Advanced Management Accounting Problems

Also by Kenneth P. Gee

Management Planning and Control in Inflation
Management Control and Information
(with R. Beresford Dew)

ADVANCED MANAGEMENT ACCOUNTING PROBLEMS

Kenneth P. Gee

Professor of Accountancy

Department of Business and Administration

University of Salford

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MACMILLAN

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First published 1986

Published by
MACMILLAN EDUCATION LTD
Houndmills, Basingstoke, Hampshire RG21 2XS
and London
Companies and representatives
throughout the world

British Library Cataloguing in Publication Data
Gee, Kenneth P.

Advanced management accounting problems.

1. Managerial accounting—Problems, exercises, etc.

I. Title

658.1'511'076 HF5661

ISBN 978-0-333-36270-9

ISBN 978-1-349-18147-6 (eBook)

DOI 10.1007/978-1-349-18147-6

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Introduction

It is a fair generalisation to say that scholars in the field of management accounting may broadly be divided into two groups. These groups may be distinguished from each other by their implicit response to this question: from which disciplines should the study of management accounting draw most heavily? To this question, one group would reply 'psychology, sociology and general systems theory' while the other group would say 'statistics, operational research and microeconomics'. This book is firmly in the latter tradition; it could hardly be otherwise, since the former tradition is much more concerned with the description of contexts than it is with the analysis of problems. It would be foolish for either group of scholars to disparage the other – their roles are complementary. However, in recent years rather more of the academic work in management accounting has conformed to the positive, behavioural mould than has conformed to the normative, quantitative mould. This book represents a small movement in the direction of redressing this balance.

In making this movement, the book endeavours to fill what is currently a fairly substantial gap in the literature available to students and teachers of management accounting at second and third year undergraduate level. Once the first year background material in statistics and quantitative methods has been assimilated, it is a logical progression to apply this material to acceptably realistic management accounting problems. It is helpful if these problems are such as to provide practice in the use of the microcomputer, while at the same time they must illustrate the employment of techniques advanced in the research literature.

The desirability of a significant computing content implies that the problems should not be so small as to give inadequate 'hands-on' practice, while the need to illustrate selected aspects of the research literature implies a requirement for close cross-referencing. Matters are further complicated by the fact that teachers differ in their identification of the most crucial papers within the literature, so that an approach placing restrictions upon the order in which topics can be dealt with may compel excessive attention to be paid to topics which are not conceived as being of central importance.

All of the issues mentioned above, but especially the last one, give rise to a need for something other than a conventional textbook to underpin the teaching of second and third year management accounting. A textbook which is to be used from 'cover to cover' in this area has to be very lengthy (and thus expensive) to cater exhaustively for the divergent emphases present in teaching. Moreover, a general purpose textbook cannot devote sufficient space to the development of realistically sized problems without compromising the interests of teachers who prefer to work through an approach which is not problem based, or whose students do not have access to the computing facilities required to handle substantial problems.

The gap in the literature faced by teachers who employ a quantitative, computational approach to the study of advanced management accounting is that there is no readily available set of problems which can be used in a flexible way to identify and illuminate those research studies having relatively immediate implications for the improvement of practice. This set of problems is intended to fill this gap. In doing so, it may also provide insights which help students (and managers) to visualise the associations between real world phenomena in management accounting and that part of the literature which addresses these phenomena sufficiently directly to enable problems to be written. Indeed, the author's aspirations extend a little further than the simple recognition by readers of a correspondence between their interests and the content of the problems presented here. It is hoped that the techniques used to solve the problems may in some cases be transferable, with adaptation, to ongoing industrial situations. The discipline imposed by the requirement that the institutional details of each problem must be spelled out is quite a stringent one; many

ideas within the literature, such as those of agency theory, have had to be omitted from this book simply because no plausible mechanism could be found whereby managers could have in their possession the necessary information to enable analysis using these ideas to take place. Those problems which could be clothed with institutional detail must by definition be at least partially realistic – the reader may judge whether the obtrusion of unrealistic, simplifying assumptions from that detail is such as to render a particular technique inapplicable to the everyday experience of industry and commerce.

The analysis of each of the problems here constitutes a self-contained guide to the contents of the paper or papers which make up the Primary Reference(s) to that problem. Put in another way, the problems have been tailor-made to fit the Primary Reference(s), and to bring out all of their central features. There is thus no need, when using this book, to refer to any other exposition of the material than that in the papers with which it deals. It is, however, necessary to have access to some of the usual computer software for operational research and statistics. In dealing with specific problems, computations are required involving operations on matrices, linear programming and the solution of moderately sized systems of simultaneous equations. The author's computational experience has been confined to work on the Commodore PET and DEC Rainbow 100 microcomputers, thus restricting the guidance that may be offered on software. However, taking the DEC machine as approximating the 'state of the art', the following packages have been found to perform satisfactorily in dealing with the problems associated with the topics enumerated below:

<i>Software package</i>	<i>Application</i>
OPTIMIZER (runs with MBASIC compiler on CP/M; requires 64K of memory)	Deals with linear programming problems, can thus carry out some of the computations required by Topics 5, 6, 7A, 7B, 15.
MINITAB (runs on CP/M 80/86 with 64K of memory)	Performs operations on matrices and can thus carry out some of the computations required by Topics 1, 2, 3, 4, 7A, 7B

TK!SOLVER 86 (runs on CP/M with 128K of memory)

Also a valuable general purpose statistical package

Solves systems of simultaneous equations, and can thus carry out some of the computations required by Topic 17

Also useful in performing iterative calculations for Topic 16, and arithmetic for Topic 8

Turning from technical to personal matters, I am delighted to record my gratitude to Mrs Jean Waring, who typed the manuscript of this book in its many drafts with unfailing patience and efficiency. The finished book I dedicate to my wife, Hilary, without whose constant encouragement and support it could never have been written.

Kenneth P. Gee