On falling neutral real rates, fiscal policy, and the risk of secular stagnation

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How this paper fits in (some) of the liquidity trap literature

1. **First generation** (Krugman (1998), Eggertsson and Woodford (2003))
   - ▶ ZLB due to some exogenous temporary forces

2. **Second generation** (Eggertsson and Krugman (2012), Guerrieri and Lorenzoni (2017))
   - ▶ Study the nature of the shocks (e.g. financial / deleveraging)
   - ▶ These may be persistent, but are ultimately temporary

3. **Third generation** (Summers (2013), Eggertsson and Mehrotra (2014), Carvalho, Ferrero, and Nechio (2015), Caballero and Farhi (2014), Caballero, Farhi, and Gourinchas (2017))
   - ▶ Focus on the long-run, trend decline in real neutral rate (R*)
   - ▶ Permanently low R* viewed as a plausible scenario
   - ▶ Drivers: demographics, slower growth, and other private sector forces
   - ▶ This paper: the role of public policy trends across industrialized world

US government debt projections and real interest rates

	2000	2018
Debt-to-GDP ratio projected for ten years later	6%	105%
Real interest rates on ten-year government bonds	4.3%	0.8%

Source: Congressional Budget Office; U.S. Department of the Treasury; authors' calculations.

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Our question: what has been the role of public policies in driving R*?
Our method: use existing elasticities and simulate calibrated GE models
Our answer: government policies pushed R* up by 3–4pp

⇒ underlying "private sector" R* might be lower than previously thought

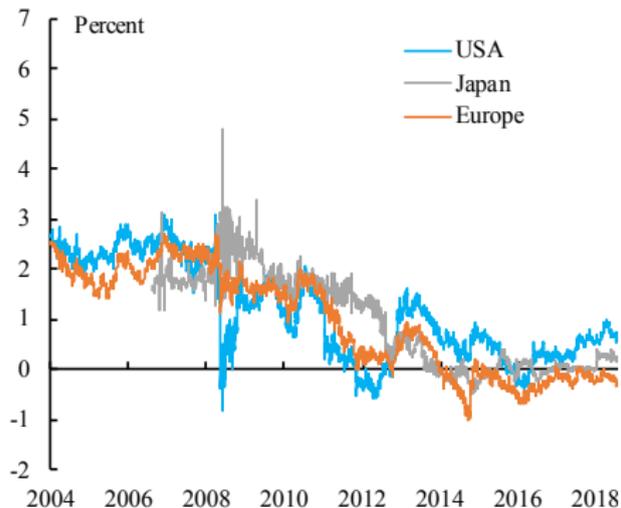# Two methodological premises of our analysis

1. Treat the advanced economies as a bloc

2. Focus on the excess of desired saving over investment, rather than on the role of the safety and liquidity premium

Real long-term interest rates across economies and markets
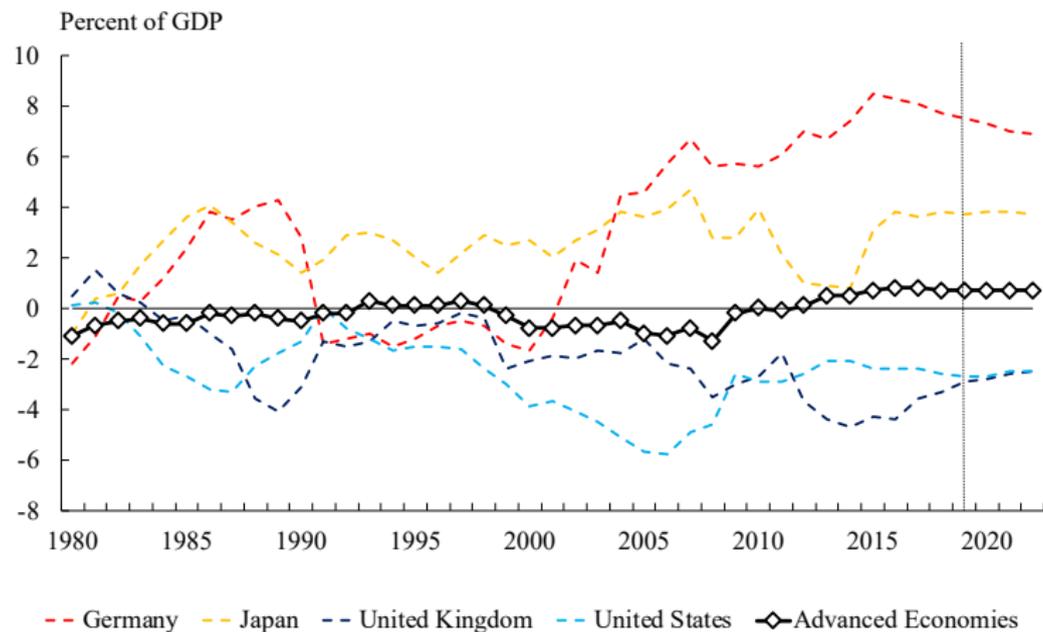
REAL YIELDS ON GOVERNMENT BONDS
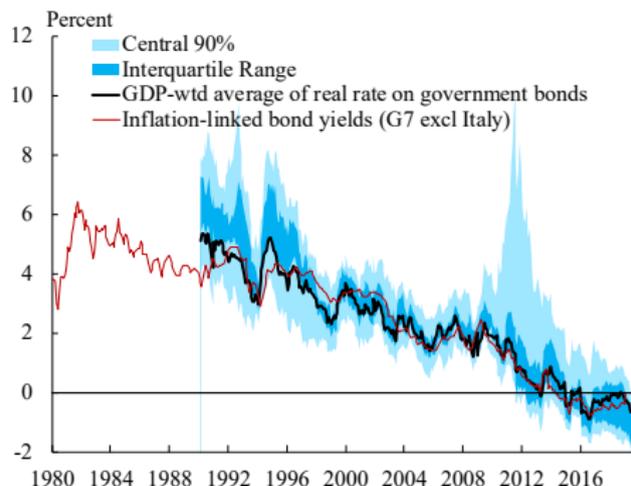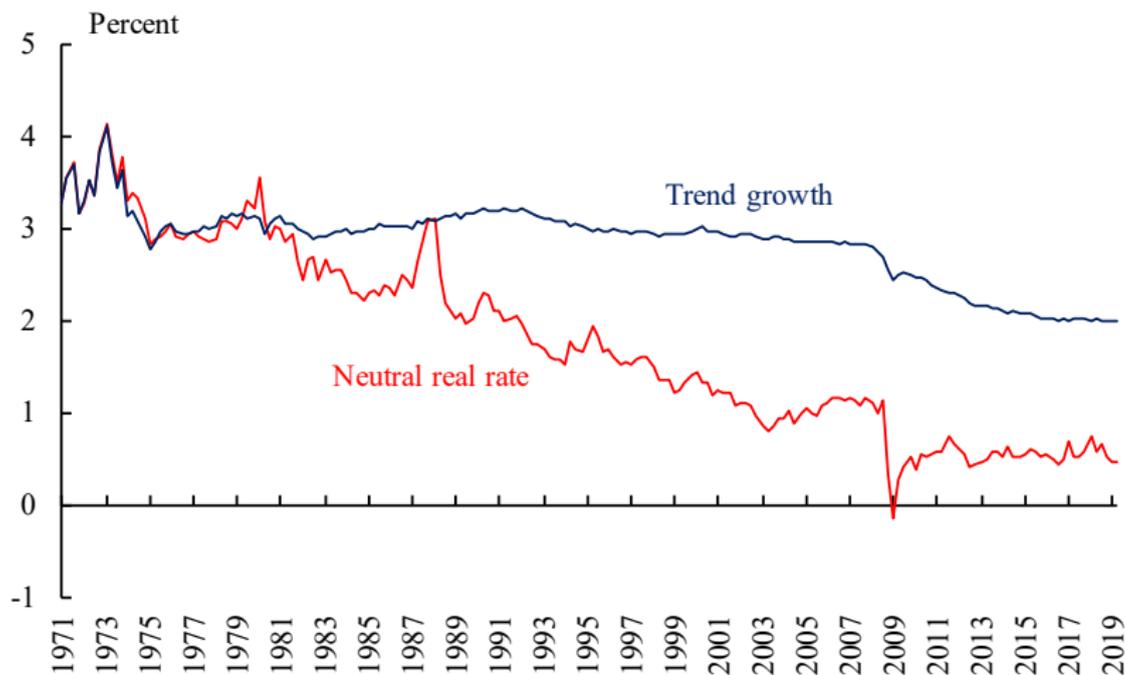

REAL FORWARD (5YR/5YR) SWAP RATES

▶ Real interest rates decline has been common across advanced economies

Advanced economies' current account balances

Percent of GDP

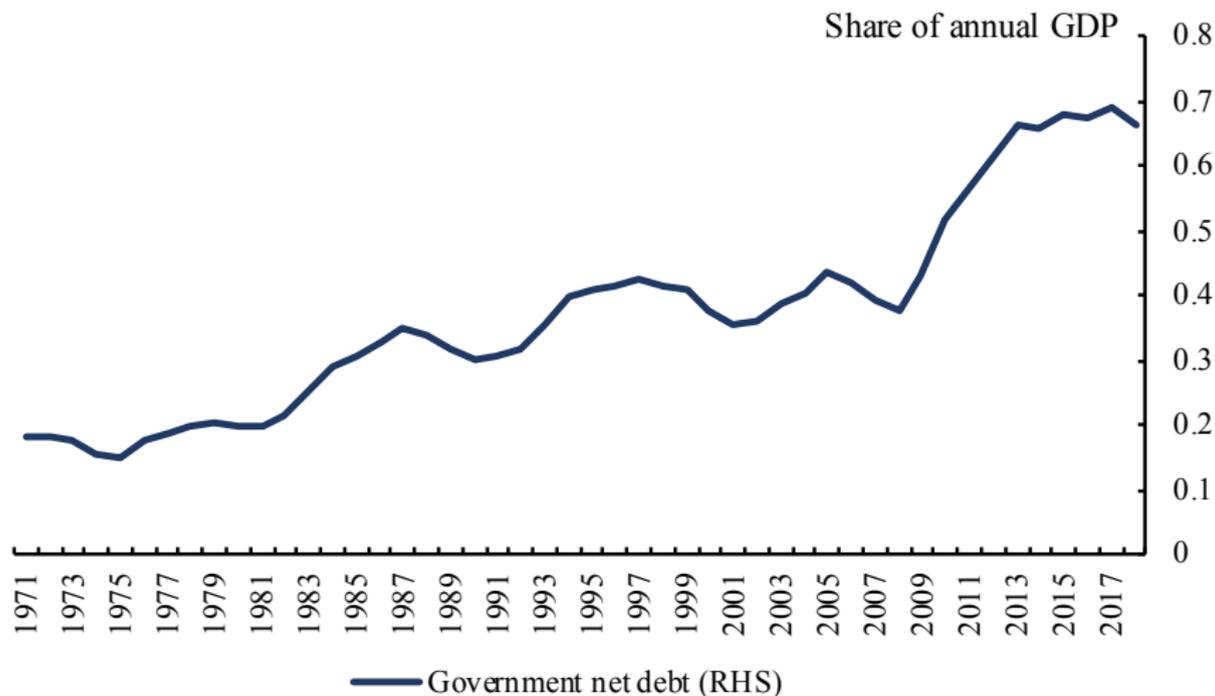Germany — Japan — United Kingdom — United States — Advanced Economies

▶ Aggregate current account of AEs small and stable

AE R* declined by around 3pp since the 1970s

- ▶ Follow the Holston, Laubach, and Williams (2017) methodology
- ▶ Results reveal a persistent downward trend that pre-dates the crisis

OECD government debt-to-GDP ratio more than tripled

Share of annual GDP

Government net debt (RHS)

What is the impact of higher govt debt on real rates?

- ▶ Difficult empirical problem:
  - ▶ Changes in debt and interest rates endogenous
  - ▶ Downward trend in R coincided with upward trend in government debt
- ▶ These difficulties likely attenuate the estimated effects

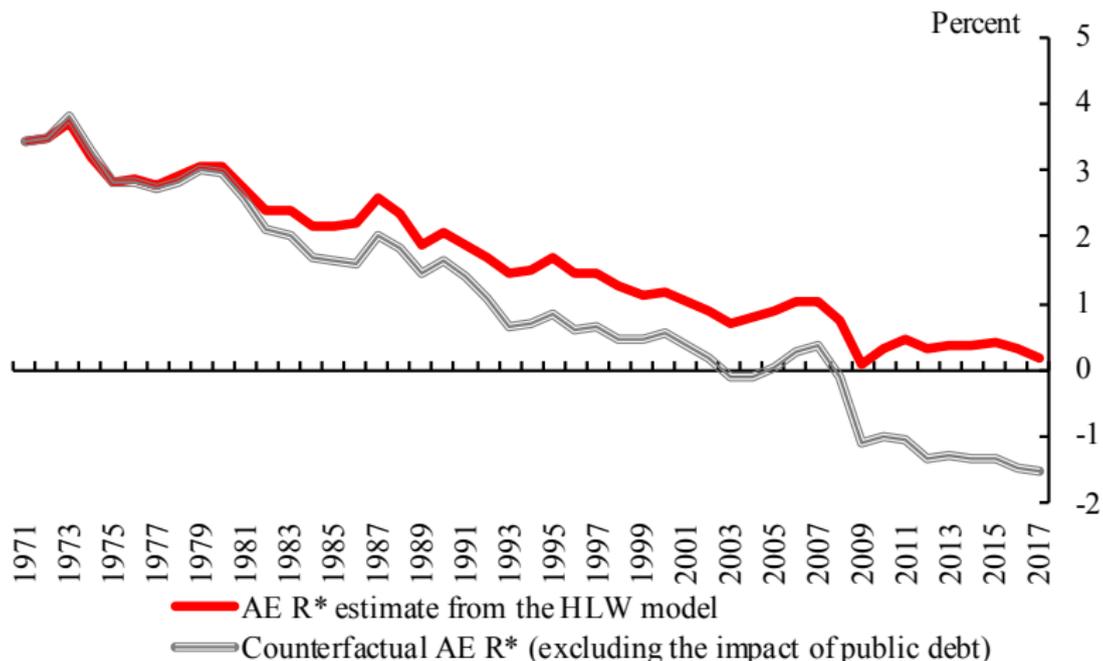# What is the impact of higher govt debt on real rates?

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IMPACT OF PUBLIC FINANCE SHOCKS ON LONG-TERM INTEREST RATES

Study	Country / region	1pp increase in deficit/GDP	1pp increase in debt/GDP
Gale and Orszag (2002) [lit review]	US	50-100bps	-
Laubach (2009)	US	20-30bps	3-4bps
Engen and Hubbard (2004)	US	18bps	3bps
FRB/US model	US	40-50bps	-
Faini (2006)	Euro Area	40bps	-
Brook (2003)	Advanced economies	20-40bps	1-6bps
Kinoshita (2006)	19 OECD economies	-	4-5bps
Average		*38bps*	*3.5bps*

Back of the envelope: impact of rising debt on R*

Percent

AE R* estimate from the HLW model
Counterfactual AE R* (excluding the impact of public debt)

- Simple calculation suggests higher debt pushed R* up by 1.5pp
- Without this support, AE R* would have been substantially negative

Beyond debt: other policy shifts in the OECD

Share of annual GDP

Social security — Old-age health spending
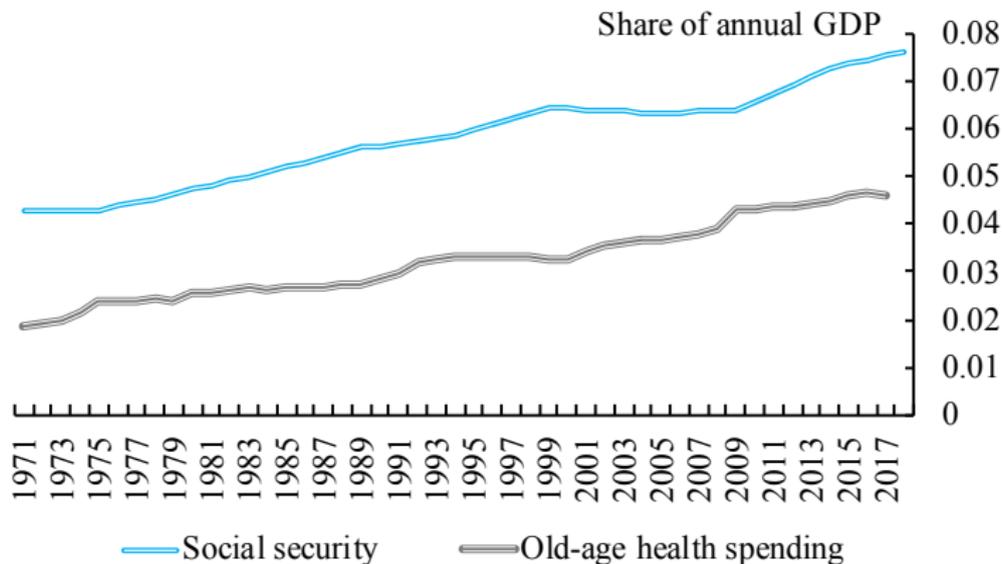
- ► Combined increase of social policies of about 5% of GDP
- ► Empirical elasticities suggest this could have pushed equilibrium rates up by between 1–2 percentage points

Model-based assessment

- ▶ GE framework consisting of 2 models:

- ▶ Life-cycle model: Blanchard (1985), Gertler (1999)
    - ▶ Two stages of life: work and retirement
    - ▶ Workers save for retirement; retirees decumulate assets
    - ▶ Finite lives key for the impact of government policies

- ▶ Incomplete markets: Aiyagari and McGrattan (1998)
    - ▶ Infinitely lived individuals face uninsurable idiosyncratic income risk
    - ▶ They self-insure through precautionary saving
    - ▶ Higher debt increases asset supply, making saving easier and cheaper

- ▶ We calibrate the models and, starting in the 1970 steady state, feed in historical paths of policies, tracing out the transition of R*
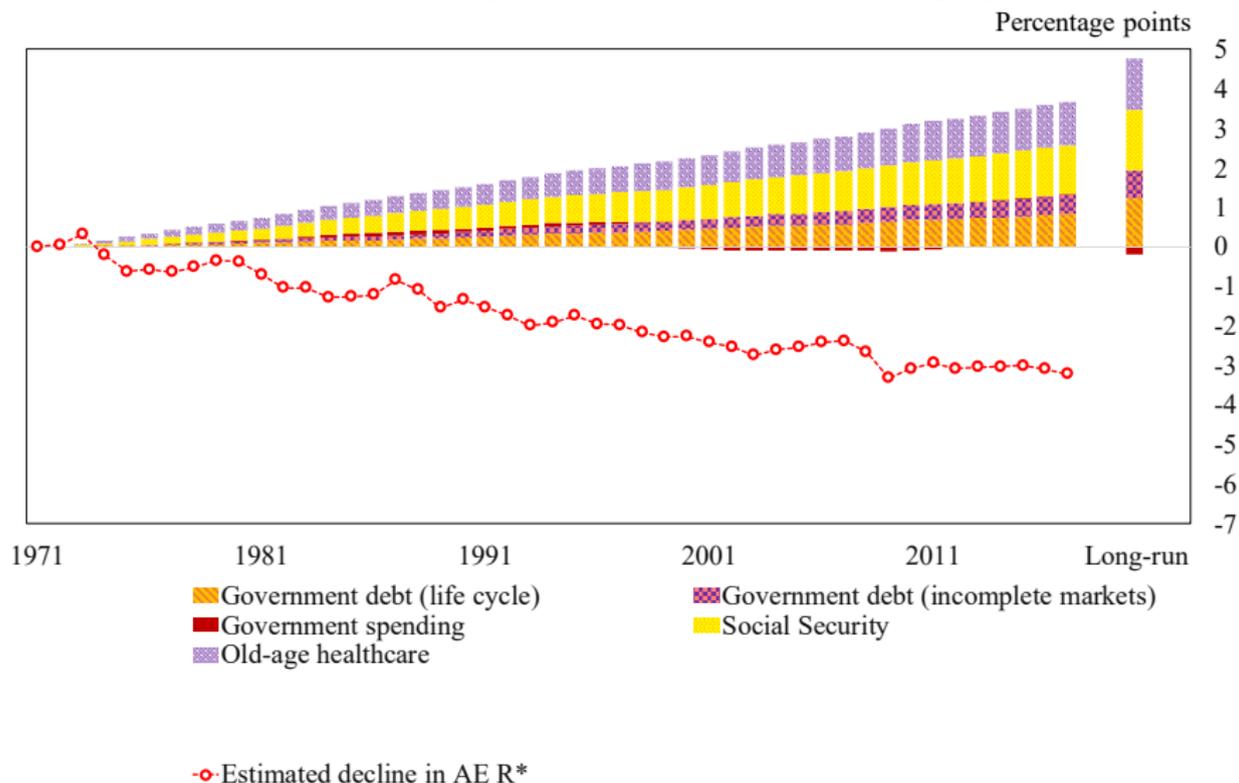
Model-based quantification: public policies
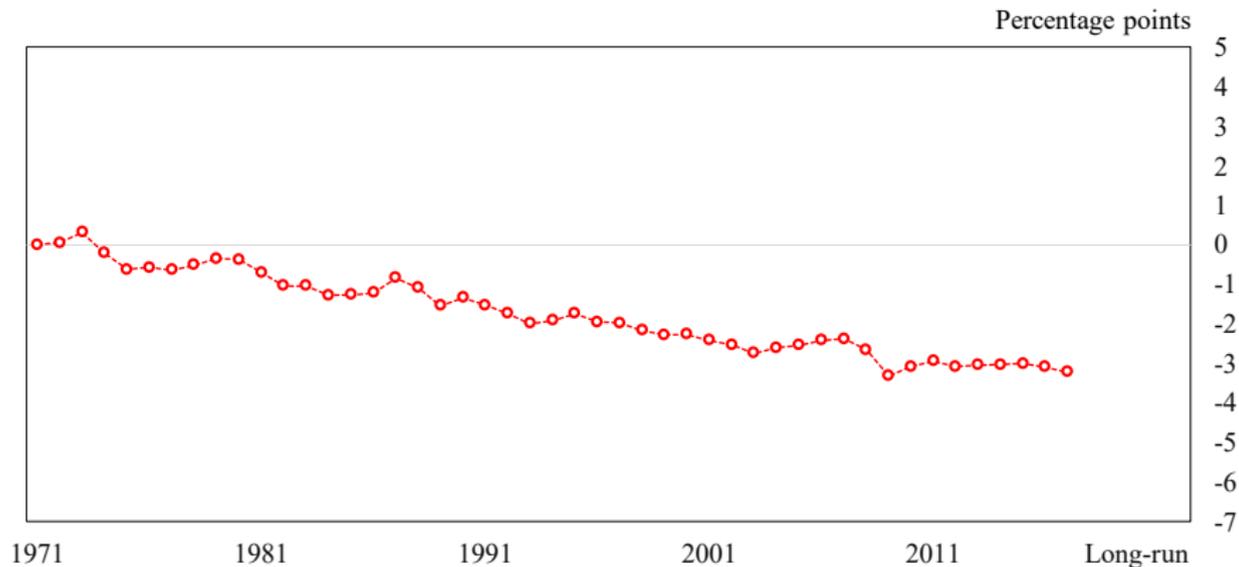
EXPLAINING CHANGES IN R* SINCE 1970

Percentage points

-o- Estimated decline in AE R*

Model-based quantification: public policies

EXPLAINING CHANGES IN R* SINCE 1970

Percentage points

Legend:
- Government debt (life cycle)
- Government debt (incomplete markets)
- Government spending
- Social Security
- Old-age healthcare

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Model-based quantification: public policies

EXPLAINING CHANGES IN R* SINCE 1970

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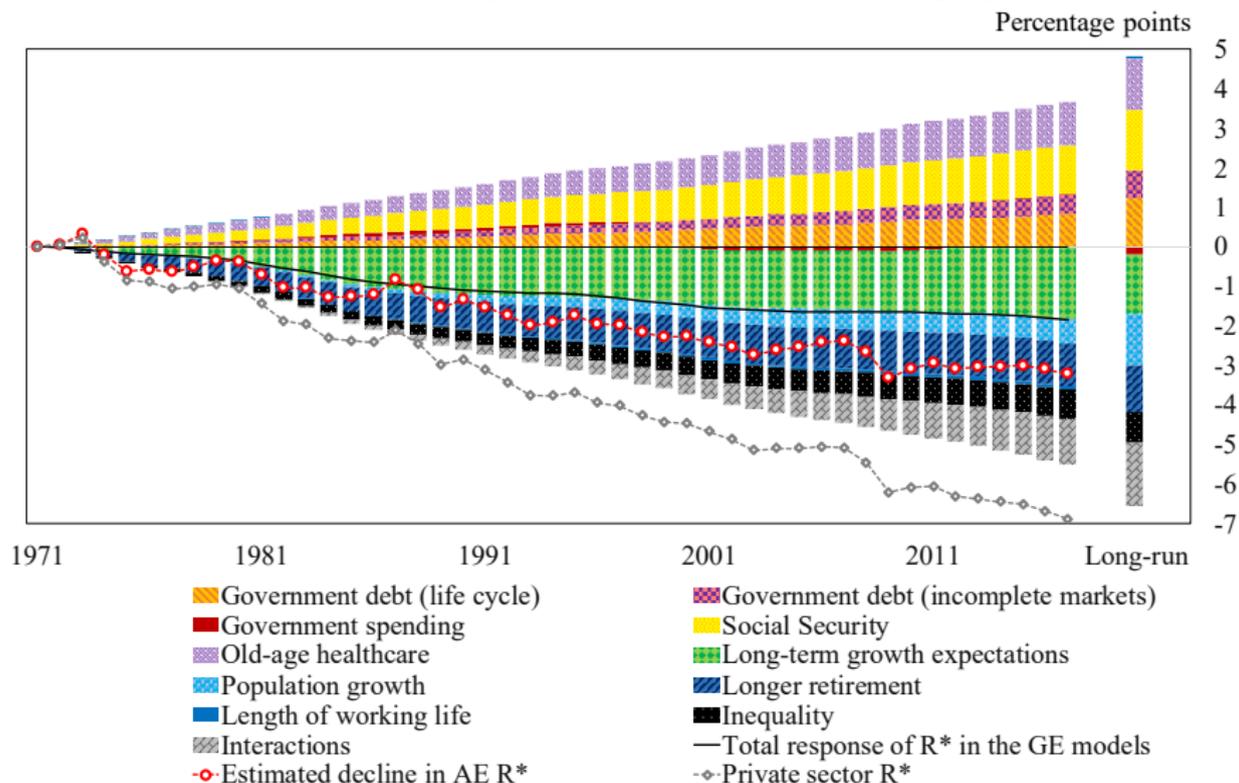- Government debt (incomplete markets)
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- Estimated decline in AE R*
- Private sector R*
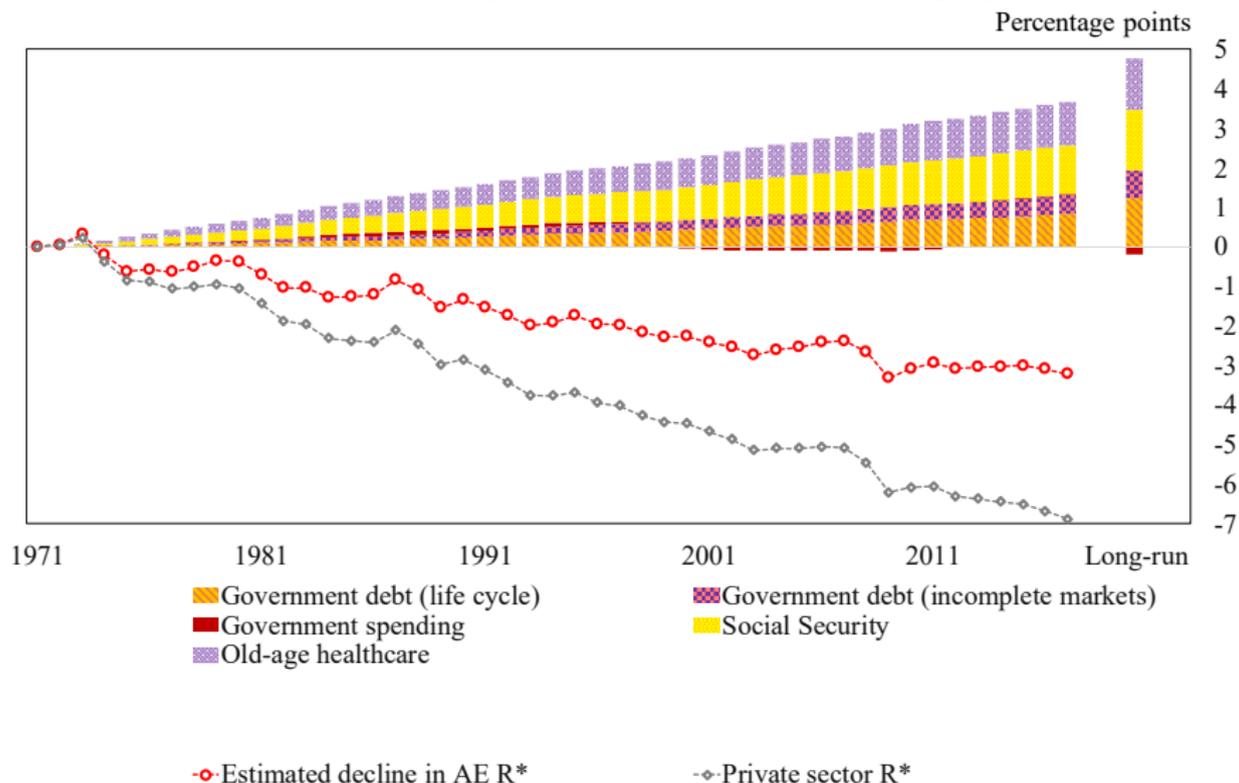
Validating the models

EXPLAINING CHANGES IN R* SINCE 1970

Percentage points

Legend:
- Government debt (life cycle)
- Government debt (incomplete markets)
- Government spending
- Social Security
- Old-age healthcare
- Long-term growth expectations
- Population growth
- Longer retirement
- Length of working life
- Inequality
- Interactions
- Total response of R* in the GE models
- Estimated decline in AE R*
- Private sector R*

Conclusion and implications

1. AE R* declined by about 3pp over the past 40 years
2. Shifts in desired saving and investment appear to be the key driver
3. A large 3–4 percentage points public policy offset
4. Private sector R* much lower than previously thought

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- Fiscal responsibility traditionally understood could mean negative neutral real rates in the industrial world
- The importance of fiscal as a stabilization tool and also as a driver of long-run trends (and the synergies between the two aspects)
- Measures to promote productivity growth are surely desirable but some may exacerbate aggregate demand shortfalls
- Need some combination of:
  - much greater tolerance of budget deficits than current attitudes suggest
  - well-designed cyclical fiscal policies
  - policies to boost private investment & absorb private saving
  - unconventional monetary policies / negative real rates

Thank you!