

1. (20%) In July, 1985, the prime lending rate was 9.5% in the U.S., but only 8.1% in Germany, and the German Deutschemark (DM) traded at 2.91 DM per dollar.
 - 1.1. What was the direct price of the DM, and what was the one-year forward exchange rate for the DM?
 - 1.2. In July, 1985, a single French Franc cost 11.3 cents. What was the direct price of the DM in Francs?
 - 1.3. In July, 1986, a single DM cost 46.5 cents. Did the forward market guess the direction of the change in the DM correctly? Did the market overestimate or underestimate the change?
 - 1.4. Suppose that an American importer signed a contract in July 1985 to import 100 BMWs, at a price of 20,000 DM each due in one year's time.
 - 1.4.1. Briefly explain how he could hedge by buying DM on the spot. How much would it cost him now, in dollars, assuming he earns interest in the meantime?
 - 1.4.2. Briefly explain how he could hedge by buying DM forward. How much would it cost him now, in dollars, assuming he earns interest in the meantime?
 - 1.4.3. Suppose the importer truly thought the market wrong, and expected the dollar to appreciate by 5%. How might he speculate on his expectation? Given what actually happened, would he win or lose?
 - 1.4.4. Suppose he wants to hedge against the possibility of large losses by buying an option at a strike price equal to the forward rate. Would he buy a put or a call for DM? Would he be the grantor or the holder? Would the price be cheaper at the forward rate, or at the July 1985 spot rate? Would he strike?

2. (15%) The following table contains the U.S. totals for key international transactions in 1960, in billions of dollars.

Line	(Credits +; debits -)	
2	Exports of goods and services	\$25.940
13	Income receipts on U.S.-owned assets abroad	4.616
19	Imports of goods and services	-22.432
30	Income payments on foreign-owned assets in the U.S.	-1.238
35	Unilateral current transfers, net	-4.062
39	Capital account transactions, net	0
	<i>Financial Outflows:</i>	
41	U.S. official reserve assets	2.145
46	U.S. government assets, other than official reserve assets	-1.100
50	U.S. private assets	-5.144
	<i>Financial Inflows:</i>	
56	Foreign official reserve assets in the U.S.	1.473
63	Other foreign assets in the U.S.	0.821

- 2.1. Calculate the Balance on Current Account.
- 2.2. Calculate the Statistical Discrepancy.
- 2.3. Calculate the Balance of Payments, not including the Statistical Discrepancy.
- 2.4. Calculate the Official Settlements Balance.
- 2.5. Did the Federal Reserve increase or decrease its foreign exchange reserve assets? Did foreign central banks increase or decrease their dollar-denominated reserve assets?
- 2.6. In 1960, U.S. GDP was \$526.4 billion. How much was Gross National Expenditure? How much was Gross National Disposable Income?

3. (20%) Show the side-by-side graphs for the money market and the forex markets.
 - 3.1. Give the equations for each.
 - 3.2. What is the Purchasing Power Parity (PPP) condition? Show both the absolute and the level equations. Do they apply in the long-run or the short-run?
 - 3.3. Assume Y drops temporarily, due to a recession. Use the graphs to show how this affects i and E . Show how i and E change over time.
 - 3.4. Assume M increases once, permanently. Use the graphs to show how this affects i and E . How will P adjust in the long-run? How will this affect E^e , as well as E ? Show how i and E should change over time.
 - 3.5. What is the Fisher equation? Show that if both interest rate parity and PPP hold, then real interest rates should be equal in the long-run.
 - 3.6. Suppose the foreign risk premium σ^* increases suddenly. How would this affect E ?
4. (15%) Consider a simple two-period intertemporal PPF for the United States in 1960.
 - 4.1. Show the optimal choice for current and future consumption without international financial flows. On your graph, also 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.
 - 4.2. Assume that the rest of the world at the time was expected to have much higher growth prospects. For the U.S., use the graph to show and/or explain how free international financial flows would affect domestic investment, future U.S. output, the marginal rate of return on investment, the trade balance in the present, and the trade balance in the future.
 - 4.3. Assuming a country currently has no initial external wealth, show the long-run budget constraint for a two-period model.
5. (10%) Using a supply and demand model for a foreign country's currency (forex), explain how a transfer of savings from the U.S. to the foreign country would affect the direct exchange rate E . Then suppose the foreign central bank is committed to maintaining a fixed exchange rate. Would this cause a BOP surplus or a deficit for the foreign country? What would happen to its dollar-denominated reserve assets and its money supply?
6. (10%) Consider two countries, Home and Foreign.
 - 6.1. If Foreign's return on investment is higher, how should this affect the forex rate E ?
 - 6.2. If Foreign's return on investment is negatively correlated with Home's, how should this affect the volume of both supply and demand in the forex market?
 - 6.3. Explain why financial flows between these countries might continue even if there was no difference in average returns, no correlation between them, and no difference in domestic savings rates.
7. (10%) Assume a country produces two types of goods, heavy industrial goods (HG) and light industrial goods (LG), with a comparative advantage in LG and a standard neoclassical PPF. Using the standard trade model, with LG on the horizontal axis and HG on the vertical axis, show a free-trade equilibrium with balanced trade, and algebraically demonstrate that trade is balanced. Then show how a net outflow of saving affect the optimal level of consumption, assuming the transfer has no effect on the terms of trade, and explain how this affects exports and imports so that the international transactions sum still to zero.

