The Macroeconomic Policy Model
Additional Homework Problems
ECON 3133
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Answers

1.

a. The general procedure for solving for inflation and the output gap is as follows: 1) substitute the model for expected inflation into the price adjustment equation; 2) solve for inflation in year 1 using the price adjustment equation; 3) substitute the inflation rate in year 1 from the price adjustment equation into the macroeconomic policy equation to get the output gap in year 1; 4) repeat steps 2 and 3 for years 2 – 6.

Model 1

Year	*Inflation*	*Output Gap*
1	2.00%	–1.67%
2	1.58%	–1.32%
3	1.25%	–1.04%
4	0.99%	–0.83%
5	0.79%	–0.66%
6	0.62%	– 0.52%

Model 2

Year	*Inflation*	*Output Gap*
1	1.20%	–1.00%
2	0.63%	–0.53%
3	0.36%	–0.30%
4	0.20%	–0.16%
5	0.11%	–0.09%
6	0.06%	–0.05%

b. The return to potential takes longer for the first model because it assumes that past inflation has a greater influence on future inflation than does the second model.

c. The degree of wage indexation may vary and/or people may have differing expectations about the length and duration of departures from potential output.

2. The investment boom corresponds to a shift out in the IS curve, and initially investment and interest rates rise. Higher investment also means increased aggregate demand, which leads to higher inflation, in response to which the Fed raises interest rates further, causing aggregate demand to decrease. In the long run, interest rates increase and investment will have increased to the extent it has crowded out other interest sensitive spending.

3.

a. It implies that the average value of the output gap is zero.

b. Substituting $\pi^e = \pi + e$ into the price adjustment equation gives

$$-e = f\left[\frac{Y_{-1} - Y^*}{Y^*}\right].$$

This implies that if agents systematically underestimate inflation ($e < 0$), a systematic positive deviation of output from potential is consistent with a stable rate of inflation.