Preface

This study is based on data relating to production costs of viscose-rayon manufacture at several plants of E. I. du Pont de Nemours and Company. The Textile Fibers Department of the Company kindly permitted me to use the annual cost sheets relevant to rayon operations at the Spruance (Richmond, Virginia) and Old Hickory (Tennessee) locations during the period 1929–1960. Considerable information relating to investment outlays was provided to supplement the cost data.

My initial contact with the Textile Fibers Department was through Dr. W. W. Heckert, Assistant General Director, Technical Divisions. Dr. Heckert arranged for the preparation of the statistical information, gave me most generously of his time, and offered valuable advice on the organization of the study at an early stage. I would like to express my sincere gratitude for Dr. Heckert's help, and for the generosity of the Department.

The technological basis for this study was derived to some extent from technical journals, but for the most part, I have relied on interviews with men personally involved in the development of the United States rayon industry. I would like to thank in particular Dr. William H. Bradshaw, formerly Research Director of Du Pont Rayon, Dr. G. Preston Hoff, and Dr. H. H. Parker, who were intimately connected with the development of "Cordura" and who gave firsthand accounts of the events of the 1930s; Dr. Charles Scott-Venable, Research Director at the American Viscose Corporation during part of the period under discussion, Dr. George Allen of the Research and Development Department of AVISCO, and Mr. J. L. Shields, Assistant Treasurer of AVISCO, who helped me obtain a broad understanding of the industry; and Dr. Church of Rayonier, Inc., who discussed with me developments by pulp manufacturers in general and the Rayonier company in particular during the period of my study. I am indebted to the late Dr. T. R. Milne, member during the 1930s of the "Cordura" research team of Du Pont's Rayon Technical Division and, for a number of years, Semi-Works Supervisor at the Buffalo location. Dr. Milne was later an officer of Chemtex, Inc. He provided much valuable information concerning the development of the United States rayon industry as a whole.

Thanks are due to Mr. Bill Ackerman and Mr. M. R. Bachlotte, at Spruance and Old Hickory, respectively, for their help in the processing of data. I appreciate also the advice of Mr. P. J. Pakurar and Mr. R. H. Stafford.

My greatest obligations are to Dr. S. W. Brainard, Manager, Du Pont Technical Service Section, Laboratory Service, and to Dr. E. M. Hicks, Jr., Technical Director, Du Pont "Orlon"-"Lycra" Technical Division. These men kindly tolerated numerous visits, phone calls, and letters; read and commented upon parts of the study; and provided the detailed information that permitted the successful completion of the project. Dr. Hicks' aid in the analysis and interpretation of the data has been invaluable.

Since *all* the cost data in this study were derived from the annual cost sheets prepared by the Spruance and Old Hickory plants, an explicit statement of "source" is usually omitted in the presentation of the data.

This monograph is, with some modification, my doctoral dissertation accepted by the Department of Economics, Princeton University, in 1963. My thesis advisors were Professors Fritz Machlup and Jesse W. Markham, to whom I am indebted for advice and encouragement. The funds for the thesis were from a Ford Foundation grant relating to a project directed by Professor Machlup on the economic aspects of patent protection, technological inventions, and their development.

The final preparation of the study for publication in book form has been carried out at the Institute for Economic Research, Queen's University, Kingston, Ontario, Canada. Funds for this purpose were provided by the Canada Council and the Institute. I am grateful to members of the Institute and above all to the Director, Professor M. C. Urquhart, for very helpful discussions and advice.

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