Borrowing

- The government need not balance its books each year.
- It must eventually pay back what it borrows.
- Is there a case for borrowing?

The Case for Deficit Financing

- The optimal tax policy is a smooth policy.
- So, if spending oscillates, let's borrow to keep taxes smooth.

Why Deficits can be Good

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<thead>
<tr>
<th>Sales Tax this Year</th>
<th>Sales Tax next Year</th>
<th>Efficiency Loss from this year's Sales Tax</th>
<th>Efficiency Loss from next year's Sales Tax</th>
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Some Applications

- Financing World War II
- Capital Projects
- Community Bond Issues

Optimal Policy I

Flatland has total national income of $100 million. It is not expected to grow. Current government expenditures are $15 million, and the national debt of $100 million carries a 5% interest rate. What is the optimal deficit reduction policy?

\[ \tau = 20\% \]

Don't pay off the national debt

An alternative: \[ \tau = 25\% \] until debt paid off. Then \[ \tau = 15\% \] increases efficiency losses.
Optimal Policy II

- Wedgwood has total national income of $100 million, is expected to grow at 3% per year, as are current government expenditures of $15 million per year.
- The $100 million debt carries an interest rate of 5%.
- What is the optimal deficit reduction policy?

\[ \tau = 17\% \]

Let the national debt grow at 3% per year.

An alternative:

- \( \tau = 25\% \) until debt paid off.
- Then \( \tau = 15\% \)
- Increases efficiency losses

Another alternative:

- \( \tau = 20\% \); balance budget.
- Then \( \tau = 15\% \)
- Increases efficiency losses

Another alternative:

- \( \tau = 20\% \); balance budget.
- Then \( \tau = 15\% \)
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Optimal Policy III

- Assume: the United States of Antarctica has a GDP of $11 trillion, expected to grow at 5% a year, as are government expenditures.
- The debt is about $4 trillion.
- What is the optimal deficit policy?
Optimal Policy III

- Assume: the United States of Antarctica has a GDP of $11 trillion, expected to grow at 5% a year, as are government expenditures.
- The debt is about $4 trillion.
- What is the optimal deficit policy?

Let the national debt grow at 5% per year.

Optimal Policy IV

- Assume: the United States of Antarctica has a GDP of $111 trillion, expected to grow at 5% a year, as are government expenditures.
- The debt is about $4 trillion.
- The current deficit is $500 billion per year, and that rate will be flat.

Policy A: raise taxes by $300 billion

Policy B: do nothing, let the debt/GDP ratio rise. Less efficiency loss, for we have lower taxes.

Optimal Policy III

- Assume: the United States of Antarctica has a GDP of $11 trillion, expected to grow at 5% a year, as are government expenditures.
- The debt is about $4 trillion.
- What is the optimal deficit policy?

That is, run a national deficit of $200 billion per year.

Policy A: raise taxes by $300 billion

Optimal Policy IV

- Assume: the United States of Antarctica has a GDP of $11 trillion, expected to grow at 5% a year, as are government expenditures.
- The debt is about $4 trillion.
- The current deficit is $500 billion per year, and that rate will be flat.

Policy A: raise taxes by $300 billion

Policy B: do nothing, let the debt/GDP ratio rise. Less efficiency loss, for we have lower taxes.

End