### **Princeton** Webinar



# When, If Ever, Should We Worry About Debt?

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### **Poll** Results

- Should concerns about debt constraint the magnitude of the response to the immediate crisis?
   (a) Yes, (b) no, (c) unsure
- 2. Which of the following would you be comfortable stabilizing the debt as a share of GDP at?
  (a) 50% or lower, (b) 100%, (c) 150%, (d) 200%, (e) >250%
- 3. What will the real interest rate on the U.S. ten-year Treasury note rate be 10 years from now?
  (a) -1%, (b) 0%, (c) 1%, (d) 2%, (e) 3%
- 4. Will the United States ever have debt/GDP below 100% again?
  (a) Yes, (b) no, (c) unsure



### Markus' intro on **Debt**

### IIF report on "Debt Tsunami"



Still has shortage of safe assets?



# **Government Debt and Safe Asset**

- What is safe asset? ("The I Theory of Money")
  - Can be retraded (among households) if one faces adverse (idiosyncratic) shock
    - HH with negative shock sells it to HH with positive shock
    - Precautionary savings
    - Partial insurance is possible even if risk is "uninsurable" (incomplete markets)
      - Can be viewed as service flow (allows partial insurance)?
    - Depresses interest rates  $r^*$  (since it offers partial insurance service flow)
- Bubble-prone feature of government debt if  $r^* < g$  (forever)
  - Allows Ponzi schemes nice! Tempting!
  - But dangerous ... bubbles can burst
    - Transversality condition holds for individuals, but not in aggregate (like in OLG)
- Relative performance matters:
  - If debt/GDP ratio is higher in many countries
    - 1. Global supply of safe asset rises (bad)
    - 2. Other government debt is less likely to become safe asset (good)





## Markus' intro on **Debt**

- Debt, Rates and Decisions
  - Consumption-Savings choice:
    - (i) substitution (ii) income, (iii) endowment effect)
  - Portfolio Choice
    - Productive risky capital
    - Safe asset return
    - Money

 $r^* - \Delta i$ 

 $\mathrm{E}[r^{K}]$ 

(relaxes double-coincidence of wants constraint)





Covariance with economy

3 rates:  $r^*, g, E[r^K]$ 

- g growth rate of economy  $\approx$  growth rate of capital stock
- $E[r^K] = g + \text{dividend yield} > g$
- $r^* = g$  —inflation tax

$$r^* = \rho + \gamma g - \frac{1}{2}\gamma(\gamma + 1)\sigma_c^2 - \Delta i$$

- If risk  $\sigma_c^2$  goes up (COVID!) → precautionary savings →  $r^*$  declines and →  $E[r^K] - r^*$  (risk premium) rises
- In short, in times of high uncertainty there is a lot of room to issue government debt (safe asset) at low r,
- But...



# Risk management approach to government debt

- VaR (fiscal debt-servicing costs/GDP|fiscal capacity)
- Danger of bursting bubble? (endogenous risk) Fiscal capacity to back up by raising taxes + Financial sector knock-on effects Flight to safety into what asset? By whom? in March 2020
  - Danger is relative (to other countries debt/GDP)

- Countries' government debt might lose special status if
  - US hikes interest rates
    - Sandwiched r<sup>\$</sup>
    - .. And r + risk premium < g











### What **maturity of debt** to worry about?

Rollover risk

- Average maturity of US Treasuries issued.
- Average maturity of US Treasuries held in private hand
  (not the central bank)
- Consolidated balance sheet of US Treasury and Fed
  - US: 3.5 years
  - How to account for reserves/money? (liability of the central bank?)



## Money vs. Gov. Debt

- What's the difference between Gov. Debt and Money (in a world in which central bank pays interest on reserves)?
- Is money like short-term T-bills?
  - Commonality: Interest rate is floating
  - Difference: no rollover risk!
- Is money like a perpetual (consol) bond?
  - Commonality: infinite maturity
  - Difference: floating vs. fixed interest payments
- Insight: Money is floating interest paying consol bond
  - Maturity =  $\infty$  (like consol Treasury)
  - Duration small (like T-bills)
  - Plus: convenience yield since it can be used as medium of exchange





### How to worry about **private debt**?

- Depends on bailout probability
  - Systemically relevant creditors
  - bankruptcy procedure?
- Diabolic/doom loop







### Do Debt and Deficits Matter Anymore?

### **Jason Furman**

### Harvard University and Peterson Institute for International Economics

Markus Academy Bendheim Center for Finance, Princeton University November 19, 2020 Questions I will address today: (U.S. focus, is 20-100% applicable elsewhere)

- Should debt be a constraint on the shortterm response to the depressed economy?
- 2. What metrics should we use in assessing the sustainability of the fiscal trajectory?
- 3. What should the fiscal goal be?

### First some context: Economic policy in 2018-19 looked like it was responding to a recession

#### Monetary and Fiscal Easing After Business Cycle Peaks



Note: Increase in budget deficit is measured 8 quarters from peak; federal funds rate is minimum through next 24 months. Source: Author's calculations based on Congressional Budget Office; Federal Reserve; Macrobond.

# A chronic excess of saving relative to investment has required lower rates to clear



Note: Inflation measured by one-year changes in the core consumer price index (core personal consumption expenditures for United States). Source: Calculations based on Bank of Canada; Statistics Canada; Eurostat; Japanese Statistics Bureau; U.S. Bureau of Economic Analysis; Macrobond.

### Why should we worry about the debt?

Traditional Argument	New(er) Thinking, In Some Cases Motivated by Lower Interest Rates	
1. Investment crowd out and economic growth	Capital not constrained by low rates and negative real rates may imply crowding out is good not bad	
2. Intergenerational fairness	<ul> <li>Future generations richer</li> <li>Negative real rates mean we do not help them</li> <li>Reducing investments hurts future generations</li> </ul>	
3. Need to be prepared for emergencies	<ul><li>We had no problem borrowing for COVID</li><li>UK borrowed 250% of GDP to fight World War II</li></ul>	
4. Avoid a fiscal crisis	How much risk for a country like the United States How much is insurance worth? How much does global fiscal behavior matter?	
5. Interest on debt crowds out other spending	Interest on debt currently negative	
	More debt reduction harmful because lower interest rates complicate monetary policy and financial stability	

### **Broad agreement: Can afford stimulus now**





"... do not believe concerns about the deficit and debt should prevent the Congress from responding robustly to this emergency." "There are times to worry about the growing government debt. This is not one of them."

-Greg Mankiw

-Janet Yellen

# How do we decide on \$100 billion or \$100 trillion of stimulus/relief?

Saying "spend whatever it takes" does not mean there is no limit and by itself does not provide useful guidance to sizing stimulus/relief.

- **Top down (macro):** What is the output gap? What is the multiplier? How much needed to fill it?
- Bottom up (micro): Even if we can borrow an unlimited amount is still redirecting scarce resources so should do a cost-benefit test for each item—just no need to add an extra "cost" for debt. For example, what would cost-benefit / SWF say about:
  - Testing
  - School reopening funding
  - Unemployment insurance
  - Student loan debt relief
  - Cash transfers to large tech companies

# Bigger debate: should we be concerned over the medium- and longer-run?

**U.S. Federal Debt Held by The Public** 



Note: Assumes extension of 2017 tax cuts.

Source: Author's calculations based on Congressional Budget Office; Office of Management and Budget; Macrobond.

### Two stopped clocks: MMT and extreme fiscal hawks



#### **Debt/GDP is a problematic metric**



### Debt-GDP is a misleading metric: 1. Stock vs Flow

Debt Held by the Public (CBO)<sub>2020</sub>

 $GDP_{2020}$ 

Debt Held by the Public<sub>2020</sub> Present Value of GDP<sub>Infinite Horizon</sub>

 $\frac{\$20 \ trillion}{\$21 \ trillion} = 98\%$ 

 $\frac{\$20\ trillion}{\$4\ quadrillion} = 0.5\%$ 

Source: Calculations based on Congressional Budget Office; OASDI Trustees.

### Debt-GDP is a misleading metric: 2. Does not reflect interest rates



### Debt-GDP is a misleading metric: 3. Backward looking

#### U.S. Federal Unified Deficit Under Current Policy

Percent of GDP, Deficit (+) / Surplus (-)



Note: Assumes extension of 2017 tax cuts.

Source: Calculations based on Congressional Budget Office; Office of Management and Budget; Historical Statistics of the United States; Macrobond.

# Interest payments as a share of GDP solve issues #1 and #2

**U.S. Federal Net Interest Payments** Percent of GDP 4.0 3.5 3.0 2.5 2.0 1.5 1.0 0.5 0.0 1950 1960 1970 1980 1990 2000 2010 2020 1940

Note: Data after 2019 is a projection.

Source: Calculations based on Congressional Budget Office; Office of Management and Budget; Bureau of Economic Analysis; Macrobond.

# In fact, should use <u>real</u> interest payments as a share of GDP (reflects inflating away debt)

U.S. Federal Real Net Interest Payments Percent of GDP



Note: Data after 2019 is a projection.

Source: Calculations based on Congressional Budget Office; Office of Management and Budget; Bureau of Economic Analysis; Macrobond.

# Misses the forward-looking fiscal situation, but how forward looking do we want to be?

**Federal Debt Held by the Public** 



Note: Projections are adjusted to account for changes in the definition of nominal GDP since projections were released. GAO estimates were converted from percent of GNP. Source: Congressional Budget Office; Government Accountability Office; Bureau of Economic Analysis; Office of Management and Budget; Macrobond.

# A forward-looking version of the real interest payments metric

U.S. Federal Real Net Interest Payments Percent of GDP



#### g > r for about two thirds of the last 150 years



Note: Growth rate is average annual growth rate over the previous 5-year period. Interest rate is the average of 10-year (or long-term) and 3-month (or short-term) interest rates on government debt.

Source: Calculations based on Congressional Budget Office; Robert Shiller; Bureau of Economic Analysis; Historical Statistics of the United States; NBER; Macrobond;

#### What would it take to stabilize the debt?

Debt sustainabilit	y if g = 2.0 and r =	0.5
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Goal (% of GDP)		<b>Required Primary balance</b>		
<u>Debt</u>	Real Interest	<u>(% of GDP)</u>		
75%	0.4%	-1.1%		
150%	0.8%	-2.2%		
200%	1.0%	-3.0%		
400%	2.0%	-6.0%		

**Primary Balance in 2019** 

Canada	France	Germany	Italy	Japan	UK	United States
-0.2%	-1.6%	2.1%	1.6%	-3.1%	-0.8%	-4.1%

Source: International Monetary Fund; author's calculations.

# Fiscal policy goals/guidelines/rules should be some combination of:

• Optimal

Understandable

Achievable

#### What is the optimal debt / net interest goal?



### A tentative framework for the United States

**Outcome goal:** Real interest should not be projected to exceed 1 percent of GDP in the coming decade.

**Input rules/guidelines** (would need to adjust over time):

- 1. Temporary emergency unpaid for, broad definition
- 2. Permanent programs paid for, with broad exceptions (e.g., investments in children that plausibly pay for themselves in NPV)
- 3. Individual tax cuts expire after 2025
- 4. Social Security addressed within context of Social Security (my preference is primarily/all revenue)

# What the debt might look like under that tentative framework

**U.S. Federal Debt Held by The Public** Percent of GDP **Tax Cuts** Permanen Proposed Framework Historical 

Note: Framework includes Social Security reform phased in linearly from 0.5% of GDP to 1.7% of GDP over 10 years beginning in 2025. \$2.5T additional stimulus over 2021-2023. Investment in early education adds 1.0% of GDP to primary deficit through 2035 after which deficit impact linearly shrinks until it reduces primary deficit by 0.5% of GDP in 2050. Source: Calculations based on Congressional Budget Office; Office of Management and Budget; OASDI Trustees; Macrobond.

# Would stabilize real interest payments below their historic value

**U.S. Federal Real Net Interest Payments** Percent of GDP 2.0 1.5 **Tax Cuts** Permanen 1.0 Proposed 0.5 Framework 0.0 Historical -0.5 -1.0 -1.5 2000 2010 2020 2030 2040 2050

Note: Framework includes Social Security reform phased in linearly from 0.5% of GDP to 1.7% of GDP over 10 years beginning in 2025. \$2.5T additional stimulus over 2021-2023. Investment in early education adds 1.0% of GDP to primary deficit through 2035 after which deficit impact linearly shrinks until it reduces primary deficit by 0.5% of GDP in 2050. Source: Calculations based on Congressional Budget Office; Office of Management and Budget; OASDI Trustees; Macrobond.

### Tentative answers to the opening questions

- 1. Should debt be a constraint on the short-term response to the depressed economy? No
- 2. What metrics should we use in assessing the sustainability of the fiscal trajectory? Real net interest/GDP, looking forward about a decade
- 3. What should the fiscal goal be? Real net interest/GDP < 1%. Or debt/GDP < 150% or 200%</p>



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