

## Cost–Benefit Analysis

### *Concepts and Practice*

Fifth edition

*Cost–Benefit Analysis* provides accessible, comprehensive, authoritative, and practical treatments of the protocols for assessing the relative efficiency of public policies. Its review of essential concepts from microeconomics and its sophisticated treatment of important topics with minimal use of mathematics helps students from a variety of backgrounds to build solid conceptual foundations. It provides thorough treatments of time discounting; dealing with contingent uncertainty using expected surpluses and option prices; taking account of parameter uncertainties using Monte Carlo simulation and other types of sensitivity analyses; revealed preference approaches; stated preference methods including contingent valuation; and other related methods.

Updated to cover contemporary research, this edition is considerably reorganized to aid in student and practitioner understanding, and includes eight new cases to demonstrate the actual practice of cost–benefit analysis. Widely cited, it is recognized as an authoritative source on cost–benefit analysis. Illustrations, exhibits, chapter exercises, and case studies help students to master concepts and develop craft skills.

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## Preface

Collaborative academic projects often take longer than originally anticipated, not just because of the normal delays of coordinating the efforts of busy people, but also because initially modest goals can become more ambitious as participants delve into their subject. We confess to both these sins with respect to preparing the first edition of this text. Our goal was to produce a book that would be conceptually sound, practically oriented, and easily accessible to both students and practitioners. Although our final product was far different in form and content than we initially planned, we believe that our first edition was such a book.

Our plans evolved for a number of reasons. Perhaps most importantly, through our teaching of undergraduate and graduate students in different countries, as well as our experiences training government employees in different jurisdictions, we realized that many topics demanded extended treatment if the essential basics were to be conveyed effectively and if solid foundations were to be laid for further learning of advanced topics. We also decided that integrating illustrations and examples with concepts and methods is useful in addition to presenting independent cases. The result is a series of chapters that develop conceptual foundations, methods of application, and extensions of cost-benefit analysis (CBA) through numerous practical examples and illustrations.

Our own use of the book in teaching, as well as comments from other teachers and students, have helped us identify several areas for incremental improvement in subsequent editions. With this current edition, however, we decided to take a fresh look at both organization and content. With respect to organization, we interlace the chapters providing the theoretical foundations with those showing how to implement them. For example, the chapter introducing the basics of measuring social surplus changes in markets is followed immediately with the chapter on estimating demand schedules. With respect to content, we added a number of cases that show the application of concepts in policy analyses. For example, following the chapter on estimating demand schedules, we provide cases presenting the use, and misuse, of social surplus as a benefit measure in regulatory impact analyses. Other cases illustrate using evidence from multiple sources to arrive at net benefits, conducting Monte Carlo simulation to assess uncertainty in net benefits, estimating costs and benefits from social experiments, using contingent valuation methods to assess the benefits of non-market goods, developing a shadow price from multiple data sources, and weighting costs and benefits to incorporate distributional values.

In overview, this new fifth edition provides the following:

- Updated content and references
- Rearrangement of chapters to facilitate better integration of theory and craft
- Addition of six cases providing extended illustrations of CBA craft

As with the earlier editions, answers to chapter problems, including spreadsheets that can be provided to students, are available for instructors.

## Acknowledgments

Our project over the years has been made more productive and enjoyable by our many colleagues and students who gave us advice, comments, encouragement, or information. We thank here just a few people who were particularly helpful: Marcus Berliant, Edward Bird, James Brander, Stanley Engerman, Eric Hanushek, Robert Havemen, Doug Landin, Walter Oi, William G. Waters II, and Michael Wolkoff. We thank Roy I. Gobin, George T. Fuller, Ruth Shen, and Larry Karp, who wrote thoughtful reviews of the first edition for the publisher; Ian Davis, John DeWald, Tim Gindling, and Laurie T. Johnson, who offered valuable comments during preparation of the second edition; Terri Sexton and Nachum Sicherman, who offered valuable comments during preparation of the third edition; Thomas Hopkins and M. Leslie Shiell, who offered valuable comments during preparation of the fourth edition; and John Janmaat, Farhad Sabetan, and Gideon Yaniv, who offered valuable comments during preparation of the fifth edition. Haynes Goddard kindly provided helpful suggestions for both the second and third editions. We especially thank Mark Moore, whose joint work with us helped us substantially improve our discussion of the social discount rate, and Roger Noll, who made extremely valuable suggestions that prompted many other substantial revisions. Of course, they are not responsible for any errors that remain.

We also thank Robert Dreesen and the editorial team at Cambridge University Press for encouraging us to take the time to do a substantial revision. We hope that teachers and students find the new edition to be both authoritative and pedagogically effective.



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