Fiscal and Monetary Policy in the Growth Model
Additional Homework Problems
ECON 3133
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Answers

1. $Y/Y = C/Y + I/Y + G/Y$.
   $I/Y = \alpha - 0.02R$.

   a. $Y/Y = C/Y + I/Y + G/Y = 1.0$.
   Since C/Y does not depend on R, I/Y must adjust enough to offset the fall in G/Y. Therefore I/Y must rise by 4% of GDP from its original level.

   b. Since I/Y rises by 2% for every 1% decrease in R, it is necessary for R to fall by 2%.

2.
   a. $1000 = [0.3\times(4000) - 4000(0.05)]\times P$
   $= (1200 - 200)\times P$
   $P = 1$.

   b. $1100 = 1000P$
   $1.1 = P$.
   10 % change in M and P.

   c. $1000 = [1200 - 4000(0.10)]\times P$
   $P = 1000/800$
   $P = 1.25$

   d. $1000 = [0.3\times(4500) - 200]\times P$
   $P = 1000/1150$
   $P = 0.87$.

3.
   a. Output increases due to increased labor input.

   b. Output increases due to improvement in technology.

   c. Output is unchanged; only price level changes.

   d. Output is unchanged initially, but *C* crowds out some *I*.

4.
   a. Both the investment spending and nongovernment spending schedules shift down.

   b. If no other spending component were related to R, then R would fall enough to restore investment to its original level.

   c. If net exports vary negatively with investment, then the decline in R will push up both investment and net exports. Investment, however, will not return to its original level, but net exports will be higher than it was initially.

5.

   a. The increase in potential GDP pushes up money demand. To keep the price level constant, the Fed should increase the money supply.

   b. An increase in income taxes forces up government savings. This causes the interest rate to fall and money demand to increase. To keep the price level constant, the Fed should increase the money supply.

   c. A law creating new investment incentives will push up investment. This causes both investment and non-government spending's share of GDP to increase. Therefore, the interest rate must rise in order for non-government spending's share of GDP to return to its previous level. This higher interest rate decreases money demand. To keep the price level constant, the Fed should decrease the money supply.

   d. The increase in demand for U.S. goods by foreigners pushes up net exports. This causes both net exports and non-government spending's share of GDP to rise. Therefore, the interest rate must increase in order for non-government spending's share of GDP to return to its previous level. This higher interest rate decreases money demand. To keep the price level constant, the Fed should decrease the money supply.

6. The long-run model predicts high real interest rates and reductions in investment and net exports as a share of GDP because of increased government purchases relative to GDP.

7. The long-run model predicts high real interest rates and reductions in investment and net exports as a share of GDP because of increased government purchases relative to GDP.

   a. An increase in the labor supply causes potential output to rise. Higher potential output pushes up money demand. Money supply, however, remains constant so prices must fall in order to lower money demand and clear the money market.

   b. A decrease in the sensitivity of investment to changes in the interest rate means that investment does not fall as fast when the interest rate rises. As a result, investment demand increases, which cause the interest rate to rise and money demand to fall. Money supply, however, remains constant so prices must increase in order to raise money demand and clear the money market.

   c. An increase in consumption causes savings to fall. This decline in savings causes the interest rate to rise, which pushes down money demand. Money supply, however, remains constant so prices must increase in order to raise money demand and clear the money market.

   d. A decrease in government purchases causes the interest rate to fall. This decline in the interest pushes up money demand. Money supply, however, remains constant so prices must fall in order to lower money demand and clear the money market.

   e. An increase in the average tariff rate on imports decreases the demand for imports, which causes net exports to rise. This rise in net exports causes direct foreign investment to fall. As a result, the interest rate rises, which pushes down money demand. Money supply, however, remains constant so prices must increase in order to raise money demand and clear the money market.