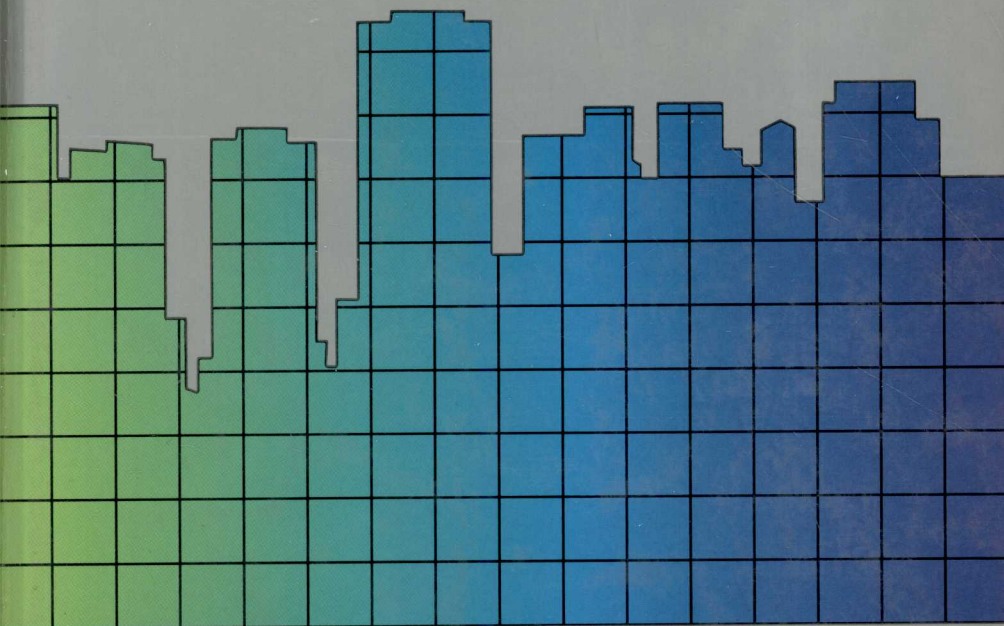


COST ACCOUNTING

Concepts and Managerial
Applications



Bierman
Dyckman
Hilton



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Cost Accounting

Concepts and Managerial Applications

Harold Bierman, Jr.

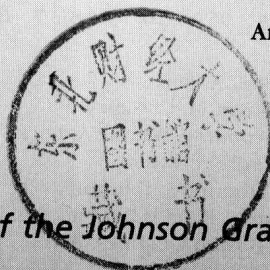
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*All of the Johnson Graduate School of Management
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Cost Accounting

Concepts and Managerial Applications

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Preface

Cost accounting systems provide vital information to accountants and other business managers in a wide variety of organizations. This book presents the major concepts of cost accounting and focuses on decision-making situations that require accounting data. Decision makers and others interested in the design of cost accounting systems will find this book useful in the analysis and application of cost accounting data.

Flexible Organization

This book is designed so that chapters can be assigned out of order if the instructor so desires. The material requires a working knowledge of financial accounting and can be used immediately after a first course in financial accounting or after an introductory managerial accounting course. We have included more chapters in the book than can be covered comfortably in a single semester or quarter. In fact, the first thirteen chapters can easily form the basis of a one-semester (or quarter) introductory course in cost accounting. The instructor can choose chapters that fit both the students' preparation and the objectives of the course.

If students already have taken a managerial accounting course, some chapters can be used to review that introductory material. There are sufficient advanced topics to fill a semester. If the book is used immediately after an introductory financial accounting course, the introductory cost accounting chapters can be used with selected advanced topics.

Pedagogical Features

The text has many features to make cost accounting interesting and accessible to a wide range of readers.

Real-World Illustrations

Experience has convinced us that student interest in cost accounting is increased considerably when they read real-world illustrations of concepts and techniques throughout the course. To stimulate interest we have included numerous illustrations of cost accounting issues from well-known companies and organizations. We obtained most of the information for these illustrations directly from the organizations; in other instances we obtained information from published case studies, used here with the permission of the publishers.

Financial statements that include cost accounting data are shown for Delta Air Lines, Inc., F. W. Woolworth Co., and The Maytag Company. Cost-volume-profit illustrations are provided for Delta Air Lines, Inc. and Dunkin' Donuts. Alternative product-costing systems are illustrated with information from The Walt Disney Company, McDonnell Douglas Corporation, and Hewlett-Packard Company. We have included a process-costing illustration from Hewlett-Packard Company and an illustration of cost variances from Chrysler Corporation. A master budget is constructed based on data obtained from The Firestone Tire & Rubber Company, and responsibility accounting is illustrated for the Marriott Corporation (Marriott Hotels). We illustrate the use of relevant costs in making decisions about athletic programs at Wright State University. Other major illustrations include cost allocation at Mayo Clinic, linear programming by Exxon Company, U.S.A., transfer pricing at Cornell University, learning curves by The Boeing Company, inventory control at Ford Motor Company, uncertainty in decision making at the Environmental Protection Agency, and productivity accounting at the New York City Sanitation Department.

In addition to major illustrations, we include dozens of excerpts and summaries from published business sources describing cost accounting issues in well-known companies and organizations. Short excerpts and summaries are included for 3M, Emerson Electric, Federal Express, General Motors, Michigan National Bank, American Express, Citibank, United Parcel Service, Harvard Medical Center, Hewlett-Packard, A&P, General Electric, J. C. Penney, ARCO, The Firestone Tire & Rubber Company, Lockheed, Florida Power and Light, Honeywell, Ingersoll Rand, Monsanto, United States government, Sony, Dow, B. F. Goodrich, City of Charlotte, North Carolina, and Chesebrough Ponds.*

The real-world examples are included in the book to illustrate the ideas developed and, we hope, enhance the reader's interest in cost accounting, rather than to teach relevant cost-accounting techniques. We believe that heightened interest results in a more effective learning process.

Balance Among Manufacturing, Service, and Nonprofit Illustrations

Coverage of cost accounting techniques is provided for manufacturing companies, service-industry firms, nonprofit organizations, and international firms. The partial list of real-world illustrations given above suggests the variety and scope of this balanced coverage.

* All company logos used within this text are registered trademarks.

Up-to-Date Coverage

We have taken great pains to keep our coverage up to date, and have included discussions of executive incentive programs, just-in-time (JIT) inventory systems, material requirements planning (MRP), flexible manufacturing, computer-integrated manufacturing (CIM), automation and robotics, emphasis on productivity and product quality, nonfinancial performance data, cost drivers and non-labor-based cost assignment, ethics, and computerized systems. We also note the criticisms levied against contemporary cost accounting systems by such scholars as Robert S. Kaplan and acknowledge the limitations of these systems where appropriate. In doing so, we endeavor to provide a balanced view of the issues involved.

Learning Objectives

Each chapter begins with a list of learning objectives to guide students in their study. Instructors may find it worth reviewing these objectives with students at the conclusion of each chapter.

Clarity, Exhibits, and Step-by-Step Instruction

Clarity of exposition has been a key objective in writing this text. In addition to precise definitions and explanations, we include many graphs, tables, flow charts, and step-by-step instructions to make the material more easily understood by the reader.

Review Problems and Key Terms

Most chapters contain a review problem followed by a solution, which can help readers determine how well they have mastered the material. A list of key terms is also given at the end of each chapter with references to the page where each term is defined. In addition, all of the book's key terms are listed and defined in the glossary at the end of the text.

Questions, Exercises, and Problems

The questions, exercises, and problems are an integral part of each chapter. In answering them, students will find it necessary to refer back to the text material. Indeed, problem solving is an essential step in understanding the main ideas in each chapter. A first reading will not give anyone a full command of the material. Problem solving followed by an additional reading of the chapter is strongly recommended.

Suggested Readings

In some respects, this volume is only an introduction to the topics covered. The reader who wishes to pursue more deeply an interest in any of the subject areas is encouraged to refer to the suggested readings provided at the end of each chapter.

Supplements

A full set of supplements is available to assist the instructor in designing and implementing a successful cost accounting course.

Instructor's Manual The Instructor's Manual provides valuable suggestions for organizing and teaching a cost accounting course and using the text.

Solutions Manual The Solutions Manual contains answers to all review questions, exercises, and problems. Also included are time estimates for solving the exercises and problems.

Study Guide The Study Guide is designed to help students master the material presented in the text, and provide a means of testing this mastery through self-tests.

Test Bank The Test Bank supplies an ample variety of testing materials to permit the preparation of several exams without repeating exam questions or problems. A computerized test bank is also available.

Cost Accounting Problems Using Lotus 1-2-3 The computer supplement contains approximately 30 problems, and helps students develop skill in using personal computers and electronic spreadsheets in performing cost accounting activities. Two levels of problems challenge students to build upon their knowledge of cost accounting by completing formatting and template problems.

Coverage of Product Costing

We have devoted two early chapters (Chapters 4 and 5) to basic product-costing systems and job-order costing. This in-depth coverage introduces students to the overall structure within which product-costing systems may be classified, including the basic differences among actual, normal, and standard costing; between job-order and process costing; and between variable and absorption costing. We have found that students benefit from having an overall framework to which they can relate various product-costing concepts as they are discussed in detail throughout subsequent chapters. The two chapters on job-order costing provide thorough coverage of these product-costing concepts.

Sequence of Topics

Recognizing that instructors often disagree on the optimal sequencing of topics in a cost accounting course, we have written the text in a modular and flexible style to facilitate a rearrangement of the topics to suit individual needs. Most chapters can easily be pulled out of their current sequence and assigned at other points in a course. The current chapter sequence makes sense to us, but we recognize that others may disagree. Several possibilities for topic rearrangement are listed below.

Chapter 3 Cost-Volume- Profit Analysis

We have found that the placement of this topic differs widely across the cost accounting texts and course syllabi, and therefore, we wrote the chapter so that it can easily be moved to a point later in the course. One common placement for Cost-Volume-Profit (CVP) analysis is near the coverage of relevant costs. We cover relevant costs in Chapter 10, and our CVP chapter can easily be moved to that point in the sequence.

**Chapter 6
Process Costing**

We place process costing immediately after job-order costing in our sequence of topics because these are the two polar extremes of product-costing systems. Some instructors view process costing as an advanced or specialized topic and defer it to late in the course or even to a second-semester cost-accounting course. Chapter 6 can easily be extracted from the current sequence and delayed until any point in the course.

**Chapter 9
Variable and
Absorption
Costing**

Some instructors treat this issue as a special topic late in the course. To allow for this approach, Chapter 9 has been written so that it may be covered anytime after Chapters 7 and 8 (on standard costing systems) have been covered.

**Chapter 10
Budgeting and
Responsibility
Accounting**

We cover budgeting after the two chapters on standard costing systems (Chapters 7 and 8) in recognition of the dual role of standard costing systems: product costing *and* control. Chapters 4 through 6 are primarily product-costing chapters, and Chapters 9 and 10 are primarily planning and control chapters. Placing the two chapters on standard costing between the product costing and control modules enables us to emphasize the dual role of standard costing.

Because some instructors may prefer to cover budgeting and responsibility accounting prior to standard costing, Chapter 10 (Budgeting and Responsibility Accounting) is designed to be able to be covered prior to Chapters 7 and 8. When placed in this sequence, the discussion of budgets as control devices can be used to motivate the subsequent discussion of standard costing. Although the term *standard cost* is mentioned near the beginning of Chapter 10, there is no substantive use of standard costing concepts in Chapter 10. Moreover, standard costing systems are introduced briefly, early in Chapter 4, as one of several alternative product-costing systems.

**Chapter 16
Accounting for
Spoiled and
Defective Units**

We have placed this topic in the latter half of the text as a specialized topic. Some instructors prefer to discuss this topic along with process costing, however, and with this in mind, we wrote Chapter 16 so that it may be completed anytime after Chapter 6 (Process Costing).

**Chapter 14 Cost
Allocation and
Chapter 15
Joint Costs and
Joint Products**

We cover these topics in the latter part of our course, but some instructors prefer to include them with the product-costing chapters. We have therefore written Chapters 14 and 15 so that they may be covered anytime after Chapters 4 and 5 (Job-Order Costing).

**Chapter 26
Behavioral and
Economic
Implications of
Budgeting and
Responsibility
Accounting**

Budgeting and responsibility accounting is an important topic that requires two chapters to cover thoroughly. We introduce the basics of these topics in Chapter 10, where we demonstrate how to construct a master budget and discuss both performance reports and responsibility-accounting centers.

Budgeting and responsibility-accounting systems have important behavioral and economic implications. These topics are covered in Chapter 26, since most instruc-

tors treat these issues as an advanced or specialized topic, but it also can easily be used immediately after Chapter 10. In fact, that is how we use this material when we teach the course.

Chapter 27 Learning Curves and Cost Behavior

We cover this topic late in the text. For instructors who prefer to discuss learning effects along with cost estimation, Chapter 27 can be moved up and assigned immediately after Chapter 13 (Cost Estimation).

Behavioral and Economic Issues

Elementary economic theory, introductory statistical methods, and topics in organizational behavior are woven throughout the text, reflecting the interaction of cost-accounting systems with the economic and behavioral forces that shape an organization. Students need no prior background in these topics. Several decision-making topics that are especially relevant to practicing accountants and managers receive particularly detailed treatment. A report of the Committee on Education and Experience Requirements for Certified Public Accountants describes the cost-accounting requirement and states that "it is believed important that students know how cost accounting can contribute to decision making and planning. Typical problems might involve make-or-buy, product mix, capital budgeting, and inventory decisions. The methodologies might include present-value analysis, models, and incremental analysis." The report of the American Accounting Association's Committee to Compile a Revised Statement of Educational Policy reaches a similar conclusion: "Management has come to recognize that accountants are in a strategic position to make significant contributions in the area of resource planning."

Many of the topics in this book might be covered elsewhere in a business curriculum, but we also include topics for which no other functional area in business has an obvious first claim. We believe these topics are highly relevant for cost accountants and managers using cost-accounting information.

Acknowledgments

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We sincerely welcome any comments or suggestions from those who use this text.

Harold Bierman, Jr.
Thomas R. Dyckman
Ronald W. Hilton

Ithaca, New York

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