CHAPTER CHECKLIST

1. Describe a country’s balance of payments accounts and explain what determines the amount of international borrowing and lending.

2. Explain how the exchange rate is determined and why it fluctuates.

LECTURE TOPICS

21.1 FINANCING INTERNATIONAL TRADE

- Balance of Payment Accounts
  - Balance of payments
    The accounts in which a nation records its international trading, borrowing, and lending.
  - Current account
    Record of international receipts and payments—current account balance equals exports minus imports, plus net interest and transfers received from abroad.
21.1 FINANCING INTERNATIONAL TRADE

Capital account
Record of foreign investment in the United States minus U.S. investment abroad.

Official settlements account
Record of the change in U.S. official reserves.

U.S. official reserves
The government’s holdings of foreign currency.

| TABLE 21.1 |
|---|---|
| The U.S. Balance of Payments Accounts in 2000 |

<table>
<thead>
<tr>
<th>Current account</th>
<th>Current account balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports of goods and services</td>
<td>(+2,010)</td>
</tr>
<tr>
<td>Imports of goods and services</td>
<td>(-1,438)</td>
</tr>
<tr>
<td>Net interest</td>
<td>(-14)</td>
</tr>
<tr>
<td>Net transfers</td>
<td>(-53)</td>
</tr>
<tr>
<td><strong>Current account balance</strong></td>
<td>(-435)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capital account</th>
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</thead>
<tbody>
<tr>
<td>Foreign investment in the United States</td>
</tr>
<tr>
<td>U.S. securities abroad</td>
</tr>
<tr>
<td>Statistical discrepancy</td>
</tr>
<tr>
<td><strong>Capital account balance</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Official settlements account</th>
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<tr>
<td>Change in official reserves</td>
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</table>
### Individual Analogy

An individual’s current account records the income from supplying the services of factors of production and the expenditures on goods and services.

An example: In 2000, Joanne
- Worked and earned an income of $25,000.
- Had investments that paid an interest of $1,000.

Her income of $25,000 is analogous to a country’s export.

Her $1,000 of interest is analogous to a country’s interest from foreigners.

Joanne:
- Spent $18,000 buying goods and services to consume.
- Bought a house, which cost her $60,000.

Joanne’s expenditure totaled $78,000.

Her expenditure is analogous to a country’s imports.

Her current account balance was $26,000 – $78,000, a deficit of $52,000.

To pay the $52,000 deficit, Joanne borrowed $50,000 from the bank and used $2,000 that she had in her bank account.

Joanne’s borrowing is analogous to a country’s borrowing from the rest of the world.

The change in her bank account is analogous to the change in the country’s official reserves.

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### Net borrower

A country that is borrowing more from the rest of the world than it is lending to the rest of the world.

### Net lender

A country that is lending more to the rest of the world than it is borrowing from the rest of the world.
21.1 FINANCING INTERNATIONAL TRADE

Debtor nation
A country that during its entire history has borrowed more from the rest of the world than it has lent to it.

A debtor nation has a stock of outstanding debt to the rest of the world that exceeds the stock of its own claims on the rest of the world.

Creditor nation
A country that has invested more in the rest of the world than other countries have invested in it.

Flows and Stocks
• Borrowing and lending are flows.
• Debts are stocks - amounts owed at a point in time.

The flow of borrowing and lending changes the stock of debt.

Since 1989, the total stock of U.S. borrowing from the rest of the world has exceeded U.S. lending to the rest of the world.

21.2 THE EXCHANGE RATE

Foreign exchange market
The market in which the currency of one country is exchanged for the currency of another.

The foreign exchange market that is made up of importers and exporters, banks, and specialist dealers who buy and sell currencies.

Foreign exchange rate
The price at which one currency exchanges for another.

For example, in August 2000, one U.S. dollar bought 108 Japanese yen. The exchange rate was 108 yen per dollar.

This exchange rate can be expressed in terms of cents per yen. In August 2000, the exchange rate was a bit less than 1 cent per yen.
21.2 THE EXCHANGE RATE

Currency depreciation
The fall in the value of one currency in terms of another currency.
For example, if the exchange rate falls from 108 yen per dollar to 105 yen per dollar, the U.S. dollar depreciates.

Currency appreciation
The rise in the value of one currency in terms of another currency.
For example, if the exchange rate falls from 108 yen per dollar to 110 yen per dollar, the U.S. dollar appreciates.

21.2 THE EXCHANGE RATE

The value of the foreign exchange rate fluctuates.

Sometimes the U.S. dollar depreciates and sometimes it appreciates. Why?

The foreign exchange rate is a price and like all prices, demand and supply in the foreign exchange market determine its value.

Demand in the Foreign Exchange Market
The quantity of dollars demanded in the foreign exchange market is the amount that traders plan to buy during a given period at a given exchange rate.

The quantity of dollars demanded depends on:
- The exchange rate
- Interest rates in the United States and other countries
- The expected future exchange rate

The Law of Demand for Foreign Exchange
Other things remaining the same, the higher the exchange rate, the smaller is the quantity of dollars demanded.

The exchange rate influences the quantity of dollars demanded for two reasons:
- Exports effect
- Expected profit effect
21.2 THE EXCHANGE RATE

Exports Effect
The larger the value of U.S. exports, the larger is the quantity of dollars demanded on the foreign exchange market.

The lower the exchange rate, the cheaper are U.S.-made goods and services to people in the rest of the world, the more the United States exports, and the greater is the quantity of U.S. dollars demanded to pay for them.

Expected Profit Effect
The larger the expected profit from holding dollars, the greater is the quantity of dollars demanded in the foreign exchange market.

But the expected profit depends on the exchange rate. The lower the exchange rate, other things remaining the same, the larger is the expected profit from holding dollars and the greater is the quantity of dollars demanded.

Figure 20.1 shows the demand for dollars.

1. If the exchange rate rises, the quantity of dollars demanded decreases along the demand curve for dollars.
2. If the exchange rate falls, the quantity of dollars demanded increases along the demand curve for dollars.

Changes in the Demand for Dollars
Any influence that changes the quantity of U.S. dollars that people plan to buy in the foreign exchange market other than the exchange rate changes the demand for U.S. dollars and shifts the demand curve for dollars.

These influences are:
• Interest rates in the United States and other countries
• Expected future exchange rate
21.2 THE EXCHANGE RATE

Interest Rates in the United States and Other Countries

**U.S. interest rate differential**
The U.S. interest rate minus the foreign interest rate.

Other things remaining the same, the larger the U.S. interest rate differential, the greater is the demand for U.S. assets and the greater is the demand for dollars on the foreign exchange market.

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The Expected Future Exchange Rate

Other things remaining the same, the higher the expected future exchange rate, the greater is the demand for dollars.

The higher the expected future exchange rate, the larger is the expected profit from holding dollars, so the larger is the quantity of dollars that people plan to buy on the foreign exchange market.

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Supply in the Foreign Exchange Market

The quantity of U.S. dollars supplied in the foreign exchange market is the amount that traders plan to sell during a given time period at a given exchange rate.

The quantity of U.S. dollars supplied depends on many factors, but the main ones are:
- The exchange rate
- Interest rates in the United States and other countries
- The expected future exchange rate

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Figure 20.2 shows changes in the demand for dollars:

1. An increase in the demand for dollars
2. A decrease in the demand for dollars.
21.2 THE EXCHANGE RATE

The Law of Supply of Foreign Exchange
Traders supply U.S. dollars in the foreign exchange market when they buy other currencies.

Other things remaining the same, the higher the exchange rate, the greater is the quantity of U.S. dollars supplied in the foreign exchange market.

The exchange rate influences the quantity of dollars supplied for two reasons:
- Imports effect
- Expected profit effect

Imports Effect
The larger the value of U.S. imports, the larger is the quantity of foreign currency demanded to pay for these imports.

When people buy foreign currency, they supply dollars.

Other things remaining the same, the higher the exchange rate, the cheaper are foreign-made goods and services to Americans. So the more the United States imports, and the greater is the quantity of U.S. dollars supplied on the foreign exchange market.

Expected Profit Effect
The larger the expected profit from holding a foreign currency, the greater is the quantity of that currency demanded and so the greater is the quantity of dollars in the foreign exchange market.

The expected profit depends on the exchange rate.

Other things remaining the same, the higher the exchange rate, the larger is the expected profit from selling dollars and the greater is the quantity of dollars supplied in the foreign exchange market.

Figure 20.3 shows the supply of dollars.
1. If the exchange rate rises, the quantity of dollars supplied increases along the supply curve for dollars.
2. If the exchange rate falls, the quantity of dollars supplied decreases along the supply curve for dollars.
21.2 THE EXCHANGE RATE

Changes in the Supply of Dollars

Any influence that changes the quantity of U.S. dollars that people plan to sell in the foreign exchange market other than the exchange rate changes the supply of U.S. dollars and shifts the supply curve for dollars.

These influences are:
- Interest rates in the United States and other countries
- Expected future exchange rate

Interest Rates in the United States and Other Countries

The larger the U.S. interest rate differential, the smaller is the demand for foreign assets and so the smaller is the supply of U.S. dollars on the foreign exchange market.

The Expected Future Exchange Rate

Other things remaining the same, the higher the expected future exchange rate, the smaller is the expected profit from selling U.S. dollars today, so the smaller is the supply of dollars today.

Figure 20.4 shows changes in the supply of dollars.
1. An increase in the supply of dollars.
2. A decrease in the supply of dollars.
21.2 THE EXCHANGE RATE

Market Equilibrium
Demand and supply in the foreign exchange market determines the exchange rate.

If the exchange rate is too low, there is a shortage of dollars.
If the exchange rate is too high, there is a surplus of dollars.
At the equilibrium exchange rate, there is neither a shortage nor a surplus.

Figure 20.5 shows the equilibrium exchange rate.

1. If the exchange rate is 120 yen per dollar, there is a surplus of dollars and the exchange rate falls.
2. If the exchange rate is 80 yen per dollar, there is a shortage of dollars and the exchange rate rises.

3. If the exchange rate is 100 yen per dollar, there is neither a shortage nor a surplus of dollars and the exchange rate remains constant. The market is in equilibrium.

Changes in the Exchange Rate
The predictions about the effects of changes in the demand for and supply of dollars are exactly the same as for any other market.

An increase in the demand for dollars with no change in supply raises the exchange rate.

A increase in the supply of dollars with no change in demand lowers the exchange rate.
21.2 THE EXCHANGE RATE

Why the Exchange Rate Is Volatile

Sometimes the dollar appreciates and sometimes it depreciates, but the quantity of dollars traded each day barely changes.

Why?

The main reason is that demand and supply are not independent in the foreign exchange market.


Between 1994 and the summer of 1995, the dollar depreciated against the yen. The exchange rate fell from 100 yen to a low of 84 yen per dollar.


Between 1995 and 1998, the dollar appreciated against the yen. The exchange rate rose from 84 yen to 130 yen per dollar.

Figure 20.6(a) shows why the dollar depreciated between 1994 and the summer of 1995.

1. Traders expected the dollar to depreciate—the demand for U.S. dollars decreased and the supply of U.S. dollars increased.

2. The dollar depreciated.

Figure 20.6(b) shows why the dollar appreciated between 1995 and 1998.

1. Traders expected the dollar to appreciate—the demand for U.S. dollars increased and the supply of U.S. dollars decreased.

2. The dollar appreciated.
Exchange Rate Expectations

Why do exchange rate expectations change?

There are two forces:
• Purchasing power parity
• Interest rate parity

Purchasing Power Parity

Equal value of money—a situation in which money buys the same amount of goods and services in different currencies.

Suppose that a Big Mac costs $4 (Canadian) in Toronto and $3 (U.S.) in New York.

If the exchange rate is $1.33 Canadian per U.S. dollar, then the two monies have the same value—you can buy a Big Mac in Toronto or New York for either $4 (Canadian) or $3 (U.S.).

But if a Big Mac in New York rises to $4 and the exchange rate remains at $1.33 Canadian per U.S. dollar, then money buys more in Canada than in the United States.

Money does not have equal value.

The value of money is determined by the price level.

If prices in the United States rise faster than those of other countries, people will generally expect the foreign exchange value of the U.S. dollar to fall.

Demand for U.S. dollars will decrease and supply will increases.

The U.S. dollar exchange rate will fall.

The U.S. dollar depreciates.

If prices in the United States rise more slowly than those of other countries, people will generally expect the foreign exchange value of the U.S. dollar to rise.

Demand for U.S. dollars will increase and supply will decreases.

The U.S. dollar exchange rate will rise.

The U.S. dollar appreciates.
Interest Rate Parity

Equal interest rates—a situation in which the interest rate in one currency equals the interest rate in another currency when exchange rate changes are taken into account.

Suppose a Canadian dollar deposit in a Toronto bank earns 5 percent a year and the U.S. dollar deposit in New York earns 3 percent a year.

If people expect the Canadian dollar to depreciate by 2 percent in a year, then the expected fall in the value of the Canadian dollar must be subtracted to calculate the net return on the Canadian dollar deposit.

The net return on the Canadian dollar deposit is 3 percent (5 percent minus 2 percent) a year. Interest rate parity holds.

Adjusted for risk, interest rate parity always hold.

Traders in the foreign exchange market move their funds into the currencies that earn the highest return.

This action of buying and selling currencies brings about interest rate parity.

The Fed in the Foreign Exchange Market

The Fed’s actions influence the U.S. interest rate, so the Fed’s actions influence the U.S. dollar exchange rate.

If U.S. interest rate rises relative to those in other countries, the U.S. dollar exchange rate rises.

But the Fed can intervene directly in the foreign exchange market.

By changing the supply of U.S. dollars, it can try to smooth out fluctuations in the exchange rate.
21.2 THE EXCHANGE RATE

It can buy or sell dollars and try to smooth out fluctuations in the exchange rate.

Figure 20.7 shows foreign market intervention.

1. If demand increases from $D_0$ to $D_1$, the Fed sells dollars to increase supply.

Suppose that the Fed’s target exchange rate is 100 yen per dollar.

2. If demand decreases from $D_0$ to $D_2$, the Fed buys dollars to decrease supply.

Persistent intervention on one side of the market cannot be sustained.