第6版

# 国际金融

# International Finance

Sixth Edition

CHARLES W. L. HILL

【美】查尔斯・希尔 著



# INTERNATIONAL FINANCE

# 国际金融

(第6版)

【美】 查尔斯·希尔 (Charles W.L. Hill) 著

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# 内容提要

本书从第3版开始一直是全球国际商务领域使用最广泛的图书。全书共分4章:外汇市场;国际货币体系;国际商业会计;国际商业中的投融资。阐述了外汇市场的功能,汇率决定的经济理论以及浮动汇率体制、固定汇率体制;各国会计准则的差异和国际会计标准的应用及其影响;资本市场的投融资决策和国际货币管理技术等。本书案例丰富,系统性强,文笔优美流畅。

本书适用于金融学、国际贸易、工商管理专业 以及英语专业应用语言方向的学生,同时,对初涉 及意欲开拓国际商务的专业人士也有很好的参考价 值。



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# INTERNATIONAL **FINANCE**





## The Foreign Exchange Market

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### Volkswagen's Hedging Strategy

In January 2004, Volkswagen, Europe's largest carmaker and until recently one of its most successful, reported a 95 percent drop in 2003 fourth-quarter profits, which slumped from €1.05 billion to a mere €50 million. For all of 2003, Volkswagen's operating profit fell by 50 percent from the record levels attained in 2002. Although the profit slump had multiple causes, two factors were the focus of much attention—the unprecedented rise in the value of the euro against the dollar during 2003, and Volkswagen's decision to hedge only 30 percent of its foreign currency exposure, as opposed to the 70 percent it had traditionally hedged. In total, currency losses due to the dollar's rise are estimated to have reduced Volkswagen's operating profits by some €1.2 billion (\$1.5 billion).

The rise in the value of the euro during 2003 took many companies by surprise. Since its introduction January 1, 1999, when it became the currency unit of 12 members of the European Union, the euro had recorded a volatile trading history against the U.S. dollar. In early 1999 the exchange rate stood at  $\in$ 1 = \$1.17, but by October 2000 it had slumped to  $\in$ 1 = \$0.83. Although it recovered, reaching parity of  $\in$ 1 = \$1.00 in late 2002, few analysts predicted a rapid rise in the value of the euro against the dollar during 2003. As so often happens in the foreign exchange markets, the experts were wrong; by late 2003 the exchange rate stood at  $\in$ 1 = \$1.25.

One cause of this reversal in the value of the euro against the dollar was a record U.S. foreign trade deficit in 2003. The U.S. economy grew rapidly during 2003, sucking in imports from foreign nations while generating anemic export growth. The result was a flow of dollars out of the United States into the hands of foreigners. Historically, foreigners had reinvested those dollars in the United States, and the return flow had kept the dollar strong despite persistent trade deficits. This didn't happen to the same extent in 2003. Instead, many foreigners sold the dollars they received for other currencies, such as the euro, Japanese yen, or British pound. They did this because they had become increasingly pessimistic about the future value of the dollar and were reducing their dollar holdings accordingly. Their pessimism was itself a function of two factors. First, U.S. government officials stated that they would prefer a weaker dollar in order to increase the competitiveness of U.S. companies in the global marketplace (the theory being that a falling dollar would make U.S. exports more competitive). With the government talking the dollar down, many foreigners decided to reduce their dollar holdings. Second, the U.S. government ran a record budget deficit in 2003, and this was projected to remain high for some time. Looking at this, some foreigners concluded that the U.S. government might be forced to finance its spending by expanding the supply of dollars (i.e., by printing money), which would lead to inflation and reduce the value of the dollar even further. Thus, they sold dollars and purchased currencies thought to be less inflation prone.

For Volkswagen, which made cars in Germany and exported them to the United States, the fall in the value of the dollar against the euro during 2003 was devastating. To understand what happened, consider a Volkswagen Jetta built in Germany for export to the United States. The Jetta costs €14,000 to make in Germany and ship to a dealer in the United States, where it sells for \$15,000. With the exchange rate standing at around €1 = \$1.00, the \$15.000 earned from the sale of a Jetta in the U.S. could be converted into €15,000, giving Volkswagen a profit of €1,000 on every Jetta sold. But if the exchange rate changes during the year, ending up at  $\leq 1 = 1.25$  as it did during 2003. each dollar of revenue will now buy only €0.80 (€1/\$1.25 = €0.80), and Volkswagen is squeezed. At an exchange rate of €1 = \$1.25, the \$15,000 Volkswagen gets for the Jetta is now only worth €12,000 when converted back into euros, meaning the company will lose €2,000 on every Jetta sold (when the exchange rate is €1 = \$1.25, \$15,000/1.25 =€12,000).

Volkswagen could have insured against this adverse movement in exchange rates by entering the foreign exchange market in late 2002 and buying a forward contract for dollars at an exchange rate of around \$1 = €1 (a forward contract gives the holder the right to exchange one currency for another at some point in the future at a predetermined exchange rate). Called hedging, the financial strategy of buying forward guarantees that at some future point, such as 180 days, Volkswagen would have been able to exchange the dollars it got from selling Jettas in the United States into euros at \$1 = €1, irrespective of what the actual exchange rate was at that time. In 2003 such a strategy would have been good for Volkswagen. However, hedging is not without its costs. If the euro had declined in value against the dollar, instead of appreciating as it did, Volkswagen would have made even more profit per car in euros by not hedging (a dollar at the end of 2003 would have bought more euros than a dollar at the end of 2002). Also, hedging is expensive because foreign exchange dealers will charge a high commission for selling currency forward. For whatever reason, Volkswagen decided to hedge just 30 percent of its anticipated U.S. sales in 2003 though forward contracts, rather than the 70 percent it had historically hedged. The decision cost the company more than a €1 billion. For 2004, the company announced that it would revert back to hedging 70 percent of its foreign currency exposure!

Sources: Mark Landler, "As Exchange Rates Swing, Car Makers Try to Duck," *The New York Times,* January 17, 2004, pp. B1, B4; N. Boudette, "Volkswagen Posts 95% Drop in Net," *The Wall Street Journal,* Februray 19, 2004, p. A3; and "Volkswagen's Financial Mechanic," *Corporate Finance,* June 2003, p. 1.



This chapter has three main objectives. The first is to explain how the foreign exchange market works. The second is to examine the forces that determine exchange rates, and to discuss the degree to which it is possible to predict future exchange rate movements. The third objective is to map the implications for international business of exchange rate movements and the foreign exchange market. This chapter is the first of two that deal with the international monetary system and its relationship to international business. In the next chapter, we will explore the institutional structure of the international monetary system. The institutional structure is the context within which the foreign exchange market functions. As we shall see, changes in the institutional structure of the international monetary system can exert a profound influence on the development of foreign exchange markets.

The **foreign exchange market** is a market for converting the currency of one country into that of another country. An **exchange rate** is simply the rate at which one currency is converted into another. For example, Volkswagen uses the foreign exchange market to convert the dollars it earns from selling cars in the United States into euros. Without the foreign exchange market, international trade and international investment on the scale that we see today would be impossible; companies would have to resort to barter. The foreign exchange market is the lubricant that enables companies based in countries that use different currencies to trade with each other.

We know from earlier chapters that international trade and investment have their risks. As the opening case illustrates, some of these risks exist because future exchange rates cannot be perfectly predicted. The rate at which one currency is converted into another can change over time. In January 1999, for example, the U.S. dollar/European euro exchange rate stood at  $\mathfrak{E}1=\$1.17$ , by October 2000 it stood at  $\mathfrak{E}1=\$0.82$ , by December 2002 it was up to  $\mathfrak{E}1=\$1.00$ , and in early January 2005 it stood at  $\mathfrak{E}1=\$1.30$ . One function of the foreign exchange market is to provide some insurance against the risks that arise from such volatile changes in exchange rates, commonly referred to as foreign exchange risk. Although the foreign exchange market offers some insurance against foreign exchange risk, it cannot provide complete insurance. It is not unusual for international businesses to suffer losses because of unpredicted changes in exchange rates. Currency fluctuations can make seemingly profitable trade and investment deals unprofitable, and vice versa. The opening case on Volkswagen contains an example.

We begin this chapter by looking at the functions and the form of the foreign exchange market. This includes distinguishing among spot exchanges, forward exchanges, and currency swaps. Then we will consider the factors that determine exchange rates. We will also look at how foreign trade is conducted when a country's currency cannot be exchanged for other currencies; that is, when its currency is not convertible. The chapter closes with a discussion of these things in terms of their implications for business.

## The Functions of the Foreign Exchange Market

The foreign exchange market serves two main functions. The first is to convert the currency of one country into the currency of another. The second is to provide some insurance against **foreign exchange risk**, by which we mean the adverse consequences of unpredictable changes in exchange rates.<sup>1</sup>

#### **CURRENCY CONVERSION**

Each country has a currency in which the prices of goods and services are quoted. In the United States, it is the dollar (\$); in Great Britain, the pound (\$); in France, Germany, and other members of the euro zone it is the euro (\$); in Japan, the yen (\$); and so on. In general, within the borders of a particular country, one must use the national currency.



The foreign exchange market enables companies based in countries that use different currencies to trade with each other.

A U.S. tourist cannot walk into a store in Edinburgh, Scotland, and use U.S. dollars to buy a bottle of Scotch whisky. Dollars are not recognized as legal tender in Scotland; the tourist must use British pounds. Fortunately, the tourist can go to a bank and exchange her dollars for pounds. Then she can buy the whisky.

When a tourist changes one currency into another, she is participating in the foreign exchange market. The exchange rate is the rate at which the market converts one currency into another. For example, an exchange rate of  $\mathfrak{C}1 = \$1.30$  specifies that one euro buys 1.30 U.S. dollars. The exchange rate allows us to compare the relative prices of goods and services in different countries. Our U.S. tourist wishing to buy a bottle of Scotch whisky in Edinburgh may find that she must pay £30 for the bottle, knowing that the same bottle costs \$45 in the United States. Is this a good deal? Imagine the current pound/dollar exchange rate is £1.00 = \$1.80. Our intrepid tourist takes out her calculator and converts £30 into dollars. (The calculation is  $30 \times 1.8$ ). She finds that the bottle of Scotch costs the equivalent of \$54. She is surprised that a bottle of Scotch whisky could cost less in the United States than in Scotland (alcohol is taxed heavily in Great Britain).

Tourists are minor participants in the foreign exchange market; companies engaged in international trade and investment are major ones. International businesses have four main uses of foreign exchange markets. First, the payments a company receives for its exports, the income it receives from foreign investments, or the income it receives from licensing agreements with foreign firms may be in foreign currencies. To use those funds in its home country, the company must convert them to its home country's currency. Consider the Scotch distillery that exports its whisky to the United States. The distillery is paid in dollars, but since those dollars cannot be spent in Great Britain, they must be converted into British pounds. Similarly, as we saw in the opening case, when Volkswagen sells cars in the United States for dollars, it must convert those dollars into euros to use them in Germany.

Second, international businesses use foreign exchange markets when they must pay a foreign company for its products or services in its country's currency. For example, Dell buys many of the components for its computers from Malaysian firms. The Malaysian companies must be paid in Malaysia's currency, the ringgit, so Dell must convert money from dollars into ringgit to pay them.

Third, international businesses use foreign exchange markets when they have spare cash that they wish to invest for short terms in money markets. For example, consider a

U.S. company that has \$10 million it wants to invest for three months. The best interest rate it can earn on these funds in the United States may be 2 percent. Investing in a South Korean money market account, however, may earn 12 percent. Thus, the company may change its \$10 million into Korean won and invest it in South Korea. Note, however, that the rate of return it earns on this investment depends not only on the Korean interest rate, but also on the changes in the value of the Korean won against the dollar in the intervening period.

Finally, **currency speculation** is another use of foreign exchange markets. Currency speculation typically involves the short-term movement of funds from one currency to another in the hopes of profiting from shifts in exchange rates. Consider again a U.S. company with \$10 million to invest for three months. Suppose the company suspects that the U.S. dollar is overvalued against the Japanese yen. That is, the company expects the value of the dollar to *depreciate* (fall) against that of the yen. Imagine the current dollar/yen exchange rate is \$1 = \$120. The company exchanges its \$10 million into yen, receiving \$1.2 billion (\$10 million  $\times$  120 = \$1.2 billion). Over the next three months, the value of the dollar depreciates against the yen until \$1 = \$100. Now the company exchanges its \$1.2 billion back into dollars and finds that it has \$12 million. The company has made a \$2 million profit on currency speculation in three months on an initial investment of \$10 million! In general, however, companies should beware that speculation is a very risky business. The company cannot know for sure what will happen to exchange rates. While a speculator may profit handsomely if his speculation about future currency movements turns out to be correct, he can also lose vast amounts of money if it turns out to be wrong.

#### INSURING AGAINST FOREIGN EXCHANGE RISK

A second function of the foreign exchange market is to provide insurance against foreign exchange risk, which is the possibility that unpredicted changes in future exchange rates will have adverse consequences for the firm. To explain how the market performs this function, we must first distinguish among spot exchange rates, forward exchange rates, and currency swaps.

#### **Spot Exchange Rates**

When two parties agree to exchange currency and execute the deal immediately, the transaction is referred to as a spot exchange. Exchange rates governing such "on the spot" trades are referred to as 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. Thus, when our U.S. tourist in Edinburgh goes to a bank to convert her dollars into pounds, the exchange rate is the spot rate for that day.

Spot exchange rates are reported daily in the financial pages of newspapers. Table 1.1 shows the dollar exchange rates for currencies traded in the New York foreign exchange market as of noon January 11, 2005. An exchange rate can be quoted in two ways: as the amount of foreign currency one U.S. dollar will buy, or as the value of a dollar for one unit of foreign currency. Thus, one U.S. dollar bought €0.759821 on January 11, 2005, and one euro bought \$1.3161.

Spot rates change continually, often on a day-by-day basis (although the magnitude of changes over such short periods is usually small). The value of a currency is determined by the interaction between the demand and supply of that currency relative to the demand and supply of other currencies. For example, if lots of people want U.S. dollars and dollars are in short supply, and few people want British pounds and pounds are in plentiful supply, the spot exchange rate for converting dollars into pounds will change. The dollar is likely to appreciate against the pound (or, the pound will depreciate against the dollar). Imagine the spot exchange rate is £1 = \$1.50 when the market opens. As the day progresses, dealers demand more dollars and fewer pounds. By the end of the day, the spot exchange rate might be £1 = \$1.48. Each pound now buys fewer dollars than at the start of the day. The dollar has appreciated, and the pound has depreciated.

	Foreign Currency per 1USD	Dollars per Unit of Foreign Currency
Australian dollar	1.30856	0.764199
Brazilian real	2.712 H. Sakkara	0.368732
British pound	0.532028	1.8796
Canadian dollar	1.2142	0.823588
Chinese yuan	8.2765	0.120824
Danish krone	5.653	0.176897
Euro	0.759821	1.3161
Hong Kong dollar	7.7955	0.128279
Indian rupee	43.68	0.0228938
Japanese yen	103.42	0.00966931
Malaysian ringgit	3.8	0.263158
Mexican peso	11.217	0.0891504
New Zealand dollar	1.42816	0.700202
Norwegian kroner	6.2278	0.16057
Singapore dollar	1.6363	0.611135
South African rand	5.955	0.167926
Korean won	1045	0.000956938
Sri Lanka rupee	98.1	0.0101937
Swedish krona	6.8616	0.145739
Swiss franc	1.1758	0.850485
Taiwan dollar	31.98	0.0312695
Thai baht	39	0.025641
Venezuelan bolivar	1915.2	0.000522139

#### TABLE 1.1

Foreign Exchange Quotations for One U.S. Dollar, January 11, 2005

Source: www.x-rates.com.

#### **Forward Exchange Rates**

As we saw in the opening case, changes in spot exchange rates can be problematic for an international business. For example, a U.S. company that imports laptop computers from Japan knows that in 30 days it must pay yen to a Japanese supplier when a shipment arrives. The company will pay the Japanese supplier ¥200,000 for each laptop computer, and the current dollar/yen spot exchange rate is 1 = 120. At this rate, each computer costs the importer \$1,667 (i.e., 1,667 = 200,000/120). The importer knows she can sell the computers the day they arrive for \$2,000 each, which yields a gross profit of \$333 on each computer (\$2,000 - \$1,667). However, the importer will not have the funds to pay the Japanese supplier until the computers have been sold. If over the next 30 days the dollar unexpectedly depreciates against the yen, say, to 1 = 495, the importer will still have to pay the Japanese company \$200,000 per computer, but in dollar terms that would be equivalent to \$2,105 per computer, which is more than she can sell the computers for. A depreciation in the value of the dollar against the yen from \$1 = \$120 to \$1 = \$95 would transform a profitable deal into an unprofitable one.

To avoid this risk, the U.S. importer might want to engage in a forward exchange. A **forward exchange** occurs when two parties agree to exchange currency and execute the deal at some specific date in the future. Exchange rates governing such future transactions are referred to as **forward exchange rates**. For most major currencies, forward exchange rates are quoted for 30 days, 90 days, and 180 days into the future. In some cases, it is possible to get forward exchange rates for several years into the future. Returning to our computer importer example, let us assume the 30-day forward exchange rate for converting dollars into yen is \$1 = \$110. The importer enters into a 30-day forward exchange transaction with a foreign exchange dealer at this rate and is guaranteed that she will have to pay no more than \$1,818 for each computer (1,818 = 200,000/110). This guarantees her a profit of \$182 per computer (\$2,000 - \$1,818). She also insures herself against the possibility that an unanticipated change in the dollar/yen exchange rate will turn a profitable deal into an unprofitable one.

In this example, the spot exchange rate (\$1 = \$120) and the 30-day forward rate (\$1 = \$110) differ. Such differences are normal; they reflect the expectations of the foreign exchange market about future currency movements. In our example, the fact that \$1 bought more yen with a spot exchange than with a 30-day forward exchange indicates foreign exchange dealers expected the dollar to depreciate against the yen in the next 30 days. When this occurs, we say the dollar is selling at a *discount* on the 30-day forward market (i.e., it is worth less than on the spot market). Of course, the opposite can also occur. If the 30-day forward exchange rate were \$1 = \$130, for example, \$1 would buy more yen with a forward exchange than with a spot exchange. In such a case, we say the dollar is selling at a *premium* on the 30-day forward market. This reflects the foreign exchange dealers' expectations that the dollar will appreciate against the yen over the next 30 days.

In sum, when a firm enters into a forward exchange contract, it is taking out insurance against the possibility that future exchange rate movements will make a transaction unprofitable by the time that transaction has been executed. Although many firms routinely enter into forward exchange contracts to hedge their foreign exchange risk, there are some spectacular examples of what happens when firms don't take out this insurance. One such example was given in the opening case, which looked at the case of Volkswagen. Another is given in the accompanying Management Focus, which explains how a failure to fully insure against foreign exchange risk cost South African Airlines \$1.05 billion.

#### **Currency Swaps**

The above discussion of spot and forward exchange rates might lead you to conclude that the option to buy forward is very important to companies engaged in international trade—and you would be right. By 2004 forward instruments accounted for some 65 percent of all foreign exchange transactions, while spot exchanges accounted for 35 percent. However, the vast majority of these forward exchanges were not forward exchanges of the type we have been discussing, but rather a more sophisticated instrument known as 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 transacted between international businesses and their banks, between banks, and between governments when it is desirable to move out of one currency into another for a limited period without incurring foreign exchange risk. A common kind of swap is spot against forward. Consider a company such as Apple Computer. Apple assembles laptop computers in the United States, but the screens are made in Japan. Apple also sells some of the finished laptops in Japan. So, like many companies, Apple both buys from and sells to Japan. Imagine Apple needs to change \$1 million into yen to pay its supplier of laptop screens today. Apple knows that

#### MANAGEMENT FOCUS

The management

forward exchange contracts valued at \$1.3 billion to protect against a possible drop in the value of South Africa's currency, the rand, against the U.S. dollar. The contracts were designed to ensure that South African Airlines could lock in the price that it would have to pay for future purchases of jet fuel and 41 new aircraft from Airbus Industrie, both of which are priced in U.S. dollars. For several years the rand had been weak against the dollar, and management felt that further declines were likely. The contracts, which extended out

This hedge seemed logical. It was certainly a conservative thing to do. However, management declined to hedge against the possibility that the rand might appreci-

over 10 years, assumed that the rand would average

10.80 to one U.S. dollar.

ate against the dollar. Apparently, such a possibility seemed so remote that they decided to forgo the costs of entering into additional forward exchange contracts to guard against a possible rise in the value of the rand against the dollar. They were wrong. In 2002 and early 2003, the South African rand appreciated against the U.S. dollar by almost 30 percent, to 6.09 rand to the dollar. For South African Airlines, this was an unmitigated disaster. In March 2003, the company announced it had recorded \$1.05 billion in unrealized foreign exchange losses. This wiped out the airline's profit and pushed its loss for the year to \$808 million. In the aftermath, the CFO resigned, followed later by the CEO. The company also announced that its financial difficulties meant it had to cancel orders for 15 Airbus planes.

Sources: D. Robertson, "SAA Up against Rand Hedge," Business Day, August 27, 2003, p. 3; J. Flottau, "SAA under Duress," Aviation Week, July 12, 2004, p. 40; and J. Wallace, "Order Cancellations a Hard Hit to Airbus," Seattle Post Intelligencer, August 28, 2004, p. E6.

in 90 days it will be paid ¥120 million by the Japanese importer that buys its finished laptops. It will want to convert these yen into dollars for use in the United States. Let us say today's spot exchange rate is \$1 = \$120 and the 90-day forward exchange rate is \$1 = \$110. Apple sells \$1 million to its bank in return for ¥120 million. Now Apple can pay its Japanese supplier. At the same time, Apple enters into a 90-day forward exchange deal with its bank for converting ¥120 million into dollars. Thus, in 90 days Apple will receive \$1.09 million (¥120 million/ 110 = \$1.09 million). Since the yen is trading at a premium on the 90-day forward market, Apple ends up with more dollars than it started with (although the opposite could also occur). The swap deal is just like a conventional forward deal in one important respect: It enables Apple to insure itself against foreign exchange risk. By engaging in a swap, Apple knows today that the ¥120 million payment it will receive in 90 days will yield \$1.09 million.

## The Nature of the Foreign Exchange Market

The foreign exchange market is not located in any one place. It is a global network of banks, brokers, and foreign exchange dealers connected by electronic communications systems. When companies wish to convert currencies, they typically go through their own banks rather than entering the market directly. The foreign exchange market has been growing at a rapid pace, reflecting a general growth in the volume of cross-border trade and investment In March 1986, the average total value of global

foreign exchange trading was about \$200 billion per day. By April 1995, it was more than \$1,200 billion per day, and by April 1998, it reached \$1,490 billion per day. While it fell back to \$1,200 billion per day in April 2001, largely due to the introduction of the euro, which reduced the number of major trading currencies in the world, by April 2004 it had grown to \$1.88 trillion.<sup>3</sup> The most important trading centers are London (31 percent of