Regrade policy: If you would like your test regraded, please submit a written statement to explain why. Your entire test will be regraded, so there is a possibility that points could be lost not gained. All regrade requests must be submitted within one week of exams first being returned.

Multiple Choice:
Versions A  1) b  2) d  3) c  4) d  5) a  6) e  7) c  8) d  9) c  10) a  11) b  12) a
Versions B  1) a  2) a  3) b  4) c  5) c  6) d  7) a  8) e  9) b  10) d  11) c  12) d
Versions C  1) d  2) b  3) d  4) c  5) d  6) a  7) e  8) c  9) d  10) b  11) a  12) b

Question 1:
a) This is the same problem as homework #2 problem #3 (where Europe replaces India, IN). The European interest rate falls to raise the value of real money demand to equal money supply. This lowers the domestic returns curve in the foreign exchange market because the domestic interest rate is the domestic return. The foreign returns curve shifts right because the shock is permanent and leads to a higher value of E in the long run (a higher value of the pound), which raises the expected foreign returns for any given current spot exchange rate.

b) PPP holds in the long run but not the short run here. IUP holds here (both short run and long run).
d) Capital controls separate the money market from the foreign exchange market, so the euro interest rate can fall in the money market without lowering the domestic returns line in the foreign exchange market. There need not be any effect on the exchange rate.

**Question 2:**

a) Equilibrium approach says:

\[ E_{\text{dinar$/US$}} = \frac{P_{\text{iraq}}}{P_{\text{US}}} = \frac{(M^*_{\text{iraq}}/M^*_{\text{US}})}{(L(i_{\text{iraq}})Y_{\text{iraq}})/L(i_{\text{US}})Y_{\text{US}}) \]

Where \( M \) indicates money supplies, \( L \) money demands. (This can also be written in terms of growth rates. The first equality, involving relative prices, is not strictly necessary for part (a), but part (b) must discuss it.)

b) Keeping \( E \) pegged requires that the price level in Iraq stay constant relative to the price level in the US: \( E_{\text{dinar$/US$}} = \frac{P_{\text{iraq}}}{P_{\text{US}}} \) in the equation above. (The answer must prove some explicit linkage to the price level or inflation rate.)

c) if \( Y_{\text{iraq}} \) is growing slower than \( Y_{\text{US}} \), this means in order to keep \( E \) pegged at a constant level, \( M_{\text{iraq}} \) must also be growing slower than \( M_{\text{US}} \). Because output growth drives growth in real money demand, money supply must accommodate this by growing at a slower rate as well.

**Question 3:**

a) Using UIP:

\[ i_{\text{yen}} = -i_{\text{won}} + \frac{(E^e_{\text{yen/won}} - E_{\text{yen/won}})}{E_{\text{yen/won}}} \]

Version A: \( 0.01 = 0.05 + \frac{(96-100)}{100} \), so \( E^e_{\text{yen/won}} = 96 \)

Version B: \( 0.02 = 0.03 + \frac{(99-100)}{100} \), so \( E^e_{\text{yen/won}} = 99 \)

Version C: \( 0.06 = 0.04 + \frac{(102-100)}{100} \), so \( E^e_{\text{yen/won}} = 102 \)

b) Using CIP:

\[ i_{\text{yen}} = -i_{\text{won}} + \frac{(F_{\text{yen/won}} - E_{\text{yen/won}})}{E_{\text{yen/won}}} \]

Version A: \( 0.01 = 0.05 + \frac{96}{100} \), so \( F_{\text{yen/won}} = 96 \)

Version B: \( 0.02 = 0.03 + \frac{99}{100} \), so \( F_{\text{yen/won}} = 99 \)

Version C: \( 0.06 = 0.04 + \frac{102}{100} \), so \( F_{\text{yen/won}} = 102 \)

c) Using relative PPP and the solution to part a:

Version A: \( (\Pi^e_{\text{Japan}} - \Pi^e_{\text{Korea}}) = \frac{(96-100)}{100} = -0.04 \)

Version B: \( (\Pi^e_{\text{Japan}} - \Pi^e_{\text{Korea}}) = \frac{(99-100)}{100} = -0.01 \)

Version C: \( (\Pi^e_{\text{Japan}} - \Pi^e_{\text{Korea}}) = \frac{(102-100)}{100} = 0.02 \)

d) Put in percent change form:

\[
\frac{\Delta q_{\text{Japan}}}{q_{\text{Japan}}} = \frac{\Delta E^e_{\text{yen/won}}}{E_{\text{yen/won}}} + \frac{\Delta P_{\text{korea}}}{P_{\text{korea}}} - \frac{\Delta P_{\text{Japan}}}{P_{\text{Japan}}} = \frac{\Delta E^e_{\text{yen/won}}}{E_{\text{yen/won}}} + \Pi_{\text{Korea}} - \Pi_{\text{Japan}}
\]

Combine with UIP:

\[
\frac{\Delta q_{\text{Japan}}}{q_{\text{Japan}}} = i_{\text{yen}} - i_{\text{won}} + \Pi_{\text{Korea}} - \Pi_{\text{Japan}} = (i_{\text{yen}} - \Pi_{\text{Japan}}) - (i_{\text{won}} - \Pi_{\text{Korea}})
\]

Apply the definition of the real exchange rate, \( r \):

\[
\frac{\Delta q_{\text{Japan}}}{q_{\text{Japan}}} = r_{\text{yen}} - r_{\text{won}}
\]

The interpretation is that if the real exchange rate is rising over time due to Korean growth, then Korea should have a lower real interest rate than Japan. (This is a more general version of real interest rate parity)