1. a. An increase in the money supply shifts the $LM$ curve to the right in the short run. This moves the economy from point $A$ to point $B$ in Figure 11–22: the interest rate falls from $r_1$ to $r_2$, and output rises from $\bar{Y}$ to $Y_2$. The increase in output occurs because the lower interest rate stimulates investment, which increases output.

![Figure 11–22](image)

Since the level of output is now above its long-run level, prices begin to rise. A rising price level lowers real balances, which raises the interest rate. As indicated in Figure 11–22, the $LM$ curve shifts back to the left. Prices continue to rise until the economy returns to its original position at point $A$. The interest rate returns to $r_1$, and investment returns to its original level. Thus, in the long run, there is no impact on real variables from an increase in the money supply. (This is what we called monetary neutrality in Chapter 4.)

b. An increase in government purchases shifts the $IS$ curve to the right, and the economy moves from point $A$ to point $B$, as shown in Figure 11–23. In the short run, output increases from $\bar{Y}$ to $Y_2$, and the interest rate increases from $r_1$ to $r_2$.

![Figure 11–23](image)
The increase in the interest rate reduces investment and "crowds out" part of the expansionary effect of the increase in government purchases. Initially, the \textit{LM} curve is not affected because government spending does not enter the \textit{LM} equation. After the increase, output is above its long-run equilibrium level, so prices begin to rise. The rise in prices reduces real balances, which shifts the \textit{LM} curve to the left. The interest rate rises even more than in the short run. This process continues until the long-run level of output is again reached. At the now equilibrium, point C, interest rates have risen to \( r_3 \), and the price level is permanently higher. Note that, like monetary policy, fiscal policy cannot change the long-run level of output. Unlike monetary policy, however, it can change the \textit{composition} of output. For example, the level of investment at point C is lower than it is at point A.

2. Figure 11–25(A) shows what the \textit{IS–LM} model looks like for the case in which the Fed holds the money supply constant. Figure 11–25(B) shows what the model looks like if the Fed adjusts the money supply to hold the interest rate constant; this policy makes the effective \textit{LM} curve horizontal.

Figure 11–25

\begin{align*}
\text{A. Holding the Money Supply Constant} \\
\text{B. Holding the Interest Rate Constant}
\end{align*}

\begin{align*}
\text{Interest rate} & \quad \text{Income, output} \\
\text{\textit{LM}} & \quad Y \\
\text{\textit{IS}} & \quad Y
\end{align*}

\begin{align*}
\text{Interest rate} & \quad \text{Income, output} \\
\text{\textit{LM}} & \quad Y \\
\text{\textit{IS}} & \quad Y
\end{align*}

\begin{enumerate}
\item If all shocks to the economy arise from exogenous changes in the demand for goods and services, this means that all shocks are to the \textit{IS} curve. Suppose a shock causes the \textit{IS} curve to shift from \textit{IS}_1 to \textit{IS}_2. Figures 11–26(A) and (B) show what effect this has on output under the two policies. It is clear that output fluctuates less if the Fed follows a policy of keeping the money supply constant. Thus, if all shocks are to the \textit{IS} curve, then the Fed should follow a policy of keeping the money supply constant.

\item If all shocks in the economy arise from exogenous changes in the demand for money, this means that all shocks are to the \textit{LM} curve. If the Fed follows a policy of adjusting the money supply to keep the interest rate constant, then the \textit{LM} curve does not shift in response to these shocks—the Fed immediately adjusts the money supply to keep the money market in equilibrium. Figures 11–27(A) and (B) show the effects of the two policies. It is clear that output fluctuates less if the Fed holds the interest rate constant, as in Figure 11–27(B). If the Fed holds the interest rate constant and offsets shocks to money demand by changing the money supply, then all variability in output is eliminated. Thus, if all shocks are to the \textit{LM} curve, then the Fed should adjust the money supply to hold the interest rate constant, thereby stabilizing output.
\end{enumerate}
3. a. National saving is the amount of output that is not purchased for current consumption by households or the government. We know output and government spending, and the consumption function allows us to solve for consumption. Hence, national saving is given by:

\[ S = Y - C - G \]
\[ = 5,000 - (250 + 0.75(5,000 - 1,000)) - 1,000 \]
\[ = 750. \]

Investment depends negatively on the interest rate, which equals the world rate \( r^* \) of 5. Thus,

\[ I = 1,000 - 50 \times 5 \]
\[ = 750. \]

Net exports equals the difference between saving and investment. Thus,
\[ NX = S - I \]
\[ = 750 - 750 \]
\[ = 0. \]

Having solved for net exports, we can now find the exchange rate that clears the foreign-exchange market:

\[ NX = 500 - 500 \times \varepsilon \]
\[ 0 = 500 - 500 \times \varepsilon \]
\[ \varepsilon = 1. \]

b. Doing the same analysis with the new value of government spending we find:

\[ S = Y - C - G \]
\[ = 5,000 - (250 + 0.75(5,000 - 1,000)) - 1,250 \]
\[ = 500 \]
\[ I = 1,000 - 50 \times 5 \]
\[ = 750 \]
\[ NX = S - I \]
\[ = 500 - 750 \]
\[ = -250 \]
\[ NX = 500 - 500 \times \varepsilon \]
\[ -250 = 500 - 500 \times \varepsilon \]
\[ \varepsilon = 1.5. \]

The increase in government spending reduces national saving, but with an unchanged world real interest rate, investment remains the same. Therefore, domestic investment now exceeds domestic saving, so some of this investment must be financed by borrowing from abroad. This capital inflow is accomplished by reducing net exports, which requires that the currency depreciate.

c. Repeating the same steps with the new interest rate,

\[ S = Y - C - G \]
\[ = 5,000 - (250 + 0.75(5,000 - 1,000)) - 1,000 \]
\[ = 750 \]
\[ I = 1,000 - 50 \times 10 \]
\[ = 500 \]
\[ NX = S - I \]
\[ = 750 - 500 \]
\[ = 250 \]
\[ NX = 500 - 500 \times \varepsilon \]
\[ 250 = 500 - 500 \times \varepsilon \]
\[ \varepsilon = 0.5. \]

Saving is unchanged from part (a), but the higher world interest rate lowers investment. This capital outflow is accomplished by running a trade surplus, which requires that the currency depreciate.
4. The easiest way to tell if your friend is right or wrong is to consider an example. Suppose that ten years ago, an American hot dog cost $1, while a Mexican taco cost 10 pesos. Since $1 bought 10 pesos ten years ago, it cost the same amount of money to buy a hot dog as to buy a taco. Since total U.S. inflation has been 25 percent, the American hot dog now costs $1.25. Total Mexican inflation has been 100 percent, so the Mexican taco now costs 20 pesos. This year, $1 buys 15 pesos, so that the taco costs 20 pesos \(\times \frac{15\text{ pesos}}{1\text{ dollar}}\) = $1.33. This means that it is now more expensive to purchase a Mexican taco than a U.S. hot dog.

Thus, your friend is simply wrong to conclude that it is cheaper to travel in Mexico. Even though the dollar buys more pesos than it used to, the relatively rapid inflation in Mexico means that pesos buy fewer goods than they used to—it is more expensive now for an American to travel there.