The first major study of air pollution emissions in the United States was undertaken in the St. Louis region as a cooperative effort by federal, state, and local agencies. While still in mimeograph form, this study was made available to me and provided a data base for a linear programming model of air pollution control. The basic structure of that model was developed in my doctoral dissertation.

This research continued for seven years. The original data base was augmented as new aspects of air pollution abatement were examined. Some of the results of this research have been published in articles appearing in journals and conference volumes from 1970 through 1977. Each of these publications is based on a different extension of the model, incorporating additional data. Nowhere have the results of these individual extensions been interrelated; this is one of the objectives of the present volume. Another objective is to incorporate the linear programming model of air pollution control into the context of a general equilibrium analysis, in which the results have welfare economic implications. In this broader perspective the research takes on new meaning and some of the results that had gone unnoticed are found to be important.

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and encouragement.

This book is written for economists, air pollution control planners, and for engineers and mathematicians who are interested in the application of linear programming to social problems. For readers who are planning to implement similar models in other air-sheds, this book anticipates many of the problems they are likely to encounter and illustrates the richness of results that can be obtained.