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

Łukasz Rachel
LSE and the Bank of England

Lawrence H. Summers
Harvard

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Disclaimer: Any views expressed here are solely of the authors and should not be taken to represent those of the Bank of England or its policy committees.
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

   - 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

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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 decline has been common across advanced economies

- Real yields on government bonds
- Real forward (5yr/5yr) swap rates

Central 90%
Interquartile Range
GDP-wtd average of real rate on government bonds
Inflation-linked bond yields (G7 excl Italy)

Real interest rates decline has been common across advanced economies
Advanced economies’ current account balances

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
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
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### Impact of Public Finance Shocks on Long-Term Interest Rates

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<th>Country / region</th>
<th>1pp increase in deficit/GDP</th>
<th>1pp increase in debt/GDP</th>
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<tr>
<td>Gale and Orszag (2002) [lit review]</td>
<td>US</td>
<td>50-100bps</td>
<td>-</td>
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<tr>
<td>Laubach (2009)</td>
<td>US</td>
<td>20-30bps</td>
<td>3-4bps</td>
</tr>
<tr>
<td>Engen and Hubbard (2004)</td>
<td>US</td>
<td>18bps</td>
<td>3bps</td>
</tr>
<tr>
<td>FRB/US model</td>
<td>US</td>
<td>40-50bps</td>
<td>-</td>
</tr>
<tr>
<td>Faini (2006)</td>
<td>Euro Area</td>
<td>40bps</td>
<td>-</td>
</tr>
<tr>
<td>Brook (2003)</td>
<td>Advanced economies</td>
<td>20-40bps</td>
<td>1-6bps</td>
</tr>
<tr>
<td>Kinoshita (2006)</td>
<td>19 OECD economies</td>
<td>-</td>
<td>4-5bps</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td></td>
<td><strong>38bps</strong></td>
<td><strong>3.5bps</strong></td>
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Back of the envelope: impact of rising debt on R*

Neutral Real Rate in AEs holding public debt constant

- 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

- 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

- Estimated decline in AE R*

- 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

Percentage points
Model-based quantification: public policies

Explaining Changes in $R^*$ since 1970

Percentage points

-7
-6
-5
-4
-3
-2
-1
0
1
2
3
4
5

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

Estimated decline in AE $R^*$
Explaining Changes in $R^*$ since 1970

- Government debt (life cycle)
- Government spending
- Social Security
- Old-age healthcare

Estimated decline in AE $R^*$

Private sector $R^*$
Validating the models

**EXPLAINING CHANGES IN $R^*$ SINCE 1970**

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

Percentage points


Estimated decline in AE $R^*$
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
Conclusion and implications

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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!