Macroeconomics, Part I
Petra Geraats, Lent 2019

Supervision 6
Aggregate Demand and Supply

Short questions (250 words max)

1. Why does the aggregate demand curve slope downward in price-output space? [Tripos 2000]

2. Suppose the central bank sets the real interest rate r according to the following Taylor rule:
$$r = \bar{r} + m_\pi (\pi - \bar{\pi}) + m_Y \left(Y - \bar{Y}\right)$$
where π denotes inflation, Y aggregate output, and the coefficients m_π and m_Y are positive. Using the IS-MP model, explain the short-run effects of:

   (i) an increase in inflation;

   (ii) an increase in the monetary policy feedback coefficient on output, m_Y.

3. Using aggregate supply and demand analysis, explain the likely consequences for real GDP and inflation in a closed economy if the central bank decides to target a higher rate of inflation.

4. Using the sticky-wage model, explain the short-run effect on aggregate output, the aggregate price level and the real wage of

   (i) a negative aggregate demand shock

   (ii) a negative productivity shock.

   Explain whether the observed behavior of the real wage over the business cycle is consistent with the sticky-wage model.

Problem

5. Consider a closed economy without government, in which investment I is given by

$$I = I_0 - br$$

where r denotes the real interest rate, and I_0 and b are positive parameters. Aggregate consumption C is described by

$$C = C_0 + cY + d\frac{M}{P}$$

where Y denotes aggregate income, $\frac{M}{P}$ real money balances, and C_0, c and d are positive parameters, with $0 < c < 1$. The demand for real money balances equals

$$\left(\frac{M}{P}\right)^d = \alpha Y - \beta\left(r + \pi^e\right)$$

where π^e denotes expected inflation, and α and β are positive parameters. Suppose the monetary authority sets the real interest rate equal to $\bar{r}$ by controlling the supply of real money balances. Assume that π^e is given and that $c + \alpha d < 1$.

(a) Derive an expression for equilibrium output in terms of $\bar{r}$ and the parameters.

(b) What is the multiplier associated with an increase in autonomous consumption, $\frac{\mathrm{d}Y}{\mathrm{d}C_0}$? Explain how it compares to the standard Keynesian multiplier.

(c) Derive and explain the aggregate demand (AD) relationship in this model

i. between Y and P for $\pi^e = 0$;

ii. between Y and π for $\pi^e = \pi$.

Essay (1000 words max)

6. "The short-run aggregate supply curve presumes that either firms or workers behave irrationally." Discuss.

Main reading

- Mankiw and Taylor (2014), *Macroeconomics - European Edition*, chapter 10, 14 and 15.
- Jones (2014), *Macroeconomics*, chapter 12, 13 and 14.

Supplementary references

- Barro and Grilli (1994), *European Macroeconomics*, chapter 1, 19 and 21.
- Blanchard and Johnson (2012), *Macroeconomics*, chapter 6-8.
- Carlin and Soskice (1990), *Macroeconomics and the Wage Bargain*, chapter 1-4.