

FIFTH EDITION

MULTINATIONAL FINANCIAL MANAGEMENT



ALAN C. SHAPIRO

ALAN C. SHAPIRO

University of Southern California

F I F T H E D I T I O N



MULTINATIONAL
FINANCIAL
MANAGEMENT



Prentice Hall, Upper Saddle River, NJ 07458

Library of Congress Cataloging-in-Publication Data

Shapiro, Alan C.
Multinational financial management / Alan C. Shapiro.—5th ed.
p. cm.
Includes bibliographical references and index.
ISBN 0-205-16007-7 (hc)
1. International business enterprises—Finance. I. Title.
HG4027.5.S47 1996
658.15'99—dc20
95-37735
CIP

Acquisitions Editor: Paul Donnelly
Assistant Editor: Teresa Cohan
Editor-in-Chief: Jim Boyd
Marketing Manager: Susan McLaughlin
Associate Managing Editor, Production: Carol Burgett
Interior Designer: Maureen Eide
Cover Art: J. W. Stewart/Lindgren & Smith
Cover Designer: Suzanne Behnke
Design Director: Patricia Wosczyk
Copy Editor: Margo Quinto
Buyer: Paul Smolenski
Supplements Editor: Richard Bretton
Production/Editorial Assistants: David Cotugno, MaryBeth Sanok



©1996 by Prentice-Hall, Inc.
A Simon & Schuster Company
Upper Saddle River, New Jersey 07458

*All rights reserved. No part of this book may be
reproduced, in any form or by any means,
without permission in writing from the publisher.*

Printed in the United States of America
10 9 8 7 6 5 4 3 2 1

ISBN 0-205-16007-7

Prentice-Hall International (UK) Limited, London
Prentice-Hall of Australia Pty. Limited, Sydney
Prentice-Hall Canada Inc., Toronto
Prentice-Hall Hispanoamericana, S.A., Mexico
Prentice-Hall of India Private Limited, New Delhi
Prentice-Hall of Japan, Inc., Tokyo
Simon & Schuster Asia Pte, Ltd., Singapore
Editora Prentice-Hall do Brasil, Ltda., Rio de Janeiro

APPROACH

The basic thrust of this fifth edition of *Multinational Financial Management* is to provide a conceptual framework with 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 focuses on decision making in an international context. Analytical techniques help translate the often vague rules of thumb 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 illustrations of corporate practice that I have collected over the years from business periodicals and my consulting practice. The examples scattered throughout the text show students 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, these areas are explored 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 try to demystify and simplify multinational financial management by showing that its basic principles rest on the same foundation as the principles of 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.

AUDIENCE

Multinational Financial Management is designed for use in master's-level courses. It is also suitable for use in bank management and other executive development programs.

FEATURES

Multinational Financial Management presumes a knowledge of basic corporate finance, economics, and algebra. However, it assumes no prior knowledge of international economics or international finance and is, therefore, self-contained in that respect. For those who are not familiar with *Multinational Financial Management*, here are some of the distinctive features that have led to its widespread adoption.

Distinctive topic coverage includes the following:

- Role of expectations in determining exchange rates (Chapter 2)
- Discussion of the equilibrium approach to exchange rate determination (Chapter 2)
- Analysis of the Mexican currency crisis (Chapter 2)
- Discussion of currency boards and the role of central bank credibility in the context of the dramatic changes made recently in Argentina and New Zealand (Chapter 2)
- Analysis of the September 1992 and August 1993 European currency crises (Chapter 3)
- Discussion of monetary union and optimum currency areas (Chapter 3)
- Use of the balance-of-payments framework to assess the economic links among nations (Chapter 4)
- Comprehensive discussion of the foreign exchange market and its institutions and mechanisms, including electronic trading (Chapter 5)
- Understanding of currency futures and options contracts (Chapter 6) and their use in exchange risk management (Chapter 9)
- Discussion of the key parity conditions in international finance, including put-call option parity with numerous real-world applications (Chapter 7)
- Use of currency risk sharing in international contracts (Chapter 9)
- Identification of the economic, as opposed to accounting, aspects of foreign exchange risk (Chapter 10)
- Development of marketing and production strategies to cope with exchange risk (Chapter 11)
- Evaluation of foreign currency-denominated debt (Chapter 12)
- Role of countertrade in financing international trade (Chapter 13)
- Costs and benefits of managing interaffiliate fund flows on a global basis (Chapter 15)
- Integration of tax management with financial management based on the Tax Reform Act of 1986 and the 1993 Tax Act (Chapters 15, 21, and 23)

- Understanding of the nature and consequences of international portfolio investment, including investments in emerging markets (Chapter 16)
- Development of global strategies of multinational corporations (Chapter 17), including joint ventures (Appendix 17A) and the strategy for Europe 1992 (Appendix 17B)
- Analysis of foreign investments, including assessing the true profitability of a foreign operation, calculating adjusted net present values, and factoring in various economic and political risks (Chapter 18)
- Valuation of the growth options often associated with foreign investments (Chapter 18)
- Assessment of the cost of capital for foreign investments, with an added discussion on the claimed differences between the cost of capital for U.S. and Japanese multinationals (Chapter 19)
- Understanding of political risk measurement and management, with a discussion of the dramatic changes taking place throughout Latin America, Eastern Europe, and China (Chapter 20)
- Use of interest rate and currency swaps and less-developed country debt-equity swaps (Chapter 22)
- Design of a global financing strategy (Chapter 23)
- Discussion of new perspectives on the international debt crisis and country risk analysis (Chapter 26)

CHANGES TO THE FIFTH EDITION

Changes that have been made to the fifth edition include the following:

- Extensive discussion of the August 1993 currency crises in the European Monetary System and currency crisis in Mexico in 1994–1995
- Extensive discussion of the changes taking place in Mexico and Latin America in recent years
- Pricing of currency options contracts using the Garman-Kohlhagen option pricing model, along with a discussion of its shortcomings
- Discussion of the monetary approach to exchange rate determination
- Analysis of how Japanese firms have coped with yen appreciation
- Calculating the cost of acceptance financing and factoring
- Discussion of new transfer pricing issues and “earnings-stripping” charges involving foreign company operations in the United States
- Analysis of exchange risk associated with foreign portfolio investments
- Extended discussion on alternative approaches to estimating the cost of capital for foreign operations
- Addition of several cases, including a comprehensive case on the financing and cash flow analysis of Euro Disneyland and another on risk management (Link Technologies)
- Update on Japanese banking and international risk-based capital standards
- Additional discussion of currency swaps
- Update of Chapter 21 on international tax planning to reflect tax law changes along with a discussion of value-added taxes

- Comparison of the cost of capital in Japan and the United States
- Discussion of how the Japanese financial system helps reduce the cost of financial distress
- Discussion of Euro-medium term notes

The book also contains many 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. To make the text more suitable as a teaching vehicle, I have added at the ends of the chapters numerous questions and problems, most of which are based on up-to-date information and real-life situations.

PEDAGOGY

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

1. *Focus on corporate practice:* Throughout the text, there are numerous real-world examples and vignettes that 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.

2. *Extensive use of examples and illustrations:* Numerous short illustrations and examples of specific concepts and techniques are scattered throughout the body of most chapters.

3. *Lengthier illustrations of corporate practice:* There are nine longer illustrations of actual company practices, at the end of key chapters, that are designed to demonstrate different aspects of international financial management.

4. *Problems and discussion questions:* Hundreds of realistic end-of-chapter questions and problems offer practice in applying the concepts and theories being taught. Many of these questions and problems are related to actual situations and companies.

5. *Learning objectives:* Each chapter opens with a statement of its action-oriented learning objectives. This statement enhances learning by previewing and guiding the reader's understanding of the materials that will be encountered in the chapter.

6. *Glossary:* A glossary at the back of the book defines key terms in the text.

7. *Supplements:* A complete set of ancillary materials is available for adopters of *Multinational Financial Management* to supplement the text. These include:

- An Instructor's Manual containing detailed solutions to the end-of-chapter questions and problems and tips for teaching each chapter.
- A Testbank containing over 160 additional questions and problems suitable for use in multiple-choice exams.
- Lotus 1-2-3 templates designed to solve a wide variety of international financial management problems. Problems in the text that can be solved using these templates are noted in the Instructor's Manual.
- A *Study Guide* written by Professor Anderea L. DeMaskey, University of Nevada, Reno, is available. The *Study Guide* contains detailed chapter outlines and solved questions and problems.

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 Jadow, Oklahoma State University; Steve Johnson, University of Texas at El Paso; Boyden C. Lee, New Mexico State University; Marc Lars Lipson, Boston University; 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.

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 and my children, Thomas and Kathryn, endured the many hours I spent writing the fifth edition of this text.

A.C.S.
Pacific Palisades

C O N T E N T S

PREFACE xv

ONE

INTRODUCTION: MULTINATIONAL ENTERPRISE AND MULTINATIONAL FINANCIAL MANAGEMENT 1

The Rise of the Multinational Corporation 1

The Process of Overseas Expansion 7

Multinational Financial Management: Theory and Practice 16

Outline of This Book 24

Questions 26

APPENDIX 1A: SIZE AND SCOPE OF MULTINATIONAL CORPORATIONS ABROAD 27

Bibliography 38

PART I ENVIRONMENT OF INTERNATIONAL FINANCIAL MANAGEMENT 39

TWO

THE DETERMINATION OF EXCHANGE RATES 41

Setting the Equilibrium Spot Exchange Rate 42

Expectations and the Asset Market Model of Exchange Rates 46

The Fundamentals of Central Bank Intervention 58

The Equilibrium Approach to Exchange Rates 66

Summary and Conclusions 69

Questions 70 Problems 72 Bibliography 73

THREE

THE INTERNATIONAL MONETARY SYSTEM 74

Alternative Exchange Rate Systems 75

A Brief History of the International Monetary System 80

The European Monetary System 91

Summary and Conclusions 102

Questions 103 Problems 104 Bibliography 105

FOUR	
THE BALANCE OF PAYMENTS AND INTERNATIONAL ECONOMIC LINKAGES	106
Balance-of-Payments Categories	107
The International Flow of Goods, Services, and Capital	111
Coping with the Current-Account Deficit	118
Summary and Conclusions	128
<i>Questions 128 Problems 130</i>	
 FIVE	
THE FOREIGN EXCHANGE MARKET	132
Organization of the Foreign Exchange Market	133
The Spot Market	137 ✓
The Forward Market	145 ✓
Summary and Conclusions	151
<i>Questions 151 Problems 152 Bibliography 153</i>	
 SIX	
CURRENCY FUTURES AND OPTIONS MARKETS	154
Futures Contracts	154 ✓
Currency Options	160 ✓
Reading Currency Futures and Options Prices	176
Summary and Conclusions	179
<i>Questions 179 Problems 180 Bibliography 181</i>	
APPENDIX 6A: AREAS UNDER THE NORMAL CURVE	182
 SEVEN	
PARITY CONDITIONS IN INTERNATIONAL FINANCE AND CURRENCY FORECASTING	183
Arbitrage and the Law of One Price	183
Purchasing Power Parity	187
The Fisher Effect	194
The International Fisher Effect	202
Interest Rate Parity Theory	205
The Relationship between the Forward Rate and the Future Spot Rate	209
Inflation Risk and Its Impact on Financial Markets	213

Put-Call Option Interest Rate Parity	215
Currency Forecasting	217
Summary and Conclusions	224
<i>Questions</i>	226
<i>Problems</i>	228
<i>Bibliography</i>	230
Part I Case Studies	232
CASE I.1: OIL LEVIES: THE ECONOMIC IMPLICATIONS	232
CASE I.2: PRESIDENT CARTER LECTURES THE FOREIGN EXCHANGE MARKETS	232

PART II FOREIGN EXCHANGE RISK MANAGEMENT 235

EIGHT	
MEASURING ACCOUNTING EXPOSURE	237
Alternative Currency Translation Methods	238
Statement of Financial Accounting Standards No. 8	240
Statement of Financial Accounting Standards No. 52	242
Transaction Exposure	247
Accounting Practice and Economic Reality	247
Summary and Conclusions	250
<i>Questions</i>	250
<i>Problems</i>	250
<i>Bibliography</i>	251

NINE	
MANAGING ACCOUNTING EXPOSURE	252
Managing Transaction Exposure	253
Managing Translation Exposure	265
Designing a Hedging Strategy	267
Illustration: Managing Transaction	
Exposure for the Toronto Blue Jays	271
Summary and Conclusions	272
<i>Questions</i>	273
<i>Problems</i>	273
<i>Bibliography</i>	275

TEN	
MEASURING ECONOMIC EXPOSURE	276
Foreign Exchange Risk and Economic Exposure	276
The Economic Consequences of Exchange Rate Changes	284
Identifying Economic Exposure	287

Calculating Economic Exposure	290
An Operational Measure of Exchange Risk	296
Illustration: Laker Airways	297
Summary and Conclusions	298
<i>Questions</i>	<i>299</i>
<i>Problems</i>	<i>300</i>
<i>Bibliography</i>	<i>302</i>

ELEVEN

MANAGING ECONOMIC EXPOSURE	303
An Overview of Operating Exposure Management	304
Marketing Management of Exchange Risk	305
Production Management of Exchange Risk	312
Financial Management of Exchange Risk	320
Summary and Conclusions	322
<i>Questions</i>	<i>323</i>
<i>Problems</i>	<i>323</i>
<i>Bibliography</i>	<i>325</i>
Part II Case Studies	326
CASE II.1: BRITISH MATERIALS CORPORATION	326
CASE II.2: EUCLIDES ENGINEERING LTD.	330
CASE II.3: POLYGON APPLIANCES, INC.	331
CASE II.4: ROLLS-ROYCE LIMITED	333
CASE II.5: THE MEXICAN PESO	334
CASE II.6: LINK TECHNOLOGIES	337

PART III MULTINATIONAL WORKING CAPITAL MANAGEMENT 341

TWELVE

SHORT-TERM FINANCING	343
Key Factors in Short-Term Financing Strategy	344
Short-Term Financing Objectives	345
Short-Term Financing Options	346
Calculating the Dollar Costs of Alternative Financing Options	354
Borrowing Strategy and Exchange Risk Management	359
Summary and Conclusions	361
<i>Questions</i>	<i>362</i>
<i>Problems</i>	<i>362</i>
<i>Bibliography</i>	<i>363</i>

THIRTEEN

FINANCING FOREIGN TRADE	364
Payment Terms in International Trade	365

Documents in International Trade	376
Financing Techniques in International Trade	378
Government Sources of Export Financing and Credit Insurance	384
Countertrade	389
Summary and Conclusions	392
<i>Questions 392 Problems 393 Bibliography 393</i>	

FOURTEEN	
CURRENT ASSET MANAGEMENT	394
International Cash Management	395
Accounts Receivable Management	411
Inventory Management	414
Illustration: American Express	418
Summary and Conclusions	420
<i>Questions 420 Problems 421 Bibliography 422</i>	

FIFTEEN	
MANAGING THE MULTINATIONAL FINANCIAL SYSTEM	423
The Value of the Multinational Financial System	424
Intercompany Fund-Flow Mechanisms: Costs and Benefits	425
Designing a Global Remittance Policy	449
Illustration: Transfer Pricing and Tax Evasion	452
Summary and Conclusions	453
<i>Questions 454 Problems 455</i>	
APPENDIX 15A: MANAGING BLOCKED CURRENCY FUNDS	457
<i>Bibliography</i>	460
Part III Case Study	461
CASE III.1: MOBEX INC.	461

PART IV FOREIGN INVESTMENT ANALYSIS 467

SIXTEEN	
INTERNATIONAL PORTFOLIO INVESTMENT	469
Measuring the Total Return from Foreign Portfolio Investing	469
Measuring Exchange Risk on Foreign Securities	471

The Benefits of International Equity Investing	472
International Bond Investing	487
Optimal International Asset Allocation	488
Summary and Conclusions	490
<i>Questions 490 Problems 491 Bibliography 493</i>	

SEVENTEEN
CORPORATE STRATEGY AND
FOREIGN DIRECT INVESTMENT 494

Theory of the Multinational Corporation	495
The Strategy of Multinational Enterprise	497
Designing a Global Expansion Strategy	508
Illustration: The Japanese Strategy for Global Expansion	512
Summary and Conclusions	516
<i>Questions 517 Problems 519</i>	
APPENDIX 17A: CORPORATE STRATEGY AND JOINT VENTURES	520
APPENDIX 17B: STRATEGIC IMPLICATIONS OF EUROPE 1992	529
<i>Bibliography 536</i>	

EIGHTEEN
CAPITAL BUDGETING FOR
THE MULTINATIONAL CORPORATION 537

Basics of Capital Budgeting	538
Issues in Foreign Investment Analysis	544
Foreign Project Appraisal: The Case of International Diesel Corporation	548
Political Risk Analysis	558
Growth Options and Project Evaluation	560
Summary and Conclusions	565
<i>Questions 566 Problems 567 Bibliography 568</i>	

NINETEEN
THE COST OF CAPITAL FOR FOREIGN INVESTMENTS 569

The Cost of Equity Capital	570
The Weighted Average Cost of Capital for Foreign Projects	571

The All-Equity Cost of Capital for Foreign Projects	574
Discount Rates for Foreign Investments	575
Comparing the Cost of Capital in the United States and Japan	583
Illustration: Internationalizing the Cost of Capital of Novo Industri	593
Summary and Conclusions	595
<i>Questions</i>	596
<i>Problems</i>	596
APPENDIX 19A: CALCULATING LONG-TERM COSTS	597
<i>Bibliography</i>	602

TWENTY	
THE MEASUREMENT AND MANAGEMENT OF POLITICAL RISK	603
Measuring Political Risk	604
Country Risk Analysis	612
Managing Political Risk	621
Postexpropriation Policies	631
Illustration: Kennecott and Anaconda in Chile	633
Summary and Conclusions	635
<i>Questions</i>	635
<i>Problems</i>	636
<i>Bibliography</i>	639

TWENTY-ONE	
INTERNATIONAL TAX MANAGEMENT	640
The Theoretical Objectives of Taxation	641
U.S. Taxation of Multinational Corporations	643
U.S. Tax Incentives for Foreign Trade	656
Tax Havens and the Multinational Corporation	660
Value-Added Tax	663
Taxation and Corporate Organization	665
Illustration: Beehive International	667
Summary and Conclusions	668
<i>Bibliography</i>	669
Part IV Case Studies	670
CASE IV.1: THE INTERNATIONAL MACHINE CORPORATION	670
CASE IV.2: EURO DISNEYLAND	672

PART V FINANCING FOREIGN OPERATIONS 677

TWENTY-TWO
INTERNATIONAL FINANCING AND
INTERNATIONAL FINANCIAL MARKETS 679

Corporate Sources and Uses of Funds 680

National Capital Markets as International Financial Centers 685

The Euromarkets 695

Development Banks 714

Summary and Conclusions 720

Questions 720 Problems 721

APPENDIX 22A: A EUROCURRENCY LOAN AGREEMENT IN PLAIN ENGLISH 722

Bibliography 725

TWENTY-THREE
SPECIAL FINANCING VEHICLES 726

Interest Rate and Currency Swaps 726

International Leasing 739

LDC Debt-Equity Swaps 742

Summary and Conclusions 747

Questions 747 Problems 748 Bibliography 749

TWENTY-FOUR
DESIGNING A GLOBAL FINANCING STRATEGY 750

Minimizing Expected After-Tax Financing Costs 751

Reducing Operating Risks 758

Establishing a Worldwide Capital Structure 763

Illustration: Nestlé 768

Summary and Conclusions 769

Questions 770 Problems 770 Bibliography 771

Part V Case Study 772

CASE V.1: MULTINATIONAL MANUFACTURING, INC. 772

PART VI INTERNATIONAL BANKING 775

TWENTY-FIVE
INTERNATIONAL BANKING TRENDS AND STRATEGIES 777

Recent Patterns of International Banking Activities 778
Organizational Forms and Strategies in Bank Expansion Overseas 783
Value Creation in International Banking 792
Summary and Conclusions 795
Questions 795 Bibliography 796

TWENTY-SIX
THE INTERNATIONAL DEBT
CRISIS AND COUNTRY RISK ANALYSIS 797

The International Banking Crisis of 1982 798
Country Risk Analysis in International Banking 806
Summary and Conclusions 810
Questions 811 Problems 811 Bibliography 812

Part VI Case Study 813
CASE VI.1: PLANO CRUZADO 813

GLOSSARY 814

INDEX 823