

Inflating our troubles away?

Comments on “Inflating away the public debt? An empirical assessment”

by Jens Hilscher Alon Aviv and Ricardo Reis

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Question

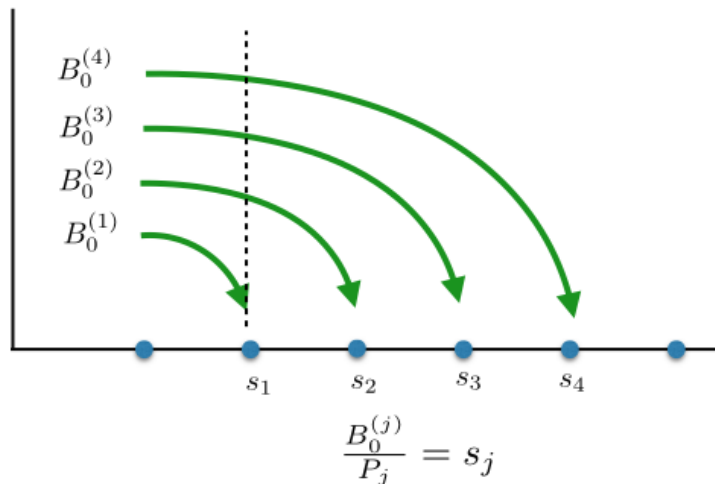
$$\frac{B_{t-1}}{P_t} = E_t \sum_{j=0}^{\infty} \beta^j \frac{u'(c_{t+j})}{u'(c_t)} s_{t+j} = E_t \sum_{j=0}^{\infty} \frac{1}{R_{t,t+j}} s_{t+j}$$
$$\frac{\sum_{j=0}^{\infty} Q_t^{(j)} B_{t-1}^{(j)}}{P_t} = \dots = E_t \sum_{j=0}^{\infty} \frac{1}{R_{t,t+j}} s_{t+j}$$

Real value of government debt = present value of real primary surplus.

Long term debt

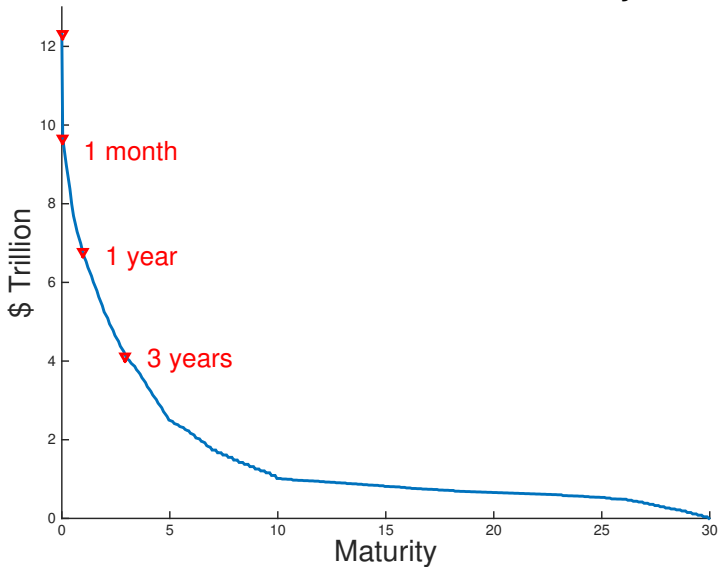
- ▶ Buffers fiscal shocks $\{s_t\}$ to Q , future P .
- ▶ Buffers discount rate shocks $\{R_t\}$.
- ▶ Allows slow, expected inflation to devalue debt.

Expected inflation can devalue long-term debt



- ▶ A rise in $E_1 P_{1+j}$ can devalue debt sold before 1, \rightarrow lower s_j .

Federal debt due on or before each maturity in 2012



Inflation and US fiscal problems

“The goal of this paper is to quantify the likelihood of inflation significantly eroding the real value of U.S. debt.”

“....significantly improving the US long-term fiscal position.”

$$b_t = \frac{B_{t-1}}{P_t} = E_t \sum_{j=0}^{\infty} \frac{1}{R^j} s_{t+j}$$

$$\frac{b}{Y} = \frac{s/Y}{r-g} \rightarrow \frac{s}{Y} = (r-g) \frac{b}{Y}$$

	% of GDP	2017 \$
Debt service	< 0.5% - 1%	\$95b - \$190b
CBO deficits	3% (2017) - 5% (2027)	\$550b - \$950b
Kotlikoff fiscal gap	10.5%	\$2,000b

- ▶ Social security, medicare, medicaid, pensions, credit guarantees.
- ▶ Inflation sensitivity?

US fiscal problems

$$b_t = E_t \sum_{j=0}^{\infty} \frac{1}{R^j} (\tau Y_{t+j} - G_{t+j})$$

$$b + PV(G) = \frac{\tau Y}{r - g}$$

How does the equation hold?

- ▶ Massive cuts in growth rate of G. (Expected?)
- ▶ Massive negative returns. (*Future* default, inflation. Unexpected!)
- ▶ More g! $r - g$ from 2% to 1% doubles $PV(\tau Y) = PV(G)$!
- ▶ More τ ? (20% \rightarrow 30% of Y, plus state & local)

$$\frac{d}{d \log \tau} \left(\frac{Y}{r - g} \right) = 1 + \frac{d \log Y}{d \log \tau} + \frac{1}{r - g} \frac{dg}{d \log \tau}$$

“Present value Laffer curve.” $1/(r - g) \rightarrow$ *tiny* growth elasticity ruins the present value of tax receipts.

US fiscal dangers...and inflation

$$b_t = E_t \sum_{j=0}^{\infty} \frac{1}{R^j} (\tau Y_{t+j} - G_{t+j})$$

$$b + PV(G) = \frac{\tau Y}{r - g}$$

How does the equation fall apart?

- ▶ Less g ! $r - g$ from 1% to 2% halves $PV(\tau Y) = PV(G)$!
- ▶ More r !

$$\frac{s}{Y} = (r - g) \frac{b}{Y}$$

- ▶ r to 5%, $b/Y=1$, $s/Y = 5\%GDP = \$1 \text{ Trillion}$.
- ▶ "Not so bad r ". $r = \delta + \gamma(g - n)$. $\gamma = 1$, lose g benefit.
- ▶ "Bad r ". Lose faith in s , credit spread, r with no g , debt crisis.

A message from the paper. (Inflation?)

- ▶ Long term debt, rising r raises debt service right away.
- ▶ Large inflation does not change surpluses much \leftrightarrow surplus crisis resolved by inflation produces larger inflation.