

Old Exam Question

$$GDP_A < GDP_B = GDP_C$$

An Old Exam Question

The Government of Central Backwater is about to undertake a \$100 million program to build a monumental tomb for its current ruler, who is not in the best of health. The project is to be completed in the year. There is a great debate about how to finance the project. Three proposals have been advanced.

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You should notice immediately this is a foolish project. No one benefits.

Three Proposals

- (a) Impose a special one-time tax on wage incomes in the coming year sufficient to cover the cost of the project.

Three Proposals

- (b) Require workers to make an involuntary loan to the government. The loan will equal the tax called for in proposal (a). However, the loan will be paid back over time with a special 3% tax on wage incomes. (The 3% tax will start the year after the project is completed). The special tax will last as long as is required to pay back the loan. And yes, it will be paid back.

Three Proposals

- (c) Rather than require an involuntary loan, Central Backwater can simply borrow \$100 million. If it elects this option, the loan will be paid back over time with a special 3% tax on wage incomes. (The 3% tax will start the year after the project is completed). The special tax will last as long as is required to pay back the loan.

Three Questions

- What will be the impact on GDP, Investment and Interest Rates in the coming year?
- Rank the proposals in term of their impact on these three variables. Say where you do not have enough information.
- On grounds of economic efficiency, which one do you recommend? Why?

A Simplification

- Proposal (b) = Proposal (c).
 - In either scenario, the government is simply borrowing the money.
 - If an individual did not want to lend the money to the government this year, he can simply sell the loan on the market.

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First Question

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- Proposal (a) will reduce GDP because of temporary labor supply effects.
- Proposal (b) = (c) have no disincentive effects in the coming year. No wage taxes this year

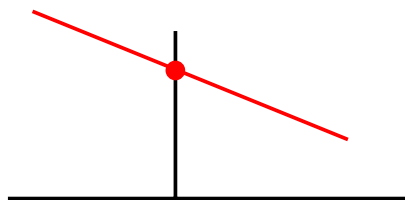
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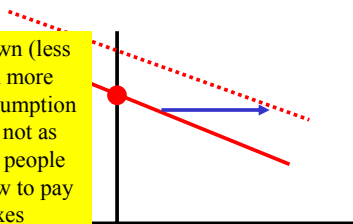
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Interest Rates



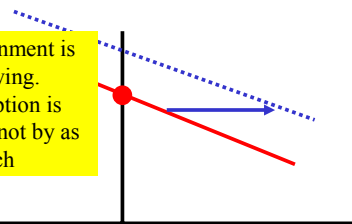
Demand For Loans (Case A)

Income down (less work and more taxes), consumption down but not as much, and people must borrow to pay the taxes



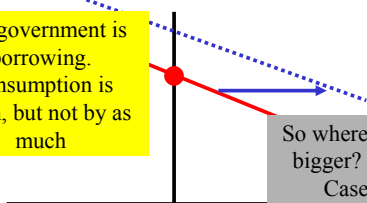
Demand For Loans (Case B=C)

The government is borrowing. Consumption is down, but not by as much



Demand For Loans (Case B=C)

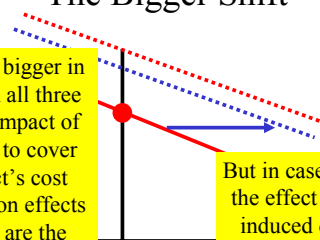
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So where is the shift bigger? Case A or Case B=C?

The Bigger Shift

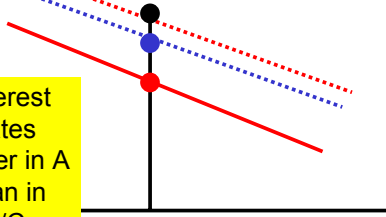
The shift is bigger in Case A. In all three cases, the impact of borrowing to cover the project's cost (consumption effects included) are the same.



But in case A, there is the effect of the tax-induced decline in GDP.

The Bigger Shift

Interest rates higher in A than in B/C.



First Question

- What will be the impact on GDP, Investment and Interest Rates in the coming year?

$$r_A > r_{B=C}$$

$$I_A < I_{B=C}$$

Second Question

- Rank the proposals in term of their impact on these three variables. Say where you do not have enough information.

$$GDP_A < GDP_B = GDP_C$$

$$r_A > r_{B=C}$$

$$I_A < I_{B=C}$$

Third Question

- On grounds of economic efficiency, which one do you recommend? Why?
- The general principle: spread taxes out. Thus Proposal B=C wins over Proposal A.

End

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