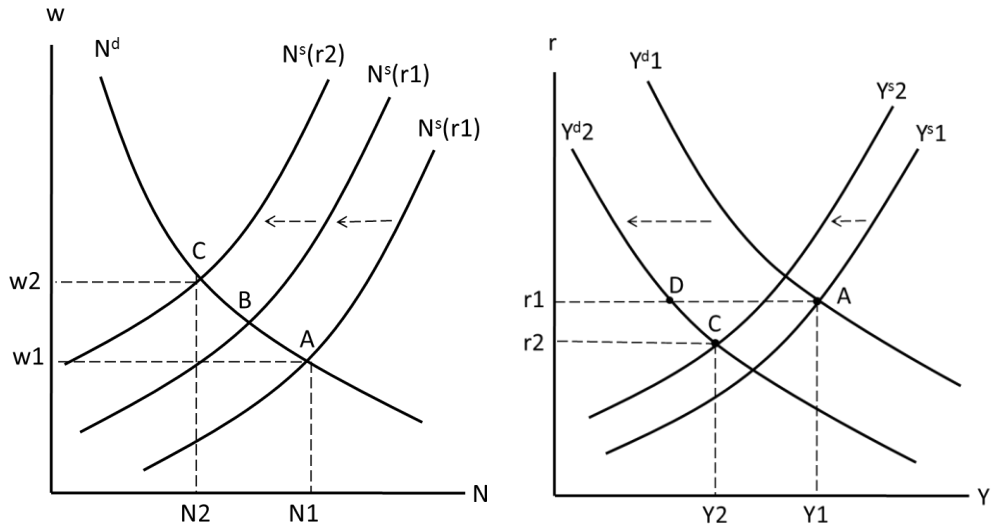
EE312 Macroeconomic Theory
Semester 1/2017
Homework II

Submission date: Wednesday 22 November 2017; 13:00hr

Questions

Use **the Closed-Economy, Monetary Intertemporal Model** to analyze the effects of a temporary decrease in government spending on the real wage, employment, current output, the real interest rate, current consumption, investment and the price level.

Answer:



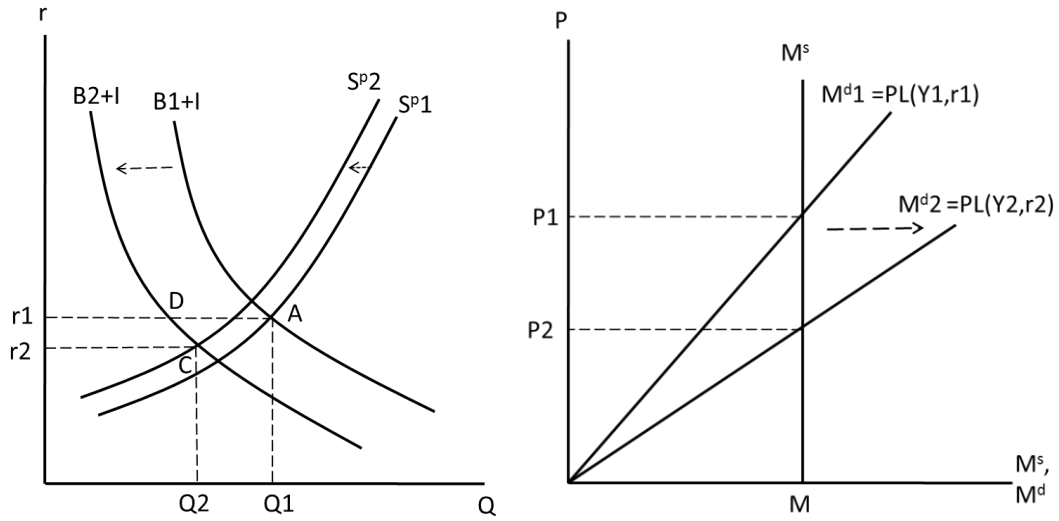
In the labor market, a decrease in government spending implies a decrease in lifetime taxes. The consumer's lifetime wealth (and disposable income) increases. The consumer increases leisure as it is a normal good. More leisure means less labor supply. The labor supply curve shifts to the left. Employment and output are decreasing while the real wage is rising. The output supply curve also shifts to the left from Ys1 to Ys2.

In the goods market, the decrease in government spending reduces the total demand for current goods by the amounts of ΔG plus ΔG multiplied by the marginal propensity to consume, $MPC\Delta G$. But the higher lifetime wealth also raises current consumption and the total demand for current goods by the amount of $MPC\Delta G$. So the net decrease in total demand for current goods is $-\Delta G - MPC\Delta G + MPC\Delta G = -\Delta G$. The output demand curve shifts to the left by the amount of ΔG (the distance AD).

The output demand curve shifts to the left more than the output supply curve because the effect of the decrease in government spending on output demand is concentrated in the current period and is stronger than the effect on output supply. On the other hand, the effect of the decrease in government spending on lifetime wealth and leisure spreads over a

lifetime. So the decrease in labor supply and the leftward shift of the output supply curve are small. The increase in current consumption as a result of an increase in lifetime wealth is also small for the same reason so that the effect of government spending on the total demand for current goods is strong. The net effect is that the real interest rate decreases from r1 to r2.

In the labor market, the lower real interest rate reduces the opportunity cost of leisure. The consumer increases leisure and reduces labor supply. The labor supply curve shifts further to the left to Ns (r2). Employment decreases from N1 to N2 while the real wage increases from w1 to w2. Output (from the production function) decreases from Y1 to Y2. In the goods market, the lower real interest rate also raises current consumption and investment demand as the real interest rate is the opportunity cost of both current consumption and investment.



The decrease in government spending causes a decrease in government borrowing (bond sale) and the demand for credit in the credit market. The credit demand curve shifts to the left. Current consumption decreases by less proportion than the decrease in income (consumption smoothing). So private savings drops. The credit supply curve shifts from Sp1 to Sp2. The lower real interest rate also reduces savings and the supply of credit (movement along the supply curve). The real interest rate decreases from r1 to r2.

In the money market, lower income (and output) reduces the demand for money while the lower real interest rate raises the money demand. If the real interest rate effect is stronger, the demand for money increases. The money demand curve rotates to the right from Md1 to Md2, given the money supply. The price level decreases from P1 to P2.

In conclusion, a decrease in government spending results in lower employment, output and income, a lower real interest rate, a higher real wage, higher investment and higher current consumption (higher lifetime wealth and a lower real interest rate increase current consumption but lower current income decreases it; the real interest rate effect is stronger.)