Suggested Answers to Spring 2006 Midterm

Part I: True, False, Uncertain

1. UNCERTAIN: Remember the identity $CA = S - I = S^g + S^p - I = (T - G) + S^p - I$. Holding private savings and investment constant, an increase in fiscal deficit will be associated with an equal increase in CA deficit. For example, a fiscal expansion under a floating exchange rate leads to a depreciation of the currency and thus is eventually reflected fully in a CA deficit. However, changes in taxes often affect private savings also (for example a lower tax rate increases the fiscal deficit, but also might lower private savings), so that the correspondence between fiscal deficit and the CA is not one-to-one. Further, consider the case of a monetary expansion where currency depreciation improves the CA deficit, but is not associated with any change in the fiscal deficit. In that case private savings rise.

2. TRUE: Uncovered interest parity states that $R - R^* = \Delta E^e$. PPP states that $\Delta E^e = \pi - \pi^*$. These two relations imply that $R - R^* = \pi - \pi^* \Leftrightarrow R - \pi = R^* - \pi^* \Leftrightarrow r = r^*$.

3. FALSE: As Chapter 17 states, with perfect asset substitutability, sterilized foreign exchange intervention on the part of the central bank will leave the money supply unchanged, which leaves interest rates, and hence, exchange rates unaffected. With imperfect asset substitutability, sterilized foreign exchange intervention can affect the exchange rate, while leaving the money supply and interest rates unchanged. Suppose that, as in the case of imperfectly substitutable assets, the central bank sells some of its foreign reserves, but makes a corresponding purchase of domestic assets, such as government debt. This leaves the money supply and interest rates unchanged. You should recall that it is the investing public from whom the central bank purchases domestic assets. Because, as the model in Chapter 17 has it, the stock of the public's holdings of domestic government debt has fallen, the riskiness of the public's collective portfolio of government debt has declined. This shifts the expected return curve downward, leading to an appreciation of the currency, even when the money supply has not changed.

4. FALSE: Foreign central banks' interventions also appear in ORT. Since $OSB = -ORT$, then the balance of payments need not be zero when the domestic central bank never intervenes.

Part II: Short Questions

1. (a) The negative foreign demand shock shifts DD schedule in (lowers domestic exports). Because the country is under a fixed exchange rate regime, the

central bank has to immediately intervene and prevent the depreciation of the currency. The central bank would sell foreign reserves, thus decreasing the money supply. As a result the AA schedule also shifts in.

(b) Because output is below full employment, prices start falling. This causes DD to shift out (real exchange rate depreciation improves the CA) and AA to shift out (lower real money supply) until the original starting point is reached again and output is again at full employment level in the long run.

(c) A tariff would shift DD back out (supposing trade volumes adjust), but foreign countries would not be happy.

2. You could answer this question using the two-sided diagram or the AA-DD framework as long as you describe the short- and long-run effects of the monetary shock. Refer to question 2 in problem set 2 for an answer using the two-sided diagram. To that answer, you would have to add that the overshooting of the exchange rate occurs due to the short run rigidity of prices. The key difference with the answer based on the AA-DD framework would be that now output decreases in the short run due to the contraction in the money supply and returns to its full-employment level in the long run as prices go down and aggregate demand increases.

3. The PPP theory states that all countries' price levels should be equal when measured in the same currency: $P = EP^*$.

PPP fails to hold accurately because of: (1) Trade barriers (transport costs and restrictions on trade, such as tariffs and quotas), which can prevent some goods and services from being traded between countries. (2) Monopolistic and oligopolistic practices in goods markets, which may interact with transportation costs and allow pricing-to-market. (3) Price level data in different countries based on different commodity baskets.

Part III: Current Events

(a) To maintain the "fixed" exchange rate, the Chinese central bank accumulates foreign reserves by printing domestic currency and hence increasing the money supply.

(b) China has sterilized extensively to avoid inflation, a real appreciation of the exchange rate, and hence output fluctuations by holding the nominal exchange rate and the money supply relatively stable. In the absence of sterilization the real exchange rate would appreciate as the increased money supply eventually produces inflation.

(c) We can write the balance of payments identity as $CA+KA+NRFA+SD = OSB$. An increase in foreign exchange reserves larger than the current account surplus can occur when foreigners purchase firms and stocks in the domestic country and pay with foreign currency. So, for example, a CA surplus of 10 can be financed by a NRFA debit but overall there is a NRFA surplus due FDI and speculative capital that translates in an OSB surplus.

(d) By purchasing US dollars and paying with Yen, the Japanese central bank is increasing Japan's money supply and hence inflation.

(e) No, as discussed in the article, the portion of the US CA deficit with China is not so large to make it significantly shrink upon a Chinese Yuan revaluation. But most important is the fact the US CA deficit can only be reduced if there is a change in private and government savings and investment (recall that $CA = S - I$). A revaluation of China's currency could lead to a shift in US consumption to other countries leaving the CA deficit relatively unchanged.