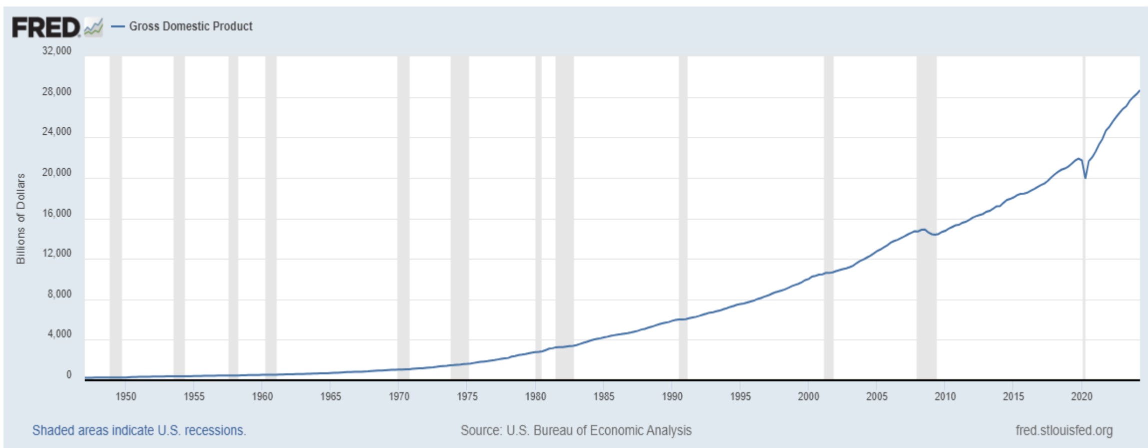
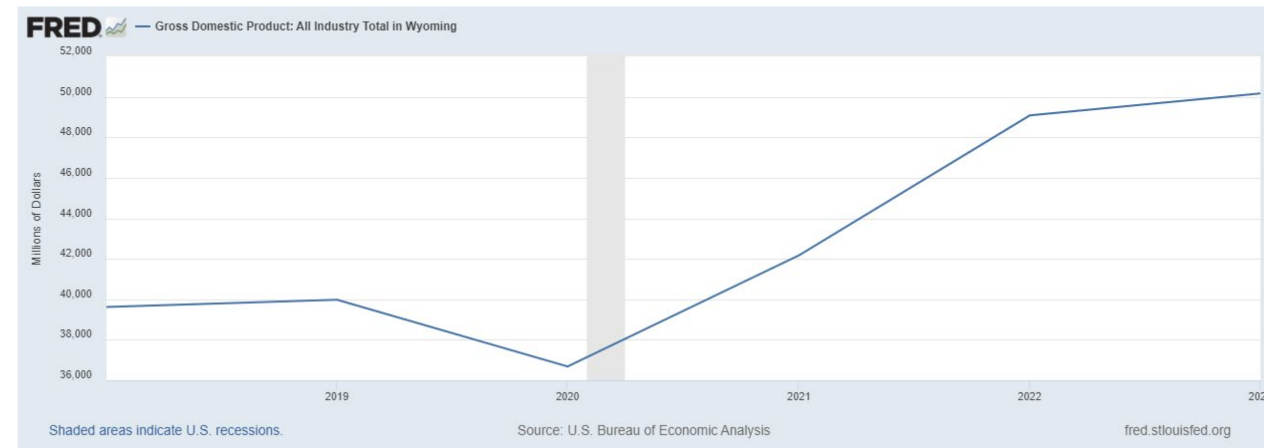
ECON 4730/5730

Review of Macroeconomics

Macro Variables & Definitions

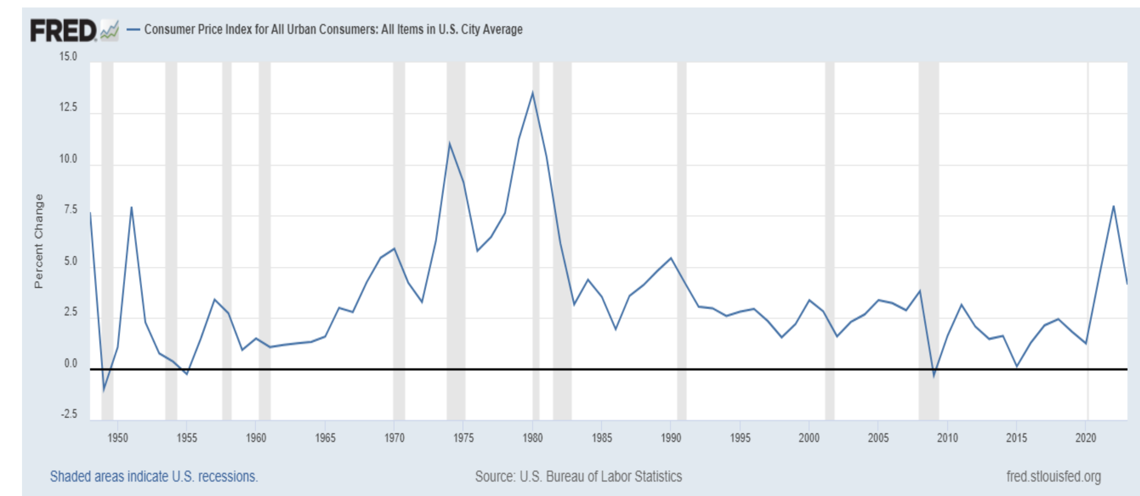
- Nominal Gross Domestic Product (GDP = Y). Current value of final goods and service produced. Equal to the value added at every stage of production.
- Expenditure approach. $Y = C + I + G + (X - IM)$
- Income approach. $Y = (W \times L) + (R \times K)$, where W is the wage rate and R is the rental rate.
- Real Gross Domestic Product (Y/P). Nominal GDP measured in base year prices.

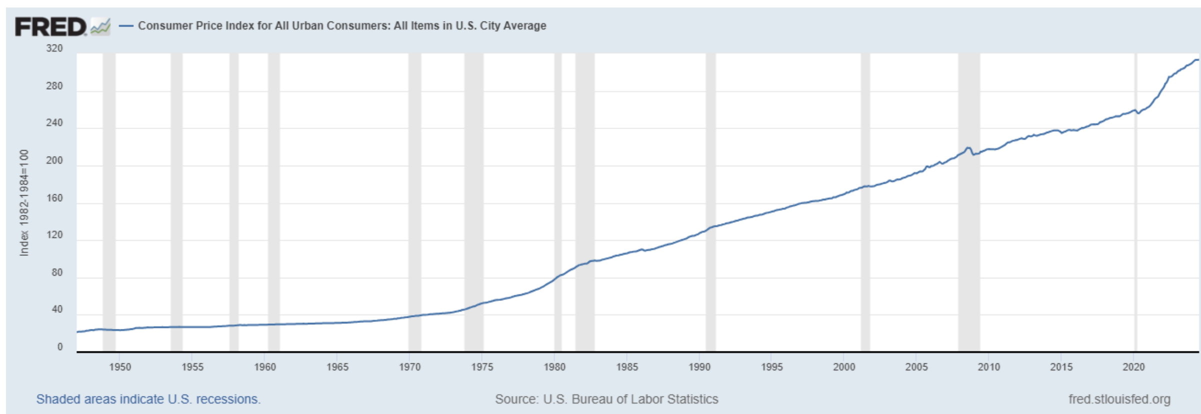




Macro Variables & Definitions

- Price Level (P). Average price of a basket of goods and services (e.g., CPI and GDP deflator).
- Consumer Price Index (CPI). Price of a basket of consumer goods for the typical consumer relative to the price of the same basket in the base year.
- GDP deflator. Nominal GDP (Y) divided by real GDP (Y/P).
- Inflation (π). Percentage change in the price level (P).





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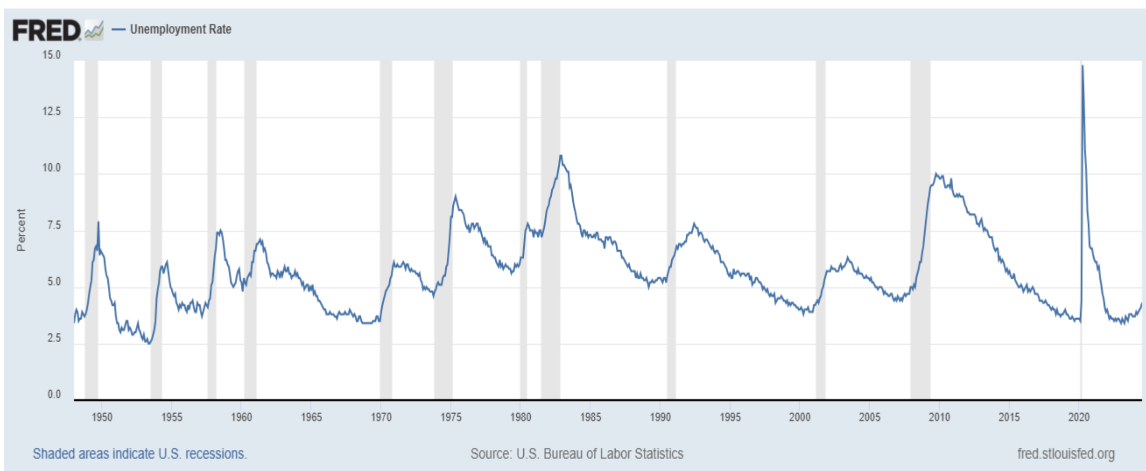
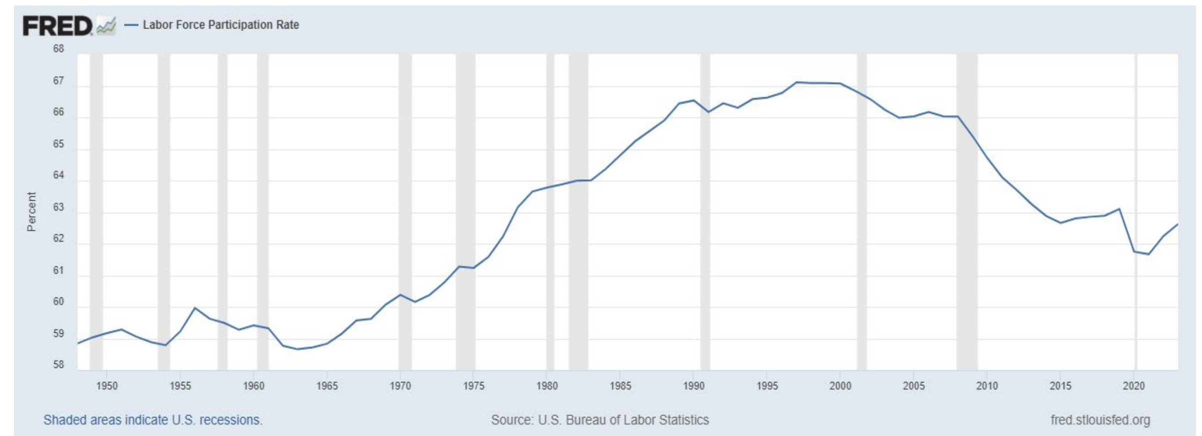
Macro Variables & Definitions

- Labor Force (L). The labor force is the sum of all employed and unemployed people.
- Unemployment Rate (U/L). Ratio of unemployed people to the labor force.
- Labor Force Participation Rate (LFPR). Ratio of labor force to the working-age population.





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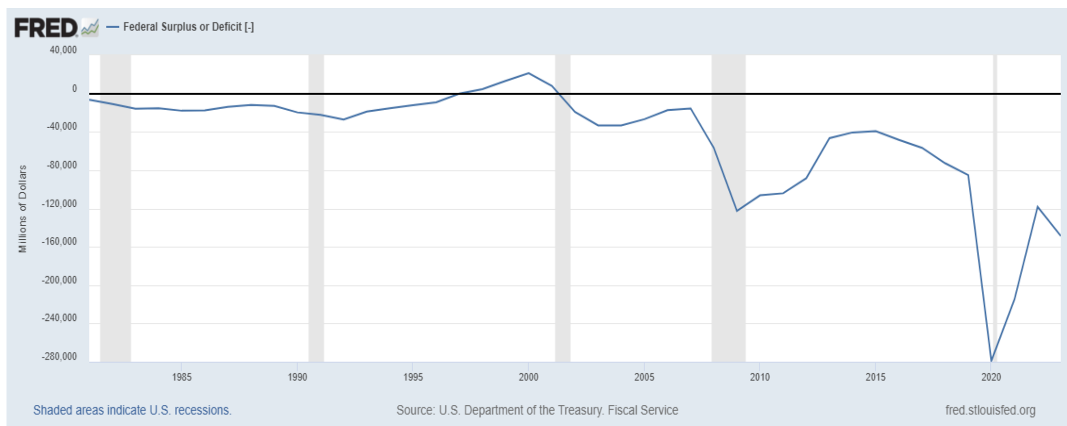
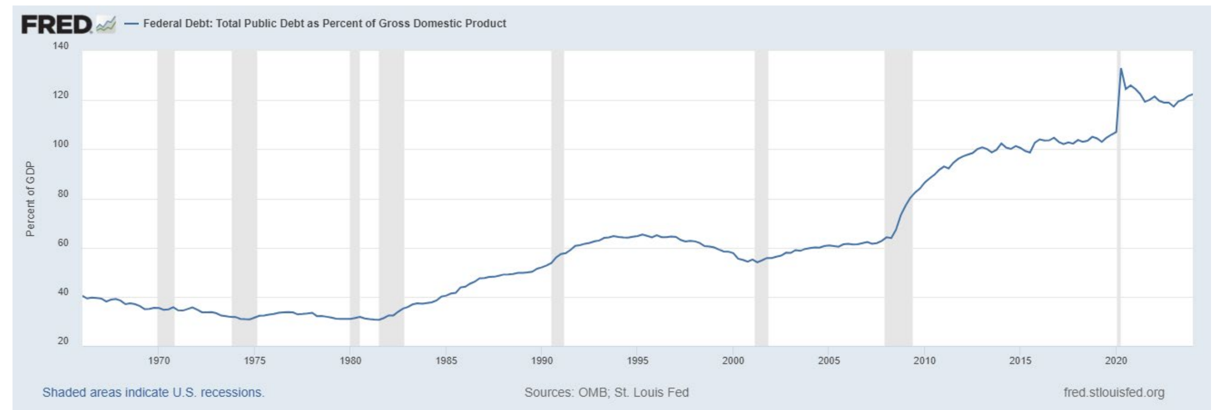
Macro Variables & Definitions

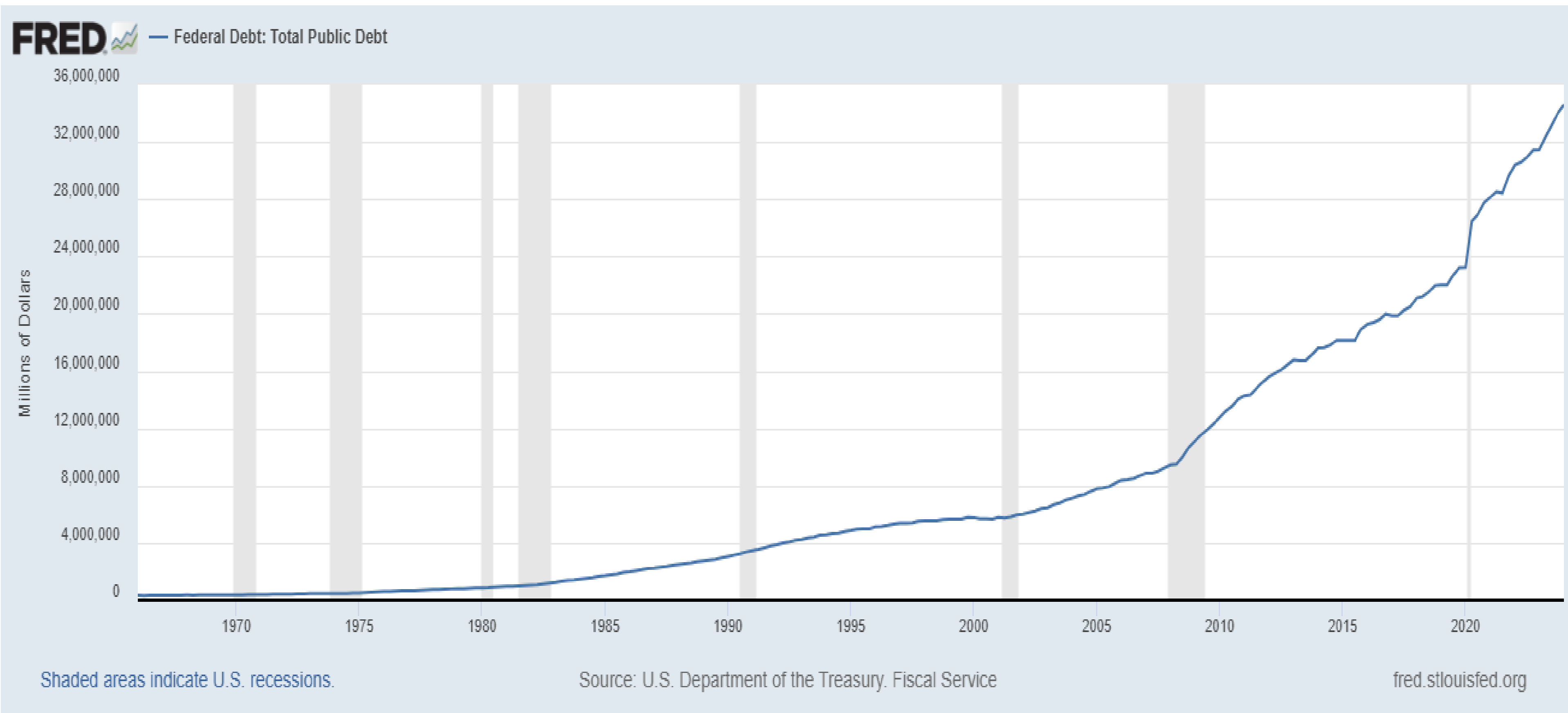
- Government Spending (G). Spending on goods and services at all levels of government.
- Taxes (T). Tax revenue at all levels of government, subtracting transfer payments.
- Federal Deficit (T-G). Difference between federal tax revenue and government spending.
- Federal Debt. Accumulation of federal deficits over time. Often presented as a percentage of GDP.





Macro Variables & Definitions

Visualization of U.S. Federal Debt.



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Macro Variables & Definitions

- Quantity Equation. $MV = PY$, where M is the money supply and V is the velocity of money.

- Money Supply (M). There are many definitions.

  - M1 is currency and demand deposits.
  - M2 adds some liquid financial assets.
  - Money supply is controlled by the U.S. Central Bank (i.e., the Federal Reserve "Fed") via the purchase and selling of U.S. securities.

- The Fed uses the federal funds rate as the policy instrument for monetary policy. The fed funds rate is linked to all other interest rates (i) through the term structure of interest rates, risk premia, etc.

- The Fisher equation defines the real interest rate (r): $i = r + \pi^e$.

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Macro Theory & Policy

- Classical Economics
  - Complete Information and rational expectations
  - Markets clear and are efficient
  - Prices and wages are flexible
  - Limited role for monetary and fiscal policy
  - Father of monetarism, Milton Freidman.
  - Quantity Theory: $\%\Delta Y = \%\Delta M - \pi$. Set money growth at 5% if you target 3% real GDP growth and 2% inflation.
  - Modern version … Neoclassical economics is based on microeconomic principles.

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Macro Theory & Policy

- Keynesian Economics
  - Prices and wages are “sticky”.
  - Clear role for monetary and fiscal policy.
  - Government spending multiplier: $dY = \frac{1}{(1-MPC)} dG$
  - Primary model for aggregate demand is IS-LM.
  - Monetary policy debate: Rules vs. Discretion.
  - Primary model for aggregate supply is the Phillips Curve.

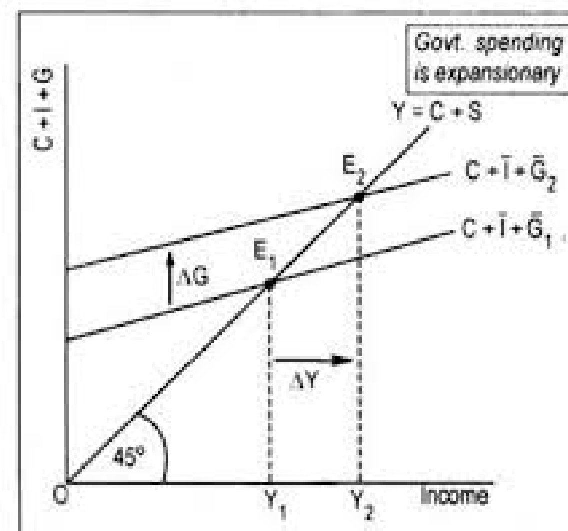
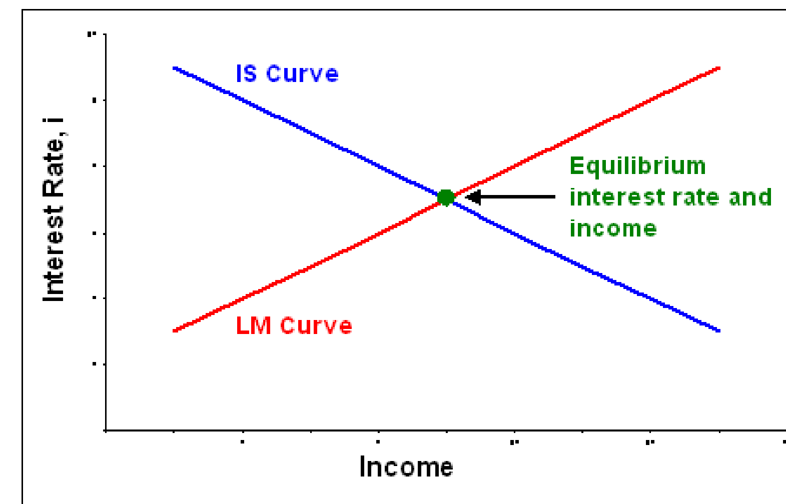
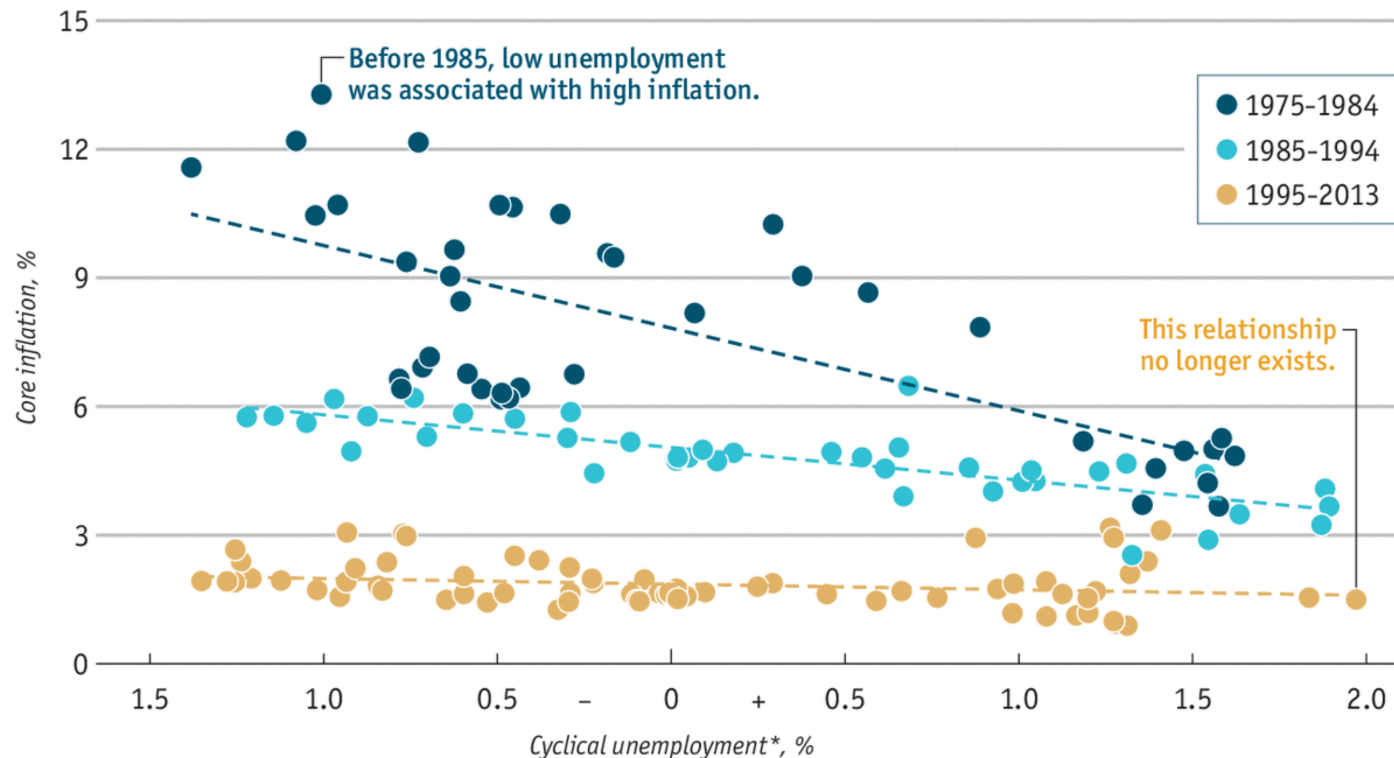


Fig. 3.19: Government Expenditure Multiplier



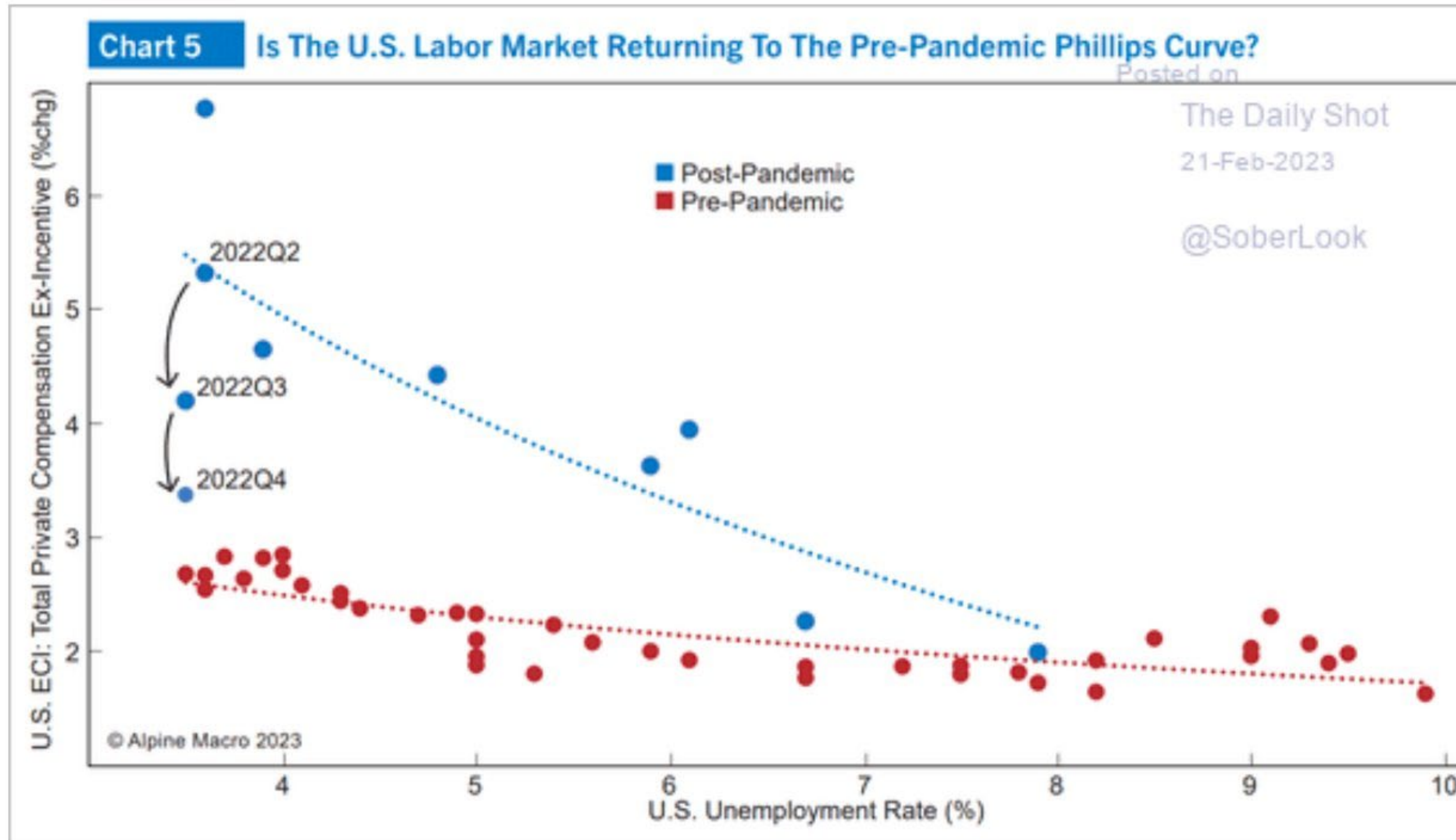
Macro Theory & Policy

- Phillips Curve Advanced Economies(1975-2013)



Macro Theory & Policy

- Phillips Curve US (Pre- and Post- Pandemic)



Source: Alpine Macro

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