Public debt as a substitute for reforms

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Public debt, bubbles and frictions

- reforms are about eliminating various frictions that result in an inefficiently low level of output
- asset bubbles can alleviate financial frictions and thus enhance growth: Caballero and Krishnamurty 2006 , Farhi and Tirole 2014, Martin and Ventura 2014

The traditional role of bubbles: eliminate dynamic ineffiency

- in a dynamically inefficient economy a "bubble" on an unproductive assets passed across generation absorbs resources and crowds out capital thus eliminating the inefficiency (Martin and Ventura 2011, 2016)

Bubbles in an efficient economy: can relax frictions expanding capital and output

1. a government with *limited ability to tax* can overcome this friction managing bubbles, i.e. issuing and rolling public debt (Martin and Ventura 2015, 2016)

2. bubbles can enable the transfer of resources from *unproductive to productive uses*
   - they are sold by productive to unproductive agents, either directly or indirectly through the credit market (Ventura 2012 and Ventura and Voth 2015)

3. bubbles can enhance liquidity in the presence of liquidity contraints
   - if some assets have a special status as collateral. Bubbles on these assets can relax the borrowing limit of financially constrained agents

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  - *a 1% reduction in real rates in the next five years relative to the rate currently projected would reduce the average advanced economy debt-to-GDP ratio by about 4 percentage points*
  - *if $r^F < g$ for a long time, some increases in debt-financed government spending, especially public investment, may not lead to increases in public debt in the medium term*

(IMF, October 2013)

Is debt a bubble, *i.e.* a free lunch?

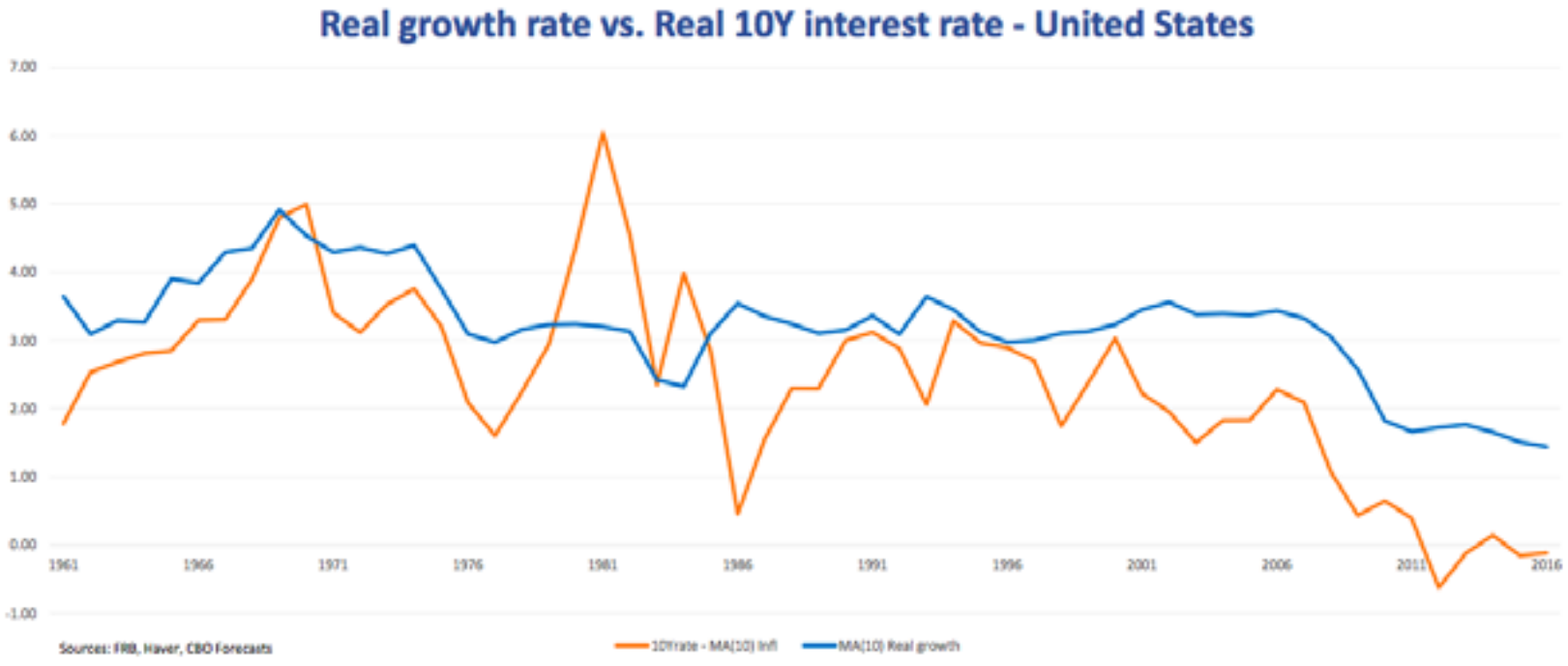

Figure: Real growth rate vs. Real 10Y interest rate - US

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Examples

- in the Lucas "tree model" the risk-free rate is pinned down by non diversifiable uncertainty – in the model the volatility of output σ^2 (the dividends from trees)
  - an increase in σ^2, and thus in the required return on risky assets, pushes down R^F

$$R^F = \frac{1+g}{\beta} \exp(-\sigma^2(Y)/2)$$

- the same result obtains in the Diamond model with uncertainty
- bottom line: In the presence of non diversifiable uncertainty: $R^F < g < f'(k)$
- bubbles can be genarated even in an efficient economy

Even when $R^F < g$, if $f'(k) > g$ debt is not a free lunch

$$B_{t+1} = R^F B_t$$

$$E_t(\frac{B_{t+1}}{Y_{t+1}}) = E_t \frac{R_t^F B_t}{(1+g)v_{t+1} Y_t}$$

$$E_t(b_{t+1}) = (1/\beta)b_t \qquad \text{where } b_t = \frac{B_t}{Y_t}$$

where$\beta$is the discount rate and $\beta^{-1} > 1$
The expected value of β diverges independently of R^F.

A mirror image of this is the fact tat the *transversality condition*is not satisfied:

$$lim_{t\to\infty} E_o b_t \prod_{t=1}^{\infty} \frac{(1+g)v_t}{R^F} = b_0 > 0$$

Intuition: since Y is stochastic, even if $E(Y) > R^F$ it could still be that some realizations fall below R^F

Rate of return on equity, safe rate and equity premium

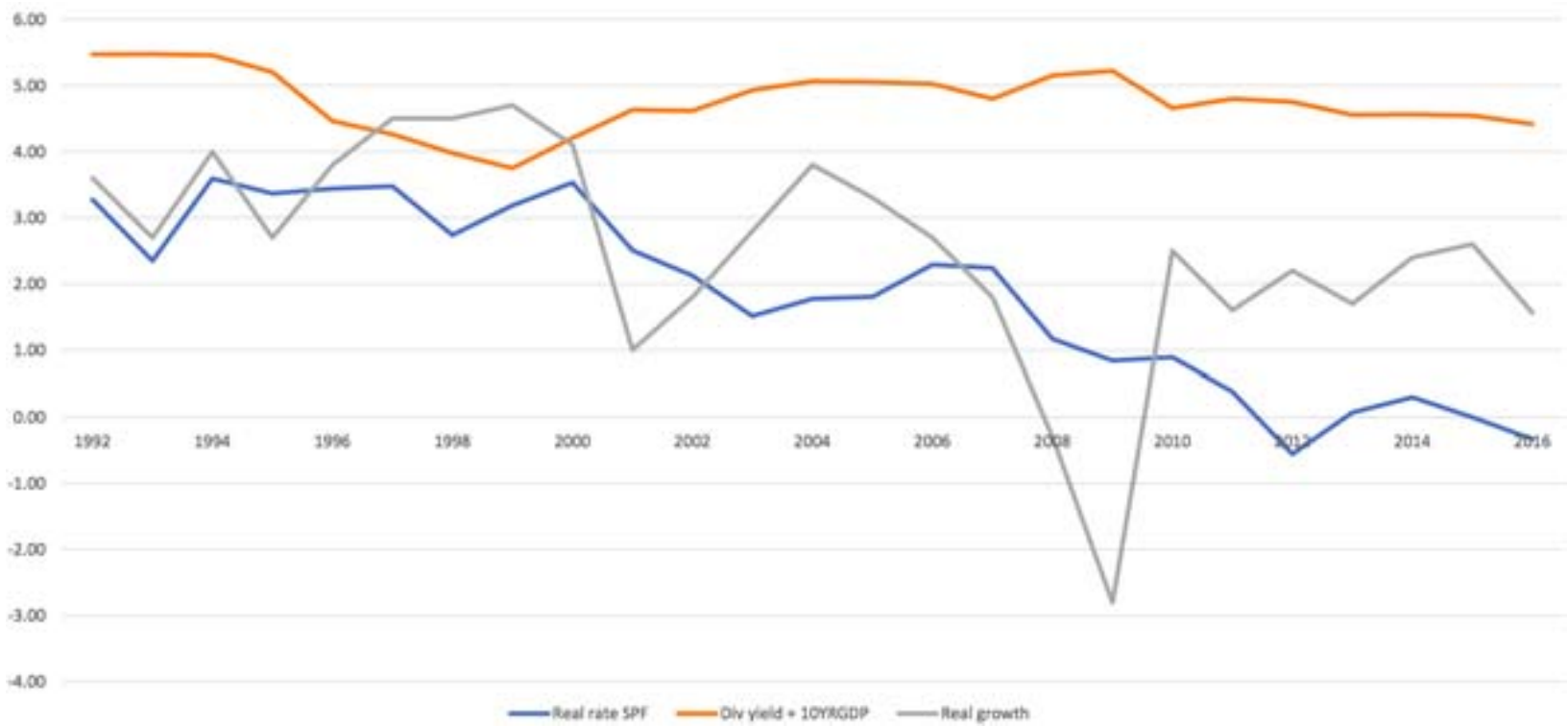

Figure: Return on equity, safe rate and equity premium

Low R^F : narratives

- Global savings glut (Bernanke)
- Secular stagnation (Summers)
- Excess demand for safe assets (Caballero, Farhi and Gourinchas)

Risk premium

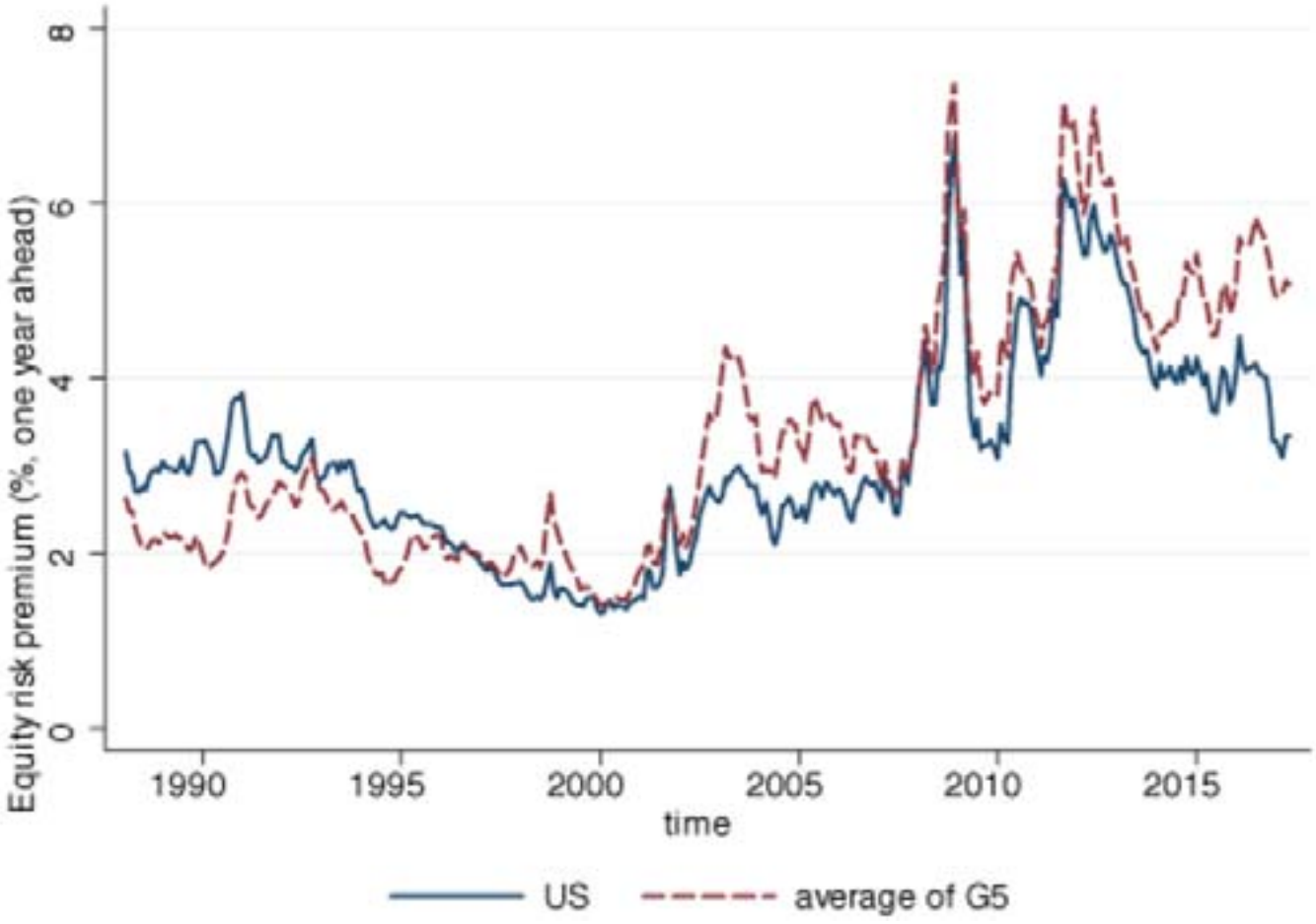

Figure: Equity risk premia

Observations (Caballero and Simsek 2017)

- the current *full employment equilibrium* seems to require a *high equity risk premium*
  - high valuations
  - low interest rates
- this takes place with record low levels of realised market volatility
- in the *risk market*, equilibrium seems to require
  - a very high Sharpe ratio to generate the valuations required to support aggregate demand
- this makes the global economy extremely vulnerable to a *spike in volatility*

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- policy implications
  - *medium run*: focus on distortions and role of liquidity provision
    - households: safety nets in China
    - countries: liquidity during sudden stops
    - increase supply of safe assets (Brunnermeier et al)
  - *short run:* macroprudential
    - because risk taking (and the resulting speculation) is associated with aggregate demand externalities.

Summing up

- Relying on $R^F < g$ as a substitute for reforms is not only risky: it is wrong
- Current *full employment equilibrium* fragile to a volatility spike
  - macro pru could help in the short run
  - more structural interventions in the medium run