Hjemmeopgave 1, 2000F, opgave 1.8

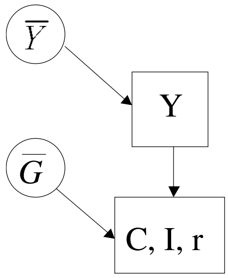
Ville man få samme resultat i spm. 1.7, hvis privatforbruget også afhang af realrenten? Begrund.

Intuitively, the answer must be no. In 1.7, we found that investments must fall one-for-one with the increase in government consumption (full crowding-out). We have the equation $I(r) = Y - C - G$ (financial market equilibrium / investment = saving, which can be seen directly from equations 1a and 1c). We know from our causality analysis that *G* does not affect *Y* and *C*, so the only way that equilibrium can be restored after an increase in *G* is through a decrease in *I* (which happens through an increase in the interest rate, *r*). Now, however, we have a situation where *C* is also affected by a change in interest rates, so it is natural to assume that some of the crowding-out must also occur through a fall in *C*.

We can calculate the exact effect if we assume a new equation to replace 1b, which takes account of consumption being affected by the real interest rate. For example:

$C = a + bY - hr$, $h > 0$

If we do a causality analysis on the new model (as an exercise, try doing this yourself), we get the following arrow-diagram:



We can now see clearly that a change in *G* affects *C*, *r* and *I*, which also affect each other.

If we want to find the exact effect on *I*, then we have to solve the model by substitution. We need to find an expression for *I* in terms of the exogenous variables and parameters, and then differentiate with respect to *G*. A process of inserting the four equations into each other and isolating *I* results in the following:

$$I = \frac{f}{f+h}\left(\overline{Y} - a - b\overline{Y} - \overline{G} + \frac{he}{f}\right)$$

Again, as an exercise you might want to try reaching this expression yourself. The effect of a change in *G* is therefore:

$$\frac{\partial I}{\partial \overline{G}} = -\frac{f}{f+h} > -1$$

So, there is less than full crowding-out of investments. It should be noted, however, that there is still full crowding-out of consumption and investments taken together (i.e. $C + I$).