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Chapter 9

The Foreign Exchange Market

Introduction

Question: What is the foreign exchange market?

- The foreign exchange market is a market for converting the currency of one country into that of another country

Question: What is the exchange rate?

- The exchange rate is the rate at which one currency is converted into another

The Functions of the Foreign Exchange Market

Question: What is the purpose of the foreign exchange market?

- The foreign exchange market
  1. enables the conversion of the currency of one country into the currency of another
  2. provides some insurance against foreign exchange risk (the adverse consequences of unpredictable changes in exchange rates)

Classroom Performance System

The rate at which one currency is converted into another is the

a) Exchange rate

b) Cross rate

c) Conversion rate

d) Foreign exchange market

Currency Conversion

International firms use foreign exchange markets

- to convert export receipts, income received from foreign investments, or income received from licensing agreements
- to pay a foreign company for products or services
- to invest spare cash for short terms in money markets
- for currency speculation (the short-term movement of funds from one currency to another in the hopes of profiting from shifts in exchange rates)

Insuring Against Foreign Exchange Risk

- The foreign exchange market can be used to provide insurance to protect against foreign exchange risk (the possibility that unpredicted changes in future exchange rates will have adverse consequences for the firm)
- A firm that protects itself against foreign exchange risk is hedging
- The market performs this function using
  1. spot exchange rates
  2. forward exchange rates
  3. currency swaps

Insuring Against Foreign Exchange Risk

1. Spot Exchange Rates

- The spot exchange rate is the rate at which a foreign exchange dealer converts one currency into another currency on a particular day
  - Spot rates are determined by the interaction between supply and demand, and so change continually

Insuring Against Foreign Exchange Risk

2. Forward Exchange Rates

- A forward exchange occurs when two parties agree to exchange currency and execute the deal at some specific date in the future
- A forward exchange rate is the exchange rate governing such a future transaction
  - Forward rates are typically quoted for 30, 90, or 180 days into the future

Insuring Against Foreign Exchange Risk

3. Currency Swaps

- A currency swap is the simultaneous purchase and sale of a given amount of foreign exchange for two different value dates
  - Swaps are used when it is desirable to move out of one currency into another for a limited period without incurring foreign exchange rate risk

Classroom Performance System

The rate at which a foreign exchange dealer converts one currency into another currency on a particular day is the

a) Currency swap rate
b) Forward rate
c) Specific rate
d) Spot rate

The Nature of the Foreign Exchange Market

- The foreign exchange market is a global network of banks, brokers, and foreign exchange dealers connected by electronic communications systems
- The market is always open somewhere in the world
  - If exchange rates quoted in different markets were not essentially the same, there would be an opportunity for arbitrage (the process of buying a currency low and selling it high)
- Most transactions involve U.S. dollars on one side
  - The U.S. dollar is a vehicle currency

Economic Theories of Exchange Rate Determination

Question: What factors are important to future exchange rates?

Three factors that have an important impact on future exchange rate movements are

1. a country's price inflation
2. a country's interest rate
3. market psychology

Prices and Exchange Rates

Question: How are prices related to exchange rate movements?

- To understand how prices and exchange rates are linked, we need to understand the law of one price, and the theory of purchasing power parity

Prices and Exchange Rates

- The law of one price states that in competitive markets free of transportation costs and barriers to trade, identical products sold in different countries must sell for the same price when their price is expressed in terms of the same currency
- Purchasing power parity theory argues that given relatively efficient markets (markets in which few impediments to international trade and investment exist) the price of a “basket of goods” should be roughly equivalent in each country

Prices and Exchange Rates

- PPP predicts that changes in relative prices will result in changes in exchange rates
  - When inflation is relatively high, a currency should depreciate
- So, if we can predict inflation rates, we can predict how a currency's value might change
  - The growth of a country's money supply determines its likely future inflation rate
  - When the growth in the money supply is greater than the growth in output, inflation will occur

Prices and Exchange Rates

Question: How well does PPP theory work?

- Empirical testing of the PPP theory indicates that it is not completely accurate in estimating exchange rate changes in the short run, but is relatively accurate in the long run

Interest Rates and Exchange Rates

Question: How do interest rates affect exchange rates?

- The Fisher Effect states that a country's nominal interest rate (i) is the sum of the required real rate of interest (r) and the expected rate of inflation over the period for which the funds are to be lent (I)
  - In other words, i = r + I
- So, if the real interest rate is the same everywhere, any difference in interest rates between countries reflects differing expectations about inflation rates

Interest Rates and Exchange Rates

- The International Fisher Effect suggests that for any two countries, the spot exchange rate should change in an equal amount but in the opposite direction to the difference in nominal interest rates between the two countries
- In other words:

$$(S1 - S2) / S2 \times 100 = i\$ - i¥$$

where $i\$$ and $i¥$ are the respective nominal interest rates in two countries (in this case the US and Japan), S1 is the spot exchange rate at the beginning of the period and S2 is the spot exchange rate at the end of the period

Investor Psychology and Bandwagon Effects

Question: How are exchange rates influences by investor psychology?

- The bandwagon effect occurs when expectations on the part of traders turn into self-fulfilling prophecies, and traders join the bandwagon and move exchange rates based on group expectations
- Governmental intervention can prevent the bandwagon from starting, but is not always effective

Summary

- Relative monetary growth, relative inflation rates, and nominal interest rate differentials are all moderately good predictors of long-run changes in exchange rates, but poor predictors of short term changes
- So, international businesses should pay attention to countries' differing monetary growth, inflation, and interest rates

Classroom Performance System

All of the following impact future exchange rate movements except

a) A country's price inflation

b) A country's interest rate

c) A country's arbitrage opportunities

d) Market psychology

Exchange Rate Forecasting

Question: Should companies invest in exchange rate forecasting services to help with decision-making?

- The efficient market school argues that forward exchange rates are the best predictors of future spot exchange rates
  - Therefore, investing in forecasting services would be a waste of money
- The inefficient market school argues that companies should invest in forecasting services
  - This school of thought does not believe that forward rates are the best predictor of future spot rates

The Efficient Market School

- An efficient market is one in which prices reflect all available information
- If the foreign exchange market is efficient, forward exchange rates should be unbiased predictors of future spot rates
- Most empirical tests confirm the efficient market hypothesis suggesting that companies should not waste their money on forecasting services, but some recent studies have challenged the theory

The Inefficient Market School

- An inefficient market is one in which prices do not reflect all available information
- In an inefficient market, forward exchange rates are not the best predictors of future spot exchange rates and it may be worthwhile for international businesses to invest in forecasting services
- However, the track record of forecasting services is questionable

Approaches to Forecasting

Question: How should exchange rate forecasts be prepared?

There are two approaches to exchange rate forecasting

1. fundamental analysis
2. technical analysis

Approaches to Forecasting

1. Fundamental Analysis

- Fundamental analysis draws upon economic factors like interest rates, monetary policy, inflation rates, or balance of payments information to predict exchange rates

2. Technical Analysis

- Technical analysis focuses on trends and believes that past trends and waves are reasonable predictors of future trends and waves

Currency Convertibility

Question: Are all currencies freely convertible?

- A currency is freely convertible when both residents and non-residents can purchase unlimited amounts of foreign currency with the domestic currency
- A currency is externally convertible when only non-residents can convert their holdings of domestic currency into a foreign currency
- A currency is nonconvertible when both residents and non-residents are prohibited from converting their holdings of domestic currency into a foreign currency

Currency Convertibility

Question: Why do countries limit currency convertibility?

- The main reason to limit convertibility is to preserve foreign exchange reserves and prevent capital flight (when residents and nonresidents rush to convert their holdings of domestic currency into a foreign currency).
- In the case of a nonconvertible currency, firms may turn to countertrade (barter like agreements by which goods and services can be traded for other goods and services) to facilitate international trade

Implications for Managers

Question: What does the foreign exchange market mean for international firms?

- Firms must understand the influence of exchange rates on the profitability of trade and investment deals
- This exchange rate risk can be divided into
  1. Transaction exposure
  2. Translation exposure
  3. Economic exposure

Transaction Exposure

- Transaction exposure is the extent to which the income from individual transactions is affected by fluctuations in foreign exchange values
- It can lead to a real monetary loss

Translation Exposure

- Translation exposure is the impact of currency exchange rate changes on the reported financial statements of a company
- it deals with the present measurement of past events
- Gains and losses from translation exposure are reflected only on paper

Economic Exposure

- Economic exposure is the extent to which a firm's future international earning power is affected by changes in exchange rates
- It is concerned with the long-term effect of changes in exchange rates on future prices, sales, and costs

Reducing Translation and Transaction Exposure

Question: How can firms minimize translation and transaction exposure?

- Firms can
  - buying forward
  - using swaps
  - leading and lagging payables and receivables (paying suppliers and collecting payment from customers early or late depending on expected exchange rate movements)

Reducing Translation and Transaction Exposure

- A lead strategy involves attempting to collect foreign currency receivables early when a foreign currency is expected to depreciate and paying foreign currency payables before they are due when a currency is expected to appreciate
- A lag strategy involves delaying collection of foreign currency receivables if that currency is expected to appreciate and delaying payables if the currency is expected to depreciate
- Lead and lag strategies can be difficult to implement

Reducing Economic Exposure

Question: How can a firm reduce economic exposure?

- To reduce economic exposure firms need to distribute productive assets to various locations so the firm's long-term financial well-being is not severely affected by changes in exchange rates
- This requires that the firm's assets are not overly concentrated in countries where likely rises in currency values will lead to damaging increases in the foreign prices of the goods and services they produce

Classroom Performance System

The extent to which income from individual transactions is affected by fluctuations in foreign exchange values is

a) Translation exposure

b) Accounting exposure

c) Transaction exposure

d) Economic exposure

Other Steps for Managing Foreign Exchange Risk

Question: Are there other strategies to manage foreign exchange risk?

- To further manage foreign exchange risk, firms should
  1. establish central control to protect resources efficiently and ensure that each subunit adopts the correct mix of tactics and strategies

Other Steps for Managing Foreign Exchange Risk

2. distinguish between transaction and translation exposure on the one hand, and economic exposure on the other hand
3. attempt to forecast future exchange rates
4. establish good reporting systems so the central finance function can regularly monitor the firm's exposure position
5. produce monthly foreign exchange exposure reports

Critical Discussion Question

1. The interest rate on South Korean government securities with one-year maturity is 4 percent and the expected inflation rate for the coming year is 2 percent. The interest rate on U.S. government securities with one-year maturity is 7 percent and the expected rate of inflation is 5 percent. The current spot exchange rate for Korea won is $1 = W1,200. Forecast the spot exchange rate one year from today. Explain the logic of your answer.

Critical Discussion Question

2. Two countries, Britain and the US produce just one good: beef. Suppose that the price of beef in the US is $2.80 per pound, and in Britain it is £3.70 per pound.

(a) According to PPP theory, what should the $/£ spot exchange rate be?

(b) Suppose the price of beef is expected to rise to $3.10 in the US, and to £4.65

in Britain. What should be the one year forward $/£ exchange rate?

(c) Given your answers to parts (a) and (b), and given that the current interest rate in the

US is 10 percent, what would you expect current interest rate to be in Britain?

Critical Discussion Question

3. Reread the Management Focus feature on Volkswagen in this chapter, then answer the following questions:

a) Why do you think management at Volkswagen decided to hedge only 30 percent of their foreign currency exposure in 2003? What would have happened if they had hedged 70 percent of their exposure?

b) Why do you think the value of the U.S. dollar declined against that of the Euro in 2003?

c) Apart from hedging through the foreign exchange market, what else can Volkswagen do to reduce its exposure to future declines in the value of the U.S. dollar against the euro?

Critical Discussion Question

4. You manufacture wine goblets. In mid June you receive an order for 10,000 goblets from Japan. Payment of ¥400,000 is due in mid December. You expect the yen to rise from its present rate of $1=¥130 to $1=¥100 by December. You can borrow yen at 6% per annum. What should you do?

Critical Discussion Question

5. You are CFO of a U.S. firm whose wholly owned subsidiary in Mexico manufactures component parts for your U.S. assembly operations. The subsidiary has been financed by bank borrowings in the United States. One of your analysts told you that the Mexican peso is expected to depreciate by 30 percent against the dollar on the foreign exchange markets over the next year. What actions, if any, should you take?