Cheol S. Eun | Bruce G. Resnick

International Financial Management

Seventh Edition

International Financial Management

Seventh Edition

The McGraw-Hill/Irwin Series in Finance, Insurance, and Real Estate

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International Financial Management

Seventh Edition

Cheol S. Eun

Georgia Institute of Technology

Bruce G. Resnick

Wake Forest University

Mc Graw Hill Education

INTERNATIONAL FINANCIAL MANAGEMENT, SEVENTH EDITION

Published by McGraw-Hill Education, 2 Penn Plaza, New York, NY 10121.

This book is printed on acid-free paper.

1 2 3 4 5 6 7 8 9 0 DOW/DOW 1 0 9 8 7 6 5 4

ISBN 978-0-07-786160-5
MHID 0-07-786160-4

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Media Project Manager: *Siva Kamar*
Compositor: *Cenveo® Publisher Services*
Typeface: *10/12.5 Times LT Std*
Printer: *R. R. Donnelley*

Library of Congress Cataloging-in-Publication Data

Eun, Cheol S.
International financial management / Cheol S. Eun, Georgia Institute of Technology, Bruce G. Resnick, Wake Forest University.—Seventh Edition.
pages cm
Includes index.
ISBN 978-0-07-786160-5 (alk. paper)
1. International finance. 2. International business enterprises—Finance. 3. Foreign exchange. 4. Financial institutions, International. I. Title.
HG3881.E655 2014
658.15’99—dc23 2013041099

www.mhhe.com

To Elizabeth

C.S.E.

To Donna

B.G.R.

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Cheol S. Eun (Ph.D., NYU, 1981) is the Thomas R. Williams Chair and Professor of Finance at the Scheller College of Business, the College of Management, Georgia Institute of Technology. Before joining Georgia Tech, he taught at the University of Minnesota and the University of Maryland. He also taught at the Wharton School of the University of Pennsylvania, Korea Advanced Institute of Science and Technology (KAIST), Singapore Management University, and the Esslingen University of Technology (Germany) as a visiting professor. He has published extensively on international finance issues in such major journals as the *Journal of Finance, JFQA, Journal of Banking and Finance, Journal of International Money and Finance, Management Science,* and *Oxford Economic Papers*. Also, he has served on the editorial boards of the *Journal of Banking and Finance, Journal of Financial Research, Journal of International Business Studies,* and *European Financial Management*. His research is widely quoted and referenced in various scholarly articles and textbooks in the United States as well as abroad.

Dr. Eun is the founding chair of the *Fortis/Georgia Tech Conference on International Finance.* The key objectives of the conference are to promote research on international finance and provide a forum for interactions among academics, practitioners, and regulators who are interested in vital current issues of international finance.

Dr. Eun has taught a variety of courses at the undergraduate, graduate, and executive levels, and was the winner of the Krowe Teaching Excellence Award at the University of Maryland. He also has served as a consultant to many national and international organizations, including the World Bank, Apex Capital, and the Korean Development Institute, advising on issues relating to capital market liberalization, global capital raising, international investment, and exchange risk management. In addition, he has been a frequent speaker at academic and professional meetings held throughout the world.

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Bruce G. Resnick is the Joseph M. Bryan Jr. Professor of Banking and Finance at the Wake Forest University School of Business in Winston-Salem, North Carolina. He has a D.B.A. (1979) in finance from Indiana University. Additionally, he has an M.B.A. from the University of Colorado and a B.B.A. from the University of Wisconsin at Oshkosh. Prior to coming to Wake Forest, he taught at Indiana University for ten years, the University of Minnesota for five years, and California State University for two years. He has also taught as a visiting professor at Bond University, Gold Coast, Queensland, Australia, and at the Helsinki School of Economics and Business Administration in Finland. Additionally, he served as the Indiana University resident director at the Center for European Studies at the Maastricht University, the Netherlands. He also served as an external examiner to the Business Administration Department of Singapore Polytechnic and as the faculty advisor on Wake Forest University study trips to Japan, China, and Hong Kong.

Dr. Resnick teaches M.B.A. courses at Wake Forest University. He specializes in the areas of investments, portfolio management, and international financial management. Dr. Resnick's research interests include market efficiency studies of options and financial futures markets and empirical tests of asset pricing models. A major interest has been the optimal design of internationally diversified portfolios constructed to control for parameter uncertainty and exchange rate risk. In recent years, he has focused on information transmission in the world money markets and yield spread comparisons of domestic and international bonds. His research articles have been published in most of the major academic journals in finance. His research is widely referenced by other researchers and textbook authors. He is an associate editor for the *Emerging Markets Review, Journal of Economics and Business,* and the *Journal of Multinational Financial Management*.

Preface

Our Reason for Writing this Textbook

Both of us have been teaching international financial management to undergraduates and M.B.A. students at Georgia Institute of Technology, Wake Forest University, and at other universities we have visited for three decades. During this time period, we conducted many research studies, published in major finance and statistics journals, concerning the operation of international financial markets. As one might imagine, in doing this we put together an extensive set of teaching materials that we used successfully in the classroom. As the years went by, we individually relied more on our own teaching materials and notes and less on any one of the major existing textbooks in international finance (most of which we tried at some point).

As you may be aware, the scope and content of international finance have been fast evolving due to deregulation of financial markets, product innovations, and technological advancements. As capital markets of the world are becoming more integrated, a solid understanding of international finance has become essential for astute corporate decision making. Reflecting the growing importance of international finance as a discipline, we have seen a sharp increase in the demand for experts in the area in both the corporate and academic worlds.

In writing *International Financial Management,* Seventh Edition, our goal was to provide well-organized, comprehensive, and up-to-date coverage of the topics that take advantage of our many years of teaching and research in this area. We hope the text is challenging to students. This does not mean that it lacks readability. The text discussion is written so that a self-contained treatment of each subject is presented in a *user-friendly* fashion. The text is intended for use at both the advanced undergraduate and M.B.A. levels.

The Underlying Philosophy

International Financial Management, Seventh Edition, like the first six editions, is written based on two tenets: emphasis on the basics and emphasis on a managerial perspective.

Emphasis on the Basics

We believe that any subject is better learned if one first is well grounded in the basics. Consequently, we initially devote several chapters to the fundamental concepts of international finance. After these are learned, the remaining material flows easily from them. We always bring the reader back, as the more advanced topics are developed, to their relationship to the fundamentals. By doing this, we believe students will be left with a framework for analysis that will serve them well when they need to apply this material in their careers in the years ahead.

We believe this approach has produced a successfuI textbook: *International Financial Management* is used in many of the best business schools in the world. Various editions of the text have been translated into Spanish and two dialects of Chinese. There is a global edition. In addition, local co-authors have assisted in preparing a Canadian, Malaysian, and Indian adaptations.

Seventh Edition Organization

International Financial Management, Seventh Edition, has been completely updated. All data tables and statistics are the most current available when the text went to press. Additionally, the chapters incorporate several new International Finance in Practice boxes that contain real-world illustrations of chapter topics and concepts. In the margins below, we highlight specific changes in the Seventh edition.

This part lays the macroeconomic foundation for all the topics to follow.

Recent economic developments such as the global financial crisis and sovereign debt crisis of Europe.

Updated coverage of monetary developments, including the euro zone crisis.

Updated balance-of-payments statistics.

Review of corporate governance systems in different countries, the Dodd-Frank Act, and managerial implications.

This part describes the market for foreign exchange and introduces currency derivatives that can be used to manage foreign exchange exposure.

Fully updated market data and examples. New section on non-deliverable forward contracts.

Integrated coverage of key parity conditions and currency carry trade.

Fully updated market data and examples.

This part describes the various types of foreign exchange risk and discusses methods available for risk management.

Systematic coverage of foreign currency transaction exposure management and a new case application.

Conceptual and managerial analysis of economic exposure to currency risk.

A Managerial Perspective

The text presentation never loses sight of the fact that it is teaching students how to make managerial decisions. *International Financial Management,* Seventh Edition, is founded in the belief that the fundamental job of the financial manager is to maximize shareholder wealth. This belief permeates the decision-making process we present from cover to cover. To reinforce the managerial perspective, we provide numerous "real-world" stories whenever appropriate.

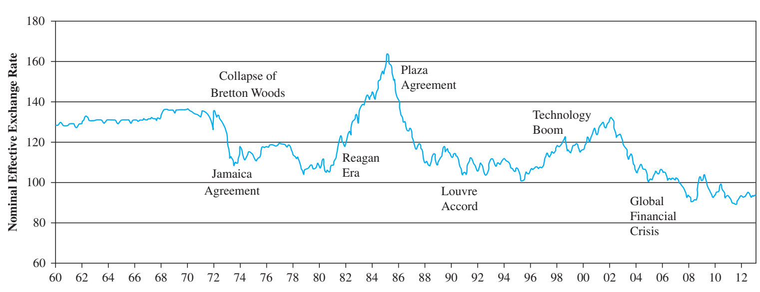
Pedagogical Features

CHAPTER OUTLINE

Chapter Outline—At the beginning of each chapter, a chapter outline is presented to provide a roadmap of concepts to be learned in that chapter.

Exhibits—Within each chapter, extensive use is made of graphs and tables to illustrate important concepts.

EXHIBIT 2.3 The Value of the U.S. Dollar since 1960[a]



[a]The value of the U.S. dollar represents the nominal exchange rate index (2005 = 100) with weights derived from trade among 21 industrialized countries.
Source: International Financial Statistics.

Examples—These are integrated throughout the text, providing students with immediate application of the text concepts.

EXAMPLE | 11.1: Rollover Pricing of a Eurocredit

Teltrex International can borrow $3,000,000 at LIBOR plus a lending margin of .75 percent per annum on a three-month rollover basis from Barclays in London. Suppose that three-month LIBOR is currently $5\frac{17}{32}$ percent. Further suppose that over the second three-month interval LIBOR falls to $5\frac{1}{8}$ percent. How much will Teltrex pay in interest to Barclays over the six-month period for the Eurodollar loan?

Solution: $\$3,000,000 \times (.0553125 + .0075)/4 + \$3,000,000 \times (.05125 + .0075)/4 = \$47,109.38 + \$44,062.50 = \$91,171.88$

International Finance in Practice Boxes—Selected chapters contain International Finance in Practice boxes. These real-world illustrations offer students a practical look at the major concepts presented in the chapter.

INTERNATIONAL FINANCE IN PRACTICE

FX Market Volumes Surge

The FX market is growing at record levels, according to figures released by the CME Group, the largest regulated foreign exchange market in the world.

Last month the CME Group reported average daily notional volume at a record level of $121 billion, up 82 percent compared to a year earlier.

With a number of indicators at play, like the news of Greece's credit concerns and the continued appetite for high-yielding currencies like the Australian dollar and the Canadian dollar, the CME saw record volumes and notional values in the euro and Australian and Canadian dollars. Euro FX futures and options saw total average daily volume of 362,000 contracts with total notional ADV of slightly over $62 billion.

Australian dollar futures and options climbed to nearly 119,000 contracts in average daily volume with almost $11 billion in total notional ADV, and Canadian dollar futures and options surpassed 88,000 contracts in ADV and $8 billion in total notional ADV.

With foreign currency futures going from strength to strength, the CME Group recently published a white paper outlining the benefits of FX futures.

"These contracts provide an ideal tool to manage currency or FX risks in an uncertain world," it said. "Product innovation, liquidity, and financial surety are the three pillars upon which the CME Group has built its world-class derivatives market. The CME Group provides products based on a wide range of frequently transacted currencies, liquidity offered on the state-of-the-art CME Globex electronic trading platform, and financial sureties afforded by its centralized clearing system."

Source: *Global Investor*, March 2010.

www.theice.com

This is the website of the Intercontinental Exchange (ICE). Several FX futures contracts are traded on their electronic trading platform.

www.numa.com/ref/exchange.htm

This is the website of The Numa Directory. It provides the website address of most of the stock and derivative exchanges in the world.

Annotated Web Resources—Web links located in the margins within each chapter serve as a quick reference of pertinent chapter-related websites. Each URL listed also includes a short statement on what can be found at that site.

In More Depth—Some topics are by nature more complex than others. The chapter sections that contain such material are indicated by the section heading "In More Depth"' and are in *blue type*. These sections may be skipped without loss of continuity, enabling the instructor to easily tailor the reading assignments to the students. End-of-chapter Questions and Problems relating to the In More Depth sections of the text are also indicated by *blue type*.

In More Depth

European Option-Pricing Formula

In the last section, we examined a simple one-step version of binomial option-pricing model. Instead, we could have assumed the stock price followed a multiplicative binomial process by subdividing the option period into many subperiods. In this case, S_T and C_T could be many different values. When the number of subperiods into which the option period is subdivided goes to infinity, the European call and put pricing formulas presented in this section are obtained. Exact European call and put pricing formulas are:[5]

$$C_e = S_t e^{-r_i T} N(d_1) - E e^{-r_\$ T} N(d_2) \tag{7.12}$$

and

$$P_e = E e^{-r_\$ T} N(-d_2) - S_t e^{-r_i T} N(-d_1) \tag{7.13}$$

The interest rates r_i and $r_\$$ are assumed to be annualized and constant over the term-to-maturity T of the option contract, which is expressed as a fraction of a year.

Invoking IRP, where with continuous compounding $F_T = S_t e^{(r_\$ - r_i)T}$, C_e and P_e in Equations 7.12 and 7.13 can be, respectively, restated as:

$$C_e = [F_T N(d_1) - EN(d_2)]e^{-r_\$ T} \tag{7.14}$$

and

$$P_e = [EN(-d_2) - F_T N(-d_1)]e^{-r_\$ T} \tag{7.15}$$

where

$$d_1 = \frac{ln\,(F_T/E) + .5\sigma^2 T}{\sigma\sqrt{T}}$$

and

$$d_2 = d_1 - \sigma\sqrt{T}$$

$N(d)$ denotes the cumulative area under the standard normal density function from $-\infty$ to d_1 (or d_2). The variable σ is the annualized volatility of the change in exchange rate $ln(S_{t+1}/S_t)$. Equations 7.14 and 7.15 indicate that C_e and P_e are functions of only five variables: F_T, E, $r_\$$, T, and σ. It can be shown that both C_e and P_e increase when σ becomes larger.

End-of-Chapter Features

SUMMARY

This chapter presents an introduction to the market for foreign exchange. Broadly defined, the foreign exchange market encompasses the conversion of purchasing power from one currency into another, bank deposits of foreign currency, the extension of credit denominated in a foreign currency, foreign trade financing, and trading in foreign currency options and futures contracts. This chapter limits the discussion to the spot and forward markets for foreign exchange. The other topics are covered in later chapters.

1. The FX market is the largest and most active financial market in the world. It is open somewhere in the world 24 hours a day, 365 days a year. In 2013, average daily trading in spot and forward foreign exchange was $4.95 trillion.
2. The FX market is divided into two tiers: the retail or client market and the wholesale or interbank market. The retail market is where international banks service their customers who need foreign exchange to conduct international commerce or trade in international financial assets. The great majority of FX trading takes place in the interbank market among international banks that are adjusting inventory positions or conducting speculative and arbitrage trades.
3. The FX market participants include international banks, bank customers, nonbank FX dealers, FX brokers, and central banks.
4. In the spot market for FX, nearly immediate purchase and sale of currencies take place. In the chapter, notation for defining a spot rate quotation was developed. Additionally, the concept of a cross-exchange rate was developed. It was determined that nondollar currency transactions must satisfy the bid-ask spread determined from the cross-rate formula or a triangular arbitrage opportunity exists.
5. In the forward market, buyers and sellers can transact today at the forward price for the future purchase and sale of foreign exchange. Notation for forward exchange rate quotations was developed. The use of forward points as a shorthand method for expressing forward quotes from spot rate quotations was presented. Additionally, the concept of a forward premium was developed.
6. Exchange-traded currency funds were discussed as a means for both institutional and retail traders to easily take positions in nine key currencies.

Summary—A short summary concludes each chapter, providing students with a handy overview of key concepts. The main points of the chapter are summarized and numbered for easy reference and study.

Key Words—One of the most interesting aspects of studying international finance is learning new terminology. All key terms are presented in boldfaced type when they are first introduced, and they are defined thoroughly in the chapter. A list of key words is presented at the end of the chapter with convenient page references.

KEY WORDS

contingent exposure, *208*
cross-hedging, *208*
economic exposure, *198*
exposure netting, *211*
forward market hedge, *200*
hedging through invoice currency, *210*
lead/lag strategy, *211*
money market hedge, *203*
options market hedge, *203*
reinvoice center, *211*
transaction exposure, *198*
translation exposure, *198*

QUESTIONS

1. How would you define *transaction exposure*? How is it different from economic exposure?
2. Discuss and compare hedging transaction exposure using the forward contract versus money market instruments. When do alternative hedging approaches produce the same result?
3. Discuss and compare the costs of hedging by forward contracts and options contracts.

PROBLEMS

The spreadsheet TRNSEXP.xls may be used in solving parts of problems 2, 3, 4, and 6.

1. Cray Research sold a supercomputer to the Max Planck Institute in Germany on credit and invoiced €10 million payable in six months. Currently, the six-month forward exchange rate is $1.10/€ and the foreign exchange adviser for Cray Research predicts that the spot rate is likely to be $1.05/€ in six months.
   a. What is the expected gain/loss from a forward hedge?
   b. If you were the financial manager of Cray Research, would you recommend hedging this euro receivable? Why or why not?

Questions and Problems—Each chapter contains a set of Questions and Problems. This material can be used by students on their own to test their understanding of the material, or as homework exercises assigned by the instructor. Questions and Problems relating to the In More Depth sections of the text are indicated by *blue type.*

Questions with Excel Software—An icon in the margin indicates that the end-of-chapter question is linked to an Excel software program created by the authors. See the Ancillary Materials section for more information on the software.

CFA Questions—Many chapters include problems from CFA Program Curriculum study materials. These CFA problems, indicated with the CFA logo, show students the relevancy of what is expected of certified professional analysts.

CFA® PROBLEMS

Internet Exercises—Found at the end of each chapter, these highlight specific topics, and they prompt the student to search the Internet for specific data. The student is then asked to analyze the data found to solve the exercise.

INTERNET EXERCISES

www

Case Applications—Case Applications are incorporated within selected chapters throughout the text in order to enhance specific topics and help students apply theories and concepts to "real-world" situations.

CASE APPLICATION

Richard May's Options

It is Tuesday afternoon, February 14, 2012. Richard May, Assistant Treasurer at American Digital Graphics (ADG), sits in his office on the thirty-fourth floor of the building that dominates Rockefeller Plaza's west perimeter. It's Valentine's Day, and Richard and his wife have dinner reservations with another couple at Balthazar at 7:30. I must get this hedging memo done, thinks May, and get out of here. Foreign exchange options? I had better get the story straight before someone in the Finance Committee starts asking questions. Let's see, there are two ways in which I can envision us using options now. One is to hedge a dividend due on September 15th from ADG Germany. The other is to hedge our upcoming payment to Matsumerda for their spring RAM chip statement. With the yen at 78 and increasing I'm glad we haven't covered the payment so far, but now I'm getting nervous and I would like to protect my posterior. An option to buy yen on June 10 might be just the thing.

MINI CASE

Airbus' Dollar Exposure

Airbus sold an A400 aircraft to Delta Airlines, a U.S. company, and billed $30 million payable in six months. Airbus is concerned about the euro proceeds from international sales and would like to control exchange risk. The current spot exchange rate is $1.05/€ and the six-month forward exchange rate is $1.10/€. Airbus can buy a six-month put option on U.S. dollars with a strike price of €0.95/$ for a premium of €0.02 per U.S. dollar. Currently, six-month interest rate is 2.5 percent in the euro zone and 3.0 percent in the United States.

1. Compute the guaranteed euro proceeds from the American sale if Airbus decides to hedge using a forward contract.
2. If Airbus decides to hedge using money market instruments, what action does Airbus need to take? What would be the guaranteed euro proceeds from the American sale in this case?
3. If Airbus decides to hedge using put options on U.S. dollars, what would be the "expected" euro proceeds from the American sale? Assume that Airbus regards the current forward exchange rate as an unbiased predictor of the future spot exchange rate.
4. At what future spot exchange do you think Airbus will be indifferent between the option and money market hedge?

Mini Cases—Almost every chapter includes a mini case for student analysis of multiple concepts covered throughout the chapter. These Mini Case problems are "real-world" in nature to show students how the theory and concepts in the textbook relate to the everyday world.

References and Suggested Readings—At the end of each chapter a list of selected references and suggested readings is presented, allowing the student to easily locate references that provide additional information about topics discussed in that chapter.

REFERENCES & SUGGESTED READINGS

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Ancillary Materials

To assist in course preparation, the following ancillaries are offered on the Online Learning Center—www.mhhe.com/er7e:

- **Solutions Manual**—Includes detailed suggested answers and solutions to the end-of-chapter questions and problems, written by the authors.
- **Lecture Outlines**—Chapter outlines, learning objectives, and teaching notes for each chapter.
- **Test Bank**—True/false and multiple-choice test questions for each chapter prepared by John Stansfield, University of Missouri. Available as Word documents and in computerized EZ Test format.
- **PowerPoint Presentations**—PowerPoint slides for each chapter to use in classroom lecture settings, created by John Stansfield.

The site also includes the International Finance Software that can be used with this book. This Excel software has four main programs:

- A currency options pricing program allows students to price put and call options on foreign exchange.
- A hedging program allows the student to compare forward, money market instruments, futures, and options for hedging exchange risk.
- A currency swap program allows students to calculate the cash flows and notional values associated with swapping fixed-rate debt from one currency into another.
- A portfolio optimization program based on the Markowitz model allows for examining the benefits of international portfolio diversification.

The four programs can be used to solve certain end-of-chapter problems (marked with an Excel icon) or assignments the instructor devises. A User's Manual and sample projects are included on the website.

Acknowledgments

We are indebted to the many colleagues who provided insight and guidance throughout the development process. Their careful work enabled us to create a text that is current, accurate, and modern in its approach. Among all who helped in this endeavor for the seventh edition:

Richard Ajayi
University of Central Florida

Lawrence A. Beer
Arizona State University

Nishant Dass
Georgia Institute of Technology

John Hund
Rice Univèrsity

Irina Khindanova
University of Denver

Gew-rae Kim
University of Bridgeport

Jaemin Kim
San Diego State University

Yong-Cheol Kim
University of Wisconsin, Milwaukee

Yen-Sheng Lee
Bellevue University

Charmen Loh
Rider University

Atsuyuki Naka
University of New Orleans

Richard L. Patterson
Indiana University, Bloomington

Adrian Shopp
Metropolitan State University of Denver

H. Douglas Witte
Missouri State University

John Wald
University of Texas at San Antonio

Many people assisted in the production of this textbook. At the risk of overlooking some individuals, we would like to acknowledge Brian Conzachi for the outstanding job he did proofreading the entire manuscript and Chee Ng for his excellent work proofreading selected chapters. Additionally, we thank Yusri Zaro for his hard work checking the accuracy of the solutions manual. Rohan-Rao Ganduri, Kristen Seaver, Milind Shrikhande, Jin-Gil Jeong, Sanjiv Sabherwal, Sandy Lai, Jinsoo Lee, Hyung Suk Choi, Teng Zhang, and Victor Huang provided useful inputs into the text. Professor Martin Glaum of the Giessen University (Germany) also provided valuable comments.

We also wish to thank the many professionals at McGraw-Hill/Irwin for their time and patience with us. Charles Synovec, executive brand manager, and Noelle Bathurst and Sarah Otterness, development editors have done a marvelous job guiding us through this edition, as has Judi David, as content project manager.

Last, but not least, we would like to thank our families, Christine, James, and Elizabeth Eun and Donna Resnick, for their tireless love and support, without which this book would not have become a reality.

We hope that you enjoy using *International Financial Management,* Seventh Edition. In addition, we welcome your comments for improvement. Please let us know either through McGraw-Hill/Irwin, c/o Editorial, or at our e-mail addresses provided below.

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Contents in Brief

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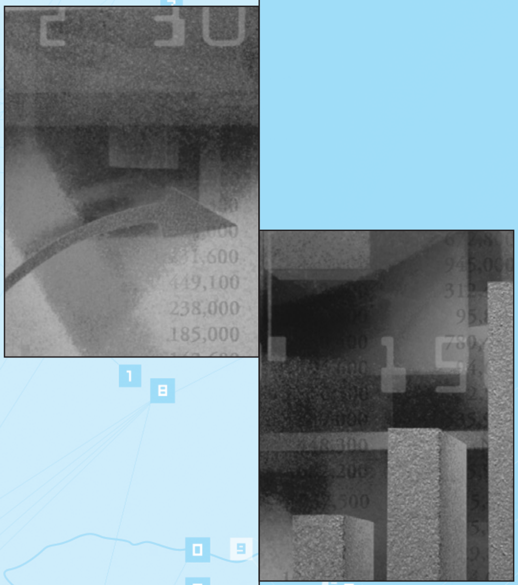
PART FOUR World Financial Markets and Institutions

International Financial Management

Seventh Edition



PART ONE

Foundations of International Financial Management

PART ONE lays the macroeconomic and institutional foundation for all the topics to follow. A thorough understanding of this material is essential for understanding the advanced topics covered in the remaining sections.

CHAPTER 1 provides an introduction to *International Financial Management*. The chapter discusses why it is important to study international finance and distinguishes international finance from domestic finance.

CHAPTER 2 introduces the various types of international monetary systems under which the world economy can function and has functioned at various times. The chapter traces the historical development of the world's international monetary systems from the early 1800s to the present. Additionally, a detailed discussion of the European Monetary Union is presented.

CHAPTER 3 presents balance-of-payment concepts and accounting. The chapter shows that even a country must keep its "economic house in order" or else it will experience current account deficits that will undermine the value of its currency.

CHAPTER 4 provides an overview of corporate governance around the world. Corporate governance structure varies greatly across countries, reflecting diverse cultural, economic, political, and legal environments.

CHAPTER

1 Globalization and the Multinational Firm

CHAPTER OUTLINE

AS THE TITLE *International Financial Management* indicates, in this book we are concerned with financial management in an international setting. Financial management is mainly concerned with how to *optimally* make various corporate financial decisions, such as those pertaining to investment, financing, dividend policy, and working capital management, with a view to achieving a set of given corporate objectives. In Anglo-American countries as well as in many advanced countries with well-developed capital markets, maximizing shareholder wealth is generally considered the most important corporate objective.

Why do we need to study "international" financial management? The answer to this question is straightforward: We are now living in a highly **globalized and integrated world economy**. American consumers, for example, routinely purchase oil imported from Saudi Arabia and Nigeria, TV sets from Korea, automobiles from Germany and Japan, garments from China, shoes from Indonesia, handbags from Italy, and wine from France. Foreigners, in turn, purchase American-made aircraft, software, movies, jeans, smart phones, and other products. Continued liberalization of international trade is certain to further internationalize consumption patterns around the world.

Like consumption, production of goods and services has become highly globalized. To a large extent, this has happened as a result of multinational corporations' (MNCs) relentless efforts to source inputs and locate production anywhere in the world where costs are lower and profits are higher. For example, personal computers sold in the world market might have been assembled in Malaysia with Taiwanese-made monitors, Korean-made keyboards, U.S.-made chips, and preinstalled software packages that were jointly developed by U.S. and Indian engineers. It has often become difficult to clearly associate a product with a single country of origin.

Recently, financial markets have also become highly integrated. This development allows investors to diversify their investment portfolios internationally. In 2011, for instance, U.S. investors collectively invested $83 billion in foreign securities, such as stocks and bonds, whereas foreigners invested $337 billion in U.S. securities.[1] In particular, Asian and Middle Eastern investors are investing heavily in U.S. and other foreign financial markets in efforts to recycle their large trade surpluses. In addition, many major corporations of the world, such as IBM, Toyota, and British Petroleum, have their shares cross-listed on foreign stock exchanges, thereby rendering their shares internationally tradable and gaining access to foreign capital as well. Consequently, Toyota's venture, say, in China can be financed partly by American investors who purchase Toyota shares traded on the New York Stock Exchange.

[1]This information is from *International Financial Statistics*, April 2013.

Undoubtedly, we are now living in a world where all the major economic functions—consumption, production, and investment—are highly globalized. It is thus essential for financial managers to fully understand vital international dimensions of financial management. This *global shift* is in marked contrast to a few decades ago, when the authors of this book were learning finance. At that time, most professors customarily (and safely, to some extent) ignored international aspects of finance. This parochial attitude has become untenable since then.

What's Special about International Finance?

Although we may be convinced of the importance of studying international finance, we still have to ask ourselves, what's special about international finance? Put another way, how is international finance different from purely domestic finance (if such a thing exists)? Three major dimensions set international finance apart from domestic finance. They are:

1. Foreign exchange and political risks.
2. Market imperfections.
3. Expanded opportunity set.

As we will see, these major dimensions of international finance largely stem from the fact that sovereign nations have the right and power to issue currencies, formulate their own economic policies, impose taxes, and regulate movements of people, goods, and capital across their borders. Before we move on, let us briefly describe each of the key dimensions of international financial management.

Foreign Exchange and Political Risks

Suppose Mexico is a major export market for your company and the Mexican peso depreciates drastically against the U.S. dollar, as it did in December 1994. This means that your company's products can be priced out of the Mexican market, as the peso price of American imports will rise following the peso's fall. If such countries as Indonesia, Thailand, and Korea are major export markets, your company would have faced the same difficult situation in the wake of the Asian currency crisis of 1997. In integrated financial markets, individuals or households may also be seriously exposed to uncertain exchange rates. For example, since the EU accession, many Hungarians have borrowed in terms of the euro or Swiss franc to purchase houses. They were initially attracted by the easy availability and low interest rates for foreign currency mortgage loans. However, as the Hungarian currency, forint, was falling against the euro and Swiss franc during the recent global financial crisis, the burden of mortgage payments in terms of forint has increased sharply, forcing many borrowers to default. The preceding examples suggest that when firms and individuals are engaged in cross-border transactions, they are potentially exposed to **foreign exchange risk** that they would not normally encounter in purely domestic transactions.

https://www.cia.gov/library/publications/the-world-factbook

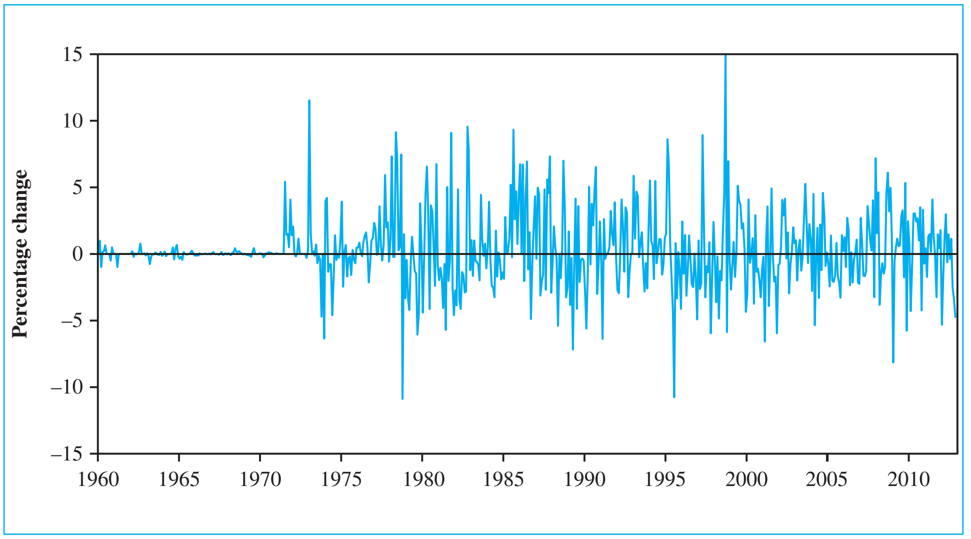
Website of *The World Factbook* published by the CIA provides background information, such as geography, government, and economy, of countries around the world.

Currently, the exchange rates among such major currencies as the U.S. dollar, Japanese yen, British pound, and euro fluctuate continuously in an unpredictable manner. This has been the case since the early 1970s, when fixed exchange rates were abandoned. As can be seen from Exhibit 1.1, exchange rate volatility has exploded since 1973. Exchange rate uncertainty will have a pervasive influence on all the major economic functions, including consumption, production, and investment.

Another risk that firms and individuals may encounter in an international setting is political risk. **Political risk** ranges from unexpected changes in tax rules to outright expropriation of assets held by foreigners. Political risk arises from the fact that a sovereign country can change the "rules of the game" and the affected parties may not have effective recourse. In 1992, for example, the Enron Development Corporation, a subsidiary of a Houston-based energy company, signed a contract to build India's largest power plant. After Enron had spent nearly $300 million, the project

EXHIBIT 1.1

Monthly Percentage Change in Japanese Yen-U.S. Dollar Exchange Rate



Source: International Monetary Fund, *International Financial Statistics,* various issues.

was canceled in 1995 by nationalist politicians in the Maharashtra state who argued India didn't need the power plant. For another example, in April 2012 the Argentine governent nationalized a majority stake in YPF, the country's largest oil company, worth approximately $10 billion, held by the Spanish parent company, Repsol, accusing the latter for underproducing oil in Argentina. Broadly, the seizure of YPF is a part of the campaign to bring strategic industries under government control. Both the Enron and Repsol episodes illustrate the difficulty of enforcing contracts in foreign countries.[2]

Multinational firms and investors should be particularly aware of political risk when they invest in those countries without a tradition of the rule of law. The meltdown of Yukos, the largest Russian oil company, provides a compelling example. Following the arrest of Mikhail Khodorkovsky, the majority owner and a critic of the government, on fraud and tax evasion charges, the Russian authorities forced Yukos into bankruptcy. The authorities sued the company for more than $20 billion in back taxes and auctioned off its assets to cover the alleged tax arrears. This government action against Yukos, widely viewed as politically motivated, inflicted serious damage on international shareholders of Yukos, whose investment values were wiped out. It is important to understand that the property rights of shareholders and investors are not universally respected.

Market Imperfections

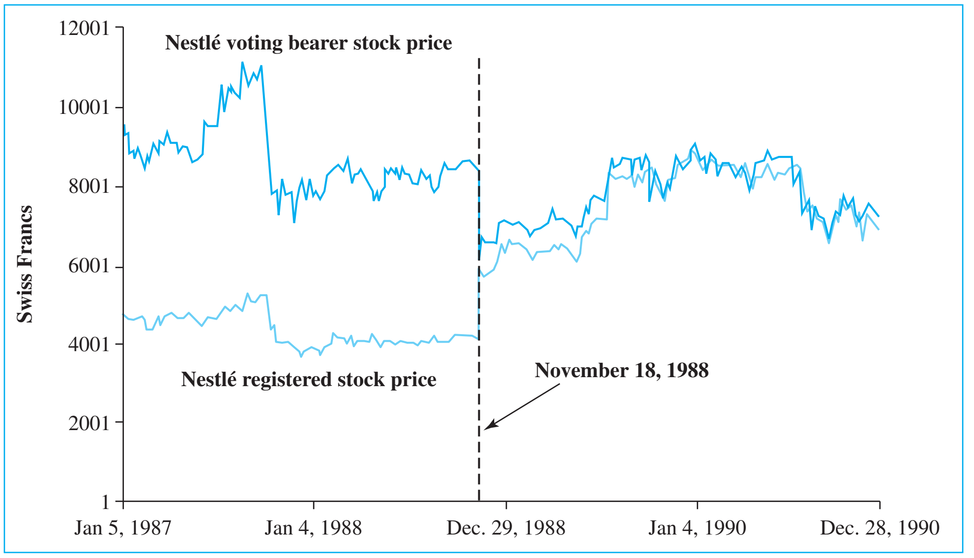
Although the world economy is much more integrated today than was the case 10 or 20 years ago, a variety of barriers still hamper free movements of people, goods, services, and capital across national boundaries. These barriers include legal restrictions, excessive transaction and transportation costs, information asymmetry, and discriminatory taxation. The world markets are thus highly imperfect. As we will discuss later in this book, **market imperfections**, which represent various frictions and impediments preventing markets from functioning perfectly, play an important role in motivating MNCs to locate production overseas. Honda, a Japanese automobile company, for instance, decided to establish production facilities in Ohio, mainly to circumvent trade barriers. One might even say that MNCs are a gift of market imperfections.

Imperfections in the world financial markets tend to restrict the extent to which investors can diversify their portfolios. An interesting example is provided by the Nestlé Corporation, a well-known Swiss MNC. Nestlé used to issue two different classes of common stock, bearer shares and registered shares, and foreigners were allowed to hold

[2]Since then, Enron has renegotiated the deal with the Maharashtra state while the Spanish government retaliated by restricting imports from Argentina.

EXHIBIT 1.2

Daily Prices of Nestlé's Bearer and Registered Shares



Source: Reprinted from *Journal of Financial Economics,* Volume 37, Issue 3, Claudio Loderer and Andreas Jacobs, "The Nestlé Crash," pp. 315–39, 1995, with kind permission from Elsevier Science S.A., P.O. Box 564, 1001 Lausanne, Switzerland.

only bearer shares. As Exhibit 1.2 shows, bearer shares used to trade for about twice the price of registered shares, which were exclusively reserved for Swiss residents.[3] This kind of price disparity is a uniquely international phenomenon that is attributable to market imperfections.

On November 18, 1988, however, Nestlé lifted restrictions imposed on foreigners, allowing them to hold registered as well as bearer shares. After this announcement, the price spread between the two types of Nestlé shares narrowed drastically. As Exhibit 1.2 shows, the price of bearer shares declined sharply, whereas that of registered shares rose sharply. This implies that there was a major transfer of wealth from foreign shareholders to domestic shareholders. Foreigners holding Nestlé bearer shares were exposed to political risk in a country that is widely viewed as a haven from such risk. The Nestlé episode illustrates both the importance of considering market imperfections in international finance and the peril of political risk.

Expanded Opportunity Set

When firms venture into the arena of global markets, they can benefit from an **expanded opportunity set**. As previously mentioned, firms can locate production in any country or region of the world to maximize their performance and raise funds in any capital market where the cost of capital is the lowest. In addition, firms can gain from greater economies of scale when their tangible and intangible assets are deployed on a global basis. A real-world example showing the gains from a global approach to financial management is provided by the following excerpt from *The Wall Street Journal* (April 9, 1996):

> Another factor binding bond markets ever closer is large companies' flexibility to issue bonds around the world at will, thanks to the global swap market. At the vanguard are companies such as General Electric of the U.S. Mark VanderGriend, who runs the financing desk at Banque Paribas, says it took "about 15 minutes" to put together a four billion franc ($791.6 million) deal for GE. By raising the money in francs and swapping into dollars instantly, GE will save five hundredths of a percentage point—or about $400,000 annually on the nine-year deal. "They have such a huge requirement for capital that they are constantly looking for arbitrages," adds Mr. VanderGriend. "And they don't care much how they get there."

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[3]It is noted that bearer and registered shares of Nestlé had the same claims on dividends but differential voting rights. Chapter 17 provides a detailed discussion of the Nestlé case.