

Consider our standard model of the IS curve and loanable funds. I will refer to $(G - T)$ as the “government budget deficit.”

1) You know that real GDP Y equals consumption C plus investment I plus government purchases of goods and services G . In general terms, that is:

$$Y = C(Y-T) + I(r) + G$$

Suppose the consumption function is specifically $C = a + b(Y-T)$ and the investment function is $I = c - dr$. Using algebra, make an equation that has Y on the left-hand side and on the right-hand side, G , T and r . This is the big equation we use to talk about the IS curve and what shifts it.

2) Suppose that output Y is too low. You want to increase Y . From the equation you made in 1) or from the IS curve, you can see that one way to increase output is to cut the real interest rate r . But suppose that, for some reason, it is *impossible* to cut the real interest rate. Instead, you have the power to increase G by ten units, or decrease T by ten units. Doing either will increase the government budget deficit $G-T$ by ten units. Which action will have a bigger effect on Y ? Hint: remember the “marginal propensity to consume” b is greater than zero, less than one.

3) You know that national saving S equals private saving plus public saving, or private saving minus the government budget deficit. In general terms, that is:

$$S = Y - T - C(Y-T) - (G-T)$$

Again suppose that the consumption function is specifically $C = a + b(Y-T)$ and the investment function is $I = c - dr$. Using algebra, make an equation that has S on the left-hand side and on the right-hand side, G , T and Y .

4) Hint: for this question, it may be useful to refer back to your answer to 3). Recall that the pool of private saving ($Y - T - C$) is divided between investment I and the government budget deficit ($G - T$). Eugene says that an increase in G cannot possibly increase Y , because any increase in the government budget deficit must be financed out of the pool of private saving, and that must reduce private saving available for investment. Thus, investment falls by the amount of the increase in the government budget deficit, and there is no increase in Y .

a) Suppose output is always equal to the “natural rate of output” $\bar{Y}$.

Using the “loanable funds” graph,
illustrate what happens to investment
if there is an increase in G or
decrease in T , and output is always
equal to $\bar{Y}$

Is Eugene’s statement correct in this case? _____ (yes or no)

b) Suppose output need not always equal $\bar{Y}$. Instead, the real interest rate is *held fixed*.

Using the “loanable funds” graph,
illustrate what happens to investment
if there is an increase in G
and the real interest rate
is held fixed. Hint: here it may be
useful to look at your answers
to 1) and 2), too.

Is Eugene’s statement correct in this case? _____ (yes or no)