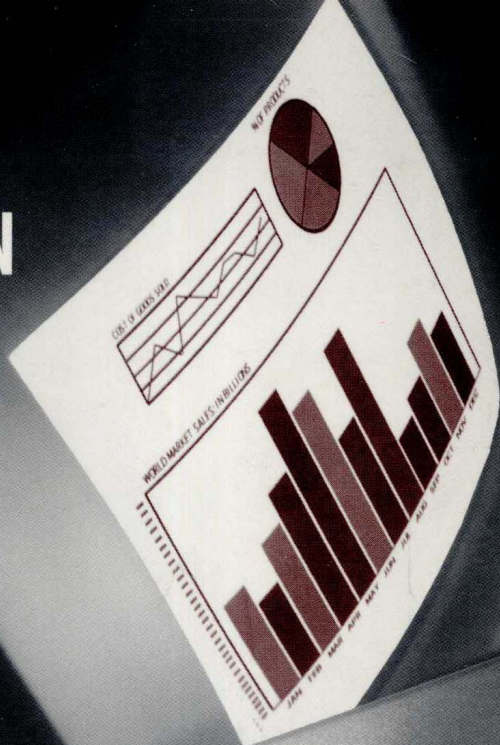


HENRY M. LEVIN  
PATRICK J. McEWAN



# **COST- EFFECTIVENESS ANALYSIS 2<sup>ND</sup> EDITION**

Methods and Applications

**HENRY M. LEVIN**  
**PATRICK J. McEWAN**

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**Methods and Applications**



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# Acknowledgments to the Second Edition

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**T**his book benefited greatly from discussions and suggestions over the years about how we might update, expand, and improve the first edition of this book. Over the span of 17 years and 13 printings, we received considerable feedback from scholars, policy analysts, and students that surely improved the content and presentation of the revision. Many researchers, too numerous to mention, have generously shared their work. We want to express our thanks to all of them. We also thank Darrell R. Lewis and Jon S. Eberling for their review of the final manuscript.

Levin wishes to dedicate this edition to the memory of his close friend, Professor Jose Luis Moreno Becerra. Moreno was a professor of Applied Economics at the University of La Laguna in the Canary Islands, Spain. He was a graduate student in the Economics of Education at Stanford some two decades ago and returned to Spain, receiving the highest score in the nation in a competition for a prestigious professorship in Applied Economics. Such a performance gave him the first choice of positions at any Spanish university. He returned to his home in the Canary Islands, and over the years, he became a leading voice of the Economics of Education throughout Spain. He was a founder and the first president of the Economics of

Education Society of Spain, a group with a dynamic agenda and an annual meeting of very high quality. His sudden death in 1999 saddened a wide circle of colleagues and friends, and we cherish our associations with him, both academic and personal. We wish to present this as an homage to Jose Luis for his wife, Tere, and his two children, Ernesto and Elena.

Finally, McEwan wishes to dedicate this edition to the memory of his father. Richard T. McEwan always harbored aspirations of being an academic, but his family was not wealthy and many educational opportunities were unavailable. By working many years at a job that was less than fulfilling, he ensured that both his children would be sufficiently privileged to choose careers that were denied to him. Unfortunately, he did not live long enough to share in their accomplishments. If this book succeeds in its goals, then it is partly due to his curiosity, his intellect, and his encouragement.

# Preface to the Second Edition

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**T**he first edition of this volume, published in 1983, lamented that “everyone is talking about cost-effectiveness analysis, but none are doing it.” Nearly two decades later, is this still a fair assessment?

In education, the use of cost-effectiveness analysis is still rather modest. To our knowledge, this is the only book-length treatment of the subject. Some general textbooks for evaluators devote a section to the topic (Boardman, Greenberg, Vining, & Weimer, 1996; Rossi & Freeman, 1993; Weiss, 1998), yet most provide only a cursory discussion, if any at all. Perhaps unsurprisingly, the number of published cost-effectiveness analyses in education has grown at a slow (albeit steady) pace.<sup>1</sup>

In sharp contrast, cost-effectiveness analysis is rapidly becoming a standard tool of health researchers. There are numerous textbooks and methodological surveys of the field (Drummond, O'Brien, Stoddart, & Torrance, 1997; Gold, Siegel, Russell, & Weinstein, 1996; Johannesson, 1996; Sloan, 1995). Journals of health policy and health economics routinely publish empirical studies—numbering in the hundreds—that compare the cost-effectiveness of different medical interventions. A national panel has even issued recommendations on the proper conduct and interpretation

of studies (Weinstein, Siegel, Gold, Kamlet, & Russell, 1996). Most heartening is that cost-effectiveness analysis is increasingly recognized as a useful and necessary tool for choosing among competing health-care investments.

Cost-effectiveness analysis should be more important than ever, particularly in education. At every level of government, administrators are being asked to accomplish more with the same or even fewer resources. At least rhetorically, this is evident in educational debates that emphasize the “cost-effectiveness” or “efficiency” of investments and policies. All too often, however, these claims are not based on solid evidence. At least part of the blame for this situation may reside in the fact that cost evaluation is still not widely understood among policymakers or even among educational evaluators. We hope that an introduction to cost analysis might encourage and enable such individuals to incorporate this approach into their evaluations and decisions. Better training is a necessary—though perhaps not a sufficient—condition for the promotion of cost studies. Thus, the main objective of this volume has remained unchanged since the first edition: to provide school personnel, evaluators, and students with a clear introduction to the rationale and methods of cost analysis.

In other respects, the volume has undergone substantial modification. Throughout the book, we have replaced many of the hypothetical examples from the first edition with actual cost studies from education. We have also rewritten and leavened the text with numerous references to methodological and applied research, in order to reflect new developments in the field. Where progress in education is lacking, we endeavored to reference developments in health cost analysis.

In the first edition, a discussion of effectiveness, benefits, and utility was confined to a single chapter. This edition has expanded the discussion to three completely new chapters (6 through 8) on cost-effectiveness, cost-benefit, and cost-utility analysis. In each case, we review the methods of estimating effectiveness, benefits, and utility and the procedures for interpreting this information in light of costs. We also focus attention on several essential features of a conscientious cost study, such as sensitivity analysis. Chapter 9 is a greatly expanded version of its predecessor, on the use of cost evaluations. For example, it presents a checklist for evaluating cost studies and uses it to evaluate a particular cost-effectiveness study. It also assesses some emergent topics, such as the use of “league tables” to compare the findings of several cost studies. Finally, Appendix B includes an extensive new bibliography of educational cost studies, grouped by their topics.

▶ **NOTE**

1. Some research bears out these impressions. Between 1985 and 1988, less than 1% of presentations at the Annual Meetings of the American Evaluation Association addressed cost-effectiveness analysis or included it as a component in evaluations. The proportion is even smaller among evaluation studies presented at the Annual Meetings of the American Educational Research Association (Levin, 1991). Monk and King (1993) compared the predominance of cost studies in two journals of public policy: one focused on educational issues and the other of general interest. Seventy-five percent of evaluation studies in the education journal ignored the issue of costs. In contrast, only 20% of articles in the general policy journal omitted a consideration of costs.

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