**Key Macroeconomic Variables**

**Agenda**

- Key Endogenous Variables
- Key Exogenous Policy Variables

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**Macroeconomic Goals**

- Macroeconomic goals are determined by governments as representatives of society.
- Final Goals:
  - High Growth,
  - Smooth Growth,
  - Low Unemployment, and
  - Low Inflation.
- Goals may be incompatible with one another.

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**Major Macroeconomic Variables**

- Economic output
  - Short-run business fluctuations
  - Long-run economic growth
- Unemployment and Employment
- Inflation

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**Key Macroeconomic Variables**

- Interest rates
- Government budget balances and finance
- International trade balances and finance
- Productivity

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**Economic Output**

- Real Output or GDP: A measure of the economy’s total output of goods and services, Y.
Economic Output

- Key Questions?
  - What accounts for its rising long-term trend?
  - Why has it been so volatile over time?
  - What can be done to dampen the volatility?
  - Why has volatility apparently been reduced since 1984?

Potential Economic Output

- Potential (or Natural) Output or GDP: The maximum sustainable output of goods and services, $Y^*$.  
- Standard against which economy is measured. 
  - Policy recommendations are highly dependent on estimates of potential output.
- Output Ratio: Ratio of actual-to-potential GDP, $\bar{Y}$.

The Output Ratio

Output Ratio: Ratio of actual-to-potential GDP, $\bar{Y}$.

$\bar{Y} = \left( \frac{Y - Y^*}{Y^*} \right) \times 100$
Output Ratio

Unemployment Rate
- The percentage of people who are not working but who are actively seeking employment, U.

Key Questions?
- Why has it been so high and so variable at times?
- Why was it rising between 1970 and 1983?
- Why has it been falling since then?
- What can be done to dampen its volatility?
- What are the economic and social consequences of high and volatile unemployment?

Natural Rate of Unemployment
- The unemployment rate that is consistent with the economy being at potential GDP, U*. 
  - Neither desirable nor immutable
- The unemployment rate that is consistent with stable inflation.
  - NAIRU: Non-Accelerating Inflation Rate of Unemployment
Employment

- Employment: The total number of people who are working, \( N \).

“Full” Employment

- The level of employment that is consistent with the economy being at potential GDP and the natural rate of unemployment, \( N^* \).

Inflation

- The rate of change in the price of a basket of goods and/or services, \( \pi \).

\[
\pi = \frac{P_t - P_{t-1}}{P_{t-1}}
\]

- where \( P \) is the general price level.

Inflation

- Key Questions?
  - Why has it been so high and so variable at times?
  - Why was it rising between 1965 and 1983?
  - Why has it been falling since then?
  - What can be done to dampen its volatility?
  - What are the economic and social consequences of high and volatile inflation?
Interest Rates

- The (realized) annualized rate of return on a financial investment.
  - Nominal: Includes inflation, \( r \).
  - Real: Excludes inflation, \( R \).

- Influenced by changes in output and changes in monetary policy.

Interest Rates

- Key Questions?
  - Why have they been so high and so variable at times?
  - Why were real interest rates negative in the 1970s?
  - Why were real interest rates so high in the 1980s?
  - Why have real interest rates been falling since the early 1980s?
  - What are the economic consequences of high and volatile interest rates?

Government Budget Balance

- The difference between government receipts and outlays, \( BB = T - G \).
  - If receipts > outlays, a budget surplus, \( BB > 0 \).
  - If receipts < outlays, a budget deficit, \( BB < 0 \).

- Influenced by changes in output and changes in fiscal policy.
International Trade Balance

• The difference between exports & imports, 
  \( NX = X - M. \)
  - If exports > imports, a trade surplus, \( NX > 0. \)
  - If exports < imports, a trade deficit, \( NX < 0. \)
• Influenced by changes in output and changes in trade policy.

Current Account Balance

International Trade Balance

• Key Questions?
  - Why has the trade deficit been so large and so persistent since 1975?
  - What are the economic consequences of large persistent budget deficits (or surpluses)?

Labor Productivity

• A measure of output per worker.
  - equals real GDP/Number of Workers, \( Y/N. \)
• Can be very volatile in the short-run but longer-term trends are most important.

Productivity

• Key Questions?
  - Why was productivity growth so slow between 1973 and 1995?
  - Why has productivity growth accelerated so sharply since 1995?
  - What are the economic and social consequences of slow (fast) productivity growth?
Key Exogenous Variables

- Fiscal Policy
- Monetary Policy
- Other Government Policies

Demand-side vs. Supply-side Policy Variables
- Demand-side policy is generally short-run.
- Supply-side policy is generally long-run.

Demand Side Policy Variables

- Fiscal Policy:
  - Discretionary government spending, $\Delta G$
  - Tax rates, $\Delta t$
- Monetary Policy:
  - Money supply, $\Delta M$
  - Interest rates (federal funds rate), $r$ or $\Delta r$
- Other Government Policies:
  - International Trade & Exchange Rates
  - Regulatory

Supply Side Policy Variables

- Fiscal Policy:
  - Tax reform
  - Tax incentives
  - Spending reform
- Other Government Policies:
  - International Trade
  - Privatization/Nationalization
  - Regulatory