EIGHT CENTURIES OF GLOBAL REAL RATES AND THE ‘SUPRASECULAR’ DECLINE, 1311-2018

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- Debates on “secular stagnation”, as well as on inequality/ R-G lack historical basis.
- Over the (very) long-term, real rates have not been static or mean-reverting. In fact, they have been falling for over 500 years – on average by 1.2 basis points per annum.
- Against that background, there is no reason to expect them to “plateau” or “stabilize” in the future.
- Instead, unless capital accumulation trends radically revert, expect a continuation of falling real rates, more frequent ELB and negative real rates, and more serious monetary policy challenges.
Real rate trends: stylized consensus

Irving Fisher:

• “interest cannot fall or rise unduly; for any such fluctuation corrects itself through the choice of appropriate income-streams. If interest is high, descending income streams will be chosen which tend to make interest low; while, if it is low, the reverse will be true” *(The Rate of Interest 1907, 176).*
Real rate trends: stylized consensus

- “There has been no pronounced long-term trend either upward or downward”...
- “The virtual stability of the pure return on capital over the very long-run is a fact of major importance for this study” (Piketty 2014, 206).

Figure 10.9. Rate of return vs. growth rate at the world level, from Antiquity until 2100

The rate of return to capital (pre-tax) has always been higher than the world growth rate, but the gap was reduced during the 20th century, and might widen again in the 21st century.

Sources and series: see piketty.pse.ens.fr/capital21c
Real rate trends: stylized consensus II

• “Figure 1...shows very clearly the decline in real rates starting in the late 1990s and continuing through and after the banking crisis of 2007-9”, (King and Low 2014, 7).

• “Note that the model projects that the interest rate will continue to decrease until it hits a nadir in 2020. After 2020, there are cycles in the real interest rate due to the echo effects of the baby boom. The economy gradually converges to the final steady-state interest rate of −1.47%”, (Eggertsson, Mehrotra, Robbins 2017).

• “the real safe asset rate is normally fluctuating around the levels we see today” (Jorda et al. 2017, 4).
New Dataset Schmelzing (2018): “Safe asset provider basis” (nominal, long-term, default-free)

Source: Schmelzing (2018), and sources therein.
Global basis: 71% of DM GDP represented over 707 years

Source: Schmelzing (2018), and sources therein.
Empirical basis: archival data

Source: Schmelzing (2018), Neumann (1865).
The “suprasecular decline”: global GDP-weighted nominal (%)

The “suprasecular decline” I: annual fall 0.9-1.2 bps

Global basis: $y = -0.0124x + 9.1539$
Safe asset provider: $y = -0.0093x + 8.0254$

Inflation basis: demise of deflation raises average inflation

All-time annual average, GDP-weighted: 1.65%.
All-time annual average, equal weighted: 1.77%.


<table>
<thead>
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<th>%</th>
<th>1300s</th>
<th>1400s</th>
<th>1500s</th>
<th>1600s</th>
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<td>2.2</td>
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<td>4.6</td>
<td>3.5</td>
<td>3.4</td>
<td>2.0</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Trends confirmed in private R: real German private mortgage rates, 1250-1883.

Trend R-G, German private R basis: -0.73bps p.a.

Standard deviation: real rate “stickiness” ever increasing

Fall p.a., global STD, %: -0.0145
Fall p.a., safe asset provider STD, %: -0.0273

“Real rate depressions” in context

Trend: $y = -0.0092x + 8.0221$

1955-1985 as the anomaly. Since 1985 re-convergence

Outlook: extrapolating the trends...

Note: assumes constant curve steepness, 10-2Y global: 52bps; 10-2Y safe asset, 96bps.
Growth: not a primary proxy

All-time correlation, annual basis: -0.06

Demographics: no primary proxy either

All-time correlation, annual basis: -0.295

Am I just capturing declining risk premium? No.

Real global land returns, 7-Y MA
Real risk premium, estimate 2
Linear (Real global land returns, 7-Y MA)

Driver I.A: Capital accumulation, “safe asset share” estimates – U.K., 1471-1965

“So far” story conforms in the general properties.

Real rate trend fall - 7.4bps p.a. 1471-1688.

Real rate trend fall - 2.55bps p.a. 1689-1812.


Financial assets/GDP ratio (RHS) - - - Safe asset share estimate, lower bound  - - Safe asset share estimate, upper bound

Basis: Upper bound linearly interpolates financial asset/GDP datapoints in Van Zanden, Zuijderveld, and De Moor (2012) and Goldsmith (1985); lower bound assumes monetary metals/financial assets ratio of 0.76x in 1471 and linearly interpolates to Goldsmith’s (1985) 1688.

Public debt basis Ryland and Thomas (2017), Hamilton (1947) and Sinclair (1785).
**Driver I.C: Capital accumulation, “safe asset share” estimates – Holland, 1591-1780**

- **1609**: Voluntary debt conversion, truce with Spain
- **1621**: Philip IV resumes war, bill-financed debt boom

**Graph Details:**
- **Financial assets/GDP estimate, ex-cash, private loans growth 1.1% p.a. RHS**
- **Safe asset share, private loan growth 2.6% p.a.**
- **Safe asset share, private loan growth 1.1% p.a.**
- **Broader safe asset share (life annuities + redeemable annuities), private loan growth 2.6% p.a., LHS**

Driver I.B: Capital accumulation, estimating K/Y via bullion data.

Real per capita money supply change/real long-term rate change, 1488-1798.