CHAPTER 4: FOREIGN EXCHANGE MARKETS

1. Definitions. Define the following terms:

a) The foreign exchange market provides the physical and institutional structure through which the money of one country is exchanged for that of another country, the rate of exchange between currencies is determined, and foreign exchange transactions are physically completed .

b) A *foreign exchange transaction* is an agreement between a buyer and seller that a fixed amount of one currency will be delivered for some other currency at a specified rate.

c) Foreign exchange means the money of a foreign country; that is, foreign currency bank balances, bank notes, checks, and drafts.

2. Functions of the foreign exchange market. What are the three major functions of the foreign exchange market?

a) To transfer purchasing power from one country and its currency to another. Typical parties would be importers and exporters, investors in foreign securities, and tourists.

b) To finance goods in transit. Typical parties would be importers and exporters.

c) To provide hedging facilities. Typical parties would be importers, exporters, and creditors and debtors with short-term monetary obligations.

3. Market participants. For each of the foreign exchange market participants identify their motive for buying or selling foreign exchange.

a) Foreign exchange dealers are banks and a few non-bank institutions that "make a market" in foreign exchange. They buy and sell foreign exchange in the wholesale market and resell or re-buy it from customers at a slight change from the wholesale price.

b) Foreign exchange brokers (not to be confused with dealers) act as intermediaries in bringing dealers together, either because the dealers do not want their identity revealed until after the transaction or because the dealers find that brokers and "shop the market," i.e., scan the bid and offer prices of many dealers very quickly.

c) Individuals and firms conducting international business consist primarily of three categories: importers and exporters, companies making direct foreign investments, and securities investors buying or selling debt or equity investments for their portfolios.

d) Speculators and arbitragers buy and sell foreign exchange for profit. Speculators and arbitragers buy or sell foreign exchange on the basis of which direction they believe a currency's value will change in the immediate or speculative horizon.

e) Central banks and treasuries buy and sell foreign exchange for several purposes, but most importantly, for intervention in the marketplace. Direct intervention, in which the central bank will buy (sell) its own currency in the market with its foreign exchange reserves to push its value up (down), is a very common activity by government treasuries and central banking authorities.

4. Transaction. Define each of the following types of foreign exchange transactions:

a) A spot transaction is an agreement between two parties to exchange one currency for another, with the transaction being carried out at once for commercial customers and on the second following business day for most inter-bank (i.e., wholesale) trades.

b) A forward transaction is an agreement made today to exchange one currency for another, with the date of the exchange being a specified time in the future – often one month, two months, or some other definitive calendar interval. The rate at which the two currencies will be exchanged is set today.

c) Forward-forward swaps. A more sophisticated swap transaction is called a "forward-forward" swap. A dealer sells £20,000,000 forward for dollars for delivery in, say, two months at $1.6870/£ and simultaneously buys £20,000,000 forward for delivery in three months at $1.6820/£. The difference between the buying price and the selling price is equivalent to the interest rate differential, i.e., interest rate parity, between the two currencies. Thus a swap can be viewed as a technique for borrowing another currency on a fully collateralized basis.

d) Non-deliverable forwards (NDFs). Created in the early 1990s, the *nondeliverable forward*, or NDF, is now a relatively common derivative offered by the largest providers of foreign exchange derivatives. NDFs possess the same characteristics and documentation requirements as traditional forward contracts except that they are settled only in U.S. dollars and the foreign currency being sold forward or bought forward is not delivered. The dollar-settlement feature reflects the fact that NDFs are contracted offshore, for example, in New York for a Mexican investor, and so are beyond the reach and regulatory frameworks of the home country governments (Mexico in this case). NDFs are used primarily for emerging market currencies, currencies which typically do not have liquid money markets or eurocurrency interest rates. Pricing of NDFs reflects basic interest differentials, as with regular forward contracts, plus an additional premium charged by the bank for dollar settlement.

5. Foreign exchange market characteristics. With reference to foreign exchange turnover in 2001:

a) Rank the relative size of spot, forwards, and swaps as of 2001. Ranking: 1. Swaps; 2. Spot; 3. Forwards

b) Rank the five most important geographic locations for foreign exchange turnover. Ranking: 1. UK; 2. US; 3. Japan; 4. Singapore; 5. Germany

c) Rank the three most important currencies of denomination. Ranking: 1. US dollar; 2. European euro; 3. Deutschmark

6. Foreign exchange rate quotations. Define and give an example of each of the following quotes:

a. Bid quote. b. Ask quote.

Interbank quotations are given as a bid and ask (also referred to as offer). A bid is the price (i.e., exchange rate) in one currency at which a dealer will buy another currency. An ask is the price (i.e., exchange rate) at which a dealer will sell the other currency. Dealers bid (buy) at one price and ask (sell) at a slightly higher price, making their profit from the spread between the buying and selling prices.

Bid and ask quotations in the foreign exchange markets are superficially complicated by the fact that the bid for one currency is also the offer for the opposite currency. A trader seeking to buy dollars with Swiss francs is simultaneously offering to sell Swiss francs for dollars. Assume a bank makes the quotations shown in the top half of Exhibit 4.5 for the Japanese yen. The spot quotations on the first line indicate that the bank's foreign

exchange trader will buy dollars (i.e., sell Japanese yen) at the bid price of ¥118.27 per dollar. The trader will sell dollars (i.e., buy Japanese yen) at the ask price of ¥118.37 per dollar.

7. Reciprocals. Convert the following indirect quotes to direct quotes and direct quotes to indirect quotes:

a. Euro: €1.02/$ (indirect quote); 1/1.02 = $0.98/€ (direct)

b. Russia: Rub 30/$ (indirect quote); 1/30 = $0.0333/Rub (direct)

c. Canada: $0.63/C$ (direct quote); 1/0.63 = C$1.5873/$ (indirect)

d. Denmark: $0.1300/DKr (direct quote); 1/0.1300 = DKr7.6923/$ (indirect)

8. Geographical extent of the foreign exchange market.

a. What is the geographical location of the foreign exchange market? All countries.

b. What are the two main types of trading systems for foreign exchange? 1) Trading on an exchange or exchange floor and 2) telecommunications linkages.

c. How are foreign exchange markets connected for trading activities? Telecommunications linkages.

9. American and European terms. With reference to interbank quotations, what is the difference between American terms and European terms?

Most foreign currencies in the world are stated in terms of the number of units of foreign currency needed to buy one dollar. For example, the exchange rate between U.S. dollars and Swiss franc is normally stated

SF1.6000/$, read as “1.6000 Swiss francs per dollar.”

This method, called *European terms*, expresses the rate as the foreign currency price of one U.S. dollar. An alternative method is called *American terms*. The same exchange rate above expressed in American terms is

$0.6250/SF, read as “0.6250 dollars per Swiss franc.”

Under American terms, foreign exchange rates are stated as the U.S. dollar price of one unit of foreign currency. Note that European terms and American terms are reciprocals:

$$\frac{1}{\text{SF}1.6000/\$} = \$0.6250/\text{SF}.$$

With several exceptions, including two important ones, most interbank quotations around the world are stated in European terms. Thus, throughout the world the normal way of quoting the relationship between the Swiss franc and U.S. dollar is SF1.6000/$; this method may also be called “Swiss terms.” A Japanese yen quote of ¥118.32/$ is called “Japanese terms,” although the expression “European terms” is often used as the generic name for Asian as well as European currency prices of the dollar. European terms were adopted as the universal way of expressing foreign exchange rates for most (but not all) currencies in 1978 to facilitate worldwide trading through telecommunications

10. Direct and indirect quotes.

a. Define and give an example of a direct quote between the U.S. dollar and the Mexican peso, where the United States is designated as the home country.

A direct quote is a home currency price of a unit of foreign currency. An example, using Mexico and the United States (home country) is: $0.1050/Peso.

b. Define and give an example of an indirect quote between the Japanese yen and the Chinese renminbi (yuan), where China is designated as the home country.

An indirect quote is a foreign currency price of a unit of home currency. An example, using Japan and China (home country) is: ¥14.75/Rmb.