

**ECON 463 - International Monetary Relations
Midterm Exam**

**Professor Elliott Parker
March 14, 2007**

Use a large blue book to answer the following questions. Always use graphs where they are helpful, especially if they are suggested, but be sure to clearly label them. Be clear! You have until 3:55 PM. You will be very challenged for time, so manage it well. Work fast!

1. (10%) Assume the Home country has a comparative advantage in X goods and a standard PPF. Using the standard trade model, with X goods on the horizontal axis and Y goods on the vertical axis, show a free-trade equilibrium with balanced trade. Then show a free-trade equilibrium with a net inflow of foreign savings. Assuming the transfer has no effect on the terms of trade, explain how exports and imports have changed so that the international transactions sum still to zero.
2. (15%) Using the intertemporal PPF for the Home country, show the optimal choice for current and future consumption for a market economy under autarky. On your graph, show the amount of domestic savings and investment, both current and future production, both current and future consumption, and the marginal rate of return on investment. Assuming the Home country's preferences are biased towards current consumption, show and explain how intertemporal trade in savings would affect domestic investment, future production, and the marginal rate of return on investment.
3. (10%) As of the moment I am writing this exam, the *Financial Times* says that the midpoint spot rate for the Euro is \$1.320, while the one-year forward rate is \$1.334.
 - a) What is the forward premium, as a percentage of spot? Since the one-year Euro Libor (London inter-bank offer rate) is 4.11%, what is the equivalent interest rate for Dollars?
 - b) The 3-month forward rate for Euros is \$1.325, and the 3-month Euro Libor is 4.27% (annualized, of course). What is the equivalent U.S. interest rate? Is the interest rate differential more or less in the short-term?
 - c) In the U.K., the spot rate for the Euro is 0.6832 £. What is the direct spot price for the Pound, in Dollars? How do we know this has to be true?
4. (10%) Using a supply and demand model for Foreign's currency (Forex), explain how a transfer of savings from Foreign to Home would affect the direct exchange rate E. Then explain how an increase in Home's domestic spending would affect Home's imports from Foreign, and how this in turn would affect E.
5. (10%) What are the basic equations for the IS and LM curves? Using a diagram of the ISLM model, explain how the following would affect national income Y, the interest rate R, the trade balance, and E. Ignore the effects of the financial account on E. In which case(s) might we see an overshooting effect on R?
 - a) an increase in the money supply
 - b) an increase in government military purchases

6. (10%) Using the E-R diagram comparing the domestic and foreign returns:
- Show what would happen to E if Foreign's interest rate R^* rose temporarily due to monetary tightening by Foreign's central bank.
 - Show what would happen to E if R^* did not change, but was suddenly expected to rise sometime in the next year or two.
 - Show what would happen to E if R^* rose permanently, due to a higher expected inflation rate.
7. (10%) What is purchasing power parity (PPP), and how does relative PPP differ from absolute PPP? Under what assumptions would we expect to observe PPP, and why would it apply to nontradeable goods as well as tradeable goods? What are the two major alternative explanations for why we tend to nonetheless observe that poorer, less-developed economies tend to have a lower cost of living?
8. (5%) Consider two foreign countries, Alpha and Beta. If returns on investment in Alpha are more variable than returns in Beta, for which country is E likely to be higher? If returns on investment in Alpha are positively correlated with returns in the U.S., while returns on investment in Beta are negatively correlated with returns in the U.S., for which country is E likely to be higher?
9. (10%) According to the BEA's website, in the third quarter of 2006 the United States exported \$262 billion in goods and 104 billion in services, including royalties and transportation, while we imported 481 billion in goods and 86 billion in services. Official reserve transactions by the U.S. included a decrease in official foreign currency reserves of roughly 1 billion. Other U.S.-owned assets abroad increased by 225 billion, while income receipts from foreign investments totaled 161 billion. Foreign official reserve assets in the United States increased by 81 billion, and other foreign-owned assets rose by 320 billion. Income payments to foreigners for their U.S. investments totaled 165 billion, and the U.S. also paid a net 21 billion in unilateral current transfers. The net of all capital account transactions rounded to a debit of 1 billion. Given all this, what is the balance on goods (i.e., the merchandise trade balance), the balance on current account, the balance on the financial account, and the statistical discrepancy?
10. (10%) Consider the monetary approach, where money supply divided by the price level always equals money demand, where interest rate parity always applies to future expectations, and where real interest rates are stable and relative purchasing power parity applies in the long-run. How would an increase in Foreign's interest rate R^* affect the dynamic path of E, assuming it was due to temporary monetary tightening? How would your answer differ if R^* rose due to higher expected inflation?

ECON 663 Take-Home Supplement: Due Friday morning 10AM in my office.

11. (20%) Consider the monetary approach, where money supply divided by the price level always equals money demand, where interest rate parity always applies to future expectations, and where real interest rates are stable and relative purchasing power parity applies in the long-run. How would an increase in Foreign's money supply M^* affect the dynamic path of E ? Compare and contrast (a) a permanent but one-time increase, (b) a temporary increase, and (c) an announced permanent increase in the growth rate of M^* .

12. (10%) Using the monetary approach, show and contrast the short-run and long-run dynamic effects on R , P , and E of: (a) a temporary increase in real domestic output, and (b) a permanent increase in the growth of real domestic output.

13. (20%) Using the intertemporal PPF for the Home country, (a) give the equations that describe the model for a market economy under autarky. (b) Assuming the indifference curves are normally shaped, show with a diagram that intertemporal trade makes the Home country better off. (c) Using income and substitution effects (assuming consumption now and later are both normal goods), show and explain how the flow of savings affects current and future consumption and savings in the Home country. (d) Algebraically demonstrate that if (i) domestic output equals consumption plus investment plus net exports, if (ii) national income equals consumption plus domestic savings, if (iii) investment is financed by either domestic savings or foreign savings, and if (iv) income equals output, then (v) net exports plus foreign savings must equal zero.