

## Midterm Solutions - Economics 160B - Winter 2008

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### Multiple Choice:

Version A	1) a	2) e	3) b	4) c	5) d	6) a	7) b
Version B	1) e	2) b	3) c	4) d	5) a	6) b	7) a
Version C	1) b	2) c	3) d	4) b	5) a	6) a	7) e

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### Problem 1:

a) By Covered interest rate parity

$$i_{\text{peso}} = i_{\text{real}} + (F_{\text{peso/real}} - E_{\text{peso/real}}) / E_{\text{peso/real}}$$

$$\text{Version A: } = 0.20 + (0.95 - 1) / 1 = 0.15 \quad (15\%)$$

$$\text{Version B: } = 0.20 + (0.90 - 1) / 1 = 0.10 \quad (10\%)$$

$$\text{Version C: } = 0.20 + (0.85 - 1) / 1 = 0.05 \quad (5\%)$$

b) If UIP and CIP hold, forward exchange rate equals the expected future spot rate. Therefore,

$$\text{Version A: } E_{\text{peso/real}}^e = 0.95.$$

$$\text{Version B: } E_{\text{peso/real}}^e = 0.90.$$

$$\text{Version C: } E_{\text{peso/real}}^e = 0.85.$$

c) By the given assumption that relative PPP holds, we know that

$$(\Pi_{\text{Mex}}^e - \Pi_{\text{Brazil}}^e) = (E_{\text{peso/real}}^e - E_{\text{peso/real}}) / E_{\text{peso/real}}$$

$$\text{Version A: } = (0.95 - 1) / 1 = -0.05 \quad (\text{inflation expected to be 5\% lower in Mexico})$$

$$\text{Version B: } = (0.90 - 1) / 1 = -0.10 \quad (\text{inflation expected to be 10\% lower in Mexico})$$

$$\text{Version C: } = (0.85 - 1) / 1 = -0.15 \quad (\text{inflation expected to be 15\% lower in Mexico})$$

d) Not enough information to solve.

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### Problem 2:

a) Equilibrium approach says:

$$E_{\$/\text{euro}} = (M_{\text{US}}^s / M_{\text{EU}}^s) / (L(i_{\text{US}})Y_{\text{US}} / L(i_{\text{EU}})Y_{\text{EU}})$$

Where  $M$  indicates money supplies,  $L$  money demands. This can also be written in terms of growth rates.

b) There are two types of possibilities suggested by this equation for a rise in  $E_{\$/\text{euro}}$ .

1) rise in U.S. money supply relative to Europe.

2) fall in U.S. relative money demand, perhaps due to a fall in US output.

Arguments could be made in favor of either of these. U.S. money supply did rise during this period. It is also true that output growth appears to be low, reflecting a possible recession. So money demand might have been low.

Note that a fall in U.S. interest rates is not a viable explanation from this perspective, since it would only raise U.S. money demand, which would tend to appreciate the value of the dollar. If the fall in the interest rate is a factor, it is working through asset markets, as captured in the asset approach to exchange rates.

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c) The monetary approach would imply that the US inflation rate should be higher in the data, since this is what relative PPP implies.

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**Problem 3:**

a) The answer is on slides 39-41 of lecture 3.

b) The US interest rate falls in the period of the shock then rises gradually back to its initial value. The exchange rate (\$/pd) rises dramatically in the period of the shock, then falls gradually, ending up at a level above the initial value before the shock. The real money supply falls gradually after the shock, due to the gradual rise in price level.

c) With capital controls, the link between money market and foreign exchange market is broken. So the shock to US money demand would lower US interest rates, but have no effect on the exchange rate.

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**Problem 4:**

Rearranging the national income accounting identity:  $Y = C + I + G + CA$

introduce taxes:  $Y - T = C + I + G - T + CA$

then rearrange:  $(Y - T - C) - (G - T) - I = CA$

or  $Sp - def - I = CA$  where  $Sp$  is private saving and  $def$  is the government budget deficit.

The twin deficits hypothesis suggests that government budget deficits cause current account deficits. The equation above indicates that there indeed is a relationship between the two: a rise in  $def$  would tend to lower  $CA$ , if private saving and investment are constant. However, private saving or investment can move around, perhaps even in response to the rising budget deficit. So the twin deficits hypothesis does not necessarily hold.

Although the hypothesis did seem to be a useful explanation for the large U.S. current account deficit in the 1980s, it does not seem to offer much explanation for the current account deficit recently. Instead it seems that a falling private saving level has caused most of the current account deficit.