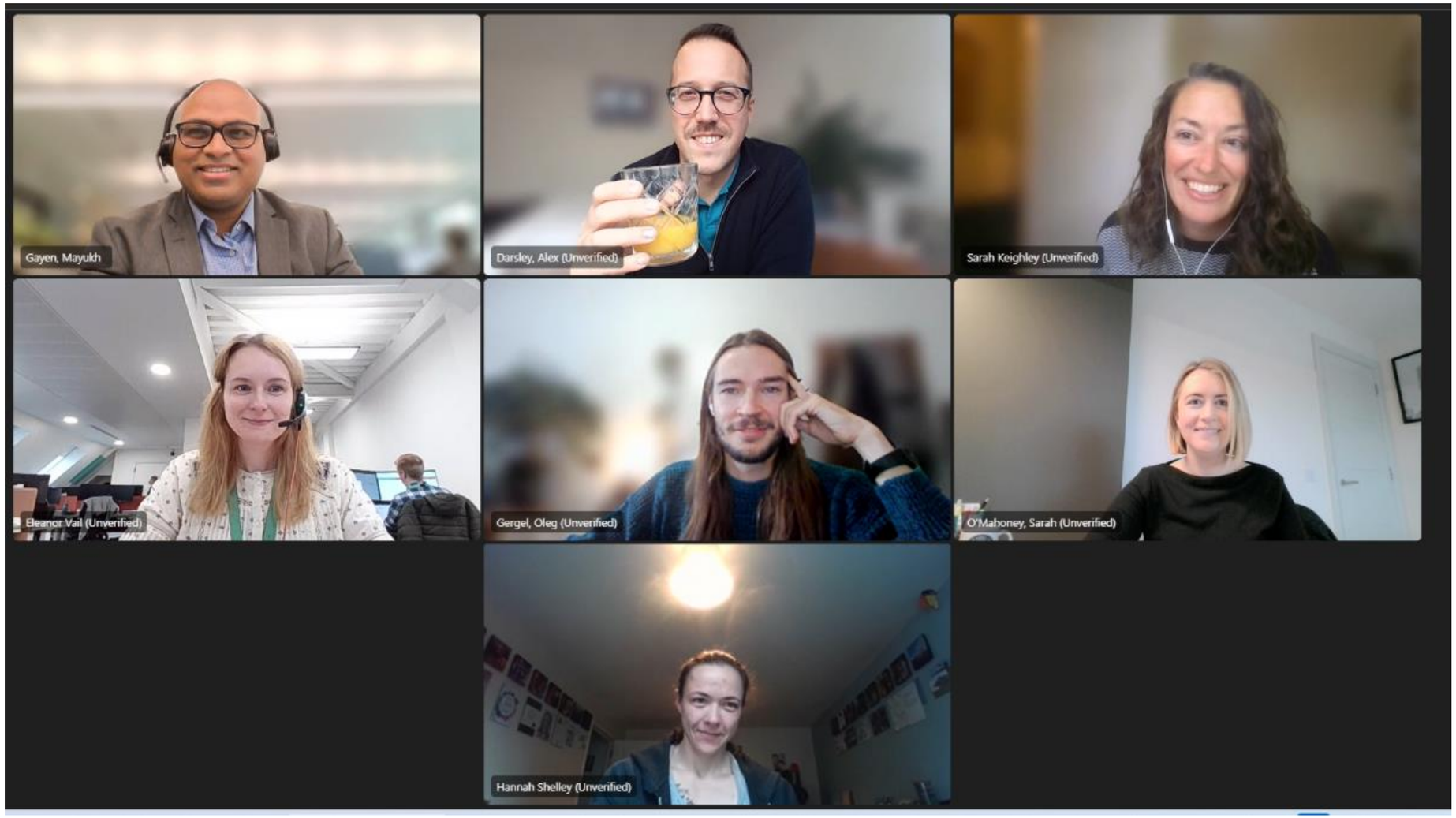
Institute and Faculty of Actuaries

IFoA Life Conference

The effect of climate change on long term interest rates

Presentation from IFoA Working Party

Our IFoA Working Party



Alex Darsley (Chair)
The Pensions Regulator

Mayukh Gayen
Marsh McLennan

Oleg Gergel
M&G

Sarah Keighley
XPS Group

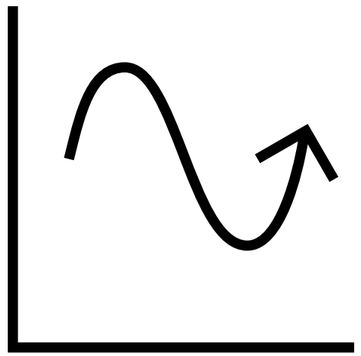
Sarah O'Mahoney
M&G

Hannah Shelley
XPS Group

Eleanor Vail
Isio

Kick off

Q: How do you think climate change will influence long-term interest rates?



1. More likely to increase
2. No or broadly neutral
3. More likely to decrease

Agenda

- Interest rates – overview
- Interest rates – impact of climate change
- Allowance for climate effects in practice
  - Survey results
  - NGFS climate scenarios

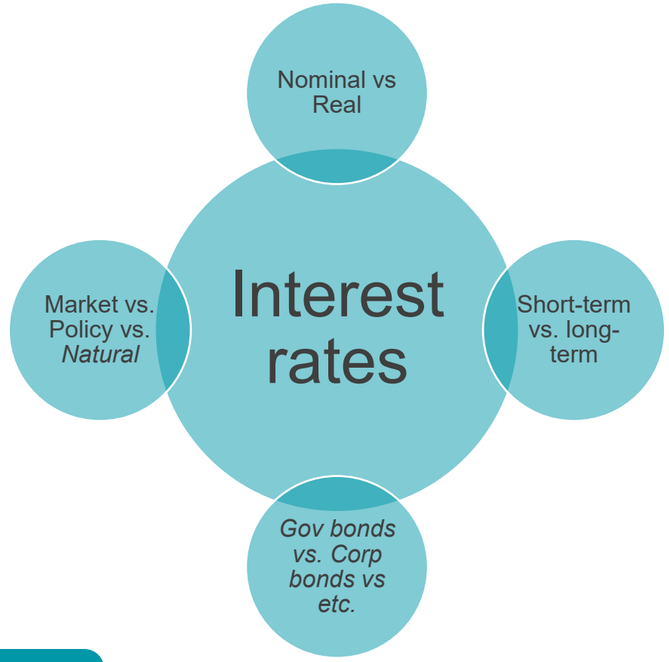
- Questions & Answers

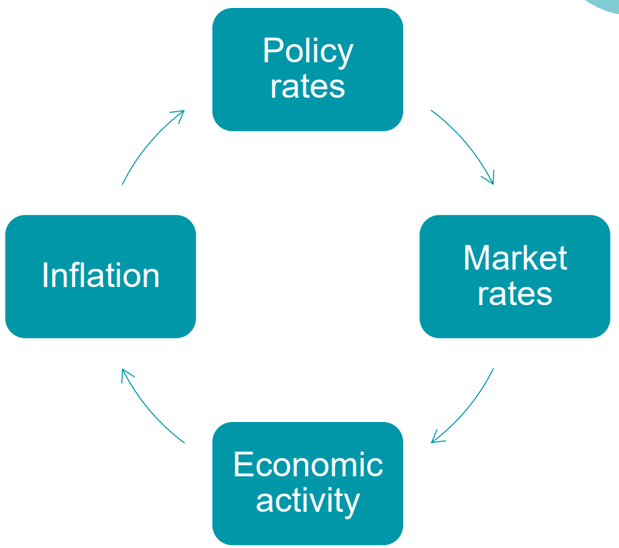
Interest rates - overview

Interest Rates - overview

- Intuitive, but complex
- Our focus – long-term interest rate on government bonds

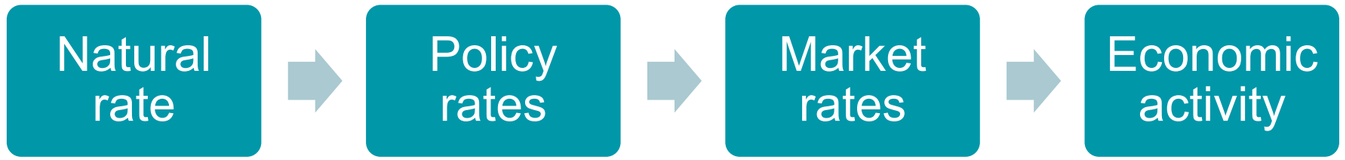
- In macroeconomics – defined by the equilibrium in savings supply and investment demand
- Interconnected with inflation, economic activity and monetary policy



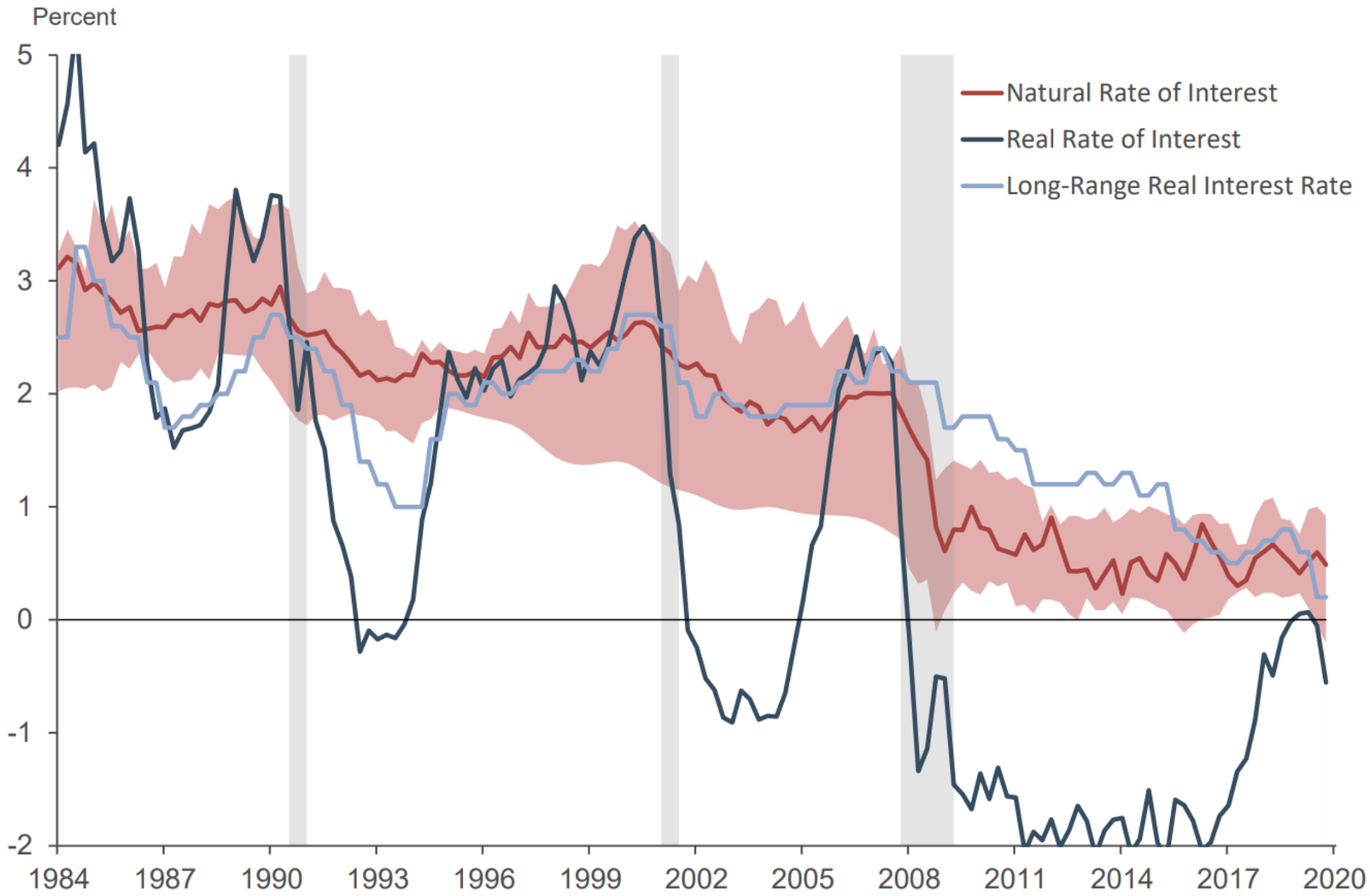


Natural interest rate

- Natural rate is *the short-term real interest rate that neither stimulates nor contracts the economy*
  - A purely theoretical concept – not observable
  - Widely used by central banks as a reference point for setting policy rates
  - Natural rate is an anchor for real rates over the long periods of time



Natural interest rate – correlation with market rates

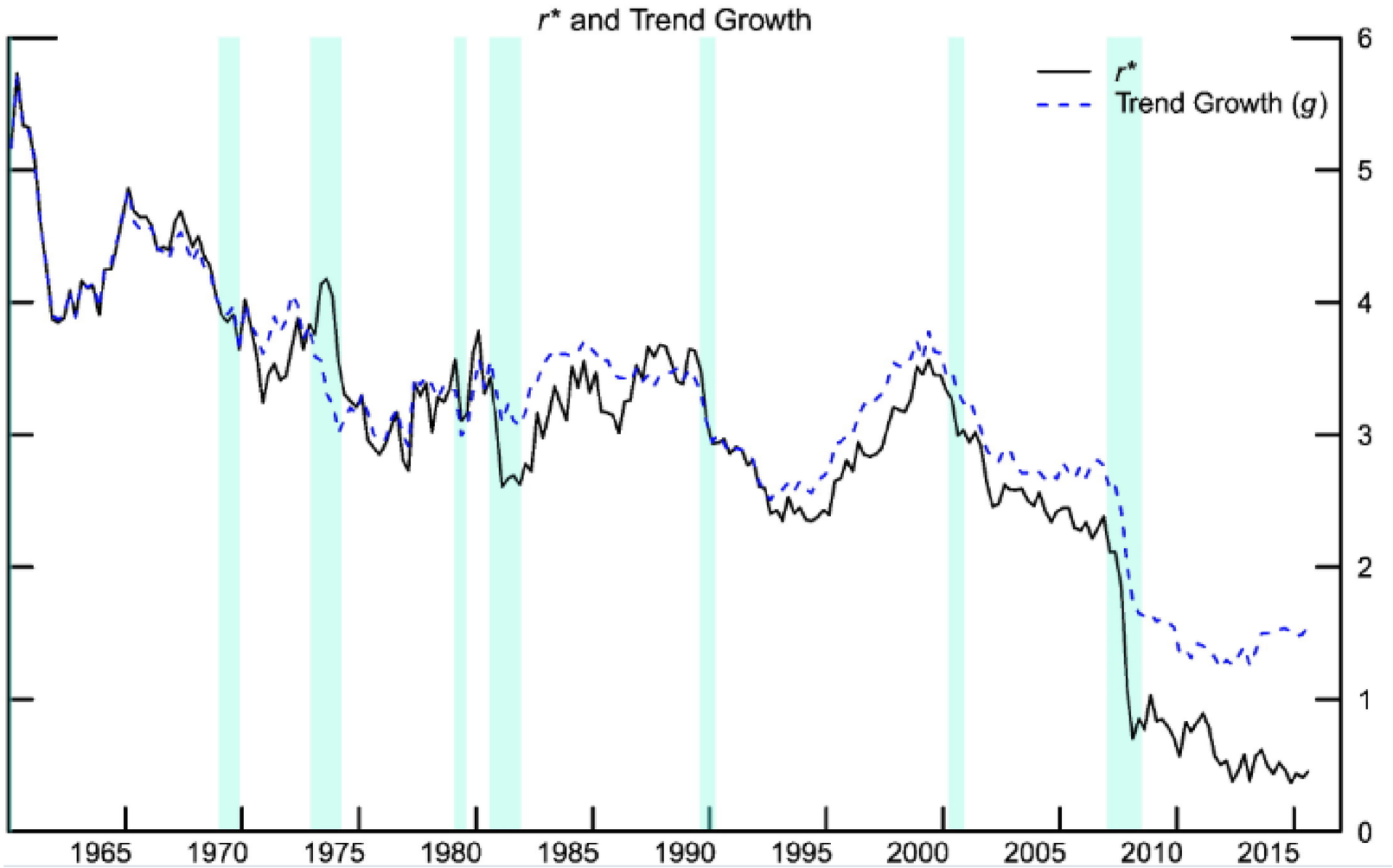


Structural drivers

What are the key factors explaining decline in [natural] interest rate over last 50 years?

Structural drivers

Economic growth is highly correlated with natural interest rate.



Structural drivers – detailed

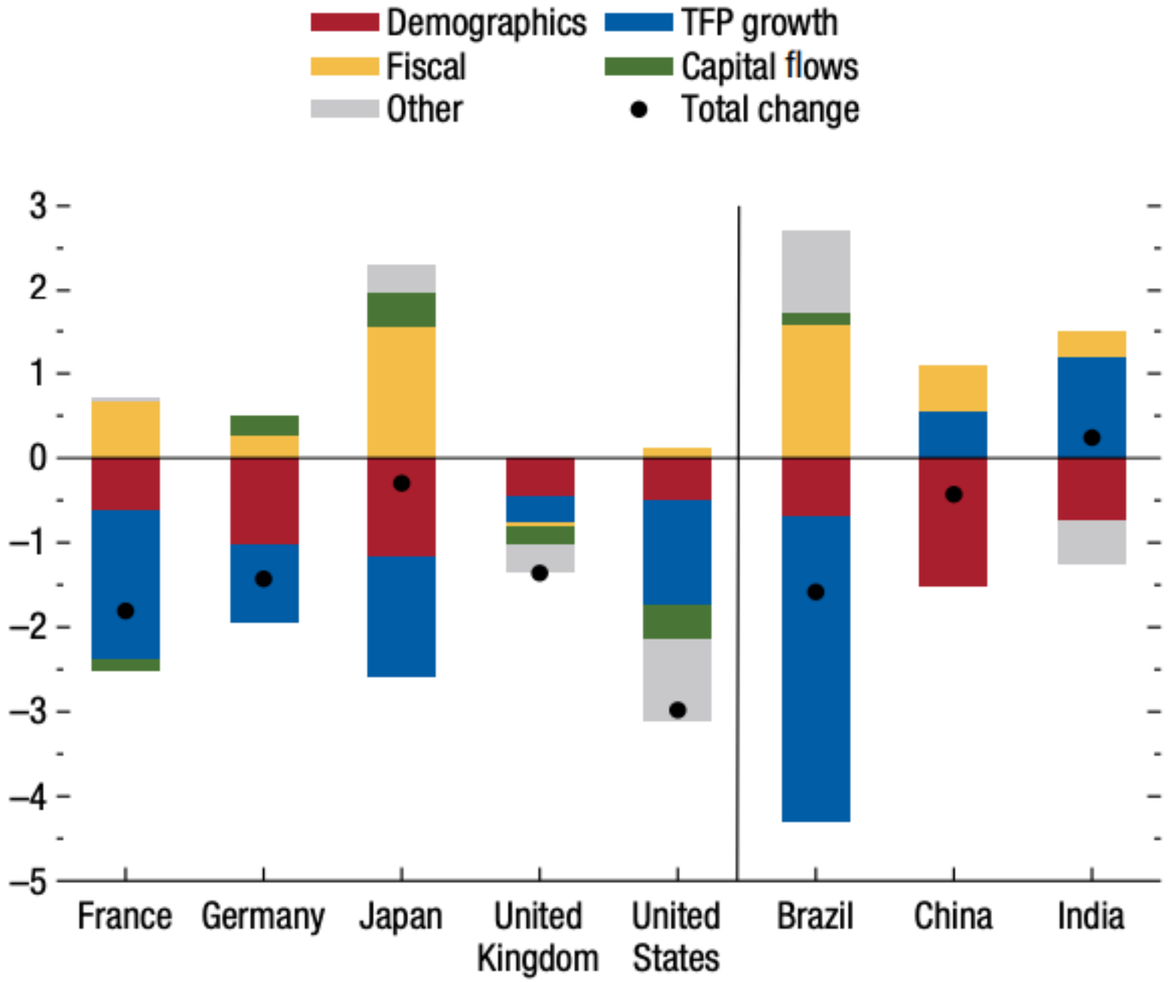
Macroeconomic drivers

- Demographics
- Productivity growth
- Fiscal policy
- Corporate market power
- Other trends – e.g. inequality

Financial drivers

- International capital flows
- Risk aversion and leverage cycles

Drivers of Natural Rate Changes from 1975-79 to 2015-19 for Selected Economies
(*Percentage points*)

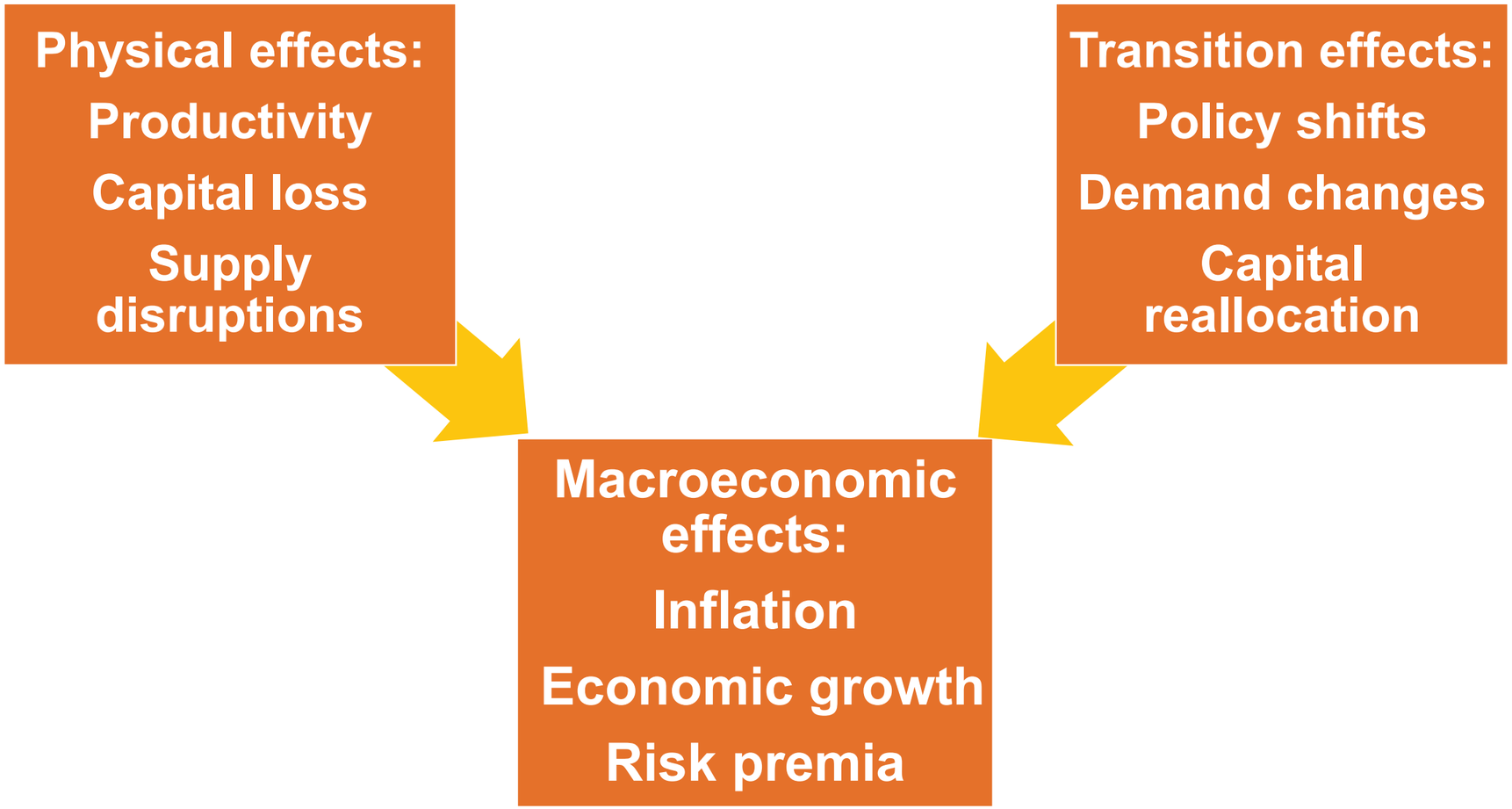


Sources: Platzer and Peruffo (2022); and IMF staff calculations.
Note: TFP = total factor productivity.

Interest rates – impact of climate change

Climate – interest rate drivers (1)

Transmission channels



Climate – interest rate drivers (2)

Physical effects – mechanisms and impact

- **Impact on productivity and growth**
  Suppresses real rates
- **Production and supply impacts increasing inflation**
  Nominal rate spikes
- **Impacts on private investment**
  Suppresses real rates
- **Impacts on fiscal spending**
  Possible increases to risk premia (increasing real rates)?
- **Increased risk aversion and safe-haven capital flows**
  Suppresses real rates?

Climate – interest rate drivers (3)

Transition effects – mechanisms and impact

- **Policy measures – tax, subsidies, regulation**
  Raises inflation and nominal rates?
- **Green investment boom – boosting growth**
  Increases real yields
- **Collapse in fossil fuel demand and stranded assets**
  Suppresses real rates
- **Increased government borrowing?**
  Increasing risk premia - raises real yields (varying by jurisdiction)?

Climate – interest rate drivers (4)

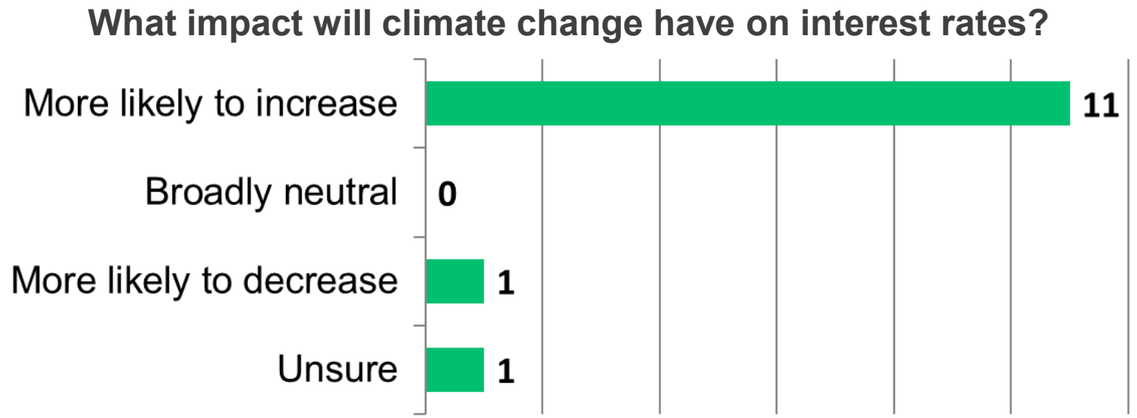
Summary – main findings

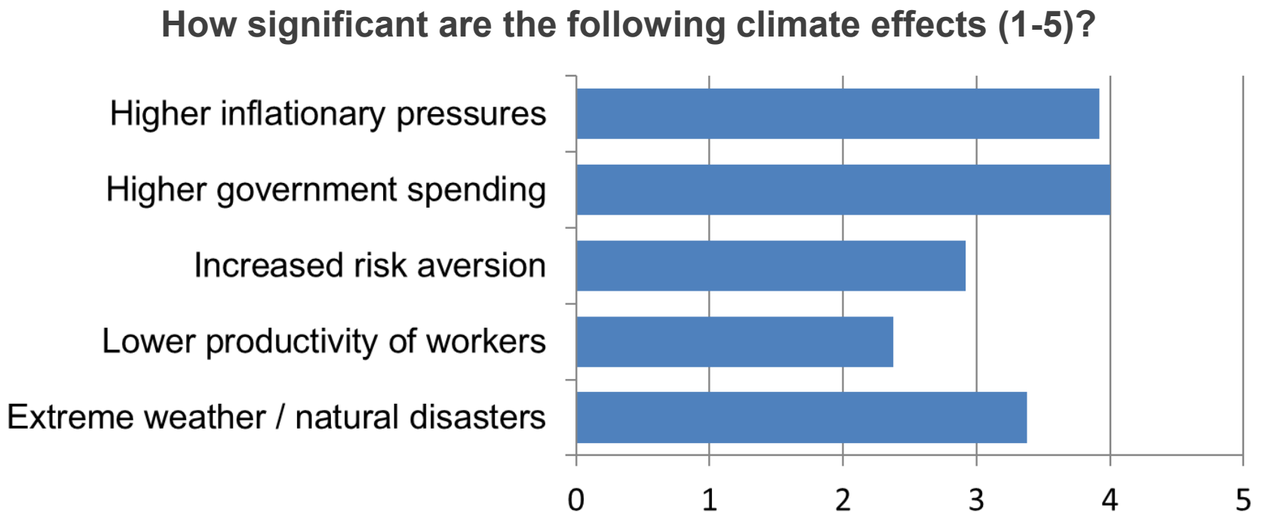
- **Competing effects** means difficult to draw broad brush conclusions
- Physical impacts may **depress long-term real rates**, but cause **inflation and nominal rate spikes**?
- Transition impacts **depend on policy success and market responses**
- Impacts may be **uneven across geographies and economies**
- **Increases in volatility and risk premia** seem likely

Allowance for climate change effects in practice

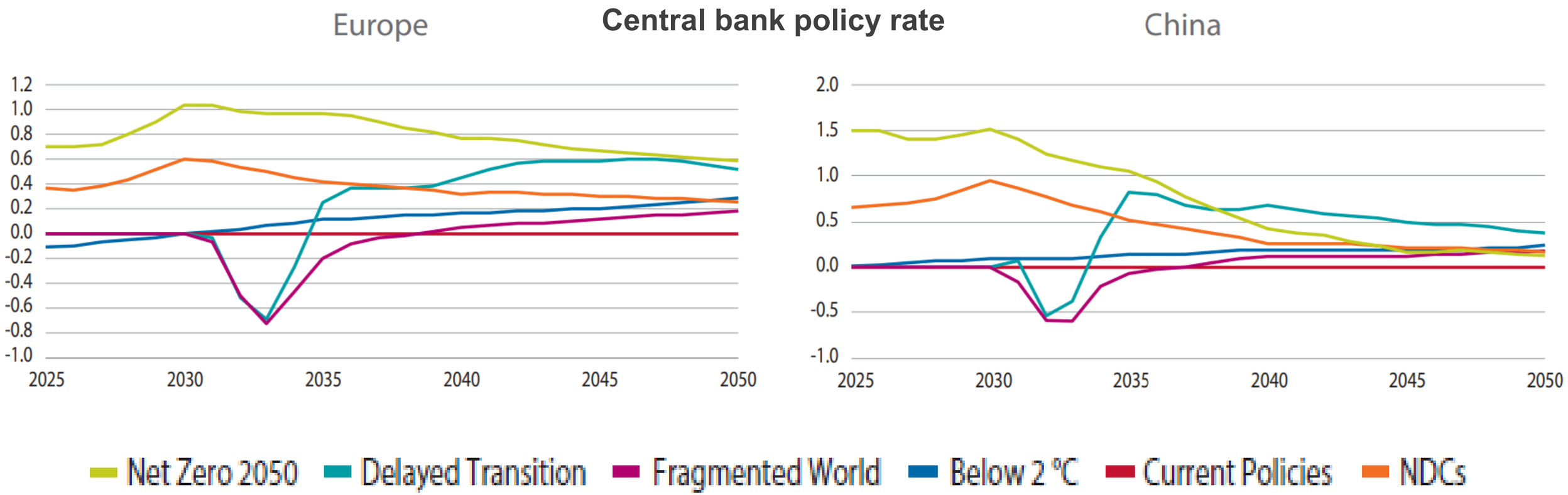
Survey of practitioners

- Dec 2024 - Jan 2025
- 13 responses – finance professionals
- Most thought **more likely to increase** interest rates
- …via higher spending / borrowing, and inflationary pressures





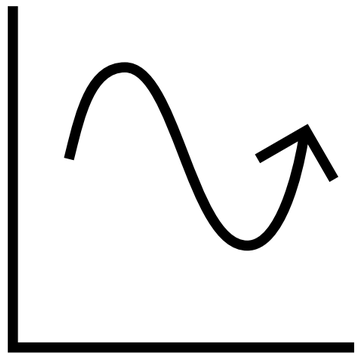
NGFS Climate scenarios



- Climate transition leads to **higher** interest rates
- Variation by country and region

Recap

Q: How do you think climate change will influence long-term interest rates?



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Our takeaways

Climate introduces more uncertainty to interest rates

Could move up or down. Bigger plausible range

Risks to institutions

Don’t overemphasise, but should be considered

Role of actuaries

Explain broad reasons climate change might affect interest rates – up and down


Q&A

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Thank you

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