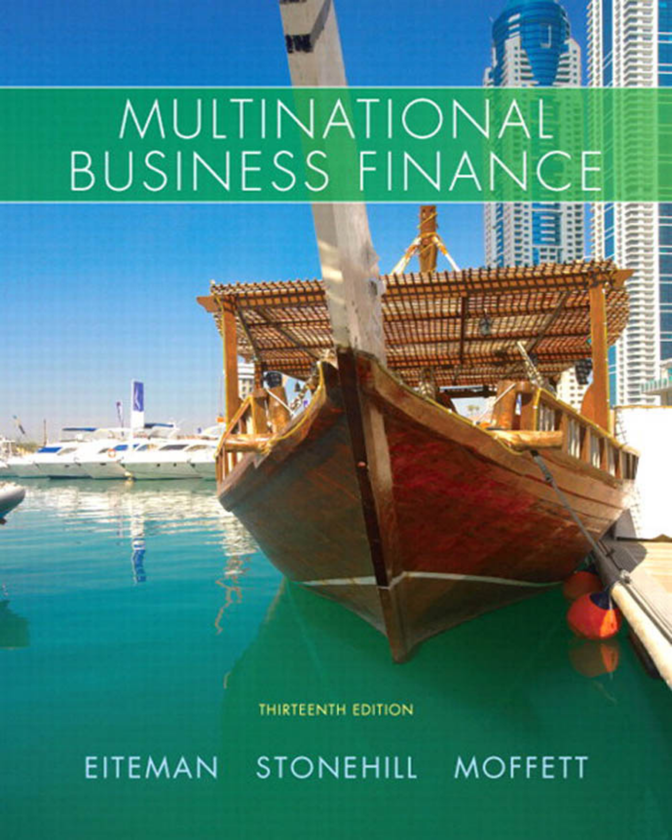

# MULTINATIONAL BUSINESS FINANCE

THIRTEENTH EDITION

EITEMAN STONEHILL MOFFETT

# MULTINATIONAL BUSINESS FINANCE

THIRTEENTH EDITION

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# MULTINATIONAL BUSINESS FINANCE

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# Preface

As the field of multinational financial management has evolved, so has the content of *Multinational Business Finance*. Both institutions and markets are changing, and as a result, this edition focuses on the multitude of financial management challenges faced by the business leaders of tomorrow, with three points of emphasis.

- **Organizations of all kinds.** Multinational enterprises (MNEs) applies to organizations of all kinds—publicly traded, privately held, state-run, and state-owned enterprises (SOEs)—all forms that permeate global business today.
- **Emerging markets.** Firms from all countries and all markets are looking to the economic drivers of the global economy today, the emerging markets. These country markets present many specific risks, opportunities, and challenges for business and multinational finance.
- **Financial leadership.** The leaders of MNEs face numerous foreign exchange and political risks. These risks can be daunting; but if properly understood, they present opportunities for creating value. These risks and opportunities are most effectively understood in the context of the global business itself, and the ability of management to integrate the strategic and financial challenges that business faces.

The success of all multinationals, however, continues to depend on their ability to recognize and benefit from imperfections in national markets for products, production factors, and financial assets. As in previous editions, we perceive the multinational enterprise to be a unique institution that acts as a catalyst and facilitator of international trade, and as an important producer and distributor in host countries where its subsidiaries are located.

## Audience

*Multinational Business Finance*, thirteenth edition, is appropriate for university-level courses in international financial management, international business finance, international finance, and similar titles. It can be used at the undergraduate or graduate level as well as in executive education courses.

A prerequisite course or experience in corporate finance or financial management is ideal. However, we review the basic finance concepts before we extend them to the multinational case. We also review the basic concepts of international economics and international business.

Over many years and many editions, as language translations and sales have expanded, we have observed a widening global audience for this book. We continue to try to service this greater global audience with multicountry companies and markets in theoretical applications, examples, Mini-Cases, and *Global Finance in Practice* features, as seen in the business and news press (including anecdotes and illustrations).

## Organization

This edition of *Multinational Business Finance* is more concise, but it includes several new subjects. We accomplished this by integrating a number of previous topics along financial management threads. The book comprises six parts, unified by the common thread of the globalization process by which a firm moves from a domestic to a multinational business orientation.

- Part 1 introduces the global financial environment.
- Part 2 explains foreign exchange theory and markets.
- Part 3 analyzes foreign exchange rate exposure.
- Part 4 explores the financing of the global firm.
- Part 5 analyzes foreign investment decisions.
- Part 6 examines the management of multinational operations.

## New in the Thirteenth Edition

Although we hesitate to use a common tag line, the thirteenth edition could be called the *new normal*. Today, the developed or industrialized countries see slower growth, poorer job opportunities, and a growing insecurity about their competitiveness in the global marketplace, while the rapidly expanding emerging markets and their major players represent an increasingly larger piece of the global pie.

In this new world, the MNEs not only depend on the emerging markets for cheaper labor, raw materials, and outsourced manufacturing, but also they increasingly depend on those markets for sales and profits. These markets—whether they are labeled as BRICs (Brazil, Russia, India, China) or some other popular label—represent the majority of the earth's population and therefore consumers. These markets are also home to many of the world's most rapidly developing multinational enterprises.

We have attempted to capture this evolution through a number of principles, practices, and features:

- We have increased the clarity of principles and practices at the core of multinational finance—to accentuate the purpose behind the book's title.
- We have integrated emerging market content, highlighting both the promise and challenges of financial management in a global marketplace where the future likely rests with these countries, cultures, and their new players.
- We have expanded our coverage of global financial crises to go beyond the credit crisis of 2007–2009 to the current sovereign debt and financial crisis raging across Europe.
- We have presented 12 new Mini-Cases. The majority are inclusive of emerging market business. The *Global Finance in Practice* features follow the same themes.

To create a shorter, succinct text for today's more complex courses, we have merged and integrated some concepts and chapters, and we have revised other chapters.

- Chapters on currency derivatives—futures, options, and swaps—have been combined to facilitate study.
- Chapters on translation exposure and operating (economic) exposure have been revised to capture industry's growing interest and concern about these currency-based company exposures.
- Chapters on the financial structures and capital sourcing strategies employed by multinational firms have been restructured and reorganized for a tighter presentation.

A final note on style. The subject of international finance is sophisticated, evolving, and rich in history. We have tried to bridge the past and future by using a mix of currency notations and symbols, including both the increasingly common three-letter currency codes—USD, CNY, GBP, EUR—and the currency symbols of the past—$, ¥, £, €—which live on in modern media. Who knows, we may be re-introducing historical currency designations like the drachma and lira in future editions!

## A Rich Array of Support Materials

A robust package of materials for the instructor and student accompanies the text to facilitate learning and to support teaching and testing. All instructor resources are available for download from the online catalog page for this book (www.pearsonhighered.com/irc).

- **Instructor's Manual.** The Online Instructor's Manual, prepared by the authors, contains answers to Case questions and end-of-chapter questions. Excel® solutions for the end-of-chapter problems are available as well as PowerPoint teaching solutions for all Mini-Cases. The Instructor's Manual is available for download as Microsoft® Word files or Adobe® PDF files and the solutions to the problems are available for download as Microsoft Excel® files from the Instructor Resource Center or from your local sales representative.
- **Test Bank.** The Test Bank, prepared by Curtis J. Bacon of Southern Oregon University, contains more than 700 multiple choice and true/false questions. The multiple choice questions are labeled by topic and category—recognition, conceptual, and analytical. The test bank is available for download from the Instructor Resource Center.
- **Computerized Test Bank.** The Test Bank is also available in Pearson Education's TestGen software for Windows® and Macintosh®. TestGen's graphical interface enables the instructor to view, edit, and add questions; transfer questions to tests; and print different forms of tests. Search-and-sort features enable the instructor to locate questions quickly and arrange them as preferred. The Quizmaster application allows the instructor to administer TestGen tests over the school's computer network. More information on TestGen software is available at http://wpslive.pearsoncmg.com/cmg_instructor_testgen_1/.
- **PowerPoint Presentation.** The PowerPoint presentation slides, prepared by Curtis J. Bacon of Southern Oregon University, provide lecture outlines and selected graphics from the text for each chapter. The PowerPoint presentation is also available for download from the Instructor Resource Center.
- **Companion Web Site.** A dedicated Web site (www.pearsonhighered.com/eiteman) contains access to chapter exhibits, Internet exercises, and glossary flashcards. Instructors have access to spreadsheet solutions for all problems from the Instructor Resource Center.

## International Editions

*Multinational Business Finance* is used throughout the world to teach students of international finance. More than two-thirds of the book's sales volume now occurs outside North America, which is distinct considering that it is used at more than 200 universities in North America alone. It is published in a number of foreign languages including Chinese, French, Spanish, Indonesian, Portuguese, and Ukrainian.

## Acknowledgments


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# Brief Contents

# Contents

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# PART I

# Global Financial Environment



CHAPTER 1

# Current Multinational Challenges and the Global Economy

*I define globalization as producing where it is most cost-effective, selling where it is most profitable, and sourcing capital where it is cheapest, without worrying about national boundaries.*

—Narayana Murthy, President and CEO, Infosys.

The subject of this book is the financial management of multinational enterprises (MNEs). MNEs are firms—both for profit companies and not-for-profit organizations—that have operations in more than one country, and conduct their business through foreign subsidiaries, branches, or joint ventures with host country firms.

MNEs are struggling to survive and prosper in a very different world than in the past. Today's MNEs depend not only on the emerging markets for cheaper labor, raw materials, and outsourced manufacturing, but also increasingly on those same emerging markets for sales and profits. These markets—whether they are emerging, less developed, developing, or BRICs (Brazil, Russia, India, and China)—represent the majority of the earth's population, and therefore, customers. And adding market complexity to this changing global landscape is the risky and challenging international macroeconomic environment, both from a long-term and short-term perspective, following the global financial crisis of 2007–2009. How to identify and navigate these risks is the focus of this book.

## Financial Globalization and Risk

*Back in the halcyon pre-crisis days of the late 20th and early 21st centuries, it was taken as self evident that financial globalisation was a good thing. But the subprime crisis and eurozone dramas are shaking that belief. Never mind the fact that imbalances amid globalisation can stoke up bubbles; what is the bigger risk now—particularly in the eurozone—is that financial globalisation has created a system that is interconnected in some dangerous ways.*

—"Crisis Fears Fuel Debate on Capital Controls,"
Gillian Tett, *The Financial Times*, December 15, 2011.

The theme dominating global financial markets today is the complexity of risks associated with financial globalization—far beyond whether it is simply good or bad, but how to lead and manage multinational firms in the rapidly moving marketplace.

- The international monetary system, an eclectic mix of floating and managed fixed exchange rates today, is under constant scrutiny. The rise of the Chinese renminbi is changing much of the world's outlook for currency exchange, reserve currencies, and the roles of the dollar and the euro (see Chapter 3).
- Large fiscal deficits plague most of the major trading countries of the world, including the current eurozone crisis, complicating fiscal and monetary policies, and ultimately, interest rates and exchange rates (see Chapters 4 and 5).
- Many countries experience continuing balance of payments imbalances, and in some cases, dangerously large deficits and surpluses—whether it be the twin surpluses enjoyed by China, the current account surplus of Germany amidst a sea of eurozone deficits, or the continuing current account deficit of the United States, all will inevitably move exchange rates (see Chapters 4 and 5).
- Ownership, control, and governance changes radically across the world. The publicly traded company is not the dominant global business organization—the privately held or family-owned business is the prevalent structure—and their goals and measures of performance differ dramatically (see Chapter 2).
- Global capital markets that normally provide the means to lower a firm's cost of capital, and even more critically increase the availability of capital, have in many ways shrunk in size, openness, and accessibility by many of the world's organizations (see Chapters 1 and 5).
- Today's emerging markets are confronted with a new dilemma: the problem of being the recipients of too much capital—sometimes. Financial globalization has resulted in the flow of massive quantities of capital into and out of many emerging markets, complicating financial management (Chapters 6 and 9).

These are but a sampling of the complexity of topics. The Mini-Case at the end of this chapter, *Nine Dragons Paper and the 2009 Credit Crisis*, highlights many of these MNE issues in emerging markets today. As described in *Global Finance in Practice 1.1*, the global credit crisis and its aftermath has damaged the world's largest banks and reduced the rate of economic growth worldwide, leading to higher rates of unemployment and putting critical pressures on government budgets from Greece to Ireland to Portugal to Mexico.

## The Global Financial Marketplace

Business—domestic, international, global—involves the interaction of individuals and individual organizations for the exchange of products, services, and capital through markets. The global capital markets are critical for the conduct of this exchange. The global financial crisis of 2008–2009 served as an illustration and a warning of how tightly integrated and fragile this marketplace can be.

### Assets, Institutions, and Linkages

Exhibit 1.1 provides a map to the global capital markets. One way to characterize the global financial marketplace is through its assets, institutions, and linkages.

## GLOBAL FINANCE IN PRACTICE 1.1

### Global Capital Markets: Entering a New Era

The current financial crisis and worldwide recession have abruptly halted a nearly three-decade-long expansion of global capital markets. From 1980 through 2007, the world's financial assets—including equities, private and public debt, and bank deposits—nearly quadrupled in size relative to global GDP. Global capital flows similarly surged. This growth reflected numerous interrelated trends, including advances in information and communication technology, financial market liberalization, and innovations in financial products and services. The result was financial globalization.

But the upheaval in financial markets in late 2008 marked a break in this trend. The total value of the world's financial assets fell by $16 trillion to $178 trillion, the largest setback on record. Although equity markets have bounced back from their recent lows, they remain well below their peaks. Credit markets have healed somewhat but are still impaired.

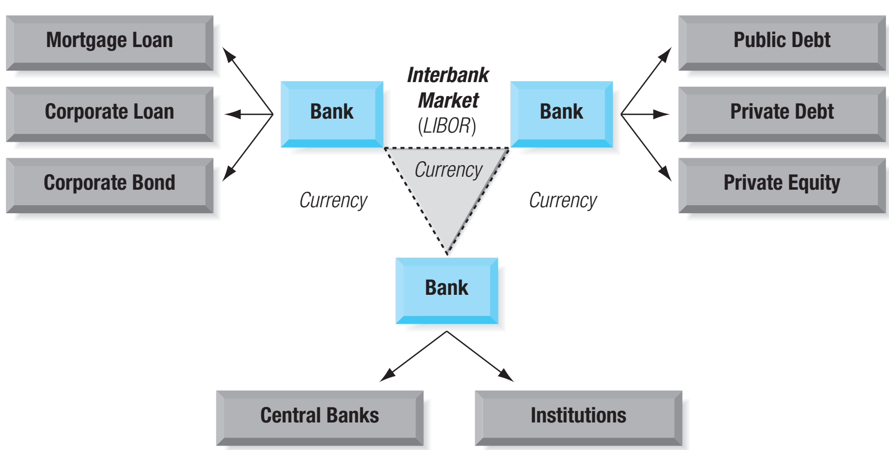
Going forward, our research suggests that global capital markets are entering a new era in which the forces fueling growth have changed. For the past 30 years, most of the overall increase in financial depth—the ratio of assets to GDP—was driven by the rapid growth of equities and private debt in mature markets. Looking ahead, these asset classes in mature markets are likely to grow more slowly, more in line with GDP, while government debt will rise sharply. An increasing share of global asset growth will occur in emerging markets, where GDP is rising faster and all asset classes have abundant room to expand.

*Source*: Excerpted from "Global Capital Markets: Entering a New Era," McKinsey Global Institute, Charles Rosburgh, Susan Lund, Charles Atkins, Stanislas Belot, Wayne W. Hu, and Moira S. Pierce, McKinsey & Company, September 2009, p. 7.

**Assets.** The assets—the financial assets—which are at the heart of the global capital markets are the debt securities issued by governments (e.g., U.S. Treasury Bonds). These low-risk or risk-free assets then form the foundation for the creating, trading, and pricing of other financial assets like bank loans, corporate bonds, and equities (stock). In recent years, a number of

**EXHIBIT 1.1 Global Capital Markets**

The global capital market is a collection of institutions (central banks, commercial banks, investment banks, not for profit financial institutions like the IMF and World Bank) and securities (bonds, mortgages, derivatives, loans, etc.), which are all linked via a global network—the *Interbank Market*. This interbank market, in which securities of all kinds are traded, is the critical pipeline system for the movement of capital.




The exchange of securities—the movement of capital in the global financial system—must all take place through a vehicle—currency. The exchange of currencies is itself the largest of the financial markets. The interbank market, which must *pass-through* and exchange securities using currencies, bases all of its pricing through the single most widely quoted interest rate in the world—LIBOR (the London Interbank Offered Rate).

additional securities have been created from the existing securities—derivatives, whose value is based on market value changes in the underlying securities. The health and security of the global financial system relies on the quality of these assets.

**Institutions.** The institutions of global finance are the central banks, which create and control each country's money supply; the commercial banks, which take deposits and extend loans to businesses, both local and global; and the multitude of other financial institutions created to trade securities and derivatives. These institutions take many shapes and are subject to many different regulatory frameworks. The health and security of the global financial system relies on the stability of these financial institutions.

**Linkages.** The links between the financial institutions, the actual fluid or medium for exchange, are the interbank networks using currency. The ready exchange of currencies in the global marketplace is the first and foremost necessary element for the conduct of financial trading, and the global currency markets are the largest markets in the world. The exchange of currencies, and the subsequent exchange of all other securities globally via currency, is the international interbank network. This network, whose primary price is the London Interbank Offered Rate (LIBOR), is the core component of the global financial system.

The movement of capital across borders and continents for the conduct of business has existed in many different forms for thousands of years. Yet, it is only within the past 50 years that these capital movements have started to move at the pace of an electron, either via a phone call or an email. And it is only within the past 20 years that this market has been able to reach the most distant corners of the earth at any moment of the day. This market has seen an explosion of innovative products and services in the past decade, some of which proved, as in the case of the 2008–2009 crisis, somewhat toxic to the touch.

## The Market for Currencies

The price of any one country's currency in terms of another country's currency is called a foreign currency exchange rate. For example, the exchange rate between the U.S. dollar ($ or USD) and the European euro (€ or EUR) may be stated as "1.4565 dollar per euro" or simply abbreviated as $1.4565/€. This is the same exchange rate as when stated "EUR1.00 = USD1.4565." Since most international business activities require at least one of the two parties in a business transaction to either pay or receive payment in a currency, which is different from their own, an understanding of exchange rates is critical to the conduct of global business.

A quick word about currency symbols. As noted, USD and EUR are often used as the symbols for the U.S. dollar and the European Union's euro. These are the computer symbols (ISO-4217 codes) used today on the world's digital networks. The field of international finance, however, has a rich history of using a variety of different symbols in the financial press, and a variety of different abbreviations are commonly used. For example, the British pound sterling may be £ (the pound symbol), GBP (Great Britain pound), STG (British pound sterling), ST£ (pound sterling), or UKL (United Kingdom pound). This book will also use the simpler common symbols—the $ (dollar), the € (euro), the ¥ (yen), the £ (pound)—but be warned and watchful when reading the business press!

**Exchange Rate Quotations and Terminology.** Exhibit 1.2 lists currency exchange rates for Thursday, January 12, 2012, as would be quoted in New York or London. The exchange rate listed is for a specific country's currency—for example, the Argentina peso against the U.S. dollar—Peso 3.9713/$, the European euro—Peso $5.1767/€, and the British pound—Peso 6.1473/£. The rate listed is termed a "mid-rate" because it is the middle or average of the rates currency traders buy currency (bid rate) and sell currency (offer rate).

## EXHIBIT 1.2 Selected Global Currency Exchange Rates

| January 12, 2012 Country | Currency | Symbol | Code | Currency to equal 1 Dollar | Currency to equal 1 Euro | Currency to equal 1 Pound |
|---|---|---|---|---|---|---|
| Argentina | peso | Ps | ARS | 4.3090 | 5.5143 | 6.6010 |
| Australia | dollar | A$ | AUD | 0.9689 | 1.2413 | 1.4859 |
| Bahrain | dinar | — | BHD | 0.3770 | 0.4825 | 0.5776 |
| Bolivia | boliviano | Bs | BOB | 6.9100 | 8.8428 | 10.5855 |
| Brazil | real | R$ | BRL | 1.7874 | 2.2873 | 2.7380 |
| Canada | dollar | C$ | CAD | 1.0206 | 1.3061 | 1.5635 |
| Chile | peso | $ | CLP | 502.050 | 642.473 | 769.090 |
| China | yuan | ¥ | CNY | 6.3178 | 8.0849 | 9.6783 |
| Colombia | peso | Col$ | COP | 1,843.30 | 2,358.87 | 2,823.75 |
| Costa Rica | colon | ₡ | CRC | 508.610 | 650.869 | 779.141 |
| Czech Republic | koruna | Kc | CZK | 20.0024 | 25.5970 | 30.6416 |
| Denmark | krone | Dkr | DKK | 5.8114 | 7.4368 | 8.9024 |
| Egypt | pound | £ | EGP | 6.0395 | 7.7288 | 9.2519 |
| Hong Kong | dollar | HK$ | HKD | 7.7679 | 9.9405 | 11.8996 |
| Hungary | forint | Ft | HUF | 241.393 | 308.910 | 369.789 |
| India | rupee | Rs | INR | 51.6050 | 66.0389 | 79.0537 |
| Indonesia | rupiah | Rp | IDR | 9,160.0 | 11,722.1 | 14,032.2 |
| Iran | rial | — | IRR | 84.5000 | 231.8950 | 89.1256 |
| Israel | shekel | Shk | ILS | 3.8312 | 4.9027 | 5.8690 |
| Japan | yen | ¥ | JPY | 76.7550 | 98.2234 | 117.581 |
| Kenya | shilling | KSh | KES | 87.6000 | 112.102 | 134.195 |
| Kuwait | dinar | — | KWD | 0.2793 | 0.3574 | 0.4278 |
| Malaysia | ringgit | RM | MYR | 3.1415 | 4.0202 | 4.8125 |
| Mexico | new peso | $ | MXN | 13.5964 | 17.3993 | 20.8283 |
| New Zealand | dollar | NZ$ | NZD | 1.2616 | 1.6145 | 1.9327 |
| Nigeria | naira | ₦ | NGN | 162.050 | 207.375 | 248.244 |
| Norway | krone | NKr | NOK | 6.0033 | 7.6824 | 9.1965 |
| Pakistan | rupee | Rs. | PKR | 90.1050 | 115.3070 | 138.0320 |
| Peru | new sol | S/. | PEN | 2.6925 | 3.4456 | 4.1247 |
| Phillippines | peso | ₱ | PHP | 44.0550 | 56.3772 | 67.4879 |
| Poland | zloty | — | PLN | 3.4543 | 4.4204 | 5.2916 |
| Romania | new leu | L | RON | 3.3924 | 4.3425 | 5.1983 |
| Russia | ruble | R | RUB | 31.6182 | 40.4618 | 48.4360 |
| Saudi Arabia | riyal | SR | SAR | 3.7504 | 4.7994 | 5.7452 |
| Singapore | dollar | S$ | SGD | 1.2909 | 1.6520 | 1.9775 |
| South Africa | rand | R | ZAR | 8.0743 | 10.3326 | 12.3690 |
| South Korea | won | W | KRW | 1,158.10 | 1,482.02 | 1,774.09 |
| Sweden | krona | SKr | SEK | 6.9311 | 8.8698 | 10.6178 |
| Switzerland | franc | Fr. | CHF | 0.9460 | 1.2106 | 1.4492 |
| Taiwan | dollar | T$ | TWD | 29.9535 | 38.3315 | 45.8858 |
| Thailand | baht | B | THB | 31.8300 | 40.7329 | 48.7604 |
| Tunisia | dinar | DT | TND | 1.5184 | 1.9431 | 2.3261 |
| Turkey | lira | YTL | TRY | 1.8524 | 2.3706 | 2.8377 |
| United Arab Emirates | dirham | — | AED | 3.6733 | 4.7007 | 5.6271 |
| United Kingdom | pound | £ | GBP | 1.5319 | 0.8354 | |
| Ukraine | hrywnja | — | UAH | 8.0400 | 10.2888 | 12.3165 |
| Uruguay | peso | $U | UYU | 19.4500 | 24.8902 | 29.7955 |
| United States | dollar | $ | USD | | 1.2797 | 1.5319 |
| Venezuela | bolivar fuerte | Bs | VEB | 4.2947 | 5.4959 | 6.5790 |
| Vietnam | dong | d | VND | 21,035.0 | 26,918.5 | 32,223.5 |
| Euro | euro | € | EUR | 1.2797 | | 1.1971 |
| Special Drawing Right | — | — | SDR | 0.6541 | 0.8370 | 1.0019 |

Note that a number of different currencies use the same symbol (for example both China and Japan have traditionally used the ¥ symbol, yen or yuan, meaning round or circle). That is one of the reasons why most of the world's currency markets today use the three-digit currency code for clarity of quotation. All quotes are mid-rates, and are drawn from the *Financial Times*, January 12, 2012.

The U.S. dollar has been the focal point of most currency trading since the 1940s. As a result, most of the world's currencies have been quoted against the dollar—Mexican pesos per dollar, Brazilian real per dollar, Hong Kong dollars per dollar, etc. This quotation convention is also followed against the world's major currencies as listed in Exhibit 1.2. For example, the Japanese yen is commonly quoted as ¥83.2200/$, ¥108.481/€, and ¥128.820/£.

**Quotation Conventions.** Several of the world's major currency exchange rates, however, follow a specific quotation convention that is the result of tradition and history. The exchange rate between the U.S. dollar and the euro is always quoted as "dollars per euro" ($/€), $1.3036/€ as listed in Exhibit 1.2. Similarly, the exchange rate between the U.S. dollar and the British pound is always quoted as $/£, for example, the $1.5480/£ listed under "United States" in Exhibit 1.2. Many countries that were formerly members of the British Commonwealth will commonly be quoted against the dollar as U.S. dollars per currency (e.g., the Australian or Canadian dollars).

## Eurocurrencies and LIBOR

One of the major linkages of global money and capital markets is the Eurocurrency market and its interest rate known as LIBOR. Eurocurrencies are domestic currencies of one country on deposit in a second country. Eurodollar time deposit maturities range from call money and overnight funds to longer periods. Certificates of deposit are usually for three months or more and in million-dollar increments. A Eurodollar deposit is not a demand deposit; it is not created on the bank's books by writing loans against required fractional reserves, and it cannot be transferred by a check drawn on the bank having the deposit. Eurodollar deposits are transferred by wire or cable transfer of an underlying balance held in a correspondent bank located within the United States. In most countries, a domestic analogy would be the transfer of deposits held in nonbank savings associations. These are transferred by the association writing its own check on a commercial bank.

Any convertible currency can exist in "Euro-" form. Note that this use of "Euro-" should not be confused with the new common European currency called the euro. The Eurocurrency market includes Eurosterling (British pounds deposited outside the United Kingdom); Euroeuros (euros on deposit outside the euro zone); Euroyen (Japanese yen deposited outside Japan) and Eurodollars (U.S. dollars deposited outside the United States). The exact size of the Eurocurrency market is difficult to measure because it varies with daily decisions made by depositors about where to hold readily transferable liquid funds, and particularly on whether to deposit dollars within or outside the United States.

Eurocurrency markets serve two valuable purposes: 1) Eurocurrency deposits are an efficient and convenient money market device for holding excess corporate liquidity; and 2) the Eurocurrency market is a major source of short-term bank loans to finance corporate working capital needs, including the financing of imports and exports.

Banks in which Eurocurrencies are deposited are called *Eurobanks*. A Eurobank is a financial intermediary that simultaneously bids for time deposits and makes loans in a currency other than that of the currency in which it is located. Eurobanks are major world banks that conduct a Eurocurrency business in addition to all other banking functions. Thus, the Eurocurrency operation that qualifies a bank for the name Eurobank is in fact a department of a large commercial bank, and the name springs from the performance of this function.

The modern Eurocurrency market was born shortly after World War II. Eastern European holders of dollars, including the various state trading banks of the Soviet Union, were afraid to deposit their dollar holdings in the United States because these deposits might be attached by U.S. residents with claims against communist governments. Therefore, Eastern

European holders deposited their dollars in Western Europe, particularly with two Soviet banks: the Moscow Narodny Bank in London, and the Banque Commerciale pour l'Europe du Nord in Paris. These banks redeposited the funds in other Western banks, especially in London. Additional dollar deposits were received from various central banks in Western Europe, which elected to hold part of their dollar reserves in this form to obtain a higher yield. Commercial banks also placed their dollar balances in the market because specific maturities could be negotiated in the Eurodollar market. Such companies found it financially advantageous to keep their dollar reserves in the higher-yielding Eurodollar market. Various holders of international refugee funds also supplied funds.

Although the basic causes of the growth of the Eurocurrency market are economic efficiencies, many unique institutional events during the 1950s and 1960s helped its growth.

- In 1957, British monetary authorities responded to a weakening of the pound by imposing tight controls on U.K. bank lending in sterling to nonresidents of the United Kingdom. Encouraged by the Bank of England, U.K. banks turned to dollar lending as the only alternative that would allow them to maintain their leading position in world finance. For this they needed dollar deposits.
- Although New York was "home base" for the dollar and had a large domestic money and capital market, international trading in the dollar centered in London because of that city's expertise in international monetary matters and its proximity in time and distance to major customers.
- Additional support for a European-based dollar market came from the balance of payments difficulties of the U.S. during the 1960s, which temporarily segmented the U.S. domestic capital market.

Ultimately, however, the Eurocurrency market continues to thrive because it is a large international money market relatively free from governmental regulation and interference.

**Eurocurrency Interest Rates: LIBOR.** In the Eurocurrency market, the reference rate of interest is LIBOR—the London Interbank Offered Rate. LIBOR is now the most widely accepted rate of interest used in standardized quotations, loan agreements or financial derivatives valuations. LIBOR is officially defined by the British Bankers Association (BBA). For example, U.S. dollar LIBOR is the mean of 16 multinational banks' interbank offered rates as sampled by the BBA at 11 A.M. London time in London. Similarly, the BBA calculates the Japanese yen LIBOR, euro LIBOR, and other currency LIBOR rates at the same time in London from samples of banks.

The interbank interest rate is not, however, confined to London. Most major domestic financial centers construct their own interbank offered rates for local loan agreements. These rates include PIBOR (Paris Interbank Offered Rate), MIBOR (Madrid Interbank Offered Rate), SIBOR (Singapore Interbank Offered Rate), and FIBOR (Frankfurt Interbank Offered Rate), to name but a few.

The key factor attracting both depositors and borrowers to the Eurocurrency loan market is the narrow interest rate spread within that market. The difference between deposit and loan rates is often less than 1%. Interest spreads in the Eurocurrency market are small for many reasons. Low lending rates exist because the Eurocurrency market is a wholesale market, where deposits and loans are made in amounts of $500,000 or more on an unsecured basis. Borrowers are usually large corporations or government entities that qualify for low rates because of their credit standing and because the transaction size is large. In addition, overhead assigned to the Eurocurrency operation by participating banks is small.

Deposit rates are higher in the Eurocurrency markets than in most domestic currency markets because the financial institutions offering Eurocurrency activities are not subject to many of the regulations and reserve requirements imposed on traditional domestic banks and banking activities. With these costs removed, rates are subject to more competitive pressures, deposit rates are higher, and loan rates are lower. A second major area of cost avoided in the Eurocurrency markets is the payment of deposit insurance fees (such as the Federal Deposit Insurance Corporation, FDIC, and assessments paid on deposits in the United States).

## The Theory of Comparative Advantage

The theory of comparative advantage provides a basis for explaining and justifying international trade in a model world assumed to enjoy free trade, perfect competition, no uncertainty, costless information, and no government interference. The theory's origins lie in the work of Adam Smith, and particularly with his seminal book *The Wealth of Nations* published in 1776. Smith sought to explain why the division of labor in productive activities, and subsequently international trade of those goods, increased the quality of life for all citizens. Smith based his work on the concept of absolute advantage, where every country should specialize in the production of that good it was uniquely suited for. More would be produced for less. Thus, by each country specializing in products for which it possessed absolute advantage, countries could produce more in total and exchange products—trade—for goods that were cheaper in price than those produced at home.

David Ricardo, in his work *On the Principles of Political Economy and Taxation* published in 1817, sought to take the basic ideas set down by Adam Smith a few logical steps further. Ricardo noted that even if a country possessed absolute advantage in the production of two products, it might still be relatively more efficient than the other country in one good's product than the other. Ricardo termed this *comparative advantage*. Each country would then possess comparative advantage in the production of one of the two products, and both countries would then benefit by specializing completely in one product and trading for the other.

Although international trade might have approached the comparative advantage model during the nineteenth century, it certainly does not today, for a variety of reasons. Countries do not appear to specialize only in those products that could be most efficiently produced by that country's particular factors of production. Instead, governments interfere with comparative advantage for a variety of economic and political reasons, such as to achieve full employment, economic development, national self-sufficiency in defense-related industries, and protection of an agricultural sector's way of life. Government interference takes the form of tariffs, quotas, and other non-tariff restrictions.

At least two of the factors of production, capital and technology, now flow directly and easily between countries, rather than only indirectly through traded goods and services. This direct flow occurs between related subsidiaries and affiliates of multinational firms, as well as between unrelated firms via loans, and license and management contracts. Even labor flows between countries such as immigrants into the United States (legal and illegal), immigrants within the European Union, and other unions.

Modern factors of production are more numerous than in this simple model. Factors considered in the location of production facilities worldwide include local and managerial skills, a dependable legal structure for settling contract disputes, research and development competence, educational levels of available workers, energy resources, consumer demand for brand name goods, mineral and raw material availability, access to capital, tax differentials, supporting infrastructure (roads, ports, and communication facilities), and possibly others.

Although the terms of trade are ultimately determined by supply and demand, the process by which the terms are set is different from that visualized in traditional trade theory. They are determined partly by administered pricing in oligopolistic markets.