United States then, Europe now

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Questions

1. Should governments **default** on their debts?
2. Should a central government **bailout** subordinate states?
3. Should a monetary union precede a fiscal union?
4. Should a fiscal union precede a monetary union?
“United States Then” - Fiscal Timeline

- War of Independence (1783)
- Articles of Confederation (1790)
- U.S. Constitution
- Nationalization of state debts (1800)
- War of 1812
- Defaults by states
- Civil War

1783 1790 1800 1830 1860

Federal Bailout

No Federal Bailout
Outline

- Fiscal arithmetic
- Fiscal and monetary choices of U.S.
- The current situations in the U.S. and EU
- Lessons
A Simple Model For Government Debt

1. **Statistical Model** for government surplus net-of interest $s_t$

   \[ s_t = \sum_{j=0}^{\infty} \sigma_j w_{t-j} = \sigma(L) w_t \]

2. **Government budget constraint**

   \[ b_t = T_t - g_t + R^{-1} b_{t+1}, \ t \geq 0 \]

   Iterating backward

   \[ b_t = -\sum_{j=0}^{t-1} R^{j+1} s_{t+j-1} + R^t b_0 \]

   Iterating forward

   \[ b_t = \sum_{j=0}^{\infty} R^{-j} E_{t-1} s_{t+j} \]
Cross-equation Restrictions

1. **Rational Expectations**:

   \[ b_t = \kappa(L)w_t, \quad s_t = \sigma(L)w_t \]

   where

   \[ \kappa(z) = \frac{z\sigma(z) - R^{-1}\sigma(R^{-1})}{z - R^{-1}} \]  \hspace{1cm} (1)

2. **Measurability**:

   \[ \sigma(R^{-1}) = 0 \]  \hspace{1cm} (2)

3. **No arbitrage**:

   \[ R^{-1} = \tilde{R}^{-1}[(1 - \pi) + \pi(1 - \phi)] \]  \hspace{1cm} (3)

   Where \( \tilde{R} \) is the risk-free rate, \( \pi \) is the probability of default and \( \phi \) is the haircut
1. What determines $s_t$?

2. Economic Model
   - Environment
     - Agents
     - Actions
     - Information flows
     - Timing protocols
   - Optimizing behavior
   - Equilibrium
Economic Theory and Outcomes

Environment + Behavior + Eqb = Prob. Dist. Over Outcomes
Economic Theory and Outcomes

\[ \text{Economic Model} \]

\[ \text{Environment} + \text{Behavior} + \text{Eqb} = \text{Prob. Dist. Over Outcomes} \]
Economic Theory and Outcomes

Economic Model

Environment + Behavior + Eqb = Prob. Dist. Over Outcomes

- Government, Voters, Creditors
- Fiscal and Monetary Policies, Voting and Portfolio Choices
- Political Institutions (Constitutions)
<table>
<thead>
<tr>
<th>Environment</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Articles of Confederation</td>
<td>• Deep discounts on IOU’s</td>
</tr>
<tr>
<td>• Weak Continental Congress</td>
<td>• $14 {s_t}$</td>
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<tr>
<td>• High debt from war</td>
<td></td>
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<tr>
<td>• Uncoordinated trade/fiscal policies</td>
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</tbody>
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### 1790’s: The U.S. Constitution

#### “New” Environment
- The U.S. Constitution
- Federal bailout of states
- Consolidation of trade/fiscal policies
- Exclusivity to tax

#### Outcomes
- No discounts on IOU’s
- Increased liquidity
- Large federal tax revenue

Monetary arrangements as an afterthought.
1790’s: The U.S. Constitution

“New” Environment

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Outcomes

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Monetary arrangements as an afterthought.

Reputation with creditors vs. reputation with states
1840’s: Fiscal Crisis

- What kind of fiscal union?
  - Expenditure
  - Bond-issuance
  - Taxation
- Eleventh Amendment and Congress’s refusal to bail out states
- Rewritten state constitutions with balanced budget provisions
U.S. then

- Deep discounts on bonds
- Uncoordinated fiscal policies
- “Messy” monetary arrangements
- Large federal debt
EU now

- Deep and varied discounts on member state bonds
- Uncoordinated fiscal policies
- Centralized monetary arrangements
- No "federal" debt
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