Why are real interest rates so low?

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The Future of Savings Axa-BdF Conference

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The decline of real rates
The stability of Return on K
(based on national accounts)
Determinants of $r$ in model with demography

- Observable factors
  - Productivity of labor $g_A$
  - Aging
    - Growth of working age population $g_L$
    - Increase in the probability of survival $s$
  - Relative price of capital (developing apps in Palo Alto,...) $g_I$

- Not so easy to observe factors
  - Levels of debt constraints $\theta$

- 3 periods in life, « young », « middle age », « old »
  $$u(c_{y,t}) + (1 - \delta)u(c_{m,t+1}) + (1 - \delta)^2 s_{t+1} u(c_{o,t+2})$$

- Constraint on debt
  $$b_{y,t+1} \leq \frac{\theta w_{t+1}}{1 + r_{t+1}}$$
Demand and supply => the real rate $r$

- **Loan demand**

$$L_{D,t} = \frac{\theta (1 + g_L)(1 + g_W)}{1 + r_{t+1}} w_t$$

- **Loan supply**

$$L_{S,t} = (1 - \theta) w_t - c_{m,t} - \frac{r_{K,t+1} k_{t+1}}{1 + r_{t+1}}$$

$$\frac{1}{2} (1 + g_L)(1 + e^y(1 + g_L))(1 + g_W) w_t$$

Où $g_W = 1 + g_A - \frac{g_I}{2}$
What determines $r$

$$r = \frac{\delta}{2} + g_A + g_L + e^y + \frac{1 - s}{2} - \frac{1}{2} g_I + \frac{3}{10} \theta$$
Impact of observable determinants (US) (pour un $\theta = 0,025$)

-1,7 %
Impact of observable determinants (EA) (pour un $\theta = 0,025$)
Decomposing the effects on r

<table>
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<th></th>
<th>Productivity</th>
<th>Pop. Active</th>
<th>Longevity</th>
<th>Price of Inv.</th>
<th>Total</th>
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</table>
Impact of changing the debt constraint (EA)

- How large should $\theta$ be?
  - Household debt is 50% of GDP in the EA, 100% in the US, i.e. 1 to 10% of 20 years of household disposable income
  - Cutting $\theta$ from 0.1 to 0.025 implies a 2% fall in $r$
Conclusion

• Real rates on “risk free” assets dropped by 4% in 20 years and return on capital is flat
• The productivity slowdown explains 1%
• Demography explains another 1 (to 2) %
• The missing (1 to) 2 % reflects either
  – an increase in risk aversion or
  – the perception that risk has increased