

**Comparative Technology Policy for the Semiconductor Industry  
in Japan and the United States**

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## Preface

Having devoted my career to issues pertaining to public policy at the Ministry of International Trade and Industry (MITI), I became interested in learning about technology policy from a legal perspective. While working at the Industrial Electronics Division of MITI, I was involved in the initiation of a national R&D project for future electronics technologies and the semiconductor trade negotiation with the United States government. Policy discussion with my colleagues, business people, and foreign governments drove me to study the role of government in technological innovation both in Japan and abroad.

In this thesis, I chose to focus on those policies that pertain to the semiconductor industry. The changes in international competitiveness in this industry have aroused emotional responses among policymakers in industrialized nations such as the European Commission, the United States, and Japan. As a result, deep political intervention characterizes the semiconductor industry. My purpose is to analyze similarities and differences in legal approach to technologies in the United States and Japan, hoping to enable Japanese government policymakers to better cope with the difficulties they face in implementing policies at technological frontiers.

In writing this thesis, I draw heavily upon the previous academic work of Richard R. Nelson, Nathan Rosenberg, and David C. Mowery regarding comparative research on technology policies and innovation systems and the interaction between innovation systems and technology policy. Research for this thesis was facilitated by the cooperation of MITI colleagues, in particular of Tatsuya Fujiwara, Katsumoto Yoshimura, and Yuri Nakatani.

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## **Abstract**

This paper investigates the differences between Japan and the United States in instruments of technology policies for the semiconductor industry, in particular legal frameworks of government-funded R&D consortia which play a central role in recent technological policies in the two nations as a means to promote development and disseminate new technologies.

By literature review of past and current technology policy and field research of several R&D consortia, the analysis leads to the conclusion that the U.S. financial system of government R&D programs has several advantages in improving the productivity of consortia, among them the disposition of intellectual property rights, cost sharing with industries, and involvement of universities in government-funded R&D programs, over Japan's one. Japan should introduce the American system in part in order to enhance incentive of innovators, while retaining the merits of its own system which will disseminate new technologies within an economy.

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