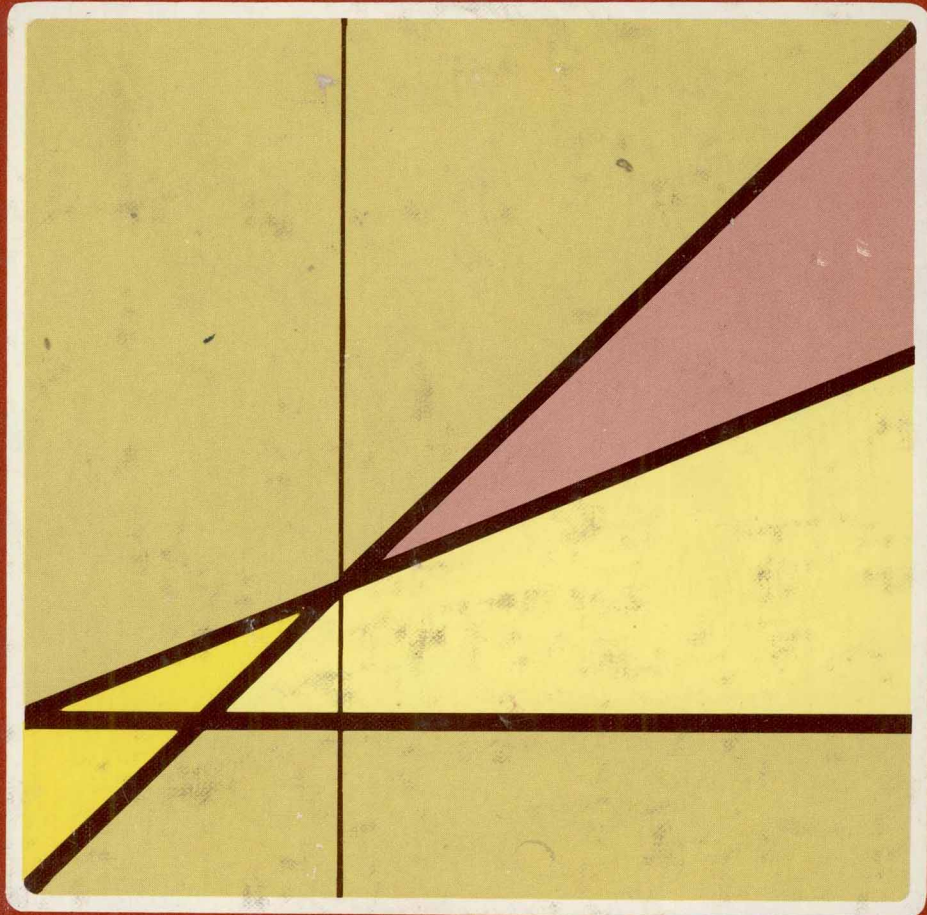


# AN INTRODUCTION TO FINANCIAL MANAGEMENT

SECOND EDITION



Ezra Solomon & John J. Pringle



# AN INTRODUCTION TO FINANCIAL MANAGEMENT

Second Edition

Ezra Solomon

*Dean Witter Professor of Finance  
Stanford University*

John J. Pringle

*Professor of Finance  
University of North Carolina at Chapel Hill*

Goodyear Publishing Company, Inc.  
Santa Monica, California

## *To our children*

Library of Congress Cataloging in Publication Data

Solomon, Ezra.

An introduction to financial management.

Includes bibliographies and index.

I. Business enterprises—Finance. 2. Corporations—Finance. I. Pringle, John J., joint author.

II. Title.

HG4026.s66 1980 658.1'5 79-26623

ISBN 0-87620-475-2

Copyright 1980 © by Goodyear Publishing Company, Inc.  
Santa Monica, California

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.

Library of Congress Catalog Card Number: 79-26623

ISBN: 0-87620-475-2

Y-4752-2

Current Printing (last number): 10 9 8 7 6 5 4 3 2 1

Printed in the United States of America

Acquisitions editor: Robert "Chip" Price

Production manager: Suzanne Knott

Production coordination: Jean Varven

Composition: Interactive Composition Corp. and Typothetae

# Preface

The theme and basic objective of this book remain the same. We continue to view financial management as applied microeconomics in a business policy context. The firm's goals give rise to its commercial strategy, which prescribes the appropriate investment policy. Financing policies then are tailored to fit. The student is encouraged to view financial management decisions as part of a broader management process. Throughout, the viewpoint is managerial rather than technical.

As was the first edition, this edition is addressed specifically to beginning students of financial management. Our major objective is to provide a sound conceptual framework within which a wide variety of financial management decisions can be analyzed. Emphasis is placed on concepts and understanding as well as on techniques and skills and on the limitations of theories and models along with their uses.

Those familiar with our first edition will note that this is a very substantial revision. New material has been added to reflect major recent developments in theory and empirical work. We have also tried, as much as possible, to incorporate the many helpful suggestions of users and reviewers of the first edition. The most important changes in this edition are described below.

In the first edition, we departed from the tradition of using the firm's weighted average cost of capital as the central organizing concept for investment and financing decisions. Instead of *cost of capital*, we used the label *required rate of return* and developed an approach to capital budgeting around the capital asset pricing model. We have continued that

approach in this edition but have included (by popular demand!) a full discussion of the weighted average cost of capital in a new Chapter 15. In addition, the material on setting return targets (Chapter 14) has been completely rewritten and simplified. Those who want a more technical treatment can turn to the material on the capital asset pricing model and the impact of financing mix on capital investment covered in Chapter 15.

Several other chapters also have been substantially revised and new chapters added. The chapter on discounted cash flow (9) has been completely rewritten and expanded. A new chapter (10) on valuation and the capital asset pricing model has been added. Parts of Chapter 18 have been rewritten to include recent theory and empirical work on capital structure. A new part, Part VI, has been added that includes chapters on international financial management and on mergers and acquisitions.

We have added material throughout the book to provide more help for students and instructors. Sample problems, with solutions and narrative, are provided at the ends of chapters that require problem work. In addition, the number of end-of-chapter problems has been substantially increased. Many parts of the book have been rewritten to simplify and improve it, and a large number of real-life examples have been added to the textual material. The entire book has been updated throughout to include changes that have occurred since 1976 in the field of financial management.

There are many ways to teach financial management and hence a number of alternative sequences for using this book. Our own preference is to take material in the order presented in the table of contents. An alternative sequence that may be preferred by some instructors is to proceed from Part I directly to Part III, taking up valuation early in the course. A special introduction to Part III is provided to facilitate this sequencing. Instructors following this sequence then would have the option of returning to Part II (current operations), or proceeding through Parts IV and V (investment and financing decisions) and then returning to Part II. The four principal parts of the book, II, III, IV, V, are arranged so that they can be taken in any one of several sequences. Part VI, special topics, normally would be taken up last.

A good grounding in basic financial accounting is an essential prerequisite. A course in basic microeconomics would be helpful but is not essential. Except for Chapter 15, the second edition does not require a background in probability theory. For those who cover Chapter 15, a brief appendix on probability concepts is included at the end of the book.

Our package of supplementary materials has been expanded and improved. An instructor's manual is available to adopters of the book. It includes our commentary on each chapter, answers to questions, and solutions to end-of-chapter problems. Transparencies can be prepared directly from the problem solutions. In addition, transparency masters of selected charts and tables from the book are included. Also in the instructor's manual are test questions for each chapter prepared by Russell P. Biosjoly and Severin C. Carlson of the University of Maryland.

Available for student use is a very helpful study guide by John A. Halloran and Howard P. Lanser of the University of Notre Dame. For instructors wishing to assign cases, a companion casebook is available, *Cases in Introductory Finance*, by Michael Rice and John J. Pringle.

Although many improvements have been made in this edition, opportunities for still further improvements undoubtedly exist. As before, we will be grateful to users for bringing these to our attention.

*Ezra Solomon*  
*John J. Pringle*

# Acknowledgments

In the preface to the first edition, we asked users to give us their suggestions for improving the book. Many did so, and we have revised the book extensively in order to incorporate the many thoughtful suggestions we received. We would like to thank especially the following people who read and reviewed the manuscript for the first and second editions: Gordon R. Bonner, University of Delaware; Severin C. Carlson, University of Maryland; Richard F. Demong, University of Virginia; M. Chapman Findlay, University of Southern California; Roger A. Formisano, University of Wisconsin; David W. Glenn, University of Utah; Irwin Harvey, University of Georgia; Hugh Hobson, Loyola University in New Orleans; Ron E. Hutchins, Eastern Michigan University; James Kehr, Miami University; John H. Lewis, Stephen F. Austin State University; Surendra K. Mansinghka, San Francisco State University; Sheldon Novack, Widener University; William L. Sartoris, Indiana University; Herbert T. Spiro, California State University at Northridge; Charles E. Wade, Texas Technical University; Robert Wood, Pennsylvania State University; and Kent Zumwalt, University of Illinois.

The many responses to a survey conducted by the publisher were a great help in planning the new edition. In particular we would like to thank the following individuals: Sheldon Balbirer, University of North Carolina at Greensboro; Stuart Bancroft, Pacific Lutheran University; Stanley Bodalski, St. Joseph's College; Carl Chen, University of Dayton; James Clay, Slippery Rock State College; Maclyn Clouse, University of

Denver; Rust Gray, Wright State University; John Harbell, San Francisco State University; Dale Johnson, University of South Florida; William Lane, Louisiana State University; Andrew McCollough, University of Florida; Vince Mercurio, San Diego State University; George Moody, West Virginia University; Peter Rosko, University of Minnesota; Fred Scherr, West Virginia University; and Daniel Vellenga, University of Denver.

As do all authors of textbooks, we owe an intellectual debt to those who have contributed to the rapid developments in the theory of financial management over the past 20 years. Any attempt to acknowledge specific contributions would leave us at a loss as to where to draw the line. Specific works are cited in the text where doing so seemed useful to instructors and students and key references are provided at the end of each chapter.

We are grateful also to our colleagues at Stanford, The University of North Carolina, and elsewhere who have contributed ideas and influenced our thinking on the subject of financial management.

Finally, we wish to thank those who contributed directly to the preparation and production of the book. Maria DiMenna, Christina Benson, and David Peterson assisted with end-of-chapter problems and Pamela Peterson with the instructor's manual. Chip Price of Goodyear provided valuable advice in preparation of the manuscript and supplementary materials, and Suzanne Knott took the project from manuscript to finished product.



# Contents

## I THE SCOPE AND SETTING OF FINANCIAL MANAGEMENT

### Chapter 1 What Is Financial Management?

The Scope of Financial Management **3** The Role of Firms in a  
Market Economy **6** Applying the Profit-Maximization Criterion to  
Financial Management **10** Value-Maximization **12** Financial  
Management and the Larger Goals of the Firm and Society **14**  
Broader Applicability of Financial Management Concepts **15**  
A Normative Framework **16** Summary **17** Questions **18**  
References **18**

### Chapter 2 The Firm and Its Environment

Forms of Business Organization **21** Taxes **23** Regulation **26**  
The Financial Environment **29** Function of Financial Markets **30**  
Principal Participants in Financial Markets **33** Types of Financial  
Claims **37** The Money Market and the Capital Market **39** Summary  
**46** Questions **47** References **47**

## II MANAGING ONGOING OPERATIONS

### Chapter 3 Revenues, Costs, Profits, and Cash Flows

Financial Variables **51** Cost/Volume/Profit Relationships **60**  
Summary **68** Sample Problem **69** Questions **70** Problems **70**  
References **74**

### Chapter 4 Analyzing Financial Performance

Basic Data **80** Sources and Uses of Funds **80** Measuring Profits  
and Profitability **87** Measuring Return on Investment **89**  
Measuring Activity and Turnover **94** Measuring Liquidity **101**  
Measuring Indebtedness **103** Allowing for Inflation **110** Sources  
of Industry Data **111** Summary **114** Sample Problem **115**  
Questions **116** Problems **117** References **122**

### Chapter 5 Developing the Financial Plan

Estimating Requirements for Funds **128** Patterns of Funds Require-  
ments **138** Budgeting Cash Receipts and Disbursements **142**  
Using the Financial Plan **146** Financial Planning Over Longer Time  
Periods **149** Inflation and Financial Planning **151** Summary **154**  
Sample Problem A **155** Sample Problem B **156** Questions **158**  
Problems **159** References **163**

### Chapter 6 Sources of Short-Term and Intermediate-Term Funds

Suppliers of Short-Term and Intermediate-Term Funds **165** Trade  
Credit **166** Unsecured Short-Term Loans **170** Secured Short-Term  
Loans **174** Commercial Paper **180** Term Loans **182** Equipment  
Financing **184** Government-Sponsored Loan Programs **186** Find-  
ing the Right Source **187** Summary **188** Sample Problem **189**  
Questions **189** Problems **190** References **191**

### Chapter 7 Managing Cash

Managing Collections and Disbursements **194** Determining the  
Appropriate Working Cash Balance **200** Investing Idle Cash **205**  
Summary **211** Sample Problem **212** Questions **213** Prob-  
lems **213** References **216**

### Chapter 8 Managing Accounts Receivable and Inventory

Investing in Accounts Receivable **221** Implementing Credit Policy **227**  
Investing in Inventory **231** Inventory Management **242** The Required  
Return on Investment in Receivables and Inventory **243** Summary **245**  
Sample Problem **247** Questions **247** Problems **248** References  
**251** Appendix: Derivation of the Economic Order Quantity **253**

## III TIME, RISK, AND VALUE

### Chapter 9 Fundamentals of Discounted Cash Flow

The Time Value of Money **260** Future Value **263** Present Value **265** The General Discounted Cash Flow (DCF) Valuation Model **274** The Discount Rate **275** Summary **276** Sample Problem A **277** Sample Problem B **279** Questions **279** Problems **280** Appendix A: Annuities **284** Appendix B: Continuous Compounding **286**

### Chapter 10 Valuation in Financial Markets

Risk, Return, and Value **289** Using Market Evidence **290** Valuation of Equity Securities **294** The Capital Asset Pricing Model **301** Summary **307** Sample Problem A **308** Sample Problem B **309** Questions **310** Problems **310** References **310**

## IV ANALYZING INVESTMENT OPPORTUNITIES

### Chapter 11 Criteria for Investment Decisions

The Payback Period **316** Accounting Return on Investment (AROI) **317** Internal Rate of Return (IRR) **320** Discounted Cash Flow (DCF) Decision Criteria **323** Comparison of DCF Decision Criteria **326** Strengths and Weaknesses of DCF Methods **332** Summary **333** Sample Problem **334** Questions **335** Problems **335** References **339** Appendix: Alternative DCF Return Measures **341**

### Chapter 12 Identifying Relevant Cash Flows

Cash Flows versus Accounting Profits **345** Incremental Cash Flows **345** Dealing with Uncertainty **358** The Decision Horizon **360** The Objective: Cash Flows after Taxes **361** Some Special Considerations **362** Summary **366** Sample Problem **367** Questions **369** Problems **369** References **375**

### Chapter 13 The Required Rate of Return

Opportunity Rates **377** Risk and Risk-Aversion **379** Role of Markets **383** Required Rate of Return: Firm versus Project **385** Cost of Capital **387** Summary **389** Questions **390** Problems **390** References **392**

## Chapter 14 Setting Return Targets

Earning the Market Return **395** Estimating the Risk Premium **400**  
Risk Differences Among Projects **405** Grouping Investments by Risk  
Category **409** The Effects of Inflation **414** Using Return Targets  
**416** Summary **419** Sample Problem **420** Questions **420**  
Problems **421** References **423**

## Chapter 15 Technical Topics in Investment Analysis

A: The Capital Asset Pricing Model **427** B: The Impact of Financing  
Mix on Project Evaluation **435** C: The Weighted Average Cost of  
Capital **442** Problems **447** References **447**

## Chapter 16 Making Investment Decisions in Practice

Valuation as a Decision Criterion **451** Net Present Value Rule and  
Society's Goals **455** Managerial Considerations **458** Financial  
Management and Corporate Strategy **465** Summary **469**  
Questions **470** Problem **470** References **471**

# V

## PLANNING THE FINANCIAL STRUCTURE

## Chapter 17 Sources of Long-Term Financing

Corporate Financing **476** Contractual Claims: Debt **480** Pre-  
ferred Claims: Preferred Stock **485** Residual Claims: Common  
Stock **488** Leasing **492** Convertible Securities **496** Summary **496**  
Questions **497** References **498**

## Chapter 18 Financial Leverage: Debt versus Equity

Operating Leverage and Financial Leverage **501** Effect of Financial  
Leverage on Returns **502** Criteria for Financing Decisions **509**  
Leverage and Firm Value **515** Motives for Borrowing **522** Implica-  
tions for Decision-Makers **525** Summary **526** Sample Problem  
**527** Questions **529** Problems **530** References **534**

## Chapter 19 Determining the Level of Debt

Financial Leverage and Investment Policy **539** Analyzing Alternative  
Financial Plans **541** Defining Debt Capacity **548** Analyzing Cash  
Flows **550** Allowing for Reserve Borrowing Capacity **558** Choos-  
ing the Appropriate Debt Policy **559** Summary **559** Sample Prob-  
lem **560** Questions **562** Problems **562** References **565**

## Chapter 20 Selecting the Form of Debt

Short-Term versus Long-Term Debt **569** Evaluating Financing Costs  
Using DCF Techniques **579** Leasing **580** Convertible Securities

and Warrants	586	Summary	595	Sample Problem	596
Questions	597	Problems	598	References	601
Chapter 21 Issuing and Managing Long-Term Securities					
Issuing Long-Term Securities	605	Managing Outstanding Issues	618		
Failure and Reorganization	627	Summary	630	Questions	632
References	632				
Chapter 22 Dividend Policy					
Dividends and the Value of the Firm	637	Information Effects	641		
Interdependence of Investment, Financing, and Dividend Decisions	643	Factors to Consider in Setting Dividend Policy	646	Dividend Policy Goals	649
Procedural and Legal Considerations	654	Dividend Policy in Closely Held Firms	655	Summary	656
Sample Problem	657	Questions	658	Problems	658
References	661				
Appendix: Stock Dividends and Stock Splits	662				

## VI SPECIAL TOPICS IN FINANCIAL MANAGEMENT

Chapter 23 International Aspects of Financial Management					
The Importance of the Exchange-Rate Problem	667	Foreign Exchange Exposure	671	Alternative Translation Methods	673
Understanding the Foreign Exchange Market	676	Dealing with Foreign Exchange Exposure	679	Multinational Investment Decisions	682
Summary	685	Questions	686	Problems	686
References	687				
Chapter 24 Mergers and Acquisitions					
Varieties of Mergers	689	Forms of Payment	692	Motives for Mergers	694
Conglomerate Mergers of the Late 1960s	696	The Acquisition Wave of the Late 1970s	699	Summary	703
Questions	703	Problems	704	References	706
Appendix: Probability Concepts					
Probabilities	709	Expected Value	712	Measures of Dispersion	713
Conditional Probabilities	715	Correlation and Covariance	717		
Summary	721	Questions	721	Problems	722
References	724				
Table I Present Value of \$1 Due at the End of $n$ Years 725					
Table II Present Value of \$1 per Year for $n$ Year 729					
Table III Future Value of \$1 at the End of $n$ Years 733					
Table IV Future Value of \$1 per Year for $n$ Years 735					
Glossary 737					
Index 747					



THE SCOPE  
AND SETTING  
OF FINANCIAL  
MANAGEMENT I

# What Is Financial Management?

## 1

The Scope of Financial Management  
The Role of Firms in a Market Economy  
Applying the Profit-Maximization Criterion  
Value-Maximization  
Financial Management and Larger Goals  
Applicability of Financial Management Concepts  
A Normative Framework

Financial management is two things: It is an extensive body of professional practice; it is also an academic discipline that spans nearly a century of writing and teaching devoted to what financial management does or should do. Practice and theory have each undergone a process of continuous change and development. Since the late 1950s this process has been an especially lively one, with significant interaction between the two facets of the field.

## The Scope of Financial Management

One way we can approach the problem of defining the *scope* of financial management is to examine what practicing “financial managers” do. But we will soon find that this “grass-roots” approach, in itself, will not get us very far. The reason is that in most business organizations there is no single individual who is designated as *the* “financial manager” and who has all the responsibilities of “financial management.”

Firms have corporate treasurers and controllers, vice-presidents of finance and chairmen of finance committees, and sometimes all four titles are found within a single enterprise. On the other hand, we may find only one and sometimes none of these titles in the organizational structure of other firms. Yet, in some more fundamental sense, there is always a financial manager, title or no.

Although what we have dubbed a grass-roots approach to the task of defining the scope of the field cannot, in itself, produce a final answer, it does provide two valuable insights:

1. *Responsibility for “financial management” is often highly diffused within a business corporation.* Thus, operating managers frequently have a considerable say in proposing and analyzing investment opportunities that lead to the commitment of corporate funds in plant, equipment, inventory, or acquisitions; central staff groups, sometimes under the treasurer, but just as frequently under the controller or an executive in charge of planning, play a large role in analyzing investment and financing ideas; investment and financing decisions often involve committees of senior officers of the firm and in the case of most major decisions, the board of directors itself.
2. *In addition to being diffused, finance involves a large diversity of actions.* Some of these are better classified as administrative functions incidental to finance rather than as finan-

cial management proper: for example, the receipt, disbursement, and custody of funds and securities; the preparation of confidential payrolls; the supervision of how securities are registered or transferred; the management and payment of various taxes; the negotiation and placement of a myriad of insurance policies. Other functions are more major: for example, the preparation and review of cash budgets, the investment of temporarily idle funds, the hedging of foreign exchange risks, the arrangement of bank credit, supervision of the company's pension funds, the decision to change the company's dividend rate or to float new securities, the task of explaining the company's performance and prospects to groups of financial analysts.

One way to deal with the diversity of actions and decisions would be to examine them, one at a time, and cover each item separately in a handbook. This has been done. But such a compilation is unsuitable to an academic discipline for one simple reason: It produces a subject of bits and pieces and thus obscures the underlying thread of continuity that comprises the very core of what is now an intellectually exciting, difficult, and important field.

### An Alternative Approach

An alternative approach to the problem of defining the *scope* of financial management is to isolate the thread of continuity that unites the diffused and diverse set of actions and decisions in which operating financial managers engage (whoever they are and however they are titled). This is what the academic treatment of the field has tried to do. With the passage of time, academic emphasis on what comprises the real core of the finance function has undergone large shifts, driven as much by practitioners as by professors. During this century three major themes have been put forward:

1. From its inception as a separate field of study to around World War II, the unifying theme of finance, as an academic field, was that it should be concerned with the relationships between a corporation and its sources of funds. This concentration on the procurement of funds shaped the content of the field. It covered the financing instruments, institutions, and practices through which a corporation obtained funds in the capital markets and the