

GLOBAL
EDITION



Multinational Business Finance

SIXTEENTH EDITION

David K. Eiteman • Arthur I. Stonehill • Michael H. Moffet



Multinational Business Finance

Sixteenth Edition
Global Edition

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Content Production: Nitin Shankar

Product Management: Yajnaseni Das, Paromita Banerjee, Daniel J.N. Luiz, and Ratul Ghosh

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CM17 9SR

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Authorized adaptation from the United States edition, *Multinational Business Finance*, 16th Edition, ISBN 978-0-13-749596-2, David K. Eiteman, Arthur I. Stonehill, and Michael H. Moffett, published by Pearson Education © 2023.

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ISBN 10 (Print): 1-292-44596-3

ISBN 13 (Print): 978-1-292-44596-0

ISBN 13 (eBook): 978-1-292-44605-9

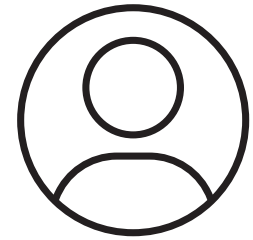
British Library Cataloguing-in-Publication Data

A catalogue record for this book is available from the British Library

Typeset in Times Ten LT Std Roman By B2r Technologies Pvt. Ltd.

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Preface

New to This Edition

Our continuing challenge is to strike a balance between being one of the very first textbooks in this field (and therefore in many ways defining the field) and introducing the many new concepts and components in global business today, from digital currencies to global fintech. We have hopefully found some balance between what is valued by continuing adopters and the valued insights of selected reviewers—the *innovator's dilemma*. Surveys of adopters were extremely useful in this revision, and a number of specific recommendations were included.

- **Corporate Governance, Activists, and Stakeholder Capitalism.** Chapter 4 on corporate governance, including elements of ownership, financial objectives, and the growing role of activist investors, has been revised and expanded. Of special note is the growth of stakeholder capitalism and its multiple objective framework as compared to stockholder wealth maximization.
- **The Impossible Trinity.** A core international financial principle, the *Impossible Trinity's* use as a unifying theoretical link across multiple subjects—whether it be Iceland's financial crisis or choices made by the European Union on capital flows—is increasingly leveraged.
- **The Foreign Exchange Market and Digital Trade.** New material in this edition explores in depth how the changing structure of the global foreign exchange market—trading, communication, and settlement—is posing challenges for private players and public regulators and overseers.
- **Currency Manipulation.** This is a politically charged topic between the U.S. and China, and we explore in depth the motivations, methods, and metrics associated with currency manipulation. Included is a new mini-case that seeks to determine whether China is or is not a currency manipulator.
- **Emerging Market Regimes.** The sixteenth edition offers new insights into the currency and capital regime choices of many emerging market countries; many recognizing that they are trade-dependent economies in search of currency stability in lieu of attracting other capital account elements such as foreign direct investment.
- **International Taxation.** Integrally linked to a world of digital commerce, multinational tax management continues to rise in its significance in multinational financial management. We have expanded our coverage of this critical determinant of global finance, with emphasis on the constantly changing U.S. tax rates and rules.
- **Political Risk and Financial Losses.** The chapter on foreign direct investment and political risk has been revised to reflect the growing use of restrictions on convertibility, transferability, and the possibility of repudiation or expropriation.

Solving Teaching and Learning Challenges

Multinational Business Finance is the financial management of multinational enterprises (MNEs)—*multinational financial management*. MNEs are firms and organizations of all kinds and sizes—for-profit companies, family-owned businesses, sovereign states, and nongovernmental organizations (NGOs), among others—that have operations in more than one country and conduct their activities through a multitude of structures and contracts from wholly owned foreign subsidiaries to joint ventures with local or global partners to host governments.

Moreover, global business and finance, all the way down to the trading of currencies, has been revolutionized by digital platforms from electronic trading to the coming introduction of digital currencies, all adding to the complexity of international business.

Multinational Business Finance, Sixteenth Edition, is aimed at university-level courses in international financial management, international business finance, international finance, and similar titles. It can be used either at the graduate level or in executive education and corporate learning courses.

A prerequisite course or experience in corporate finance or financial management would be 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 we ourselves have used the book in courses from Hyderabad to Helsinki to Honolulu, we have observed an ever-widening audience for this book. We continue to try to service this greater global audience with multicountry companies, markets, and challenges, whether in theoretical applications, practice boxes, mini-cases, or end-of-chapter problems.

Global Financial Marketplace

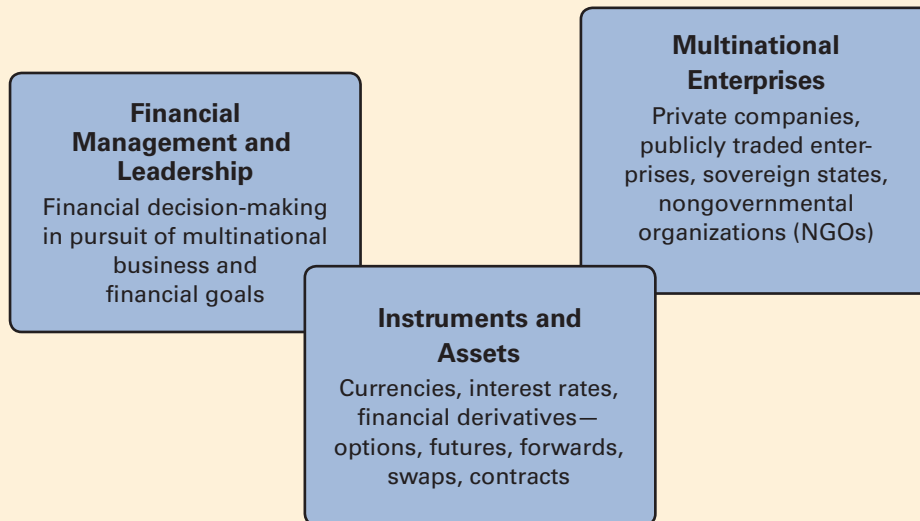
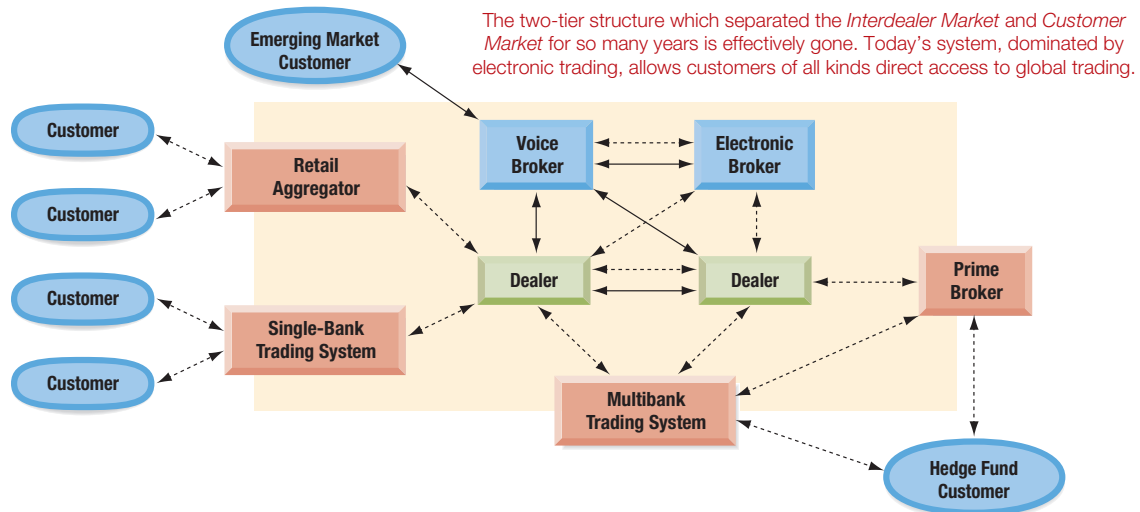


EXHIBIT 5.4 The Foreign Exchange Market Today



Constructed by authors based on a number of sources including "Foreign Exchange Market Structure, Players and Evolution," Michael R. King, Carol Osler and Dagfinn Rime, Norges Bank, Working Paper, Research Department, 2011, 10, p. 21, and "The anatomy of the global FX market through the lens of the 2013 Triennial Survey," by Dagfinn Rime and Andreas Schrimpf, *BIS Quarterly Review*, December 2013.

Organization

Multinational Business Finance has been redesigned and restructured for tightness—critical elements of the field but in a much shorter delivery framework. This has been accomplished by integrating a number of previous topics along financial management threads. The book is in five parts, the 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 explores foreign exchange rate exposure.
- Part 4 details the financing of the global firm.
- Part 5 analyzes international investment decisions.

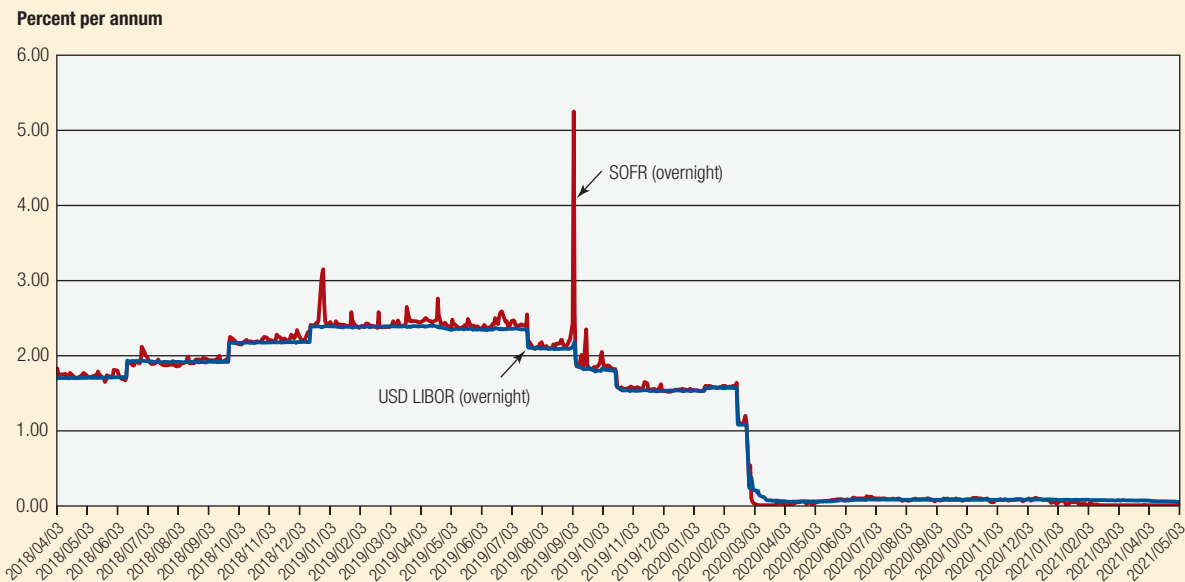
Pedagogical Tools

To make the book as comprehensible as possible, we use a large number of proven pedagogical tools. Again, our efforts have been informed by the detailed reviews and suggestions of a panel of professors who are recognized individually for excellence in the field of international finance, particularly at the undergraduate level. Among these pedagogical tools are the following:

- A student-friendly writing style combined with a structured presentation of material, beginning with *learning objectives* for each chapter and ending with a summarization of how those learning objectives were realized.

- A wealth of *illustrations and exhibits* to provide a visual parallel to the concepts and content presented.
- A running case on a hypothetical Ireland-based firm, *Aidan Corporation*, provides a cohesive framework for the multifaceted globalization process and is reinforced in several end-of-chapter problems.
- A *mini-case* at the end of each chapter illustrates the chapter content and extends it to the multinational financial business environment.

EXHIBIT B Comparison of SOFR and Overnight USD LIBOR



The continuing popularity of our mini-cases has prompted us to introduce 11 new mini-cases in the sixteenth edition. The new topics, among others, include the following:

- **Global fintech.** Global fintech’s continuing role in opening the emerging world to global finance.
- **Digital currencies.** The rise of digital currencies like the Chinese eYuan.
- **Toshiba’s corporate governance challenges.**
- **International remittances.** The role international remittances may play in alleviating global income inequality and opportunity.
- **Replacing LIBOR.** The rationale and complexity of replacing the global financial system’s interest rate centerpiece—LIBOR.
- **Currency volatility.** The rise and fall of currency volatility during the year of COVID.
- **Google tax.** The U.S. development of what many term “the Google tax.”
- **Saudi Aramco.** The initial public offering of the world’s most profitable company, Saudi Aramco.

- **Hostile acquisitions.** A detailed exploration of one of the world's most hostile international acquisitions, Mittal's acquisition of Arcelor.
- *Global Finance in Practice* boxes in every chapter highlight how real firms and real managers deal with the never-ending complexity of executing global business deals in a changing marketplace, from the mundane accounts payable to the exceptional expropriation. These applications extend the concepts without adding to the length of the text itself.

GLOBAL FINANCE IN PRACTICE 13.1

Brexit and the Cost of Capital

The decision for the United Kingdom to leave the European Union is resulting in more and more companies having a higher cost of capital on both sides of the Channel. A restructuring of the banking sectors in both regions involves direct costs as well as more segmented markets, all at a time when global interest rates—dollar, pound, and euro—are expected to start rising as the post-COVID stimulus programs fall further and further into the past.

Impacts on Banks. Banks in the UK are already incurring sizeable restructuring costs. A number of London banks have been moving quickly to move large portions of their operations and jobs to the Continent in an effort to retain clients and market share. London banks are estimating that restructuring costs alone may range between \$200 million and \$400 million. The costs of capital for banks themselves are expected to rise at least 4%, and many are looking to increase their capital bases by more than 30% as they establish European banks to retain Continental clients.

Impacts on Borrowers. One of the unintended results is a multitude of banks are reducing their lines of credit and increasing their fees to many of the small to medium-sized enterprises. Companies with annual revenue of up to €10 million

are defined as *small businesses*, and firms with revenue between €10 and €50 million are *medium-sized* according to the European Union. This segment of borrowers is particularly sensitive to these changes as many of these firms use only one bank for the majority of their financial services. Without alternative banks, offering either alternative services or competitive rates, they are starting to feel the impacts of reduced services and increased costs. As a result of rising bank fees and fewer alternatives, borrowers have experienced rising costs of debt.

How this will ultimately impact business activity is hard to say, but early signs from these segments are not encouraging. Some experts, including Professor Aswath Damodaran of New York University's Stern School of Business, have been encouraging companies to focus on the three drivers of business valuation—cash flows, growth rates, and discount rates—and not fall victim to pessimism. He has characterized Brexit as a “garden variety crisis” that most businesses should endure. A number of firms, however, have cut back on new investment projects. Rising capital costs make fewer prospective investments financially viable. A number of borrowers have noted that their firms will intentionally now work to increase their cash balances—a form of precautionary source of funds—as they fear reduced access to affordable debt.

- A multitude of end-of-chapter questions and problems assess the students' understanding of the course material. All end-of-chapter problems are solved using spreadsheet solutions. Selected end-of-chapter problem answers are included at the back of this book.
- Numerous mathematical derivations, such as parity conditions, foreign currency option pricing, and complex option products, are placed in appendices. This allows selective use as the student or faculty member feels appropriate.

Acknowledgments

The authors are very thankful for the many detailed reviews of previous editions and suggestions from a number of colleagues.

Otto Adleberger

Essen University, Germany

Alan Alford

Northeastern University

Stephen Archer

Willamette University

Bala Arshanapalli

Indiana University Northwest

Hossein G. Askari

George Washington University

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Kent State University

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Boston*

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Johns Hopkins University

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Angeles*

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Philadelphia Stock Exchange

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Corporation*

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A note of thanks is also extended to our accuracy reviewer, Michael Casey. We would like to thank all those with Pearson Education who have worked so diligently on this edition: Emily Biberger, Meredith Gertz, Miguel Leonarte, and Melissa Honig. We are also grateful to Gina Linko, our Project Manager at Integra.

We thank our wives, Megan and Kari, for their patience while we were preparing *Multi-national Business Finance*.

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Global Edition Acknowledgments

Pearson would like to thank the following people for their work on the Global Edition:

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Technology*

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*University of
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Gary Rangel

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PART 1

Global Financial Environment

CHAPTER 1

**Multinational Financial Management:
Opportunities and Challenges**

CHAPTER 2

International Monetary System

CHAPTER 3

The Balance of Payments

CHAPTER 4

**Financial Goals, Corporate Governance, and the
Market for Corporate Control**

Multinational Financial Management: Opportunities and Challenges

The objects of a financier are, then, to secure an ample revenue; to impose it with judgment and equality; to employ it economically; and, when necessity obliges him to make use of credit, to secure its foundations in that instance, and forever, by the clearness and candor of his proceedings, the exactness of his calculations, and the solidity of his funds.

—Edmund Burke, *Reflections on the Revolution in France*, 1790, p. 467.

LEARNING OBJECTIVES

- 1.1 Explore the global financial marketplace—players and playing field
- 1.2 Consider how the theory of comparative advantage applies to multinational business
- 1.3 Examine how international financial management differs from domestic financial management
- 1.4 Discover the steps and stages of the globalization process

The subject of this book is the financial management of *multinational enterprises* (MNEs)—*multinational financial management*. 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 branches, foreign subsidiaries, or joint ventures with host country firms.

It is a brave new world, a new world in which digital startups may become multinational enterprises in hours, where the number of publicly traded companies on earth is shrinking, where the most challenging competitors are arising from emerging markets, and where more and more value is being created by “idea firms.” The global marketplace is seeing change—radical, disruptive, rapid, whatever terminology you prefer—from the growing role of the Chinese currency, the *yuan*; the continuing recuperative efforts to economies following the global pandemic; or the possible sea change likely to come from the introduction of digital currencies. In 2021 the world even saw the first country, El Salvador, adopt a cryptocurrency, Bitcoin, as legal tender. In the following chapters we will explore everything from how the international financial community is in the process of changing its global benchmark (LIBOR) of the past 50 years, to the changes in currency volatility during the global pandemic, to the entry of the world’s most profitable company (Saudi Aramco) into the public security markets. Change is indeed the constant.

Multinational financial management requires managers and leaders all over the world to identify and navigate the prospective returns and risks of the global financial marketplace. These risks may all occur on the playing field of the global financial marketplace, but they are still a question of management—of navigating complexity in pursuit of the goals of the firm and all of its varied stakeholders.

This first chapter provides a brief overview of the global financial landscape including foreign currency markets and financial institutions—the ground rules and nomenclature of the game. We then explore the foundations of comparative advantage, those forces differentiating international from domestic finance. We conclude our introductory overview with the alternative paths firms may take in going global. The chapter concludes with a mini-case, *Global Fintech*, that examines how financial technology is changing all financial functions and services, how it offers the power to overcome barriers to access and inclusion across the globe, but also how its adoption faces many political and institutional barriers along the way.

1.1 The Global Financial Marketplace

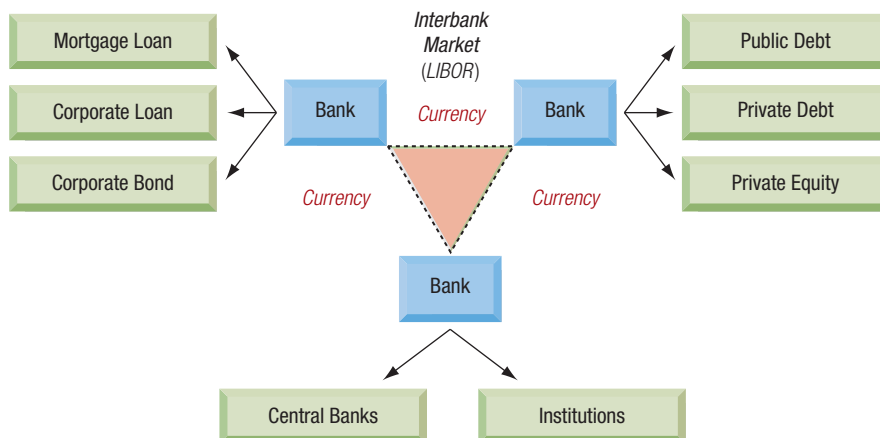
Business—domestic, international, global—involves the interaction of individuals and individual organizations for the exchange of products, services, and capital across markets. The global *capital markets* and business marketplace is in many ways the field of play. This is the landscape upon which the daily activities of global business play out. Like all institutions created by humans, it is constantly changing, yet certain fundamental components rarely change. We begin by exploring the institutional and behavioral landscape of global business—specifically, the organizations and assets that make up the global financial marketplace.

Assets, Institutions, and Linkages

Exhibit 1.1 provides an overview of the global capital markets. One way to characterize the global financial marketplace is through its securities and institutions, all linked through the interbank market.

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 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 use currencies, bases its pricing through the single most widely quoted interest rate in the world—LIBOR (the London Interbank Offered Rate).

Securities. The securities—financial assets—at the heart of the global capital markets are the debt securities issued by highly industrialized country governments (e.g., U.S. Treasury Bonds, U.K. gilts). These low-risk or risk-free securities form the foundation for the creation, trading, and pricing of other financial securities like bank loans, corporate bonds, and equities (stock). In recent years, a number of additional securities—derivatives—have been created from existing securities, the value of which is based on market value changes of the underlying securities. The health and security of the global financial system rely on the quality of these securities.

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 rely 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 market. This network, whose primary price is the London Interbank Offered Rate (LIBOR), is the core component of the global financial system. (In Chapter 8 we will examine the international effort to replace LIBOR and what it may mean for financial instruments and markets.)

The movement of capital across currencies 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 the velocity of these capital movements has increased to the pace of an electron in the digital marketplace. 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. The result has been an explosion of innovative products and services—some for better and some for worse.

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 (indicated by the symbols \$ or USD) and the European euro (€ or EUR) may be stated as “1.1274 dollars per euro” or simply abbreviated as $\$1.1274 = \text{€}1.00$. This exchange rate can also be stated as “ $\text{USD}1.1274 = \text{EUR}1.00$ ” using the three-digit ISO codes. 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 that is different from their own, an understanding of exchange rates is critical to the conduct of global business.

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 financial press, however, has a rich history of using a variety of different symbols, and a variety of different abbreviations are commonly used. For example, the British pound sterling may be indicated by £ (the pound symbol), GBP (Great Britain pound), STG (British pound sterling), ST£ (pound sterling), or UKL or UK£ (United Kingdom pound). This book uses both the simpler common symbols—the \$ (dollar), the € (euro), the ¥ (yen), the £ (pound)—and the three-letter ISO codes.

Exchange Rate Quotations and Terminology. Exhibit 1.2 lists currency exchange rates for June 19, 2021, as would be quoted in New York or London. Each exchange rate listed is for a specific country's currency against the U.S. dollar, the euro, and the British pound. The

EXHIBIT 1.2 Selected Global Currency Exchange Rates for June 18, 2021

Country	Currency	Symbol	Code	Currency to equal 1 Dollar	Currency to equal 1 Euro	Currency to equal 1 Pound
Argentina	nuevo peso	Ps	ARS	95.3800	113.1875	131.8533
Australia	dollar	A\$	AUD	1.3342	1.5833	1.8444
Brazil	real	R\$	BRL	5.0522	5.9949	6.9800
Canada	dollar	C\$	CAD	1.2406	1.4722	1.7150
Chile	peso	\$	CLP	743.68	882.53	1,028.06
China	yuan	¥	CNY	6.4500	7.6542	8.9165
Czech Republic	koruna	Kc	CZK	21.5280	25.5470	29.7600
Denmark	krone	Dkr	DKK	6.2649	7.4346	8.6606
Eurozone	euro	€	EUR	0.8424	1.0000	1.1645
Hong Kong	dollar	HK\$	HKD	7.7643	9.2116	10.7295
Hungary	forint	Ft	HUF	299.730	355.760	414.240
India	rupee	Rs	INR	74.083	87.914	102.412
Indonesia	rupiah	Rp	IDR	14,495.25	17,052.88	19,865.09
Israel	shekel	Shk	ILS	3.2795	3.8889	4.5266
Japan	yen	¥	JPY	110.38	130.99	152.59
Kuwait	dinar	KD	KWD	0.2971	0.3524	0.4104
Malaysia	ringgit	RM	MYR	4.1370	4.9123	5.7190
Mexico	new peso	\$	MXN	20.6905	24.5534	28.6025
Morocco	dirham	DH	MAD	8.7967	10.4350	12.1501
New Zealand	dollar	NZ\$	NZD	1.4397	1.7095	1.9905
Norway	krone	NKr	NOK	8.6678	10.2861	11.9824
Pakistan	rupee	Rs	PKR	153.1770	181.7477	211.5997
Philippines	peso	?	PHP	47.8400	56.7228	66.0317
Peru	new sol	SI	PEN	3.7814	4.4856	5.2229
Poland	zloty	zl	PLN	3.8335	4.5519	5.3002
Russia	ruble	R	RUB	72.4350	86.0093	100.1470
Saudi Arabia	riyal	—	SAR	3.7117	4.4009	5.1231
Singapore	dollar	S\$	SGD	1.3441	1.5960	1.8584
South Africa	rand	R	ZAR	14.2702	16.9344	19.7271
South Korea	won	W	KRW	1,134.93	1,347.12	1,568.35
Sweden	krona	SKr	SEK	8.6176	10.2310	11.9147
Switzerland	franc	Fr.	CHF	0.9217	1.0938	1.2742
Taiwan	dollar	T\$	TWD	27.8020	33.0121	38.4390
Thailand	baht	B	THB	31.4700	37.3675	43.5100
Turkey	lira	YTL	TRY	8.7136	10.3465	12.0474
United Arab Emirates	dirham	—	AED	3.6726	4.3583	5.0770
United Kingdom	pound	£	GBP	0.7236	0.8582	1.0000
United States	dollar	\$	USD	1.0000	1.1867	1.3824
Vietnam	dong	d	VND	22,450.00	26,618.45	30,986.89

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.”) All quotes are mid rates and are drawn from the *Financial Times*.

rate listed is termed a “midrate” because it is the middle or average of the rates at which currency traders buy currency (*bid rate*) and sell currency (*offer rate*).

The U.S. dollar has been the focal point of currency trading since the 1940s. As a result, most of the world’s currencies are quoted against the dollar—Mexican pesos per dollar, Brazilian real per dollar, Hong Kong dollars per dollar, etc. They are also frequently quoted against other major world currencies like the euro and pound. For example, the Japanese yen is commonly quoted against the dollar, euro, and pound, as $¥110.38 = \$1.00$, $¥130.99 = €1.00$, and $¥152.59 = £1.00$, as illustrated in Exhibit 1.2.

Quotation Conventions. Several of the world’s major currency exchange rates 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” or $\$ = €1.00$ —for example, \$1.1867 listed in Exhibit 1.2 for “United States.” Similarly, the exchange rate between the U.S. dollar and the British pound is always quoted as “dollars per pound” or $\$ = £1.00$ —for example, \$1.3824 listed for “United States” in Exhibit 1.2. In addition, countries that were formerly members of the British Commonwealth will often be quoted against the U.S. dollar, as in U.S. dollars per Australian dollar.

Global Finance in Practice 1.1 introduces the topic that is fundamental to this entire field of study, the quotation of currencies.

If exchange rates never changed, the global financial marketplace would be a much kinder, simpler place. But, alas, that is not the case. Exchange rates change, and when they do, they alter the business results and competitiveness of all players on the playing field. As illustrated in the following section, it requires a careful calculation of even the amount of the change—percentage change.

GLOBAL FINANCE IN PRACTICE 1.1

Exchange Rate Quotations

Foreign exchange rate refers to the per unit value of a given currency in terms of another currency. Seemingly a very simple concept—except it is not. For example, on October 7, 2022, the following were the spot currency quotes across three major business and financial data sources for the value of the British pound sterling (GBP) in terms of the Chinese renminbi (CNY):

<i>Financial Times</i>	GBPCNY	7.8467
<i>Bloomberg</i>	GBP-CNY	7.8259
<i>Xe.com</i>	GBP/CNY	7.8819

To be clear, all three are saying nearly the same thing: that the value of one British pound is equivalent to seven renminbi and 85 fen (one hundred fen equals one renminbi). However, there are some unique characteristics that highlight the differences.

- First, they use the three-letter ISO-4217 code for each currency. For example, GBP instead of British pound sterling or £, or CNY instead of renminbi or ¥. This is how the rates are expressed in the financial markets. Yet, many news organizations and contemporary media still commonly use symbols like £, \$, €, or ¥.
- Second, the order of the currency codes is the same, GBP and then CNY. In this standardized format the first currency (GBP) is the “base” currency and the second currency (CNY) is known as the “underlying” currency. A standardized

quote provides the value of one unit of the base currency in terms of the underlying currency. This makes it easy to list currencies in tables and databases as it eliminates the need for details like “Renminbi per pound.”

- Third, all these quotes are different from the way currencies were quoted for decades, when the common way to express these would have been $¥ 7.8259/£$, spoken as ¥7.8259 per pound.

Our objective in this book is to both educate and inform the reader with how international finance is conducted and communicated in the modern world. That means we will use both forms of currency symbols, the ISO-4217 codes and symbols like £, \$, and ¥. In certain cases, you may note that the same symbol is used for more than one currency. For Example, the U.S. dollar, Singapore dollar, and Australian dollar use the same symbol, \$. The standardized ISO-4217 codes eliminate this confusion (USD, SGD, and AUD).

The final difference is that the quotes rates are slightly different from each other. This is because the forex market is the only financial market that operates 24×7 as at least one currency zone is always operating at any given point in time. Also, different organizations use different sources to obtain their rates and sometimes the markets may not be in perfect sync with each other. However, it is much more complex than this, a subject best left for Chapter 5. Now back to your previously scheduled program.

Percentage Change in Spot Exchange Rates

Assume that the Mexican peso has recently changed in value from MXN 16.00 = USD 1.00 to MXN 20.00 = USD 1.00. If your home currency is the U.S. dollar (USD), what is the percent change in the value of the Mexican peso (MXN)? The calculation depends upon the designated home currency.

Foreign Currency Terms. When the foreign currency price (the price, MXN) of the home currency (the unit, USD) is used, Mexican pesos per U.S. dollar in this case, the formula for the percent change (%Δ) in the foreign currency becomes

$$\% \Delta = \frac{\text{Begin rate} - \text{End rate}}{\text{End rate}} \times 100 = \frac{\text{MXN}16.00 - \text{MXN}20.00}{\text{MXN}20.00} \times 100 = -20.00\%$$

The Mexican peso fell in value 20% against the dollar. Note that it takes more pesos per dollar, and the calculation resulted in a negative value, both characteristics of a fall in value.

Home Currency Terms. When the home currency price (the price, USD) for a foreign currency (the unit, MXN) is used—the reciprocals of the foreign exchange quotes above—the formula for the percent age change in the foreign currency is

$$\% \Delta = \frac{\text{End rate} - \text{Begin rate}}{\text{Begin rate}} \times 100 = \frac{\text{USD}0.05000 - \text{USD}0.06250}{\text{USD}0.06250} \times 100 = -20.00\%$$

The calculation yields the identical percentage change, a fall in the value of the peso by -20%. Many people find the home currency terms calculation to be the more intuitive because it reminds them of a general percentage change calculation (ending value less beginning value over beginning value); however, one must be careful to remember that these are exchanges of currency for currency, and the currency that is designated as the home currency is important.

The fall of the Argentine peso in 2015 serves as a clear example of percentage change. On December 16, 2015, the government of Argentina announced it would lift currency controls; it would no longer restrict the ability of its citizens to move money out of the country. Over the next 24 hours, as Argentinians took advantage of this new freedom, the value of the Argentine peso fell from ARG 9.7908 per U.S. dollar to 13.6160, as pesos poured out of Argentina into the foreign exchange markets.

$$\% \Delta = \frac{\text{Begin rate} - \text{End rate}}{\text{End rate}} \times 100 = \frac{\text{ARG}9.7908 - \text{ARG}13.6160}{\text{ARG}13.6160} \times 100 = -28\%$$

After the 28% drop in the value of the peso against the U.S. dollar, the peso stabilized. But a fall in its value of that magnitude, 28%, was both dramatic and devastating for some. The change in exchange rates is the first example of our next subject—*risk*.

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 globalization was a good thing. But the subprime crisis and eurozone dramas are shaking that belief. . . what is the bigger risk now—particularly in the eurozone—is that financial globalization has created a system that is interconnected in some dangerous ways.

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

Much of the discussion dominating global financial markets today is centered on the complexity of risks associated with *financial globalization*—the discussion goes far beyond whether such globalization is simply good or bad and encompasses ways to lead and manage multinational firms in the rapidly moving marketplace. The following is but a sampling of risks that must be explored, considered, and—ultimately—*managed*.

- The international monetary system, an eclectic mix of floating and managed fixed exchange rates, is under constant scrutiny. The rise of the Chinese renminbi is changing much of the world's outlook on currency exchange, reserve currencies, and the roles of the dollar and the euro (see Chapter 2).
- Large fiscal deficits, including the continuing eurozone crisis, plague most of the major trading countries of the world, complicating fiscal and monetary policies and, ultimately, leading to the use of negative interest rates in an attempt to stimulate economies and protect currencies (see Chapter 3).
- 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, or the continuing current account deficits of the United States and United Kingdom, all will inevitably move exchange rates (see Chapter 3).
- Ownership and governance vary dramatically across the world. The publicly traded company is not the dominant global business organization; the privately held firm or the state-owned enterprise dominates in many countries, changing corporate objectives and expectations for financial performance (see Chapter 4).
- 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 and have become less open and accessible to many of the world's organizations (see Chapter 2).
- Today's emerging markets are confronted with a new dilemma: the problem of first being the recipients of capital inflows and then of experiencing rapid and massive capital outflows. Financial globalization has resulted in the ebb and flow of capital into and out of both industrial and emerging markets, greatly complicating financial management (Chapters 5 and 8).

Eurocurrencies and Eurocurrency Interest Rates

One of the major linkages of global money and capital markets is the eurocurrency market.

Eurocurrencies. *Eurocurrencies* are domestic currencies of one country on deposit in a second country. For example, a U.S. dollar deposit in a British bank, a eurodollar deposit, is one type of eurocurrency. Banks will pay interest on these deposits—eurocurrency interest—depending on the agreed-upon maturity—a period ranging from overnight to more than a year or longer. Eurocurrency deposits are digitally transferred between banks.

The eurocurrency market serves 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.

Any *convertible currency* can exist in “euro” form. Note that this use of the “euro” prefix should not be confused with the European currency called the euro. The eurocurrency market includes eurosterling (British pounds deposited outside the United Kingdom), euroeuros (euros on deposit outside the eurozone), euroyen (Japanese yen deposited outside Japan), and *eurodollars* (U.S. dollars deposited outside the U.S.).

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 its home currency. 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 those deposits might be attached by U.S. residents with claims against communist governments. Therefore, Eastern Europeans 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 contributed to 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. The attitude of governments toward market intervention, such as the possible intentional undervaluation of one’s own currency, is the subject of *Global Finance in Practice 1.2*.

Eurocurrency Interest Rates. The reference rate of interest in the eurocurrency market is the *London Interbank Offered Rate*, or LIBOR. LIBOR is the most widely accepted rate of interest used in standardized quotations, loan agreements, or financial derivatives valuations. The use of interbank offered rates, however, is not confined to London. Most major domestic financial centers construct their own interbank offered rates for local loan agreements. Examples of such 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 just a few. But as prevalent and central LIBOR is to the global financial system, it is now slated for replacement, the subject of our mini-case in Chapter 8.

GLOBAL FINANCE IN PRACTICE 1.2

Why Don't African Countries Undervalue Their Currencies?

One of the oldest strategies to promote a country's exports is to undervalue its currency, maintain its traded value against other currencies at a rate of exchange that makes it relatively cheap. And if the currency is cheap, products that are priced in that currency—the country's exports—will be relatively cheap. And, theoretically, cheaper prices mean greater sales. It is not a secret that many of the countries of south Asia maintained undervalued currencies for many years in pursuit of export-led growth. If it worked for them, why not Africa?

A representative of the International Monetary Fund (IMF) once encouraged the president of Tanzania to weaken its currency. The president, Julius Nyerere, responded, "I will devalue the shilling over my dead body." That perspective is commonly

held across Africa. Countries like Nigeria use all possible ways to maintain their currency at a value that many in the world believe is either slightly overvalued or about equilibrium, but hardly ever will one find a currency significantly undervalued.

That's not to say that African currencies are famously solid. The Zimbabwe currency is infamous in its inability to maintain its value as a result of bouts of hyperinflation and rampant money printing by the government. And there are others. But the international markets keep a watchful eye on any African country's currency showing any sign of weakness and will pounce (or maybe *flee* is the more appropriate term) if they smell smoke. For much of Africa, however, maintaining the value of their currency is a matter of pride and demonstrated resilience and stability, and even if a weaker or cheaper home currency might help boost exports and therefore their economy, in their eyes, the "cost" is too much.

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 savings associated with eurocurrency markets is that deposit insurance (such as the Federal Deposit Insurance Corporation [FDIC]) and other assessments paid on deposits in the United States, for example, are unnecessary.

1.2 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 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 goods produced, increased the quality of life for all citizens. Smith based his work on the concept of *absolute advantage*, with every country specializing in the production of those goods for which it was uniquely suited. More would be produced for less. Thus, with each country specializing in products for which it possessed absolute advantage, countries could produce more in total and trade for goods that were cheaper in price than those produced at home.

In his work *On the Principles of Political Economy and Taxation*, published in 1817, David Ricardo sought to take the basic ideas set down by Smith a few logical steps further. Ricardo noted that even if a country possessed absolute advantage in the production of two goods, it might still be relatively more efficient than the other country in one good's production than the production of the other good. 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 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 can flow between countries to varying degrees, such as immigrants into the EU from North Africa and the Middle East and then in turn between states in the EU.

Modern factors of production are more numerous than in this simple model. Factors considered in the location of production facilities worldwide include 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.

Comparative advantage shifts over time as less-developed countries become more developed and realize their latent opportunities. For example, over the past 150 years, comparative advantage in producing cotton textiles has shifted from the United Kingdom to the United States, to Japan, to Hong Kong, to Taiwan, and to China. The classical model of comparative advantage also does not address certain other issues such as the effect of uncertainty and information costs, the role of differentiated products in imperfectly competitive markets, and economies of scale.

Nevertheless, although the world is a long way from the pure theory of comparative advantage, the general principle of comparative advantage is still valid. The closer the world gets to true international specialization, the more world production and consumption can be increased, provided that the problem of equitable distribution of the benefits can be solved to the satisfaction of consumers, producers, and political leaders. Complete specialization, however, remains an unrealistic limiting case, just as perfect competition is a limiting case in microeconomic theory.

Comparative advantage is still a relevant theory to explain why particular countries are most suitable for exports of goods and services that support the global supply chain of both MNEs and domestic firms. The comparative advantage of the twenty-first century, however, is one that is based more on services and their cross-border facilitation by telecommunications and the Internet. The source of a nation's comparative advantage, however, is still the mixture of its own labor skills, access to capital, and technology.

The extent of global outsourcing is already reaching every corner of the globe. From financial back offices in Manila to information technology engineers in Hungary, modern

telecommunications now bring business activities to labor rather than moving labor to the places of business.

1.3 What Is Different About International Financial Management?

Exhibit 1.3 details some of the main differences between international and domestic financial management. These component differences include institutions, corporate governance, foreign exchange, political risks, and the modifications required of financial theory and financial instruments.

Multinational financial management requires an understanding of cultural, historical, and institutional differences such as those affecting corporate governance. Although both domestic firms and MNEs are exposed to foreign exchange risks, MNEs alone face certain unique risks, such as political risks, that are not normally a threat to domestic operations. MNEs also face other risks that can be classified as extensions of domestic finance theory.

For example, the normal domestic approach to the cost of capital, sourcing debt and equity, capital budgeting, *working capital management*, taxation, and credit analysis needs to be modified to accommodate foreign complexities. Moreover, a number of financial instruments that are used in domestic financial management have been modified for use in international financial management. Examples are foreign currency options and futures, interest rate and currency swaps, and letters of credit.

The main theme of this book is to analyze how an MNE’s financial management evolves as it pursues global strategic opportunities and as new constraints emerge. In this chapter, we introduce the challenges and risks associated with Aidan Corporation (Aidan), a company we use as an example throughout this book. Aidan is a company evolving from being domestic in scope to becoming truly multinational. The discussion includes constraints that a company will face in terms of managerial goals and governance as it becomes increasingly

EXHIBIT 1.3 What Is Different about International Financial Management?

Concept	International	Domestic
Culture, history, and institutions	Each foreign country is unique and not always understood by MNE management	Each country has a known base case
Corporate governance	Foreign countries’ regulations and institutional practices are all uniquely different	Regulations and institutions are well known
Foreign exchange risk	MNEs face foreign exchange risks due to their subsidiaries, as well as import/export and foreign competitors	Foreign exchange risks from import/export and foreign competition (no subsidiaries)
Political risk	MNEs face political risk because of their foreign subsidiaries and high profile	Negligible political risks
Modification of domestic finance theories	MNEs must modify finance theories like capital budgeting and the cost of capital because of foreign complexities	Traditional financial theory applies
Modification of domestic financial instruments	MNEs utilize modified financial instruments such as options, forwards, swaps, and letters of credit	Limited use of financial instruments and derivatives because of few foreign exchange and political risks

involved in multinational operations. But first we need to clarify the unique value proposition and advantages that the MNE was created to exploit.

Market Imperfections: A Rationale for the Existence of the Multinational Firm

MNEs strive to take advantage of imperfections in national markets for products, factors of production, and financial assets. Imperfections in the market for products translate into market opportunities for MNEs. Large international firms are better able to exploit such competitive factors as economies of scale, managerial and technological expertise, product differentiation, and financial strength than are their local competitors. In fact, MNEs thrive best in markets characterized by international oligopolistic competition, where these factors are particularly critical. In addition, once MNEs have established a physical presence abroad, they are in a better position than purely domestic firms to identify and implement market opportunities through their own internal information network.

Why Do Firms Go Global?

Strategic motives drive the decision to invest abroad and become an MNE. These motives can be summarized under the following categories:

1. *Market seekers* produce in foreign markets either to satisfy local demand or to export to markets other than their home market. U.S. automobile firms manufacturing in Europe for local consumption are an example of market-seeking motivation.
2. *Raw material seekers* extract raw materials wherever they can be found, either for export or for further processing and sale in the country in which they are found—the host country. Firms in the oil, mining, plantation, and forest industries fall into this category.
3. *Production efficiency seekers* produce in countries where one or more of the factors of production are underpriced relative to their productivity. Labor-intensive production of electronic components in Taiwan, Malaysia, and Mexico is an example of this motivation.
4. *Knowledge seekers* operate in foreign countries to gain access to technology or managerial expertise. For example, German, Dutch, and Japanese firms have purchased U.S. electronics firms for their technology.
5. *Political safety seekers* acquire or establish new operations in countries that are considered unlikely to expropriate or interfere with private enterprise. For example, Hong Kong firms invested heavily in the United States, United Kingdom, Canada, and Australia in anticipation of the consequences of China's 1997 takeover of the British colony.

These five types of strategic considerations are not mutually exclusive. Forest products firms seeking wood fiber in Brazil, for example, may also find a large Brazilian market for a portion of their output.

In industries characterized by worldwide oligopolistic competition, each of the aforementioned strategic motives should be subdivided into proactive and defensive investments. Proactive investments are designed to enhance the growth and profitability of the firm itself. Defensive investments are designed to deny growth and profitability to the firm's competitors. Examples of the latter are investments that try to preempt a market before competitors can get established in it or capture raw material sources and deny them to competitors. But as highlighted by *Global Finance in Practice 1.3*, the objectives and responsibilities of the modern multinational enterprise have grown significantly more complex with these elements.

GLOBAL FINANCE IN PRACTICE 1.3

Corporate Responsibility and Corporate Sustainability

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

—Brundtland Report, 1987, p. 54.

What is the purpose of the corporation? It is accepted that the purpose of the corporation is to certainly create profits and value for its stakeholders, but the responsibility of the corporation is to do so in a way that inflicts no costs on society, including the environment. As a result of globalization, this growing responsibility and role of the corporation in society have added a level of complexity to the leadership challenges faced by the multinational firm.

This developing controversy has been somewhat hampered to date by conflicting terms and labels—*corporate*

goodness, corporate responsibility, corporate social responsibility (CSR), corporate philanthropy, and corporate sustainability, to list but a few. Confusion can be reduced by using a guiding principle—that sustainability is a goal, while responsibility is an obligation. It follows that the obligation of leadership in the modern multinational is to pursue profit, social development, and the environment, all along sustainable principles.

The term *sustainability* has evolved greatly within the context of global business in the past decade. A traditional primary objective of the family-owned business has been the “sustainability of the organization”—the long-term ability of the company to remain commercially viable and provide security and income for future generations. Although narrower in scope, the concept of environmental sustainability shares a common core thread—the ability of a company, a culture, or even the earth to survive and renew over time.

1.4 The Globalization Process

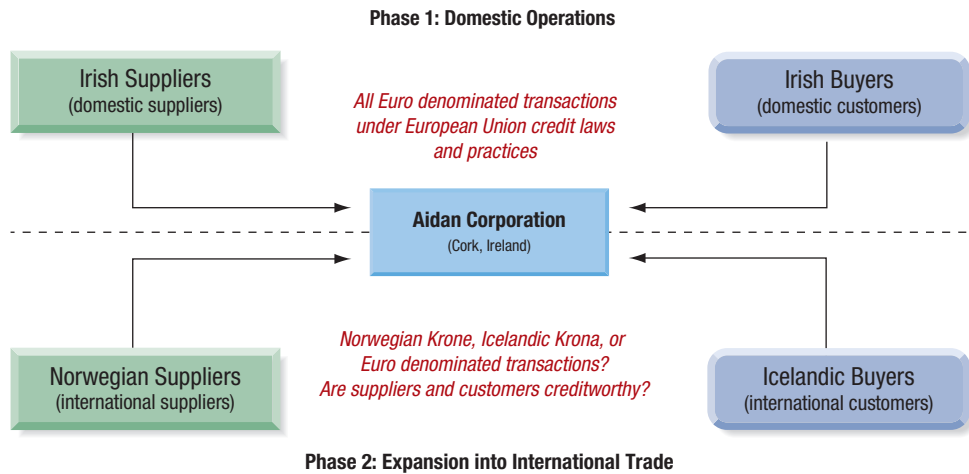
Aidan Corporation is a hypothetical Irish firm that is used as an illustrative example throughout the book to demonstrate the phases of the globalization process—the structural and managerial changes and challenges experienced by a firm as it moves its operations from domestic to global.

Global Transition I: Domestic Phase to the International Trade Phase

Aidan is a young firm that manufactures and distributes an array of telecommunication equipment. Its initial strategy is to develop a sustainable competitive advantage in the Irish market. Like many other young firms, it is constrained by its small size, competitors, and lack of access to cheap and plentiful sources of capital. The top half of Exhibit 1.4 shows Aidan in its early domestic phase.

Aidan sells its products in euros to Irish customers and buys its manufacturing and service inputs from Irish suppliers, paying euros. The creditworthiness of all suppliers and buyers is established under European practices and procedures. A potential issue for Aidan at this time is that, although Aidan is not international or global in its operations, some of its competitors, suppliers, or buyers may be. This is often the impetus to push a firm like Aidan into the first phase of the globalization process—into international trade. Aidan was founded in Dublin by Aidan McClafferty in 1960 to make telecommunication equipment. The family-owned business expanded slowly but steadily over the following 60 years. The demands of continual technological investment in the 1990s, however, required that the firm raise additional equity capital in order to compete. This need for capital led to its initial public offering (IPO) in 1998. As an Irish publicly traded company on Euronext Dublin, Aidan’s management sought to create value for its shareholders.

As Aidan became a visible and viable competitor in the Irish market, strategic opportunities arose to expand the firm’s market reach by exporting products and services to one or more foreign markets. The European Economic Area (EEA) made trade with other European countries

EXHIBIT 1.4 Aidan Corp: Initiation of the Globalization Process

such as Norway and Iceland attractive. This second phase of the globalization process is shown in the lower half of Exhibit 1.4.

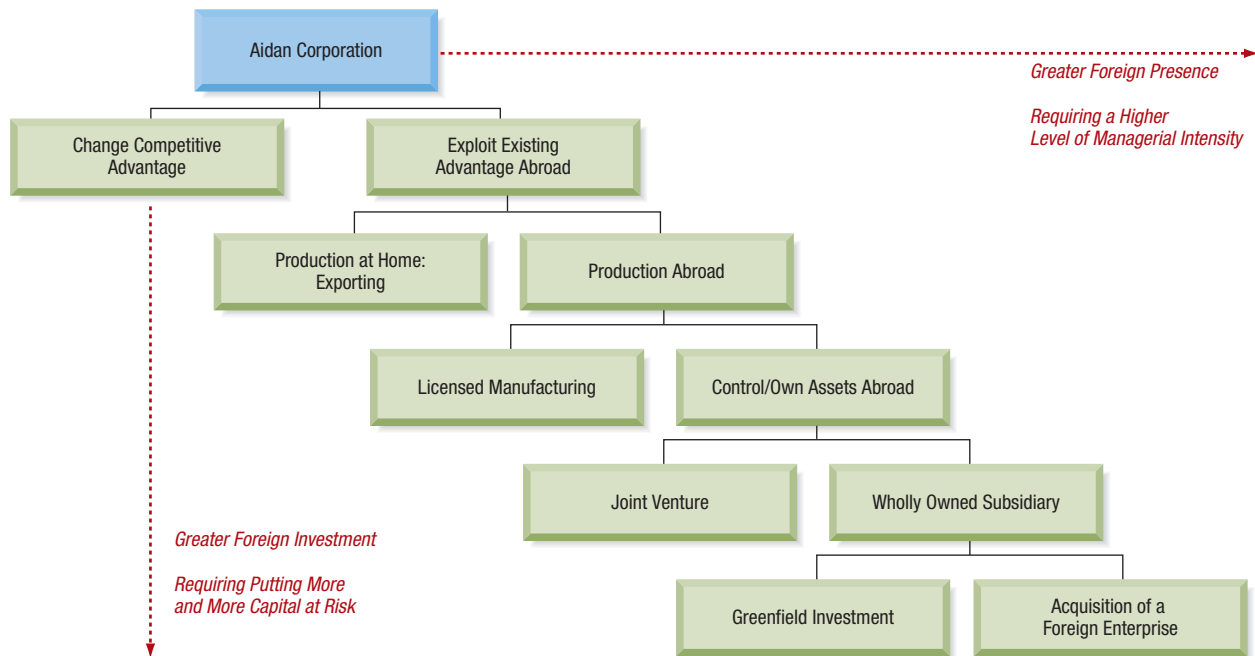
Aidan responded to these globalization forces by importing inputs from Norwegian suppliers and making export sales to Icelandic buyers. We define this phase of the globalization process as the International Trade Phase. Exporting and importing products and services increase the demands of financial management over and above the traditional requirements of the domestic-only business in two ways. First, direct foreign exchange risks are now borne by the firm. Aidan may now need to quote prices in foreign currencies, accept payment in foreign currencies, or pay suppliers in foreign currencies. As the values of currencies change from minute to minute in the global marketplace, Aidan will increasingly experience significant risks from the changing values associated with these foreign currency payments and receipts.

Second, the evaluation of the credit quality of foreign buyers and sellers is now more important than ever. Reducing the possibility of non-payment for exports and non-delivery of imports becomes a key financial management task during the international trade phase. This credit risk management task is much more difficult in international business, as buyers and suppliers are new, subject to differing business practices and legal systems, and generally more challenging to assess.

Global Transition II: The International Trade Phase to the Multinational Phase

If Aidan is successful in its international trade activities, the time will come when the globalization process will progress to the next phase. Aidan will soon need to establish foreign sales and service affiliates. This step is often followed by establishing manufacturing operations abroad or by licensing foreign firms to produce and service Aidan's products. The multitude of issues and activities associated with this second, larger global transition is the real focus of this book.

Aidan's continued globalization will require it to identify the sources of its competitive advantage, and with that knowledge, expand its intellectual capital and physical presence globally. A variety of strategic alternatives are available to Aidan—the

EXHIBIT 1.5 Aidan's Foreign Direct Investment Sequence

foreign direct investment sequence—as shown in Exhibit 1.5. These alternatives include the creation of foreign sales offices, the licensing of the company name and everything associated with it, and the manufacturing and distribution of its products to other firms in foreign markets.

As Aidan moves further down and to the right in Exhibit 1.5, the extent of its physical presence in foreign markets increases. It may now own its own distribution and production facilities, and ultimately, it may want to acquire other companies. Once Aidan owns assets and enterprises in foreign countries, it has entered the multinational phase of its globalization.

The Multinational Enterprise's Consolidated Financial Results

Aidan will create more and more foreign subsidiaries as it expands globally. Some MNEs may only have one foreign subsidiary, while others, like Johnson & Johnson (U.S.), have nearly 200. Each subsidiary will have its own set of financial statements and results (income statement, balance sheet, and statement of cash flow). Each subsidiary is also likely operating in a different currency, subject to differing tax rates, accounting practices such as depreciation, and a multitude of other financial parameters. The company, however, must periodically consolidate all those financial results and report them in the currency of its home country.

Exhibit 1.6 illustrates a simplified income statement consolidation for Aidan. Assuming that Irish-based Aidan has two foreign subsidiaries, one in Malaysia and one in Turkey, in addition to its Irish operations, it converts the various income statement items to euros from Malaysian ringgit and Turkish lira at the average exchange rate for each currency pair for the period (in this case, the year). As we will see in later chapters, this process results in a number of currency risks and exposures, as exchange rates may change in ways that increase or decrease consolidated results.

EXHIBIT 1.6 Selected Consolidated Income Results for Aidan (Ireland)

As an Irish-based multinational company, Aidan must consolidate the financial results (in this case, sales and earnings from the income statements) of foreign subsidiaries. This requires converting foreign currency values into euros.

Country	Currency	Sales (millions)	Avg Exchange Rate for Year	Sales (millions euros)	Percent of Total
Ireland	European euro (€)	€400		€400	61.3%
Malaysia	Malaysian ringgit (MYR)	MYR500	MYR4.59 = €1.00	€108.9	16.7%
Turkey	Turkish lira (₺)	₺900	₺6.28 = €1.00	€143.3	22.0%
				€652.2	100%
Country	Currency	Earnings (millions)	Avg Exchange Rate for Year	Earnings (millions euros)	Percent of Total
Ireland	European euro (€)	€38.1		€38.1	58.9%
Malaysia	Malaysian ringgit (MYR)	MYR43.75	MYR4.59 = €1.00	€9.53	14.7%
Turkey	Turkish lira (₺)	₺107.1	₺6.28 = €1.00	€17.05	26.4%
				€64.68	100%

Aidan, for the year shown, generated 61.3% of its global sales in Ireland, with those Irish sales making up 58.9% of its consolidated profits. From quarter to quarter and year to year, both the financial performance of the individual subsidiaries will change in addition to exchange rates.

* This is a simplified consolidation. Actual consolidation accounting practices require a number of specific line item adjustments not shown here.

The Limits to Financial Globalization

The theories of international business and international finance introduced in this chapter have long argued that with an increasingly open and transparent global marketplace in which capital may flow freely, capital will increasingly flow and support countries and companies based on the theory of comparative advantage. Since the mid-twentieth century, this has indeed been the case as more and more countries have pursued more open and competitive markets. But the past decade has seen the growth of a new kind of limit or impediment to financial globalization: the increasing influence and self-enrichment of organizational insiders.

One possible representation of this process can be seen in Exhibit 1.7. If influential insiders in corporations and sovereign states continue to pursue the increase in firm value, there will be a definite and continuing growth in financial globalization. But if these same influential insiders pursue their own personal agendas, which may increase their personal power and influence or personal wealth, or both, then capital will not flow into these sovereign states and corporations. The result is the growth of financial inefficiency and the segmentation of globalization outcomes creating winners and losers. As we will see throughout this book, this barrier to international finance may indeed become increasingly troublesome. This growing dilemma is also something of a composite of what this book is about. The three fundamental elements—financial theory, global business, and management beliefs and actions—combine to present either the problem or the solution to the growing debate over the benefits of globalization to countries and cultures worldwide.

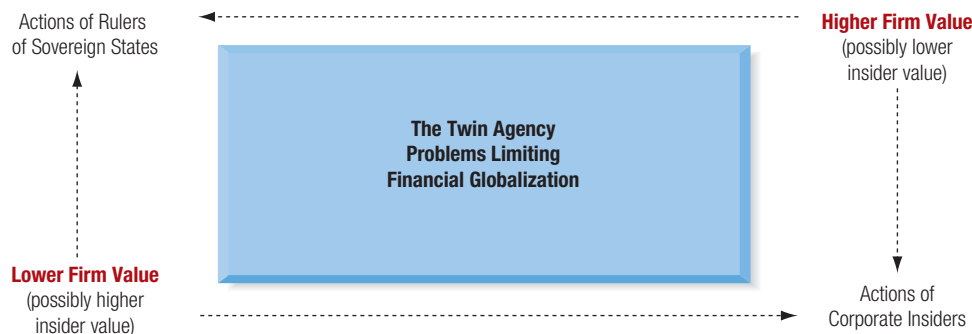
We close this chapter and open this book with the simple words of one of our colleagues on the outlook for global finance and global financial management:

Welcome to the future. This will be a constant struggle. We need leadership, citizenship, and dialogue.

—Donald Lessard, in *Global Risk, New Perspectives and Opportunities*, 2011, p. 33.

EXHIBIT 1.7 The Limits of Financial Globalization

There is a growing debate over whether many of the insiders and rulers of organizations with enterprises globally are taking actions consistent with creating firm value or consistent with increasing their own personal stakes and power.



If these influential insiders are building personal wealth over that of the firm, it will indeed result in preventing the flow of capital across borders, currencies, and institutions to create a more open and integrated global financial community.

Source: Constructed by authors based on "The Limits of Financial Globalization," Rene M. Stulz, *Journal of Applied Corporate Finance*, Vol. 19, No. 1, Winter 2007, pp. 8–15.

Summary Points

- The creation of value requires combining three critical elements: (1) an open marketplace, (2) high-quality strategic management, and (3) access to capital.
- The theory of comparative advantage provides a basis for explaining and justifying international trade in a model world of free and open competition.
- International financial management requires an understanding of cultural, historical, and institutional differences, such as those affecting corporate governance.
- Although both domestic firms and MNEs are exposed to foreign exchange risks, MNEs alone face certain unique risks, such as political risks, that are not normally a threat to domestic operations.
- MNEs strive to take advantage of imperfections in national markets for products, factors of production, and financial assets.
- The decision whether or not to invest abroad is driven by strategic motives and may require the MNE to enter into global licensing agreements, joint ventures, cross-border acquisitions, or greenfield investments.
- If influential insiders in corporations and sovereign states pursue their own personal agendas, which may increase their personal power, influence, or wealth, then capital will not flow into these sovereign states and corporations. This will, in turn, create limitations to globalization in finance.

MINI-CASE

Global Fintech¹

Fintech—financial technology—will, in the eyes of some, revolutionize the world. To others, it is just the most recent evolutionary stage of the financial industry. It has, however, the power to overcome barriers of access and inclusion to people in many countries, altering the trajectory of economic bet-

terment for many. Fintech could conceptually include any technology associated with the movement of or transactions involving money. The abacus, cash register, and automated teller machine (ATM) are all examples of financial technological developments. The term today is more commonly associated with online payments processing, such as AliPay, PayPal, or M-Pesa and cryptocurrencies like Bitcoin and Litecoin.²

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But fintech is much more than just payments processing or cryptocurrencies.³ Developments in financial technology associated with Internet access and mobile communications can potentially disrupt nearly every dimension of financial services. At present, across the globe, from Kenya to Kathmandu, new platforms and processes and products are advancing as rapidly as most nations will allow them to. The potential for fintech across countries will in many ways cross three different axes of national development: (1) level of economic development, (2) financial sector infrastructure, and (3) bank/financial services regulatory landscapes. But like all technologies, they are not inherently good or evil; the societal outcome depends on how they are applied.

Financial Landscape

Access to critical financial services, such as payments, savings and insurance, helps people improve their lives. But access is unequal and poor people and small firms typically have many fewer options. Fintech has shown its potential to close gaps in the delivery of financial services to households and firms in emerging markets and developing economies. Initially, such benefits were channeled via mobile money and digital payments solutions.

Research conducted at country and regional level, and more recently at global level, has shown the effectiveness of such solutions for financial inclusion. Other types of fintech firms, such as lending and capital raising platforms, are showing their potential to improve access to finance for underserved groups, including SMEs, although these platform solutions are still at an early stage in the majority of emerging markets and developing economies. Finally, firms that provide supporting services such as credit scoring or digital ID solutions are helping to expand the benefits of fintech across the entire financial sector. —“The Global Covid-19 FinTech Market Rapid Assessment Study,” World Bank Group, 2020, p. 8.

What is fintech’s real potential? Which societal financial functions are likely to be impacted? A basic overview of which financial functions and services society utilizes has been somewhat missing from the discussion. The World Economic Forum offered up a basic description of the financial landscape, what it called the *Wheel*, a number of years ago that is helpful in understanding the multitude of financial service sectors that could potentially be impacted by fintech. The Wheel identifies six sectors of potential impact.⁴

1. **Payments.** The execution of payment processing for both B2C and B2B transactions was the first and generally easiest financial service to be impacted by fintech. The movement toward digital payments is already quite advanced in a number of nations where the people are often ahead of the institutions, both banks and regulators.
2. **Market provisioning.** The development of technological data collection and analysis, some using artificial intelligence for rapid financial assessments, some using artificial intelligence, is expected to be a key area of impact. This sector is still considered in its infancy, as the artificial intelligence and big data necessary to support its use are still considered developing.
3. **Investment management.** The increased reach of fintech to previously ignored and underserved demographic and income sectors (e.g., Robinhood) has already proven both powerful and disruptive. The promise of the developing world is enormous in changing spending/saving-investment behaviors.
4. **Insurance.** Access to insurance services, particularly affordable services, is one of the key development barriers in emerging economies. Insurance is often one of the requirements for acquiring and utilizing assets for business and economic development. But new digital insurance providers are rapidly changing who and what is insured at what costs.
5. **Deposits and lending.** This is one of the core traditional banking functions that is already undergoing disruptive change. Financial institutions have been rapidly adopting fintech apps for deposit taking but have been slow to advance the lending functions. Fintech lending has some of the greatest potential but also some of the greatest risks—for example, the experience China has had with peer-to-peer (P2P) lending—for the global financial system.
6. **Capital raising.** Internet-based capital-raising channels such as crowdfunding have rapidly developed their own financial ecosystems. More innovation than disruption, fintech capital raising represents some of the greatest potential improvements in society through economic development.

This is just one taxonomy of societal financial functions. But regardless of how the financial service cake is sliced, it is clear that fintech’s potential to alter the lives of people in all countries and markets is real and, in many cases, already here. The recent global pandemic provided a multitude of examples of how fintech could provide more

²Many of these developments and platforms use blockchain technology. Blockchain is an encrypted list of records, called blocks, that are linked together. Although fundamental to cryptocurrencies like Bitcoin, it is not a uniquely financial technology.

³El Salvador in 2021 became the first country to declare a cryptocurrency, Bitcoin, official legal tender, money.

⁴“The Future of Financial Services: How Disruptive Innovations Are Reshaping the Way Financial Services Are Structured, Provisioned and Consumed,” World Economic Forum, Prepared in collaboration with Deloitte, Final Report, June 2015.

information and more financial services to people everywhere, partially in support of the world's struggle to ease human suffering from COVID.

Digital financial services are faster, more efficient, and typically cheaper than traditional financial services and, therefore, increasingly reaching lower-income households and small- and medium-sized enterprises (SMEs). During the COVID-19 health crisis, digital financial services can and are enabling contactless and cashless transactions. Where digital financial inclusion is advanced, they are helping facilitate the efficient and quick deployment of government support measures, including to people and firms affected by the pandemic. —“The Promise of Fintech, Financial Inclusion in the Post COVID-19 Era,” Ratna Sahay, Ulric Eriksson von Allmen, Amina Lahreche, Purva Khera, Sumiko Ogawa, Majid Bazarbash, and Kim Beaton, International Monetary Fund, No. 20/09, 2020.

Country Reach

One of the curious facets of fintech is that it may have the greatest impact on countries which are largely under-banked and, simultaneously, those that are over-banked.

Like mobile phones in countries without existing landline infrastructures, fintech can leapfrog the legacy physical infrastructure of traditional banking. It can potentially provide all of the basic financial services that the large marble-columned edifices have provided in older industrial markets for centuries at a fraction of the cost, both capital and operating. In these countries—for example, those in Sub-Saharan Africa—banking sectors are in some cases rudimentary, with a large part of the population not having access to traditional banking services. Here fintech can be fundamental, accessible at low cost, and powerful in reach. There is little to “disrupt”; here fintech can be seen in the role of a new financial infrastructure. And that can in turn act as a device for inclusion.

At the same time, fintech's potential may also be quite impactful and disruptive in the older highly banked industrialized markets. These are markets—for example, the United States or Mexico—where banks have operated profitably for more than two centuries. They are established within a societal structure of laws, regulations, and institutions that shelter and protect their activities and markets. And that long-term protection has in many cases resulted in low rates of innovation, most importantly in the under-investment in digital and cellular financial services that many customers now desire—now that people have discovered what those services may offer and cost. The traditional highly banked developed markets may be ripe for fintech disruption, as new digital financial services may be much cheaper and more efficient than

the bureaucratic, stodgy banking empires of the past. But that will only happen if they can break down the political power and breach the turf of the established institutions.

The one sector of possibly the greatest potential benefit in global business is digital lending. A naive or simplistic view of the world might be to visualize that the rich, highly industrialized countries, that play host to most of the world's capital, could see massive opportunities in getting the capital to the business entrepreneurs, startups, and under-capitalized enterprises in the emerging world. This access, once again, has been somewhat denied as established banking industries in countries, not foreign investors or lenders, define the rules of access. Again, fintech innovations, like FairMoney in Nigeria or Goldman Sachs in Mexico, are finding their way through the forests of national regulatory barriers and data deficiencies to offer small enterprises access to capital.⁵

Cross-Border Potential

One example of the potential power of fintech for good is that of international money transfers. Migrant workers all over the world continue to suffer extremely high transfer costs, often ranging between 5% to 25%, to simply transfer the income they have generated in a host country back to their families and friends in their home countries.

International money transfers in many ways represent one of the biggest challenges of fintech: low-income populations, with no legal standing, political standing, or banking access, attempting to move small amounts of money across borders. Fintech firms have started building their own international correspondent relationships, some banking, allowing these transfers to bypass the legacy banking systems that exploited lower-income migrant populations. Unfortunately, that does not mean that the fintech providers do not similarly exploit low-income customers. M-Pesa, a payment processing platform founded in Kenya and then expanded to a multitude of countries across Africa, is considered by many one of the true success stories of fintech. But a multitude of studies have cited its monopoly status. With no real competitors, it has been able to charge high fees for its use. Once again technology does not assure healthy societal outcomes.

Promise and Peril

Probably no single case exemplifies the risks and rewards of fintech better than Alipay and China. China, all agree, is the leader in fintech development, in some ways because it is a nexus of both categories of markets described in the previous section—under-banked and over-banked. And China also offers a powerful device of expediting

⁵See for example “Why Goldman Sachs Is Interested in a Small Bike Shop in Mexico, Bank's Credit Line to Fintech Firm Credijusto Is Latest Example of Growing Market of Alternative Lenders to Local Business,” by Robbie Whelan, *The Wall Street Journal*, March 14, 2019; and “FinTechs Find Lending's ‘Atomic Data Points’ in Emerging Markets,” by PYMNTS, February 26, 2021.

fintech—those most capable of embracing digital transactions are also those with some of the greatest income/wealth-generating capabilities. Oh, to be young.

Home to an old, bureaucratic, and politically powerful banking industry, it has seen the advancement of two of the world's largest and most successful digital payments systems, WeChatPay (a unit of Tencent) and AliPay (a unit of Ant Group). These digital payments applications allow buying and selling of all things economic without the use of traditional cash, bank checks, or credit cards while operating outside the traditional banking system. AliPay, the largest, is a third-party mobile and online payment platform utilizing a Quick Response (QR) code on a personal phone to conduct electronically recorded transactions in an instant. As the world's largest online payment platform it grew in market share and reach with the most advanced of consumers in Shanghai (over-banked) to the poorest of farmers in the inland provinces (under-banked).

In November 2020, AliPay's parent company, the Ant Group, was 48 hours away from its initial public offering (IPO) when the Chinese government stepped in and stopped it. Expected to be the largest IPO in financial history, the Ant Group and its founder Jack Ma had purportedly grown so large and so powerful that Chinese authorities worried about its impact on their financial system's stability. One specific activity was Ant's role in originating loans, playing a middleman role in connecting borrowers with lenders (banks) through its digital interface. The fear was that it was starting to operate similar to bank lending

seen in the U.S. leading up to the financial crisis of 2008, where a lack of prudent due diligence in lending led to subprime borrowing—and repayment delinquencies—at record rates.⁶ In the months that followed, the Chinese government rolled out a series of additional regulations to ensure that most lending remained in the hands of the banks themselves, for now.

Fintech Themes

Fintech offers new and impactful opportunities for money and capital to flow outside the brick-and-mortar institutions of the past and present. Strangely, whether fintech will threaten the banks, partner with the banks, or both is dominating much of the discussion at present. Yet the banks or existing financial institutions are largely only distributors, the plumbing and plumber, moving the capital from those who have it to those who wish to use it. With greater capital freedom will come risks and failures that cause governments to take one step back with each two steps forward. Such is experience. The net result, that's positive.

MINI-CASE QUESTIONS

1. Why do you think fintech's relationship to banking systems is the focal point of such debate?
2. Why has China proven to be the leader in fintech?
3. In your opinion, is fintech revolutionary or evolutionary?

⁶Although Ant's lending activities was the common explanation for the regulatory crackdown, it is estimated that total Ant lending was less than 1% of total Chinese bank lending.

Questions

- 1.1 **Globalization Risks for MNEs.** Was globalization responsible for the slowdown of multinational enterprise (MNE) business during the financial crisis of 2008?
- 1.2 **MNEs and Operation in Global Markets.** What are the factors that affect the decisions of multinational enterprises to operate in global markets?
- 1.3 **Eurocurrencies and Eurocurrency Markets.** What are the major eurocurrencies? What is meant by a Eurocurrency market?
- 1.4 **Fragility of the Global Financial Marketplace.** How has the global financial crisis exposed the fragility of assets and institutions of the global system?
- 1.5 **MNEs and LIBOR.** Most MNEs either take loans in eurocurrencies or issue Eurobonds with a floating coupon rate tied to the LIBOR. Explain how MNEs were affected by the LIBOR scandal.
- 1.6 **Post-LIBOR Scandal.** Why do you think the U.K. government has resolved against the total

elimination of LIBOR benchmarks after the scandal?

- 1.7 **Limitations of Comparative Advantage.** The key to understanding most theories is what they say and what they don't. Name four key limitations to the theory of comparative advantage.
- 1.8 **International Financial Management.** What is different about international financial management?
- 1.9 **Aidan's Globalization.** After reading the chapter's description of Aidan's globalization process, how would you explain the distinctions between international, multinational, and global companies?
- 1.10 **Aidan, the MNE.** At what point in the globalization process did Aidan become an MNE?
- 1.11 **Market Conditions.** The decisions of MNEs to move to new markets invariably take advantage of both market imperfections and market efficiencies. Explain.
- 1.12 **Why Go?** Why do firms become multinational?
- 1.13 **Investment Motives of Firms.** What is the difference between proactive and defensive investment motives?

- 1.14 Aidan's Phases.** What are the main phases that Aidan passed through as it evolved into a truly global firm? What are the advantages and disadvantages of each?
- 1.15 Financial Globalization.** Explain the twin agency problems. How do the twin agency problems limit financial globalization?

Problems

- 1.1 Mark Du Plessis in Johannesburg.** Mark Du Plessis lives in Johannesburg, South Africa. He can buy one euro for R16.3700 (South African rand). At the same time, Richard Nolan, living in Paris, can buy a South African rand for €0.0631. What is the foreign exchange rate between the South African rand and the euro?
- 1.2 Mexico's Cada Seis Años.** Mexico was famous—or infamous—or many years for having two things every six years (*cada seis años* in Spanish): a presidential election and a currency devaluation. This was the case in 1976, 1982, 1988, and 1994. In its last devaluation on December 20, 1994, the value of the Mexican peso (Ps) was officially changed from Ps3.30 = \$1.00 to Ps5.50 = \$1.00. What was the percentage devaluation?
- 1.3 Krisianto's Competing Job Offers.** Krisianto, after an intensive post-graduation job search, has received job offers from three multinational companies. Each position is based in a different country—Mozambique, Uzbekistan, and Singapore—and offers a different starting salary and a different signing bonus in a different currency. Krisianto wants to compare all the compensation packages in a common currency, the euro. Use the data below to determine which offer represents the greatest initial euro compensation package.
- 1.4 Munich to Moscow.** For your post-graduation celebratory trip you decide to travel from Munich, Germany, to Moscow, Russia. You leave Munich with 15,000 euros (EUR) in your wallet. Wanting to exchange all of them for Russian rubles (RUB), you obtain the following quotes:
- Spot rate on the U.S. dollar to euro cross rate:
USD1.0644 = EUR1.00
- Spot rate on the Russian ruble to dollar cross rate:
RUB59.468 = USD1.00
- What is the Russian ruble-euro cross rate?
 - How many Russian rubles will you obtain for your euros?

- 1.5 Rugby World Cup and JPY.** Steven McGregor had planned his trip to the Rugby World Cup in Japan for almost a year. He had budgeted—saved—€17,000 for expenses while in Japan. But he had postponed exchanging the euros for Japanese yen (JPY or ¥)—until the very last minute on September 17th, doing it at Dublin Airport at JPY 119.23 = 1.00 EUR. Given the following average monthly exchange rates in 2019, when should he have exchanged the euros for yen to maximize his Japanese spending money?

Month	JRL = 1.00 EUR	Month	JRL = 1.00 EUR
January	125.18	May	121.76
February	126.17	June	122.71
March	124.38	July	121.14
April	124.95	August	11702

- 1.6 Pokémon Go.** Crystal Gomez, who lives in Mexico City, bought 100 Pokécoins for 17 Mexican pesos (Ps or MXN). Nintendo of Japan, one of the owners of Pokémon Go, will need to convert the Mexican pesos (Ps or MXN) into its home currency, the Japanese yen, in order to record the financial proceeds. The current spot exchange rate between the Mexican peso and the U.S. dollar is MXN18.00 = USD1.00, and the current spot rate between the dollar and the Japanese yen (¥ or JPY) is JPY100.00 = USD1.00. What are the yen proceeds of Crystal Gomez's purchase?
- 1.7 Isaac Díez of Brazil.** Isaac Díez Peris lives in Rio de Janeiro, Brazil. While attending school in Spain he meets Juan Carlos Cordero from Guatemala. Over the summer holiday Isaac decides to visit Juan Carlos in Guatemala City for a couple of weeks. Isaac's parents give him some spending money, 4,500 Brazilian real (BRL). Isaac wants to exchange his Brazilian real for Guatemalan quetzals (GTQ). He collects the following rates:
- Spot rate, Guatemalan quetzals per euro:
GTQ10.5799 = EUR1.00
- Spot rate, Euros per Brazilian real: EUR0.4462 = BRL1.00
- What is the Brazilian reais/Guatemalan quetzal cross rate?
 - How many Guatemalan quetzals will Isaac get for his Brazilian reais?

Problem 1.3

Country	ISO	Currency	Salary	Signing Bonus	Currency = €1.00
Mozambique	MZN	metical (MT)	MT3,000,000	MT850,000	68.5900
Uzbekistan	UZS	so'm	So'm400,000,000	So'm100,000,000	10,389.84
Singapore	SGD	dollar (S\$)	S\$85,000	S\$18,000	1.5100

1.8 Moscow to Tokyo. After spending a week in Moscow you get an email from your friend in Japan. He can get you a very good deal on a plane ticket and wants you to meet him in Tokyo next week to continue your post-graduation celebratory trip. You have 450,000 Russian rubles (RUB) left in your money pouch. In preparation for the trip you want to exchange your Russian rubles for Japanese yen (JPY), so you get the following quotes:

Spot rate on the Russian ruble to U.S. dollar cross rate: RUB30.96 = USD1.00

Spot rate on the Japanese yen to U.S. dollar cross rate: JPY84.02 = USD1.00

- What is the Russian ruble/yen cross rate?
- How many Japanese yen will you obtain for your Russian rubles?

1.9 Comparing Cheap Dates around the World.

Comparison of prices or costs across different country and currency environments requires translation of the local currency into a single common currency.

This is most meaningful when the comparison is for the identical or near-identical product or service across countries. Deutsche Bank has recently started publishing a comparison of cheap dates—an evening on the town for two to eat at McDonald's, see a movie, and have a drink. Once all costs are converted to a common currency, the U.S. dollar in this case, the cost of the date can be compared across cities relative to the base case of a cheap date in USD in New York City. After completing the table below, answer the following questions.

- Which city in the table truly offers the cheapest date?
- Which city in the table offers the most expensive cheap date?
- If the exchange rate in Moscow on the Russian ruble (RUB) was 0.04200, instead of 0.0283, what would be the USD price?
- If the exchange rate in Shanghai was CNY 6.66 = 1 USD, what would be its cost in USD and relative to a cheap date in New York City?

Problem 1.9

Country	City	Cheap Date in Local Currency	Exchange Rate Quote	Exchange Rate	In USD	Relative to NYC
Australia	Sydney	AUD 111.96	USD = 1 AUD	0.9290	104.01	112%
Brazil	Rio de Janeiro	BRL 135.43	USD = 1 BRL	0.4363	_____	_____
Canada	Ottawa	CAD 78.33	USD = 1 CAD	0.9106	_____	_____
China	Shanghai	CNY 373.87	USD = 1 CNY	0.1619	_____	_____
France	Paris	EUR 75.57	USD = 1 EUR	1.3702	_____	_____
Germany	Berlin	EUR 76.49	USD = 1 EUR	1.3702	_____	_____
Hong Kong	Hong Kong	HKD 467.03	USD = 1 HKD	0.1289	_____	_____
India	Mumbai	INR 1,379.64	USD = 1 INR	0.0167	_____	_____
Indonesia	Jakarta	IDR 314,700	USD = 1 IDR	0.0001	_____	_____
Japan	Tokyo	JPY 10,269.07	USD = 1 JPY	0.0097	_____	_____
Malaysia	Kuala Lumpur	MYR 117.85	USD = 1 MYR	0.3048	_____	_____
Mexico	Mexico City	MXN 423.93	USD = 1 MXN	0.0769	_____	_____
New Zealand	Auckland	NZD 111.52	USD = 1 NZD	0.8595	_____	_____
Philippines	Manila	PHP 1,182.88	USD = 1 PHP	0.0222	_____	_____
Russia	Moscow	RUB 2,451.24	USD = 1 RUB	0.0283	_____	_____
Singapore	Singapore	SGD 77.89	USD = 1 SGD	0.7939	_____	_____
South Africa	Cape Town	ZAR 388.58	USD = 1 ZAR	0.0946	_____	_____
United Kingdom	London	GBP 73.29	USD = 1 GBP	1.6566	_____	_____
United States	New York City	USD 93.20	1 USD	1.0000	93.20	100%
United States	San Francisco	USD 88.72	1 USD	1.0000	_____	_____

Source: Data drawn from *The Random Walk, Mapping the World's Prices 2014*, Deutsche Bank Research, 09 May 2014, Figures 30 and 32, with author calculations.

Note: The *cheap date* combines the local currency cost of a cab ride for two, two McDonald's hamburgers, two soft drinks, two movie tickets, and two beers. In 2013 Deutsche Bank had included sending a bouquet of roses in the date, but did not include that in the 2014 index, making the two years not directly comparable.

1.10 Blundell Biotech. Blundell Biotech is a U.S.-based biotechnology company with operations and earnings in a number of foreign countries. The company's profits by subsidiary, in local currency (in millions), are shown in the following table for 2013 and 2014. The average exchange rate for each year, by currency pairs, was the following. Use this data to answer the following questions.

- a. What were Blundell Biotech's consolidated profits in U.S. dollars in 2013 and 2014?

Net Income	Japanese Subsidiary	British Subsidiary	European Subsidiary	Chinese Subsidiary	Russian Subsidiary	U.S. Subsidiary
2013	JPY 1,500	GBP 100.00	EUR 204.00	CNY 168.00	RUB 124.00	USD 360.00
2014	JPY 1,460	GBP 106.40	EUR 208.00	CNY 194.00	RUB 116.00	USD 382.00

The average exchange rate for each year, by currency pairs, was the following. Use this data to answer the following questions.

Exchange Rate	JPY = 1 USD	USD = 1 GBP	USD = 1 EUR	CNY = 1 USD	RUB = 1 USD	USD
2013	97.57	1.5646	1.3286	6.1484	31.86	1.0000
2014	105.88	1.6473	1.3288	6.1612	38.62	1.0000

1.11 Peng Plasma Pricing. Peng Plasma is a privately held Chinese business. It specializes in the manufacture of plasma cutting torches. Over the past eight years it has held the Chinese renminbi price of the PT350 cutting torch fixed at Rmb 18,000 per unit. Over that same period it has worked to reduce costs per unit but has struggled of late due to higher input costs. Over that same period the renminbi has continued to be revalued against the U.S. dollar by the

- b. If the same exchange rates were used for both years—what is often called a “constant currency basis”—was the change in corporate earnings on a constant currency basis?
- c. Using the results of the constant currency analysis in part b, is it possible to separate Blundell's growth in earnings between local currency earnings and foreign exchange rate impacts on a consolidated basis?

Chinese government. After completing the table—assuming the same price in renminbi for all years—answer the following questions.

- a. What has been the impact of Peng's pricing strategy on the US\$ price? How would you expect their U.S. dollar-based customers to have reacted to this?
- b. What has been the impact on Peng's margins from this pricing strategy?

Fixed Rmb Pricing of the PT350 Plasma Cutting Torch

Year	Cost (Rmb)	Margin (Rmb)	Price (Rmb)	Margin (percent)	Average Rate (Rmb/US\$)	Price (US\$)	Percent Chg in US\$ Price
2007	16,000	2,000	18,000	11.1%	7.61	2,365	—
2008	15,400	—	—	—	6.95	—	—
2009	14,800	—	—	—	6.83	—	—
2010	14,700	—	—	—	6.77	—	—
2011	14,200	—	—	—	6.46	—	—
2012	14,400	—	—	—	6.31	—	—
2013	14,600	—	—	—	6.15	—	—
2014	14,800	—	—	—	6.16	—	—
Cumulative	—	—	—	—	—	—	—

- 1.12 Andreas Delon's Compensation.** Andreas Delon is a French citizen who has been offered the position of CEO of LakePharma, a large French pharmaceuticals firm. LakePharma produces high-quality chemicals used by pharmaceutical firms around the world. Much of the production of LakePharma is sold in Switzerland, which means that Andreas Delon will spend most of his time there helping to market LakePharma's products to Swiss pharmaceutical firms. He wishes to be paid in euros, not Swiss francs (CHF).

LakePharma has agreed to pay Andreas' base salary in euros, but insists on paying his sales commission and bonus (amounting to 25% of his base salary) in Swiss francs. Andreas is unable to decide whether to agree to this suggestion or to insist on receiving all his remuneration in euros. He constructs the table on the next page showing the sales revenue to help him decide. As a close friend and colleague, what advice would you give him based on your completion of the following table?

Year	(million euros)	Change	CHF = 1 EUR	(million CHF)	Change
2015	€1,000		1.05	CHF _____	
2016	€1,100	_____%	1.06	CHF _____	_____%
2017	€1,250	_____%	1.07	CHF _____	_____%
2018	€1,300	_____%	1.08	CHF _____	_____%

EuroVirtual. Problems 13–17 are based on EuroVirtual, a France-based multinational IT firm. In addition to its home operations in France, EuroVirtual owns and operates subsidiaries in Switzerland, the

United Kingdom, and Denmark. It has 650,000 shares currently outstanding on the pan-European stock exchange: Euronext. The following table summarizes the business performance of EuroVirtual:

Business Performance (000s)	French Parent (euros, €)	Swiss Subsidiary (Swiss franc, CHF)	British Subsidiary (British pound, £)	Danish Subsidiary (Danish krone, DKK)
Earnings before taxes (EBT) in 000s of domestic currency	€2,500	CHF400	£2,100	DKK4,500
Corporate income tax rate	33.3%	25%	20%	23%
Average cross rate for the period	—	CHF1.0335/€	£0.7415/€	DKK7.4642/€

- 1.13 EuroVirtual's Consolidated Earnings.** EuroVirtual pays different tax rates for each of its country operations.

- What are its earnings per share in euros after deducting taxes?
- What is the proportion of EuroVirtual's consolidated EBT that arises from each country?
- What is the proportion of income generated outside France?

1.14 EuroVirtual's EPS Sensitivity to Exchange Rates (A).

On January 15, 2015, the Swiss National Bank (SNB) decided to unpeg the franc, which was fixed at CHF1.20/€ since 2011. Suppose the SNB was to reverse its decision and readopt the previous peg.

How would this affect the consolidated EPS of EuroVirtual if all other exchange rates, tax rates, and earnings remain unchanged?

1.15 EuroVirtual's EPS Sensitivity to Exchange Rates (B).

Assume a major weather crisis hits Switzerland, reducing its agricultural and food industries and subsequently leading to a macroeconomic recession, and by extension weakening the Swiss franc. What would be the impact on EuroVirtual's consolidated EPS if, in addition to the fall in the value of the franc to CHF 1.2/€, earnings before taxes in Switzerland fell as a result of the recession by half?

1.16 EuroVirtual's EPS and Euro Appreciation/Depreciation. Since its introduction in 2003, the euro has been fluctuating against major global currencies.

- a. What is the impact of 15% appreciation of all major currencies against the euro on the consolidated EPS of EuroVirtual?
- b. What is the impact of 20% depreciation of all major currencies against the euro on the consolidated EPS of EuroVirtual?

1.17 EuroVirtual's Global Taxation and Effective Tax Rate. All MNEs attempt to minimize their global tax liabilities. Return to the original set of baseline

assumptions and answer the following questions regarding EuroVirtual's global tax liabilities:

- a. What is the total corporate income tax that EuroVirtual pays for all its operations in euros?
- b. What is its effective tax rate (total taxes paid as a proportion of pre-tax earnings)?
- c. Suppose the United Kingdom decides to reduce its corporate tax rate to 10%, leading to a rise in EuroVirtual's British subsidiary's earnings before tax to £3,000,000. What would be the impact on EuroVirtual's EPS?

International Monetary System

The price of every thing rises and falls from time to time and place to place; and with every such change the purchasing power of money changes so far as that thing goes.

—Alfred Marshall, *Principles of Economics*, 8th ed. New York: Cosimo Inc., 2009

LEARNING OBJECTIVES

- 2.1 Explore how the international monetary system has evolved from the days of the gold standard to today's eclectic currency arrangement
- 2.2 Examine how the choice of fixed versus flexible exchange rate regimes is made by a country in the context of its desires for economic and social independence and openness
- 2.3 Describe the tradeoff a nation must make between a fixed exchange rate, monetary independence, and freedom of capital movements—the impossible trinity
- 2.4 Explain the dramatic choices the creation of a single currency for Europe—the euro—required of the European Union's member states
- 2.5 Study the complexity of exchange rate regime choices faced by many emerging market countries today including China
- 2.6 Evaluate trends in global reserve currencies and how the introduction of digital currencies may impact the future of the international monetary system

This chapter begins with a brief history of the international monetary system, from the days of the classical gold standard to the present time. The first section describes contemporary currency regimes and their construction and classification. The second section examines fixed versus flexible exchange rate principles. The third section, what we would consider the theoretical core of the chapter, describes the attributes of the ideal currency and the choices nations must make in establishing their currency regime. The fourth section describes the creation and development of the euro for European Union participating countries. The fifth section details the difficult currency regime choices faced by many emerging market countries today. We then conclude with both data and thoughts on global reserve currencies and what the future might hold. The chapter concludes with the mini-case *The Promise of the Digital Yuan*, which examines the rapid development of China's government-sponsored digital currency.

2.1 History of the International Monetary System

No world central bank issues a separate currency for commerce across national boundaries. Instead, a “system” of national monies works more or less well in providing a medium of exchange and unit of account for current international transactions, as well as a store of value and standard of deferred payment for longer-term borrowing and lending.

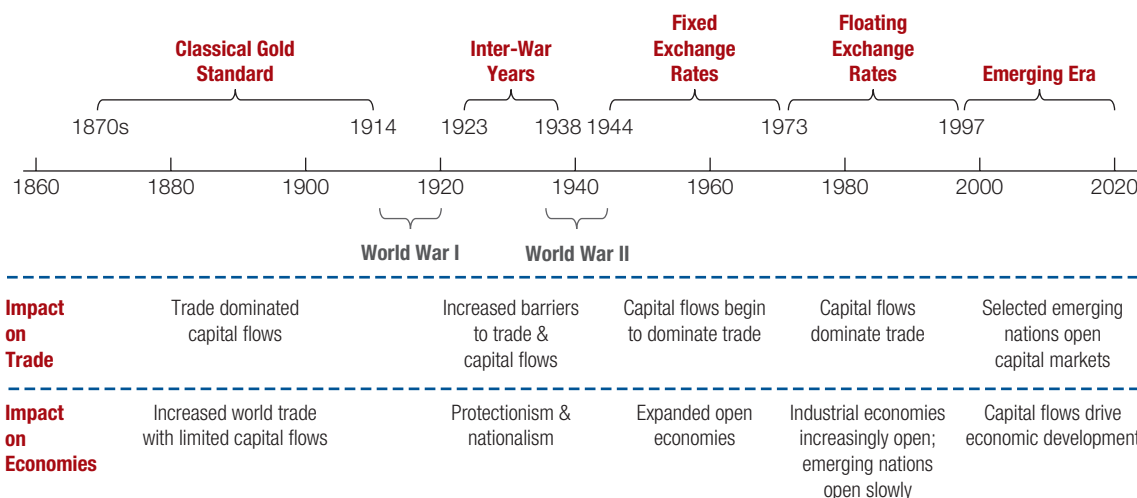
—Ronald I. McKinnon, *The Rules of the Game: International Money in Historical Perspective*, *Journal of Economic Literature*, Vol. 31, No. 1, March 1993, pp. 1–44

The system of international money, as noted by McKinnon above, is essentially a loose agreement between nations to exchange their currencies. Over the centuries, currencies have been defined in terms of gold, silver, and other items of value, all within a variety of different agreements between nations to recognize these varying definitions. A review of the evolution of these systems over the past two centuries, shown in Exhibit 2.1, provides one perspective against which to understand how we arrived at today’s rather eclectic system of fixed rates, floating rates, crawling pegs, and others and helps us to evaluate weaknesses in and challenges for all enterprises conducting global business.

The Classical Gold Standard (1879–1913)

Since the days of the pharaohs (about 3000 B.C.), gold has served as a medium of exchange and a store of value. The Greeks and Romans used gold coins, and this tradition persisted through to the nineteenth century. The great increase in trade during the late nineteenth century led to a need for a more formalized system for settling international trade balances. One country after another set a par value for its currency in terms of gold or silver and then tried to adhere to the so-called *rules of the game*.¹

EXHIBIT 2.1 The Evolution of the Global Monetary System



¹Although the expression “rules of the game” is often attributed to John Maynard Keynes, he actually never listed what he thought those rules were. Keynes, in the “Economic Consequences of Mr. Churchill” (1925), described the Bank of England reducing credit as a result of the “rules of the gold standard game.”

Some countries, like the U.S., first defined their currency in terms of both gold and silver (a bi-metallic standard), setting a ratio between the two (e.g., 1 unit of gold equaling 15 units of silver). If the market values of gold and silver diverged from this ratio, for example, if silver became relatively more valuable, then it (silver) would flow out of the nation leaving the other metal (gold) as the surviving metal backing the currency. The U.S. altered ratios and convertibility a number of times in the mid-1800s, even ending convertibility during the Civil War years of 1861–1865. In order to finance its war effort, the U.S. government suspended convertibility and printed paper money. The paper notes, printed in green on their back (“greenbacks”), had no intrinsic value and no exchange value in gold or silver and therefore were considered *fiat money*, money by decree. Following the Civil War the U.S. moved back to convertibility. As the rise of gold as the single metal (or *specie*) became prevalent across countries, the *classical gold standard* was born.

The gold standard as an international monetary system gained acceptance in Western Europe in the 1870s. France moved to gold alone in 1873, followed by Germany. Great Britain, far ahead of the other major powers of the time, had officially adopted a gold standard in 1844 under the Bank Charter Act, which made Bank of England notes fully convertible to gold. The U.S. was a bit of a latecomer to the system, not officially adopting the gold standard until 1879.

Under the gold standard, the rules of the game were clear and simple: Each country set the rate at which its currency unit (paper or coin) could be converted to a given weight of gold. For example, prior to the first world war the United States declared the U.S. dollar to be convertible to gold at a rate of \$20.67 per Troy ounce, while Great Britain pegged the British pound sterling at £4.2474 per Troy ounce of gold. As long as both currencies were freely convertible into gold within each nation, the rate of exchange between the two monies—the *parity*—was set:

$$\frac{\$20.67 = 1 \text{ ounce of gold}}{\pounds 4.2474 = 1 \text{ ounce of gold}} = \$4.8665/\pounds 1.0$$

Because the government of each country on the gold standard agreed to buy or sell gold on demand at its own fixed parity rate, *convertibility*, the value of each individual currency in terms of gold, and therefore exchange rates between currencies, was fixed. But the validity of each parity rate, whether the U.S. dollar, British pound, Russian rouble, or German mark, was based on the ability of an individual to exchange the currency for the metal—gold. Maintaining reserves of gold, gold ready to be exchanged for the currency on demand, was therefore critical in order for a government to maintain the faith of its citizens in its monetary system.

The system simultaneously implicitly limited the rate at which any individual government could expand its money supply. Growth in the money supply was limited to the rate at which official authorities (government treasuries or central banks) could acquire additional gold. This restriction was deemed essential to prevent governments from printing money and stoking inflationary forces. The gold standard worked adequately until the outbreak of World War I interrupted trade flows and the free movement of gold. This event caused the main trading nations to suspend operation of the gold standard. And as described in *Global Finance in Practice 2.1*, the gold standard allowed some governments to raise capital on the international markets by assuring investors of fixed rates of exchange.

The Interwar Years and World War II (1914–1944)

During World War I and through the early 1920s, currencies were allowed to fluctuate over fairly wide ranges in terms of gold and in relation to each other. Theoretically, supply and demand for a country’s exports and imports caused moderate changes in an exchange rate about a central equilibrium value. This was the same function that gold had performed under

GLOBAL FINANCE IN PRACTICE 2.1

The “Gold Bloc”—The Last Stand of Gold Standard

The approach of governments across the world to deal with the relative fluctuations of exchange rates after World War II was mostly uniform. The Great Depression followed the World War II in the 1930s made the promotion of economic development a priority for governments across the world. At the same time, the gold standard made the value of currencies fixed against each other, irrespective of their demand from external trade. This led to capital flight and short selling making it more difficult to uphold the dictated exchange rates.

The growing fiscal problems due to fluctuating currency exchange rates made it increasingly difficult for governments to “peg” the value of their currency with gold standard. This led to abandonment of gold standard by several countries including the United Kingdom, Japan, Norway, and Sweden in 1931. Within two more years, by 1933 the United States also abandoned gold standard.

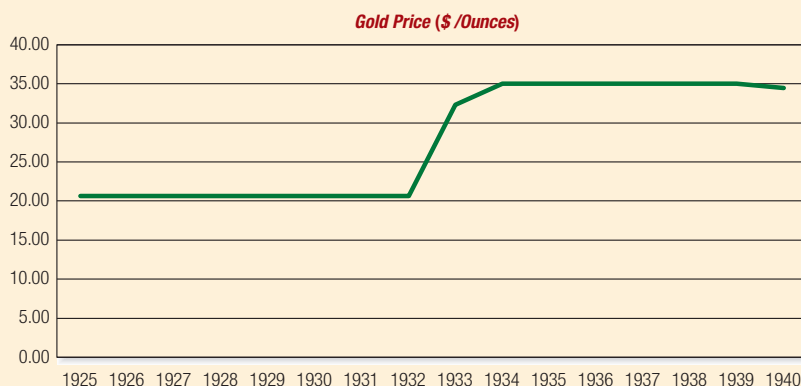
However, there was a group of seven European countries led by France, which decided to stay with the gold standard as the basis of their monetary policy. This group is termed as the “Gold Bloc” and included Switzerland, Belgium, Luxembourg, The Netherlands, Poland, and Italy with France.

The United States abandoned the gold standard in 1931, resulting into a sharp jump in gold prices (see figure below) increasing pressure on Gold Bloc.

From 1931 until 1935, the Gold Bloc tried to continue with the gold standard – despite the key international countries abandoning the same. They tried various measures to stabilize their currency’s exchange rates that included various forms of internal trade protection and import restrictions. However, these measures were not sufficient to outweigh the impact of asynchronies in the exchange rates for their currencies.

During this time, both the United States and the United Kingdom decided to devalue the US Dollars and the British Pound sterling. Making their exports cheaper for other countries – boosting their respective economies. This made the industries in the Gold Bloc less profitable as their exports become more and more expensive for foreign buyers. This led to significant transfer of capital from the Gold Bloc countries to the United States and the United Kingdom. To ease the pressure the Belgium and Luxembourg finally gave away the gold standard in 1935 and devalued their currencies. France took one more year to join the rest of the countries and finally abandoned the gold standard in 1936.

However, it is argued that in addition to economic factors, as we have outlined here and in section 2.1 of this chapter, there were very strong social and political development during this time, related to the impending expectations of the World War II, that contributed to the fall of the last stand of the gold standard.



the previous gold standard. Unfortunately, such flexible exchange rates did not work in an equilibrating manner. On the contrary, international speculators sold the weak currencies short, causing them to fall further in value than warranted by real economic factors. Selling short is a speculation technique in which an individual speculator sells an asset, such as a currency, to another party for delivery at a future date. The speculator, however, does not yet own the asset and expects the price of the asset to fall before the date by which the speculator must purchase the asset in the open market for delivery.

The reverse happened with strong currencies. Fluctuations in currency values could not be offset by the relatively illiquid forward exchange market, except at exorbitant cost. The net result was that the volume of world trade did not grow in the 1920s in proportion to world gross domestic product. Instead, it declined to a very low level with the advent of the Great Depression in the 1930s.

GLOBAL FINANCE IN PRACTICE 2.2

Britain Leaves the Gold Standard: Press Notice (Excerpts of September 19, 1931)

His Majesty's Government have decided after consultation with the Bank of England that it has become necessary to suspend for the time being the operation of Subsection (2) of Section 1 of the Gold Standard Act of 1925 which requires the Bank to sell gold at a fixed price. A Bill for this purpose will be introduced immediately and it is the intention of His Majesty's Government to ask Parliament to pass it through all its stages on Monday, 21st of September. In the meantime the Bank of England have been authorised to proceed accordingly in anticipation of the action of Parliament.

The reasons which have led to this decision are as follows. Since the middle of July funds amounting to more than £200 millions have been met partly from gold and foreign currency held by the Bank of England, partly from the proceeds of a credit of £50 millions which shortly matures secured by the Bank of England from New York and Paris and partly from the proceeds of the French and American credits amounting to £80 millions recently obtained by the Government. During

the last few days the withdrawals of foreign balances have accelerated so sharply that His Majesty's Government have felt bound to take the decision mentioned above.

This decision will of course not affect obligations of His Majesty's Government or the Bank of England which are payable in foreign currencies.

The gold holding of the Bank of England amounts to some £130 millions and having regard to the contingencies which may have to be met it is inadvisable to allow the reserve to be further reduced.

His Majesty's Government are well aware that the present step is bound to have serious consequences both at home and abroad. But during the last few days the International financial markets have become demoralised and seem bent on liquidating their foreign assets in a spate of panic. In the circumstances there was no alternative but to protect the economy of this country the only means at our disposal.

Source: The National Archives.

<https://www.nationalarchives.gov.uk/wp-content/uploads/2014/03/t163-68-181.jpg>

Britain had returned to the gold standard in 1925, but as a result of onset of the depression and the flight of gold out of Britain in 1931, it was forced to abandon the standard in September 1931. *Global Finance in Practice 2.2* presents excerpts of His Majesty's Government's decision.

The United States adopted a modified gold standard in 1934 when the U.S. dollar was devalued to \$35 per ounce of gold from the \$20.67 per ounce price in effect prior to World War I. Contrary to previous practice, the U.S. Treasury now traded gold only with foreign central banks, not private citizens. From 1934 to the end of World War II, exchange rates were theoretically determined by each currency's value in terms of gold. During World War II and its chaotic aftermath, however, many of the main trading currencies lost their convertibility into other currencies. The dollar was one of the few currencies that continued to be convertible.

Bretton Woods and the International Monetary Fund (1944)

As World War II drew to a close in 1944, the Allied Powers met at Bretton Woods, New Hampshire, to create a new postwar international monetary system. The Bretton Woods Agreement established a U.S. dollar-based international monetary system and provided for two new institutions: the International Monetary Fund and the World Bank. The International Monetary Fund (IMF) was created to aid countries with balance of payments and exchange rate problems. The International Bank for Reconstruction and Development (IBRD or as it is more commonly called, the World Bank) was formed to help fund postwar reconstruction and has since supported general economic development. *Global Finance in Practice 2.3* provides some insight into the debates at Bretton Woods.

The IMF was the key institution in the new international monetary system, and it has remained so to the present day. The IMF was established to render temporary assistance to

GLOBAL FINANCE IN PRACTICE 2.3

Hammering out an Agreement at Bretton Woods

The governments of the Allied powers knew that the devastating impacts of World War II would require swift and decisive policies. In the summer of 1944 (July 1–22), representatives of all 45 allied nations met at Bretton Woods, New Hampshire, for the United Nations Monetary and Financial Conference. Their purpose was to plan the postwar international monetary system. It was a difficult process, and the final synthesis was shaded by pragmatism.

The leading policymakers at Bretton Woods were the British and the Americans. The British delegation was led by Lord John Maynard Keynes, known as “Britain’s economic heavy weight.” The British argued for a postwar system that would be more flexible than the various gold standards used before the war. Keynes argued, as he had after World War I, that attempts to tie currency values to gold would create pressures for deflation in many of the war-ravaged economies.

The American delegation was led by the director of the U.S. Treasury’s monetary research department, Harry D. White, and the U.S. Secretary of the Treasury, Henry Morgenthau, Jr. The Americans argued for stability (fixed exchange rates) but not a return to the gold standard itself. In fact, although the U.S. at that time held most of the gold of the Allied powers, the U.S. delegates argued that currencies should be fixed in parities* but that redemption of gold should occur only between official authorities like central banks.

On the more pragmatic side, all parties agreed that a postwar system would be stable and sustainable only if there was sufficient credit available for countries to defend their currencies in the event of payment imbalances, which they knew to be inevitable in a reconstructing world order. The conference divided into three commissions for weeks of negotiation. One commission, led by U.S. Treasury Secretary Morgenthau, was charged with the organization of a fund of capital to be used for exchange rate stabilization. A second commission, chaired by Lord Keynes, was charged with the organization of a second “bank” whose purpose would be for long-term reconstruction and development. A third commission was to hammer out details such as what role silver would have in any new system.

After weeks of meetings, the participants came to a three-part agreement—the *Bretton Woods Agreement*. The plan called for: (1) fixed exchange rates, termed an *adjustable peg*, among members; (2) a fund of gold and constituent currencies available to members for stabilization of their respective currencies, called the International Monetary Fund (IMF); and (3) a bank for financing long-term development projects (eventually known as the World Bank). One proposal resulting from the meetings, which was not ratified by the U.S., was the establishment of an international trade organization to promote free trade.

* *Fixed in parities* is an old expression in this field, which means that the value of currencies should be fixed at rates that equalize their value, typically measured by purchasing power.

member countries trying to defend their currencies against cyclical, seasonal, or random occurrences. It also assists countries having structural trade problems if they promise to take adequate steps to correct their problems. If persistent deficits occur, however, the IMF cannot save a country from eventual devaluation. In recent years, the IMF has attempted to help countries facing financial crises, providing massive loans as well as advice to Russia, Brazil, Greece, Indonesia, and South Korea, to name but a few.

Under the original provisions of Bretton Woods, all countries fixed the value of their currencies in terms of gold, but they were not required to exchange their currencies for gold. Only the dollar remained convertible into gold (at \$35 per ounce). Each country established its exchange rate vis-à-vis the dollar and then calculated the gold par value of its currency to create the desired dollar exchange rate. Participating countries agreed to try to maintain the value of their currencies within 1% (later expanded to 2.25%) of par by buying or selling foreign exchange or gold as needed. Devaluation was not to be used as a competitive trade policy, but if a currency became too weak to defend, devaluation of up to 10% was allowed without formal approval by the IMF. Larger devaluations required IMF approval. This became known as the *gold-exchange standard*.

An additional innovation introduced by Bretton Woods was the creation of the Special Drawing Right (SDR). The SDR is an international reserve asset created by the IMF to supplement existing foreign exchange reserves. It serves as a unit of account for the IMF and other international and regional organizations. It is also the base against which some countries peg the exchange rate for their currencies. Initially defined in terms of a fixed quantity of gold, the SDR was for many years the weighted average of four major currencies: the U.S. dollar, the euro, the Japanese yen, and the British pound. On October 1, 2016, the Chinese yuan (or renminbi) was added as the fifth currency component.

The weight assigned to each SDR currency is updated every five years by the IMF. The 2015 weights, taking effect on October 1, 2016, are as follows:

Currency	2015 Weight	2010 Weight
U.S. dollar	41.73%	41.9%
Euro	30.93%	37.4%
Chinese renminbi	10.92%	—
Japanese yen	8.33%	9.4%
Pound sterling	8.09%	11.3%
Total	100.00%	100.0%

Individual countries hold SDRs in the form of deposits in the IMF. These holdings are part of each country's international monetary reserves, along with its official holdings of gold, its foreign exchange, and its reserve position at the IMF. Member countries may settle transactions among themselves with SDRs.

The SDR's use outside of reserve assets is extremely limited. Harvard economist Jeffrey Frankel has described the SDR as “basically the Esperanto, at best, of international currencies. It's not at all used.” He is not quite correct, however, as the Suez Canal and the Universal Postal Union both use the SDR in the calculation of transit charges and postal fees, respectively. As a weighted index of five different currencies, it is mathematically less volatile than any single currency value and, therefore, has found specific uses in areas such as maritime contracts, securities in the eurobond market, and select international treaties. Most recently, in March 2021, the G7, the world's seven largest industrial economies, agreed to support the expansion of the IMF's reserves to help developing countries cope with the global pandemic.

Fixed Exchange Rates (1945–1973)

The currency arrangement negotiated at Bretton Woods and monitored by the IMF worked fairly well during the postwar period of reconstruction and rapid growth in world trade. However, widely diverging national monetary and fiscal policies, differential rates of inflation, and various unexpected external shocks eventually resulted in the system's demise. The U.S. dollar was the main reserve currency held by central banks and was the key to the web of exchange rate values. Unfortunately, the U.S. ran persistent and growing deficits in its balance of payments.

A heavy capital outflow of dollars was required to finance these deficits and to meet the growing demand for dollars from investors and businesses. Eventually, the heavy overhang of dollars held by foreigners resulted in a lack of confidence in the ability of the U.S. to meet its commitments in gold. This lack of confidence came to a head in the first half of 1971. In a little less than seven months, the U.S. suffered the loss of nearly one-third of its official gold reserves as global confidence in the value of the dollar plummeted. Exchange rates between most major currencies and the U.S. dollar began to float, and thus indirectly, so did their

values relative to gold. A year and a half later, the U.S. dollar once again came under attack, thereby forcing a second devaluation in February 1973, this time by 10% to \$42.22 per ounce of gold. By late February 1973, a fixed-rate system no longer appeared feasible given the speculative flows of currencies. The major foreign exchange markets were actually closed for several weeks in March 1973. When markets reopened, most currencies were allowed to float to levels determined by market forces.

Floating Exchange Rates, 1973–1997

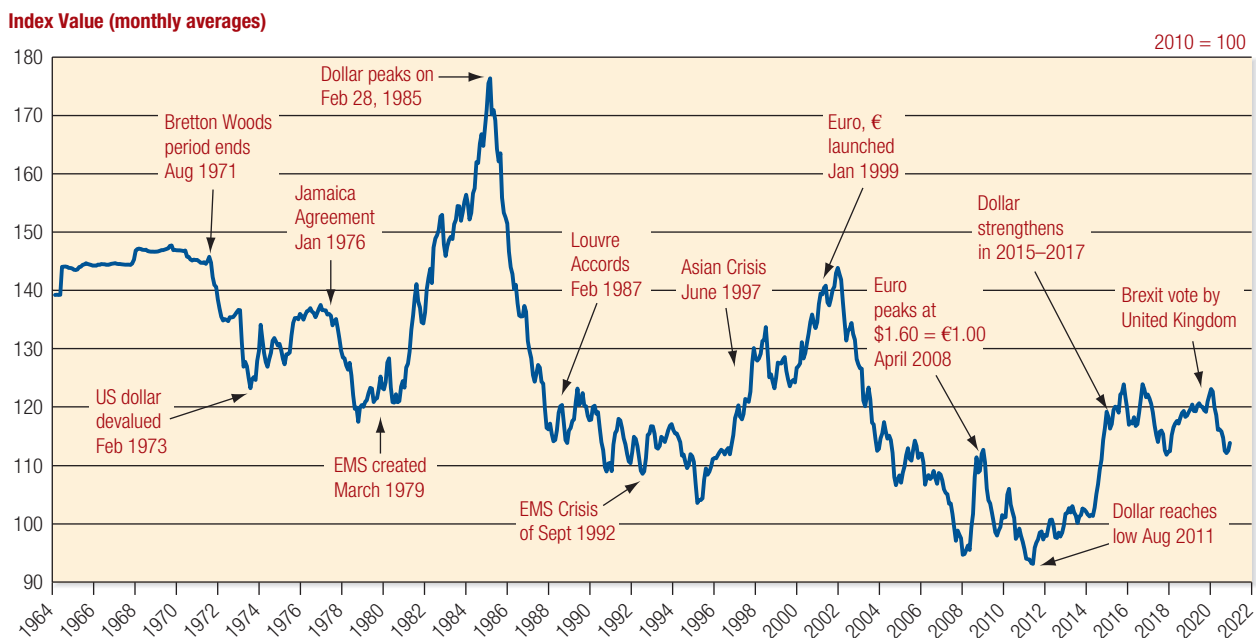
Since 1973 exchange rates have become more volatile and less predictable than they were during the “fixed” exchange rate era, when changes occurred infrequently. Exhibit 2.2 illustrates the wide swings exhibited by the nominal exchange rate index of the U.S. dollar since 1964. Clearly, volatility has increased since 1973.

Exhibit 2.2 notes some of the most important shocks in recent history: the creation of the European Monetary System (EMS) in 1979, the run-up and peak of the dollar in 1985, the EMS crisis of 1992, the Asian crisis of 1997, the launch of the European euro in 1999, and the Brexit vote in 2016.

The Emerging Era, 1997–Present

The period following the Asian Crisis of 1997 has seen growth in both the breadth and depth of emerging market economies and currencies. We may end up being proven wrong on this count, but the final section of this chapter argues that the global monetary system has already begun embracing—for more than two decades now—a number of major emerging market currencies, beginning with the Chinese renminbi. Feel free to disagree.

EXHIBIT 2.2 Bank for International Settlements Index of the Dollar



Source: BIS org Nominal exchange rate index (narrow definition), effective exchange rate (EER) for the U.S. dollar (NNUS).

IMF Classification of Currency Regimes

The global monetary system—if there is indeed a singular “system”—is an eclectic combination of exchange rate regimes and arrangements. There is no single governing body or single official global policing authority for global exchange of currencies. The IMF, however, has at least played the role of “town crier” since World War II. As part of its self-appointed duties, it has created a classification system of currency regimes.

Brief Classification History

The IMF was for many years the central clearinghouse for exchange rate classifications. Member states submitted their exchange rate policies to the IMF, and those submissions were the basis for its categorization of exchange rate regimes. However, that all changed in 1997–1998 with the Asian Financial Crisis. During the crisis many countries began following very different exchange rate practices than those they had committed to with the IMF. Their actual practices—their *de facto* systems—were not what they had publicly and officially committed to—their *de jure* systems.

Beginning in 1998, the IMF changed its practice and stopped collecting regime classification submissions from member states. Instead, it confined its regime classifications and reports to analysis performed in-house. (This included the cessation of publishing its Annual Report on Exchange Arrangements and Exchange Restrictions, a document on which many of the world’s financial institutions had relied for decades.) As a global institution, which is in principle apolitical, the IMF’s analysis today is focused on classifying currencies on the basis of an *ex post* analysis of how the currency’s value was based in the recent past. This analysis focuses on observed behavior, not on official government policy pronouncements.

The IMF’s De Facto System

The IMF’s methodology of classifying exchange rate regimes today, in effect since January 2009, is presented in Exhibit 2.3. It is based on actual observed behavior, *de facto* results, and not on the official policy statements of the respective governments, *de jure* classification. The classification process begins with the determination of whether the exchange rate of the country’s currency is dominated by markets or by official action. Although the classification system is a bit challenging, there are four basic categories.

Category 1: Hard Pegs. These countries have given up their own sovereignty over monetary policy. This category includes countries that have adopted other countries’ currencies (e.g., Zimbabwe’s dollarization—its adoption of the U.S. dollar) and countries utilizing a currency board structure that limits monetary expansion to the accumulation of foreign exchange.

Category 2: Soft Pegs. This general category is colloquially referred to as fixed exchange rates. The five subcategories of soft peg regimes are differentiated on the basis of what the currency is fixed to, whether that fix is allowed to change (and if so under what conditions); what types, magnitudes, and frequencies of intervention are allowed/used; and the degree of variance about the fixed rate.

Category 3: Floating Arrangements. Currencies that are predominantly market-driven are further subdivided into free floating with values determined by open market forces without governmental influence or intervention and simple floating or floating with intervention, where government occasionally does intervene in the market in pursuit of some rate goals or objectives.

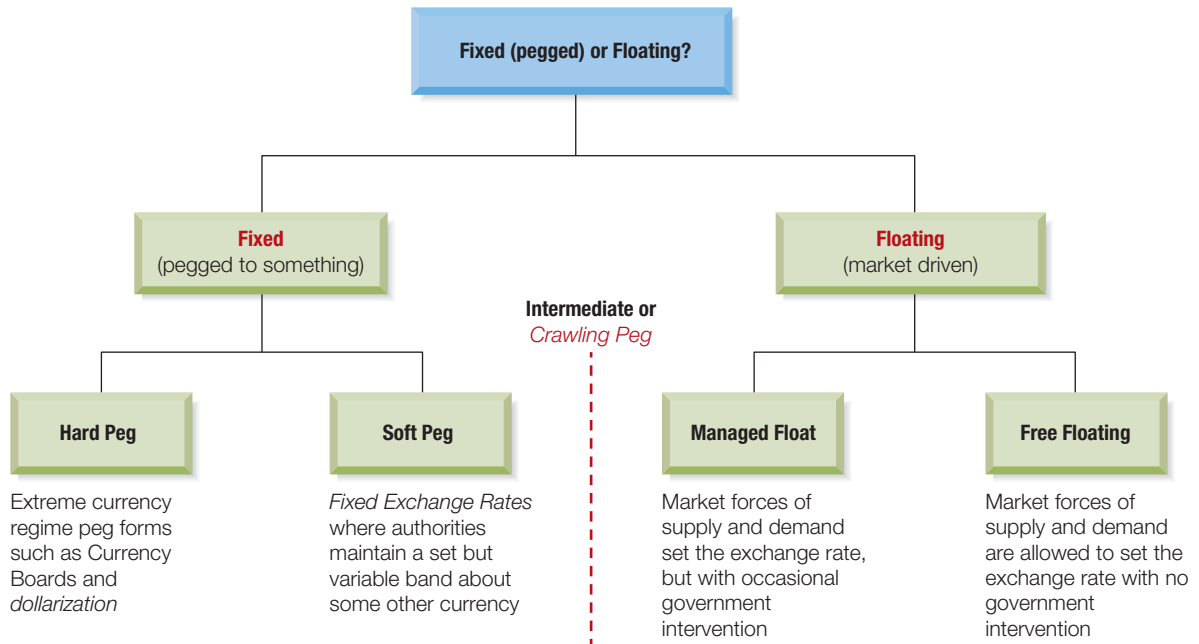
EXHIBIT 2.3 IMF Exchange Rate Classifications

Rate Classification	De Facto System	Description and Requirements
Hard Pegs	Arrangement with no separate legal tender	The currency of another country circulates as the sole legal tender (<i>formal dollarization</i>), as well as members of a monetary or currency union in which the same legal tender is shared by the members.
	Currency board arrangement	A monetary arrangement based on an explicit legislative commitment to exchange domestic currency for a specific foreign currency at a fixed exchange rate, combined with restrictions on the issuing authority. Restrictions imply that domestic currency will be issued only against foreign exchange and that it remains fully backed by foreign assets.
Soft Pegs	Conventional pegged arrangement	A country formally pegs its currency at a fixed rate to another currency or a basket of currencies of major financial or trading partners. Country authorities stand ready to maintain the fixed parity through direct or indirect intervention. The exchange rate may vary $\pm 1\%$ around a central rate or may vary no more than 2% for a six-month period.
	Stabilized arrangement	A spot market rate that remains within a margin of 2% for six months or more and is not floating. Margin stability can be met by either a single currency or basket of currencies (assuming statistical measurement). Exchange rate remains stable as a result of official action.
	<u>Intermediate pegs:</u> Crawling peg	Currency is adjusted in small amounts at a fixed rate or in response to changes in quantitative indicators (e.g., inflation differentials).
	Crawl-like arrangement	Exchange rate must remain with a narrow margin of 2% relative to a statistically defined trend for six months or more. Exchange rate cannot be considered floating. Minimum rate of change is greater than allowed under a stabilized arrangement.
	Pegged exchange rate within horizontal bands	Value of the currency is maintained within 1% of a fixed central rate or the margin between the maximum and minimum value of the exchange rate exceeds 2%. This includes countries which are today members of the ERM II system.
Floating Arrangements	Floating	Exchange rate is largely market determined without an ascertainable or predictable path. Market intervention may be direct or indirect and serves to moderate the rate of change (but not targeting). Rate may exhibit more or less volatility.
	Free floating	A floating rate is freely floating if intervention occurs only exceptionally and confirmation of intervention is limited to at most three instances in a six-month period, each lasting no more than three business days.
Residual	Other managed arrangements	This category is residual and is used when the exchange rate does not meet the criteria for any other category. Arrangements characterized by frequent shifts in policies fall into this category.

Source: "Revised System for the Classification of Exchange Rate Arrangements," by Karl Habermeier, Annamaria Kokenyne, Romain Veyrune, and Harald Anderson, IMF Working Paper WP/09/211, International Monetary Fund, November 17, 2009.

Category 4: Residual. As one would suspect, this category includes all exchange rate arrangements that do not meet the criteria of the previous three categories. Country systems demonstrating frequent shifts in policy typically make up the bulk of this category.

Exhibit 2.4 provides a glimpse into how these major regime categories translate in the global market—fixed or floating. The vertical dashed line, the crawling peg, is the zone some currencies move into and out of depending on their relative currency stability. Although the classification regimes appear clear and distinct, the distinctions are often more difficult to distinguish in practice in the market. For example, in January 2014, the Bank of Russia

EXHIBIT 2.4 Taxonomy of Exchange Rate Regimes

announced it would no longer conduct intervention activities with regard to the value of the ruble and that it planned to allow the ruble to trade freely with no intervention.

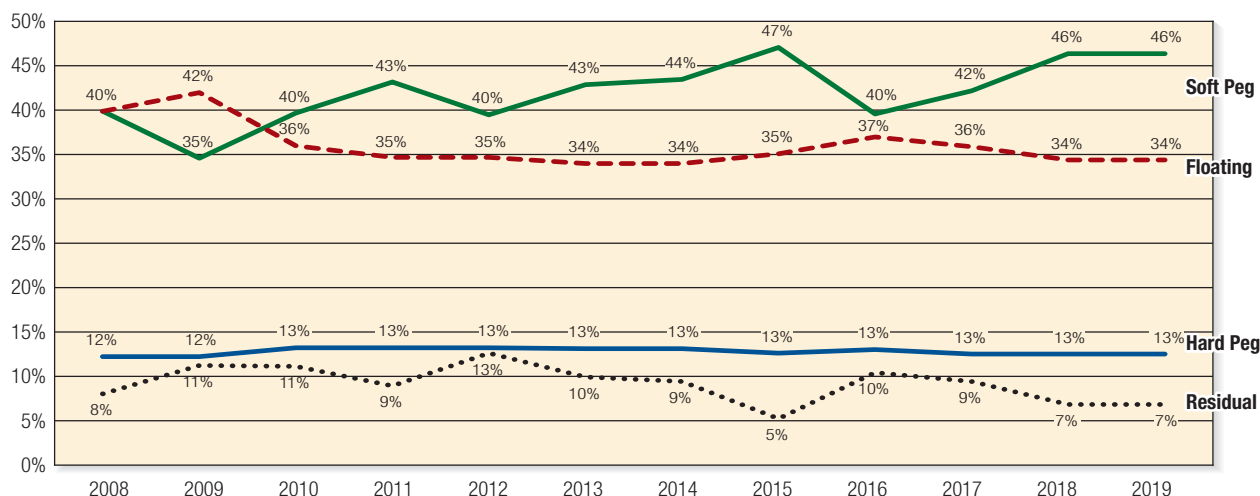
A Global Eclectic

Despite the IMF's attempt to apply rigor to regime classifications, the global monetary system today is indeed a global eclectic in every sense of the term. As Chapter 5 will describe in detail, the current global market in currency is dominated by two major currencies, the U.S. dollar and the European euro, and after that, a multitude of systems, arrangements, currency areas, and zones.

The IMF estimates that 20.3% of its member countries use the U.S. dollar as their *anchor currency*, with another 13% using the euro and 4.7% using a composite or other currency as anchor.² In addition to anchor currency systems, 12.5% of IMF members use some monetary aggregate (money supply measure) as their gauge to currency management, while another 20% pursue inflation rate targeting. A full 25% of IMF members use some other form of monetary policy framework or unstated exchange rate anchor.

The euro itself is an example of a rigidly fixed system, acting as a single currency for its member countries. However, the euro is also an independently floating currency against all other currencies. Other examples of rigidly fixed exchange regimes include Ecuador, Panama, and Zimbabwe, all of which use the U.S. dollar as their official currency; the Central African Franc (CFA) zone, in which countries such as Mali, Niger, Senegal, Cameroon, and Chad among others use a single common currency (the franc, which is tied to the euro); and the Eastern Caribbean Currency Union (ECCU), a set of countries that use the Eastern Caribbean dollar.

²Annual Report on Exchange Arrangements and Exchange Restrictions, 2016, International Monetary Fund, p. 10.

EXHIBIT 2.5 IMF Member Exchange Rate Regime Choices*Percentage of IMF membership by regime choice*

Source: Data drawn from *Annual Report on Exchange Arrangements and Exchange Restrictions*, International Monetary Fund, Table 3, Exchange Rate Arrangements 2008–2019.

At the other extreme are countries with independently floating currencies. These include many of the most developed countries, such as Japan, the United States, the United Kingdom, Canada, Australia, New Zealand, Sweden, and Switzerland. However, this category also includes a number of unwilling participants—emerging market countries that tried to maintain fixed rates but were forced by the marketplace to let their currencies float. Among these are Korea, the Philippines, Brazil, Indonesia, Mexico, and Thailand.

As illustrated by Exhibit 2.5, the regime choices of IMF member countries have not changed dramatically over the past decade. Countries with floating regimes average 34% or 35% of member countries, while countries using soft peg regimes have increased from just under 40% to 46% in recent years. Although the contemporary international monetary system is typically referred to as a floating exchange rate system, that is clearly not the case for the majority of the world's nations.

2.2 Fixed versus Flexible Exchange Rates

A nation's choice as to which currency regime to follow reflects national priorities about all facets of the economy, including inflation, unemployment, interest rate levels, trade balances, and economic growth. The choice between fixed and flexible rates may change over time as priorities change. At the risk of overgeneralizing, the following points partly explain why countries pursue certain exchange rate regimes. Fixed exchange rates have a number of disadvantages—as we will show in the following section—and maintaining them can be difficult and costly. But they also offer some advantages as follows:

- Fixed rates provide stability in international prices for the conduct of trade. Stable prices aid in the growth of international trade and lessen risks for all businesses.

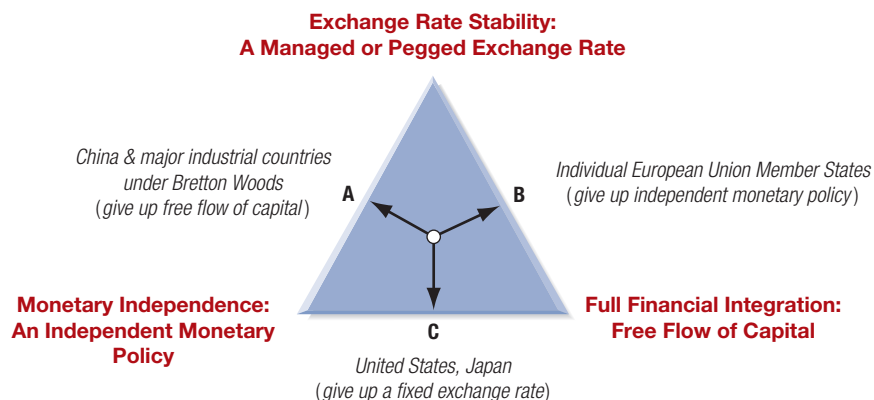
- Fixed exchange rates are inherently anti-inflationary, requiring the country to follow restrictive monetary and fiscal policies. This restrictiveness, however, can be a burden to a country wishing to pursue policies to alleviate internal economic problems such as high unemployment or slow economic growth.
- Fixed exchange rate regimes necessitate that central banks maintain large quantities of international reserves (hard currencies and gold) for use in the occasional defense of the fixed rate. As international currency markets have grown in size, increasing reserve holdings has become a growing burden.
- Fixed rates, once in place, may be maintained at levels that are inconsistent with economic fundamentals. As the structure of a nation's economy changes and as its trade relationships and balances evolve, the exchange rate itself should change. Flexible exchange rates allow this to happen gradually and efficiently, but fixed rates must be changed administratively—usually too late, with too much publicity, and at too large a one-time cost to the nation's economic health.

The terminology associated with changes in currency values is also technically specific. When a government officially declares its own currency to be worth less or more relative to other currencies, it is termed a *devaluation* or *revaluation*, respectively. This obviously applies to currencies whose value is controlled by government. When a currency's value is changed in the open currency market—not directly by government—it is called a *depreciation* (with a fall in value) or *appreciation* (with an increase in value).

2.3 The Impossible Trinity

If the ideal currency existed in today's world, it would possess the following three attributes, illustrated in Exhibit 2.6, often referred to as the *impossible trinity* or the *trilemma of international finance*:

EXHIBIT 2.6 The Impossible Trinity



Nations must choose in which direction to move from the center—toward points A, B, or C. Their choice is a choice of what to pursue and what to give up—that of the opposite point of the pyramid. Marginal compromise is possible, but only marginal.

Source: Constructed by the authors based on *International Financial Integration*, Lar Oxelheim, Springer-Verlag, Berlin, 1990, p. 10.

1. **Exchange rate stability.** The value of the currency is fixed in relationship to other major currencies, so traders and investors could be relatively certain of the foreign exchange value of each currency in the present and into the near future.
2. **Full financial integration.** Complete freedom of monetary flows would be allowed, so traders and investors could easily move funds from one country and currency to another in response to perceived economic opportunities or risks.
3. **Monetary independence.** Domestic monetary and interest rate policies would be set by each individual country to pursue desired national economic policies, especially as they might relate to limiting inflation, combating recessions, and fostering prosperity and full employment.

Together, these qualities are termed the *impossible trinity* because the forces of economics do not allow a country to simultaneously achieve all three goals: monetary independence, exchange rate stability, and full financial integration. The impossible trinity makes it clear that each economy must choose its own medicine. Here is what many argue are the choices of three of the major global economic players:

Entity	Choice #1	Choice #2	Implied Condition #3
United States	Independent monetary policy	Free movement of capital	Currency value floats
China	Independent monetary policy	Fixed rate of exchange	Restricted movement of capital
Europe (EU)	Free movement of capital	Fixed rate of exchange	Integrated monetary policy

For example, a country like the U.S. has knowingly given up on having a fixed exchange rate—moving from the center of the pyramid toward point C—because it wishes to have an independent monetary policy, and it allows a high level of freedom in the movement of capital into and out of the country.

The choices made by the EU are clearly more complex. As a combination of different sovereign states, the EU has pursued integration of a common currency, the euro, and free movement of labor and capital. The result, according to the impossible trinity, is that EU member states had to give up independent monetary policy, replacing individual central banks with the European Central Bank (ECB). The recent fiscal deficits and near-collapses of government debt issuances in Greece, Portugal, and Ireland have raised questions over the efficacy of the arrangement.

China today is a clear example of a nation that has chosen to continue to control and manage the value of its currency and to conduct an independent monetary policy, moving from the center of the pyramid toward point A while continuing to restrict the flow of capital into and out of the country. To say it has “given up” the free flow of capital is probably inaccurate, as China has allowed no real freedom of capital flows in the past century.

The consensus of many experts is that the force of increased capital mobility has been pushing more and more countries toward full financial integration in an attempt to stimulate their domestic economies and to feed the capital appetites of their own MNEs. As a result, their currency regimes are being “cornered” into being either purely floating (like the U.S.) or integrated with other countries in monetary unions (like the European Union).

2.4 A Single Currency for Europe: The Euro

Beginning with the Treaty of Rome in 1957 and continuing with the Single European Act of 1987, the Maastricht Treaty of 1992, and the Treaty of Amsterdam of 1997, a core set of European countries worked steadily toward integrating their individual country markets into one larger, more efficient domestic market. However, even after the launch of the 1992 Single Europe program, a number of barriers to true openness remained, including the use of different currencies, which required both consumers and companies to treat the individual country markets separately. Currency risk of cross-border commerce still persisted. The creation of a single currency was seen as the way to move beyond these last vestiges of separated markets.

The original 15 members of the EU were also members of the European Monetary System (EMS). The EMS formed a system of fixed exchange rates among the member currencies, with deviations managed through bilateral responsibility to maintain rates at $\pm 2.5\%$ of an established central rate. This system of fixed rates, with adjustments along the way, remained in effect from 1979 to 1999. Its resiliency was seriously tested with exchange rate crises in 1992 and 1993, but it held.

The Maastricht Treaty and Monetary Union

In December 1991, the members of the EU met at Maastricht, the Netherlands, and concluded a treaty that changed Europe's currency future. The *Maastricht Treaty* specified a timetable and a plan to replace all individual EMS member currencies with a single currency—eventually named the euro. Other aspects of the treaty were also adopted that would lead to a full *European Economic and Monetary Union* (EMU). According to the EU, the EMU is a single-currency area within the singular EU market, now known informally as the eurozone, in which people, goods, services, and capital are allowed to move freely.

The integration of separate country monetary systems is not, however, a minor task. To prepare for the EMU, the Maastricht Treaty called for the integration and coordination of the member countries' monetary and fiscal policies. The EMU would be implemented by a process called *convergence*. Before becoming a full member of the EMU, each member country was expected to meet a set of convergence criteria in order to integrate systems that were at the same relative performance levels: (1) nominal inflation should be no more than 1.5% above the average for the three members of the EU that had the lowest inflation rates during the previous year, (2) long-term interest rates should be no more than 2% above the average of the three members with the lowest interest rates, (3) individual government budget deficits (fiscal deficits) should be no more than 3% of gross domestic product, and (4) government debt outstanding should be no more than 60% of gross domestic product. The convergence criteria were so tough that few, if any, of the members could satisfy them at that time, but 11 countries managed to do so just prior to 1999. (Greece was added two years later.)

The European Central Bank (ECB)

The cornerstone of any monetary system is a strong, disciplined central bank. The Maastricht Treaty established this single institution for the EMU, the European Central Bank (ECB), which was established in 1998. (The EU created the European Monetary Institute [EMI] in 1994 as a transitional step in establishing the European Central Bank.) The ECB's structure and functions were modeled after the German Bundesbank, which in turn had been modeled after the U.S. Federal Reserve System. The ECB is an independent central bank that dominates the activities of the individual countries' central banks. The individual central banks continue to regulate banks resident within their borders, but all financial market intervention