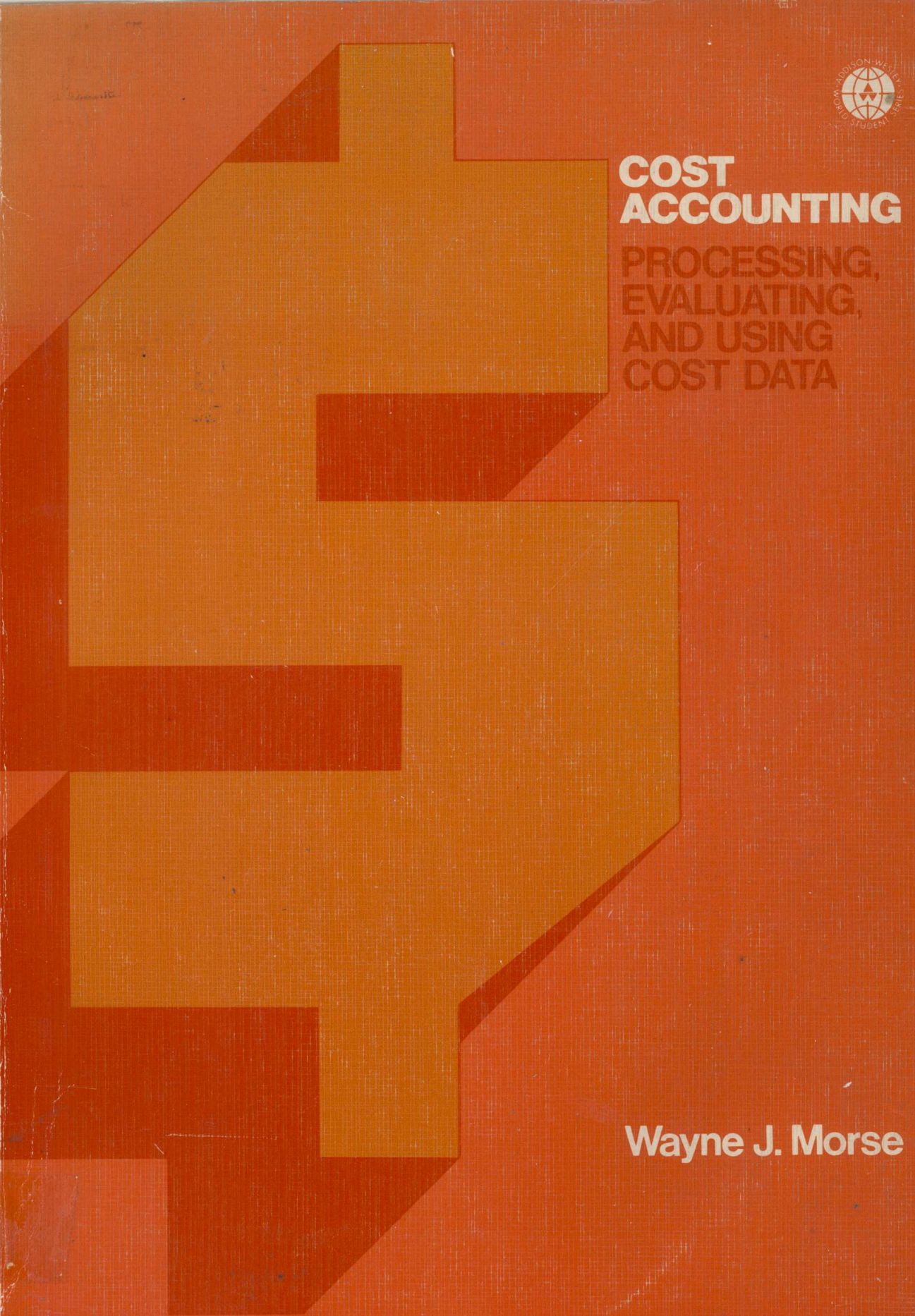

COST ACCOUNTING

PROCESSING, EVALUATING, AND USING COST DATA

Wayne J. Morse

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PREFACE

Because of their importance in approaching and solving everyday problems, virtually all institutions of higher learning require business students to take courses that deal with quantitative or behavioral issues. For several years accounting educators have argued for the inclusion of relevant materials from these disciplines within the accounting curriculum:

- In 1971 the AAA Committee on the Measurement Methods Content of the Accounting Curriculum argued that "accounting courses should use the quantitative techniques that apply to the subject being taught. Only in this way can accounting students see the possible application of the techniques they are learning in mathematics courses. And only through such use are the techniques reinforced so that they will be remembered."[1]
- In a similar vein, the 1971 AAA Committee on the Behavioral Science Content of the Accounting Curriculum argued that "relevant behavioral concepts and methods should be introduced and discussed within the accounting curriculum itself."[2]

In the opinion of this author, previously available cost accounting textbooks have not responded adequately to the changing needs of accounting students. Most tend to be deficient in at least one of the following aspects:

- They do not consider relevant quantitative and behavior materials.
- They treat these materials as separate topics or extensions and frequently place them near the end of the book.

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[1] "Report of Committee on the Measurement Methods Content of the Accounting Curriculum," *Accounting Review*, Supplement to vol. 46, 1971, p. 228.

[2] "Report of the Committee on Behavioral Science Content of the Accounting Curriculum," *Accounting Review*, Supplement to vol. 46, 1971, p. 247.

- They lose their accounting perspective by emphasizing quantitative and/or behavioral material to the exclusion of important traditional topics.

In writing this book an attempt was made to achieve the following objectives:

- Integrate relevant quantitative material into the mainstream presentation in an effort to enhance the students' understanding of cost accounting, reinforce the students' knowledge of quantitative techniques, and demonstrate that the time spent in finite mathematics and statistics courses is not wasted.
- Indicate the importance of human behavior so that instructors may emphasize the importance of behavioral issues in planning and control.
- Provide thorough coverage of traditional cost accounting topics, but place topics not required for general business education so that instructors may skip them and spend more time on other material.
- Provide a wide range of problem material that reinforces the students' comprehension of basic concepts and illustrates the extension of basic concepts to new situations.
- Write a text of reasonable length that builds from the ground up and may be used in a single semester (term) MBA course (omitting some topics) or a two-semester (term) undergraduate sequence (with supplementary readings).
- Make the subject area appear as a unit by presenting topics in a logical sequence that starts with accumulating cost data, continues through developing cost estimates from that data, utilizes these estimates in short range planning, and compares actual results with plans.

This book is intended for use by students who have had at least one course in accounting, one course in economics, and one course in finite mathematics (including some probability). As a minimum, statistics is required as a corequisite. If statistics is taken concurrently some material in Chapter 5 must be deferred. (The author has done this in an integrated MBA program by having the statistics instructor assign some Chapter 5 problems.) The problem material accompanying Chapter 1 is intended as a review of important financial accounting concepts. The author has found such a review useful at the start of the fall semester (term). It is not necessary to be familiar with linear programming to cover the material in Chapter 7. Recognizing that Bayesian statistics is frequently omitted from introductory statistics courses, applications of this topic are placed in appendices. Some problems also require the use of calculus or computers.

Because this is an accounting, rather than a statistics, operations research, or finance textbook, many topics are omitted or their discussion is truncated. Noticeable by their absence are

- The development of the normal equations used in regression analysis. (They are provided in a problem for computational purposes.)
- An example of the simplex method for solving linear programming problems.

(Some problems do, however, require hand or computer computations that use this procedure.)

- The simultaneous determination of economic order quantities and reorder points for inventories when backorders exist.

- The capital asset pricing model.

Persons interested in examining these topics as they utilize this book are referred to the references at the end of appropriate chapters.[3]

Suggested course outlines are included in the instructors manual. The author and other instructors have thoroughly tested this material in graduate and undergraduate courses. In general, I follow the chapter sequence with minor modifications. In the first MBA cost course I omit Chapters 4, 13, 14 and 15. In the first undergraduate cost course I omit Chapters 7, 11, 12, 15, 16, 17, and 18.

Note that variance computations and standard cost systems are introduced in separate chapters. This makes it possible to stress the intricacies of standard cost systems when dealing with accounting majors while avoiding the topic in MBA courses. For accounting majors the study of standard cost systems also serves as a review and overview of previously discussed concepts. I have found this a rewarding chapter to teach because it brings the entire subject area together and makes it appear as a unified whole rather than a collection of topics.

This book could not have been completed without the generous cooperation, assistance, and support of numerous individuals and organizations. I am deeply indebted to the following professors who provided helpful comments on the manuscript and/or classroom-tested portions of it: Robert Capettini (University of Iowa); Edward Deakin III (University of Texas at Austin); Ray Dillon (Georgia State University); Lester Heitger (Indiana University); Howard Rockness (University of North Carolina at Chapel Hill); Robert Taylor (Duke University); and Gary Sundem (University of Washington).

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- I am grateful to the Literary Executor of the late Sir Ronald A. Fisher, F.R.S., to Dr. Frank Yates, F.R.S., and to Longman Group Ltd., London, for permission to reprint Table II from their book *Statistical Tables for Biological, Agricultural and Medical Research* (6th edition, 1975).

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[3] Information economics is an emerging area that is not given *formal* analysis in this text. The interested reader is refered to Joel S. Demski, *Information Analysis* (Reading, Mass.: Addison-Wesley, 1972) and *Cost Determining: A Conceptual Approach* by Joel S. Demski and Gerald Feltham, (Ames, Iowa: Iowa State University Press, 1976). Some problems at the end of Chapters 5 and 7 do, however, deal with the cost and value of information.

I would also like to acknowledge the help of Carol Hamlett who typed the final draft of the manuscript and of the staff at Addison-Wesley.

Finally, and most importantly, my wife Linda, besides typing all but the final draft of this manuscript and assisting in the proofreading, provided moral support throughout the three-year period the manuscript was in preparation. Perhaps we shall have a vacation at last.

Durham, North Carolina W. J. M.
November 1977

CONTENTS

PART I:
Processing Cost Data

PART II:
Short-Range Planning

13

PART IV: Advanced Topics

14

APPENDIX

INDEX

Part I
Processing Cost Data