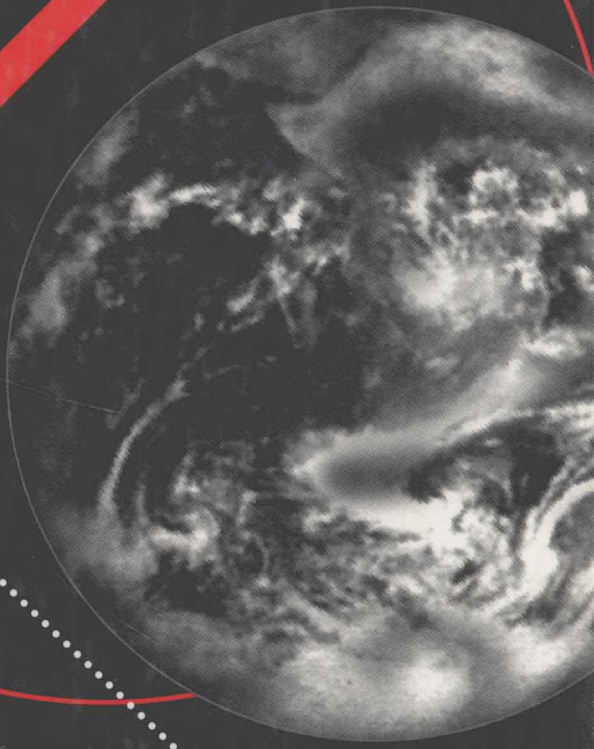
Sixth Edition

International Money and Finance



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Sixth Edition

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Preface

International finance is one of the growth areas of the finance and economics curricula. Today's financial marketplace is truly global. No student of economics or finance can fully understand current developments without some background in international finance. If, after studying this text, a student can pick up *The Wall Street Journal* and understand the international financial news, along with its implications, then I feel that I have succeeded as a teacher. To this end, *International Money and Finance* offers a concise yet comprehensive overview of the subject. The basics of the foreign exchange market and the balance of payments are presented, along with accessible discussions of the most recent research findings related to exchange rate determination. Topics covered range from the nitty-gritty of financing international trade to intuitive discussions of overshooting exchange rates and currency substitution.

The first edition of *International Money and Finance* grew from the lecture notes I used to teach undergraduate students. The notes, as well as the book, summarized the current literature in international finance, with only elementary math as a prerequisite. It was extremely gratifying to find that instructors at other institutions found the earlier editions to be useful texts for undergraduate and MBA students. In fact, the adoption list ranged from the leading MBA schools in the country to small rural four-year colleges. The fact that the text has proved successful with students of varying abilities and backgrounds is a feature that I have strived to retain in preparing this sixth edition.

Users of the fifth edition will find the sixth edition updated and revised to keep pace with the rapidly changing world of international finance. There are several major changes in this edition. ISO currency codes are now introduced in Chapter 1. The balance of payments classifications in Chapter 2 shifts emphasis from short- and long-term capital flows to private versus official flows. Chapter 2 now covers the role of investment income flow mismeasurement and its contribution to the global current account statistical discrepancy. Chapter 3 incorporates a new discussion of the euro and an extended discussion of currency boards, while reducing the lengthy presentation and discussion devoted to the SDR. Chapter 4 has a new discussion of

foreign exchange and currency swaps and additional questions on options and futures have been added. Chapter 9 now includes a diagram to illustrate the time sequence of events in the "currency contract period." The discussion of evidence on effects of devaluations has been greatly shortened. There is a new table and discussion in Chapter 12 devoted to arm's-length pricing and transfer pricing distortions. Chapter 13 includes a new, more realistic example of Eurocurrency deposit creation using real firm names. Also, the old discussion of international debt and the debt crisis of the 1980s has been replaced by a new section on international lending and crisis, which discusses the causes and consequences of the Asian financial crisis of 1997 to 1998.

The sixth edition has been written in the same spirit as the first five—to provide a concise survey of international finance suitable for undergraduate and MBA classes.

ACKNOWLEDGMENTS

I am grateful to all who have offered comments leading to the revision of *International Money and Finance.* They include countless former students, and instructors at other institutions, who provided informal comments on style and content. Earlier editions were reviewed by Mamadou K. Diallo of East Stroudsburg University, B.D. Elzas of Erasmus University, Judy L. Klein of Mary Baldwin College, Vibhas Madan of Drexel University, Kiminori Matsuyama of Northwestern University, Thomas Russell of Santa Clara University, Larry J. Sechrest of Sul Ross State University, Robert Sedgwich of Sheffield Hallam University, Darrel Young of St. Edward's University, Carl Beidleman of Lehigh University, Glenn W. Boyle of Louisiana State University, David Ding of Memphis State University, Chen Jia-sheng of the University of Denver, Francis A. Lees of St. Johns University, Chu-Ping Vijverberg of the University of Texas at Dallas, Robert Flood of Northwestern University, Samuel Katz of Georgetown University, Donald P. Stegall of California State University at Fresno, and Clas Wihlborg of the University of Southern California. Reviews of the fifth edition that were helpful in the preparation of the sixth edition were provided by Bernard Gauci of Hollins University, Bang Nam Jeon of Drexel University, Chris Neely of the Federal Reserve Bank of St. Louis, Helen Popper of Santa Clara University, and Felix Rioja of Georgia State University. While I could not incorporate all of their thoughtful suggestions, I appreciate their comments and have no doubt that the text has been much improved by their reviews.

Finally, I welcome comments and criticism from users of the sixth edition of *International Money and Finance.* My hope is that the book will evolve over time to best suit your needs.

MICHAEL MELVIN

To the Student

WHY STUDY INTERNATIONAL FINANCE?

Why study the subject of international money and finance? One reason is that career goals are paramount to many people, and in this regard the topic of the text is related to a growth area in the labor market. This book provides a background in international finance for those who expect to obtain jobs created by international investment, international banking, and multinational business activity.

Other readers may have a more scholarly concern with "rounding out" their economic education by studying the international relationships between financial markets and institutions. Although a course in principles of economics is the only prerequisite assumed for this text, many students may have already taken intermediate macroeconomics, money and banking, or essentials of finance courses. But for those interested in international economic relationships, such courses often lack a global orientation. The economic models and discussions of the typical money and banking course focus on the *closed economy,* closed in the sense that the interrelationships with the rest of the world are ignored. Here we study the institutions and analysis of an integrated world financial community, thus giving a better understanding of the world in which we live. We will learn that there are constraints as well as opportunities facing the business firm, government, and the individual investor that become apparent only in a worldwide setting.

FINANCE AND THE MULTINATIONAL FIRM

A *multinational firm* is a firm with operations that extend beyond its domestic national borders. Such firms have become increasingly sophisticated in international financial dealings because international business poses risk and return opportunities that are not present in purely domestic business operations. A U.S. multinational firm may have accounts payable and receivable that are denominated in U.S. dollars, Japanese yen, British pounds, Mexican pesos, Canadian dollars, and German marks. The financial managers of this firm face a different set of problems than the managers of a firm doing business strictly in dollars. It may be true that "a dollar is a dollar," but the dollar value of yen, marks, or pesos can and does change over time. As the dollar value of the yen changes, the value of yen-denominated contracts will change when evaluated in terms of dollars.

Multinational finance responds to this new set of challenges with a tool kit of techniques and market instruments that are used to maximize the return on the firm's investment, subject to an acceptable level of risk. Once we extend beyond the domestic economy, a rich variety of business opportunities exists that must be utilized with the appropriate financial arrangements. This book intends to cover many aspects of these international financial transactions that the financial manager may encounter.

The financial side of international business differs from the study of international trade commonly encountered in international economics courses. Courses in international trade study the determinants of the pattern and volume of world trade—formally referred to as the theory of *comparative advantage.* If country A produces and exports shoes in exchange for country B's food, we say that A has a comparative advantage in shoes and B has a comparative advantage in food. Besides comparative advantage, such courses also examine the movement of factors of production, labor, and capital goods between nations. Obviously, these subjects are important and deserve careful study, but our purpose is to study the monetary consequences of such trade. Although we will not explicitly consider any theories of comparative advantage—such theories are usually developed without referring to the use of money—we will often consider the impact of monetary events on trade in real goods and services. Our discussions range from the effects of the currency used in pricing international trade (Chapter 9) to financing trade in the offshore banking industry (Chapter 13). We will find that monetary events can have real consequences for the volume and pattern of international trade.

THE ACTORS

This course is not simply a study of abstract theories concerning the international consequences of changes in money supply or demand, prices, interest

rates, or exchange rates. We also discuss the role and importance of the institutional and individual participants. Most people tend to think immediately of large commercial banks as holding the starring role in the international monetary scene. Because the foreign exchange market is a market where huge sums of national currencies are bought and sold through commercial banks, any text on international finance will include many examples and instances in which such banks play a major part. In fact, Chapter 1 begins with a discussion of the role of banks in the foreign exchange market.

Besides commercial banks, other business firms play a key part in our discussion, since the goods and services they buy and sell internationally effect a need for financing such trade. The corporate treasurer of any multinational firm is well versed in foreign exchange trading and hedging and international investment opportunities. What is hedging? How are international investment opportunities related to domestic opportunities? These are subjects we address in Chapters 4 and 5.

Finally, we examine the role of government. Central banks, such as the Federal Reserve in the United States, are often important actors in our story. Besides their roles of buying, selling, lending, and borrowing internationally, they also act to restrict the freedom of the other actors. The policies of central governments and central banks are crucial to understanding the actual operation of the international monetary system, and each chapter will address the impact of government on the topic being described.

PLAN OF ATTACK

This book can be thought of in terms of three main sections. Chapters 1 through 8 identify the key institutions and relationships of the international monetary system. To aid our understanding of the relationships among prices, exchange rates, and interest rates, we will consider existing theories, as well as the current state of research that illuminates their validity. For those students who choose to proceed professionally in the field of international finance, the study of this text should provide both a good reference and a springboard to more advanced work—and ultimately employment.

Chapters 9 and 10 cover the next general area of the determinants of balance of payments and exchange rates. Government and industry devote many resources to trying to forecast the balance of payments and exchange rates. The discussion in these chapters includes the most important recent developments. Although there is some disagreement among economists regarding the relative significance of competing theories, as far as possible in an intermediate-level presentation, the theories are evaluated in light of research evidence. Altogether, these chapters present a detailed summary of the current state of knowledge regarding the determinants of the balance of payments and exchange rates.

Chapters 11 through 13 are devoted to applied topics of interest to the international financial manager. Issues range from the "nuts and bolts" of financing imports and exports to the evaluation of risk in international lending to sovereign governments. The topics covered in these chapters are of practical interest to corporate treasurers and international bankers.

The concluding chapter is an analysis of macroeconomic issues in an open economy. This coverage of open-economy macroeconomics includes the determination of the equilibrium values of key macroeconomic variables and the effects of government monetary and fiscal policy on these variables.

At the beginning of this introduction we asked: Why study international money and finance? I hope that the brief preview provided here will have motivated you to answer this question. International finance is not a dull "ivory tower" subject to be tolerated, or avoided if possible. Instead, it is a subject that involves dynamic real-world events. Since the material covered in this book is emphasized daily in the newspapers and other media, you will soon find that the pages in *International Money and Finance* seem to come to life. To this end, a daily reading of the *Wall Street Journal* or the London *Financial Times* makes an excellent supplement for the text material. As you progress through the book, international financial news will become more and more meaningful and useful. For the many users of this text who do not go on to a career in international finance, the major lasting benefit of the lessons contained here will be the ability to understand the international financial news intelligently and effectively.

M.M.

Contents

1

The Foreign Exchange Market

Foreign exchange trading refers to trading one country's money for that of another country. The need for such trade arises because of tourism, the buying and selling of goods internationally, or investment occurring across international boundaries. The kind of money specifically traded takes the form of bank deposits or bank transfers of deposits denominated in foreign currency. The *foreign exchange market,* as we usually think of it, refers to large commercial banks in financial centers, such as New York or London, that trade foreign-currency-denominated deposits with each other. Actual *bank notes* like dollar bills are relatively unimportant insofar as they rarely physically cross international borders. In general, only tourism or illegal activities would lead to the international movement of bank notes.

Spot Rates

Figure 1.1 shows foreign *exchange rate* quotations for a particular day. An exchange rate is the price of one money in terms of another. In the figure we see that on Wednesday, September 9, 1998, French francs were selling for $0.1733. Note that this exchange rate is quoted at a specific time, 4 P.M., since rates will change throughout the day as supply and demand for the currencies change. Notice also that these exchange rates are

quotes based on large trades ($1 million or more), in what is essentially a wholesale market for money. The smaller the quantity of foreign exchange purchased, the higher the price. For instance, if you were a U.S. importer buying wine from France at the dollar price of $10,000, your local bank would sell $10,000 worth of francs to you for more than $0.1733 per franc. Suppose the bank charges you $0.180 per franc. You would then buy FF55,555.56 ($10,000/$0.180) to settle the account with the French exporter. An individual buying even smaller amounts of francs would pay a still higher rate.

In the example just considered, the U.S. importer found that $10,000 was equivalent in value to FF55,555.56. We calculated this by dividing the total dollar value of the purchase ($10,000) by the dollar price of 1 franc ($0.180). Note that the foreign exchange quotations also list quotes in terms of foreign currency units per dollar. In Figure 1.1 we see that on Wednesday, September 9, the French franc sold for $0.1733. By looking farther to the right, we also see that on Wednesday, the dollar was worth FF5.7715. It will always be true that when we know the dollar price of the franc ($/FF), we can find the franc price of the dollar by taking the reciprocal (FF/$). Of course, this relationship works in the opposite direction as well. If the franc price of the dollar is FF5.7715, then the dollar price of the franc is found as the reciprocal (1/5.7715 = 0.1733). In the example of the U.S. wine importer, if the bank is selling francs for $0.180, then what is the implied franc price of the dollar? To find this we simply calculate the reciprocal: 1/0.180 = FF5.5555. Had we initially been given the exchange rate quote in terms of francs per dollar, we could have found the franc equivalent of $10,000 by multiplying $10,000 by the franc price of 1 dollar: 10,000 × 5.5555 = FF55,555.56. The importer buys this quantity of francs from the bank and actually pays for the wine with a check drawn on the bank (or a foreign associate of the bank).

Note that the exchange rate quotes in Figure 1.1 are selling rates. Banks bid to buy foreign exchange at lower rates, and the difference between the selling and buying rates is called the *spread.* Table 1.1 lists the spreads at 10 A.M. Tokyo time on Wednesday, September 9. We see that at this time, the franc price a bank would pay for dollars was FF5.8099 per dollar. Dollars would be sold for francs by the bank at FF5.8121 per dollar. This spread of less than 1/10 of 1 percent [(5.8121 − 5.8099)/5.8099 = 0.0004] is indicative of the normal spread in the market for major traded currencies. The existing spread in any currency will vary according to the individual currency trader, the currency being traded, and the trading bank's overall view of conditions in the foreign

CURRENCY TRADING

EXCHANGE RATES

Wednesday, September 9, 1998

The New York foreign exchange selling rates below apply to trading among banks in amounts of $1 million and more, as quoted at 4 p.m. Eastern time by Telerate and other sources. Retail transactions provide fewer units of foreign currency per dollar.

	U.S. $ equiv.		Currency per U.S. $	
Country	**Wed**	**Tue**	**Wed**	**Tue**
Argentina (Peso)	1.0002	1.0002	.9998	.9998
Australia (Dollar	.5857	.5903	1.7074	1.6941
Austria (Schilling)	.08233	.08232	12.146	12.147
Bahrain (Dinar)	2.6525	2.6525	.3770	.3770
Belgium (Franc)	.02809	.02809	35.600	35.600
Brazil (Real)	.8482	.8501	1.1789	1.1763
Britain (Pound)	1.6680	1.6568	.5995	.6036
1-month forward	1.6655	1.6541	.6004	.6046
3-months forward	1.6604	1.6491	.6023	.6064
6-months forward	1.6533	1.6420	.6049	.6090
Canada (Dollar)	.6567	.6584	1.5228	1.5188
1-month forward	.6540	.6583	1.5290	1.5190
3-months forward	.6565	.6581	1.5233	1.5195
6-months forward	.6560	.6576	1.5244	1.5207
Chile (Peso)	.002109	.002111	474.15	473.75
China (Renminbi)	.1208	.1208	8.2796	8.2799
Colombia (Peso)	.0006642	.0006616	1505.66	1511.55
Czech. Rep. (Koruna)	—	—	—	—
Commercial rate	.03272	.03283	30.558	30.457
Denmark (Krone)	.1525	.1516	6.5555	6.5965
Ecuador (Sucre)	—	—	—	—
Floating rate	.0001812	.0001812	5518.00	5518.00
Finland (Markka)	.1908	.1903	5.2416	5.2553
France (Franc)	.1733	.1726	5.7715	5.7945
1-month forward	.1736	.1729	5.7608	5.7833
3-months forward	.1742	.1735	5.7421	5.7649
6-months forward	.1749	.1742	5.7175	5.7398
Germany (Mark)	.5810	.5779	1.7212	1.7305
1-month forward	.5821	.5790	1.7179	1.7271
3-months forward	.5840	.5809	1.7123	1.7215
6-months forward	.5865	.5834	1.7050	1.7141
Greece (Drachma)	.003394	.003377	294.60	296.10
Hong Kong (Dollar)	.1290	.1290	7.7495	7.7495
Hungary (Forint)	.004499	.004505	222.27	221.97
India (Rupee)	.02351	.02349	42.535	42.562
Indonesia (Rupiah)	.00008368	.00008439	11950.00	11850.00

Continued

Figure 1.1 Foreign exchange rate quotations for September 9, 1998. *Source: The Wall Street Journal*, September 10, 1998, p. C17. Reprinted by permission of the *The Wall Street Journal*, © 1998, Dow Jones and Company, Inc. All rights reserved worldwide.