Chapter 17
The International Monetary System

After reading Chapter 17, THE INTERNATIONAL MONETARY SYSTEM, you should be able to:

- Describe Foreign Exchange markets and discuss the differences between Fixed and Floating Exchange Rates.
- Explain what determines the demand and supply of Foreign Exchange.
- Discuss how the equilibrium floating exchange rate is determined and explain the role played by Purchasing Power Parity.
- Describe how equilibrium is reached in a system of fixed exchange rates and tell what government actions can be used to maintain the fixed exchange rate.
- Discuss the determinants and importance of international capital movements.
- Relate the historical evolution of the world’s international monetary system and the introduction of the Euro.
- Describe the Currency Crisis in Asia and criticism of the International Monetary Fund.
- Discuss a country’s Balance of Payments.

Outline

I. Foreign Exchange and Exchange Rates
   A) Foreign Exchange is the national currency of another country that is needed to carry out international transactions.
      1. Residents of one country demand foreign exchange to buy imported goods and services or to invest in another country.
      2. The supply of foreign exchange comes from exports of goods and services or the remittance of profits from foreign countries.
   B) The Foreign-Exchange Rate is the price of one currency in terms of another. It can be used to convert prices of goods given in terms of one currency into prices in another currency.
   C) A Floating (or Flexible) Exchange Rate is one determined by the free interaction of supply and demand for foreign exchange.
      1. The demand curve for foreign exchange is downward-sloping. The higher the exchange rate, the higher the price of foreign goods in the domestic currency. The higher price leads to a decrease in quantity demanded of the foreign good, and therefore the foreign currency.
      2. The supply curve for foreign exchange is upward-sloping. An increase in the exchange rate lowers the foreign price of exported goods, thereby raising the quantity demanded of them and so raising the quantity supplied of foreign exchange offered in trade for them.
D) The equilibrium exchange rate, illustrated below as $E$, is the exchange rate where the quantity of foreign exchange demanded just equals the quantity supplied.

1. If the demand for a currency increases it will **Appreciate**, which means it rises in value on the foreign exchange market. If the demand for a currency decreases it will **Depreciate**, which means it decreases in value on the foreign exchange market.

![Diagram of supply and demand for foreign exchange](image)

E) **Purchasing Power Parity** holds when the exchange rate reflects the relative purchasing power of two countries. It suggests the equilibrium exchange rate is such that a unit of currency can buy the same quantity of goods in the foreign country as in the domestic country. Thus, domestic inflation lowers the foreign exchange value of the domestic currency.

F) A **Fixed Exchange Rate** is one that is set by government decree or intervention.

1. In a **Gold Standard** exchange rates are determined by the relative gold content. Under the **Bretton Woods System**, which was in effect from 1944–1971, participating countries agreed to fixed exchange rates.

2. **Devaluation** occurs when a currency’s official value if lowered from one fixed exchange rate to another.

3. With a fixed exchange rate system the government stands ready to buy or sell its money and foreign exchange in order to peg the exchange rate. In the diagram below, at the fixed exchange rate $E$, the quantity supplied of Mexican peso exceeds the quantity demanded. To keep the exchange rate at $E$, Mexico must use its foreign reserves to buy pesos equal in value to the distance $AB$.

![Diagram of fixed exchange rate](image)

4. When fixing the exchange rate, a country may eventually run out of foreign exchange, at which time the exchange rate can no longer be kept fixed.
II. International Capital Movements

A) Capital movements allow capital importing nations to increase their physical capital higher than it would be without international capital flows. Capital exports provide funds for another country to finance investment spending.

B) Assuming the government has a balanced budget, $G = T$, $I = S + M - X$. A country’s investment is equal to household savings, $S$, plus foreign saving, $(M - X)$. If exports are larger than imports, $M > X$, then there is an export of capital. If exports are smaller than imports, then capital flows into the domestic country.

C) Net capital movement is influenced by the desire to seek out higher interest rates. Capital exports increase interest rates in low interest countries and lower interest rates in high interest rate regions.

D) In 2002, foreigners invested $528 billion more in U.S. assets than we invested in foreign assets.

E) A trade deficit can be seen as either an inability to compete in world markets or an ability to attract savings from other countries.

III. The International Monetary System

A) The Bretton Woods system was established after World War II.

1. Major industrialized countries agreed to have the system of exchange rates fixed through government intervention that would make currencies convertible at fixed rates into the dollar.

2. The dollar was set equal to one and three-fifths (1 3/5) of an ounce of gold; that is, a foreign central bank could use $35 to buy an ounce of gold from the United States.

B) From the early 1950s to 1971, the United States had a deficit every year and foreign countries accumulated vast amounts of American dollars. In 1971, President Nixon declared that countries could no longer convert their dollars into gold at a fixed rate, and the Bretton Woods system collapsed.

C) Today all major countries have more or less freely flexible exchange rates with the dollar.

1. European nations attempted to fix exchange rates between their currencies in the European Monetary System (EMS), but several nations were forced to devalue their currencies in the 1990s.

2. As a result of the Maastricht Treaty (1992), on January 1, 1999, the European Central Bank was established, and a common currency, the Euro, was adopted for all bank transactions. On January 1, 2002, the euro became the sole currency for the European Union (Britain, Sweden, and Denmark do not use the common currency).

IV. Fixed Exchange Rates and Currency Crises

A) A Currency Crisis occurs when a country on a fixed exchange rate system is forced to abandon its fixed rate.

B) Asian countries such as Thailand, Indonesia, Malaysia and the Philippines, and also Argentina tied their national currencies to the dollar, in an attempt to encourage foreign investment.

1. These countries carried out a significant amount of trade with other countries, whose currency was falling relative to the dollar. Since their currencies were fixed to the dollar, their currencies became relatively expensive: their exports fell and import rose.

2. It became clear that these countries could not maintain their fixed exchange rate and foreign investment started to decline.

3. By the summer of 1997 these countries started to devalue their currency.
C) There are a number of effects related to a currency crisis.
   1. The country in crisis does not earn enough to pay its foreign public and private debt.
   2. As the domestic currency collapses there is a substantial decline in the country’s standard of living.

D) The International Monetary Fund (IMF) can lend money to countries facing a currency crisis, usually with the condition that the country enacts some kind of reforms. Critics of the IMF argue that they act as a **Lender of Last Resort**, which can lead to a **Moral Hazard Problem**. This problem occurs when agents are able to change their economic behavior after a contract is signed.

V. **The Balance of Payments**

A) The **Balance of Payments** is a country’s record of its transactions with foreigners over some period of time.

B) One account in the balance of payments is merchandise trade; another account measures a country’s inflows and outflows of capital. While the entire balance payments always balances (that is, the total “plus” entries must equal the total “minus” entries), specific accounts need not balance.

C) Capital flows occur when one nation saves more than it invests domestically and another country borrows the “excess” savings. Capital flows between countries:
   1. Allow capital-importing countries to raise their stock of capital.
   2. Allow investors in capital-exporting countries to earn a higher and/or safer return on their investment.
   3. Both capital-importing and capital-exporting countries gain from capital movements.

### Review Questions

**True/False**

*If the statement is correct, write true in the space provided; if it is wrong, write false. Below the question give a short statement that supports your answer.*

_____ 1. In order for an American importer to buy Japanese cars, the importer needs Japanese yen.

_____ 2. The supply of a country’s foreign exchange comes from the demand by foreigners to buy the country’s products.

_____ 3. A fixed exchange rate is one that is fixed by the free interaction of supply and demand for foreign exchange.

_____ 4. The higher the price of pesos in dollars, *ceteris paribus*, the lower the American demand for Mexican goods.

_____ 5. The higher the price of pesos in dollars, *ceteris paribus*, the lower the Mexican demand for American goods.

_____ 6. The demand curve for foreign exchange shifts out when the price of foreign exchange rises.
7. A country’s supply curve of foreign exchange shifts out when there is an increase in demand for its exports.

8. Exports and imports must always be equal.

9. Capital-importing nations are made worse off by capital flows, while capital-exporting nations are made better off.

10. Most European nations currently fix their exchange rate to the U.S. dollar.

11. For most of the thirty years after World War II, the world was generally on a system of floating exchange rates.

12. Exchange rate movements provide the major equilibrating force with fixed exchange rates.

13. A devaluation occurs when a country with a fixed exchange rate lowers the price of its currency.

14. Under the Bretton Woods system, countries made their currencies directly convertible into gold at a set price.

15. Capital exports from a country are an immediate source of additional foreign exchange.

16. Capital exports allow capital-importing countries to increase their quantity of capital.

17. The Bretton Woods system was a system of floating exchange rates.

Multiple Choice Questions

Circle the letter corresponding to the correct answer.

1. Suppose the exchange rate between British pounds and American dollars is 1.10 dollars per pound. What would a bottle of British ale cost in America if it costs 1 pound in England?
   (a) $.90  
   (b) $.91  
   (c) $1.00  
   (d) $1.10  
   (e) $1.11

2. If the American dollar depreciates so that the exchange rate is 2.00 dollars per British pound, what does the same bottle of British ale described in Question 1 now cost in America?
   (a) $.50  
   (b) $.90  
   (c) $1.00  
   (d) $1.10  
   (e) $2.00
3. Demand for foreign exchange in America is increased by all of the following except
   (a) an increase in demand by Americans for imported commodities.
   (b) an increase in American exports.
   (c) an increase in the number of Americans traveling abroad.
   (d) an increase in the desire of Americans to invest abroad.
   (e) an increase in the profits sent by companies in America to their foreign owners.

4. Purchasing power parity suggests that exchange rates depend on
   (a) interest rates.
   (b) inflation rates.
   (c) capital movements.
   (d) the business cycle.
   (e) changes in comparative advantage.

5. Under a floating exchange rate system, if the demand for foreign exchange increases,
   (a) the exchange rate depreciates.
   (b) the country revalues its exchange rate.
   (c) the government supplies the extra foreign exchange.
   (d) the government lowers the official price of its currency.
   (e) None of the above

6. Which of the following statements about fixed exchange rate systems is not correct?
   (a) The government may run out of foreign exchange while attempting to fix its exchange rate.
   (b) Fixed exchange rates refer to the case where the government pegs the exchange rate at a fixed level.
   (c) If a country lowers the value of its currency, it has devalued the currency.
   (d) The Bretton Worlds system was an example of a fixed exchange rate system.
   (e) They are all correct.

7. With a flexible exchange rate, the exchange rate appreciates whenever
   (a) domestic citizens increase their demand for foreign goods.
   (b) domestic inflation greatly exceeds foreign inflation.
   (c) foreign citizens increase their demand for goods exported from the domestic country.
   (d) domestic citizens decide to increase their investment in foreign countries.
   (e) domestic firms reduce their exports.

8. If the exchange rate depreciates, imported goods are ____ for domestic residents, and domestic exports are ____ for foreign citizens.
   (a) cheaper; cheaper
   (b) cheaper; more expensive
   (c) more expensive; more expensive
   (d) more expensive; cheaper
   (e) Any of the above could be correct depending on other factors.
Essay Questions

Write a short essay or otherwise answer each question.

1. Discuss the history of the international monetary system since the end of World War II.

2. Using the diagram above, show what happens to the dollar/mark exchange rate if German residents decide to invest more in America.

3. Why does American demand for Japanese products rise when the dollar price of the yen falls?

4. Using the diagram above, indicate the amount of pounds the English government would need to buy in order to peg its exchange rate at $E$. With what does the English government pay for these pounds? What will eventually happen if the government continues to buy pounds?

Answers to Review Questions

True/False

1. True. A nation needs foreign exchange so it can buy goods from other countries. For instance, in order to pay the Japanese auto maker, yen are required.

2. True. A country acquires foreign exchange when other countries want to buy its products. In order for a Japanese importer to buy American rice, the importer must supply yen in exchange for the American dollars necessary to buy the rice.

3. False. A fixed exchange rate is an exchange rate set by the government.
4. True. For an American to purchase a Mexican good, the American must buy pesos and then, with the pesos, buy the good in Mexico. If the price of pesos rises, the price of the good to Americans rises, so the American demand falls.

5. False. The Mexican must use his or her pesos to buy dollars and then use the dollars to purchase the American good. If the dollar price of pesos rises, it takes more dollars to buy a peso, or, conversely, one peso can buy more dollars. The Mexican price of the good falls because it takes fewer pesos to purchase the good, so Mexican demand rises.

6. False. A change in the price of foreign exchange causes a movement along the foreign exchange demand curve.

7. True. If foreigners increase their demand for a country’s exports, they are more willing to supply their currency in exchange for the domestic currency.

8. False. While the entire balance of payments must be equal, individual accounts need not balance.

9. False. Both the capital-importing and capital-exporting nations benefit from international capital flows. The importing nation gains because its capital stock and hence its total output is larger than otherwise. The capital exporting nation gains because it gets a higher and/or safer return from its capital.

10. False. European nations generally are trying to fix the exchange rates amongst their currencies, but they float against the dollar.

11. False. During most of this period of time, the Bretton Woods system—a system of firmly fixed exchange rates—prevailed.

12. False. With fixed exchange rates, exchange rates are not free to change. The equilibrating mechanism involves flows of foreign exchange reserves—money—from one country to another.

13. True. With floating exchange rates such a fall is called depreciation.

14. False. Countries made their currencies convertible into dollars. The dollars were then convertible into gold.

15. False. Capital exports require foreign exchange so that investors can buy capital in foreign countries.

16. True. The increase in the stock of capital means that more output can be produced by the capital-importing country.

17. False. The Bretton Woods system had fixed exchange rates.

Multiple Choice Questions

1. (d) To translate the price into dollars, take the pound price (1 pound) and multiply it by the number of dollars it takes to purchase one pound (1.10 dollars per pound).

2. (e) Compare this problem with the preceding question. As the exchange rate depreciates—that is, it takes more dollars to buy a pound—the American price of British goods rises.

3. (b) The increase in American exports raises the supply of foreign exchange but does not change the demand for the exchange.
4. (b) When countries have widely differing inflation rates, the movement in their exchange rates is predicted very well by purchasing power parity.

5. (a) As the demand for foreign exchange rises, the amount of domestic currency necessary to buy one unit of foreign currency rises. Thus the exchange rate depreciates.

6. (e) All of these statements about fixed-exchange rate systems are correct.

7. (c) This increases the supply of foreign exchange to the country and appreciates (makes more valuable) the domestic currency.

8. (d) As the exchange rate depreciates, it takes more domestic currency to buy foreign currency and less foreign currency to purchase domestic currency. The first effect causes a rise in the domestic prices of foreign goods, while the second causes a fall in foreign prices of domestic goods.

**Essay Questions**

1. After World War II, the Bretton Woods system was established. This was a fixed exchange rate system in which countries were to maintain set exchange rates into the American dollar and the dollar was to be convertible into gold at a fixed rate. This system lasted until 1971 when persistent American deficits caused President Nixon to declare that the United States would no longer convert dollars into gold. Since that time, exchange rates between the industrialized countries and the United States have generally floated. Many European nations have tried to fix their exchange rates in the European Monetary System, but in the 1990s several nations were forced to devalue their exchange rates.

2. When Germans want to invest in the United States, they need dollars for the investment. In order to buy the dollars, the Germans supply marks. Hence, the increase in the demand for dollars means that the supply of marks increases. The diagram above shows this. The exchange rate moves from $E$ to $E'$ so that it takes fewer dollars to buy a mark. It is therefore clear that when Germans demand more dollars, they cause the dollar to appreciate and the mark to depreciate.
3. To buy a Japanese product, an American importer must first buy yen and then use the yen to purchase the Japanese product. If the dollar price of the yen falls, it takes fewer dollars to buy the necessary yen. Thus the dollar price of the Japanese product falls, so American demand for the good rises.

4. The British government must buy pounds equal in amount to AB, as shown in the diagram above. In order to buy these pounds, the British government must pay for these purchases with foreign exchange. The British government has only a limited amount of foreign exchange. If the government continues to buy pounds, it will eventually run out of foreign exchange. Once this happens, the government is unable to maintain the fixed exchange rate at $E$ and will be forced to devalue its currency.

Additional Questions

1. Suppose that a bottle of wine made in France cost 60 euros.
   (a) How much would an American have to pay in dollars if the exchange rate was 1 euro = $0.80?
   (b) How much would a Mexican have to pay if the exchange rate was 1 peso = 0.08 euros?
   (c) How much would a Japanese have to pay if 1 euro = 150 yen?

2. Consider the exchange rate between the US dollar and the British pound. Initially, the exchange rate is $0.75 = 1$ pound. If purchasing power parity holds, explain what happens to the exchange rate if the price level in Britain does not change but the price level in the United States increases by:
   (a) 10%
   (b) 18%
   (c) 32%

3. Assume that the United States and Britain trade only with each other. Where does the demand for British pounds and supply of British pounds come from? What could cause the pound to appreciate in value?
4. The table below shows the U.S. Balance of Payments:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports of Goods</td>
<td>+250</td>
</tr>
<tr>
<td>Exports of Services</td>
<td>+75</td>
</tr>
<tr>
<td>Income from US assets abroad</td>
<td>+67</td>
</tr>
<tr>
<td>Net unilateral transfers</td>
<td>0</td>
</tr>
<tr>
<td>Imports of Goods</td>
<td>-360</td>
</tr>
<tr>
<td>Imports of Services</td>
<td>-48</td>
</tr>
<tr>
<td>Income from foreign assets in the U.S.</td>
<td>-26</td>
</tr>
<tr>
<td>US capital outflow</td>
<td>-158</td>
</tr>
<tr>
<td>Foreign capital inflow</td>
<td>+200</td>
</tr>
</tbody>
</table>

(a) How much is the current account balance?
(b) How much is the capital account balance?
(c) How much is the statistical discrepancy?

Answers

1. (a) The American would have to pay $48.
(b) The Mexican would have to pay 750 pesos.
(c) The Japanese would have to pay 9,000 yen.

2. In each case the price level in the US is rising while it remains the same in Britain. This means that to maintain purchasing power parity the pound should appreciate.
   (a) 10%: $0.825 = 1 pound
   (b) 18%: $0.885 = 1 pound
   (c) 32%: $0.99 = 1 pound

3. US residents would demand British pounds to buy British goods and assets. British residents supply pounds so they can purchase dollars to buy American goods and assets. For the pound to appreciate in value the demand for pounds would need to increase relative to the demand for dollars. One reason this could occur if incomes in the US grew more than incomes in Britain. All else equal, the demand for British goods by Americans would increase by more than the demand by American goods by the British. Second, if the price level increases in the United States by more than in Britain, the pound would appreciate since British goods are now relatively less expensive. Third, if interest rates in Britain were higher than in the United States, the pound would appreciate since the demand for British assets would be relatively higher than the demand for US assets.

4. (a) The current account balance is $-42: (250 + 75 + 67) + 0 + (-360 - 48 - 26).
(b) The capital account balance is $+42.
(c) The statistical discrepancy is zero. Either add up all the terms or note that the current and capital account balance are the same.