Problem Session #4 (Chapters 11 and 12):

Krugman and Wells, Ch 12,

Q 1 A fall in the value of the dollar against other currencies makes U.S. final goods and …

You are right. When a fall in the value of the dollar against other currencies makes U.S. final goods and services cheaper to foreigners, this represents a shift of the aggregate demand curve. Although foreigners may be demanding more U.S. goods because the price of those goods in their own currency is lower, there is no change in the U.S. aggregate price level. From the U.S. perspective, there is an increase in aggregate output demanded at any given aggregate price level.

Q 7 Suppose that the economy is currently at potential output. Also suppose that you…

The most preferred shock would be a positive supply shock. The economy would have higher aggregate output without the danger of inflation. The government would not need to respond with a change in policy. The least preferred shock would be a negative supply shock. The economy would experience stagflation. There would be lower aggregate output and higher inflation. There is no good policy remedy for a negative supply shock: policies to counteract the slump in aggregate output would worsen inflation, and policies to counteract inflation would further depress aggregate output. It is unclear how economic policy makers would rank positive and negative demand shocks. A positive demand shock brings a higher level of aggregate output but at a higher aggregate price level. A negative demand shock brings a lower level of aggregate output but at a lower aggregate price level. With either a positive or negative demand shock, policy makers could try to use either monetary or fiscal policy to lessen the effects of the shock.

Q 11 There were two major shocks to the U.S. economy in 2007, leading to the severe …

a.

b. The rise in the price of oil usually causes a supply shock. The short-run aggregate supply (SRAS) curve shifts to the left, from SRAS1 to SRAS2. The economy settles at a new short-run macroeconomic equilibrium at E2, with a higher aggregate price level, P2, and lower real GDP, Y2.
c. The fall in home prices would cause a demand shock because of the wealth effect. The aggregate demand (AD) curve shifts leftward, from AD1 to AD2. The new aggregate price level, $P_3$, could either be equal to, above, or below $P_1$. The new level of real GDP, $Y_3$, is below the original level, $Y_1$.

Q 13 Using aggregate demand, short-run aggregate supply, and long-run aggregate supply...

a. An increase in taxes will decrease consumer spending by households. Beginning at E1 in the accompanying diagram, the aggregate demand curve will shift leftward from AD1 to AD2. In the short run, nominal wages are sticky, and the economy will be in short-run macroeconomic equilibrium at point E2. The aggregate price level is lower than at E1, and aggregate output is lower than potential output. The economy faces a recessionary gap. As wage contracts are renegotiated, nominal wages will fall and the short-run aggregate supply curve will shift gradually to the right over time until it reaches SRAS2 and intersects AD2 at point E3. At E3, the economy is back at its potential output but at a much lower aggregate price level.
b. An increase in the quantity of money will encourage people to lend, lowering interest rates and increasing investment and consumer spending; at any given aggregate price level, the quantity of aggregate output demanded will be higher. Beginning at long-run macroeconomic equilibrium, $E_1$ in the accompanying diagram, the aggregate demand curve will shift from $AD_1$ to $AD_2$. In the short run, nominal wages are sticky, and the economy will be in short-run macroeconomic equilibrium at point $E_2$. The aggregate price level is higher than at $E_1$, and aggregate output is higher than potential output. The economy faces an inflationary gap. As wage contracts are renegotiated, nominal wages will rise and the short-run aggregate supply curve will shift gradually to the left over time until it reaches $SRAS_2$ and intersects $AD_2$ at point $E_3$. At $E_3$, the economy is back at its potential output but at a much higher aggregate price level.

c. An increase in government spending will increase aggregate demand; at any given aggregate price level, the quantity of aggregate output demanded will be higher. Beginning at long-run macroeconomic equilibrium, $E_1$ in the accompanying diagram, the aggregate demand curve will shift from $AD_1$ to $AD_2$. In the short run, nominal wages are sticky, and the economy will be in short-run macroeconomic equilibrium at point $E_2$. The aggregate price level is higher than at $E_1$, and aggregate output is higher than potential output. The economy faces an inflationary gap. As wage contracts are renegotiated, nominal wages will rise and the short-run aggregate supply curve will shift gradually to the left over time until it reaches $SRAS_2$ and intersects $AD_2$ at point $E_3$. At $E_3$, the economy is back at its potential output but at a much higher aggregate price level.
Krugman and Wells, Ch 11,

Q 2 Assuming that the aggregate price level is constant, the interest rate is fixed, and there are …

a. An autonomous increase in consumer spending of $25 billion, with a marginal propensity to consume of 2/3, will increase GDP by $75 billion:

\[
\text{Total change in GDP} = \frac{1}{1 - \text{MPC}} \times _C
\]

\[
\text{Total change in GDP} = \frac{1}{1 - \frac{2}{3}} \times 25 \text{ billion}
\]

\[
\text{Total change in GDP} = 3 \times 25 \text{ billion}
\]

\[
\text{Total change in GDP} = 75 \text{ billion}
\]

b. If firms reduce investment spending by $40 billion and the marginal propensity to consume is 0.8, GDP will fall by $200 billion:

\[
\text{Total change in GDP} = \frac{1}{1 - \text{MPC}} \times _I
\]

\[
\text{Total change in GDP} = \frac{1}{1 - 0.8} \times (-40 \text{ billion})
\]

\[
\text{Total change in GDP} = 5 \times (-40 \text{ billion})
\]

\[
\text{Total change in GDP} = -200 \text{ billion}
\]

c. If government purchases of goods and services rise by $60 billion and the marginal propensity to consume is 0.6, GDP will increase by $150 billion:

\[
\text{Total change in GDP} = \frac{1}{1 - \text{MPC}} \times _G
\]

\[
\text{Total change in GDP} = \frac{1}{1 - 0.6} \times 60 \text{ billion}
\]

\[
\text{Total change in GDP} = 2.5 \times 60 \text{ billion}
\]

\[
\text{Total change in GDP} = 150 \text{ billion}
\]

Q 6 During the early 2000s, the Case–Shiller U.S. Home Price Index, a measure of average …

As home prices increased, homeowners experienced a large increase in the value of their wealth held in real estate. At the same time, as the S&P 500 almost double from March 2003 to October 2007, stockholders experienced a large increase in the value of their wealth held in stocks. Both of these increased consumer spending in the economy dramatically. However, as home prices plummeted from their peak in early 2006, consumer spending should have fallen, other things equal, as homeowners’ wealth decreased. And, as the S&P 500 fell almost 60% from its peak in October 2007 to its low in March 2009, there was great concern that the decline in the stock market was exacerbating the decrease in consumers’ wealth that had occurred because of the collapse in the housing market.

Q 7 How will planned investment spending change as the following events …

a. The lower interest rate will lead to a rise in planned investment spending.

b. Firms will need to replace older machinery with newer, less polluting machinery. This will increase planned investment spending.
c. As the interest rate rises, planned investment spending will fall.

Q 8 Explain how each of the following actions will affect the level of planned investment spending

a. A rise in the interest rate will reduce planned investment spending. Planned aggregate spending will now be less than GDP, and inventories will accumulate. So unplanned inventory investment will be positive.

b. A rise in the expected growth rate of real GDP will lead firms to increase their planned investment spending. Planned aggregate spending will now exceed GDP. Sales will exceed firms’ expectations, firms will draw down inventories unexpectedly, and unplanned inventory investment will be negative.

c. A fall in the interest rate will lead to an increase in planned investment spending. Planned aggregate spending will now exceed GDP. Sales will exceed firms’ expectations, firms will draw down inventories unexpectedly, and unplanned inventory investment will be negative.

Q 12 Although the United States is one of the richest nations in the world, it is also the …

If policy makers successfully encouraged greater savings, there would be a decrease in either consumer spending or planned investment spending. A drop in $C$ or in $I_{\text{planned}}$ would decrease the income – expenditure equilibrium GDP by several times the change in spending. This is the paradox of thrift. If households and producers decrease spending to reduce the nation’s debt, these actions will depress the economy, leaving households and producers worse off than they were with the nation’s large debt.

Krugman and Wells, Ch 11A

Q 1 In an economy without government purchases, transfers, or taxes, and without imports...

a. In an economy without government purchases, planned aggregate spending equals the aggregate consumption function plus planned investment spending:

$$AE_{\text{planned}} = C + I_{\text{planned}}$$

$$AE_{\text{planned}} = $500 \text{ billion} + 0.5 \times YD + $250 \text{ billion}$$

b. In an economy without taxes or government transfers, GDP equals disposable income. The economy will be in income – expenditure equilibrium when GDP equals planned aggregate spending:

$$Y^* = $750 \text{ billion} + 0.5 \times Y^*$$

$$0.5 \times Y^* = $750 \text{ billion}$$

$$Y^* = $1,500 \text{ billion}$$

c. The value of the multiplier is 2 \([= 1/(1 - 0.5)]\).

d. If autonomous consumer spending falls to $450 billion, it will have decreased by $50 billion. Given a multiplier of 2, $Y^*$ will fall by $100 billion when autonomous consumer spending falls by $50 billion. The new $Y^*$ equals $1,400 billion.