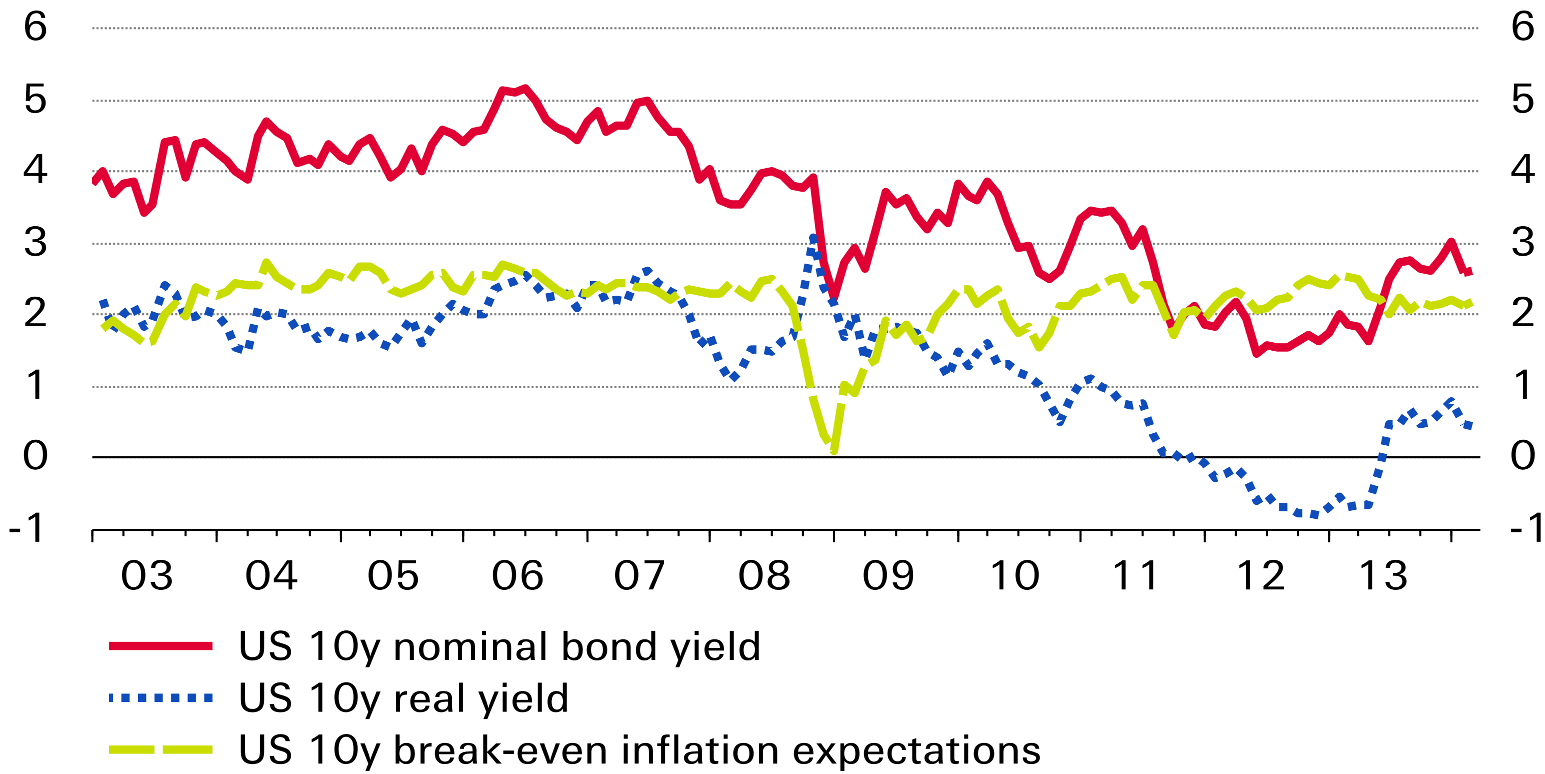
Inflation: a looming threat?

- Inflation fears due to: large fiscal deficits, high debt levels, loose monetary policy ("quantitative easing")
- But no automatic link to inflation
- Near-term inflationary pressures very low
- Longer-term inflation outlook more uncertain
- Central banks have the tools – and the will – to control inflation

- BUT: Politics may intervene (the real risk of inflation)

Inflation expectations have been remarkably stable over the last few years

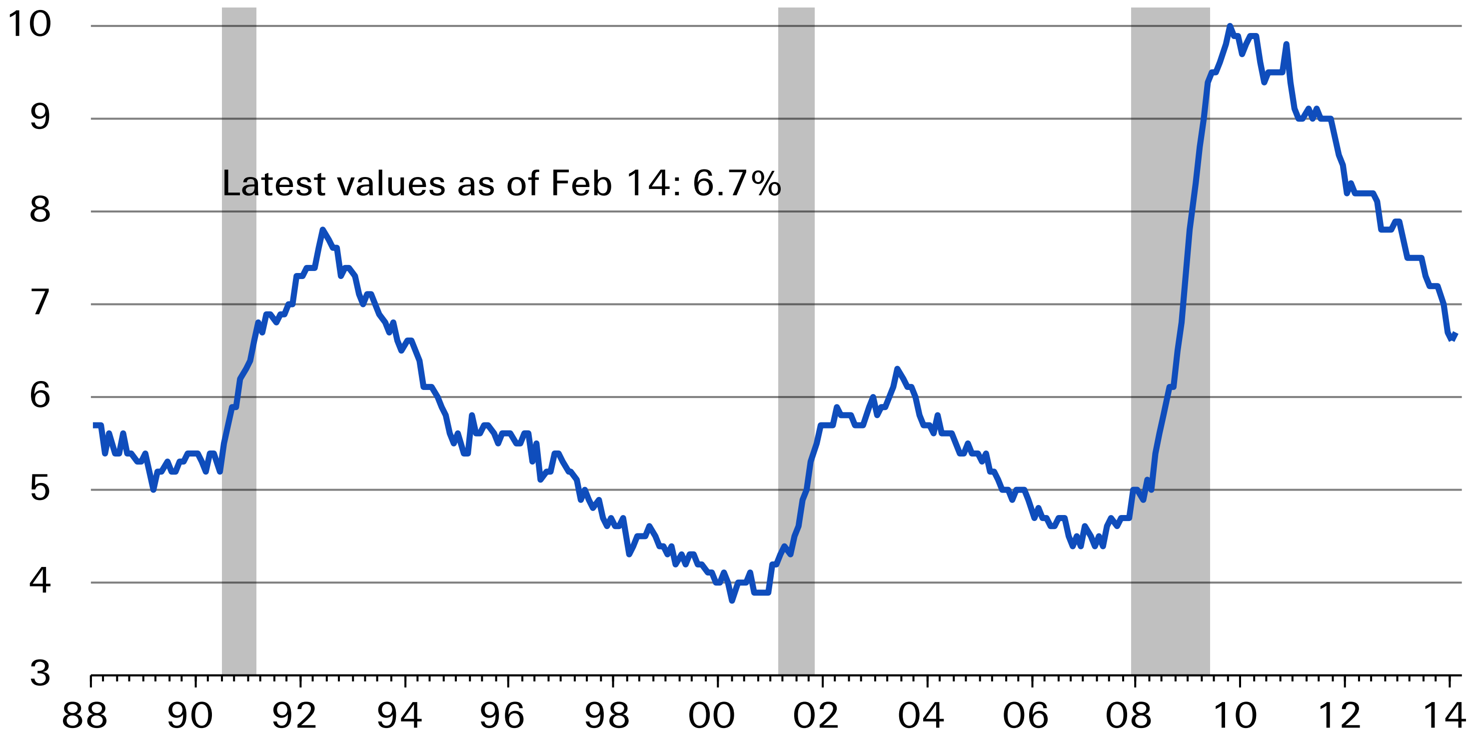
10y real and nominal US Treasury yields and break-even inflation (%)



Sources: Datastream, Swiss Re Economic Research and Consulting

The US unemployment rate has dropped sharply, so when will the Fed "start thinking" about raising rates?

US unemployment rate, %



Sources: Datastream, Swiss Re Economic Research and Consulting; NBER

ER&C interest rate forecast

- Tapering will likely be completed before end of this year.
- Fed begins hiking in 2015, reaches 1.75% on Fed funds rate by end-2015, 4% by end-2016. This is slower than in the glacially slow hiking of 2004-06, which helped cause a housing bubble, so this risk is rising
  - The pace of rate hikes will depend on strength of economic growth and rate of inflation -- 2.5% inflation will certainly be tolerated
- 10-year T-note rises to 4.2% (end-2015), then 4.75% by end-2016
- Growth will push up interest rates. Thus, if growth is less than expected, then interest rates will stay low for longer (and vice versa!).
- ECB rate hikes will probably lag the US due to the more sluggish recovery.
- BoE probably before ECB, while BoJ only begins hiking if inflation gets high

How do interest rates affect re/insurers?

Rising interest rates will benefit re/insurers: a back-of-the-envelope calculation

Insurers manage around

USD 26'800 billion

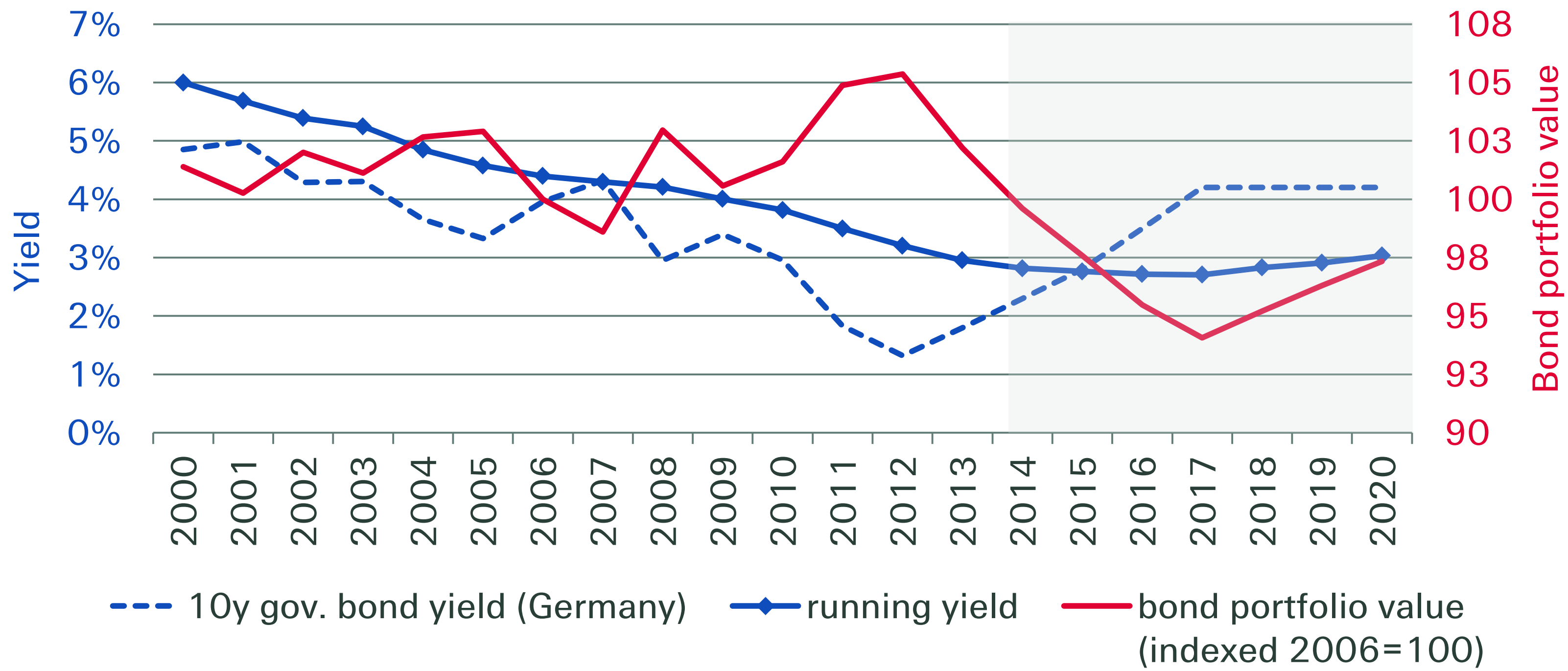
of assets (12% of global financial assets).

A reduction/increase of one percentage point in interest rates results in lost/gained investment income of about

USD 268 billion per year

or about 6% of global premium income.

But interest rate increases will not benefit re/insurers immediately



Source: Swiss Re Economic Research & Consulting

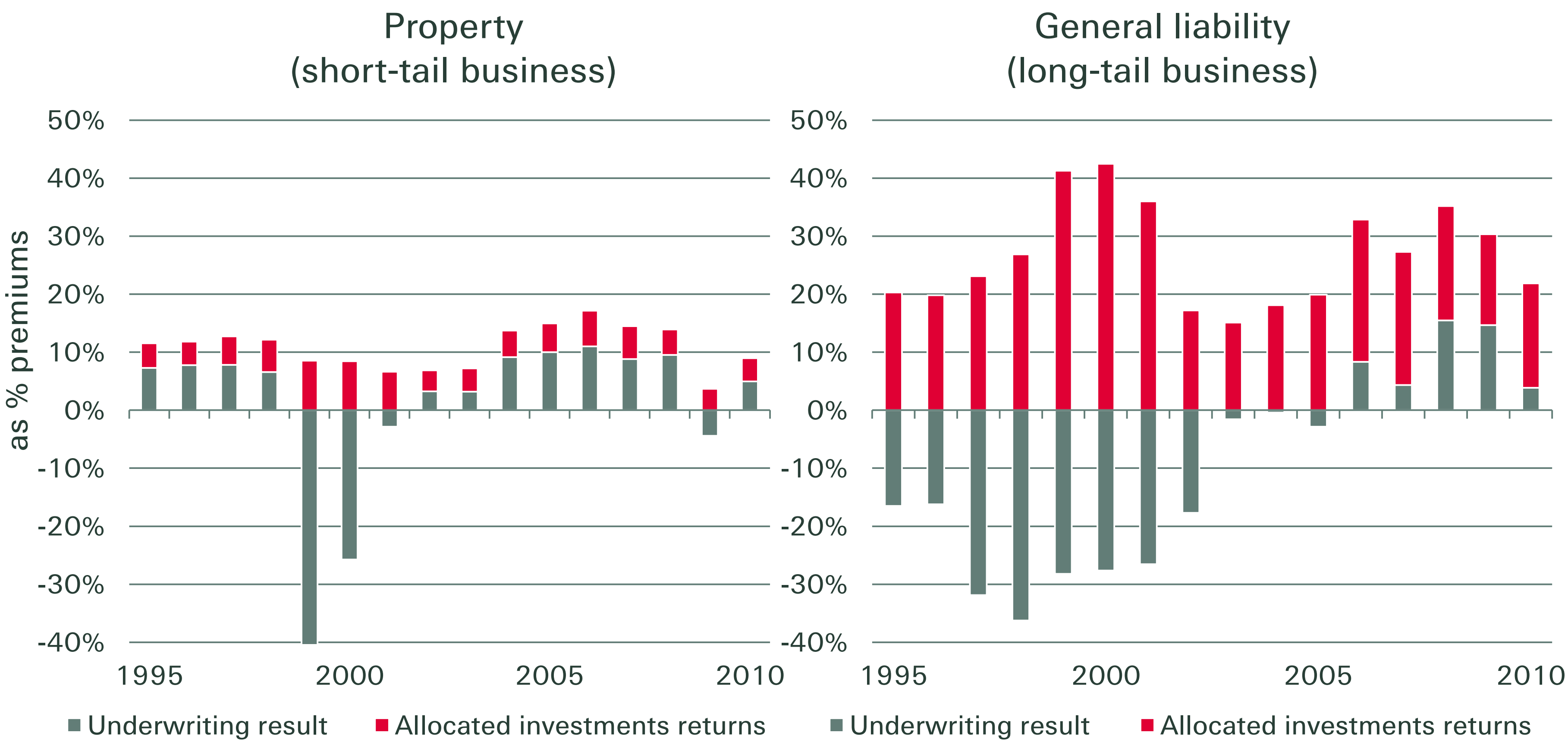
Running yields will remain low over the next few years.
Declining portfolio values will have a negative impact on accounting balance sheets.

What makes insurance business interest rate sensitive?

1. Importance of investment income as source of profit
   - differs by line of business: less important for short-tail P&C and life protection products, significant for long-tail P&C and life savings and pension products
   - in life insurance: asymmetric profit sharing rules exacerbate interest rate sensitivity because upside is shared with policyholders, but all the downside is borne by shareholders
2. Ability to hedge interest rate risks
   - limited availability of long-term securities in combination with long-term interest rate guarantees and pricing assumptions
   - policyholder behaviour may foil cash flow predictions and hence ALM and hedging strategies

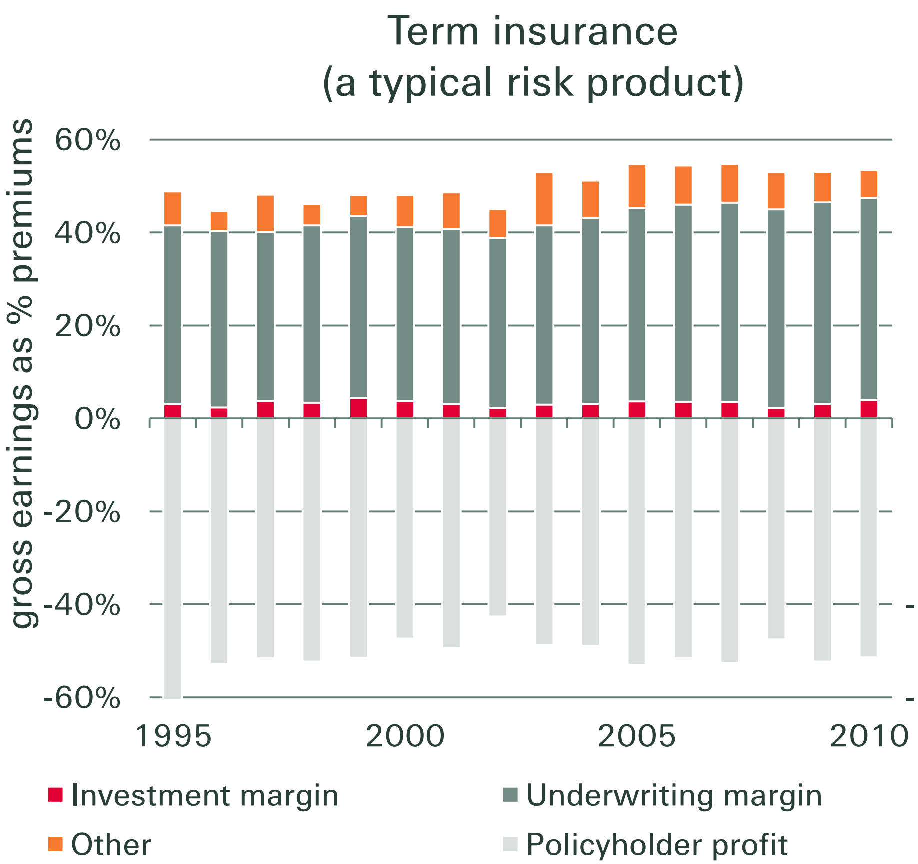
➡ In-force savings business is most exposed to interest rates.
P&C, pension and life risk products are less impacted by low interest rates.

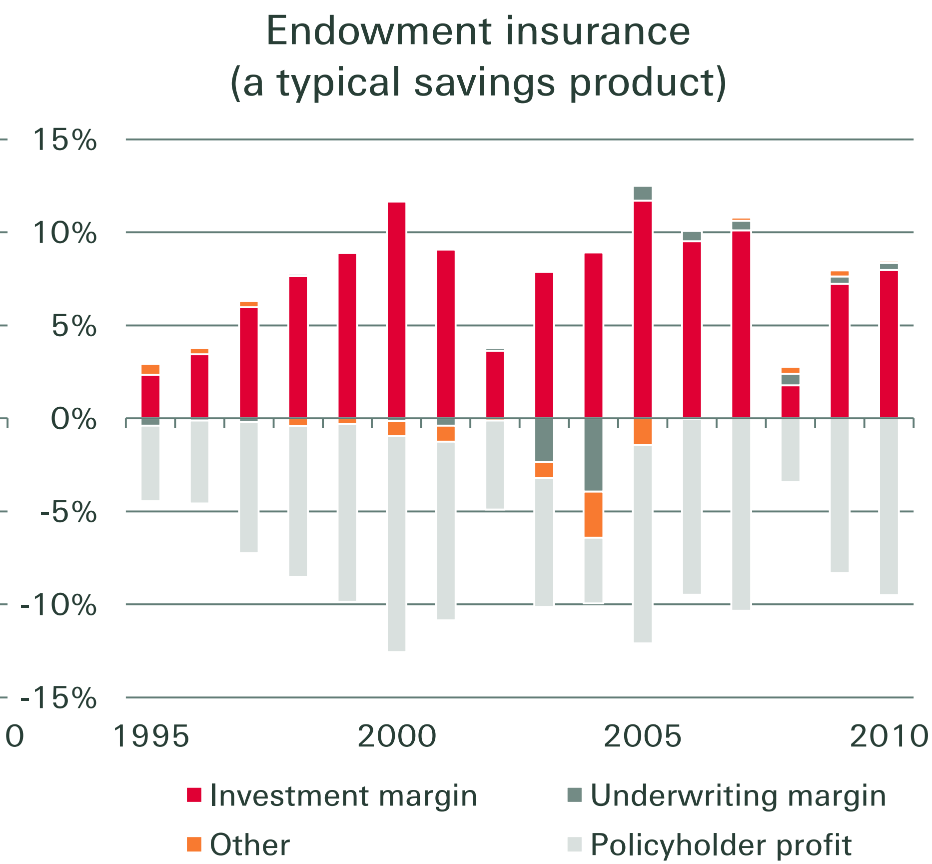
Non-life insurance:
Investment returns are more important for long-tail than for short-tail business



Note: Data refers to French market
Sources: FFSA and Swiss Re Economic Research & Consulting

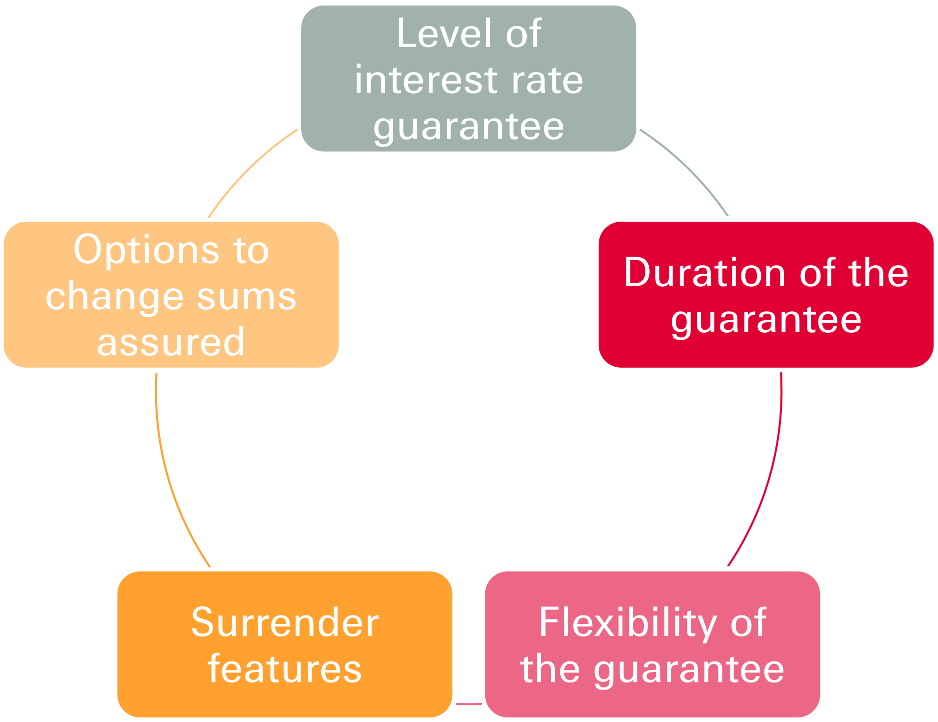
Life insurance: Investment income is more important for savings than for risk products





Note: Data refers to German market
Sources: BaFin and Swiss Re Economic Research & Consulting

Which product features affect interest rate sensitivity of savings products?



Product features are key for the exposure to policyholder action, and thus for managing interest rate exposure.

Life re/insurers:
Reported MCEV/EEV interest rate sensitivities
100 basis point *decline* in interest rates

	2009	2010	2011	2012
Central and northern Europe[1]	-10.7%	-12.7%	-56.1%	-23.9%
Japan[2]	-11.7%	-10.7%	-8.0%	-16.0%
Southern Europe and France[3]	-5.2%	-3.9%	-7.9%	-8.3%
UK[4]	1.2%	1.1%	-1.6%	0.6%
Life reinsurers[5]	0.2%	0.7%	1.2%	4.6%

[1] Aegon, Ageas, Allianz, Delta Lloyds, Eureko/Achmea, Munich Re (primary life insurance book), SNS REAAL, Storebrand, Swiss Life, UNIQA, Vienna, Zurich, [2] Sony Life, Himawari Life, [3] AXA, CNP, Generali, Mediolanum, [4] Aviva, Old Mutual, Phoenix, Resolution, SJP, Standard Life, [5] Hannover Re, Munich Re (life reinsurance only), SCOR

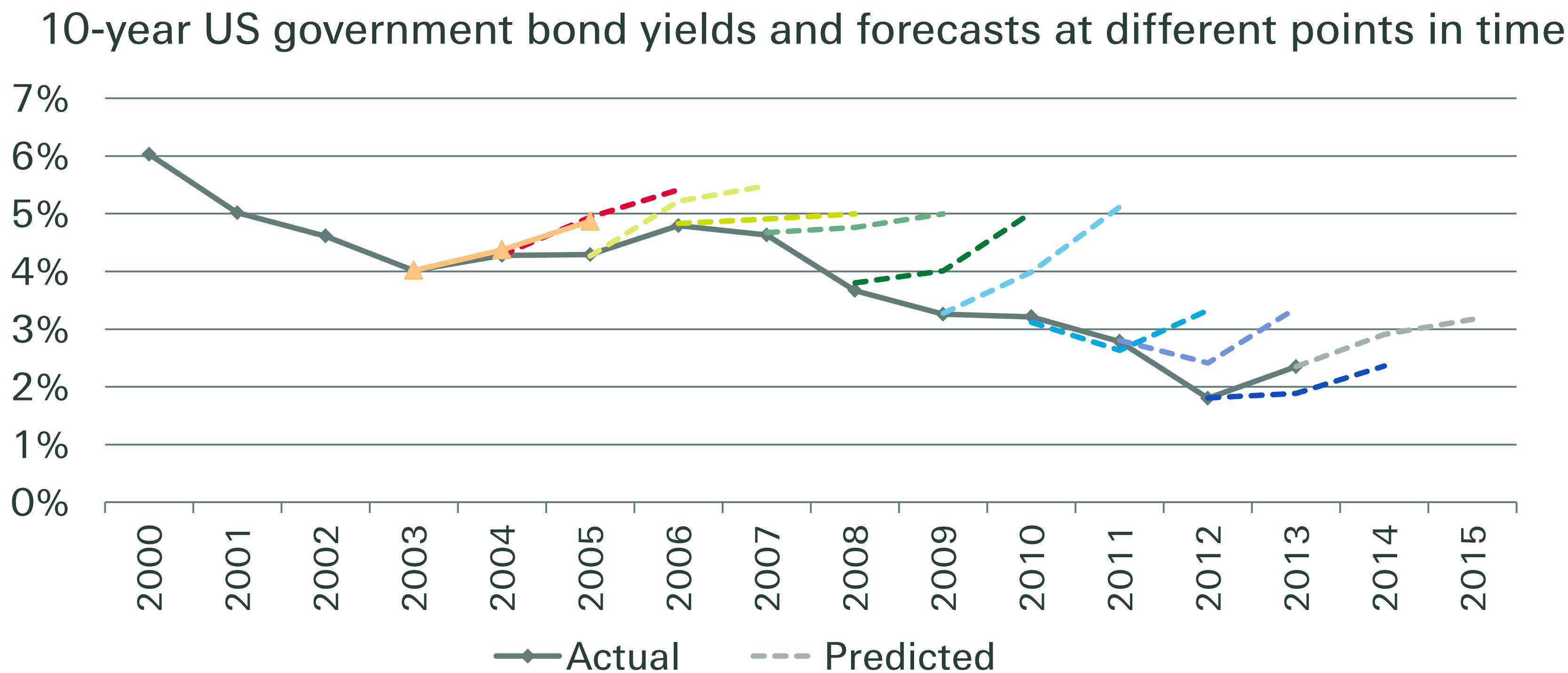
Note: MCEV is Market Consistent Embedded Value and EEV is European Embedded Value

Interest rate sensitivity of life insurance differs significantly across countries/regions – this is due to different product features.

Sources: company MCEV/EEV reports for 2009 to 2012

How can insurers manage interest rate risk?

Forecasting interest rates is not a "hedging strategy"

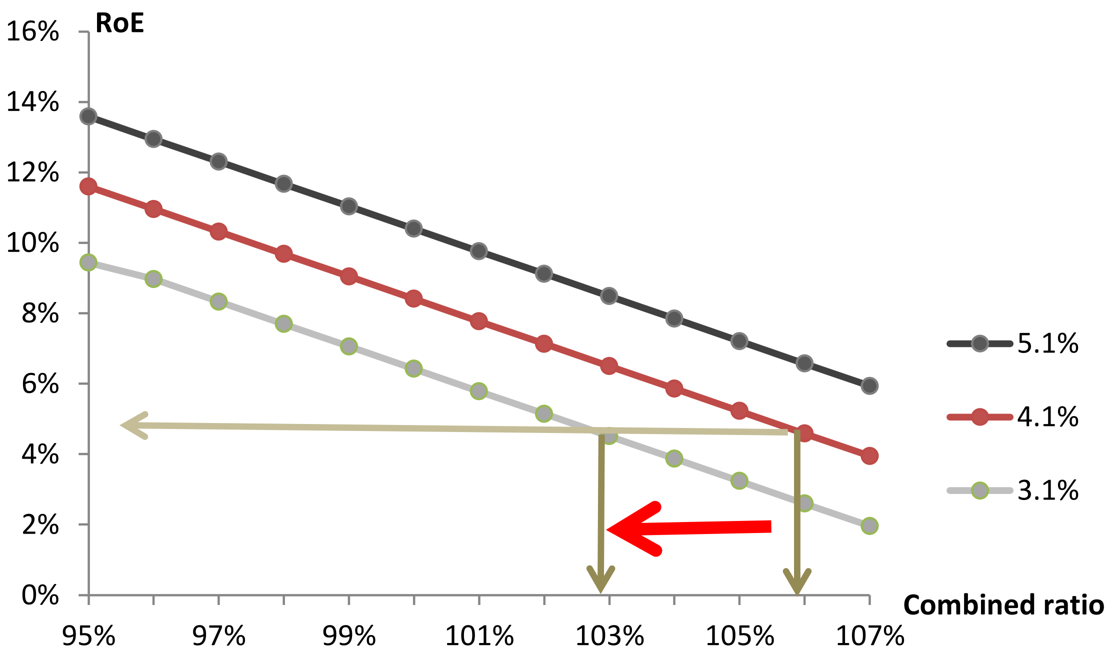


Sources: Swiss Re Economic Research and Consulting; Oxford Economics

"Prediction is very difficult, especially if it's about the future."

Nils Bohr, Nobel laureate in Physics

Non-life insurers can compensate for lower yields with a lower combined ratio



2011 US industry assumptions:

Asset leverage:	312%
Tax rate[1]	25%
NPW/ avg. surplus	77%

2011 ROE was 4.8%; total yield was 4.1%, and CR 106%

Adjusted for average cat losses and reserves releases, 2011 CR was about 105%

[1] based on 10-year average

Insurance prices must be adjusted to preserve/restore profitability

Source: Swiss Re Economic Research & Consulting

How can life insurers deal with the current low interest rate environment?

- In force business
  - do the ALM and hedging homework - improve understanding of policyholder behaviour
  - manage operational costs
  - offer exchange of interest rate sensitive policies
- New business
  - product design: review product features and options that are key for policyholder behaviour and interest rate sensitivity
  - learn from other countries: what proved to be marketable and hedgeable
- Rebalance policyholders' willingness to pay and costs of guarantees
  - what are the economic costs of guarantees, what are consumers willing to pay?
  - concentrate on options and guarantees that create value and can be effectively hedged

➡ Assure "hedgeability" through understanding policyholder behavior and optimizing guarantees and options

Conclusions

Conclusions

- Improving economic growth is expected to push up interest rates.
- Rising interest rates will benefit re/insurers, but not immediately.
- Over the short-term, the accounting balance sheets will even be affected negatively.
- Not all lines of business are affected equally by low/rising interest rates.
- For P&C insurance, interest rate risks can be managed with ALM – the main risk for P&C is unexpected inflation.
- Life insurance savings business is most exposed to interest rate risks because investment income is the key source of earnings and policyholder behaviour may foil hedging strategies.
- Interest rate risk sensitivity is driven by product features such as the level, duration and flexibility of the guarantees and options that allow policyholders to opportunistically adjust their insurance cover.
- Life insurers need to go beyond adjusting guarantee levels – they need to reassess their value proposition and change product design

Appendix

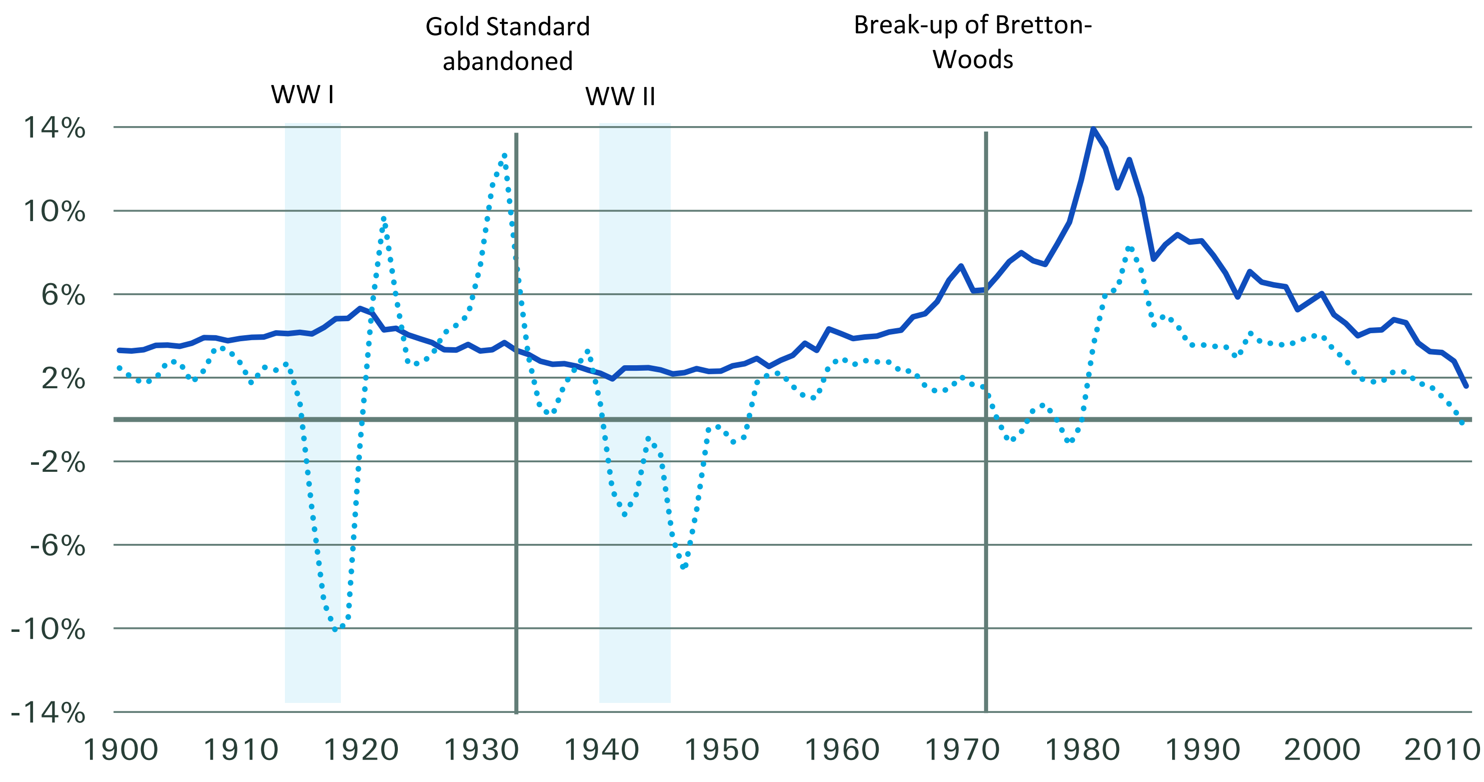
Key indicators for the major economies

		2013	2014	2015	2016	2017
Real GDP growth, annual avg., %	US	1.8	3.0	3.5	3.2	3.0
	Euro area	-0.4	1.0	1.4	1.8	2.0
	UK	1.9	2.8	2.4	2.6	2.6
	Japan	1.6	1.6	1.3	1.5	1.5
	China	7.7	7.5	7.4	7.6	7.5
Inflation, all-items CPI, annual avg., %	US	1.5	1.7	2.1	2.2	2.3
	Euro area	1.3	1.0	1.3	1.5	1.8
	UK	2.6	2.2	2.0	2.0	2.0
	Japan	0.2	2.3	1.6	1.5	1.5
	China	2.6	3.1	3.0	3.0	3.0
Policy rate, year-end, %	US	0.25	0.25	1.75	4.00	4.00
	Euro area	0.25	0.25	0.25	1.50	3.50
	UK	0.50	0.50	1.75	3.50	4.00
	Japan	0.07	0.09	0.11	0.30	0.75
Yield, 10-year govt bond, year-end, %	US	3.0	3.5	4.2	4.8	4.8
	Euro area	1.9	2.3	2.8	3.3	3.8
	UK	3.0	3.5	4.0	4.8	4.8
	Japan	0.7	0.9	1.0	1.4	1.8

Source: Swiss Re Economic Research & Consulting

Interest rates have been low for long in the past

Long-term US government bond yields since 1900



Source: sigma 4/2012

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