

Monetary Policymaking: An Intellectual History

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Ground truths

U.S. Macroeconomic Features, 2024:Q1

Real GDP growth:

Unemployment rate:

Inflation rates:

Wage growth:

Interest rates:

U.S. Macroeconomic Features, 2024:Q1

Real GDP growth: 1.6%

Unemployment rate: 3.8%

Inflation rates: 3.8% (Core CPI), 2.9% (Core PCE)

Wage growth: 4.2% (ECI)

Interest rates: 5.5% (fed funds), 4.2% (10 yr. treasury bond)

Money matters





Milton Friedman (1912 - 2006)

Money and Inflation



Source: Federal Reserve Bank of St. Louis (FRED) series M2SL and PCEPILFE.

Money-Stock Growth



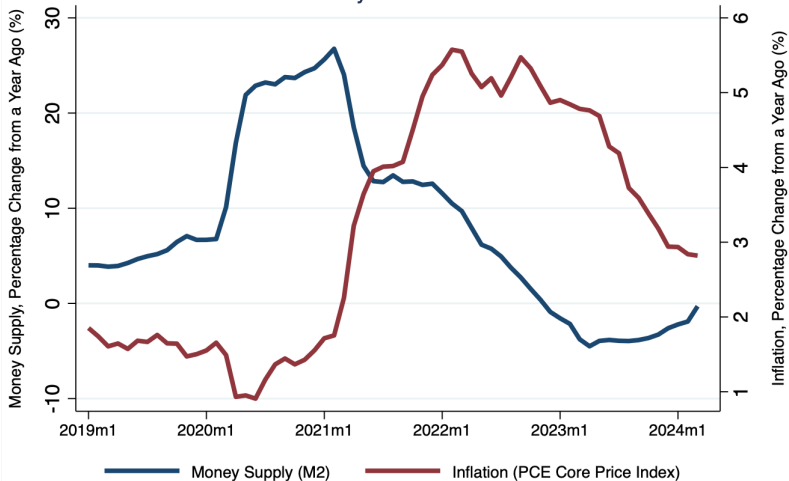
Source: Federal Reserve Bank of St. Louis (FRED) series M2SL.

Money and Inflation



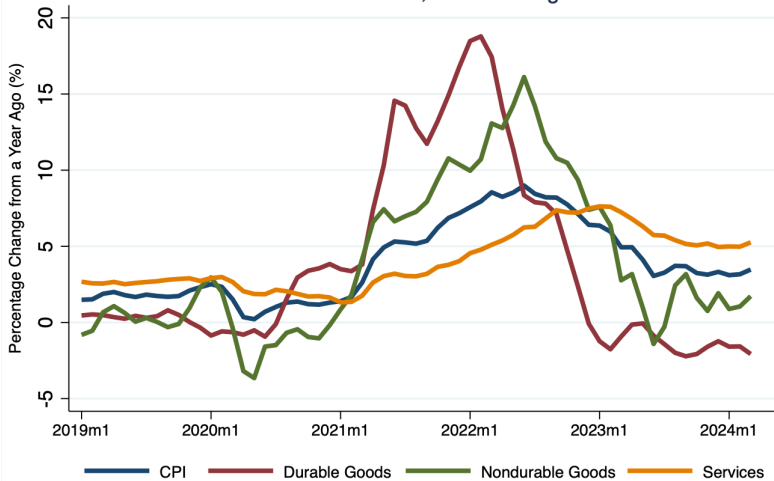
Source: Federal Reserve Bank of St. Louis (FRED) series M2SL and PCEPILFE.

Money and Inflation



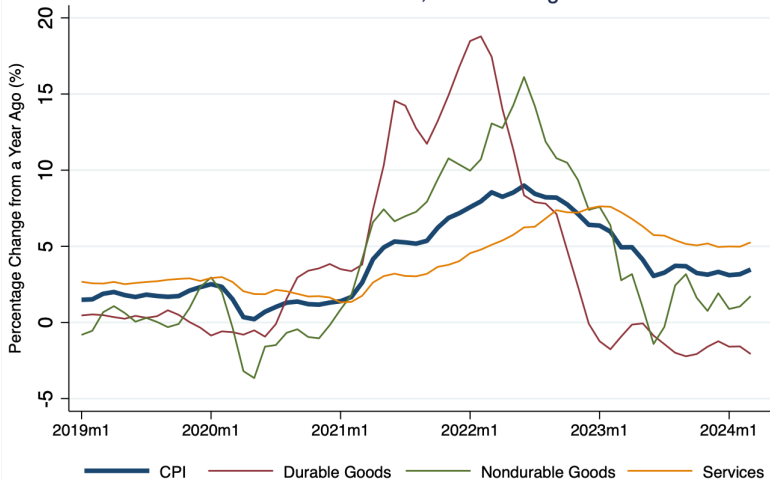
Source: Federal Reserve Bank of St. Louis (FRED) series M2SL and PCEPILFE.

Consumer Inflation, Select Categories



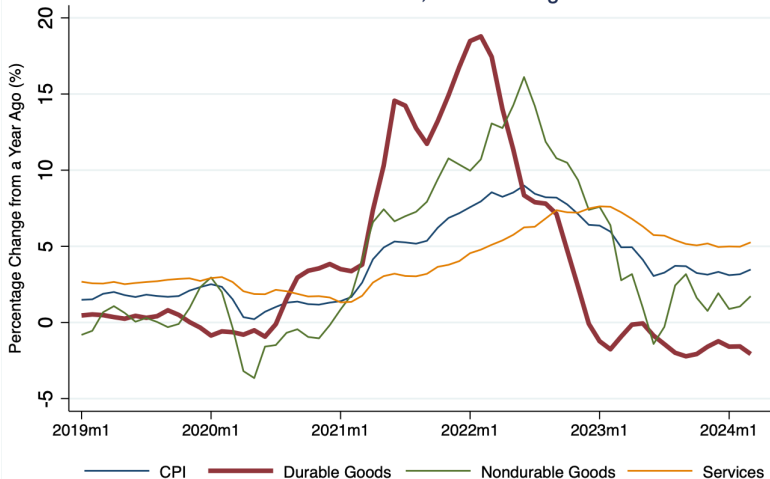
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



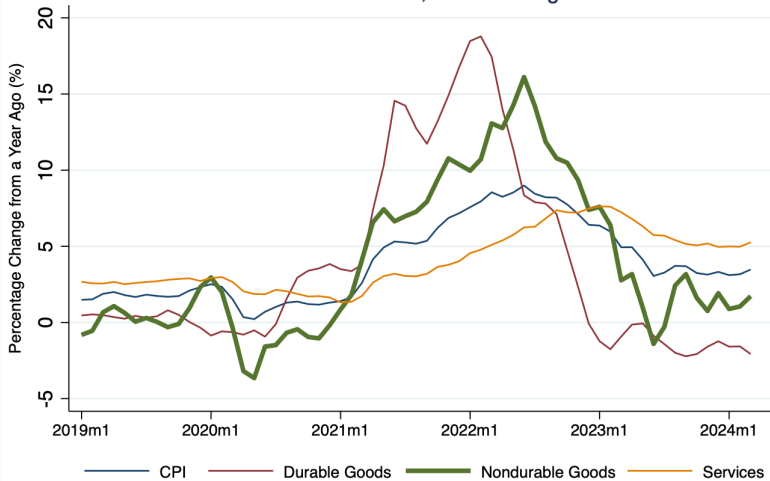
Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



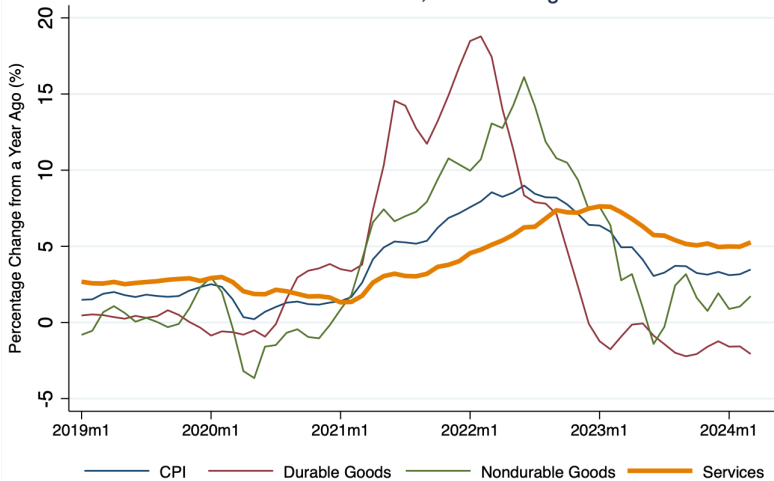
Source: Federal Reserve Bank of St. Louis (FRED) series CPlAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Consumer Inflation, Select Categories



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Consumer Inflation, Select Categories



Source: Federal Reserve Bank of St. Louis (FRED) series CPIAUCSL, CUSR0000SAD, CUSR0000SAN, & CUSR0000SAS.

Monetary policy matters too





Jerome Powell (1953 -)

Higher for longer

Higher for longer

...and the ghost of contractions past





Paul Volcker (1927 - 2019)

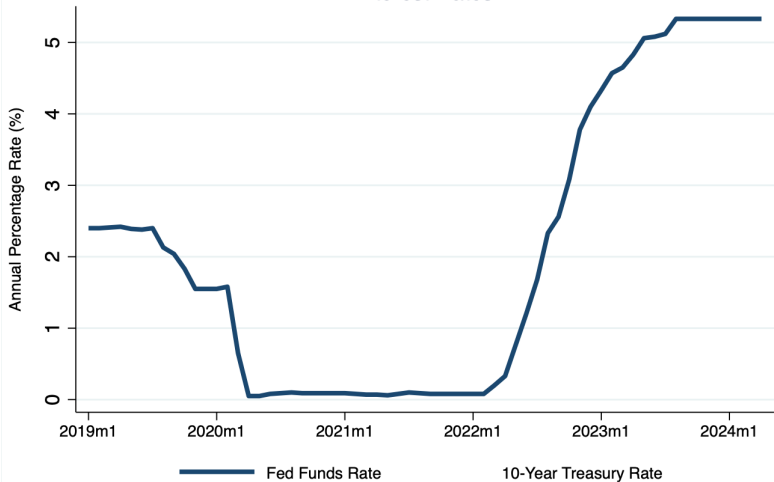
Inflation



Source: Federal Reserve Bank of St. Louis (FRED) series JCXFE.

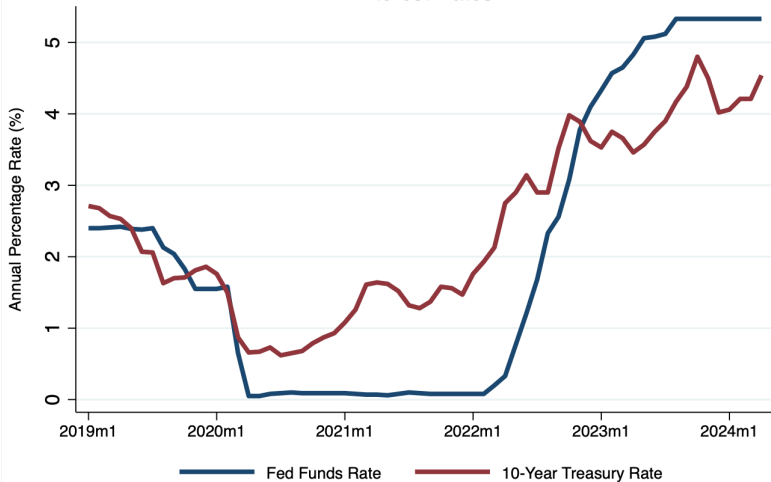
Higher for longer

Interest Rates



Source: Federal Reserve Bank of St. Louis (FRED) series FEDFUNDS & GS10.

Interest Rates

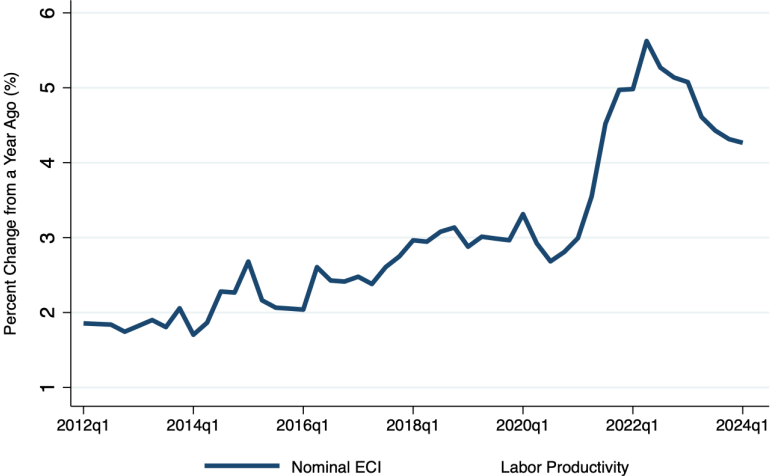


Source: Federal Reserve Bank of St. Louis (FRED) series FEDFUNDS & GS10.



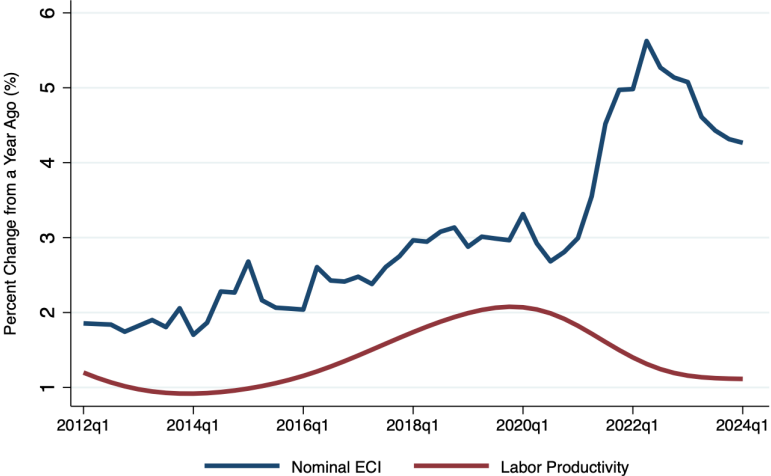
Payday

Nominal Employment Cost Index and Labor Productivity



Source: Federal Reserve Bank of St. Louis (FRED) series ECIWAG & OPHNFB.

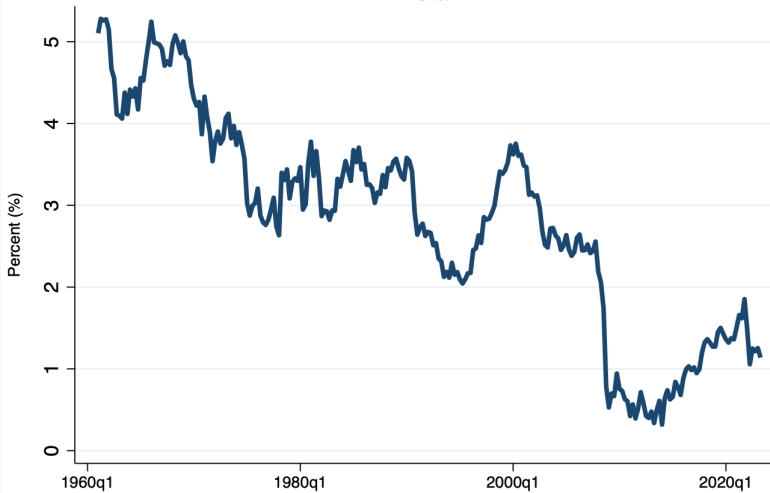
Nominal Employment Cost Index and Labor Productivity



Source: Federal Reserve Bank of St. Louis (FRED) series ECIWAG & OPHNFB.

R-Star is born

R-Star



Source: Laubach-William (2003), updated.





John Taylor (1946 -)

Taylor rules

The Taylor Rule

$$\hat{i} = r^* + \pi + \frac{1}{2} \times (\textit{inflation gap}) + \frac{1}{2} \times (\textit{output gap})$$

Where \hat{i} is the fed funds rate prescribed by the Taylor rule;
 r^* is the equilibrium real federal funds rate;
and π is the actual inflation rate.

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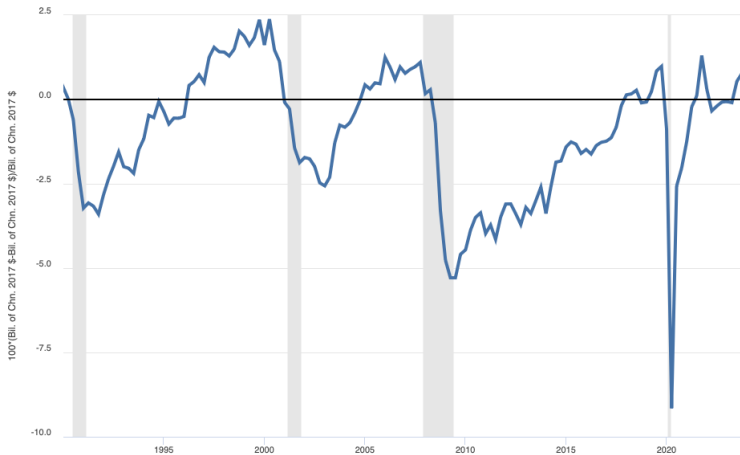
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Output Gap

FRED 



Shaded areas indicate U.S. recessions.

Sources: BEA; CBO

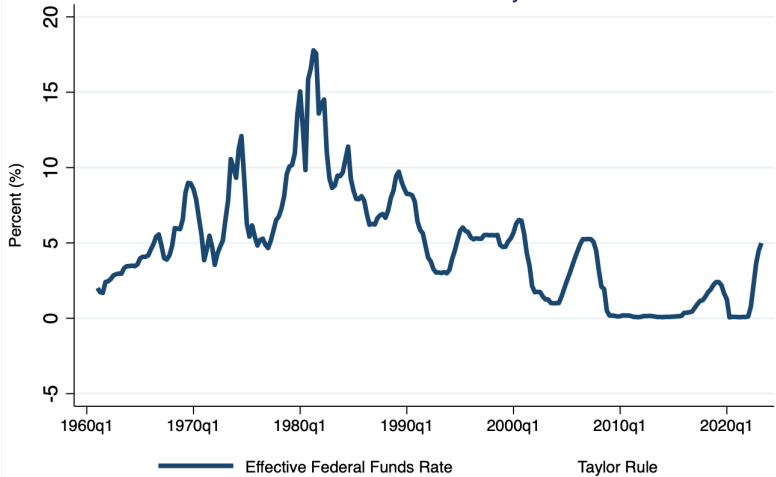
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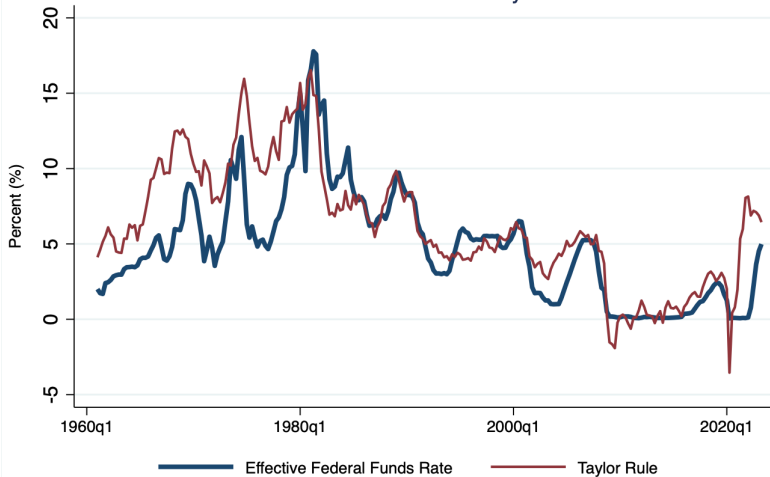
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U.S. Federal Funds Rate and Taylor Rule Rate



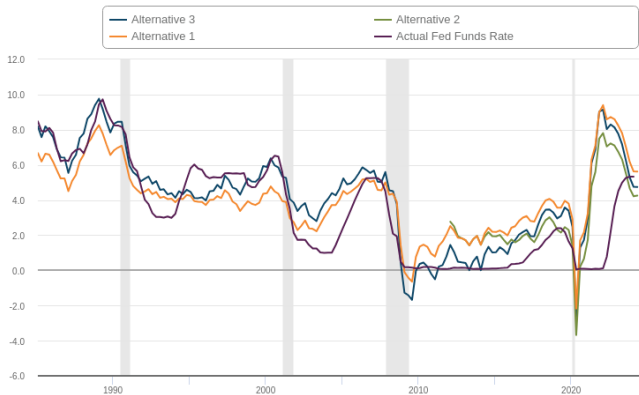
Source: FRED series FEDFUNDS; author's calculations based on Laubach and Williams (2003).

U.S. Federal Funds Rate and Taylor Rule Rate



Source: FRED series FEDFUNDS; author's calculations based on Laubach and Williams (2003).

Actual Fed Funds Rate and Taylor Rule Prescriptions



	Alternative 1	Alternative 2	Alternative 3
Inflation Target Measures:	2PercentInflation	2PercentInflation	2PercentInflation
Natural Real Interest Rate Measures:	TwoPercentNatural	RstarFOMCMedian	LWRstar1side
Resource Gap Measures:	CBOGDPgap	CBOGDPgap	CBOGDPgap
Inflation Measures:	CorePCEInflation	CorePCEInflation	CorePCEInflation
Weight on Gap:	0.5	0.5	0.5
Interest Rate Smoothing:	0	0	0

Source: Atlanta Fed





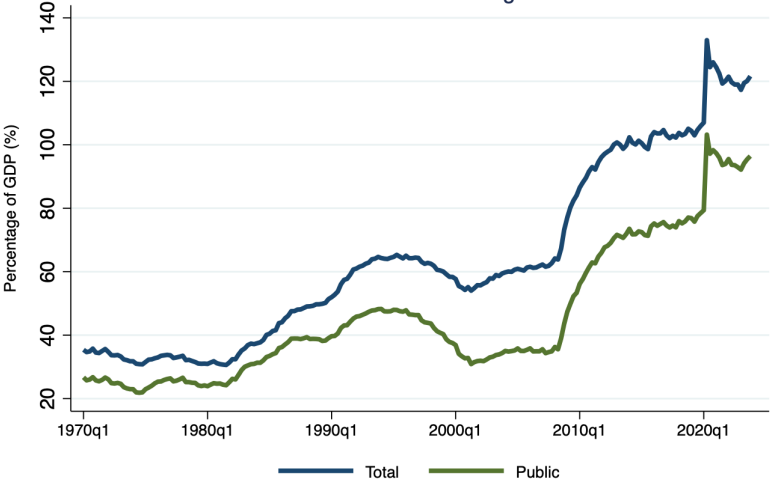
Janet Yellen (1946 -)

Buried treasury

Buried treasury

...and r versus g

Federal Debt as a Percentage of GDP



Source: Federal Reserve Bank of St. Louis (FRED) series GFDEGDQ188S & FYGFGDQ188S.

An Inconvenient Truth

$debt \uparrow \Leftrightarrow deficit \uparrow$

$debt \uparrow \Leftrightarrow interest\ rates \uparrow$

$debt \uparrow \Leftrightarrow GDP \downarrow$

Where *debt* and *deficit* are relative to GDP.

An Inconvenient Truth

debt ↑ ⇔ *deficit* ↑

debt ↑ ⇔ *interest rates* ↑

debt ↑ ⇔ *GDP* ↓

Where *debt* and *deficit* are relative to GDP.

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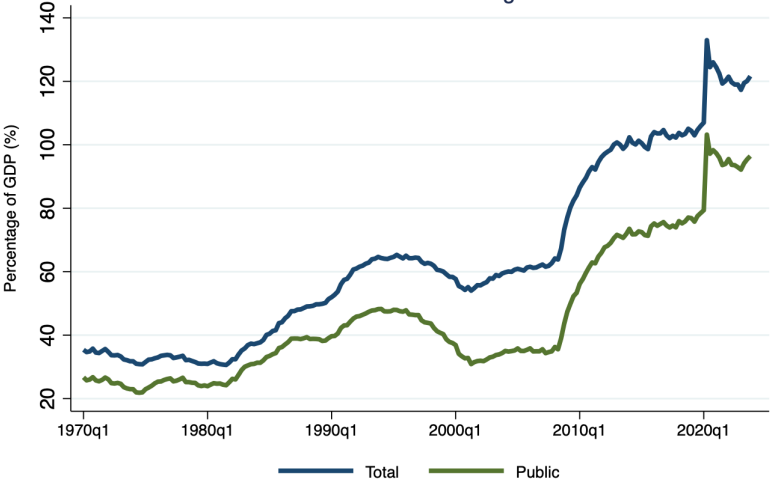
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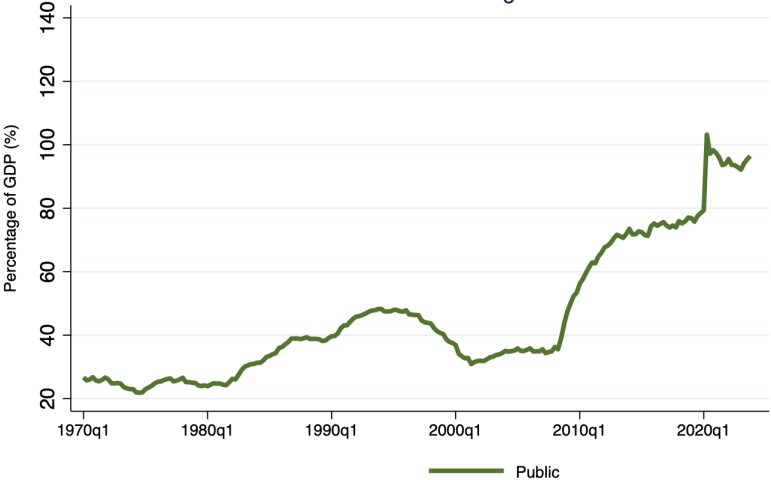
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Federal Debt as a Percentage of GDP



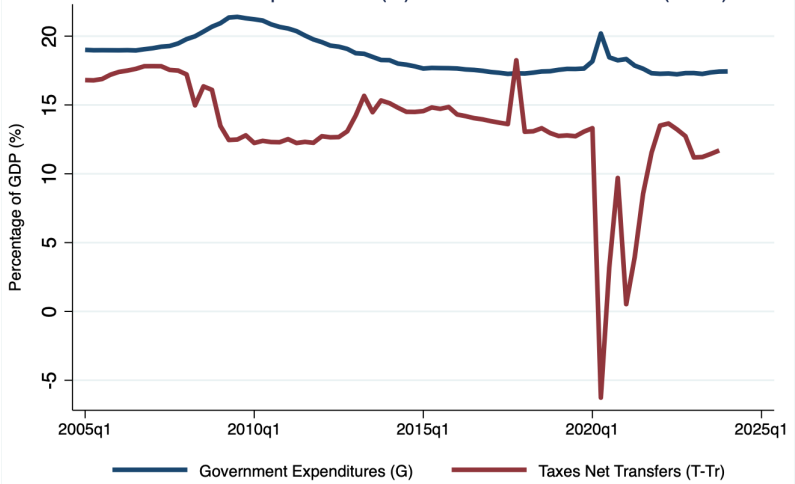
Source: Federal Reserve Bank of St. Louis (FRED) series GFDEGDQ188S & FYGFGDQ188S.

Federal Debt as a Percentage of GDP



Source: Federal Reserve Bank of St. Louis (FRED) series GFDEGDQ188S & FYGFGDQ188S.

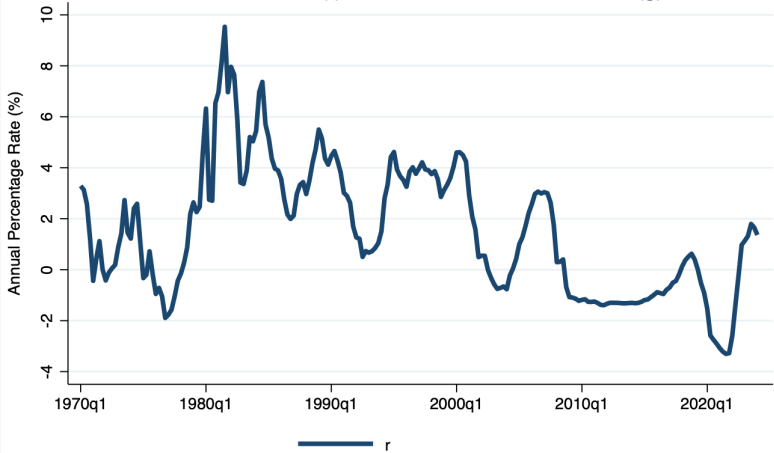
Government Expenditures (G) and Taxes Net Transfers (T - Tr)



Source: Federal Reserve Bank of St. Louis (FRED) series FGEXPND, GCE, GDP, W018RC1Q027SBEA, and W006RC1Q027SBEA.

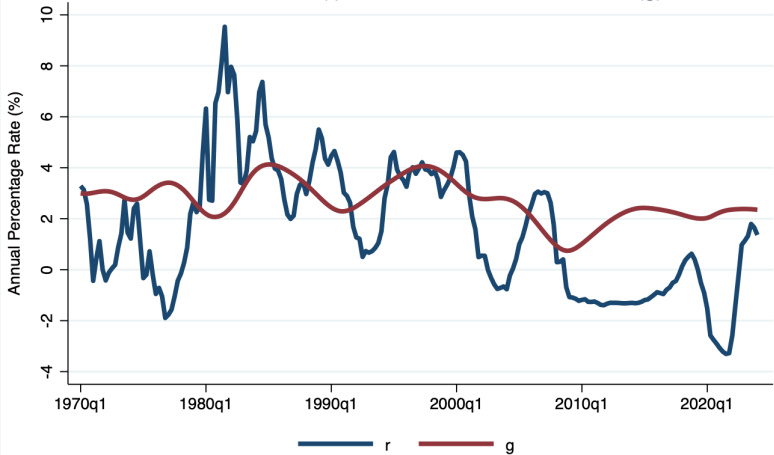
...and r versus g

Interest Rates (r) and Economic-Growth Rates (g)



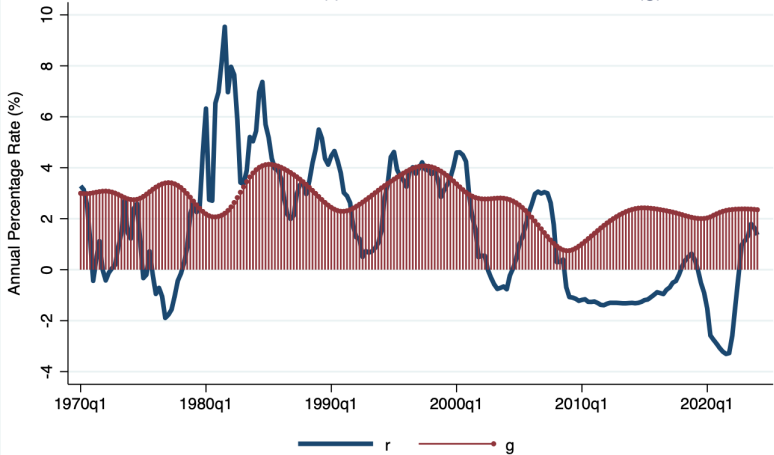
Source: Author's calculations; Federal Reserve Bank of St. Louis (FRED). r measures the four-quarter moving average of the ex-post real constant yield to maturity on the 1-year US Treasury bond (based on the annualized quarterly growth rate of the HP-smoothed PCE core price index); g measures the annualized quarterly growth rate of HP-smoothed real GDP.

Interest Rates (r) and Economic-Growth Rates (g)



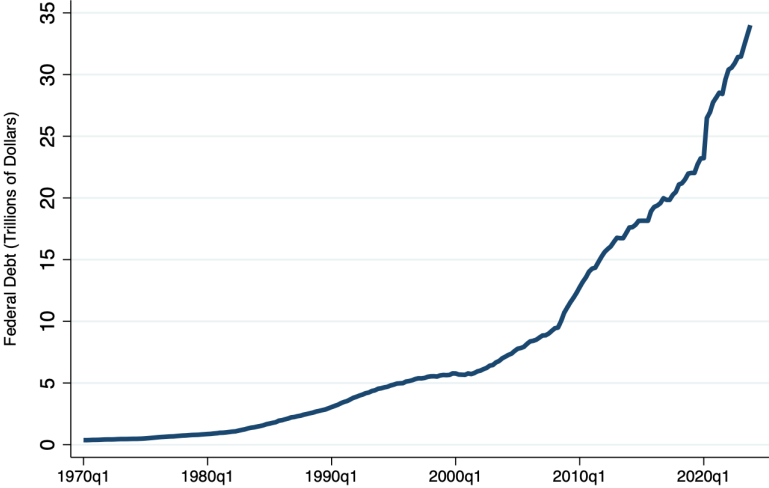
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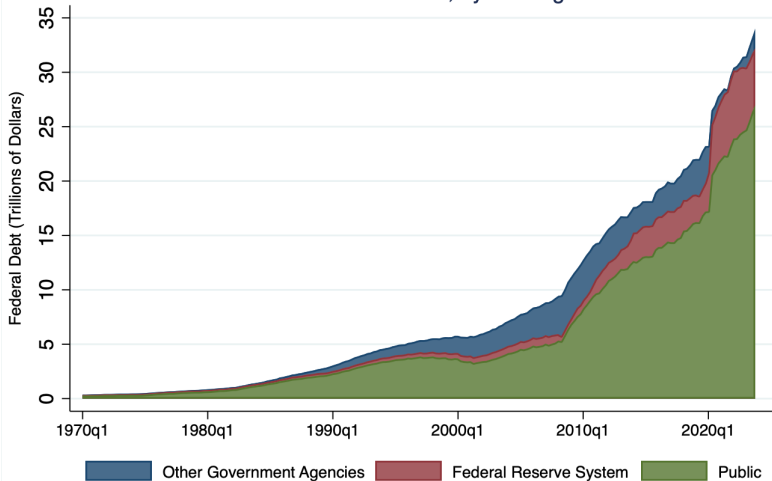
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Total Federal Debt



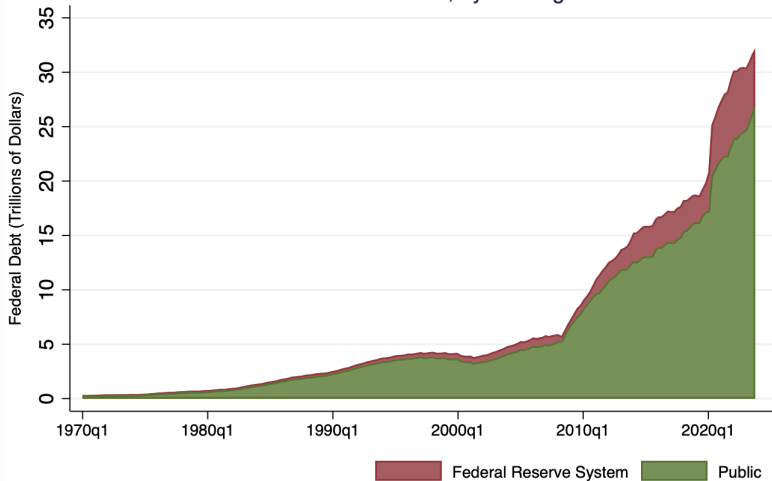
Source: Federal Reserve Bank of St. Louis (FRED) series FYGFPUN.

Total Federal Debt, by Holdings



Source: Federal Reserve Bank of St. Louis (FRED) series GFDEBTN, FYGFDUN, FDHBTN, & FDHBFBN.

Total Federal Debt, by Holdings

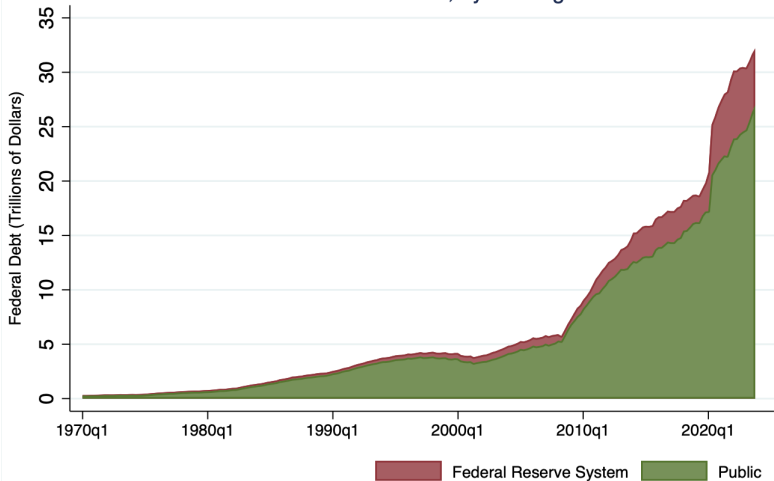


Source: Federal Reserve Bank of St. Louis (FRED) series GFDEBTN, FYGFDUN, FDHATN, & FDHBFBN.

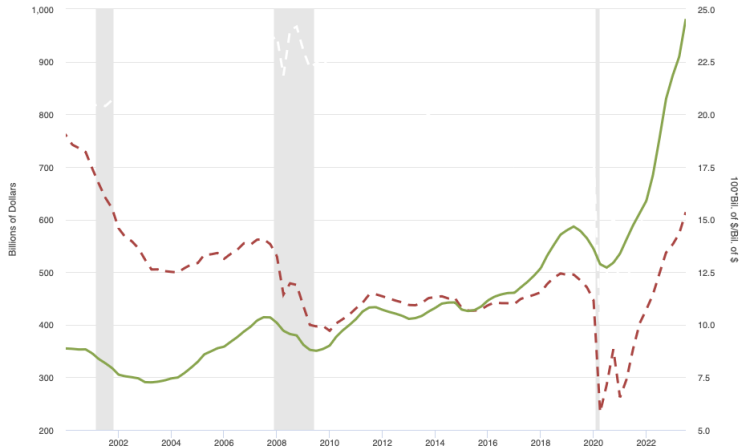
Federal Reserve System

Assets	Liabilities and Equity
Securities	Currency in Circulation
MBS	Bank Reserves
Discount Loans	⋮
⋮	Equity

Total Federal Debt, by Holdings



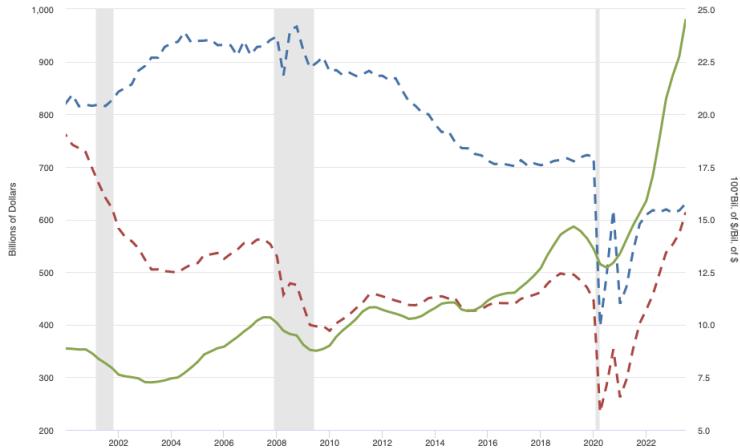
Source: Federal Reserve Bank of St. Louis (FRED) series GFDEBTN, FYGFDUN, FDHBTN, & FDHBFBN.



Shaded areas indicate U.S. recessions.

Source: U.S. Bureau of Economic Analysis

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Takeaways

Money matters: $M \uparrow \Rightarrow \pi \uparrow \Rightarrow i \uparrow$

Payday: $W \uparrow \Rightarrow \pi \uparrow \Rightarrow i \uparrow$

R-Star is born: $r^* \uparrow \Rightarrow i \uparrow$

Taylor rules: $i < \hat{i} \Rightarrow i \uparrow$

Buried treasury: $\frac{\text{debt}}{\text{gdp}} \uparrow \Rightarrow i \uparrow$

Thank you.