

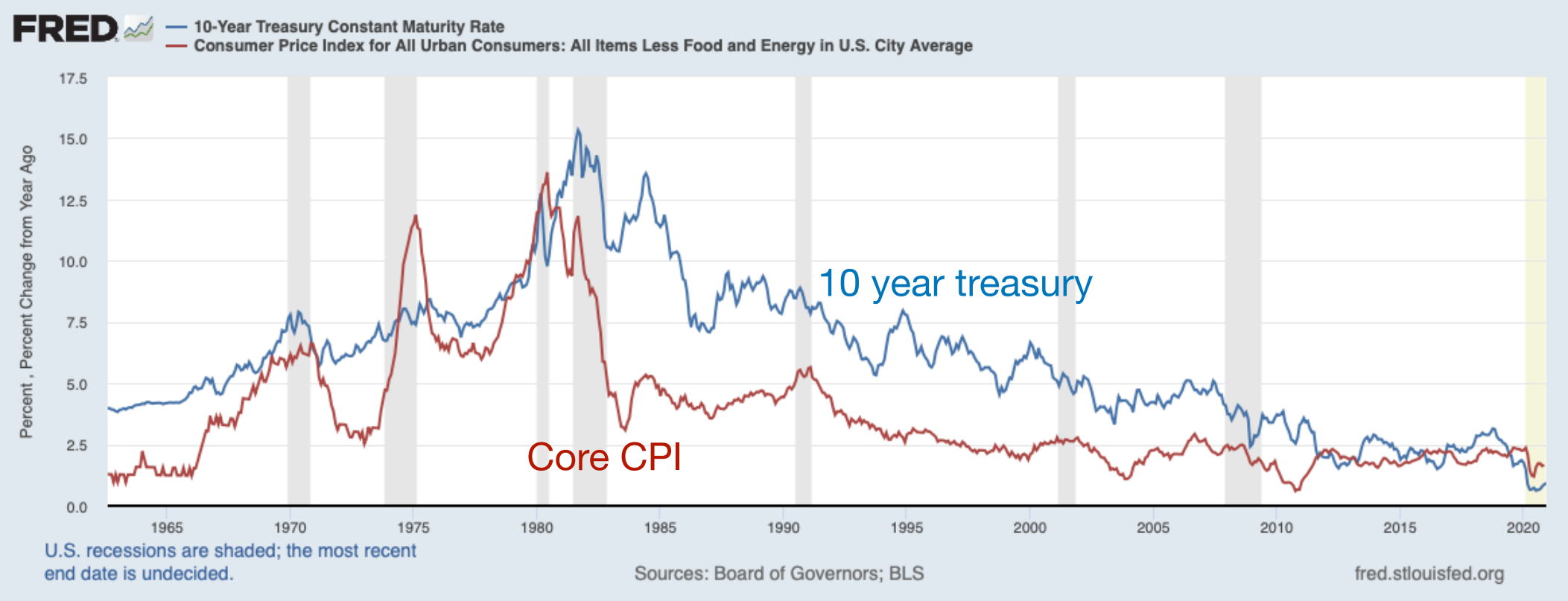
Low Interest Rates and Government Debt

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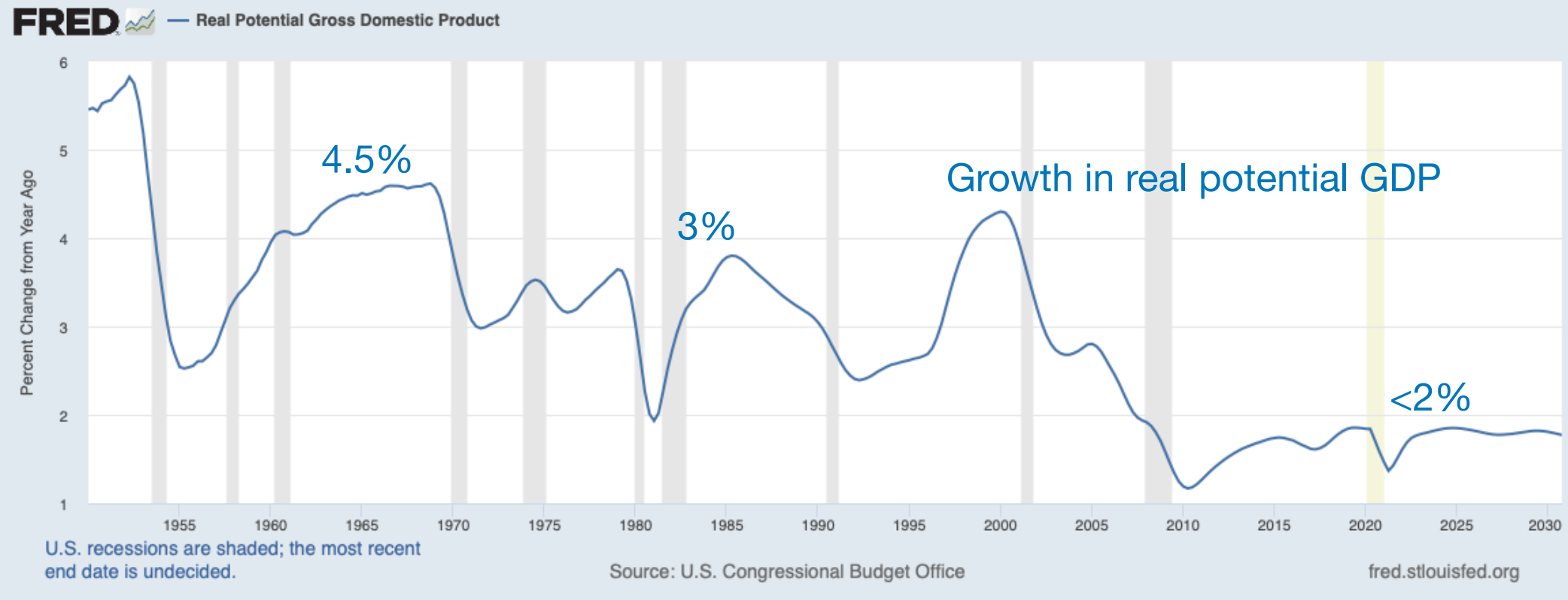
<https://www.johnhcochrane.com>

Why are rates so low? When and how will it end?



- Steady trend since 1980
- Savings gluts, fx reserves, central banks QE, zero bound, liquidity demands, etc. icing. Cake?

Econ 101 basics

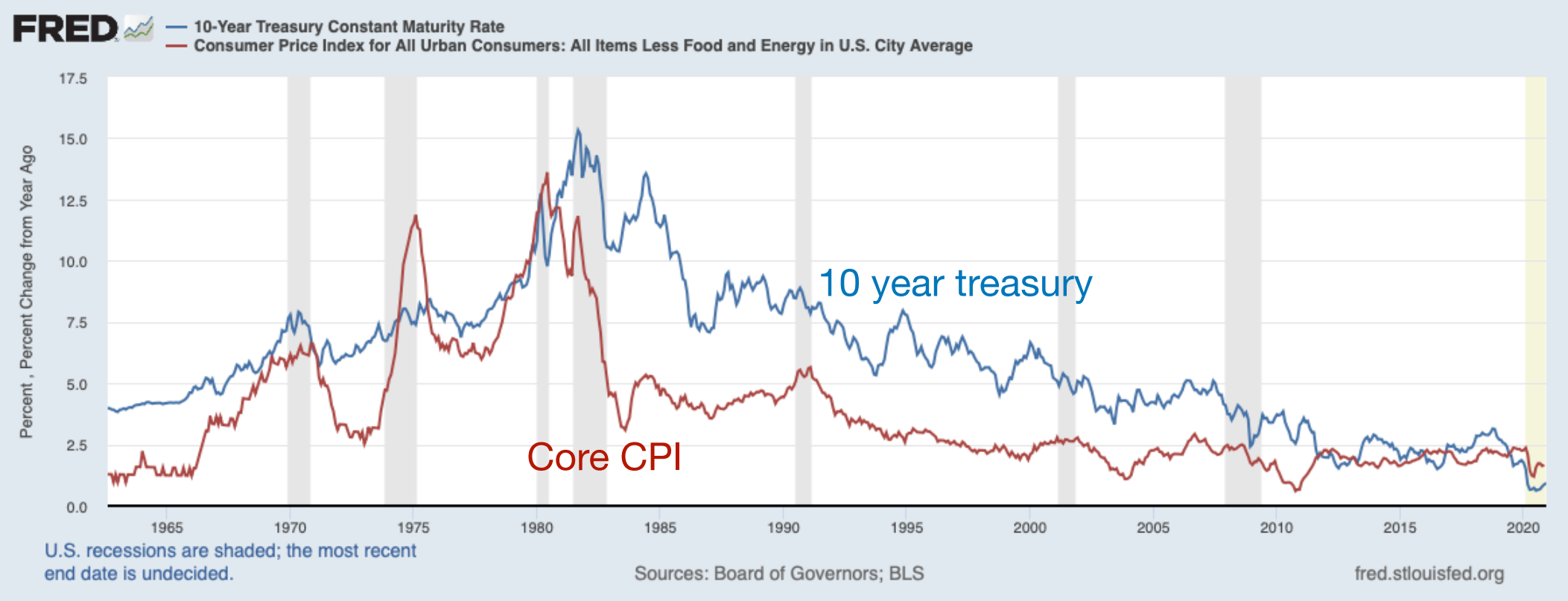


$$r = \delta + \gamma g = \theta f'(k)$$

Real rate = impatience + (1-2) x growth = marg. product capital

- More patience (saving demand) lowers r given g , or raises g given r . Less g lowers r .
- Less capital intensive (services)? Fewer ideas (end of growth)? More tax and regulation?

What happened in 1980?

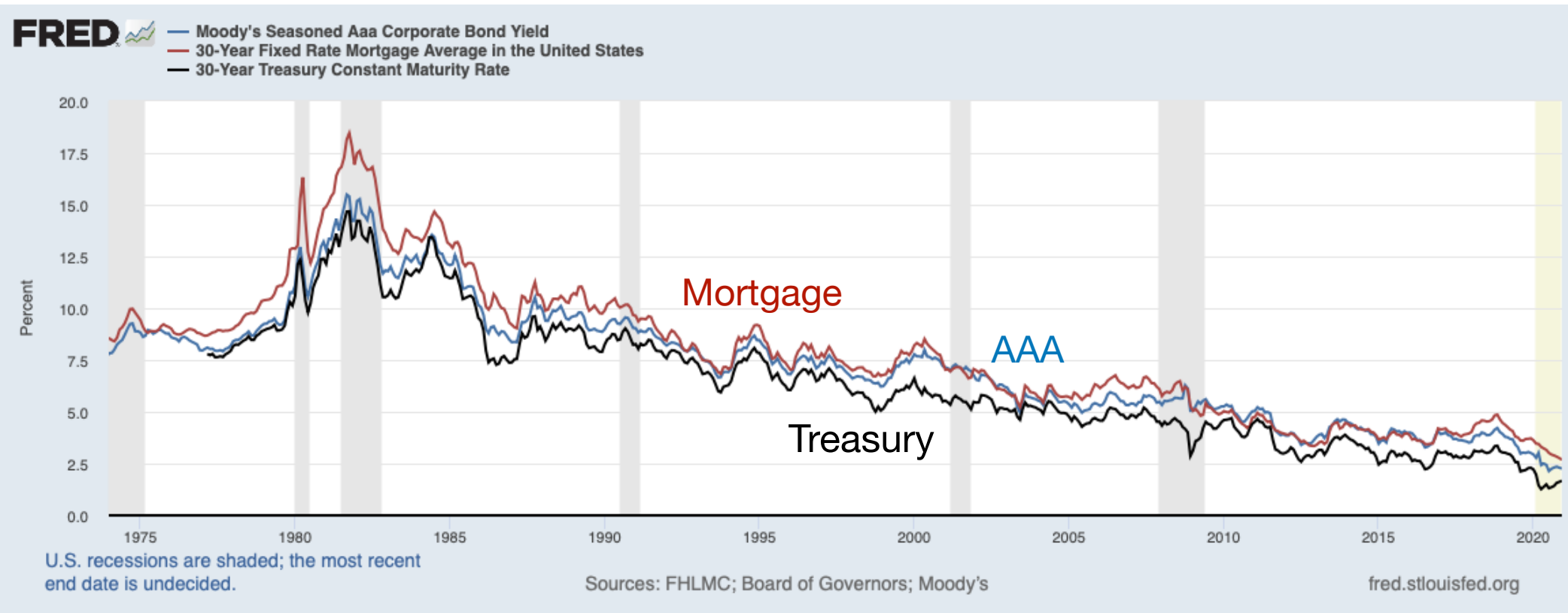


$$E(R_i) = R^f + \beta_i \lambda$$

Average return = risk free rate + beta x premium

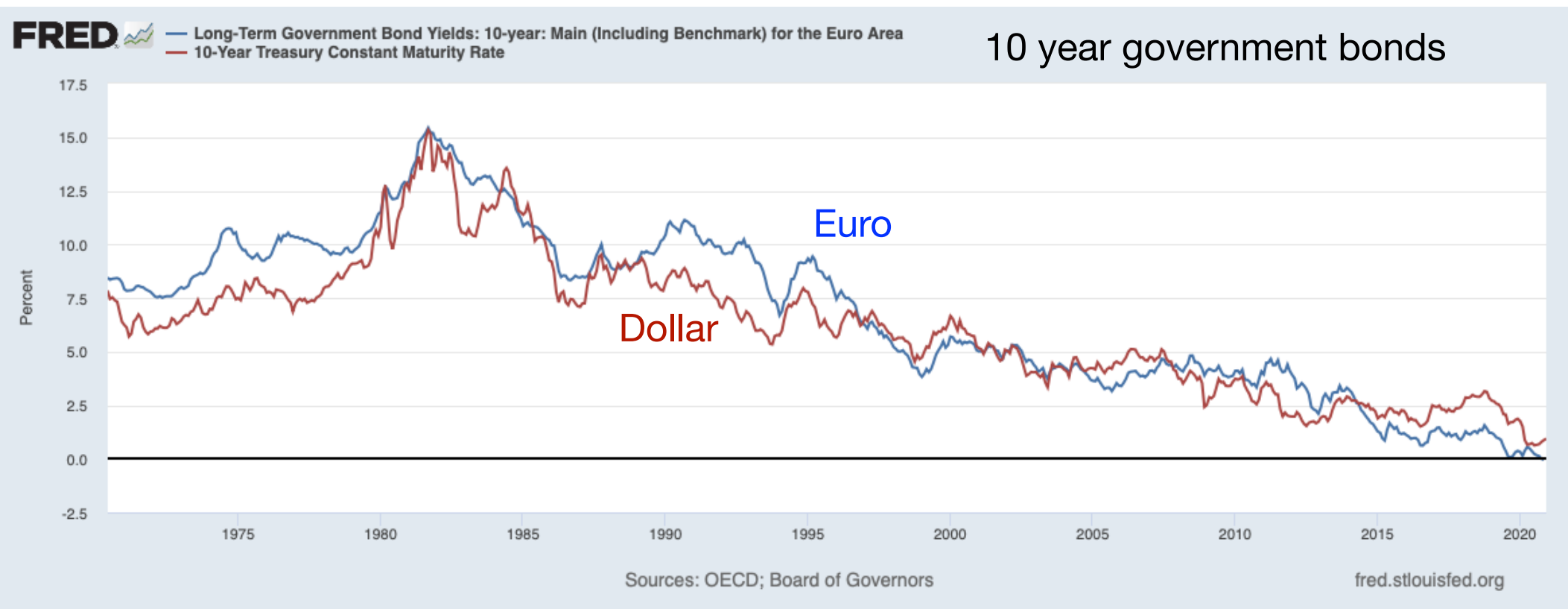
- 1970s: inflation rises in recessions, bond prices fall. Positive beta.
- 1980-now: Inflation falls in recessions, gov't bond prices rise, private bonds fall, dollar rises, “flight to safety.” Gov't bonds are a negative beta security, pay less than R^f !
- “Anchored” inflation expectations. But why? Good speeches? How long?

Government bonds special?



- A bit of icing on the cake? But not the main story.

Dollar special?



- Euro, Japan rates (real to) are even lower (and lower growth).

Low r and government finances

$$\frac{d}{dt} \left(\frac{B}{Y} \right) = (r - g) \frac{B}{Y} - \frac{s}{Y}$$

Debt/GDP ratio grows at (interest-growth) less surplus/GDP ratio.

What about $r < g$?

1. Government can run steady primary deficits $s < 0$ forever, and keep B/Y constant. A form of “seignorage.”
2. Government can run a big one-time fiscal expansion, then grow out with zero primary surplus afterwards.

(Note:

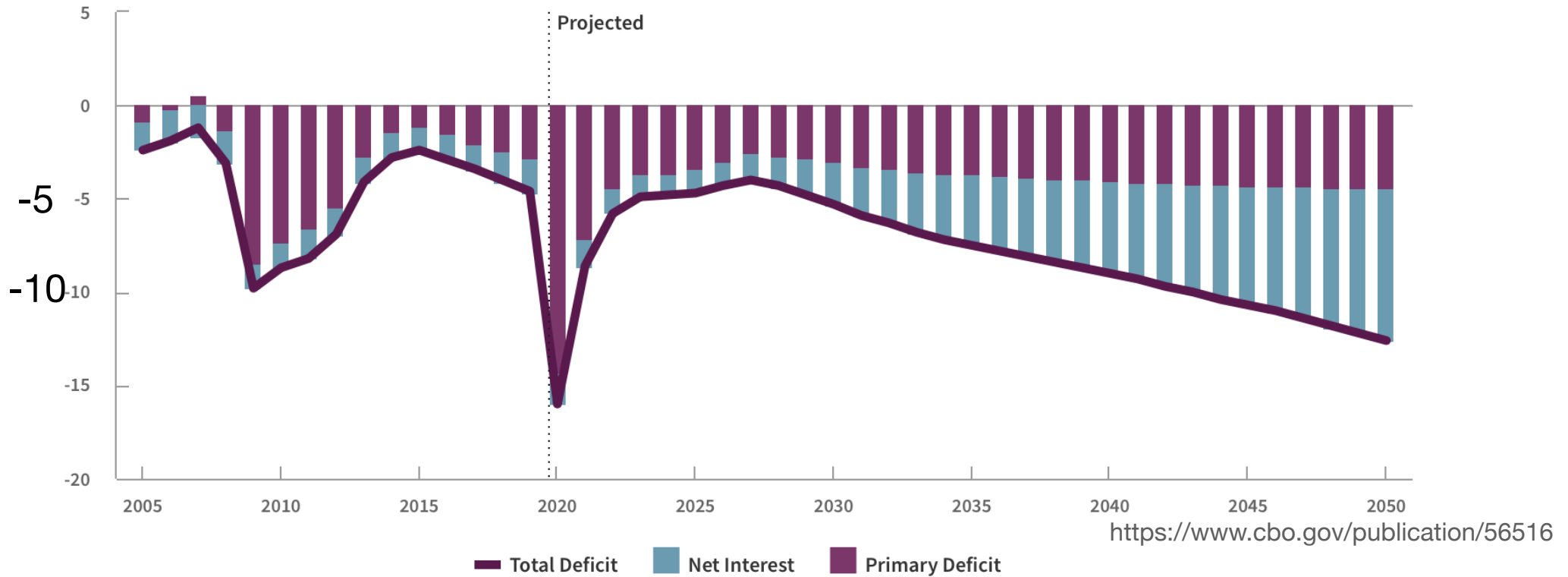
1. As long as low r is scaleable. At some point more B means higher r .
2. *Zero* primary surpluses, not endless deficits. Still pay taxes!)

My view: Brilliant. (Read Blanchard AEA!) But irrelevant to US, EU fiscal situation and current policy questions.

Total Deficits, Primary Deficits, and Net Interest

Percentage of Gross Domestic Product

Run steady deficits forever?



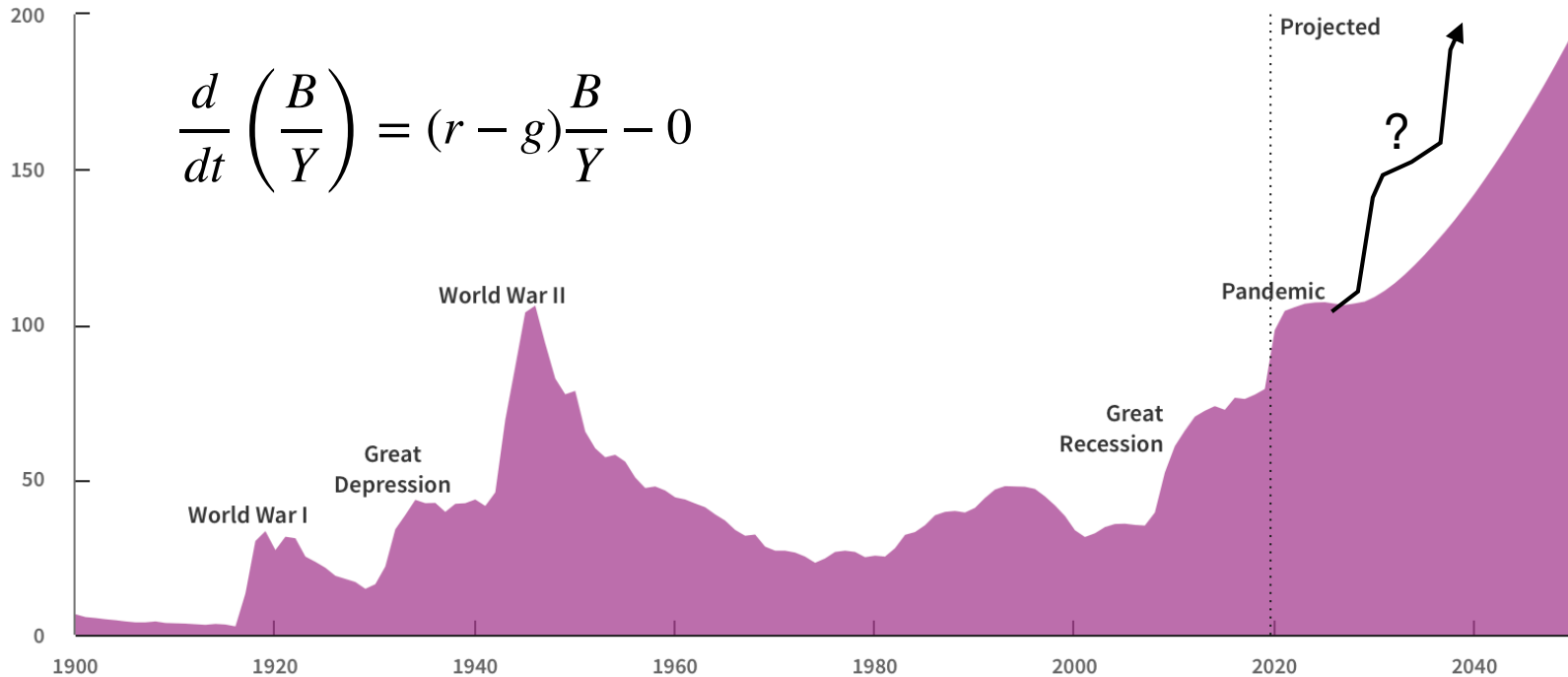
$$\frac{d}{dt} \left(\frac{B}{Y} \right) = (r - g) \frac{B}{Y} - \frac{s}{Y} = 0?$$

- 100% B/Y, 1% r-g pays for -1% s/Y *not* -5% - 10% s/Y.
- And this is *before* any big fiscal expansion, and *excludes* 20% of GDP in each crisis (there will be more).
- US fiscal issue is European entitlements with American taxes.

“One time” fiscal expansion?

Federal Debt Held by the Public, 1900 to 2050

Percentage of Gross Domestic Product



$$\frac{d}{dt} \left(\frac{B}{Y} \right) = (r - g) \frac{B}{Y} - 0$$

- This is *before* a “one time” fiscal expansion or the next (inevitable) crisis (arrow, ?).
- $r < g$ does not justify endlessly growing debt/GDP.
- $r < g$ and $s = 0$ takes a long time to grow out of debt.

Debt/GDP with surplus=0, $r - g = -1\%$

Year	0	10	25	50	100	110	138
B/Y	200	181	156	121	74		50
B/Y	150	135	116	91	55	50	

- Want to bring debt down faster? Run surpluses!
- $r - g > 0$ or < 0 not special. $r - g = -0.01\%$? Grow out in 1,000 years. Or repay with surplus.

The danger

How/when does r change?

1. More g with higher r ? Not so bad even if $r > g$.
2. Inflation, lose negative beta. Happens fast and with economic problems.
3. Doom loop/sovereign crisis. (More r less g)
 1. 200% debt/GDP.
 2. Markets worry. R rises to 5%.
 3. $r = 5\% = 10\%$ of GDP debt service.
 4. Markets worry more. R rises to 10%...
 5. Either sharp inflation or default.
4. Default? Can happen!
 1. Pandemic/war/crisis. Need \$5 trillion (20% GDP) stat. + \$10 trillion roll over
 2. Rollover /borrowing trouble (5% rate).
 3. Continued political chaos.
 4. Pay China, “the rich” “Wall Street” ahead of needy Americans?
 5. Default. Really haircut, rescheduling, forced conversion to low rate long debt.
 6. Financial and economic catastrophe. Default *and* inflation.
 7. NB *move to long term financing would help immensely.*
5. More g ! Need not come with higher r . *Faster innovation/productivity led growth is the best hope.*
6. Spend as if you have to pay it back. You do.
7. Why is r low? Good question. Beware trends without economic foundation. “Stocks are at a permanently higher plateau.” - Irving Fisher, 1929.