

PUBLIC UTILITY INDUSTRIES IN  
JAPAN: PAST, PRESENT AND FUTURE

*Public Utility Industries in Japan: Past, Present and Future*, edited by the Japan Society of Public Utility Economics and published by the Institute of Public Utilities, is the latest contribution to the "MSU Public Utilities Papers" Series. This book, through examination of a wide variety of cases, presents a comprehensive understanding of the organization, structure and governance of public utility and transportation industries in Japan. The volume offers an "insider" perspective and provides a clear image of the process of transformation taking place in several of Japan's largest industrial sectors.

The history and current structure of the utility industries presented in the book are important to addressing and understanding the central theme, that is—future prospects for reform and restructuring in Japan. The cases and perspectives presented in *Public Utility Industries in Japan* demonstrate both accommodation of and resistance to deregulation in an attempt to understand and balance the positive and negative economic and social effects of reform.

*Public Utility Industries in Japan* provides a substantial contribution to our understanding of privatization, market liberalization, and deregulation of Japanese utility sectors and offers a basis for comparison of those processes in Japan with other major sectors and economies throughout the world.

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PUBLIC UTILITY INDUSTRIES IN JAPAN  
PAST, PRESENT AND FUTURE

THE JAPAN SOCIETY OF  
PUBLIC UTILITY ECONOMICS

MSU PUBLIC UTILITIES PAPERS

PUBLIC UTILITY  
INDUSTRIES IN JAPAN

*PAST, PRESENT AND FUTURE*

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THE INSTITUTE OF PUBLIC UTILITIES  
AND NETWORK INDUSTRIES

## JAPAN SOCIETY OF PUBLIC UTILITY ECONOMICS

The Japan Society of Public Utility Economics (JSPUE) was founded in 1949. The Society fosters studies and conducts investigations of public utilities from political, economic and technical standpoints. The goal of the Society is to improve the understanding of public utility service, support healthy development and, through these efforts, contribute to public welfare.

The Society has steadily conducted research and other activities since its creation more than 50 years ago. The main activities of the society are publishing the *Journal of Public Utility Economics* three to four times a year, holding an annual national conference and hosting a series of regional academic meetings.

The Society has more than 400 regular members and 70 institutional members. It is governed by a president, two vice presidents, a board of managing directors, a board of trustees and a secretary general who manages the affairs of the organization.

The Society has three regional sections. The Kanto and Kansai Sections were established in 1975. The Hokkaido-Tohoku Section was formed in 1992.

The Kanto Section has approximately 300 regular members and 50 institutional members. The Kansai Section has about 100 regular and institutional members, while the Hokkaido-Tohoku Section has about 30 members.

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Through its Annual Regulatory Studies Program, a two-week course on the campus of Michigan State University, the Institute has trained more than 8,000 regulators from the United States and dozens of foreign nations. For more than three decades the Institute's Annual Conference has provided a national forum for utility executives and regulators to discuss the issues and trends that affect one of the largest and most significant sectors of the U.S. and global economies.

In addition, more than 40 books and conference volumes have been published by the Institute during the past two decades. The "MSU Public Utilities Papers" Series provides among the most comprehensive collections of published literature on public utilities and their regulation available to the professional and academic reader communities.

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Finally, we gratefully acknowledge Harry M. Trebing, professor emeritus of Economics at Michigan State University and founder of the institute. As he mentions in the foreword, many of the contributors have benefited from their association with the institute as visiting researchers under his directorship, and have learned about U.S. public utilities from his books.

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## *Foreword*

*Harry M. Trebing*

The organization, structure, and governance of the major public utility and transportation industries is changing dramatically in both industrialized and developing nations. These changes have taken the form of privatization of state-owned enterprises, the partial or complete deregulation of privately owned utilities, and the marketization of services heretofore viewed as necessities. A great deal of attention has been focused on industrial restructuring and the introduction of public policies favoring competition in the United States, the United Kingdom, and the European Union. However, with the exception of New Zealand and Australia, much less attention has been given to the changes taking place in most of the nations of the Pacific Rim. In view of the fact that Japan is the world's second largest economy, this lack of attention among Western academics and policy makers must be attributed to the dearth of English-language studies dealing with Japanese public utility and transportation industries. A major step has been taken to correct this shortcoming with *Public Utility Industries in Japan: Past, Present, and Future*, edited by the Japan Society of Public Utility Economics.

Of course, a great deal has been written about the substantial growth of the Japanese economy since 1945, with particular emphasis on the interrelationship between industry, government, and financial institutions. But relatively little has been done to present an across-the-board examination of Japanese public utility and transportation industries. There has been anecdotal evidence about particular firms. For example, we know that Nippon Telegraph and Telephone was the only Japanese company to be listed by the Dow-Jones Indexes among the top ten largest global companies as of June 30, 1998 (as measured by market value). But such information provides little insight into the changing pattern of the utility and transportation industries, their regulation, or their contribution to national productivity and income growth.

We are indebted to the Japan Society of Public Utility Economics for assembling a distinguished group of scholars to examine virtually all aspects of the electric power, gas, water, transport, postal services, telecommunications, and broadcast industries. The society has five hundred members drawn from academic institutions, government, industry, and private research organizations. In this collection of papers, twenty-three authors contribute essays covering not only specific industry issues, but also the history of privatization in these industries, in-depth analyses of new management strategies, reforms in economic and social regulation, and reforms in government administration.

This compendium of papers will serve at least two important functions. First, it will give English-speaking students of public utilities, industrial organization, and regulation a valuable overall appreciation of the major changes that are taking place in Japanese utility and transportation industries. Second, and perhaps more important, it will permit a comparative evaluation of restructuring programs in Japan with those in the United States, the United Kingdom, and the European Union. That is, it will now be possible to contrast the restructuring policies and programs for major portions of the global economy, and to develop a detailed critique of different approaches to restructuring and reform.

In the United States, restructuring policies in electric power and gas supply have placed much emphasis on the functional separation of the public utility networks from the marketing phase of these industries. The networks would remain under regulation while marketing appears, more and more, to be entrusted to deregulated marketing

affiliates. The traditional obligation to serve all customers at just and reasonable rates is being replaced by a new requirement that customers look to primary and secondary markets to ensure adequate supplies of service at desired levels of reliability. In telecommunications, the breakup of AT&T in 1984 has led to a bifurcated industry structure in which there are intense confrontations between the regional Bell operating companies (providing local exchange service) and the long-distance carriers such as AT&T, MCI-WorldCom, and Sprint. In electric power, gas, and telecommunications, public policy makers place great emphasis on attempts to achieve open access as a means of promoting a transition to competitive markets. Thus far, however, these efforts have achieved only modest success.

In the United Kingdom there have been radical changes in the structure of electric power supply and railway transport. In electric power, the traditional pattern of vertical integration has been abandoned in favor of the separation of generation from transmission and distribution; in railway transport, carriage has been separated from ownership of the railway network. On the other hand, British Telecom has not been subject to restructuring and it still retains a position of market dominance. As of December 1997, British Telecom had 89 percent of the local telephone market and 78 percent of the national market, while its largest competitor, Mercury, had only 2 and 10 percent of these markets, respectively. It is probably too soon to make a judgment regarding the structural changes taking place in the European Union since liberalized entry in telecommunications only began on January 1, 1998. Interconnection agreements will have to be negotiated between incumbent carriers and new entrants, but a series of alliances have already begun to proliferate between the major players.

Major questions can be raised regarding the consequences of functional and structural change in the United States and the United Kingdom. Most important, has a market structure approximating workable competition begun to emerge? If tight oligopoly is defined as the control of 60 to 100 percent of the market by the four leading firms, combined, while significant barriers to entry remain, then it is clear that most if not all of the U.S. and U.K. public utility and transportation industries have become oligopolistic.

At the same time, questions can be raised about the behavior and performance of oligopolistic industries when judged from a societal

perspective. For example, will there be noticeable evidence of price discrimination and cross-subsidization between different classes of customers under oligopolistic rivalry, and will societal goals such as universal service and the promotion of environmental protection be achieved when primary reliance is placed on market-driven incentives?

A comparative study of the strategies and behavior of these large, partially deregulated enterprises should reveal new insights into oligopolistic behavior and Schumpeterian innovation. A comparative study will also provide insight into the problems associated with the transformation of localized public enterprises into multinational corporations. Similarly, such a study will give some insight into whether the traditional boundaries between electric power and gas utilities, or between telecommunications and the information economy we being eroded by a growing trend of interindustry convergence.

Finally, there remains the question of whether adequate safeguards are being put in place to protect residential, small business, and other residual customers. Different nations have adopted different approaches. For example, the United States and the United Kingdom have placed primary reliance on the imposition of ceiling prices (or variants of price-cap regulation), together with mandatory interconnection regulations designed to enhance consumer choice. These measures appear to have done little to constrain levels of profitability, but they do appear to have complemented corporate mergers, acquisitions, and alliances. Also, new proposals such as aggregator procurement and the auction of service territories have been proposed in the United States. A meaningful comparison could be made that would evaluate each of these protective measures in terms of its effectiveness by examining experience to date in the United States, the United Kingdom, the European Union, and Japan. This comparison would give the analyst, the policy maker, and the practitioner valuable information about the adequacy of protective measures taken by the industrialized nations during the period of transition.

Again, we are indebted to both the individual contributors to this collection and to the members of the Editorial Board for undertaking this forward-looking study of the Japanese utility and transportation industries. It constitutes a significant step toward enhancing our knowledge of domestic Japanese changes, while facilitating comparative international studies. In passing, I would like to take this opportu-

nity to recognize not only the important contributions of the current authors, but also the pioneering work of the late Professor Tatsuo Takenaka. Professor Takenaka visited the United States in the mid-1950s to acquaint American economists with the major issues and problems confronting the Japanese public utility and transportation industries in the years after 1945. He also wrote extensively on these topics in Japanese, and in his long and distinguished career he served as mentor for many of the current members of the Japan Society of Public Utility Economics.



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## *Preface*

*Hiroshi Sasaki*

Study of the public utility industry and public enterprises in Japan dates well before World War II, as far back as the Meiji era, but it was not until the 1930s that serious research began. The Japan Society of Public Utility Economics (JSPUE) was established in 1949 by scholars and organizations associated with the public utility industry. Because of extensive damage to the infrastructure during World War II, there was an urgent need for reconstruction and restoration. Furthermore, as Japan emerged as a new democracy after the war, research was seen as necessary on topics related to enhancing the standard of living and improving the social infrastructure.

At its inception, JSPUE had 156 individual members and 30 corporate members. Now in its fiftieth year, the society has grown to 426 individual members and 75 corporate members.

Today, JSPUE has four main activities. First, it holds an annual conference at which on-going research is presented and discussed by members. Second, several seminars are conducted annually by the three regional divisions (Kansai, Kanto, and Tohoku-Hokkaido). These seminars include not only research presentations, but also visits

to important public utility facilities. Third, JSPUE publishes an academic quarterly, the leading journal on public utility economics in Japan. Finally, other activities include exchanges with foreign research organizations, the collection of information on public utilities overseas, and translation the to/from Japanese of important literature on public utilities.

Originally, public utility industries were considered domestic entities, immune to changes in other countries. With increasing globalization, however, one country's changing regulations or experiments with public utilities can affect national corporate behavior to such an extent that repercussions are felt in other economies. Thus, it is vitally important to know what is happening elsewhere in order to be able to respond to change or to learn by example.

Among the recent trends in public utility industries overseas are deregulation, policies to promote competition, the use of incentive regulation to enhance managerial efficiency, and privatization of public corporations. It is important to be aware of these international developments, but it is also important to understand what is happening in Japan—what problems are occurring, what policy is being implemented by the government, and how public corporations are performing. There is a need to convey information about Japanese public utilities so that others may draw any useful lessons.

This book aims to provide such information to overseas researchers, policy makers, and businesspeople. On the fiftieth anniversary of JSPUE, we hope that this book will contribute to a deeper understanding of the Japanese public utility industry and that the experience offered here will in some way be helpful to the industry worldwide. We also eagerly await reactions from readers who may share their knowledge and experience with us, so that we may improve the industry in Japan. If this book plays a part in stimulating an exchange of ideas that will enhance the public utility industry at home and abroad, then it will have achieved our goal, and we will be most grateful.