10th Edition

Multinational Financial Management

Alan C. Shapiro

WILEY

TENTH EDITION

MULTINATIONAL FINANCIAL MANAGEMENT

ALAN C. SHAPIRO

University of Southern California

WILEY

To my parents,
Hyman and Lily Shapiro,
for their encouragement,
support, and love

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PREFACE

Approach

The basic thrust of this tenth edition of *Multinational Financial Management* (MFM) is to provide a conceptual framework within which the key financial decisions of the multinational firm can be analyzed. The approach is to treat international financial management as a natural and logical extension of the principles learned in the foundations course in financial management. Thus, it builds on and extends the valuation framework provided by domestic corporate finance to account for dimensions unique to international finance. *Multinational Financial Management* presumes a knowledge of basic corporate finance, economics, and algebra. However, it does not assume prior knowledge of international economics or international finance and is therefore self-contained in that respect.

MFM focuses on decision making in an international context. Analytical techniques help translate the often vague guidelines used by international financial executives into specific decision criteria. The book offers a variety of real-life examples, both numerical and institutional, that demonstrate the use of financial analysis and reasoning in solving international financial problems. These examples have been culled from the thousands of applications of corporate practice that I have collected over the years from business periodicals and my consulting practice. Scattering the best of these examples throughout the text allows students to see the value of examining decision problems with the aid of a solid theoretical foundation. Seemingly disparate facts and events can then be interpreted as specific manifestations of more general financial principles.

All the traditional areas of corporate finance are explored, including working capital management, capital budgeting, cost of capital, and financial structure. However, this is done from the perspective of a multinational corporation, concentrating on those decision elements that are rarely, if ever, encountered by purely domestic firms. These elements include multiple currencies with frequent exchange rate changes and varying rates of inflation, differing tax systems, multiple money markets, exchange controls, segmented capital markets, and political risks such as nationalization or expropriation. Throughout the book, I have tried to demystify and simplify multinational financial management by showing that its basic principles rest on the same foundation as does corporate finance.

The emphasis throughout this book is on taking advantage of being multinational. Too often companies focus on the threats and risks inherent in venturing abroad rather than on the opportunities that are available to multinational firms. These opportunities include the ability to obtain a greater degree of international diversification than security purchases alone can provide as well as the ability to arbitrage between imperfect capital markets, thereby obtaining funds at a lower cost than could a purely domestic firm.

CHANGES TO THE TENTH EDITION

The tenth edition of *Multinational Financial Management* has been extensively updated to incorporate the changes in the world financial system, particularly the ongoing European sovereign debt crisis and the continuing development of China and India. The new material that has been added includes the following:

- Update of the "Ruble Is Rubble" application (Chapter 2)
- Discussion of recent instability in the international monetary system (Chapter 3)
- Discussion of the trilemma policymakers face in designing an exchange rate regime and examination of how the BRICs dealt with the trilemma in setting their own currency policies (Chapter 3)
- Updated discussion of competitive devaluations (Chapter 3)
- Discussion of QE2 and extensive analysis of the recent crises and structural flaws in the European Monetary Union, especially related to the experience of the PIGS (Chapter 3)
- Discussion of the carry trade and Iceland's meltdown (Chapter 4)
- Discussion of the iPhone's design and manufacture and its implications for the current-account balance (Chapter 5)
- Discussions of recent Indian economic reforms and Solyndra in the context of crony capitalism (Chapter 6)
- Analysis of the mathematics of sovereign debt analysis and its application to the Eurozone (Chapter 6)
- Discussion of the PHLX FOREX Options market (Chapter 8)
- Discussion of credit default swaps (Chapter 9)
- Discussion of how Japanese manufacturers plan to cope with a strong yen (Chapter 11)
- Analysis of how the Basel rules contributed to the global financial crisis (Chapter 12)
- Analysis of the strategic mistakes made by the Japanese electronics industry (Chapter 16)
- Discussion of the controversy over whether Export-Import Bank financing distorts markets or corrects for market distortions (Chapter 18)

The book also contains new charts and illustrations of corporate practice that are designed to highlight specific techniques or teaching points. Again, the emphasis is on reinforcing and making more relevant the concepts developed in the body of each chapter.

PEDAGOGY

The pedagogical thrust of the book is greatly enhanced by including the following learning and teaching aids:

Focus on Corporate Practice:. Throughout the text, numerous real-world examples and vignettes provide actual applications of financial concepts and theories. They show students that the issues, tools, and techniques discussed in the book are being applied to day-to-day financial decision making.

Extensive Use of Examples and Applications:. Numerous short applications and examples of specific concepts and techniques are scattered throughout the body of most chapters.

Learning Objectives:. Each chapter opens with a statement of its action-oriented learning objectives. These statements enhance learning by previewing and guiding the reader's understanding of the materials that will be encountered in the chapter.

***Mini-Cases*:.** Each chapter has at least one mini-case that briefly presents a situation that illustrates an important concept in that chapter and then has a series of questions to test student understanding of that concept.

Problems and Discussion Questions:. There are many realistic end-of-chapter questions and problems that offer practice in applying the concepts and theories being taught. Many of these questions and problems relate to actual situations and companies.

Web Resources:. Each chapter has sections called "Web Resources" and "Web Exercises" that contain a set of relevant websites for that chapter and several exercises that use those websites to address various issues that arise in the chapter. In addition, the longer cases that previously appeared at the end of each section are now available on the Internet. Solutions to these cases are available to faculty.

Glossary:. The back of the book contains a glossary that defines the key terms appearing in the text.

ADDITIONAL RESOURCES

A complete set of ancillary materials is available for adopters of *Multinational Financial Management*. These resources can be found on the book's companion site at www.wiley.com/college/shapiro:

- An Instructor's Manual containing detailed solutions to the end-of-chapter questions and problems and tips for teaching each chapter
- Additional Case Studies along with teaching notes and solutions
- A Test Bank containing more than 160 additional questions and problems suitable for use in multiple choice exams
- PowerPoint Presentations for course lectures. In addition, electronic files for all the figures in the text are available in an Image Gallery.

THANKS

I have been greatly aided in developing *Multinational Financial Management* by the helpful suggestions of the following reviewers: Robert Aubey, University of Wisconsin; James Baker, Kent State University; Donald T. Buck, Southern Connecticut State University; C. Edward Chang, Southwest Missouri State University; Jay Choi, Temple University; Robert C. Duvic, University of Texas, Austin; Janice Wickstead Jadlow, Oklahoma State University; Steve Johnson, University of Texas at El Paso; Boyden C. Lee, New Mexico State University; Marc Lars Lipson, Boston University; Richard K. Lyons, University of California, Berkeley; Dileep Mehta, Georgia State University; Margaret Moore, Franklin University; William Pugh, Auburn University; Bruce Seifert, Old Dominion University; Jay Sultan, Bentley College; Paul J. Swanson, Jr., University of Cincinnati; and Steve Wyatt, University of Cincinnati. I am particularly grateful to Jack K. Strauss, St. Louis University, for his extensive help in rewriting Chapter 3. His hard work, excellent writing style, creative suggestions, and keen insights greatly improved this chapter.

My family, especially my wife, Diane, as well as my mother and three brothers, have provided me (once again) with continual support and encouragement during the writing of this book. I appreciate the (usual) cheerfulness with which Diane endured the many hours I spent writing the tenth edition of this text.

A.C.S.
Pacific Palisades

Selected Currencies and Symbols

COUNTRY	CURRENCY	SYMBOL
Afghanistan	Afghani	Af
Albania	lek	lek
Algeria	dinar	DA
Antigua and Barbuda	E.C. dollar	E.C.$
Argentina	peso	Arg$
Australia	dollar	$A
Austria	euro	€
Bahamas	dollar	BS
Bahrain	dinar	BD
Barbados	dollar	BDS$
Belgium	euro	€
Belize	dollar	BZ$
Bermuda	dollar	Ber$
Bolivia	boliviano	Bs
Botswana	pula	P
Brazil*	real	R
Cambodia	riel	CR
Canada	dollar	$ or Can$
Cayman Islands	dollar	CS
Chile	peso	Ch$
China, People's Republic of**	yuan	Y
Colombia	peso	Col$
Costa Rica	colon	C
Cyprus	euro	€
Denmark	krone	DKr
Dominican Republic	peso	RD$
Ecuador	sucre	S /.
Egypt	pound	LE
European Monetary Unit	euro	€
El Salvador	colon	C
Fiji	dollar	F$
Finland	euro	€
France	euro	€
Germany	euro	€
Greece	euro	€
Guatemala	quetzal	Q
Honduras	lempira	L
Hong Kong	dollar	HK$
Hungary	forint	Ft
India	rupee	Rs
Indonesia	rupiah	Rp
Iran, Islamic Republic of	rial	Rls
Ireland	euro	€
Israel	new sheqel	NIS
Italy	euro	€
Jamaica	dollar	J$
Japan	yen	¥
Kenya	shilling	K Sh
Korea, Republic of	won	W
Kuwait	dinar	KD
Liberia	dollar	$
Liechtenstein	franc	Sw F
Luxembourg	euro	€

*Prior to 1994, Brazil's currency was the cruzeiro, Cr$.

**The currency is the renminbi, whereas the currency unit is the yuan.

COUNTRY	CURRENCY	SYMBOL	COUNTRY	CURRENCY	SYMBOL
Macao	pataca	P	Singapore	dollar	S$
Malawi	kwacha	MK	Slovakia	euro	€
Malaysia	ringgit	MS	Slovenia	euro	€
Malta	euro	€	Somalia	shiling	So. Sh.
Mauritius	ruppe	Mau Rs	So. Africa	rand	R
Mexico	peso	Mex$	Spain	euro	€
Morocco	dirham	DH	Sri Lanka	rupee	SL Rs
Namibia	rand (S.Afr.)	R	Sweden	krona	SKr
Netherlands	euro	€	Switzerland	franc	SFr
Netherlands Antilles	guilder	NA. f	Taiwan	dollar	NT$
			Thailand	baht	B
New Zealand	dollar	$NZ	Trinidad and Tobago	dollar	TT$
Nigeria	naira	N			
Norway	krone	NKr	Tunisia	dinar	D
Oman	rial Omani	RO	Turkey	lira	LT
Pakistan	rupee	PRs	Ukraine	ruble	rub
Panama	balboa	B	United Arab Emirates	dirham	Dh
Papua New Guinea	kina	K			
			United Kingdom	pound	£ or £ stg.
Paraguay	guarani	G	Uruguay	new peso	NUr$
Peru	new sol	S/.	Vanuatu	vatu	VT
Philippines	peso	₽	Venezuela	bolivar	Bs
Portugal	euro	€	Vietnam	dong	D
Qatar	riyal	QR	Western Samoa	tala	WS$
Russia	ruble	Rb	Zaire	zaire	Z
Saudi Arabia	riyal	SRls	Zambia	kwacha	K
Senegal	franc	CFAF	Zimbabwe	dollar	Z$

Symbols And Acronyms

a_h	Expected real return on home currency loan
a_f	Expected real return on a foreign currency loan
ADR	American depository receipt
APV	Adjusted present value
B/L	Bill of lading
β	Beta coefficient, a measure of an asset's riskiness
β^*	All-equity beta
β_e	Levered β
C_1	Local currency cash flows in period t
C	Cost
C(E)	Price of a foreign currency call option
d	Amount of currency devalution
D	Forward discount
D_f	Amount of foreign currency debt
e_t	Nominal exchange rate at time t
e'_t	Real exchange rate at time t
E	(a) Exercise price on a call option or (b) Amount of equity
E_f	Foreign subsidiary retained earnings
f_t	t-period forward exchange rate
g	(a) Expected dividend growth rate or
	(b) Expected rate of foreign currency appreciation against the dollar
HC	Home currency
i_f	(a) Expected rate of foreign inflation per period or
	(b) Before-tax cost of foreign debt
i_h	Expected rate of home country inflation per period
i_d	Before-tax cost of domestic debt
I_o	Initial investment
IRPT	Interest rate parity theory
k	Cost of capital
k_0	Weighted cost of capital

k_e	Cost of equity capital given the firm's degree of leverage
k_1	Weighted cost of capital for a project
k^*	Cost of equity capital if all equity financed
L	Parent's target debt ratio
LC	Local currency
L/C	Letter of credit
LDC	Less-developed country
LIBOR	London interbank offer rate
MNC	Multinational corporation
NPV	Net present value
OFDI	Office of Foreign Direct Investment
P	(a) Put option premium or
	(b) Principle amount of foreign currency loan
PIE	Price-earnings ration on a share of stock
PPP	Purchasing power parity
r	Effective yield on a bond
r_h	Home currency interest rate
r_f	Foreign currency interest rate
^{r}us	U.S. interest rate
r_L	Local currency interest rate
R_f	Risk-free rate of return
R_m	Required return on the market
s	Flotation cost, in percent, on long-term debt
S	Current spot rate
S_i	Interest subsidy in period i
SDR	Special drawing right
t	(a) Tax rate or (b) Time, when used as a subscript
t_a	Foreign affiliate tax rate
T_i	Tax savings in period i association with using debt financing
X_i	Home currency cash flow in period i

PART I

ENVIRONMENT OF INTERNATIONAL FINANCIAL MANAGEMENT

CHAPTER 1

Introduction: Multinational Enterprise and Multinational Financial Management

What is prudence in the conduct of every private family can scarce be folly in that of a great kingdom. If a foreign country can supply us with a commodity cheaper than we ourselves can make it, better buy it of them with some part of the produce of our own industry employed in a way in which we have some advantage.

ADAM SMITH (1776)

Learning Objectives

- To understand the nature and benefits of globalization
- To explain why multinational corporations are the key players in international economic competition today
- To understand the motivations for foreign direct investment and the evolution of the multinational corporation (MNC)
- To identify the stages of corporate expansion overseas by which companies gradually become MNCs
- To explain why managers of MNCs need to exploit rapidly changing global economic conditions and why political policymakers must also be concerned with the same changing conditions
- To identify the advantages of being multinational, including the benefits of international diversification
- To describe the general importance of financial economics to multinational financial management and the particular importance of the concepts of arbitrage, market efficiency, capital asset pricing, and total risk
- To characterize the global financial marketplace and explain why MNC managers must be alert to capital market imperfections and asymmetries in tax regulations

A key theme of this book is that companies today operate within a global marketplace and can ignore this fact only at their peril. The internationalization of finance and commerce has been brought about by the great advances in transportation, communications, and information-processing technology. This development introduces a dramatic new commercial reality—the global market for standardized consumer and industrial products on a previously unimagined scale. It places primary emphasis on the one great thing all markets have in common—the overwhelming desire for dependable, world-class products at aggressively low prices. The international integration of markets also introduces the global competitor, making firms insecure even in their home markets.

The transformation of the world economy has dramatic implications for business. American management, for example, has learned that the United States can no longer be viewed as a huge economy that does a bit of business with secondary economies around the world. Rather, the United States is merely one economy, albeit a very large one, that is part of an extremely competitive, integrated world economic system. To succeed, U.S. companies need great flexibility; they must be able to change corporate policies quickly as the world market creates new opportunities and challenges. Big Steel, which was virtually the antithesis of this modern model of business practice, paid the price for failing to adjust to the transformation of the world economy. Similarly, non-U.S. companies are finding that they must increasingly turn to foreign markets to source capital and technology and sell their products.

Today's financial reality is that money knows no national boundary. The dollar has become the world's central currency, with billions switched at the flick of an electronic blip from one global corporation to another, from one central bank to another. The international mobility of capital has benefited firms by giving them more financial options, while at the same time complicating the job of the chief financial officer by increasing its complexity.

The extent to which economies around the world have been integrated into a single global economy was vividly illustrated by the global nature of the financial crisis that began in August 2007 and was triggered by the subprime mortgage crisis. Financial globalization was pivotal to the boom in the U.S. housing market that preceded the subprime mortgage crisis (by providing a ready supply of low-cost foreign capital to fund mortgages) and was also the crucial conduit whereby problems in the U.S. housing market were transmitted to the rest of the world (as foreign investors in U.S. mortgage-backed securities were stuck with their risky bets). As the financial crisis led to a deep U.S. recession, its economic effects were transmitted overseas as well as a decline in American income reduced the U.S. demand for imported goods and services. Slow growth overseas, in turn, led to a steep decline in demand for U.S. exports. The swift decline in trade worsened both the U.S. and global recession.

Because we operate in an integrated world economy, all students of finance should have an international orientation. Indeed, it is the rare company today, in any country, that does not have a supplier, competitor, or customer located abroad. Moreover, its domestic suppliers, competitors, and customers likely have their own foreign choices as well. Thus, a key aim of this book is to help you bring to bear on key business decisions a global perspective, manifested by questions such as, Where in the *world* should we locate our plants? Which *global* market segments should we seek to penetrate? and Where in the *world* should we raise our financing? This international perspective is best captured in the following quotation from an ad for J.P. Morgan, the large, successful New York bank (known as JPMorgan Chase & Co. since its December 2000 merger with Chase Manhattan): "J.P. Morgan is an international firm with a very important American business."

1.1 The Rise of the Multinational Corporation

Despite its increasing importance today, international business activity is not new. The transfer of goods and services across national borders has been taking place for thousands of years, antedating even Joseph's advice to the rulers of Egypt to establish that nation as the granary of the Middle East. Since the end of World War II, however, international business has undergone a revolution out of which has emerged one of the most important economic phenomena of the latter half of the twentieth century: the multinational corporation.

A **multinational corporation** (MNC) is a company engaged in producing and selling goods or services in more than one country. It ordinarily consists of a parent company located in the home country and at least five or six foreign subsidiaries, typically with a high degree of strategic interaction among the units. Some MNCs have upward of 100 foreign subsidiaries scattered around the world. The United Nations estimated in 2010 that over 82,000 parent companies around the world (with over 807,000 foreign subsidiaries employing 80 million workers) can be classified as multinational.[1]

Based in part on the development of modern communications and transportation technologies, the rise of the multinational corporation was unanticipated by the classical theory of international trade as first developed by Adam Smith and David Ricardo. According to this theory, which rests on the doctrine of **comparative advantage**, each nation should specialize in the production and export of those goods that it can produce with highest relative efficiency and import those goods that other nations can produce relatively more efficiently.

Underlying this theory is the assumption that goods and services can move internationally but factors of production, such as capital, labor, and land, are relatively immobile. Furthermore, the theory deals only with trade in commodities—that is, undifferentiated products; it ignores the roles of uncertainty, economies of scale, transportation costs, and technology in international trade; and it is static rather than dynamic. For all these defects, however, it is a valuable theory, and it still provides a well-reasoned theoretical foundation for free-trade arguments (see Appendix 1A). But the growth of the MNC can be understood only by relaxing the traditional assumptions of classical trade theory.

Classical trade theory implicitly assumes that countries differ enough in terms of resource endowments and economic skills for those differences to be at the center of any analysis of corporate competitiveness. Differences among individual corporate strategies are considered to be of only secondary importance; a company's citizenship is the key determinant of international success in the world of Adam Smith and David Ricardo.

This theory, however, is increasingly irrelevant to the analysis of businesses in the countries currently at the core of the world economy—the United States, Japan, China, the nations of Western Europe, and, to an increasing extent, the most successful East Asian countries. Within this advanced and highly integrated core economy, differences among corporations are becoming more important than aggregate differences among countries. Furthermore, the increasing capacity of even small companies to operate in a global perspective makes the old analytical framework even more obsolete.

Not only are the "core nations" more homogeneous than before in terms of living standards, lifestyles, and economic organization, but their factors of production tend to move more rapidly in search of higher returns. Natural resources have lost much of their previous role in national specialization as advanced, knowledge-intensive societies move rapidly into the age of artificial materials and genetic engineering. Capital moves around the world in massive amounts at the speed of light; increasingly, corporations raise capital simultaneously in several major markets. Labor skills in these countries no longer can be considered fundamentally different; many of the students enrolled in American graduate schools are foreign, and training has become a key dimension of many joint ventures between international corporations. Technology and know-how are also rapidly becoming a global pool, with companies such as General Electric, Morgan Stanley, Electronic Data Systems, Cisco Systems, McKinsey & Co., and IBM shifting software writing, accounting, engineering, and other skilled services to countries such as India and China.

Against this background, the ability of corporations of all sizes to use these globally available factors of production is a far bigger factor in international competitiveness than broad macroeconomic differences among countries. Contrary to the postulates of Smith and Ricardo, the very existence of the multinational enterprise is based on the international mobility of certain factors of production. Capital raised in London on the Eurodollar market may be used by a Swiss-based pharmaceutical firm to finance the acquisition of German equipment by a subsidiary in Brazil. A single Barbie doll is made in 10 countries—designed in California; with parts and clothing from Japan, China, Hong Kong, Malaysia, Indonesia, Korea, Italy, and

[1] *World Investment Report 2010*, United Nations Conference on Trade and Development, July 22, 2010.

Taiwan; and assembled in Mexico—and sold in 144 countries. Information technology also makes it possible for worker skills to flow with little regard to borders. In the semiconductor industry, the leading companies typically locate their design facilities in high-tech corridors in the United States, Japan, and Europe. Finished designs are transported quickly by computer networks to manufacturing plants in countries with more advantageous cost structures. In effect, the traditional world economy in which products are exported has been replaced by one in which value is added in several different countries.

The value added in a particular country—product development, design, production, assembly, or marketing—depends on differences in labor costs and unique national attributes or skills. Although trade in goods, capital, and services and the ability to shift production act to limit these differences in costs and skills among nations, differences nonetheless remain based on cultural predilections, historical accidents, and government policies. Each of these factors can affect the nature of the competitive advantages enjoyed by different nations and their companies. For example, at the moment, the United States has some significant competitive advantages. For one thing, individualism and entrepreneurship—characteristics that are deeply ingrained in the American spirit—are increasingly a source of competitive advantage as the creation of value becomes more knowledge intensive. When inventiveness and entrepreneurship, along with a culture of openness and innovation, are combined with abundant risk capital, superior graduate education, better infrastructure, and an inflow of foreign brainpower, it is not surprising that U.S. companies—from Boston to Austin, from Silicon Alley to Silicon Valley—dominate world markets in software, biotechnology, Internet-related business, microprocessors, aerospace, and entertainment. Also, U.S. firms are moving rapidly forward to construct an information superhighway and related multimedia technology, whereas their European and Japanese rivals face continued regulatory and bureaucratic roadblocks.

Recent experiences also have given the United States a significant competitive advantage. During the 1980s and 1990s, fundamental political, technological, regulatory, and economic forces radically changed the global competitive environment. A brief listing of some of these forces includes the following:

- Massive deregulation
- The collapse of communism
- The sale of hundreds of billions of dollars of state-owned firms around the world in massive privatizations designed to shrink the public sector
- The revolution in information technologies
- The rise in the market for corporate control with its waves of takeovers, mergers, and leveraged buyouts
- The jettisoning of statist policies and their replacement by free-market policies in Third World nations
- The unprecedented number of nations submitting themselves to the exacting rigors and standards of the global marketplace

These forces have combined to usher in an era of brutal price and service competition. The United States is further along than other nations in adapting to this new world economic order, largely because its more open economy has forced its firms to confront rather than hide from competitors. Facing vicious competition at home and abroad, U.S. companies—including such corporate landmarks as IBM, General Motors, Walt Disney, Xerox, American Express, Coca-Cola, and 3M—have been restructuring and investing heavily in new technologies and marketing strategies to boost productivity and expand their markets. In addition, the United States has gone further than any other industrialized country in deregulating its financial services, telecommunications, airlines, and trucking industries. The result: Even traditionally sheltered U.S. industries have become far more competitive in recent years, and so has the U.S. workforce. The heightened competitiveness of U.S. firms has, in turn, compelled European and Japanese rivals to undergo a similar process of restructuring and renewal.

Perhaps the most dramatic change in the international economy over the past three decades has been the rise of China as a global competitor. From 1978, when Deng Xiaoping launched his country's economic reform program, to 2010, China's gross domestic product rose by more than 3200%, an annual rate of 11%, the most rapid growth rate by far of any country in the world during this 33-year period. Since 1991, China has attracted the largest amount of foreign investment among developing countries each year, with annual foreign investment by the late 1990s exceeding $50 billion. Since 2002, China has been the world's number-two destination (the United States is number one) for **foreign direct investment** (FDI), which is the acquisition abroad of companies, property, or physical assets such as plant and equipment, attracting over $105 billion in FDI flows in 2010. About 400 out of the world's 500 largest companies, employing 16 million workers in 2008, have now invested in China.

The transformation of China from an insular nation to the world's low-cost site for labor-intensive manufacturing has had enormous effects on everything from Mexico's competitiveness as an export platform to the cost of furniture and computers in the United States to the value of the dollar to the number of U.S. manufacturing jobs. China's rapid growth and resulting huge appetite for energy and raw materials have also resulted in stunning increases in the prices of oil, steel, and other basic commodities. Most important, hundreds of millions of consumers worldwide are benefiting from the low prices of China's goods and more than a billion Chinese are escaping the dire poverty of their past.

The prime transmitter of competitive forces in this global economy is the multinational corporation. In 2005, for example, 58% of China's exports were by foreign companies manufacturing in China.[2] What differentiates the multinational enterprise from other firms engaged in international business is the globally coordinated allocation of resources by a single centralized management. Multinational corporations make decisions about market-entry strategy; ownership of foreign operations; and design, production, marketing, and financial activities with an eye to what is best for the corporation as a whole. The true multinational corporation emphasizes group performance rather than the performance of its individual parts. For example, in 2003, Whirlpool Corporation launched what it billed as the world's cheapest washing machine, with an eye on low-income consumers who never thought they could afford one. Whirlpool designed and developed the Ideale washing machine in Brazil, but it manufactures the Ideale in China and India, as well as Brazil, for sale in those and other developing countries.

MINI-CASE *General Electric Globalizes Its Medical Systems Business*

One of General Electric's key growth initiatives is to globalize its business. According to its website, "Globalization no longer refers only to selling goods and services in global markets. Today's most valuable innovations and solutions are envisioned, designed, built and offered on a global scale."[3]

A critical element of General Electric's global strategy is to be first or second in the world in a business or to exit that business. For example, in 1987, GE swapped its RCA consumer electronics division for Thomson CGR, the medical equipment business of Thomson SA of France, to strengthen its own medical unit. Together with GE Medical Systems Asia (GEMSA) in Japan, CGR makes GE number one in the world market for X-ray, CAT scan, magnetic resonance, ultrasound, and other diagnostic imaging devices, ahead of Siemens (Germany), Philips (Netherlands), and Toshiba (Japan).

General Electric's production is also globalized, with each unit exclusively responsible for equipment in which it is the volume leader. Hence, GE Medical Systems (GEMS) now makes the high end

[2]Salil Tripathi, "*The Dragon Tamers*." *The Guardian*, August 11, 2006.
[3]http://savelives.gecareers.com/abtus_growth.html

of its CAT scanners and magnetic resonance equipment near Milwaukee (its headquarters) and the low end in Japan. The middle market is supplied by GE Medical Systems SA (France). Engineering skills pass horizontally from the United States to Japan to France and back again. Each subsidiary supplies the marketing skills to its own home market.

The core of GEMS's global strategy is to "provide high-value global products and services, created by global talent, for global customers."[4] As part of this strategy, "GE Medical Systems focuses on growth through globalization by aggressively searching out and attracting talent in the 150 countries in which we do business worldwide."[5]

GEMS also grows by acquiring companies overseas in order to "broaden our ability to provide product and service solutions to our customers worldwide. Through several key acquisitions, we've strengthened our position in our existing markets, and entered new and exciting markets."[6] For example, in April 2003, GE announced that it would acquire Instrumentarium, a Finnish medical technology company, for $2.1 billion. According to the press release,

> The combination of Instrumentarium and GE offerings will further enable GE Medical Systems to support healthcare customers with a broad range of anesthesia monitoring and delivery, critical care, infant care and diagnostic imaging solutions and help ensure the highest quality of care.[7]

A year later, in April 2004, GE spent $11.3 billion to acquire Amersham, a British company that is a world leader in medical diagnostics and life sciences. According to the press release, the acquisition will enable GE to "become the world's best diagnostic company, serving customers in the medical, pharmaceutical, biotech and bioresearch markets around the world."[8] The combined GEMS and Amersham is now known as GE Healthcare.

In line with GE's decision to shift its corporate center of gravity from the industrialized world to the emerging markets of Asia and Latin America,[9] Medical Systems has set up joint ventures in India and China to make low-end CAT scanners and various ultrasound devices for sale in their local markets. These machines were developed in Japan with GEMS's 75% joint venture GE Yokogawa Medical Systems, but the design work was turned over to India's vast pool of inexpensive engineers through its joint venture WIPRO GE Medical Systems (India). At the same time, engineers in India and China were developing low-cost products to serve markets in Asia, Latin America, and the United States, where there is a demand from a cost-conscious medical community for cheaper machines. In 2010, GE Healthcare derived about $3.5 billion in sales to emerging markets, with over $1 billion in revenue from China alone.

Although it still pursues geographic market expansion, GE's **globalization** drive now focuses on taking advantage of its global reach to find less expensive materials and intellectual capital abroad. In material procurement, GE's global supply chain does business with over 500,000 suppliers across thousands of entities in more than 100 countries, deriving over $1 billion in savings on its foreign purchases. On the human capital side, General Electric has established global research and development (R&D) centers in Shanghai, China; Munich, Germany; Bangalore, India; and Rio de Janeiro, Brazil. By sourcing intellect globally, GE has three times the engineering capacity for the same cost. For Medical Systems, the ability to produce in low-cost countries has meant bringing to market a low-priced CAT scanner for $200, 000 (most sell for $700, 000-$1 million) and still earning a 30% operating margin.

Questions

1. What advantages does General Electric seek to attain from its international business activities?
2. What actions is it taking to gain these advantages from its international activities?
3. What risks does GE face in its foreign operations?
4. What profit opportunities for GE can arise out of those risks?

[4]Ibid.
[5]Ibid.
[6]Ibid.
[7]http://www.gemedicalsystems.com/company/acquisitions/index.html.
[8]http://www5.amershambiosciences.com/aptrix/upp01077.nsf/Content/about_us_press_releases_2004_080404.
[9]In 2005, GE said it expected 60% of its revenue growth over the next decade to come from emerging markets, compared with 20% in the previous decade.

Evolution of the Multinational Corporation

Every year, *Fortune* publishes a list of the most admired U.S. corporations. Year in and year out, most of these firms are largely multinational in philosophy and operations. In contrast, the least admired tend to be national firms with much smaller proportions of assets, sales, or profits derived from foreign operations. Although multinationality and economic efficiency do not necessarily go hand in hand, international business is clearly of great importance to a growing number of U.S. and non-U.S. firms. The list of large American firms that receive 50% or more of their revenues and profits from abroad and that have a sizable fraction of their assets abroad reads like a corporate *Who's Who*: Motorola, Gillette, Dow Chemical, Colgate-Palmolive, McDonald's, and Hewlett-Packard. In 2010, the S&P 500 companies earned 40% of their profit abroad.

Despite their seeming ubiquity, multinational corporations comprise much less than 1% of U.S. firms. Nonetheless, they are among the most powerful of U.S. companies, accounting for about 19% of all private sector jobs, 25% of all private wages, 48% of all goods exports, an outsized 74% of nonpublic R&D spending, and a remarkable 41% of the growth since 1990 in private sector labor productivity—the foundation of a rising American living standard.[10]

For many of the best-known U.S. companies, foreign markets are of critical importance. For example, in 2010, Coca-Cola, 3M, and Caterpillar generated 69.5%, 65.5%, and 67.8% of sales, respectively, from overseas. At the same time, industries differ greatly in the extent to which foreign operations are of importance to them. For example, oil companies and banks are far more heavily involved overseas than are tobacco companies and automakers. Even within industries, companies differ markedly in their commitment to international business. For example, in 2000, ExxonMobil had 69% of its sales, 63% of its assets, and 60% of its profits abroad. The corresponding figures for Chevron were 45%, 53%, and 52%. Similarly, General Motors generated 61% of its income overseas, in contrast to a loss on overseas operations for Ford. These and other examples of the importance of foreign operations to U.S. business are shown in Exhibit 1.1.

The degree of internationalization of the American economy is often surprising. For example, 69% of the U.S. film industry's box office revenues in 2012 came from foreign markets.[11] The film industry illustrates other dimensions of internationalization as well, many of which are reflected in *Total Recall*, a film that was made by a Hungarian-born producer and a Dutch director, starred an Austrian-born leading man (who later became governor of California) and a Canadian villain, was shot in Mexico, and was distributed by a Hollywood studio owned by a Japanese firm. Another demonstration of internationalization is provided by Exhibit 1.2, which shows the global sourcing of major components of Boeing's new 787 Dreamliner. Rather than bear the entire estimated $10 billion cost to develop a new plane, Boeing decided that suppliers from around the world would independently bankroll their parts of the project, sharing costs, risks, and—ultimately, it is hoped—profits.

Exhibit 1.3 provides further evidence of the growing **internationalization** of American business. It shows that overseas investment by U.S. firms and U.S. investment by foreign firms are in the hundreds of billions of dollars each year. The stock of foreign direct investment by U.S. companies on an historical cost basis reached $3.8 trillion in 2010 (with net income of

[10]These data appear in Martin N. Baily, Matthew J. Slaughter, and Laura D'Andrea Tyson, "The Global Jobs Competition Heats Up," *Wall Street Journal*, July 1, 2010, p. A19.

[11]Motion Picture Association of America. *Theatrical Market Statistics 2012*. Accessed at http://www.mpaa.org/Resources/3037b7a4-58a2-4109-8012-58fca3abdf1b.pdf, p. 4.

Exhibit 1.1 Selected Large U.S Multinationals

	Foreign Revenue ($ billions)	Foreign Revenue (% of total)	Net Profit ($ billions)	Net Profit (% of total)	Foreign Assets ($ billion)	Foreign Assets (% of total)
ExxonMobil	143.0	69	10.2	60	56.7	63
Ford	51.2	30	−0.6	NA	19.9	43
IBM	51.2	58	3.9	48	14.3	40
General Motors	48.2	26	2.9	61	12.6	36
Chevron	31.4	45	2.7	52	27.1	53
Hewlett-Packard	27.2	56	2.2	61	2.2	50
Protecter & Gamble	19.9	50	1.5	42	17.0	50
Intel	19.8	59	3.6	34	3.9	26
Motorola	19.7	53	1.6	74	16.8	40
Dow Chemical	14.1	62	1.1	73	4.2	46
Coca-Cola	12.4	61	0.8	36	5.5	37
Pfizer	11.6	39	3.9	106	5.7	47
McDonald's	9.0	63	1.2	62	12.8	59
3M	8.8	53	0.9	47	2.1	37
Colgate-Palmolive	6.6	71	0.7	69	3.2	67
Gillette	5.5	60	0.5	56	1.8	52
HJ Heinz	4.6	49	0.5	58	2.1	43
Nike	4.0	44	0.3	55	0.7	43
Apple Computer	3.8	48	1.0	93	0.6	13
Avon Products	3.8	67	0.3	69	1.6	56

Source: Forbes June 30, 2001.

$1.1 trillion) while the stock of direct investment by foreign companies in the United States on a comparable basis exceeded $2.2 trillion that year (with net income of $116 billion).[12]

Worldwide, the stock of FDI reached an estimated $18.9 trillion in 2010, as shown in Exhibit 1.4. Moreover, these investments have grown steadily over time, facilitated by a combination of factors: falling regulatory barriers to overseas investment; rapidly declining telecommunications and transport costs; and freer domestic and international capital markets in which vast sums of money can be raised, companies can be bought, and currency and other risks can be hedged. These factors have made it easier for companies to invest abroad, to do so more cheaply, and to experience less risk than ever before.

The list of companies investing abroad includes not just the usual suspects from Japan, Great Britain, Germany, France, Canada, and other developed countries but also many from developing countries, especially Brazil, Russia, India, and China, referred to collectively as the BRICs. Rapid economic growth combined with growing competitive pressure at home, the rise of home-grown MNCs, high commodity prices, and FDI liberalization in host countries have been feeding a boom in outward investment from the BRICs, which reached a peak of $147 billion in 2008—almost 9% of world outflows, compared to less than 1% 10 years before. Although their FDI outflows fell in 2009 due to the global financial and economic crisis, the four BRIC countries' MNCs were again active outward investors in 2010.

A brief discussion of the various considerations that have prompted the rise of the multinational corporation follows.

[12]Data from http://www.bea.gov/iTable/iTable.cfm?ReqID=2&step=1#reqid=2&step=1&isuri=1.