The Government Budget

Module Objectives

• Know the major items in the government budget constraint
• Know the alternative ways of measuring the government budget deficit
• Know the economic consequences of budget deficits
• Know the economic consequences of an unfunded social security system

One-Period Government Budget Constraint

\[ G_t + TR_t + i_t B_{t-1} = T_t + (B_t - B_{t-1}) + (H_t - H_{t-1}) \]

• government purchases: \( G_t \)
• transfer payments: \( TR_t \)
• nominal interest payments: \( i_t B_{t-1} \)
• taxes, etc.: \( T_t \)
• net new debt: \( B_t - B_{t-1} \)
• net new high-powered money: \( H_t - H_{t-1} \)
How Is the Deficit Measured?

- Conventional
  \[ G_t + TR_t + iB_{t-1} - T_t \]
- Use real interest expense
  \[ G_t + TR_t + rB_{t-1} - T_t \]
- Recognize revenue from money growth
  \[ G_t + TR_t + iB_{t-1} - T_t - (H_t - H_{t-1}) \]
- Primary
  \[ G_t + TR_t - T_t \]
How Big Are These Adjustments?

• Inflation Adjustment
  \[ i_{t}B_{t-1} - r_{t}B_{t-1} = \pi_{t}B_{t-1} \]
  \[ = (0.022)(3,733.0) \]
  \[ = 82.2 \text{ billion in 1997} \]

• Revenue from money growth
  \[ H_t - H_{t-1} = 23.5 \text{ billion in 1997} \]

Real Deficit

• The real deficit is obtained by taking the conventional deficit and making both of these adjustments.

• The real deficit is equal to the increase in the real value of the government debt held by the private sector.

Conventional and Real Federal Budget Deficits
How Big Is the Deficit?

- Conventional deficit
  $22.6 billion in 1997

- Primary surplus
  $313.2 billion in 1997

- Real surplus
  $83.1 billion in 1997

Primary Deficit

- If the primary deficit is zero, the government borrows exactly enough to cover its interest expense
  - The debt then grows at the rate of interest
- If the government runs a primary deficit forever, then the growth rate of its debt is higher than the interest rate

Debt-GDP Ratio

- Most people believe that the ratio of public debt to GDP cannot increase forever
- This means that the debt cannot grow at a faster rate than GDP
- If the interest rate is greater than the growth rate of GDP, then the government cannot run a primary deficit forever
Real Federal Debt Held by the Public

Economic Consequences

- Question: What happens if the government reduces taxes and increases borrowing, while keeping its expenditures unchanged?

- Two views
  - traditional
  - Ricardian

Real Federal Deficit and Consumption

Note: Both variables are expressed as a percent of GDP.
Social Security

- There are different types of public pension systems
- Issues:
  - Funded or unfunded?
  - Who manages the pension assets?
  - How are an individual’s lifetime retirement benefits linked to lifetime contributions?
Unfunded Social Security

- System holds almost no assets
  - Current revenues are paid directly to current retirees
- Like public debt
  - Government promise to make future payments
  - Payments to be financed by taxes on future workers

Benefit- Contribution Linkage

Rate of Return on Unfunded Social Security

- Steady state
  - Each generation taxed at the same rate
  - Rate of return equal to rate of GDP growth
  - Generally thought to be less than rate of return on capital
- Transition to larger system
  - Early generations get windfall gain
- Baby-boom effects
Alternative Pension Systems

- Fully funded systems
  - Mandatory individual retirement accounts
  - Chile: private pension fund managers
  - Singapore: government-run system

- Transition issues