

WILEY FINANCE

FOREIGN EXCHANGE

A Practical Guide to the FX Markets

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Trading Money

INTRODUCTION

When many of us think of foreign exchange, what comes to mind are those little booths in the airport at which we can exchange, say, our United States Dollars for British Pounds Sterling when on our way to or from a vacation or business trip. Indeed, in some ways, there is nothing more complicated about the market for foreign exchange than that; it is all about buying and selling money.

But there are two things to note up front about **foreign exchange** that make it appear a bit daunting.

First, the realm of foreign exchange is rife with incomprehensible slang, confusing jargon, a proliferation of different names for the same thing, and the existence of convoluted conventions that make working in this field (unless you have already gained a facility with the rules) a real challenge. Banks and other financial institutions can't even agree as to what this business area or "desk" should be called: **FX, Currencies, Treasury Products, ForEx or Forex, Bank Notes, Exchange Rates, . . .**

Second, and more fundamentally, what constitutes "foreign" depends upon where you consider "home" (e.g., whether you are from the U.S. or the U.K.). Having taught about this product for years, working for a large global bank, I know that what is "foreign" for me may very well be "domestic" for you. For that reason, I will make every attempt to avoid the use of the expressions "foreign" and "domestic" in our explanations—not so much out of my hope that this book may achieve some degree of international success, but out of my inclination to want to avoid any ambiguity (and also based on the fact that I, as an "ugly American," would almost always revert to thinking in terms of U.S. Dollars). This will keep me honest. We see later, though, in the context of options that perspective really can and does matter!

Over the years, I have developed a mantra (which I always share with my classes):

**“Foreign Exchange:
It’s not difficult;
It’s just confusing.”**

I genuinely believe this. As we explore the market conventions used by the FX community, the reasons for this statement will become clear.

Furthermore, of all the complicated financial instruments about which I lecture on a daily basis, the product area, far and away, that generates the most questions (and anxiety) is foreign exchange. The interesting thing is that many of the questions asked in my classroom come from people who work in foreign exchange; in the course of doing their jobs, they often internalize mental shortcuts and rules of thumb and stop thinking about what is going on under the surface; at least one reason for this is that speed is frequently rewarded in the marketplace.

It is our intention to do four things in this book:

1. We’d like to make you familiar with the market conventions associated with foreign exchange as well as conveying an understanding of the practical mechanics required to participate in the FX markets.
2. We hope to provide you with a solid grounding in the theory and the relationships that are relevant for foreign exchange products, valuation (what some people call “pricing”), arbitrage, and trading.
3. We intend to empower you with the intuition to efficiently and expeditiously analyze what is transpiring in the currency markets and infer what might be the ramifications of various sorts of news.
4. And finally, we would like everyone to take away an understanding of the underlying economic phenomena that drive this fascinating maelstrom of financial activity.

TRADING MONEY

Understanding that the FX market involves exchanging one country’s currency for the currency of another country (or region), it is clearly all about trading money. Why is trading money so important? A long time ago,

David Hume, a friend of Adam Smith (the founder of modern economics and champion of free markets), wrote:

Money is not, properly speaking, one of the subjects of commerce; but only the instrument which men have agreed upon to facilitate the exchange of one commodity for another. It is none of the wheels of trade: It is the oil which renders the motion of the wheels more smooth and easy. (David Hume, Of Money (1752))

Now, if that is true (that money should not be the object of trade), then why is the foreign exchange market so large? Its magnitude (i.e., trading volume) is, surprisingly and significantly, greater than the flows required by the entire amount of global international trade. Indeed, foreign exchange constitutes the largest financial market in the world.

To answer the question of why the FX market is so big, it is worth thinking a bit about money, maybe a bit more (or at least a bit differently) than we usually do.

THE ROLES MONEY PLAYS

Economists ascribe three functions (or roles) to money. **Money serves as**

1. **A medium of exchange.**
2. **A unit of account.**
3. **A store of value.**

A Medium of Exchange

The first function is served because money, as Hume noted, is meant to facilitate trade. Prior to the emergence of money (I always thought it was interesting that “to discover” and “to invent” are the same word in Latin), people had to barter, that is, they had to trade goods for goods. This, no doubt, made transactions potentially problematic, even though barter may have been enjoyed by some wheeler-dealers at the time. Unless I had some of what you wanted, you had some of what I wanted, and we could arrive at some mutually agreeable rate of exchange, the lack of a universally acceptable product limited the extent of trade.

Over the ages, a variety of things have served in this role as money. It has been documented that, at one time, large numbers of bronze knife blades traded hands as part of lumpier transactions and, while still

seemingly an instrument of barter, these are recognized as one of the first commonly accepted **commodity currencies**. Other non-precious metal money include sheep, shells, whale teeth, tobacco, nails, oxen, fish-hooks, jewels, elephant tails, and wampum. What distinguishes these from instruments of barter is the fact that they were generally accepted in a transaction with no thought to their consumption usage, but simply as a means of payment that would later be spent again.

Some strange things have served as mediums of exchange. Perhaps one of the most unusual is the money of Yap. For centuries, inhabitants of this Micronesian island group have employed extremely large stones, known as “rai,” as currency in various transactions. Interestingly, while they occasionally change hands (in terms of ownership), they generally do not change location.

There is also a fascinating account of money that was written by a British economist (turned Royal Air Force officer) named R. A. Radford who, during World War II, was shot down, captured, and spent time in a German prisoner of war camp.¹ Within that environment, the generally accepted medium of exchange was the cigarette. Prices were quoted and transactions carried out using cigarettes as payment. As with all other forms of money, value fluctuated with demand and supply. For example, with an influx of Red Cross packages containing cigarettes, prices tended to jump, but, over time, as the supply of cigarettes was exhausted, prices (of other goods in terms of cigarettes) tended to fall—a phenomenon known as “deflation” (the opposite of the more familiar sustained aggregate price increases commonly referred to as “inflation”).

One might think that large stones and coffin nails would not be particularly relevant to the study of foreign exchange, but, as mediums of exchange, our examples all serve to highlight the central role of money in facilitating trade.

Economists have identified money, defined as a commonly accepted means of payment, as a critical factor in fostering trade, in encouraging specialization, in allowing for the division of labor, and in promoting economic development in the large—leading, quite literally, to the “wealth of nations” (a phrase which, although constituting part of the title of his revolutionary book published in 1776, was not coined by Adam Smith).²

Indeed, some people have even tried to identify or equate wealth and money, although anyone who has lived through a hyperinflation knows that the value of money can be fleeting (as experienced by generations of inhabitants of South America as well as individuals in Germany in 1923 during which it literally required a wheelbarrow of Marks to buy a loaf of bread).

In general, though, by serving as a generally acceptable (and accepted) vehicle of payment, money circumvents what economists refer to as “the double coincidence of wants,” a circumstance that makes barter a particularly inefficient mechanism of exchange.

Why is money “commonly accepted?” Good question. Why did Native Americans willingly take strung shell beads (wampum) in exchange for real products like corn and meat? One might think of the “greater fool theory” (that is, I’ll buy something for a high price today in the expectation that there is somebody out there—an even bigger fool—who will buy it from me at an even higher price in the future), but that explanation is rather naïve. In general, one accepts money as a means of payment (for one’s labor or one’s goods) in the belief that that same money can subsequently be employed in the acquisition of other goods and services. George J. W. Goodman (who published under the pen name Adam Smith) properly wrote, “All money is a matter of belief.”

“Common acceptance” is an essential characteristic of money. Of course, over the years, the U.S. government has insisted upon the acceptance of their money “for all debts public and private” (a stock epithet that continues to appear on the face of U.S. paper currency to this day—see Figure 1.1)—though there is no formal federal law or statute that man-

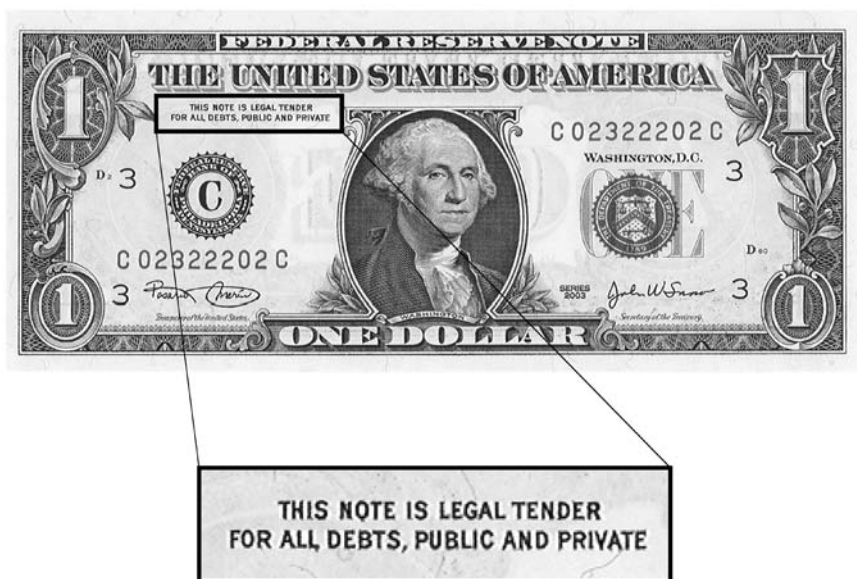


FIGURE 1.1 “This Note Is Legal Tender for All Debts, Public and Private”

dates that private businesses in the United States must accept cash as a form of payment.³ Interestingly, back in the 1800s, the U.S. government did not allow the payment of U.S. paper money for one's tax liabilities, insisting, instead, on the delivery of real money (e.g., precious metal or "specie").

Money can achieve common acceptance either due to formal governmental proclamation ("fiat") or due to the explicit or implicit acknowledgment of the market participants. Why has the U.S. Dollar enjoyed its status as a universal currency since World War II? Because, in short, individuals and institutions around the world have been willing to hold this money (i.e., to accept it as payment and often to maintain a stock of it "in reserve"). Prior to the global acceptance of the U.S. Dollar, this status was long enjoyed by the British Pound (on whose empire, as was said at one time, "the sun never sets").

U.S. paper currency, which is occasionally referred to as "fiat currency," once was backed by real money (i.e., gold and/or silver). In the United States, you may have seen silver certificates—Dollar bills with blue seals on them—or heard of gold certificates (see Figure 1.2). This paper money, at one time, could literally be exchanged for gold (up until April 5, 1933) or silver (up until June 24, 1968) through the U.S. Treasury via the Federal Reserve Bank—the central bank of the United States. Almost all of the world's major currencies were once backed by gold and/or silver; today, U.S. Dollars (and the others) are no longer convertible into precious metal. Gold and silver are now recognized as commodities (even though they have been employed in the manufacture of money for millennia and are still minted/coined for investors and collectors). We return to discuss the market for gold, silver, platinum, and other precious metals at the end of this book (in the Appendix following the final chapter).

Regardless of its form, money generally continues to serve its role as a medium of exchange, though currency substitutes (credit cards, checks, debit cards, wire transfers, money orders, charge cards, etc.) increasingly impinge on the role of cash money. And, with the increasingly sophisticated ability to reproduce and print counterfeit currency, which requires constantly vigilant and continuously sophisticated measures on the part of the United States Treasury and the other central banks of the world to counteract such activity, the trend toward electronic money will no doubt continue.

We will return to a more formal definition of money, from a banking perspective, later on.

The second role of money is as a **unit of account**, that is, we measure things in currency units. We consider the size of our bank accounts, the profitability of our businesses, and the magnitude of our pension funds (and



FIGURE 1.2 Five Dollar Silver Certificate and Ten Dollar Gold Note

therefore the financial security of our retirement) all in terms of money. On a larger (or more macro) scale, gross domestic product (GDP, the sum of the market value of all goods and services produced within a given country in a given year) is reported in monetary terms. The GDP of the United States in 2004 was approximately 12,000,000,000,000 (12 trillion). Japan’s gross domestic product in 2004 was about 505,000,000,000,000 (505 trillion). Did Japan really produce approximately 42 times more than the United States in 2004?

No. Japan shows a larger GDP than does the United States because the Japanese GDP figure is reported in Japanese Yen and the U.S. GDP number is reported in U.S. Dollars, and Yen are small in value when compared to a Dollar. Of course, if you were to convert these GDPs into either one of the two currencies, then you would be comparing apples and

apples. Practically, though, there are several issues to consider when doing these sorts of conversions; typically, aggregate numbers or indices such as GDP figures are used to track the growth in various economic variables or series. There is a potential disconnect when converting to one currency because the value of currencies themselves change over time (and this may obscure what is happening in real terms—or “behind the veil of money” as economists are fond of saying). For example, if Japan produced exactly the same output in 2005 as it did in 2004 (and, measured in Yen, this number was precisely the same), but the exchange rate between Yen and Dollars were to double (i.e., it took twice as many Yen in 2005, relative to 2004, to buy a fixed amount of Dollars), then, looking at Japanese GDP in U.S. Dollar terms, it would seem to indicate that the Japanese economy “halved” in magnitude over that time period, while, by definition, it would have really (that is, in real terms) remained exactly the same.⁴ Yes, foreign exchange can be confusing.

While we calculate and report things in currency units (which, on the surface, seems to make sense, allowing us to aggregate the value of all the various and varied products and services produced in a given country in a given year), obviously employing money as a unit of account may raise problems analogous to measuring things with a ruler, yardstick, or measuring rod, which themselves have a tendency to shrink and expand over time. Nevertheless, we still frequently measure, record, and report wealth and other financial variables in monetary increments and money typically serves in this financial role of numeraire.

Because the value of money does change over time (both in terms of other currencies, but also in terms of real goods and services), GDP numbers are frequently reported both in current (i.e., contemporaneous) currency units as well as in “constant” or “base year” currency units. As an example, the 2004 U.S. GDP was around 12,000,000,000,000 Dollars (in 2004 Dollars), but this translates to (i.e., these goods and services would have cost) only around 2,000,000,000,000 in 1955 Dollars. The implication is that a Dollar today just isn’t the same as a Dollar last year (or 50 years ago). If you don’t believe us, just ask your grandparents for confirmation of this fact.

Not only does the value of money change as time goes by, but (and this may be one of the reasons why) money itself has a tendency to grow over time (through the phenomenon of interest). Interest, as well as the fact that different countries have different rates of interest (not to mention different interest rate conventions), is a fundamental aspect of money that will be dealt with in detail in Chapter 3.

Finally, money serves as a **store of value**. Once civilization was able to

generate an above-subsistence standard of living for the members of society, the question of what to do with the surplus arose. How can we save? What should we do with this production or these resources that we do not plan to consume today? Obviously we would like to put our wealth, our savings, our money to work, but, even if money paid no interest at all,⁵ there are those who would hold it for a rainy day (that is, for insurance purposes), or for retirement (after one's actual productivity wanes), or as a diversifying asset (since its value would not necessarily move in lockstep with other assets), or as a commodity that might hold its value even if other financial assets crash.

It is interesting to note that, for their high-net-worth clients, banks have sometimes recommended holding currency in their portfolios. This is not simply advocating that wealthy individuals sit on cash or invest in liquid assets (e.g., a U.S. client maintaining a balance of U.S. Dollars or short-term Dollar-denominated money market instruments as one category of his/her holdings), but actually dedicating a portion of one's wealth to a "basket" of currencies as part of one's asset allocation decision-making process. This might involve a U.S. client holding some Euros, some Pounds Sterling, some Swiss Francs, and some Japanese Yen in his/her portfolio; the logic of this decision recognizes the return on currencies (interest) as well as the possible portfolio diversification benefits they may provide. Foreign exchange is not necessarily highly correlated with equities, fixed income, interest rates, commodities, or other assets such as real estate or fine art. While the notion of "foreign exchange as an asset class" may not yet be a universally accepted investment principle, it is certainly a reasonable and relatively interesting idea.

THE MAJOR CURRENCIES

Thus far we have talked mainly about U.S. currency, but what of the money of other countries? Which are the most important for the FX market? Does every country have its own currency? How many currencies are out there? Can you actually trade every currency? Do the prices of currencies move freely or are exchange rates "pegged" or "fixed"? For those floating exchange rates, how much do their prices fluctuate? We have a great deal to talk about.

Which currencies are important? The following list is not meant to slight any country (or any country's currency) as unimportant or insignificant, but is simply intended to identify those currencies that account for

the vast majority of foreign exchange transactions and with which we shall spend most of our time. These currencies are

The United States Dollar

The Euro

The Japanese Yen

The Great Britain Pound

The Swiss Franc

Of course, Canadian Dollars, Australian Dollars, Swedish Krona, Brazilian Real, South African Rand, New Zealand Dollars, Mexican Pesos, Thai Baht, etc. trade hands every day, but in total they do not come close to accounting for the volume of trade involving any of the “big five” mentioned.

The British Pound goes by other names: the English Pound (perhaps meant to distinguish it from the Scottish Pound which, until relatively recently, for the one Pound denomination, appeared as a paper note as opposed to its southern relative, which, in that face amount, circulates only as a coin). The Great Britain Pound is also known as the Pound Sterling or, more simply, Sterling. This is one of the things you have to get used to in FX; there are a lot of nicknames floating around and you need to be able to speak the language. When quoting the exchange rate between British Pounds and U.S. Dollars, it is most commonly referred to as “Cable” in the professional market and, while its origins may be slightly obscure, it is probably easiest to keep this in mind by thinking of the transatlantic cable (which joins the U.S. and the U.K.). But is it quoted as Pounds per Dollar or Dollars per Pound? We return to that in Chapter 5.

As far as the identification of currencies and their quotation, a variety of conventions are employed in the financial press and by various institutions around the world (many of them undoubtedly and utterly confusing). For this reason, in this book, we will stick to the International Standards Organization Codes (ISO Codes), which are generally universally employed in the interbank or over-the-counter (OTC) market. ISO Codes use three letters to identify a currency. Usually, the first two letters refer to the country of origin and the third letter refers to the name of the primary currency unit. Therefore,



FIGURE 1.3 Ten Dollar Bill

USD = United States Dollar

See Figure 1.3.

The International Monetary Fund (IMF), contrarily, for example, uses the identification label: US\$ or US \$.

GBP = Great Britain Pound (United Kingdom Pound Sterling)

As a unit of currency, the term “Pound” originated from the value of a troy Pound of high quality silver known as “sterling silver.” (See Figure 1.4.)



FIGURE 1.4 Ten Pound Note



FIGURE 1.5 One Thousand Yen Note

JPY = Japanese Yen

The word “Yen” derives from the Japanese term meaning “round,” presumably used to refer to the gold coin of that shape which was first introduced in 1870. (Similarly, the Chinese currency is sometimes referred to as the “Yuan,” which also translates as “round”—having first been introduced as a silver coin in the nineteenth century; the Yuan is also referred to as the “Renminbi,” which translates as “the people’s currency”). See Figure 1.5.

In the *Financial Times* (of London), GBP appears as “£” and JPY is identified using the symbol “¥”.

CHF = Swiss Franc

What about CHF? Where does this come from? The official name for Switzerland is “Confederation Helvetica” (a Confederation of “Cantons,” one of the founding constituents of which was Schwyz). Depending on where you are in this nation, an inhabitant of Switzerland may identify their country as Schweiz (if German-speaking) or Suisse (if French-speaking) or Svizzera (if Italian-speaking) or possibly even the Swiss Confederation (in English). One of the appealing aspects of using the Latin name, like many other things in Switzerland, is that it is neutral; it does not require the choice of any one of the primary languages spoken in that country.⁶ See Figure 1.6.



FIGURE 1.6 Ten Swiss Franc Note

Also in the London *Financial Times* (and elsewhere), Swiss Francs are denoted “SFr.”

EUR = Euro

What is EUR? EUR refers to the currency of the EuroZone (the combined countries that use the Euro as their money). (See Figure 1.7.) This



FIGURE 1.7 Ten Euro Note

is obviously an exception to the convention previously indicated where, with XYZ, XY indicates the country and Z the name of the currency. Over the years, I have said that if someone were to write *The Foreign Exchange Rule Book*—something far more ambitious than we have attempted here—then it would be a really fat book, the reason being there are always exceptions to the rule in foreign exchange.

Of course, almost every other country has its own currency. What would you guess is the ISO code for Canadian Dollar? Right, CAD. How about Mexican Peso? Of course, MXP sounds reasonable, but it is identified as MXN. Why? It refers to the Mexican Nuevo Peso (the New Peso) and so actually does, in a not-so-obvious way, follow the rule. Having seen it, one can probably remember that KRW is used for the South Korean Won, but may find it a bit tougher to remember SEK for Swedish Krona. We have compiled a fairly exhaustive (and at the time of publication, up to date) list of currencies in the appendix to this chapter (including legacy currencies that you may run into if you are reading any older books or journal articles).

For those who may want to follow the foreign exchange markets in the press, there are a number of sources of information that might prove helpful. The *Wall Street Journal* regularly publishes a table identifying the value of the (U.S.) Dollar against many of the world's currencies. (See Figure 1.8.) The *Journal* also publishes a daily matrix of reciprocal foreign exchange prices for the most important (“key”) currencies. (See Figure 1.9.)

Moreover, the *Financial Times* publishes FX rates showing both the European and American perspectives. (See Figure 1.10.)

Finally, a number of news services, such as Bloomberg, offer FX quotes; the accuracy, frequency of updating, and other measures of informational quality may depend on the level of service to which you subscribe. (See Figures 1.11 and 1.12.)

SOME INTERESTING QUESTIONS

Having identified the most important currencies (USD, EUR, JPY, GBP, and CHF) and recognizing these as important because they are acknowledged as constituting the bulk of the trade in the FX market (and are those with which we spend most of our time in this book), we can return and answer some of our earlier questions.

Currencies

U.S. dollar foreign-exchange rates in late New York trading

Country/currency	Friday		US\$ against each currency Last Year-to-date		Country/currency	Friday		US\$ against each currency Last Year-to-date	
	In US\$	Per US\$				In US\$	Per US\$		
Argentina peso-a	0.3438	2.9087	...	-2.2%	Mexico peso-a	0.0930	10.7573	-0.7%	-3.4%
Australia dollar	0.7627	1.3111	-0.7%	2.6	New Zealand dollar	0.6920	1.4451	-0.6	3.8
Bahrain dinar	2.6525	0.3770	...	...	Norway krone	0.1527	6.5488	1.1	7.9
Brazil real	0.4484	2.2302	-1.5	-16.0	Pakistan rupee	0.0168	59.702	-0.2	0.5
Canada dollar	0.8603	1.1624	-0.8	-3.1	Peru new sol	0.2991	3.3434	0.9	2.0
1-month forward	0.8610	1.1614	-0.8	-3.2	Philippines peso	0.0178	56.085	-0.3	-0.1
3-months forward	0.8626	1.1593	-0.8	-3.4	Poland zloty	0.3066	3.2616	1.5	8.3
6-months forward	0.8648	1.1563	-0.8	-3.6	Russia ruble-d	0.03508	28.506	0.1	2.9
Chile peso	0.001888	529.66	-1.5	-4.7	Saudi Arabia riyal	0.2665	3.7523	...	...
China yuan	0.1236	8.0922	0.1	-2.2	Singapore dollar	0.5910	1.6920	0.4	3.7
Colombia peso	0.0004372	2287.28	-0.1	-2.8	Slovakia koruna	0.03096	32.2997	0.7	13.1
Czech. Rep. koruna-b	0.0406	24.625	0.7	10.0	South Africa rand	0.1572	6.3613	-0.2	12.3
Denmark krone	0.1611	6.2073	0.2	13.2	South Korea won	0.0009583	1043.51	1.3	0.8
Ecuador US dollar	1	1	...	...	Sweden krona	0.1290	7.7519	-0.5	16.7
Egypt pound-a	0.1736	5.7600	...	-5.1	Switzerland franc	0.7726	1.2943	0.2	13.5
Euro area euro	1.2021	0.8319	0.2	12.9	1-month forward	0.7746	1.2910	0.2	13.4
Hong Kong dollar	0.1289	7.7574	...	-0.2	3-months forward	0.7790	1.2837	0.2	13.1
Hungary forint	0.004814	207.73	0.8	14.9	6-months forward	0.7857	1.2728	0.1	12.8
India rupee	0.0228	43.956	0.2	1.6	Taiwan dollar	0.03013	33.190	...	4.4
Indonesia rupiah	0.0000971	10299	0.7	10.9	Thailand baht	0.02436	41.051	-0.1	5.6
Israel shekel	0.2176	4.5956	-0.1	6.4	Turkey new lira-d	0.7427	1.3465	-0.2	-0.4
Japan yen	0.008809	113.52	1.0	10.9	U.K. poundsterling	1.7638	0.5670	0.8	8.8
1-month forward	0.008838	113.15	1.0	10.7	1-month forward	1.7628	0.5673	0.8	8.6
3-months forward	0.008900	112.36	0.9	10.4	3-months forward	1.7618	0.5676	0.8	8.3
6-months forward	0.008997	111.15	0.9	10.0	6-months forward	1.7618	0.5676	0.7	7.8
Jordan dinar	1.4100	0.7092	0.1	...	United Arab Emirates dirham	0.2723	3.6724	...	...
Kuwait dinar	3.4247	0.2920	...	-0.9	Uruguay peso-e	0.0415	24.096	0.2	-8.7
Lebanon pound	0.0006651	1503.53	...	-0.7	Venezuela bolivar	0.000466	2145.92	...	11.8
Malaysia ringgit-c	0.2653	3.7693	...	-0.8	SDR-f	1.4495	0.6899	0.5	6.8
Malta lira	2.8000	0.3571	1.4	11.6					

a-floating rate b-commercial rate c-government rate d-Russian Central Bank rate e-financial f-Special Drawing Rights (SDR); from the International Monetary Fund; based on exchange rates for U.S., British, and Japanese currencies.

Note: Based on trading among banks in amounts of \$1 million and more, as quoted at 4 P.M. ET by Reuters.

FIGURE 1.8 WSJ World Value Currency Table

Source: Wall Street Journal. © 2006 Reuters. Reprinted with permission from Reuters.

Key Currency Cross Rates							Late New York Trading Wednesday, September 28, 2005		
	Dollar	Euro	Pound	SFranc	Peso	Yen	CdnDlr		
Canada	1.1729	1.4119	2.0733	0.9072	1.0806	.01037	...		
Japan	113.15	136.21	200.01	87.520	10.424	...	96.470		
Mexico	10.8542	13.0663	19.187	8.3957	...	.09593	9.2543		
Switzerland	1.2928	1.5563	2.2853	...	.11911	.01143	1.1023		
U.K.	0.6570	.6810	...	.4376	.05212	.00500	.48232		
Euro	.83070	...	1.4684	.64255	.07653	.00734	.70826		
U.S.	...	1.2038	1.7677	.77350	.09213	.00884	.85260		

Source: Reuters

FIGURE 1.9 WSJ World Key Currency Cross Rates

Source: Wall Street Journal. © 2006 Reuters. Reprinted with permission from Reuters.

CURRENCIES										www.ft.com/currencydata										
Dep	Currency	DOLLAR			EURO			POUND			Currency	DOLLAR			EURO			POUND		
29 Sep		Closing	Day's	Change	Closing	Day's	Change	Closing	Day's	Change		Closing	Day's	Change	Closing	Day's	Change	Closing	Day's	Change
	Argentina (Peso)	2.9162	+0.0025	3.5029	+0.0039	5.1363	+0.0040	Three Month	56.58	-0.0010	68.2862	+0.0252	99.5379	+0.0034						
	Australia (A\$)	1.3173	-0.0054	1.5822	-0.0061	2.3200	-0.0098	One Year	58.24	-0.0080	71.4032	-0.0033	102.55	+0.0290						
	One Month	-	-	1.5869	-0.0061	2.322	-0.0099	Poland (Zloty)	3.2517	-0.0101	3.9057	-0.0113	5.7270	-0.0184						
	One Year	-	-	1.6257	-0.0068	2.3491	-0.0093	One Month	3.2536	-0.0101	3.9137	-0.0112	5.7277	-0.0183						
	Bahrain (Dinar)	0.3770	-	0.4529	+0.0001	0.6640	-	One Year	3.2475	-0.0092	3.9815	-0.0110	5.1783	-0.0140						
	Bolivia (Boliviano)	8.0375	-	9.6543	+0.0024	14.1561	-0.0011	Romania (Leu)	2.9576	+0.0043	3.5525	+0.0060	5.2091	+0.0017						
	Brazil (R\$)	2.2340	-0.0155	2.6834	-0.0180	3.9346	-0.0277	Russia (Ruble)	28.5400	-0.0050	34.2088	+0.0075	50.7660	-0.0132						
	One Month	1.1715	-0.0101	1.4072	-0.0117	2.0633	-0.0179	Saudi Arabia (SR)	3.7521	-	4.5068	-0.0004	6.6083	-0.0006						
	One Year	1.2305	-0.0101	1.4080	-0.0118	2.0604	-0.0179	One Month	3.754	-	4.5158	-0.0013	6.6079	-0.0013						
	Three Month	1.1685	-0.0100	1.4103	-0.0116	2.0556	-0.0177	One Year	3.7633	+0.0005	4.6138	+0.0010	6.6074	+0.0025						
	One Year	1.1599	-0.0101	1.4220	-0.0122	2.0423	-0.0169	Singapore (S\$)	1.6907	-0.0031	2.0308	-0.0032	2.9777	-0.0057						
	Chile (Peso)	534.750	-3.9000	642.315	-4.5200	941.829	-6.9490	One Month	1.6891	-0.0036	2.0318	-0.0038	2.9721	-0.0066						
	Colombia (Peso)	2291.55	-2.30	2752.50	-2.07	4035.99	-4.40	One Year	1.6597	-0.0052	2.0348	-0.0062	2.9224	-0.0080						
	Costa Rica (Colon)	487.300	+0.1500	585.320	+0.3260	858.757	+0.1910	Slovakia (Koruna)	32.3190	+0.0010	38.8200	+0.0110	56.9219	+0.0029						
	Czech Rep. (Koruna)	24.6139	+0.0604	29.9560	+0.0800	43.3513	+0.1029	One Month	32.2878	+0.0010	38.8400	+0.0118	56.8344	-0.0017						
	One Month	24.5709	+0.0604	29.9571	+0.0800	43.3508	+0.1029	One Year	31.7183	+0.0025	38.9788	+0.0068	55.9817	+0.0274						
	One Year	24.0339	+0.0579	29.4660	+0.0736	42.3194	+0.1194	Slovenia (Tolar)	199.335	-0.0400	239.431	-0.0110	351.079	-0.0010						
	Denmark (DKK)	6.2129	-0.0013	7.4627	+0.0003	10.9425	-0.0033	South Africa (R)	6.3838	-0.0487	7.6679	-0.0566	11.2434	-0.0868						
	One Month	6.204	-0.0013	7.4629	+0.0003	10.9205	-0.0032	Three Month	6.4006	-0.0494	7.6995	-0.0573	11.2656	-0.0877						
	Three Month	6.0887	-0.0001	7.4648	+0.0004	10.721	-0.0038	One Year	6.4337	-0.0492	7.7647	-0.0568	11.3163	-0.0866						
	One Year	6.0887	-0.0001	7.4648	+0.0004	10.721	-0.0038	South Korea (Won)	1037.50	-	1246.19	+0.31	1827.30	-0.860						
	Egypt (Egypt £)	5.7600	-0.0025	6.9187	-0.0012	10.1448	-0.0053	One Month	1037.50	-0.05	1247.74	+0.28	1825.81	-0.70						
	Estonia (Kroon)	13.0262	-0.0033	15.6465	-	22.9425	-0.0077	Three Month	1034.50	-0.05	1251.49	+0.50	1824.25	+0.12						
	Hong Kong (HK\$)	7.7594	-0.0004	9.3502	+0.0019	13.6662	-0.0018	One Year	1037.50	-0.04	1268.31	-0.38	1821.57	+0.04						
	One Month	7.761	-0.0003	9.3559	+0.0022	13.6611	-0.0014	Sweden (SKr)	7.7737	-0.0420	9.3374	-0.0481	13.6914	-0.0752						
	Three Month	7.7614	-	9.3672	+0.0034	13.6542	+0.0004	One Month	7.7585	-0.0470	9.3330	-0.0480	13.6569	-0.0748						
	One Year	7.7519	-0.0004	9.3639	+0.0034	13.6496	+0.0049	Three Month	7.7258	-0.0426	9.3048	-0.0482	13.5915	-0.0758						
	Hungary (Forint)	208.794	-0.6170	248.390	-0.400	364.215	-1.2000	One Year	7.5866	-0.0381	9.3013	-0.0459	13.5586	-0.0717						
	One Month	207.174	-0.6370	249.150	-0.7001	364.675	-1.1470	Switzerland (Sfr)	1.2972	-0.0007	1.5581	+0.0012	2.2845	+0.0069						
	One Year	210.119	-0.6820	257.5088	-0.8256	369.98	-1.0700	Three Month	1.2937	-0.0006	1.5562	+0.0012	2.2771	+0.0010						
	India (Ru)	43.9650	-0.0350	52.8066	-0.0789	77.4334	-0.0682	One Year	1.2865	-0.0006	1.5506	+0.0012	2.2863	+0.0068						
	One Month	44.805	-0.0275	52.9249	-0.0188	77.4695	-0.0532	Three Month	1.2865	-0.0006	1.5506	+0.0012	2.2863	+0.0068						
	One Year	44.2775	-0.0100	54.2849	-0.0703	77.9647	+0.0143	One Year	1.2545	-0.0010	1.5380	+0.0014	2.2088	+0.0026						
	Indonesia (Rupiah)	10305.00	-70.00	12377.90	-80.90	18149.70	-124.80	Taiwan (T\$)	33.2165	-0.0645	39.8980	-0.0675	58.5026	-0.1186						
	One Month	-	-	12398.10	-80.85	18139.31	-124.33	One Month	33.1665	-0.0665	39.8969	-0.0572	58.3811	-0.1032						
	One Year	-	-	12384.10	-84.05	18145.24	-115.77	Three Month	32.4215	-0.0650	39.7483	-0.0723	57.0884	-0.0859						
	Iran (Rial)	9035.00	-	10852.40	+2.70	15912.90	-1.30	One Year	41.1025	-0.1000	49.3253	-0.1077	72.3257	-0.1823						
	Israel (Shek)	4.5970	+0.0140	5.5217	+0.0182	8.0965	+0.0240	One Month	41.125	-0.1100	49.4705	-0.1072	72.3899	-0.182						
	Japan (Y)	113.095	-0.2700	135.844	-0.2900	199.189	-0.4920	One Year	41.154	-0.1000	50.9287	-0.1179	73.1444	-0.1461						
	One Month	112.715	-0.2800	135.5839	-0.3039	198.399	-0.5120	Tunisia (Dinar)	1.2419	+0.0003	1.6118	+0.0007	2.3534	+0.0003						
	Three Month	111.93	-0.3050	135.0902	-0.3185	198.914	-0.5320	Turkey (Lira)	1.3545	+0.0043	1.6270	+0.0055	2.3057	+0.0073						
	One Year	108.38	-0.2750	132.8738	-0.3279	190.834	-0.4120	U A E (Dirham)	3.6721	-0.0007	4.4108	-0.0003	6.4675	-0.0017						
	Kenya (Shilling)	74.0000	+0.9000	88.8851	+1.1029	130.333	+1.5750	One Month	3.6725	-0.0009	4.4178	-0.0001	6.4646	-0.0019						
	Kuwait (Dinar)	0.2520	-	0.3508	+0.0001	0.5144	-	One Year	3.6752	-0.0006	4.5058	-0.0004	6.4714	-0.0017						
	One Month	0.292	-	0.3514	+0.0002	0.5142	+0.0001	UK (0.5678)* (Euro)	1.2612	-0.0002	0.6820	-0.0002	-	-						
	One Year	0.2925	+0.0003	0.3508	+0.0006	0.5153	+0.0009	Three Month	1.2592	-	0.6860	-0.0002	-	-						
	Malaysia (M\$)	3.7895	-0.0002	4.5278	+0.0009	6.6391	-0.0008	One Year	1.2608	-0.0002	0.6863	-0.0002	-	-						
	Mexico (New Peso)	10.8887	-0.0476	12.9830	-0.0538	19.0369	-0.0854	Three Month	1.2608	-0.0002	0.6863	-0.0002	-	-						
	One Month	10.8625	-0.0480	13.0668	-0.0543	19.1206	-0.0859	Unquay (Peso)	23.9250	+0.0500	28.7375	+0.0672	42.1379	+0.0845						
	Three Month	10.9567	-0.0476	13.2236	-0.0528	19.2755	-0.0835	USA (\$)	-	-	1.2012	+0.0003	1.7612	-0.0002						
	One Year	11.1312	-0.0458	13.8678	-0.0659	19.917	-0.0884	One Month	-	-	1.2029	+0.0003	1.7602	-0.0002						
	New Zealand (NZ\$)	1.4488	-0.0139	1.7402	-0.0164	2.5516	-0.0248	Three Month	-	-	1.2069	+0.0004	1.7592	-0.0002						
	One Month	-	-	1.7475	-0.0175	2.5572	-0.0247	One Year	-	-	1.2260	+0.0001	1.7608	-0.0007						
	One Year	-	-	1.8261	-0.0170	2.6227	-0.0235	Venezuela † (Bolivar)	2646.22	-4.91	3178.51	-5.10	4660.65	-9.05						
	Nigeria (Naira)	130.850	-0.1000	157.171	-0.0800	230.4														

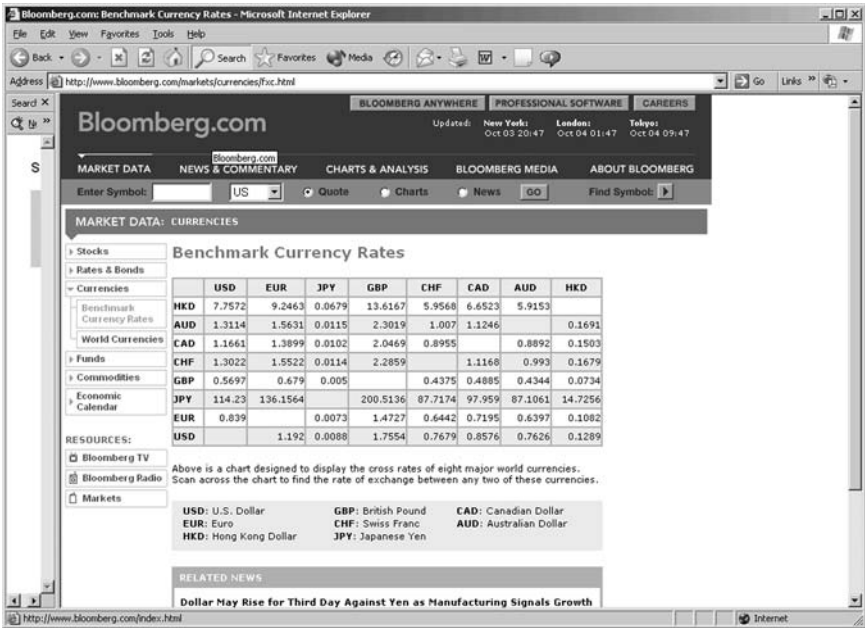


FIGURE 1.11 FX Page

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FIGURE 1.12 Exchange Rates by Region: Major Currencies

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Does Every Country Have Its Own Currency?

No. Because of the lack of confidence in a currency (for example, because a government may have indulged in the excessive printing and spending of their national currency, effectively debasing their money and often leading to hyperinflation), some countries (such as Ecuador, starting on September 11, 2000) abandoned their currency (which, in this instance, was called the “Sucre”) and adopted the money of another country (in Ecuador’s case, the United States Dollar) as their official currency. Other examples include East Timor and El Salvador. Panama has used the U.S. Dollar as its official currency since 1904. Although the use of one country’s money by another country could involve any of the more stable currencies, this situation has typically come to be called “dollarization” because of the frequency of relying on the U.S. Dollar as the external currency of choice.

Other countries, instead of switching from their own money to that of another nation, have simply “pegged” their currency to the U.S. Dollar, such as Bermuda, Bahamas, and Hong Kong (successfully) and Argentina (unsuccessfully). Having said that, the vast majority of countries have their own currency, with the exception of (1) the EuroZone, (2) a group of island nations in the Caribbean, (3) some formerly-French-colonial Central African countries, and (4) some former United Nations (UN) and/or U.S. territories (such as Palau, the Federated States of Micronesia, and the Marshall Islands).

How Many Currencies Are There?

There are slightly more than 200 currencies used around the world today including money that was issued and may still have value (even though it has been officially retired) such as some of the legacy Euro currencies (e.g., German Deutsche Marks, Italian Lira, Spanish Peseta, French Francs). As mentioned above, most countries have their own currency. While the UN recognizes 191 countries as Member States of the United Nations, their list is not exhaustive (as there are countries that the UN simply does not recognize) and the number of countries is continually changing. Some 30 new countries have emerged in the past 15 years alone.⁷ And there are even some examples, such as Taiwan and East Timor, whose status as an independent country is sometimes the subject of debate.⁸

For the most part, currency today takes the form of either notes or coins (when other than maintained in electronic form). The characteristics that are viewed as advantageous in a country’s money include porta-

bility, durability, divisibility, ease of creation (if not abused by the government), and properties of recognition/verification (the other side of that coin being difficulty in counterfeiting).⁹ Paper currency was first issued in China over a thousand years ago serving, among other purposes, as a convenient vehicle for making wage payments to the military. Marco Polo, in the late thirteenth century, wrote of the wonders of this invention. Paper money in Europe first appeared in Sweden in the seventeenth century. In both China and Sweden, the paper notes were backed by, and convertible into, precious metal at the discretion of the holder. In Canada, also in the late seventeenth century, because of a lack of coins and precious metal, the French colonial government issued playing card money (actual playing cards cut into quarters on which had been added hand-inscribed monetary denominations, the signature of the colonial governor, and the seal of the treasurer). It is interesting that the phrase “paper money” continues to be used even though, in many cases, it is technically inappropriate. U.S. notes are essentially “cloth” (being made of about 25% linen and 75% cotton and laced with colored fibers) while Australian bank notes are literally plastic (being made of a synthetic polymer).

Most countries take great pride in their currency, gracing the notes and coins with historical figures and political leaders of singular significance, local landmarks, native fauna and flora, and other motifs and designs that reflect national identity and patriotic pride.¹⁰ (See Figure 1.13.)



FIGURE 1.13 Notable Figures

It was for this reason (not the abdication of the ability to engage in autonomous monetary policy) that led many (including the author) to believe that the Euro—at the time, the proposed common currency for several of the most powerful economic countries in the world—would fail to become a reality. Interestingly, the Euro coins do allow for a degree of nationalism, as their backs (or “reverses,” to use the proper numismatic expression) display symbols idiosyncratic to the issuing country. (See Figure 1.14.)

Of course, merchants in France, for example, are required to honor (i.e., accept) German-stamped Euro.

Citizens of the United States may not be aware that, while U.S. currency is recognized and generally accepted around the world, it is also frequently ridiculed—for two reasons: the bills are all the same color (with recent advances only marginally tempering this criticism) and they are all the same size!

Can You Trade Every Currency?

No. Some countries limit or restrict trade in their money. When this occurs, the currency is said to be “controlled.” Currencies that fall into this cate-



FIGURE 1.14 The Euro Coins

gory include the Russian Ruble and the Chinese Renminbi or Yuan. Although there may be restrictions placed on the ownership and transport of a country's money, it sometimes is possible for one wishing to hedge against a change in the price of one of these currencies to enter into a contract (one example of which would be a nondeliverable forward or NDF, to be discussed later) in which payment (i.e., compensation) occurs in another, unrestricted currency.

There have also been occasions when countries have wished or sought to discourage trading in their currency. In 1987, an FX trader in New York named Andy Krieger aggressively sold (or shorted, i.e., bet against) the New Zealand Dollar or "Kiwi" as it's known to foreign exchange market professionals. Presumably, Krieger sold, "more Kiwis than the entire money supply of New Zealand." It's further been alleged that "New Zealand's finance minister telephoned Bankers Trust (his employer) to complain and beg for mercy."¹¹

Central banks have available a couple of tools that they can employ to discourage speculation in their currency such as raising the overnight rate of interest on their currency to 500%, and, although trading is nominally permitted, there are some significant reasons to avoid doing so and some clear dangers in risking one's financial capital, essentially betting against a government.

Currency Pegs, Bands, Intervention, and Floating Exchange Rates

In the past, some countries have decided to fix or "peg" the exchange rate between their currency and that of another country. A relatively recent example was Argentina, via their Currency Board (an institution through which every Argentinian Peso was presumably backed by the possession of one U.S. Dollar on the part of the Central Bank of Argentina), fixing the exchange rate at a ratio of one-to-one; this system was in place from 1991 until 2002. An important feature of such a regime is the convertibility of money and the willingness on the part of the government to actively enforce this fixed conversion rate of exchange.

On January 6, 2002, the system broke down and the Argentinian Peso devalued and floated—from 1 Peso per Dollar to over 3 Pesos per Dollar in April 2002—spiking at around 3.87 Pesos per Dollar in June of that year. Since then, the exchange rate has fluctuated around 2.90 Argentinian Pesos per Dollar. While there are real economic implications from the collapse of

a currency board, this fixed exchange rate system lasted successfully for 10 years and had been acknowledged as having brought economic benefits and financial confidence to a country that had a less-than-stellar prior track record of currency stability and a history of periodic hyperinflation. In recent history, Hong Kong, Bulgaria, and Bosnia have all had currency boards.

Other currencies are formally pegged without the seemingly negative consequences that have recently attended the Argentinian Peso. For example, from 1955 through 1975, the Mexican Peso was maintained at a fixed level relative to the U.S. Dollar. Furthermore, starting in 1983, Hong Kong also pegged its currency to the U.S. Dollar (at a rate of 7.80 Hong Kong Dollar to USD 1). Until just recently, the Malaysian Ringgit had been fixed at 3.80 Ringgit per Dollar (starting in 1997). The U.S. Dollar is not the only currency to which others are or have been tied. After becoming free of the former Soviet Union, Estonia, in 1991, chose to link its new currency, the Kroon, to the German Deutsche Mark. Some countries have been less adamant on insisting that the exchange rate be a single number, but rather simply required that its currency move within a (typically tight) range or band about a central level. We will see this idea later in our discussion of the Exchange Rate Mechanism between the major European currencies in Chapter 4.

Still other countries informally peg their currency. The People's Republic of China, from the mid-1990s through the middle of 2005, systematically kept the exchange rate at right around 8.28 Renminbi (or Yuan) per Dollar, despite the repeated protestations of the United States (in particular, as reflected in the statements of the U.S. Secretary of the Treasury John W. Snow, starting in September 2003). In July 2005, in what was considered a significant event in the world of foreign exchange, China allowed the exchange rate to drift down toward 8 Yuan (or Renminbi) per Dollar and some other pegged Asian currencies followed suit. Since that time, the number of Yuan per Dollar has slowly slipped further.

Many of the countries that hope to join the Euro community in the near future either have pegged their currency to the Euro or have decided to maintain the value of their currency within a tight band until their conversion to the Euro has been completed.

Finally, some countries, usually through their central banks, have occasionally directly intervened in the foreign exchange markets, that is, traded with the intention of either moving the exchange rate in a specific direction or sometimes with the goal of keeping it from moving. This is just one additional way in which the foreign exchange market differs

from the markets for other financial assets, which, with the exception of sovereign debt markets, do not generally experience direct governmental involvement on such a scale.¹² While most exchange rates today are determined by market forces, intervention by central banks may serve to generate, mitigate, accelerate, or truncate directional movements in their currency. The expression “dirty float” has been used to refer to a nominally market-determined exchange rate while recognizing that it is not purely or freely floating due to periodic or discretionary sovereign or governmental interference.

As a rule, most economists believe that fixing prices usually results in some sort of market inefficiency. We return later to discuss the pros and cons of fixed versus floating exchange rate regimes when we look at the economics of exchange rate determination in Chapter 11.

Before going into the specifics of transacting in foreign exchange (starting with the spot market in Chapter 5), we would like to provide a framework for thinking about markets in general (in Chapter 2) and then give some color and perspective on the historical development of the global currency markets (in Chapter 4) that has resulted in the framework, conventions, and institutions that we have today.

APPENDIX: Countries, Currencies, and ISO Codes

ISO Codes (including legacy currencies and countries that share a common currency)

Country	Currency Used/Name	ISO Code	(Numeric Code)
A			
Afghanistan	Afghani	AFA	(971)
Albania	Lek	ALL	(008)
Algeria	Algerian Dinar	DZD	(012)
American Samoa	U.S. Dollar	USD	(840)
Andorra	Euro	EUR	(978)
	(formerly Andorran Franc)	ADF	
	(formerly Andorran Peseta)	ADP	
Angola	New Kwanza	AON	(973)
Anguilla	East Caribbean Dollar	XCD	(951)

(Continued)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Antarctica	(No universal currency)		
Antigua and Barbuda	East Caribbean Dollar	XCD	(951)
Argentina	Argentinean or Argentine Peso	ARS	(032)
		(ARP, ARG)	
Armenia	Armenian Dram	AMD	(051)
Aruba	Aruban Guilder/Florin	AWG	(533)
Australia	Australian Dollar	AUD	(036)
Austria	Euro	EUR	(978)
	(formerly Austrian Schilling)	ATS	
Azerbaijan	Azerbaijani Manat	AZM	(031)
B			
Bahamas	Bahamian Dollar	BSD	(044)
Bahrain	Bahraini Dinar	BHD	(048)
Bangladesh	Taka	BDT	(050)
Barbados	Barbados Dollar	BBD	(052)
Belarus	Belarussian Ruble	BYR	(974)
Belgium	Euro	EUR	(978)
	(formerly Belgium Franc)	BEF	
Belize	Belize Dollar	BZD	(084)
Benin	Central French African Franc	XOF	(952)
Bermuda	Bermudian (Bermuda) Dollar	BMD	(060)
Bhutan	Indian Rupee	BTN	(064)
Bolivia	Boliviano	BOB	(068)
	Mvdol	BOV	(984)
Bosnia and Herzegovina	Convertible Marks/Dinar	BAM	(977)
Botswana	Pula	BWP	(072)
Bouvet Island	Norwegian Krone	NOK	(578)
Brazil	Brazilian Real	BRL	(986)
Britain (see United Kingdom)	Great Britain Pound	GBP	(826)
British Indian Ocean Terr.	US Dollar	USD	(840)
Brunei Darussalam	Brunei Dollar	BND	(096)
Bulgaria	Bulgarian Lev	BGN	(975)
Bundesrepublik Deutschland (see Germany)			

Country	Currency Used/Name	ISO Code	(Numeric Code)
Burkina Faso	Central French African Franc	XOF	(952)
Burma (see Myanmar)			
Burundi	Burundi Franc	BIF	(108)
C			
Cambodia	Riel	KHR	(116)
Cameroon	Central French African Franc	XAF	(950)
Canada	Canadian Dollar	CAD	(124)
Cape Verde	Escudo Caboverdiano	CVE	(132)
Cayman Islands	Cayman Islands Dollar	KYD	(136)
Central African Republic	Central French African Franc	XAF	(950)
Chad	Central French African Franc	XAF	(950)
Chile	Chilean Peso	CLP	(152)
	Unidades de Formento	CLF	(990)
China	Renminbi Yuan	CNY (RMB)	(156)
Christmas Island	Australian Dollar	AUD	(036)
Cocos (Keeling) Islands	Australian Dollar	AUD	(036)
Colombia	Colombian Peso	COP	(170)
	Unidad de Valor Real	COU	(970)
Comoros	Comorian Franc	KMF	(174)
Confederation Helvetica	C.H. Franc/Swiss Franc	CHF	(756)
Congo	Central French African Franc	XAF	(950)
Democratic Republic of Congo	Franc Congolais/New Zaire	CDF	(976)
Cook Islands	New Zealand Dollar	NZD	(554)
Costa Rica	Costa Rican Colon	CRC	(188)
Cote D'Ivoire (Ivory Coast)	Central French African Franc	XOF	(952)
Croatia	Croatian Kuna	HRK	(191)
Cuba	Cuban Peso	CUP	(192)

(Continued)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Cyprus	Cyprus Pound (in a holding pattern for the Euro)	CYP	(196)
Czech Republic	Czech Koruna (in a holding pattern for the Euro)	CZK	(203)
D			
Denmark	Danish Krone	DKK	(208)
Deutscheland	Euro (formerly Deutsche Mark)	EUR DEM	(978)
Djibouti	Djibouti Franc	DJF	(262)
Dominica	East Caribbean Dollar	XCD	(951)
Dominican Republic	Dominican (Republic) Peso	DOP	(214)
E			
Ecuador	US Dollar (formerly Ecuador Sucre)	USD ECS	(840)
Egypt	Egyptian Pound	EGP	(818)
El Salvador	El Salvador Colon	SVC	(222)
	US Dollar	USD	(840)
England (see United Kingdom)	Great Britain Pound	GBP	(826)
Equatorial Guinea	Central French African Franc	XAF	(950)
Eritrea	Nakfa	ERN	(232)
Estonia	Kroon (in a holding pattern for the Euro)	EEK	(233)
Ethiopia	Ethiopian Birr	ETB	(230)
Europe/EuroZone	Euro	EUR	(978)
F			
Falkland Islands	Falkland Islands Pound	FKP	(238)
Faroe Islands	Danish Krone	DKK	(208)
Federated States of Micronesia (see Micronesia)			
Fiji	Fiji Dollar	FJD	(242)
Finland	Euro (formerly Finnish Markka)	EUR FIM	(978)

Country	Currency Used/Name	ISO Code	(Numeric Code)
France	Euro (formerly French Franc)	EUR FRF	(978)
French Guiana	Euro	EUR	(978)
French Polynesia	CFP Franc	XAF	(953)
French Southern Territory	Euro	EUR	(978)
G			
Gabon	Central French African Franc	XAF	(950)
Gambia	Dalasi	GMD	(270)
Georgia	Lari	GEL	(981)
Germany	Euro (formerly Deutsche Mark)	EUR DEM	(978)
Ghana	Cedi	GHC	(288)
Gibraltar	Gibraltar Pound	GIP	(292)
Great Britain (see United Kingdom)	Great Britain Pound	GBP	(826)
Greece	Euro (formerly Greek Drachma)	EUR GRD	(978)
Greenland	Danish Krone	DKK	(208)
Grenada	East Caribbean Dollar	XCD	(951)
Guadeloupe	Euro	EUR	(978)
Guam	US Dollar	USD	(840)
Guatemala	Quetzal	GTQ	(320)
Guinea	Guinea Franc	GNF	(324)
Guinea-Bissau	Guinea-Bissau Peso Central French African Franc	GWP XOF	(624) (952)
Guyana	Guyanese Dollar	GYD	(328)
H			
Haiti	Gourde US Dollar	HTG USD	(332) (840)
Heard Islands and McDonald Islands	Australian Dollar	AUD	(036)
Hellas	Euro (formerly Greek Drachma)	EUR GRD	(978)

(Continued)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Holland (see Netherlands)	Euro (formerly Dutch Guilder)	EUR NLG	(978)
Honduras	Lempira	HNL	(340)
Hong Kong	Hong Kong Dollar	HKD	(344)
Hungary	Forint (in a holding pattern for the Euro)	HUF	(348)
I			
Iceland	Iceland Krona	ISK	(352)
India	Indian Rupee	INR	(356)
Indonesia	Rupiah	IDR	(360)
International Monetary Fund (IMF)	SDR	XDR	(960)
Iran, Islamic Republic of	Iranian Rial	IRR	(364)
Iraq	Iraqi Dinar	IQD	(368)
Ireland	Euro (formerly Irish Punt/Pound)	EUR IEP	(978)
Israel	New Israeli Sheqel (Shekel)	ILS	(376)
Italy	Euro (formerly Italian Lira)	EUR ITL	(978)
Ivory Coast	Central French African Franc	XOF	(952)
J			
Jamaica	Jamaican Dollar	JMD	(388)
Japan	Yen	JPY	(392)
Jordan	Jordanian Dinar	JOD	(400)
K			
Kazakhstan	Tenge	KZT	(398)
Kenya	Kenyan Shilling	KES	(404)
Kiribati	Australian Dollar	AUD	(036)
Korea, Democratic People's Republic of North	North Korean Won	KPW	(408)
Korea, Republic of	South Korean Won	KRW	(410)
Kuwait	Kuwaiti Dinar	KWD	(414)
Kyrgyzstan	Som	KGS	(417)

Country	Currency Used/Name	ISO Code	(Numeric Code)
L			
Laos, People's Democratic Republic of	Kip	LAK	(418)
Latvia	Latvian Lats (in a holding pattern for the Euro)	LVL	(428)
Lebanon	Lebanese Pound	LBP	(422)
Lesotho	Loti	LSL	(426)
	Rand	ZAR	(710)
Liberia	Liberian Dollar	LRD	(430)
Libyan Arab Jamahiriya	Libyan Dinar	LYD	(434)
Liechtenstein	C.H. Franc/Swiss Franc	CHF	(756)
Lithuania	Lithuanian Litas (in a holding pattern for the Euro)	LTL	(440)
Luxembourg	Euro (formerly Luxembourg Franc)	EUR LUF	(978)
M			
Macao	Pataca	MOP	(446)
Macedonia	Denar	MKD	(807)
Madagascar	Malagasy Franc Malagasy Ariary	MGF MGA	(450) (969)
Malawi	Kwacha	MWK	(454)
Malaysia	Malaysian Ringgit	MYR	(458)
Maldives	Rufiyaa	MVR	(462)
Mali	Central French African Franc	XOF	(952)
Malta	Maltese Lira (in a holding pattern for the Euro)	MTL	(470)
Malvinas	Falkland Islands Pound	FKP	(238)
Marshall Islands	US Dollar	USD	(840)
Martinique	Euro	EUR	(978)
Mauritania	Ouguiya	MRO	(478)
Mauritius	Mauritius Rupee	MUR	(480)
Mayotte	Euro	EUR	(978)
Mexico	Mexican (Nuevo) Peso Mexican Unidad de Inversion	MXN MXV	(484) (979)

(Continued)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Micronesia, Federated States of	US Dollar	USD	(840)
Moldova, Republic of	Moldovan Leu	MDL	(498)
Monaco	Euro	EUR	(978)
Mongolia	Tugrik	MNT	(496)
Montserrat	East Caribbean Dollar	XCD	(951)
Morocco	Moroccan Dirham	MAD	(504)
Mozambique	Meticais	MZM	(508)
Myanmar	Kyat	MMK	(104)
N			
Namibia	Namibian Dollar	NAD	(516)
	Rand	ZAR	(710)
Nauru	Australian Dollar	AUD	(036)
Nepal	Nepalese Rupee	NPR	(524)
Netherlands	Euro	EUR	(978)
	(formerly Dutch Guilder)	NLG	
Netherlands Antilles	Netherlands Antillian Guilder	ANG	(532)
New Caledonia	CFP Franc	XPF	(953)
New Zealand	New Zealand Dollar	NZD	(554)
Nicaragua	Cordoba Oro	NIO	(558)
Niger	Central French African Franc	XOF	(952)
Nigeria	Naira	NGN	(566)
Nippon	Japanese Yen	JPY	(392}
Niue	New Zealand Dollar	NZD	(554)
Norfolk Island	Australian Dollar	AUD	(036)
North Korea	North Korean Won	KPW	(408)
Northern Mariana Islands	US Dollar	USD	(840)
Norway	Norwegian Krone	NOK	(578)
O			
Oman	Omani Rial	OMR	(512)
P			
Pakistan	Pakistan Rupee	PKR	(586)
Palau	US Dollar	USD	(840)
Panama	Balboa	PAB	(590)
	US Dollar	USD	(840)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Papua New Guinea	Kina	PGK	(598)
Paraguay	Guarani	PYG	(600)
People's Republic of China	Renminbi Yuan	CNY	(156)
Peru	Nuevo Sol	PEN	(604)
Philippines	Philippine Peso	PHP	(608)
Pitcairn	New Zealand Dollar	NZD	(554)
Poland	Zloty (in a holding pattern for the Euro)	PLN	(985)
Portugal	Euro (formerly Portuguese Escudo)	EUR	(978)
Puerto Rico	US Dollar	USD	(840)
Q			
Qatar	Qatari Rial	QAR	(634)
R			
Reunion	Euro	EUR	(978)
Romania	Lei	ROL	(642)
Russian Federation	Russian Ruble	RUB	(643)
Rwanda	Rwanda Franc	RWF	(646)
S			
Saint Helena	Saint Helena Pound	SHP	(654)
Saint Kitts and Nevis	East Caribbean Dollar	XCD	(951)
Saint Lucia	East Caribbean Dollar	XCD	(951)
Saint Pierre and Miquelon	Euro	EUR	(978)
Saint Vincent and The Grenadines	East Caribbean Dollar	XCD	(951)
Samoa	Tala	WST	(882)
San Marino	Euro	EUR	(978)
Sao Tome and Principe	Dobra	STD	(678)
Saudi Arabia	Saudi Riyal	SAR	(682)
Senegal	Central French African Franc	XOF	(952)
Serbia and Montenegro	Serbian Dinar (in Serbia) Euro (in Montenegro)	CSD	(891)
Seychelles	Seychelles Rupee	SCR	(690)

(Continued)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Sierra Leone	Leone	SLL	(694)
Singapore	Singapore Dollar	SGD	(702)
Slovakia	Slovak Koruna (in a holding pattern for the Euro)	SKK	(703)
Slovenia	Tolar (in a holding pattern for the Euro)	SIT	(705)
Solomon Islands	Solomon Islands Dollar	SBD	(090)
Somalia	Somali Shilling	SOS	(706)
South Africa	Rand	ZAR	(710)
South Korea	South Korean Won	KRW	(410)
Spain	Euro (formerly Spanish Peseta)	EUR	(978)
Sri Lanka	Sri Lanka Rupee	ESP	(144)
Sudan	Sudanese Dinar	LKR	(736)
	Sudanese Pound	SDD	(736)
Suriname	Surinam Dollar	SDP	
	Suriname Guilder	SRD	(968)
Svalbard and Jan Mayen	Norwegian Krone	SRG	
Swaziland	Lilangeni	NOK	(578)
Sweden	Swedish Krona	SZL	(748)
Switzerland	Swiss Franc/C.H. Franc	SEK	(752)
	WIR Euro	CHF	(756)
	WIR Franc	CHE	(947)
Syrian Arab Republic	Syrian Pound	CHW	(948)
		SYP	(760)
T			
Taiwan	New Taiwan Dollar	TWD	(901)
Tajikistan	Somoni	TJS	(972)
Tanzania, United Republic of	Tanzanian Shilling	TZS	(834)
Thailand	Baht	THB	(764)
Timor-Leste	US Dollar	USD	(840)
Togo	Central French African Franc	XOF	(952)
Tokelau	New Zealand Dollar	NZD	(554)
Tonga	Pa'anga	TOP	(776)
Trinidad and Tobago	Trinidad and Tobago Dollar	TTD	(780)
Tunisia	Tunisian Dinar	TND	(788)
Turkey	Old Turkish Lira	TRL	(792)
	New Turkish Lira	TRY	(949)

Country	Currency Used/Name	ISO Code	(Numeric Code)
Turkmenistan	Manat	TMM	(795)
Turks and Caicos Islands	US Dollar	USD	(840)
Tuvalu	Australian Dollar	AUD	(036)
U			
Uganda	Uganda Shilling	UGS	(800)
Ukraine	Hryvnia	UAH	(980)
United Arab Emirates	UAE Dirham	AED	(784)
United Kingdom	Pound Sterling	GBP	(826)
United States	US Dollar	USD	(840)
	(Next Day Delivery "T + 1")	USN	(997)
	(Same Day Delivery "T + 0")	USS	(998)
United States Minor Outlying Islands	US Dollar	USD	(840)
Uruguay	Uruguayan Peso	UYP	(858)
Uzbekistan	Uzbekistan Sum	UZS	(860)
V			
Vanuatu	Vatu	VUV	(548)
Vatican City	Euro	EUR	(978)
Venezuela	Bolivar	VEB	(862)
Viet Nam	Dong	VND	(704)
Virgin Islands (British)	US Dollar	USD	(840)
Virgin Islands (US)	US Dollar	USD	(840)
W			
Wallis and Futuna	CFP Franc	XPF	(953)
Western Sahara	Moroccan Dirham	MAD	(504)
Y			
Yemen	Yemeni Rial	YER	(886)
Yugoslavia	Yugoslav Dinar	YUN	
Z			
Zambia	Kwacha	ZMK	(894)
Zimbabwe	Zimbabwe Dollar	ZWD	(716)

Precious Metals

Gold	(AU from Latin “aurum” for “gold”)	XAU	(959)
Palladium	(from Greek “Pallas”)	XPD	(964)
Platinum	(from Spanish “platina” for “little silver”)	XPT	(962)
Silver	(AG from Latin “argentum” for “silver”)	XAG	(961)

Other Miscellaneous ISO Codes

European Monetary Unit (E.M.U.-6)	XBB	(956)
European Unit of Account 9 (E.U.A.-9)	XBC	(957)
European Unit of Account 17 (E.U.A.-17)	XBD	(958)
European Bond Markets Composite Unit (EURCO)	XBA	(955)
Transactions where no currency is involved	XXX	(999)
Reserved for testing purposes	XTS	(963)
Special Settlement Currencies:		
UIC—Franc	XFU	
Gold—Franc	XFO	